EXECUTIVE SUMMARY

- 1. The Committee on allocation of natural resources (CANR) was constituted vide Cabinet Secretariat Office Memorandum (OM) dated January 31, 2011 to deliberate on measures required for enhancing transparency, effectiveness and sustainability in utilization of natural resources. The Committee was entrusted with the mandate of identifying key natural resources being allocated by Government; examining the efficacy and suitability of existing legal and regulatory framework and rules being employed in the allocative processes; make recommendations for enhancing the sustainability, transparency and effectiveness of the allocative processes; and, finally to suggest changes in the legal, institutional and regulatory framework to implement the above recommendations. The Committee decided to restrict its ambit of deliberations to those natural resources in which the Central Government or its agencies have a substantial role in their allocation. Consequently, the following natural resources were identified for further study and analysis: coal, minerals, petroleum, natural gas, spectrum, forests, water and land. It was felt that while many of these subjects were being administered and regulated by State and even local Governments, the Union Government still had a major role to play in articulating the policy framework or otherwise influencing the manner of their allocation.
- 2. Transparency, effectiveness and sustainability can be interpreted in myriad ways. Before proceeding with the exercise, the Committee decided to clarify its approach in this area and also highlight its limitations in addressing some of these issues as fully as they deserved. The Committee's deliberations, given the time available to it, focused on issues of transparency in allocation and in particular, open, transparent and competitive mechanisms of allocation, pricing and utilisation of natural resources. However, it recognizes that issues of efficiency and sustainability underpin the entire process. In the Committee's opinion, the test of transparency needs to be applied regardless of whether the allocation process is market-related or non-market. While market-related processes are likely to be inherently more transparent, there are a number of possible opacities in pre-qualification and bid evaluation that need to be removed to the maximum extent possible. Similarly, non-market processes can also be made more transparent by ensuring that the reasoning underlying these decisions is clearly spelt out and available in the public domain. For example, in pricing, the overall approach taken by the committee is to ensure transparency in all decisions that deviate from a market discovered price. Institutionally, it means that if a good or service is sought to be subsidized, then it is best to do it at one place, preferably at the consumer end, rather than at the input end, where it affects the pricing of natural resources. The instruments for such consumer subsidies are being progressively established, through regulatory institutions and direct transfer mechanisms.
- 3. The word "effectiveness" is used in many contexts, but in this report it will be used primarily in the sense that the minimal amount of natural resources are being used to produce a given amount of output of goods. Effectiveness is not only that of extraction, but also of exploration, where the framework must balance incentives to explore with the sharing of rents. On occasion, it may be possible to save cost on extraction of resource at a given point in time but in a

manner that either uses a greater amount of conjunctive resources, like water and forests, or even reduces the ability to extract the resource in the future. In such a case, the reduced cost reflects the under-pricing or non-pricing of conjunctive and future resources. The Committee did not address these kinds of issues in significant detail due to paucity of time. However, they are nonetheless extremely important and addressing such issues need to rely on both market and regulatory approaches. While it is important for market processes to be used wherever relevant and feasible, the capacity for oversight is an integral component of an institutional architecture that ensures transparent, efficient and sustainable allocation and use of natural resources. The essence of a regulatory mechanism is a substitution of its judgement for that of the market, and while this may be justified, the decision must be transparent and reasoned, so that the basis for the judgement is clear.

- Sustainability is perhaps the most multi-faceted concept among the three. It can take many forms, but the Committee considered four, viz. technological, which has been addressed above, environmental, social and intergenerational. In each of these areas a number of judgements will need to be made and a balance struck. It is important that this be based on all the relevant information, high-quality analysis and in the least time feasible. For this, it is important that institutions tasked with these responsibilities have the necessary capabilities and resources. Broader socio-economic changes are brought about by natural resource extraction. The issue of changing livelihoods as a result of such activity is an important one. While it was not within the scope of the Committee to investigate appropriate livelihood reconstruction strategies, it is perhaps essential that a few key features be kept in mind, viz. the recognition that project affected persons are not just people who lose land, but also those whose current livelihoods are severely impaired, the need to ensure that they are better off than before, the establishment of a mechanism for appropriately sharing the gains from the activity with them and (d) enabling them to participate effectively in the changed economic environment, the last being the most challenging. Another aspect of social sustainability particularly relevant to a federal polity such as ours is related to equity between the Union and the states. In view of the recent exercise conducted by the Inter-State Council on compensation to resource bearing states, the Committee decided not to inquire into issues of Union-state sharing but it believes that this is an important issue that needs more attention from the government. Finally, the rate of resource extraction cannot be based solely on the needs of the current generation; these resources are limited and valuable and hence the benefits must be distributed between immediate consumption and future use. This issue is not related solely to extractive techniques. It can also relate to the technology in user industries. These are not considerations that admit of broad policy approaches. However, the Committee believes it is legitimate for policy to take such considerations into account and to the extent found necessary, take actions to appropriately regulate the extraction, import and export of resources, as long as the decisions are taken after due process.
- 5. Coal is a sector with an administered allocation mechanism with a monopoly producer supplemented by a limited amount of captive production. Domestic production is progressively falling behind demand, leading to a rising share of imports. Even users who have been administratively allocated supplies of coal do not receive their full allocation regularly. The e-auction mechanism, as currently structured does not bring additional supply on to the market, nor does it enable buyers to plan the associated logistics in a systematic manner. There is an urgent need to increase supply if the current growth path is to be maintained. Under the Coal Mines Nationalisation Act, it would appear that mining by persons other than state-owned entities is permitted as long as the mined coal is supplied to approved and designated endusers. The Committee therefore recommends inclusion of mining firms as part of a bid-based

captive mine allocation process, which is already under consideration of the Ministry. These mining firms would be linked to designated and approved end-users through the creation of a transaction platform, which could be owned and managed by government in order to ensure that all potential designated and approved end-users can benefit from increased supply, instead of the limited number of captive users, as is the current practice. Imported coal and surplus coal from existing captive mines, as allowed by current policy, could also be transacted through this platform. It is not clear what the price implications of this platform will be since there is likely to be a shift from imported supply to domestic supply. However, if there is a price impact on electricity production, it could be addressed through transparent subsidies at the consumer end, given the existence of the State and Central Electricity Regulatory Commissions.

- 6. Coal also has broader and important issues relating to the environment, including and beyond that of forest diversion. The prevalence of mine fires, inter alia, point to the need for improved mining and mine closure practices. There are also issues that relate to the adoption of technologies such as coal gasification for deep seated deposits. A broader strategic decision on which more study is needed is the optimal inter-temporal extraction rate. For example, there is a mismatch between domestic coal quality and imported high efficiency ultra-critical boiler technologies. Imports of coal appropriate to high-efficiency boilers until such time as ultra-critical boiler technologies can be adapted for domestic coal is an option that needs further examination.
- In minerals, the policy architecture in a process of change. The global scenario may also 7. be at an inflection point, where the prices of minerals may be becoming much higher and more volatile. In such a situation, it is important and challenging to evolve an architecture that will strike a balance between a fair share for the country and sufficient incentives for exploration, without foreclosing options for the future. The Committee's recommendation supports the move in the proposed architecture to change the method of awarding areas with sufficient knowledge of mineralization, viz., mining leases and some prospecting licenses, from the current first come first served method to a bid based allocation method. In other areas too, the security of tenure and the transferability of license, as envisaged under the proposed architecture, creates an option value for reconnaissance and large area prospecting licenses. The appropriate method for awarding these licenses that balances the need to preserve exploration incentives with a fair share for the nation will vary in the context of specific minerals and knowledge of mineralization and the Committee recommends that the proposed architecture be designed so as not to foreclose any options. Furthermore, a modern mining sector needs vigorous and capable state mining departments to increase knowledge of mineralization and oversee the licensees and lessees. For this, their capacity and that of the Geological Survey of India has to be appropriately enhanced.
- 8. Apart from issues relating to the environment mine closure and small mines, which are in part related to the capacity for oversight mentioned above, benefit sharing from mining activities is an issue of current concern. There has been a long-standing practice of preference for mine allocation to lessees who promise to establish local end-use facilities. The Committee recognizes the aspirations of State governments to develop local industry based on availability of natural resources. However, the decisions about location of industry are techno-economic decisions often influenced more by the availability of infrastructure, human capital and levels of overall governance. The Committee feels that the state will be able to more effectively incentivise the growth of local industry by transparent systems of optimising revenue generation through appropriately designed bidding processes and using the revenue for creating conducive overall conditions for investment.

- 9. The development of mineral bearing areas, which generate the revenue, leaves much to be desired. In this, the Committee believes that the incidence and structure of royalty be should be appropriate and a significant portion of the revenue should be used to ensure all round development of the mineral bearing areas, for example, through a non-lapsable fund in the mining districts and transparent and flexible district level mechanisms including Zilla Panchayats and District Planning Committees.
- 10. In petroleum, the allocation process under NELP is seen as a benchmark for transparency in the natural resources sector. It is undeniable that the NELP model is distinctly ahead of the methods of allocation seen in other sectors examined by the Committee such as coal and minerals. However, the transparency in allocation is a contrast with the degree of opacity of the post award process, i.e., the management of the resource itself. In the petroleum sector, the creation of a National Data Repository has been an issue for almost two decades, with Parliamentary concern with the delay as early as 2000. This affects the degree of interest in exploration, which has been falling in recent years, as reflected in the number of bids and the dominance of state-owned firms. Production sharing contracts are admittedly an efficient way of allocating risk in this sector. However, the bid parameter, i.e., the pre-tax investment multiple (PTIM) does provide possibilities for gaming during the pendency of the contract. The institutional framework for determining the PTIM is thus crucial for proper management of the PSC. Currently, this is done in a contractual and consensual, but ostensibly closed and opaque process. The concerns are enhanced by the fact that there is significant circulation of personnel between state-owned operators and oversight bodies, which enhances the perception of conflict of interest.
- 11. It would thus appear that while the NELP system has much to recommend itself, there are still a number of areas of improvement that need to be addressed. The Committee in its recommendations has tried to build on the inherent strengths of NELP to ensure that its objectives are as fully met as possible. Apart from expediting the process of creating the National Data Repository and suggestions as to how more data could be made available in the interim, it is the Committee's belief that the transparency in the management of contracts and associated considerable financial implications should be enhanced by increasing the independence of the regulatory mechanism, clarifying the separation of the policy maker, regulator and the operator and bringing the decision making process into the open. On this, however, the Ministry of Petroleum and Natural Gas (MoPNG) point of view is that a separate independent regulator for the upstream sector is not required for reasons that are given in a separate note submitted by Secretary, MoPNG, a Member of the Committee. Principally, it is because, they argue that in the upstream sector, policies such NELP already provide a level playing field to all companies.
- 12. In as far as natural gas is concerned, under the present policy, Government retains the right to decide the manner in which the gas produced from fields bid out under NELP is to be utilized; on pricing issues, while the contractor(s) have a relatively higher degree of freedom to determine gas prices based on competitive price discovery, the pricing formula or basis is subject to approval by Government. Natural gas being produced from the producing NELP fields is being allocated by an Empowered Group of Ministers (EGoM) to selected sectors, with fertilizers and power generation being accorded top priority in allotment. The price at which the allocation is being done has also been decided by an EGoM.
- 13. In the opinion of the Committee, in the ideal case, natural gas should be viewed as a substitute for oil and related applications, such as cooking, transport, heating fuel and other

industrial uses. In many of these applications, natural gas can be a viable substitute at market determined prices, with the price of imported LNG acting as a cap. Thus, a complete unshackling of the natural gas market, without restrictions on utilization and pricing, concomitant with development of robust infrastructure (in the form of gas pipelines and re-gasification terminals) and a transparent regulatory oversight appears to recommend itself as the most optimal framework for allocation of natural gas. However, keeping the critical needs of the agriculture sector and food security in mind, the Committee has recommended that the extant practice of allocation of natural gas for production of urea should continue, at a price to be determined on the basis of a formula to be approved by Government. The pricing restrictions should continue till such time that a subsidy regime continues for urea, or till direct delivery of subsidy is made possible. At the same time, the power sector should also be assured of supplies of natural gas, for peaking power generation (till a pre-defined level of plant load factor [PLF]), albeit at market determined prices, at least till the end of the XII Five year plan period. Power plants, which do not lend themselves to regulated tariffs, however, should be considered for exclusion from the category of sectors reserved for earmarked allocation, with immediate effect. All other sectors should compete for gas at market rates. The Committee has recommended that a trading platform/exchange should be created for developing a robust and transparent market for natural gas, with regulatory oversight being exercised by the downstream regulator, the PNGRB. Finally, the Committee has also laid great emphasis on urgent development of gas infrastructure which will promote the development of an active gas market.

- 14. The Committee, however, would like to stress that the aforesaid allocation and pricing recommendations would only be applicable to future discoveries and contracts of gas. The existing contracts should be maintained. The existing contracted supplies can continue to be earmarked for various sectors, through the EGoM, as per extant practice; and, at the price discovered and approved by Government.
- 15. The Committee has looked at the practice adopted by various countries for allocation of spectrum. There is sufficient evidence to conclude that in the initial phase of telecom development, most countries adopt an administered system of allocation, which may be in the form of first come first served (FCFS) methodology, beauty contests or lottery. The experience of countries in Europe who auctioned 3G spectrum in the first decade of this century, which subsequently led to large destruction in firm values, has also been looked at. The choice of the appropriate method of allocation of spectrum, therefore, depends critically on the context, market conditions and the objectives of extant telecom policy. However, given the current state of development of the Indian telecom market, the Committee has recommended that in future, spectrum for telecom access services should be made available through suitable market related processes.
- 16. The other significant recommendations of the Committee are that all future telecom licenses should be unified licenses and also de-linked from spectrum; and, effective measures should be taken to ensure continued efficient usage of spectrum inter alia through re-defining the appropriate geographical units for allocation. At the same time, vacation and re-farming of spectrum for commercial services should be expedited to ensure availability and certainty of adequate spectrum to facilitate optimal usage and revenue realization. Finally, a comprehensive and integrated legislative frame work for spectrum management both in respect of commercial and non-commercial frequency bands should be put in place to ensure optimal and efficient use of country's spectrum resources.

- 17. The contentiousness over the allocation of forests in India is largely for its conjunctive use, rather than for its use as timber as in countries like Indonesia and Brazil. Necessarily, therefore, the balance has to be struck between the value of the use for which the forest is needed, primarily for the extraction of some kind of mineral, and the value of the forest itself. This is complicated by the fact that the value of a forest is a conceptually complex and thus administratively almost impossible to calculate to everyone's satisfaction. It will vary with people's current preferences and with their view of inter-temporal choices. Yet, choices have to be made and indeed, the primary function of the political process is the aggregation of disparate preferences. It is imperative however, that in doing so, the process be as well informed and transparent as possible and try to avoid decisions that foreclose future options. The process must also be able to deliver decisions within a reasonable time frame, for which the existence of a well-accepted database on existing ground conditions is a sine qua non. The Committee's recommendations are directed towards achieving such an outcome.
- 18. Much of the angst about forest clearances comes from the time taken to arrive at a decision, whether positive or negative, and the opacity of the process outside the group involved, i.e., the forest department and the firm seeking clearance. The capacity of forest departments need to be enhanced and the quality and organization of databases on forest conditions needs to be substantially improved for the process of decision making to be expeditious and transparent. Thus, the thrust of the recommendations are about improving the capability of the state forest departments and establishing a scientific public domain database, and ensuring that reasons for all decisions are publicly available.
- The legislative framework for usage of water is characterized in India by a multiplicity of principles and rules and a multiplicity of institutions. Thus, there is lack of an overall integrated system of water management, which can harmonize various aspects of water use, the primary being that of life-support. The Committee feels that there is urgent need to have a comprehensive national legislation on water. This can be either done through bringing water under the Concurrent List and then framing the appropriate legislation; or, by obtaining consensus from a majority of the States that such a "framework law" is necessary and desirable as a Central enactment. The legal options in this regard need to be examined by the Union Ministry of Water Resources (MoWR). The national legislation should clarify a common position on a number of issues, e.g., need to consider all water resources as a conjunctive, unified whole; water as a common property resource; principles of allocations and pricing and so on. The proposed framework is not meant to confer administrative authority on the Central Government, by way of issuing licenses and clearances. What is intended is a kind of umbrella legislation under which laws will be enacted, policies framed, rules and orders issued, and executive decisions and actions taken, at different levels. Those laws, policies, actions, etc, will have to conform to the provisions of the umbrella legislation, and the legislation itself will of course be justiciable.
- 20. In the interim, while such a framework legislation is not enacted, there is need to re-draft the River Boards' Act, 1956 to enable River Board Authorities (RBAs) to also play a managerial as opposed to a pure supervision role, in river basins' management. The problems of groundwater management need to be addressed urgently through aquifer level mapping, along with hydrogeological studies; and initiation of pilot projects in different settings, duly taking into account community awareness and participation, self-regulation of groundwater, enhancement of coverage of water saving methods, including changes in cropping pattern and so on.

- 21. A transparent and rational framework for management and allocation of Government lands is needed to bring about uniformity in policies, in terms of the broad guidelines to be observed while allocating/alienating Government land. The Committee feels that there is imminent need for having an institutional framework for creating a centralized and transparent data bank, of all lands available with Government Departments and organizations, which should include complete ownership details, area allotted and possible land uses along with actual status as regards utilisation and encroachments etc., in addition to satellite images and GIS Mapping. Since these lands are scarce, the Committee has also recommended that the lands being alienated should be brought to their optimal land use before such alienation. All land allocations should preferably be on the basis of out-right sale of land, unless there are legal constraints. Even in these categories of cases, the estimated sale value of land on the date of transfer should be received upfront, before entering into any long term lease, with nominal amount of annual lease payments being made every year thereafter.
- 22. The committee has also recommended for creation of a high level oversight body to ensure that there is a monitoring mechanism for all cases of land alienation by the Central Government Organisations in addition to a Land Exchange Management Committee to supervise or permit any exchange of land or transfer of surplus land from one Central Government Department or Organisation to other Central Government or Organisation / State Government after comprehensive scrutiny of the complete facts.
- 23. In case of land alienation by land owning parastatals and housing boards under the control of Central Government, the Committee has recommended a transparent competitive bidding or e-auction methodology for all cases of land alienation, especially in case of commercial and institutional properties. If in some exceptional cases, e-auction or competitive bidding is not found feasible, the land should be allotted only after the specific approval of Cabinet on a case to case basis. A separate dispensation, however has been suggested for schools and educational institutions. The Schedule of Rates should be updated regularly and the amount of annual ground rent revised periodically in terms of the lease deed. The committee has also suggested that there should be more transparency in the Accounts and these should be put in the public domain so that the public at large also stands apprised about the efficiency of these bodies.
- 24. In a number of instances, the Committee has suggested the use of market related mechanisms for allocation. This is the case in coal, minerals, petroleum and natural gas, spectrum and land. However, it is important to realise that market related mechanisms, especially auctions, come in many varieties that are suited to different circumstances. This variety is not always appreciated generally. The Committee therefore felt it useful to present a discussion on varieties of auction models. The core objective of an auction mechanism is trying to elicit the true valuation of the bidder through the bidding process. The critical learning from this discussion is that for some types of items, known as items with interdependent values in the literature, this valuation is often updated during the auction process as a result of information from other participants in the auction. In some cases, this kind of updating is a useful function, but it may also facilitate collusive behaviour. The challenge is therefore to reveal information that would help bidders arrive at a more considered valuation while limiting the facilitation of collusive behaviour. The report discusses a few ways in which this can be done. Thus, with the help of information technology and support from specialist auction design firms, as availed recently during the 3G auction, it is possible to select suitable models and improve the process considerably.

- 25. Finally, the Committee highlights a few important overarching issues that were seen to cut across multiple sectors and affect the allocation process. These relate to use of policy statements to provide guidelines on matters of allocation rather than rules under the relevant legislation, the nature of independent regulatory institutions and mechanisms for expediting clearances. It also considered the question of legacy issues, i.e., prior commitments made by Government that would be inconsistent with a proposed new dispensation and complementary investments needed to ensure efficient allocation of natural resources.
- 26. The Committee considered these issues and opined first, that rules, being justiciable, are more transparent instruments for governing a sector. It also highlighted broad institutional ground rules for regulators and allocation of functions. These include distancing the administrative ministry from appointment and removal of regulators and entrusting it to a statutorily defined body, having an independent cadre for the regulator with appropriate remuneration and service conditions and ensuring that it has a stable budget. Appropriate support for the staffing of the regulator is essential to create conditions for ensuring that the regulator possess substantial technical capacity and have the ability to access specialized technical knowledge and use it effectively. The power to issue policy directions to the regulator also needs to be appropriately defined, accompanied by suitable justification. The Committee is of the opinion that powers to license and to determine statutory levies like royalties and license fees should rest with the sovereign, though it may be fruitful for the regulator to evolve suitable recommendations after a consultative process. Consultations may also be needed between regulators, especially sector regulators and the Competition Commission of India. The Committee believes that a formal consultative mechanism would be productive in this regard. With respect to clearances, wherever feasible, the government should try to embed the necessary clearances in an SPV before inviting private participation.
- 27. In a business environment, it is quite natural that the rules of engagement evolve over time and it is not necessary to address all legacy issues. However, where it is deemed necessary, as a result of, to try and 'level the playing field', the government may consider moving to a new licensing regime and allowing existing licensees to move voluntarily, after paying a special levy, if needed. Broadly speaking, there is less resistance to legacy advantages when the future market size is large relative to the past, which would be the case when the economy is growing at a high rate but as one moves to the future, the Committee recognizes that transparent mechanisms of allocation of natural resources need to be supported by investment in complementary physical and social infrastructure in order for markets to work effectively and for the process to be efficient and sustainable. To this end, it is necessary that allocation choices avoid the tendency to base decisions on the current state of complementary infrastructure and keep its continuing evolution in mind. This will need a high level of inter-ministerial policy co-ordination to be effective.
- 28. There are no doubt other important issues that impinge on the process, such as the stability of overall fiscal and investment regime, the policies with respect to international trade and most importantly perhaps, policies that influence the overall energy and resource intensity of the growth path that India will travel on. The policies for natural resource allocation, addressed by this Committee, will be but a part of this overall architecture, which has to stand together consistently with each other.

REPORT OF THE COMMITTEE ON ALLOCATION OF NATURAL RESOURCES



Cabinet Secretariat, Government of India



We, the members of the Committee on Allocation of Natural Resources constituted vide order no. 483/1/1/2011-Cab dated 31st January, 2011 hereby recommend, endorse and present the report, which was finalized after deliberations in the various meetings of the Committee.

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Member Secretary, Planning Commission (Member)

G C Chaturvedi Secretary, Ministry of Petroleum and Natural Gas (Member)

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Changeast

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Gøvind Mohan,
Joint Secretary, Cabinet Secretariat,
Member Secretary

Ashok Chawla,
Former Finance Secretary, Government of India
Chairperson

FOREWORD

- 1. There are times when one wishes that the clock would stop ticking. If by some miracle it had, we would perhaps have done greater justice to the terms of reference assigned to us. The subject, indeed interesting and perhaps path-breaking for India, could well be the focus of a large number of doctoral theses. However, in keeping with the adage that 'necessity is the mother of invention', we have, in the limited time of 100 days allotted to us, tried to build a conceptual framework for the Government of India on the allocation and pricing of scarce natural resources. Needless to say, we could at best paint with broad strokes of the brush. The details, along with the colours of the rainbow, would have to come by way of follow-on work.
- 2. A framework based only on the cold logic of economic rationale can be relatively easy to attempt. It can be done sitting in the proverbial ivory tower. We have, though, not lost sight of the practitioners and the concomitant heat and dust of the political economy, which cannot be wished away. Therefore, if some stake-holders do not find our proposals radical enough, they may bear in mind that we have tried to marry economic logic with pragmatism. Such a marriage is not always easy; but it needs to be given a fair chance.
- 3. I am thankful to the Government of India and, in particular, the Cabinet Secretary for the trust reposed in me. Besides the Planning Commission, twelve Ministries/Departments of the Governments of India were represented on the committee through their Secretaries or other senior officials. I received the unstinted support of all these committee members, and was immensely benefitted by their views and analysis of their respective sectors. The industry federations, CII and FICCI, which were represented on the committee also provided valuable inputs. I would be failing if I do not thank my colleagues on the Committee, the experts and stake-holders who generously shared their views and helped shape its final recommendations.
- 4. I compliment the special efforts of the Centre for Policy Research, in particular, Dr. Partha Mukhopadhyay, who provided high quality intellectual inputs to the committee and helped guide us through the complicated maze. I am grateful for the assistance provided by the Department of Economic Affairs and especially acknowledge the contribution of Shri Bimal Julka, Director General and Additional Secretary and Shri I.P. Singh, Director, in this regard. Special thanks are due to the Member-Secretary, Shri Govind Mohan, who, as always, brought to bear a high level of dedication and analytical skills to his job.

Ashok Chawla Chairman

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ABBREVIATIONS

AAI Airports Authority of India AGR Adjusted Gross Revenue AM Amplitude Modulation

APM Administered Pricing Formula
AR Analogue Radio Spectrum
ARPU average revenues per user

BCM Billion Cubic Meters

BHEL Bharat Heavy Electricals Limited
BIS Bureau of Indian Standards
BSNL Bharat Sanchar Nigam Limited

BT Billion tonnes

BTA Basic Trading Areas

CA Compensatory Afforestation

CANR Committee on allocation of Natural Resources

CCI Competition Commission of India CDMA Code Division Multiple Aspect CEC Central Empowered Committee

CERC Central Electricity Regulation Commission

CGD City Gas Distribution

CGWA Central Ground Water Authority
CGWB Central Ground Water Board
CHP Combined heating and power

CIL Coal India Limited

CMN Coal Mines (Nationalisation) Act, 1973

CMPDIL Central Mine Planning and Design Institute Limited

CMTS Cable Modem Termination System

CNG Compressed Natural Gas

CPCB Central Pollution Control Board
CPSU Central Public Sector Undertaking

CRS Community Radio Services
DDA Delhi Development Authority

DGH Directorate General of Hydrocarbons

DIZ Defence Interest Zone

DMRC Delhi Metro Rail Corporation

DoDWS Department of Drinking Water Supply

DoLA Department of Legal Affairs

DoP Department of Posts
DoS Department of Space

DoT Department of Telecommunications

DPC District Planning Committee
DSNG Digital Satellite News Gathering

DTH Direct to Home
DVB-T Digital TV Spectrum

E&P Exploration and Production
EGOM Empowered Group of Ministers
EHF Extremely High Frequency

EIA Environment Impact Assessments
EIA Energy Information Administration

ELF Extremely Low Frequency
Eol Expression of Interest

ERLP Extractable Reserve Linked Payment

FAC Forest Advisory Committee

FAR Floor Area Ratio

FCC Federal Communications Commission

FCFS First Come First serve FM Frequency Modulation

FOB Freight On Board

FSA Fuel Supply Agreement FWA Fixed Wireless Access

GAIL Gas Authority of India Limited
GDA General Development Account

GHG Greenhouse Gas

GHz Gigahertz

GIS Geographic Information System

GLC Gas Linkage Committee

GMPCS Global Mobile Personal Communication System

GoM Group of Ministers

GPS Global Positioning System

GSM Global System for Mobile Communication

HF High Frequency

HLC High Level Committee
HSD High Speed Diesel
IBM Indian Bureau of Mines

ILD International Long Distance Service
IP-I Infrastructure Providers (Category)

IPTV Internet Protocol Television

IR Indian Railways

ISRO Indian Space Research Organisation
ITU International Telecommunications Union
JNNURM Jawaharlal Nehru Urban Renewal Mission

JV Joint Venture KG Krishna Godavari

kHz kilohertz

L&DO Land and Development Office LAPL Large Area Prospecting License

LF Low Frequency
LoA Letters of Assurance
LPG Liquefied Petroleum Gas

LTE long term evolution

M&A Mergers and Acquisition

MC Management Committee

MF Medium Frequency

MHz Megahertz

MIB Ministry of Information & Broadcasting

ML Mining Lease

mmbtu One Million BTU (British Thermal Unit)

MMDR Mines and Minerals (Development and Regulation) Act, 1957

mmscmd million cubic metres per day

MMT Million metric tonne MoC Ministry of Coal

MoC&IT Ministry of Communications and Information Technology

MoD Ministry of Defence

MoEF Ministry of Environment and Forests

Mol&B Ministry of Information and Broadcasting

MoPNG Ministry of Petroleum and Natural Gas

MoR Ministry of Railways
MoS Ministry of Shipping

MoU Memorandum of Understanding
MoUD Ministry of Urban Development
MoWR Ministry of Water Resources

MS Motor Spirit

MTA metropolitan trading areas

MTNL Mahanagar Telephone Nigam Limited

NBWL National Board Wildlife
NCDP New Coal Distribution Policy
NCT National Capital Territory
NDR National Data Repository

NELP New Exploration Licensing Policy
NFAP National Frequency Allocation Plan

NG Natural Gas

NGO Non Government Organisation

NIO Notice Inviting Offers

NLC National Lignite Corporation
NLD National Long Distance Service

NMP National Mineral Policy
NOC National Oil Companies
NoC No objection certificate
NPP National Perspective Plan

NPV Net Present Value

NSE National Stock Exchange NSS National Sample Survey

NTC National Textile Corporation Ltd NTP-99 New Telecom Policy – 1999

NTPC National Thermal Power Corporation

NWB National Water Board

NWDA National Water Development Agency NWRC National Water Resources Council POL

OALP Open Acreage Licensing Policy

OC Open Cast

OECD Organisation for Economic Co-operation and Development

OFC Optical Fibre Cable
OIL Oil India Limited

OMIFCO Oman India Fertiliser Company ONGC Oil and Natural Gas Corporation

OTC Over the Counter

PAO Principal Accounts Officer

PCS Personal Communications Service

PL Prospecting License
PLF Plant Load Factor
PMO Prime Minister's Office
PMR Personal Mobile Radio
PMT Panna Mukta Tapti

PNGRB Petroleum and Natural Gas Regulatory Board

Petroleum, Oil and Lubricant

PPP Public Private Partnership **PSC Production Sharing Contract** Public Sector Undertaking PSU PTIM Pre-tax Investment Multiple Research & Development R&D RFS Radio Frequency Spectrum RHP **Red Herring Prospectus** RIL Reliance Industries Limited

RLDA Rail Land Development Authority
R-LNG re-gassified Liquefied Natural Gas
RNRL Reliance Natural Resources Limited

RP Reconnaissance Permit

SACFA Standing Advisory Committee on Radio Frequency Allocation

SAG State Advisory Group
SAIL Steel Authority of India

SCCL Singareni Coal Collieries Limited

SERC State Electricity Regulation Commission

SHF Super High Frequency
SLC subscriber linked criteria

SLC (LT) Standing Linkage Committee (Long Term)

SLF Super Low Frequency
SoR Schedule of Rates

SPCB State Pollution Control Board SPSU State Public Sector Undertakings

SPV Special Purpose Vehicle
SSU standard spectrum units
STU standard trading unit

TAPI Turkmenistan-Afghanistan-Pakistan-India

tcf trillion cubic feet
T-DAB Digital Radio Spectrum
TPS Total Primary Supply

TRAI Telecom Regulatory Authority of India

UAS Unified Access Service

UASL Unified Access Service Licensing

UG Under Ground

UHF Ultra High Frequency
ULF Ultra Low Frequency
UMPP Ultra Mega Power Project

UMTS Universal Mobile Telecommunication System
UNFC United Nations Framework Classification

USOF Universal Service Obligation Fund

VHF Very High Frequency
VLF Very Low Frequency

VSAT Very Small Aperture Terminal
VSNL Videsh Sanchar Nigam Limited
WLAN Wireless Local Area Network

WLL Wireless Local Loop

WPC Wireless Planning and Coordination Wing

WPI Wholesale price index WWF World Wildlife Fund

EXECUTIVE SUMMARY

- 1. The Committee on allocation of natural resources (CANR) was constituted vide Cabinet Secretariat Office Memorandum (OM) dated January 31, 2011 to deliberate on measures required for enhancing transparency, effectiveness and sustainability in utilization of natural resources. The Committee was entrusted with the mandate of identifying key natural resources being allocated by Government; examining the efficacy and suitability of existing legal and regulatory framework and rules being employed in the allocative processes; make recommendations for enhancing the sustainability, transparency and effectiveness of the allocative processes; and, finally to suggest changes in the legal, institutional and regulatory framework to implement the above recommendations. The Committee decided to restrict its ambit of deliberations to those natural resources in which the Central Government or its agencies have a substantial role in their allocation. Consequently, the following natural resources were identified for further study and analysis: coal, minerals, petroleum, natural gas, spectrum, forests, water and land. It was felt that while many of these subjects were being administered and regulated by State and even local Governments, the Union Government still had a major role to play in articulating the policy framework or otherwise influencing the manner of their allocation.
- 2. Transparency, effectiveness and sustainability can be interpreted in myriad ways. Before proceeding with the exercise, the Committee decided to clarify its approach in this area and also highlight its limitations in addressing some of these issues as fully as they deserved. The Committee's deliberations, given the time available to it, focused on issues of transparency in allocation and in particular, open, transparent and competitive mechanisms of allocation, pricing and utilisation of natural resources. However, it recognizes that issues of efficiency and sustainability underpin the entire process. In the Committee's opinion, the test of transparency needs to be applied regardless of whether the allocation process is market-related or non-market. While market-related processes are likely to be inherently more transparent, there are a number of possible opacities in pre-qualification and bid evaluation that need to be removed to the maximum extent possible. Similarly, non-market processes can also be made more transparent by ensuring that the reasoning underlying these decisions is clearly spelt out and available in the public domain. For example, in pricing, the overall approach taken by the committee is to ensure transparency in all decisions that deviate from a market discovered price. Institutionally, it means that if a good or service is sought to be subsidized, then it is best to do it at one place, preferably at the consumer end, rather than at the input end, where it affects the pricing of natural resources. The instruments for such consumer subsidies are being progressively established, through regulatory institutions and direct transfer mechanisms.
- 3. The word "effectiveness" is used in many contexts, but in this report it will be used primarily in the sense that the minimal amount of natural resources are being used to produce a given amount of output of goods. Effectiveness is not only that of extraction, but also of exploration, where the framework must balance incentives to explore with the sharing of rents. On occasion, it may be possible to save cost on extraction of resource at a given point in time but in a

manner that either uses a greater amount of conjunctive resources, like water and forests, or even reduces the ability to extract the resource in the future. In such a case, the reduced cost reflects the under-pricing or non-pricing of conjunctive and future resources. The Committee did not address these kinds of issues in significant detail due to paucity of time. However, they are nonetheless extremely important and addressing such issues need to rely on both market and regulatory approaches. While it is important for market processes to be used wherever relevant and feasible, the capacity for oversight is an integral component of an institutional architecture that ensures transparent, efficient and sustainable allocation and use of natural resources. The essence of a regulatory mechanism is a substitution of its judgement for that of the market, and while this may be justified, the decision must be transparent and reasoned, so that the basis for the judgement is clear.

- Sustainability is perhaps the most multi-faceted concept among the three. It can take many forms, but the Committee considered four, viz. technological, which has been addressed above, environmental, social and intergenerational. In each of these areas a number of judgements will need to be made and a balance struck. It is important that this be based on all the relevant information, high-quality analysis and in the least time feasible. For this, it is important that institutions tasked with these responsibilities have the necessary capabilities and resources. Broader socio-economic changes are brought about by natural resource extraction. The issue of changing livelihoods as a result of such activity is an important one. While it was not within the scope of the Committee to investigate appropriate livelihood reconstruction strategies, it is perhaps essential that a few key features be kept in mind, viz. the recognition that project affected persons are not just people who lose land, but also those whose current livelihoods are severely impaired, the need to ensure that they are better off than before, the establishment of a mechanism for appropriately sharing the gains from the activity with them and (d) enabling them to participate effectively in the changed economic environment, the last being the most challenging. Another aspect of social sustainability particularly relevant to a federal polity such as ours is related to equity between the Union and the states. In view of the recent exercise conducted by the Inter-State Council on compensation to resource bearing states, the Committee decided not to inquire into issues of Union-state sharing but it believes that this is an important issue that needs more attention from the government. Finally, the rate of resource extraction cannot be based solely on the needs of the current generation; these resources are limited and valuable and hence the benefits must be distributed between immediate consumption and future use. This issue is not related solely to extractive techniques. It can also relate to the technology in user industries. These are not considerations that admit of broad policy approaches. However, the Committee believes it is legitimate for policy to take such considerations into account and to the extent found necessary, take actions to appropriately regulate the extraction, import and export of resources, as long as the decisions are taken after due process.
- 5. Coal is a sector with an administered allocation mechanism with a monopoly producer supplemented by a limited amount of captive production. Domestic production is progressively falling behind demand, leading to a rising share of imports. Even users who have been administratively allocated supplies of coal do not receive their full allocation regularly. The e-auction mechanism, as currently structured does not bring additional supply on to the market, nor does it enable buyers to plan the associated logistics in a systematic manner. There is an urgent need to increase supply if the current growth path is to be maintained. Under the Coal Mines Nationalisation Act, it would appear that mining by persons other than state-owned entities is permitted as long as the mined coal is supplied to approved and designated endusers. The Committee therefore recommends inclusion of mining firms as part of a bid-based

captive mine allocation process, which is already under consideration of the Ministry. These mining firms would be linked to designated and approved end-users through the creation of a transaction platform, which could be owned and managed by government in order to ensure that all potential designated and approved end-users can benefit from increased supply, instead of the limited number of captive users, as is the current practice. Imported coal and surplus coal from existing captive mines, as allowed by current policy, could also be transacted through this platform. It is not clear what the price implications of this platform will be since there is likely to be a shift from imported supply to domestic supply. However, if there is a price impact on electricity production, it could be addressed through transparent subsidies at the consumer end, given the existence of the State and Central Electricity Regulatory Commissions.

- 6. Coal also has broader and important issues relating to the environment, including and beyond that of forest diversion. The prevalence of mine fires, inter alia, point to the need for improved mining and mine closure practices. There are also issues that relate to the adoption of technologies such as coal gasification for deep seated deposits. A broader strategic decision on which more study is needed is the optimal inter-temporal extraction rate. For example, there is a mismatch between domestic coal quality and imported high efficiency ultra-critical boiler technologies. Imports of coal appropriate to high-efficiency boilers until such time as ultra-critical boiler technologies can be adapted for domestic coal is an option that needs further examination.
- In minerals, the policy architecture in a process of change. The global scenario may also 7. be at an inflection point, where the prices of minerals may be becoming much higher and more volatile. In such a situation, it is important and challenging to evolve an architecture that will strike a balance between a fair share for the country and sufficient incentives for exploration, without foreclosing options for the future. The Committee's recommendation supports the move in the proposed architecture to change the method of awarding areas with sufficient knowledge of mineralization, viz., mining leases and some prospecting licenses, from the current first come first served method to a bid based allocation method. In other areas too, the security of tenure and the transferability of license, as envisaged under the proposed architecture, creates an option value for reconnaissance and large area prospecting licenses. The appropriate method for awarding these licenses that balances the need to preserve exploration incentives with a fair share for the nation will vary in the context of specific minerals and knowledge of mineralization and the Committee recommends that the proposed architecture be designed so as not to foreclose any options. Furthermore, a modern mining sector needs vigorous and capable state mining departments to increase knowledge of mineralization and oversee the licensees and lessees. For this, their capacity and that of the Geological Survey of India has to be appropriately enhanced.
- 8. Apart from issues relating to the environment mine closure and small mines, which are in part related to the capacity for oversight mentioned above, benefit sharing from mining activities is an issue of current concern. There has been a long-standing practice of preference for mine allocation to lessees who promise to establish local end-use facilities. The Committee recognizes the aspirations of State governments to develop local industry based on availability of natural resources. However, the decisions about location of industry are techno-economic decisions often influenced more by the availability of infrastructure, human capital and levels of overall governance. The Committee feels that the state will be able to more effectively incentivise the growth of local industry by transparent systems of optimising revenue generation through appropriately designed bidding processes and using the revenue for creating conducive overall conditions for investment.

- 9. The development of mineral bearing areas, which generate the revenue, leaves much to be desired. In this, the Committee believes that the incidence and structure of royalty be should be appropriate and a significant portion of the revenue should be used to ensure all round development of the mineral bearing areas, for example, through a non-lapsable fund in the mining districts and transparent and flexible district level mechanisms including Zilla Panchayats and District Planning Committees.
- 10. In petroleum, the allocation process under NELP is seen as a benchmark for transparency in the natural resources sector. It is undeniable that the NELP model is distinctly ahead of the methods of allocation seen in other sectors examined by the Committee such as coal and minerals. However, the transparency in allocation is a contrast with the degree of opacity of the post award process, i.e., the management of the resource itself. In the petroleum sector, the creation of a National Data Repository has been an issue for almost two decades, with Parliamentary concern with the delay as early as 2000. This affects the degree of interest in exploration, which has been falling in recent years, as reflected in the number of bids and the dominance of state-owned firms. Production sharing contracts are admittedly an efficient way of allocating risk in this sector. However, the bid parameter, i.e., the pre-tax investment multiple (PTIM) does provide possibilities for gaming during the pendency of the contract. The institutional framework for determining the PTIM is thus crucial for proper management of the PSC. Currently, this is done in a contractual and consensual, but ostensibly closed and opaque process. The concerns are enhanced by the fact that there is significant circulation of personnel between state-owned operators and oversight bodies, which enhances the perception of conflict of interest.
- 11. It would thus appear that while the NELP system has much to recommend itself, there are still a number of areas of improvement that need to be addressed. The Committee in its recommendations has tried to build on the inherent strengths of NELP to ensure that its objectives are as fully met as possible. Apart from expediting the process of creating the National Data Repository and suggestions as to how more data could be made available in the interim, it is the Committee's belief that the transparency in the management of contracts and associated considerable financial implications should be enhanced by increasing the independence of the regulatory mechanism, clarifying the separation of the policy maker, regulator and the operator and bringing the decision making process into the open. On this, however, the Ministry of Petroleum and Natural Gas (MoPNG) point of view is that a separate independent regulator for the upstream sector is not required for reasons that are given in a separate note submitted by Secretary, MoPNG, a Member of the Committee. Principally, it is because, they argue that in the upstream sector, policies such NELP already provide a level playing field to all companies.
- 12. In as far as natural gas is concerned, under the present policy, Government retains the right to decide the manner in which the gas produced from fields bid out under NELP is to be utilized; on pricing issues, while the contractor(s) have a relatively higher degree of freedom to determine gas prices based on competitive price discovery, the pricing formula or basis is subject to approval by Government. Natural gas being produced from the producing NELP fields is being allocated by an Empowered Group of Ministers (EGoM) to selected sectors, with fertilizers and power generation being accorded top priority in allotment. The price at which the allocation is being done has also been decided by an EGoM.
- 13. In the opinion of the Committee, in the ideal case, natural gas should be viewed as a substitute for oil and related applications, such as cooking, transport, heating fuel and other

industrial uses. In many of these applications, natural gas can be a viable substitute at market determined prices, with the price of imported LNG acting as a cap. Thus, a complete unshackling of the natural gas market, without restrictions on utilization and pricing, concomitant with development of robust infrastructure (in the form of gas pipelines and re-gasification terminals) and a transparent regulatory oversight appears to recommend itself as the most optimal framework for allocation of natural gas. However, keeping the critical needs of the agriculture sector and food security in mind, the Committee has recommended that the extant practice of allocation of natural gas for production of urea should continue, at a price to be determined on the basis of a formula to be approved by Government. The pricing restrictions should continue till such time that a subsidy regime continues for urea, or till direct delivery of subsidy is made possible. At the same time, the power sector should also be assured of supplies of natural gas, for peaking power generation (till a pre-defined level of plant load factor [PLF]), albeit at market determined prices, at least till the end of the XII Five year plan period. Power plants, which do not lend themselves to regulated tariffs, however, should be considered for exclusion from the category of sectors reserved for earmarked allocation, with immediate effect. All other sectors should compete for gas at market rates. The Committee has recommended that a trading platform/exchange should be created for developing a robust and transparent market for natural gas, with regulatory oversight being exercised by the downstream regulator, the PNGRB. Finally, the Committee has also laid great emphasis on urgent development of gas infrastructure which will promote the development of an active gas market.

- 14. The Committee, however, would like to stress that the aforesaid allocation and pricing recommendations would only be applicable to future discoveries and contracts of gas. The existing contracts should be maintained. The existing contracted supplies can continue to be earmarked for various sectors, through the EGoM, as per extant practice; and, at the price discovered and approved by Government.
- 15. The Committee has looked at the practice adopted by various countries for allocation of spectrum. There is sufficient evidence to conclude that in the initial phase of telecom development, most countries adopt an administered system of allocation, which may be in the form of first come first served (FCFS) methodology, beauty contests or lottery. The experience of countries in Europe who auctioned 3G spectrum in the first decade of this century, which subsequently led to large destruction in firm values, has also been looked at. The choice of the appropriate method of allocation of spectrum, therefore, depends critically on the context, market conditions and the objectives of extant telecom policy. However, given the current state of development of the Indian telecom market, the Committee has recommended that in future, spectrum for telecom access services should be made available through suitable market related processes.
- 16. The other significant recommendations of the Committee are that all future telecom licenses should be unified licenses and also de-linked from spectrum; and, effective measures should be taken to ensure continued efficient usage of spectrum inter alia through re-defining the appropriate geographical units for allocation. At the same time, vacation and re-farming of spectrum for commercial services should be expedited to ensure availability and certainty of adequate spectrum to facilitate optimal usage and revenue realization. Finally, a comprehensive and integrated legislative frame work for spectrum management both in respect of commercial and non-commercial frequency bands should be put in place to ensure optimal and efficient use of country's spectrum resources.

- 17. The contentiousness over the allocation of forests in India is largely for its conjunctive use, rather than for its use as timber as in countries like Indonesia and Brazil. Necessarily, therefore, the balance has to be struck between the value of the use for which the forest is needed, primarily for the extraction of some kind of mineral, and the value of the forest itself. This is complicated by the fact that the value of a forest is a conceptually complex and thus administratively almost impossible to calculate to everyone's satisfaction. It will vary with people's current preferences and with their view of inter-temporal choices. Yet, choices have to be made and indeed, the primary function of the political process is the aggregation of disparate preferences. It is imperative however, that in doing so, the process be as well informed and transparent as possible and try to avoid decisions that foreclose future options. The process must also be able to deliver decisions within a reasonable time frame, for which the existence of a well-accepted database on existing ground conditions is a sine qua non. The Committee's recommendations are directed towards achieving such an outcome.
- 18. Much of the angst about forest clearances comes from the time taken to arrive at a decision, whether positive or negative, and the opacity of the process outside the group involved, i.e., the forest department and the firm seeking clearance. The capacity of forest departments need to be enhanced and the quality and organization of databases on forest conditions needs to be substantially improved for the process of decision making to be expeditious and transparent. Thus, the thrust of the recommendations are about improving the capability of the state forest departments and establishing a scientific public domain database, and ensuring that reasons for all decisions are publicly available.
- The legislative framework for usage of water is characterized in India by a multiplicity of principles and rules and a multiplicity of institutions. Thus, there is lack of an overall integrated system of water management, which can harmonize various aspects of water use, the primary being that of life-support. The Committee feels that there is urgent need to have a comprehensive national legislation on water. This can be either done through bringing water under the Concurrent List and then framing the appropriate legislation; or, by obtaining consensus from a majority of the States that such a "framework law" is necessary and desirable as a Central enactment. The legal options in this regard need to be examined by the Union Ministry of Water Resources (MoWR). The national legislation should clarify a common position on a number of issues, e.g., need to consider all water resources as a conjunctive, unified whole; water as a common property resource; principles of allocations and pricing and so on. The proposed framework is not meant to confer administrative authority on the Central Government, by way of issuing licenses and clearances. What is intended is a kind of umbrella legislation under which laws will be enacted, policies framed, rules and orders issued, and executive decisions and actions taken, at different levels. Those laws, policies, actions, etc, will have to conform to the provisions of the umbrella legislation, and the legislation itself will of course be justiciable.
- 20. In the interim, while such a framework legislation is not enacted, there is need to re-draft the River Boards' Act, 1956 to enable River Board Authorities (RBAs) to also play a managerial as opposed to a pure supervision role, in river basins' management. The problems of groundwater management need to be addressed urgently through aquifer level mapping, along with hydrogeological studies; and initiation of pilot projects in different settings, duly taking into account community awareness and participation, self-regulation of groundwater, enhancement of coverage of water saving methods, including changes in cropping pattern and so on.

- 21. A transparent and rational framework for management and allocation of Government lands is needed to bring about uniformity in policies, in terms of the broad guidelines to be observed while allocating/alienating Government land. The Committee feels that there is imminent need for having an institutional framework for creating a centralized and transparent data bank, of all lands available with Government Departments and organizations, which should include complete ownership details, area allotted and possible land uses along with actual status as regards utilisation and encroachments etc., in addition to satellite images and GIS Mapping. Since these lands are scarce, the Committee has also recommended that the lands being alienated should be brought to their optimal land use before such alienation. All land allocations should preferably be on the basis of out-right sale of land, unless there are legal constraints. Even in these categories of cases, the estimated sale value of land on the date of transfer should be received upfront, before entering into any long term lease, with nominal amount of annual lease payments being made every year thereafter.
- 22. The committee has also recommended for creation of a high level oversight body to ensure that there is a monitoring mechanism for all cases of land alienation by the Central Government Organisations in addition to a Land Exchange Management Committee to supervise or permit any exchange of land or transfer of surplus land from one Central Government Department or Organisation to other Central Government or Organisation / State Government after comprehensive scrutiny of the complete facts.
- 23. In case of land alienation by land owning parastatals and housing boards under the control of Central Government, the Committee has recommended a transparent competitive bidding or e-auction methodology for all cases of land alienation, especially in case of commercial and institutional properties. If in some exceptional cases, e-auction or competitive bidding is not found feasible, the land should be allotted only after the specific approval of Cabinet on a case to case basis. A separate dispensation, however has been suggested for schools and educational institutions. The Schedule of Rates should be updated regularly and the amount of annual ground rent revised periodically in terms of the lease deed. The committee has also suggested that there should be more transparency in the Accounts and these should be put in the public domain so that the public at large also stands apprised about the efficiency of these bodies.
- 24. In a number of instances, the Committee has suggested the use of market related mechanisms for allocation. This is the case in coal, minerals, petroleum and natural gas, spectrum and land. However, it is important to realise that market related mechanisms, especially auctions, come in many varieties that are suited to different circumstances. This variety is not always appreciated generally. The Committee therefore felt it useful to present a discussion on varieties of auction models. The core objective of an auction mechanism is trying to elicit the true valuation of the bidder through the bidding process. The critical learning from this discussion is that for some types of items, known as items with interdependent values in the literature, this valuation is often updated during the auction process as a result of information from other participants in the auction. In some cases, this kind of updating is a useful function, but it may also facilitate collusive behaviour. The challenge is therefore to reveal information that would help bidders arrive at a more considered valuation while limiting the facilitation of collusive behaviour. The report discusses a few ways in which this can be done. Thus, with the help of information technology and support from specialist auction design firms, as availed recently during the 3G auction, it is possible to select suitable models and improve the process considerably.

- 25. Finally, the Committee highlights a few important overarching issues that were seen to cut across multiple sectors and affect the allocation process. These relate to use of policy statements to provide guidelines on matters of allocation rather than rules under the relevant legislation, the nature of independent regulatory institutions and mechanisms for expediting clearances. It also considered the question of legacy issues, i.e., prior commitments made by Government that would be inconsistent with a proposed new dispensation and complementary investments needed to ensure efficient allocation of natural resources.
- 26. The Committee considered these issues and opined first, that rules, being justiciable, are more transparent instruments for governing a sector. It also highlighted broad institutional ground rules for regulators and allocation of functions. These include distancing the administrative ministry from appointment and removal of regulators and entrusting it to a statutorily defined body, having an independent cadre for the regulator with appropriate remuneration and service conditions and ensuring that it has a stable budget. Appropriate support for the staffing of the regulator is essential to create conditions for ensuring that the regulator possess substantial technical capacity and have the ability to access specialized technical knowledge and use it effectively. The power to issue policy directions to the regulator also needs to be appropriately defined, accompanied by suitable justification. The Committee is of the opinion that powers to license and to determine statutory levies like royalties and license fees should rest with the sovereign, though it may be fruitful for the regulator to evolve suitable recommendations after a consultative process. Consultations may also be needed between regulators, especially sector regulators and the Competition Commission of India. The Committee believes that a formal consultative mechanism would be productive in this regard. With respect to clearances, wherever feasible, the government should try to embed the necessary clearances in an SPV before inviting private participation.
- 27. In a business environment, it is quite natural that the rules of engagement evolve over time and it is not necessary to address all legacy issues. However, where it is deemed necessary, as a result of, to try and 'level the playing field', the government may consider moving to a new licensing regime and allowing existing licensees to move voluntarily, after paying a special levy, if needed. Broadly speaking, there is less resistance to legacy advantages when the future market size is large relative to the past, which would be the case when the economy is growing at a high rate but as one moves to the future, the Committee recognizes that transparent mechanisms of allocation of natural resources need to be supported by investment in complementary physical and social infrastructure in order for markets to work effectively and for the process to be efficient and sustainable. To this end, it is necessary that allocation choices avoid the tendency to base decisions on the current state of complementary infrastructure and keep its continuing evolution in mind. This will need a high level of inter-ministerial policy co-ordination to be effective.
- 28. There are no doubt other important issues that impinge on the process, such as the stability of overall fiscal and investment regime, the policies with respect to international trade and most importantly perhaps, policies that influence the overall energy and resource intensity of the growth path that India will travel on. The policies for natural resource allocation, addressed by this Committee, will be but a part of this overall architecture, which has to stand together consistently with each other.

1. INTRODUCTION

Chronology

- 1. The Government had constituted a Group of Ministers (GoM) headed by the Finance Minister vide order no. 483/1/1/2011-Cab dated January 6, 2011 to consider measures that could be taken by Government to tackle corruption. The GoM, in its first meeting held on January 21, 2011, decided inter-alia to constitute a mechanism to deliberate on issues of enhancing transparency, effectiveness and sustainability in utilization of natural resources, consistent with the needs of the country to achieve accelerated economic development. Consequently, the Cabinet Secretariat constituted a Committee on allocation of natural resources (CANR) under the Chairmanship of Shri Ashok Chawla vide order no. No. 483/1/1/2011-Cab dated January 31, 2011. The Committee was initially asked to submit its report to the Cabinet Secretariat within a period of four weeks. However, this period of four weeks was subsequently extended up to April 30, 2011 (Annex I) vide Cabinet Secretariat Order No. 483/1/1/2011-Cab dated March 04, 2011 (Annex II) and till May 16, 2011 finally vide Cabinet Secretariat Order No. 483/1/1/2011-Cab dated May 13, 2011 (Annex III).
- 2. The Committee held four meetings of the entire group. The first meeting of the Committee was held on February 08, 2011 (minutes at Annex IV). This was followed by the second meeting of the Committee, which was held on February 18, 2011 (minutes at Annex VI). The third and the fourth meetings of the Committee were held on April 20, 2011 (minutes at Annex XIII) and May 11, 2011 respectively.
- 3. In addition, focused meetings were also held with the concerned Ministries / Departments representing the specific sectors. The first focused meeting on the land related issues was held on February 11, 2011 (minutes at Annex IV). This was followed by two focused meets on February 24, 2011 with respect to water related issues (minutes at Annex VII) and telecom related issues (minutes at Annex VIII). A focused meeting with the Federation of Indian Mining Industries (FIMI) on mining sector was held on March 07, 2011 (minutes at Annex XI) followed by another meeting with the officials of the Geological Survey of India (GSI) and Directorate General of Hydrocarbons (DGH) on March 14, 2011 (minutes at Annex XII). A focused meet with the officials of the Petroleum & Natural Gas Regulatory Board (PNGRB) was held on April 01, 2011. Meanwhile, the Chairman of the Committee also held discussions with the representatives of Confederation of Indian Industries [CII] (minutes at Annex IX) and Federation of Indian Chamber of Commerce and Industry [FICCI] (minutes at Annex X) on February 25, 2011. Consultations with Associated Chambers of Commerce and Industry (ASSOCHAM) were held on April 18, 2011. Separate meetings were also held with other eminent experts like S/Shri Vijay Kelkar, Prodipto Ghosh and Ms. Ligia Noronha, etc. The Chairperson of the committee also interacted with

Chairman, Telecom Regulatory Authority of India (TRAI) in order to understand the regulator's views on spectrum regulation.

4. The detailed chronology of events for the Committee is summarized in the following table:

Table 1.1: Chronology of the Committee's Deliberations

S. No.	Particulars	Date	Reference	Annex
1.	Constitution of the Committee	January 31, 2011	483/1/1/2011-Cab	1
2.	Extension of time	March 04, 2011	483/1/1/2011-Cab	II
3.	Further Extension of Time	May 13, 2011	483/1/1/2011-Cab	III
4.	First Meeting of the Committee	February 08, 2011		IV
5.	Focused Meeting on land related issues	February 11, 2011		V
6.	Second Meeting of the Committee	February 18, 2011		VI
7.	Focused Meeting on water sector related issues	February 24, 2011		VII
8.	Focused Meeting on telecom related issues	February 24, 2011		VIII
9.	Meeting with CII	February 25, 2011		IX
10.	Meeting with FICCI	February 25, 2011		Χ
11.	Focused Meeting with FIMI on Mining Sector	March 07, 2011		XI
12.	Focused Meeting with GSI and DGH	March 14, 2011		XII
13.	Meeting with PNGRB	April 01, 2011		Not minuted
14.	Meeting with ASSOCHAM	April 18, 2011		Not minuted
15.	Third Meeting of the Committee	April 20, 2011		XIII
16.	Fourth Meeting of the Committee	May 11, 2011		Not minuted

Terms of Reference

- 5. Quoting Annex I, the terms of reference of the committee are as follows:
 - i. To identify major natural resources which are allotted / allocated / distributed by the Government of India and the institutional framework for utilization of such resources;
 - ii. To examine the efficacy and suitability of the existing legal and regulatory framework and rules and procedures in this regard;
 - iii. To suggest measures to optimize the benefits of such utilization for all stakeholders, while ensuring sustainability of the resources;
 - iv. To suggest measures for promoting transparency and enhancing effectiveness in allocation, pricing and utilization of these resources;
 - v. To suggest changes in the legal, institutional and regulatory framework to implement the above recommendations; and
 - vi. Any other issue(s) related to the above
- 6. For the purposes of this report, natural resources were defined as follows. The word "natural" signifies being freely available in nature, not man-made. "Resource" signifies a potential commercial value. Thus a natural resource is one which is freely available in nature and can be used to generate value, on account of a relative scarcity with respect to demand. Natural resources can be of three kinds: renewable, renewable with cost, and non-renewable. Generally natural resources are both limited and non-renewable on a large scale, which is where they derive their commercial value from. For such natural resources, the Union government has a significant existing or potential role in allocation, pricing and utilisation. Consequently, the

purpose of this committee is to examine the current framework for allocation and disposal of natural resources, and suggest alternatives with a view to promote transparency, efficiency and sustainability.

- 7. Under this interpretation of its terms of reference, the committee found it appropriate to look at the following resources: coal, minerals, petroleum, natural gas,¹ forests, land, water and spectrum. The Union government has some role to play in the allocation and pricing decisions for all of these natural resources.² For some of these resources, the ambit of this committee is relatively obvious, but some clarifications are needed. In forests, the report focuses mainly on the issue of allocation of forest land for development, and does not take up the issue of environmental clearances, in which regard, sufficient forward looking initiatives are already underway in the Ministry of Environment and Forests (MoEF). Regarding land disposal, the report focuses mainly on the land allocation policies of various Union agencies, in particular, the Department of Posts and Telegraph, Airports Authority of India, Ports Authority of India(AAI), Railways and other urban land agencies like the Delhi Development Authority(DDA). On the issue of water, both surface and ground water are considered. Finally, the report considers spectrum which is used for telecommunication purposes and also for other uses, such as broadcasting.
- 8. The report looks at how the aforementioned natural resources can be allocated in a manner which is transparent, efficient and sustainable. The manner in which the committee interpreted these terms in outlined in the next chapter.

¹ Petroleum and natural gas are often catch-all terms which also include resources like coal bed methane, shale gas, shale oil and hydrates. Since the development of these resources domestically is still quite tentative, these resources are not considered in detail in this report.

² To the extent that some of these resources, like minerals and water, were state subjects, the Committee's deliberations focused on the role of the Union government.

2. TRANSPARENCY, EFFECTIVENESS AND SUSTAINABILITY

2. I KANSPAKENCY, EFFECTIVENESS AND SUSTAINABILITY

Introduction

- 1. In accordance with the Committee's Terms of Reference, the issues of transparency, effectiveness and sustainability were chosen as the focal points for the report. Each of these terms is particularly laden with meaning, and it is worth spending some time to elaborate on how this report addresses these issues, and the structure that follows.
- 2. The Committee's deliberations, given the time available to it, focused on issues of transparency in allocation and in particular, open, transparent and competitive mechanisms of allocation, pricing and utilization of natural resources. However, issues of effectiveness and sustainability underpin the entire process. This chapter reflects the Committee's approach to the three issues.

Transparency

- 3. Transparency relates to the openness in the activities that are undertaken by any agency. With respect to decisions about allocation, it is important that the reason why a person or firm was allocated a resource and equally, why another was not; be clear to both. Open transparent and competitive market linked processes are more likely to make this happen. In a bid situation, one firm is allocated the resource because it bid higher, while the others did not match the bid.
- 4. However, even here there will be issues relating to how the bid is evaluated, e.g., while the 3G spectrum auction involved a single parameter with a clear upfront payment, the NELP bid was multi-parameter, which was evaluated using a pre-disclosed financial model. The manner in which multiple parameters will be aggregated itself therefore needs to be transparent and also reasonable. Further, there will be questions about who is allowed to participate in a bid and who isn't. Such pre-qualification conditions too need to meet the test of transparency.

Transparency in Non-Market Processes

5. Not all decisions can however be made through market processes, e.g., the decision as to whether or not forest clearance should be granted for a mining project. This decision is necessarily an administrative determination based on the facts of the case. However, in the interests of transparency, it is incumbent on those that are responsible for making decisions to make clear the process by which decisions are reached. At various points in this report, this Committee has recommended that minutes of meetings be detailed and reasoned and available in the public domain to convey the process by which a particular decision was arrived at.

- 6. In addition to administrative decisions, there are other transparent non-market methods of allocation. This could, for example, be a lottery, as for example in the allocation of houses in DDA. Here too, the eligibility criteria for participation become important. Random selection, however, is reasonable, when there is no ex-ante reason to prefer a particular group of bidders over another, i.e., all bidders are equally qualified for the task. This is not the case in many situations, e.g., deep-water exploration for oil and gas, which needs specific capabilities. Broadly, when there is a need to elicit information from the contenders before allocation, it would be sensible to try and structure a bid process, while if there is no such need, a random allocation may be one method of choosing from many claimants for a limited resource.
- 7. In the allocation of natural resources, it is not always the best method to offer the resource to the highest bidder. Public purpose may demand a different use of the resource from what the market may put it to. This is evident in the case of urban land, where commercial uses could displace all other uses, were all land to be auctioned. Similarly, one may need to ensure that certain uses of a resource be prioritized, e.g., gas for fertilizer in the current situation. The merits of competitive mechanisms and the consequent revenue generation need to be offset against other public purposes. However, it is also true that not all public purposes require the giving up of competitive allocation mechanisms. There is a variety of such mechanisms which can be adapted to the needs of the situation.
- 8. On pricing, the overall approach taken by the Committee to such issues of public purpose is to ensure transparency in all decisions that deviate from a market discovered price. Institutionally, it means that if a good or service is sought to be subsidized, then it is best to do it at one place, preferably at the consumer end, rather than at the input end, where it affects the pricing of natural resources. Such mechanisms are in place where there are regulatory institutions as in electricity and telecom and petroleum and natural gas and such institutions are also being proposed in other sectors like coal and, minerals. In other areas, mechanisms such as cash transfers are being proposed. So, while interim arrangements may be needed, to the extent that these initiatives are in process, and will become operational shortly, the extent of pricing distortion can be minimized.

Variety of Competitive Bids

9. In this context, the Committee feels that it is also important to understand that competitive market allocation processes, such as auctions, come in various forms, some of which are more suitable to one situation as compared to another. For this reason, a separate chapter on various auction varieties has been included in the report to indicate that once a decision is taken to allocate resources through a competitive bid, further decisions need to be taken about the nature of the bid, the rules of the auction process, the nature of the contract, the eligibility of the bidders, etc.

Effectiveness

10. The word "effectiveness" is used in many contexts, but in this report it will be used primarily in the sense that the minimal amount of natural resources are being used to produce a given amount of output of goods (e.g., steel) or services (telecommunication services). This is, however, not as clear as it seems. For example, there are at least two ways of measuring the amount of resource, viz. physical, i.e., tons of iron ore and financial, i.e., rupees worth of iron ore. On occasion, it may be possible to save cost on extraction of resource at a given point in time but

in a manner that either uses a greater amount of conjunctive resources, like water and forests, or even reduces the ability to extract the resource in the future. In such a case, the reduced cost reflects the under-pricing or non-pricing of conjunctive and future resources.

- 11. In order to save current resources, a miner might adopt techniques that reduce the current cost of extraction, but this might lead to mine collapses, or leave a large amount of the resource underground, without a safe way to extract it. If the miner has a limited lease on the mine, he may ignore such costs, which reduce overall resource availability.
- 12. The Committee did not address these kinds of issues in significant detail due to paucity of time and the degree of expertise involved. However, they are nonetheless extremely important. Addressing such issues needs to rely on both market and regulatory approaches.

Market Approach

- 13. In order to ensure that short-sighted extraction techniques are not adopted, the market approach relies upon transferring long lived property rights, so that the firm has an incentive to preserve its resource. However, this depends on the discount rate of the firm (how the firm values the future) and the situation with respect to prices, i.e., if the firm expects that a current spike in price would be short lived, e.g., for a few years only, then it may choose to over-exploit the resource nonetheless, since it expects that the extra profit in the short-term will outweigh any future gains. Besides, the firm itself may have a limited life, e.g., if it is a proprietorship rather than a long-lived corporate body. If so, the future would be less important to the firm. Thus, the extent to which the market can assure inter-temporal efficiency is limited.
- 14. However, this does not detract from the need to have appropriately long concessions in the resource sector, so as to enable firms to take the long view. It could also point to the need to select firms appropriately to ensure a presumption of longevity. Furthermore, it is also possible that if the fiscal impost on the firm becomes excessive, it may choose to leave resources, rather than extract them.

Regulatory Approach

- 15. The most visible regulatory action in the natural resources sector comes from the environment regulator, in an attempt to ensure that the use of conjunctive resources is minimized. This is an important part of the regulatory architecture. However, the issues in natural resources go well beyond the environment. As noted above, a critical aspect of regulation is ensuring that the current extraction practices do not negatively affect the feasibility of longer-term extraction of the resource.
- 16. This is not a trivial matter for determination, since it involves complex judgements about extraction operations. In coal and minerals, the primary instrument of regulation is through the mining plan, overseen by the Central Mine Planning & Design Institute Limited (CMPDIL) and the Indian Bureau of Mines (IBM). Not only is the approval and preparation of the mining plan an essential part of the regulatory architecture, its monitoring is even more important. Similarly, in petroleum and natural gas, the Director General of Hydrocarbons (DGH) performs this function. In telecom, the Wireless Planning Cell (WPC) is supposed to ensure technical efficiency in the use of spectrum. It is important that these institutions have sufficient capacity, both in terms of being abreast with the current developments in their field and in terms of being adequately staffed, to

be able to perform their functions. They should have the ability to source specialized technical expertise if necessary and engage with such expertise productively. At various points in the report, the Committee has therefore suggested a restructuring of these institutions to enhance their independence, effectiveness and capability. The capacity for oversight is an integral component of an institutional architecture that ensures transparent, efficient and sustainable allocation and use of natural resources.

- 17. In natural resources, effectiveness is not only that of extraction, but also of exploration, which is true for mineral resources considered in this report, including coal.¹ The Committee was not able to substantially address the technical aspects of this issue, though it has tried to address the aspects of contractual incentives that affect exploration in the case of minerals and petroleum, natural gas and coal. In this respect the Committee notes that even while exploration activity is conducted by the private sector, it is important that there be a core technical capacity available with the government to oversee private activity and undertake exploration activity that may have limited commercial value, but high national value. In the petroleum and natural gas sectors, the national oil companies (NOCs) control a substantial acreage, acquired both through competitive bidding and nomination. It is essential that this acreage be efficiently explored. However, much of the mineral exploration is a state activity. To this end, the Committee has recommended capacity building of state mining departments to enhance their capacity. In addition, the creation of a national data repository for both minerals and petroleum and natural gas would hopefully help to increase the effectiveness of exploration, by enabling a broader range of people to subject the data to analysis.
- 18. However, in the context of regulation and efficiency, it is important to realize that the essence of a regulatory mechanism is a substitution of its judgement for that of the market, where the price reflects the collective judgement of market participants weighted by their economic heft. While this may be justified—after all, participants in the resource market are not the only members of society—it is important that the regulatory decision be as transparent and reasoned as possible, so that the basis for the judgement is clear.

Sustainability

19. Sustainability is perhaps the most multi-faceted concept among these three. It can take many forms, but the Committee considered four, viz. technological, which has been addressed above, and the three which are addressed in this section, i.e., environmental, which is the most common facet, social and intergenerational.

Environmental Sustainability

20. Environmental sustainability is a key issue in questions of natural resource extraction. Not only are many resources located in areas of significant ecological value, whether on land or off shore, the technologies of extraction of one resource, e.g., shale gas and oil sands, may involve considerable conjunctive use of another, such as water. It is not always possible to evolve broad principles that balance these two uses with each other, given the location specificity of value that is attached to ecological services provided by the environment and other resources, and the specificity of the resource extraction that is involved. Of necessity, therefore, much of the decision making has to be on a case by case basis, with the possible assistance of broad guidelines. This, therefore, requires an institutional framework, rather than a set of rules.

¹ The exploration aspect is not present in the case of land, water, forests and spectrum, though in spectrum, the ability to develop technology to use different bandwidths can be said to be similar.

- 21. While we do have an institutional architecture; as noted in the broader discussion on regulation and efficiency, the capacity to act may be limited by the resources available to the agencies involved. It is important that these agencies have sufficient capacity and resources to make the necessarily complex determinations and judgement calls. Concomitantly, the process and their reasoning must also be transparent and, in addition to judicial review, which is always an option in a system such as ours, it should also be open to public scrutiny.
- 22. In the course of this Committee's discussions, mining and forests were the key areas where this problem was particularly apparent. Environmental permits are often viewed as impediments to development, but they are also necessary to prevent irreversible damage to ecosystems and are thus necessary for preserving long-term development opportunities. The approach adopted by the Committee is to try and enhance capacity such that these determinations take the least time possible. One such method is to ensure that the data on existing conditions be as up to date as possible and as granular as required to make effective choices. It is for this reason, for example, that the Committee has recommended substantial capacity building of state forest departments and the development of an ecologically fine-grained database on our forest resource, so that the appropriate balance can be struck in the choices made.

Social Sustainability

- 23. The social facet of sustainability has a number of aspects to it. The Committee considered two of them, viz., (a) relating to local populations affected by the activities related to natural resource extraction and (b) relating to equity between the Union and the states.
- 24. Practices like mining frequently have adverse consequences for local communities. Some of these are operational practices that need to be regulated by taking social impact on board, as a factor in determining mining plans, etc., in terms of efficiency to the extent that such an impact is avoidable. Others are related to the broader socio-economic changes that are brought about by natural resource extraction. The issue of changing livelihoods as a result of such activity is an important one. While it is not within the scope of the Committee, nor did it have the time, to investigate appropriate livelihood reconstruction strategies, it is perhaps essential that a few key features be kept in mind, viz.
 - i. Recognition that project affected persons (PAP) are not just people who lose land, but also those whose current livelihoods are severely impaired.
 - ii. Ensuring that those with livelihoods are at not worse off than before.
 - iii. Adopting practices that will enable the PAP, or other members of their family, to acquire skills that will allow them to participate effectively in the changed economic environment.
 - iv. Establishment of a mechanism for appropriately sharing in the gains from the activity, an issue which this report addresses in the context of mining.
- 25. In all such discussion, there is the notion of stakeholder rights and free prior and informed consent (FPIC). Here, it is important to ensure that the FPIC is that of the relevant population and that the mechanisms for ensuring that it is free, prior and informed have sufficient safeguards. It is necessary to ensure that the capacity for operationalizing many of these mechanisms, such as the requirement for an Aam Sabha included in the forest clearance guidelines, be adequate for the complexity and importance of the task.

26. One aspect of social sustainability particularly relevant to a federal polity such as ours is related to equity between the Union and the states. This is an extremely important issue in natural resources, since the Constitution grants ownership of many of these resources to the constituent states. However, in view of the recent exercise conducted by the Inter-State Council on compensation to resource bearing states, the Committee, keeping the paucity of time and the extensiveness of the report of the Inter-State Council in mind, decided not to inquire into issues of Union-state sharing. However, the Committee believes that this is an important issue that needs more attention from the government.

Inter-generational Sustainability

- 27. Finally, there is the concept of intergenerational sustainability. The rate of resource extraction cannot be based solely on the needs of the current generation; these resources are limited and valuable and hence the benefits must be distributed between immediate consumption and future use. Indeed, as future generations will have to deal with the potential negative effects of decreased resource availability and environmental damage caused by us, their needs for such resources may be even more than ours. Another reason to delay the extraction of natural resources is technology. If the choice is between extracting and using resources inefficiently right now, or effectively later, it may make sense to delay extraction until the technologies are sufficiently developed.
- 28. Neither is this issue related solely to extractive techniques. It can also relate to the technology in user industries. For example, the Committee understands that Indian coal is unsuitable for the currently available design of ultra-critical boilers. So, the question arises as to whether it is sensible to use more efficient boilers and import coal, while technology is developed to use domestic coal in ultra-critical plants or use domestic coal and less efficient boilers. This is not a question that the Committee addressed, but it is nonetheless an important inter-temporal allocation issue. In the case of coal, the Committee has recommended that the issue be examined in depth, but similar questions will arise elsewhere too. Thus, it is not clear that maximizing the current mining output is the optimal strategy from an inter-temporal viewpoint.
- 29. This inter-temporal allocation of resources may also have strategic implications. In coal, if the possibility, even if remote, of future climate related restrictions on trade in coal are factored in, it may tend to weigh the balance in favour of preserving domestic reserves. Similarly, the export of other resources may foreclose the possibility of fully developing industries based on those resources at home. These are not considerations that admit of broad policy approaches. However, it is legitimate for policy to take such considerations into account and to the extent found necessary, take actions to appropriately regulate the extraction, import and export of resources, as long as the decisions are taken after due process.

Conclusion

30. Transparency, effectiveness and sustainability can be interpreted in myriad ways. This chapter has tried to clarify the Committee's approach in this area and also point out its limitations in addressing some of these issues as fully as they deserved. In the following sections, that address issues in specific sectors, some of the principles outlined in this chapter will hopefully be evident.

3. COAL

Introduction

1. The coal industry in India has changed considerably in the last 50 years. From being a predominantly private industry around Independence, it was nationalised completely in 1973 once the government realised coal's essential role in meeting India's power needs. This landmark legislation, the Coal Mines (Nationalisation) Act, 1973 (CMN), is still the main law that governs the mining of coal in India, along with certain sections of the Mines and Minerals (Development and Regulation) Act, 1957 (MMDR), which governs mining more generally. (There have been a few additional rules and amendments but these Acts are by and large responsible for allowing and regulating coal mining activity in India). Unlike other minerals, coal is a Union subject, which makes its governance relatively unique; while the resource is distributed among many states, its mining is controlled by a single government ministry (Ministry of Coal [MoC]), and is carried out by two primarily² state-owned enterprises, Coal India Limited (CIL) and Singareni Collieries Company Limited (SCCL).³

Notion of Allotment

2. In the coal industry there are two important kinds of allotment: the allotment of mines and the allotment of coal. Ultimately, both kinds of allotment lead to the procurement and use of coal for some productive purpose, but functionally the two are quite different. Mine allotment gives an entity the right to set up a coal mine and extract coal for a designated end-use. Coal allotment, on the other hand, is done after mining, where the coal output of a company (CIL, SCCL, etc., in this case) is then sold, allocated or granted to the end-users. As will be shown later in this chapter, mine allotment is considerably more complicated for the allottee than coal allotment.

Existing Mechanism of Allocation

- 3. One of the major discussion points in the coal industry in India is the allocation mechanism. As can be seen in Figure 3.1, there are multiple decisions in the allocation process which determine how much coal will be allocated and to whom coal will be allocated. Ultimately, there are four ways in which parties can obtain Indian coal (Figure 3.2 shows the breakdown for 2009-2010):
 - i. allocations through linkage/screening committees;
 - ii. e-auctions;
 - iii. captive mines; and
 - iv. smaller allocations through State governments.

http://coal.nic.in/act1973.pdf.

 $^{^{2}}$ 10% of CIL was disinvested through an IPO in 2010.

³ CIL is actually a holding company, which has 100% shareholding in seven of the main coal producing subsidiaries (Eastern Coalfields Ltd., Northern Coalfields Ltd., South Eastern Coalfields Ltd., Western Coalfields Ltd., Mahanadi Coalfields Ltd., Central Coalfields Ltd., and Bharat Coking Coal Ltd.). CIL is also a 100% shareholder in its technical arm, Coal Mine Planning and Design Institute Ltd. (CMPDIL). SCCL is a joint venture between the Andhra Pradesh government (51%) and CIL (49%).

Mining Not Permitted Mining Permitted Committee CIL, SCCL Other Committee Committee State governments and Linkage E-auction other agencies Private (10%)captive Committee Committee Screening Fuel Supply Agreement Linkage Committee (75%) Market Non-Market Different private firms Committee Railways, defence and specific firms

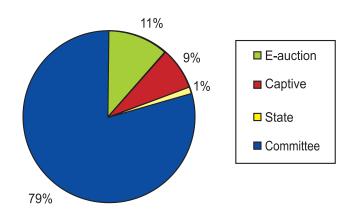
Figure 3.1: Coal Allocation Process Tree Diagram

Source: Based on information from the MoC

in power, cement, iron and steel

Figure 3.2: Coal Allocation Process Distribution

Coal Allocation Mechanisms Breakdown 2009-2010



Source: MoC Annual Reports, Coal Comptroller's Organisation Production Statistics 2009-10.

4. The fourth option is a very small percentage of the overall annual coal allocation (\sim 1%), and is left at the discretion of state agencies, so it will not be considered in this analysis. However, the allocative distribution among the other three processes has been questioned, especially in the last few years as domestic demand for coal has increased considerably (Figure 3.3) leading to increasing imports.⁴

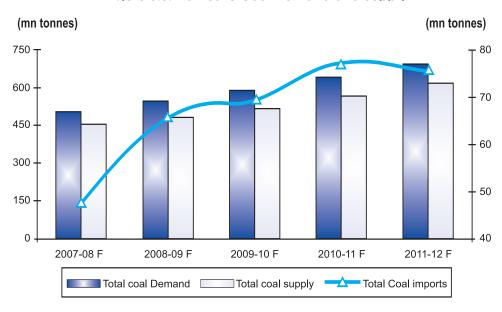


Figure 3.3: Domestic Coal Demand and Supply⁵

Source: CRISIL presentation

Coal Linkage Committees

5. According to the New Coal Distribution Policy (NCDP), 2007, apart from a few privileged sectors (defence, railways), almost all other major coal-using industries (power, steel, cement, fertilizers etc.) are allocated coal primarily through fuel supply agreements (FSAs) which are granted on the basis of applications to the government. The Standing Linkage Committee (Long Term) [SLC [LT)] was constituted in 1974 (after the CMN Act was passed) and convenes periodically to review applications from different industries (power, cement, sponge iron) and recommend Letters of Assurance (LoA). After the LoA is granted, applicants must satisfy a list of criteria (mostly related to end-use project completion and bank guarantees) after which the linkage is granted and the FSA is finalised by the concerned coal company. The NCDP also earmarks about 10% of CIL's annual coal production for e-auction, a process which has been in place in 2007. As a percentage of total volume of raw coal sold in fiscal 2008, 2009 and 2010, the volume of raw coal allotted under the e-Auction scheme was 8.1%, 12.9% and 11.6%, respectively.⁷

⁴ Detailed production statistics are available in Annexure I.

⁵ This figure is taken from Slide 8 of a November 2009 presentation by Crisil Infrastructure Advisory entitled "Understanding dynamics of importing thermal coal in India: Presentation on global coal market scenario".

⁶ Paragraph 2.1 of the NCDP explicitly says that "Requirements of defence sector and Railways [sic] will be met in full at notified price, as at present."

⁷ Draft red herring prospectus issued during CIL's IPO http://www.sebi.gov.in/dp/coaldrhp.pdf.

Captive Mine Allocation

- 6. The other form of coal allocation, which is a little more indirect, relates to granting of captive mining rights to corporations (both public and private). Captive blocks may only be given for end-uses which are notified in the CMN Act. Initially these end-uses were restricted to the production of iron & steel, generation of power, and coal washing. However, under section 3 (3) (a) of the CMN Act, through notification, the list of end-uses can be expanded and this provision was used in 1996 to include cement, and then in 2007 to include coal liquefaction and syn-gas production.
- 7. Captive mines have, in the past, been granted to the private sector through screening committees headed by the Secretary (Coal) and with representatives from various ministries, state-owned corporations, and state governments. Industry representatives are also invited to make presentations regarding their applications, which are then scrutinized by the committee members. Because of the end-use conditionality, power and steel are still accorded preference, but there is a list of technical and economic criteria (provided in Annex XV) which the committee is supposed to use to assess projects; however, the criteria are so broad that any decision can be justified. Since the estimated capacity of captive blocks is often greater than the required use of any one project, many blocks are jointly granted to multiple companies, who are expected to suitably split the development costs among themselves.
- 8. Government companies get captive mines through a separate route; a list of blocks is circulated internally among Union Ministries and State Governments, applications are made to the MoC, and decisions regarding allocations of captive blocks are made within the Ministry without referring it to a screening committee.
- 9. Also, certain blocks are put directly under the Ministry of Power's disposal. These blocks are allocated through tariff-based competitive bidding, where eligible companies are invited to apply, and the lowest bidder is awarded the Ultra Mega Power Project (UMPP) as well as the captive block to supply the UMPP project.
- 10. Data on currently allocated captive mines shows that about 15% of the allotted mines are in production, and are currently producing 4% of their possible peak output.8 Many of the allotted blocks are still waiting on various clearances from the MoC and Ministry of Environment & Forests (MoEF). The MoC has, in fact, reprimanded many allottees urging them to explain the delays by threatening and occasionally enforcing de-allocation.9 But industry's response has been that they are hampered by the multiple clearances that are required, and would prefer a single-window clearance system, perhaps even before block allocation. It is interesting to note that as of February 2011, the jointly allotted blocks have yet to commence production. Figure 3.4 shows the current state of captive block production, showing that only 3 mines allocated after 2003 have started production.

⁸ This data was compiled from the Provisional Coal Statistics 2009 – 2010 put together by the Coal Controller's Organisation (http://www.coal.nic.in/Provisional09-10.pdf).

⁹ "Steelmakers continue to face captive block woes." Sourcing Insights February, 2011.

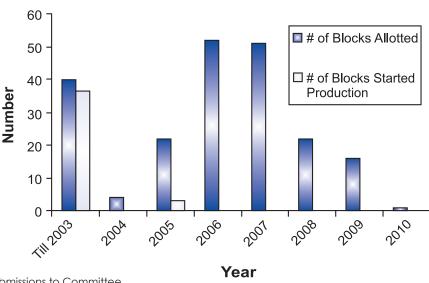


Figure 3.4: Status of Captive Block Production

Source: MoC Submissions to Committee.

- 11. Annex XVI provides further details on allocated coal blocks and their stage of development towards production. As noted earlier, no jointly awarded block is in production. A detailed perusal of the data for individually awarded blocks leads to the following conclusions, viz.:
 - i. A large number of blocks awarded in recent years are still being explored.
 - ii. Many blocks awarded even as early as 2003 and 2004 have not yet completed their land acquisition. This is true in instances even where Stage I forest clearance has been granted. As such, land acquisition is at least as large a problem as forest clearances, based on the information provided.
 - iii. About a fifth of the individually allocated blocks are in "no go" areas, but such a classification is not an absolute bar to production, since there are instances of producing mines in "no go" areas.
 - iv. Only a limited number of blocks are in a position to come into production in the near future.
- 12. A large number of allocations are to state-owned companies. Of the 146 individual blocks, 10 are linked to UMPPs, another eight are either de-allocated or otherwise removed. Of the remaining, 79 are in the state sector, of which 33 are for commercial use (the private sector is not allocated blocks for commercial use). Of these, only one, in Arunachal Pradesh, is in production and another 23 are still in the exploration stage. Of the nine remaining state-owned blocks at various stages of clearances which are allocated for commercial mining, three are in "no go" areas, leaving six that are likely to come into production in the near future that can be available as a source of increased supply.

Table 3.1: Suggested Auction Formats for Captive Mine Bidding

Upfront Payment/Fixed Price Tag (Reserve Price) Extractable Reserve Linked Payment (ERLP)	Without Techn Amount in Ru Payment as p Rupees per to Payment as p Suggeste	80% fo 20% fo 80% fo 20% fo	With Technical Score 80% for upfront payment 20% for technical score 80% for upfront payment 20% for technical score			
Months Upfront Payment/Fixed Price Tag (Reserve Price) Months	1 10% 96	24 10% 108	36 20% 120	48 25% 132	60 35% 144	
Extractable Reserve Linked Payment (ERLP)	20%	20%	20%	20%	20%	

Source: MoC

Bidding for Captive Blocks

- 13. In late 2010, the MMDR Act was amended to allow the Union government to set the terms and conditions for the selection of a company through competitive bidding for areas containing coal or lignite. Following up on this amendment, the MoC recently circulated a series of draft notices¹⁰ which would invite competitive bids for captive mines. If implemented, these steps would shift captive block allocation from a screening committee to a multi-step auction process with some preference for in-state bidders.
- 14. The documents circulated by the MoC on captive mine bidding suggest a set of potential auction methodologies with different bid weights and payoff structures. These are summarized in Table 1, which describes the four different options based on whether a technical bid is included, and whether the payment is an upfront lump sum, or a distributed payment per tonne extracted. The resulting payment structures for these two payment schemes are also shown.

E-auction

15. In contrast to linkages and captive mining, the e-auction process is relatively simpler. The e-auction process used by CIL and its subsidiaries has gone through multiple iterations since its initial induction in 2004, including a short suspension enforced by the Supreme Court.¹¹ The system has resulted in a dynamic online bidding interface, with winning bid prices considerably (30-80%) higher than CIL's notified prices. Initially the e-auction system was purely a spot market, but in the 2010–2011 financial year, forward e-auctions were added. Its success has been limited so far with only 19.8% offtake in the first year (see Table 2).

¹⁰ The draft bid documents are available at http://coal.nic.in/policy181007.pdf.

¹¹ Ashok Smokeless vs. Union of India, AIR 2006 SC 30.

Pricing

16. Since nationalisation, coal prices were notified by the MoC. Beginning in 1996, the MoC gradually handed over this responsibility to CIL. According to Coal India's Draft Red Herring Prospectus (RHP)¹², "The pricing of coal in India was completely deregulated pursuant to the Colliery Control Order, 2000 with effect from January 1, 2000, subsequent to which we were entitled to fix the price of our coal." Despite this assertion of deregulation, however, it is understood that the government still "guides" the price of coal. While the domestic CIL prices of superior, i.e., grades A and B of coal, are benchmarked to import prices, the prices of other grades of coal are not determined based on market benchmarks. In February 2011, CIL initiated a differential pricing system attempting to differentiate between sectors that are market-driven and sectors that are not. The justification for this was to "minimise the impact on the common man". In

Table 3.2: E-Auction Statistics16

	E-Auction		E-Auction			Spot E-Auction			Forward E- Auction	
Particulars		2005 – 06	2006 – 07		2007 – 08		2008 – 09	2009 – 10	2010 – 11	2010 – 11
			April – Dec '06	Jan – Mar '07	April – Oct. '07	Nov '07 – March '08			Apr '10 – Feb '11	Apr '10 – Feb '11
No. of Bidders	1399	27739	18307	98804	236490	27954	73248	78155	66111	248
No. of Successful bidders	611	18563	14419	44336	57417	14069	43428	40848	40622	192
Total Qty. offered (L. Tonnes)	12.395	245.98	314.53	178.34	164.21	174.996	919.575	541.392	497.58	247.51
Total Qty. allocated (L. Tonnes)	10.347	195.17	183.93	121.92	132.23	155.695	488.744	457.321	422.77	49.05
Percentage Offtake	83.5%	79.3%	58.5%	68.4%	80.5%	89.0%	53.1%	84.5%	85.0%	19.8%
Notified Price of Total Allocated Qty. (₹ Crore)	110.85	1916.22	1585.6	1053.8	1050.69	1382.935	4577.92	4528.96	4412.24	446.64
Bid Price of Total Allocated Qty. (₹ Crore)	148.51	2838.75	2141.5	1370	1365.9	2511.35	7237.11	7238.48	8062.86	895.19
% Increase over Notified Price	34	48.1	35.1	30	30	81.6	58.1	59.8	82.7	100.43

¹² The draft red herring prospectus is available at http://www.sebi.gov.in/dp/coaldrhp.pdf

¹³ Chikkatur, Ananth, Ambuj Sagar and T.L. Sankar. "Sustainable Development of the Indian Coal Sector." *Energy.* Volume 34, Issue 8. August 2009.

¹⁴ This was an explicit recommendation of the Integrated Energy Policy. Of the existing grades of coal (A-G), in which A is of highest calorific value and G is of lowest calorific value, the prices of lower grades of coal have remained low compared to current international prices.

¹⁵ http://www.hindu.com/2011/02/27/stories/2011022754951900.htm.

¹⁶ Parts of data in this table are from the MoC's submissions to the committee.

Regulation

- 17. Then there is the question of regulation, which has been looming around the coal industry for a few years since the Sankar Committee report was submitted. A Coal Regulatory Authority Bill has been circulated within government in the last year. From what is currently being proposed, the regulator's main functions would be related to price and technical regulation (competition promotion is not relevant in a nationalized sector a monopoly producer and no provision for merchant mining). The regulator would also have a significant role in dispute resolution, with the establishment of a separate Appellate Tribunal specifically for coal related disputes. The regulator would also be partially responsible for some sustainability concerns (in particular mine closure). And related to all these function, the regulator would also have the authority to levy fees to and develop mechanisms to support such services. A list of the stated functions, Section 20 of the draft bill, is included in Annex XVII.
- 18. In its current formulation, the Coal Regulatory Authority would have five members, including a chairperson and four members (legal, technical, finance and administration). Only the legal and administrative members are required to have served in government, according to recent drafts of the bill. These members can be dismissed for various reasons. These include insolvency, conviction of an offence involving moral turpitude, physical and mental incapability, acquisition of financial or other interests which could cause prejudicial action, abuse of his/her position contrary to public interest, and acts of arbitration.
- 19. The coal regulator would also have the legal authority to authorize the produce, supply and washing of coal. Anyone who wants to undertake such activities will have to get authorization from the Coal Regulatory Authority. The punitive consequences for not obtaining the correct authorisations or for not following Appellate Tribunal rulings and decrees include fines which extend to 25 crore rupees and both companies and individuals can be held liable.

Issues for Consideration

Relating to Increasing Transparency of Existing Administrative Process

- 20. The allocative mechanisms outlined earlier do have problems. While there are plenty of statistics regarding the annual production of coal, and its industrial usage, it is still difficult to answer the question: How much coal is allocated through the various processes every year? Part of this is because the MoC engages in long-term contractual agreements to supply coal, but the cumulative contractual obligations of CIL, SCCL and their various subsidiaries remain unclear, at least from the publicly available statistics. Considering the magnitude of these decisions there needs to be more transparency on actual allocations.
- 21. While the bodies responsible for making various allocative decisions seem to be relatively clear at this point (as shown in Figure 3.1), it is not entirely clear what principles are used to make their decisions. This is particularly true of the SLC (LT), which is responsible for determining the allocation of most of CIL's and SCCL's annual output. Looking through the minutes of the various SLC (LT) meetings on the MoC's website, there is considerable variation in the quality of the minutes, which has implications for transparency of the decision making process. For example, the minutes available from recent meetings of the SLC (LT) (Power) are fairly detailed, giving short justifications for each decision made, and clearly delineating the proceedings of the meeting. However, similar minutes from the SLC (LT) (Cement) meetings are quite inadequate;

they explain in very broad terms the content of the meeting, and then simply list those projects which have been granted linkages. While some of the SLC (LT) minutes do seem to have short justifications for why LoAs are granted, generally these seem to be only stock justifications, which do not add much information. There is rarely any mention of the projects that were not granted linkages.

- 22. This lack of transparency is echoed in feedback from businesses as well. According to industry representations, the SLC (LT) (Cement) has not convened in the last few years, although in theory this body should meet bi-annually. Some private companies, in fact, find it procedurally easier and faster to import large volumes of foreign coal into India, than to obtain the same quantities through the domestic linkage processes. Even certain State governments have recently complained about the difficulty of obtaining linkages.¹⁷ Many of these SLC (LT) meetings are huge consultations; some of the minutes list 40–50 attendees from the MoC, CIL and its various subsidiaries, representatives from the Ministries of Power, Railways and Steel, Planning Commission advisors, representatives from state companies like NTPC, and regulatory representatives. While the representatives of the MoC clarified during the meetings of the committee that the minutes have to be read in conjunction with the agendas, these meeting agendas are not publicly available. Since linkage rejections are not well documented, it is difficult to ascertain how many, and which projects were granted linkages from the original list being considered. This degree of transparency is inadequate in the present context.
- 23. Concomitantly, there must be some serious introspection on whether such committees are suitable vehicles for allocating the majority of India's coal. In the short-term, however, the allocation process can move towards greater transparency. Given that linkage approval is such a complicated process, it would be useful to adopt some basic principles regarding the consistent, detailed publishing of linkage committee meeting agendas and minutes. A better understanding of the functioning of these important allocation committees will allow all stakeholders to shape their expectations accordingly.
- 24. As mentioned earlier, many of the allotted blocks are perceived to be inferior ¹⁸ to the ones mined by Coal India; they are often in remote areas which are poorly explored and have challenging geographies. Block development is often further delayed by issues related to land acquisition, lack of mining expertise, financial closure, and environmental clearances. Even if all of these hurdles are overcome, any excess coal mined from captive blocks must be sold back to CIL at a notified price, which is considerably lower than market prices. This gives current captive mine owners little incentive to increase production beyond their needs.
- 25. Despite this improved price realization, e-auction also has its problems. Unlike in linkages, where applicants are able to express a preference for which regional subsidiary they want their supply from, e-auction locations are not predictable. This is primarily because e-auction quantity allocations seem to come from the surpluses (after linkage allocation) of various subsidiaries. Spot contracts require quick evacuation, but the contracts are usually not over long enough periods to develop the associated logistics. Consequently, the quantity allocated through e-auction is often 10–20% lower than the quantity offered, even though there is a huge demand for coal in the country.

http://www.hindu.com/2010/07/15/stories/2010071561650500.htm.

¹⁸ "Steelmakers Continue to Face Captive Block Woes." Sourcing Insights. February 2011.

26. In summary, it would seem that the majority of coal in India is still allocated through a relatively non-transparent system via the screening committee route. Small steps have been taken towards market-based mechanism by expanding captive mining and initiating e-auctions. Progress in captive mining appears to be quite slow, and while e-auction price realization is effective, logistical constraints prevent it from being scaled up quickly. The private sector (through captive coal mines) seems to be unable to move any faster than the public sector, mainly because of clearance and expertise–related issues. There seem to be no easy solutions in this area unless incentives are suitably aligned.

Movement Towards a National Coal Transaction Platform for Approved End-users

- 27. The principles being adopted through captive mining and e-auctions are definitely a move towards market-based allocation. However, as the earlier statistics show, both of these mechanisms are still relatively small in magnitude, and have their own shortcomings. If more transparent and efficient allocation is the ultimate goal, then these principles can be expanded by moving to a national coal transaction platform. The current mismatch between supply and demand of coal in India can partially be attributed to the lack of sufficient interfaces between consumers and producers. The question is: what constrains a coal transaction platform and how can we move towards a coal transaction platform given the current system? These perceived constraints can be listed under the following heads:
 - Lack of sufficient suppliers
 - ii. Limit on number of approved buyers
 - iii. Lack of a price discovery mechanism

Increasing the Number of Suppliers

- 28. Currently, the market suppliers of coal are limited to CIL, through e-auction, and importers. This is a relatively limited foundation on which to base a transaction platform. Besides, increasing the amount for e-auction would take coal away from linked consumers with FSAs. There is a need to generate more suppliers. A quick method would be to allow existing allottees of captive mines to sell to other approved end-users but this would generate windfall gains, apart from being legally tenuous. However, among the existing allotments, both joint blocks as well as individual blocks, there are a number of blocks allocated to state-owned firms for commercial use¹⁹. These can be moved to market supply without any legal bar.
- 29. Another method would be to include mining companies in the allocation process for captive blocks, to expedite the development process. It is now settled after a series of opinions from the Attorney General (AG) that mining firms can be allocated blocks for sale to identified end users. On September 11, 1995, the Attorney General opined that the company mining the coal could be a firm that was different from the end user firm as long as the entire production of the mining firm was used by the end user firm. This was further elaborated on in a separate opinion²⁰ on November 27, 1995 wherein the AG stated that a legislative purpose of captive mining was "to allow private sector participation in coal mining for captive use purposes of power generation." To this end, the AG "saw no difficulty in giving the term 'end use' used

¹⁹ Many of these are blocks still in exploration, as discussed earlier, but some can be brought into production relatively quickly.

²⁰ "Re: F.No. AG/15/95/Adv. 'C' dated November 20, 1995—Interpretation of Certain Provisions of the Coal Mines (Nationalisation) Act, 1973 for Determining the Eligibility of State Electricity Boards to Take Up Captive Mining of Coal." Opinion. November 27, 1995.

in Section 3(3)(a)(iii)(4) [of the CMN act] an expansive meaning consistent with the legislative purpose." Neither is there a degree of association required between the mining company and the end user. While, the MoC's policy on captive mining had earlier required that the end user company have at least a 26% equity stake in the mining venture, the AG in his opinion dated January 20, 2006 and a further clarification on August 1, 2006²¹ on this subject clarified that the ratio of his earlier opinions was that the "coal mine should be captively consumed by the notified end use company. It is not necessary that the end use company hold any equity in the mining company." Furthermore, the mining lease could be in the name of the mining company, but end use should be mentioned clearly in order to bring the notification under the purview of Sec. 3(3)(a)(iii)(4).

Box 3.1 Competitive Bidding for Captive Blocks

The introduction of competitive bidding for captive blocks is a welcome development. The key is to transform this into a process for generating new suppliers for a coal transaction platform. From this perspective, the draft bid documents put out by the MoC can be improved. Of the four proposed forms, two are based on upfront payment structures, and the other two are based on royalties assessed on estimated reserves. Neither of these forms is optimal. Upfront payment structures are risky because incorrect initial valuations could potentially lead to undesirable renegotiations later or the failure of winning bidders to secure financial closure for mine development. This is especially so since the market for coal is currently in a fluid regulatory environment. An upfront bid presupposes a relative well-structured and predictable regulatory framework in the foreseeable future. The other bid parameter, i.e., royalties on estimated reserves is too tenuous and non-transparent and is likely to lead to disputes over the amount of "extractable reserve". As has been demonstrated in the Sasan UMPP case, the notion of extractable reserves is tenuous, and could lead to significant foregone revenues. Furthermore, in both cases, the bid does not vary with prices and in a situation where commodity prices are becoming more volatile, this can lead to significant risk transfer to the private bidder, which may reduce the bid offer.

The bid mechanism therefore needs to be linked to actual revenues of the mine allottee, i.e., depend on production and prices, i.e., a form of production sharing contract like the NELP contracts, but possibly with some changes.²² The production sharing contract can be a fixed amount per tonne (pre-set) with a biddable share or a fixed share with a biddable fixed amount per tonne. One change from the NELP model would be to move away from an investment multiple model (which allows deduction of costs before sharing) since the mining costs are relatively well known with well-defined mining blocks that do not need further prospecting. However, if the blocks are allotted with greater uncertainty about them (less than UNFC 111 or 221), then a NELP investment multiple type model may be more appropriate.

Given the situation with clearances for existing captive blocks that have been awarded, it is imperative that a certain level of clearance be obtained before bidding out an explored block. This would include obtaining the mining lease, Stage-I forest clearance and initiation of the land acquisition process. This is important to ensure that the block comes into production as soon as possible. It will also improve the realization from the bidding process since the uncertainty about when the block can come into production will be reduced.

[&]quot;Sub: Whether a notification to declare end use without the 26% equity holding will enable an allocattee to have coal from allocated block mined and supplied exclusively to them by an independent company under CMN Act." Opinion. January 20, 2006 and "Sub: Disposal of excess coal produced from the coal blocks allocated for the captive mining –reg." Opinion. August 1, 2006. Responding to the literalist interpretation of singular "company" in the Act, the AG cited Section 13 of the General Clauses Act, 1897 which allows the singular and plural interpretations to be interchangeable, "unless there is anything repugnant in the subject or context."

²² If the reserves were clear, a service contract would be suitable, but this is clearly not the case, which increases risks of misreporting production and illegal sales.

- 30. Thus, "there is no legal bar in granting a coal block to an independent mining company on the condition of issuing a Notification under Section 3(3)(a)(iii)(4) of the Act that the entire mined coal would be transferred to the end use company (or companies) for the specified end use." In principle, the number of such companies could be an identified but large number of approved end-users.
- 31. A related issue is the legality of the sale of surplus coal. Surplus coal, due to overproduction or underuse, is not uncommon in the industry. Because of the problems of long-term storage and excess demand, it would not be unreasonable to dispatch surplus coal to other approved endusers (this issue has been partially taken care of with the introduction of e-auctions). On this issue, the AG opined in 1998²³ that any surplus production of coal for reasons that are technological or the result of a demand-supply mismatch "can be sold ... as per the directions of the Coal Controller and at a price fixed by him". This price is to be set so that there is no "profiteering", i.e., the earning of excessive profits, from the sale of such coal. The Coal Controller can presumably delegate the function of price fixation to a regulatory authority, once it comes into existence, or could, in principle, choose to use prices discovered during e-auction.

Increasing the Number of Approved Buyers

32. The number of possible approved end users is already quite large, given the number of power plants, iron and steel, and cement plants that are in production and that have applied for coal. As of September 2010, there were 1267 pending applications for linkage.²⁴ A number of these firms, especially captive power plants, may currently be meeting their demand through imports. In addition, if needed, the number of approved end-uses can be increased by notification.²⁵ A start can be made in this direction by studying the industry distribution of the buyers on the e-auction route.

Platform: Matching Suppliers to Buyers

33. A platform would be a mechanism where the suppliers and demanders can transact. The e-auction platform is one such example. One possible mechanism is to build on the experience gained in the e-auction platform to create a common platform for all buyers and suppliers, including those other than CIL and SCCL, i.e., the allottees that are permitted to sell such as the state-owned mining firms with commercial end use and independent mining firms that win coal blocks through bidding. While the platform can initially be "over the counter (OTC)" in its nature, it would be mandatory for all sales in coal by the permitted entities to be registered with the platform and pay a standard fee, with details of price and nature of contract and grade of coal transacted. This would permit a gradual evolution of established prices and terms of contract. The operations of the platform could be regulated by the proposed coal regulator.

Registered Approved End-Users

34. For regulatory simplicity, the structure of the platform could envisage a system of registered approved end-users, whose bonafides are examined and pre-approved by the platform. The notification issued to mining companies can specify such registered end users as the notified group of end user companies, subject to the condition that their sales would only be through the

²³ "In matter of Coal Mines Nationalisation Act, 1973—Permission for captive coal mining—sale of surplus coal to non-associate companies." <u>Opinion</u>. February 19, 1998.

http://www.coal.nic.in/cpdlist01092010.pdf.

²⁵ As mentioned earlier, as per the provisions in Section 3 (3) (a) (iii) of the Coal Mines (Nationalisation) Act, 1973, no company shall carry on coal mining operation in India in any form unless it is engaged in production of iron and steel, generation of power, washing of coal obtained from a mine, or such other end use as the Union Government may, by notification, specify (emphasis added).

platform. This would meet the legal bar for sales from independent mining companies to notified end use companies.

35. For sale of surplus coal, the structure of the transaction could also be designed such that the seller sells to the platform, which then sells in turn to the buyer with pre-agreed prices with the Coal Controller and standard transaction fees. If the platform is owned by CIL, this will preserve the current system where excess production is sold through CIL. The price agreed by the Coal Controller could be based on prices discovered through e-auction or in the platform's OTC transactions. Figures 3.5 and 3.6 shows a schematic diagram of the operation of the transaction platform. Allocations to defence and railways can continue as currently practiced.

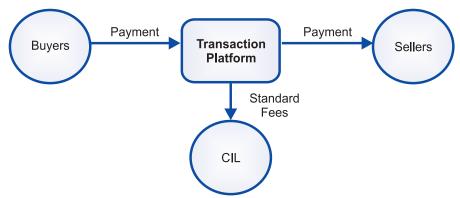
Subsidies and Pricing

36. In a move towards a coal transaction platform, the implications for downstream industries need to be analysed. Other than defence, electricity, and railways, all of the other consumers of coal (iron and steel, cement, etc.) in India sell their goods in competitive markets. For these sectors, it is not entirely clear if the subsidized input cost actually translates into a reduction in final product prices to the end user, especially since there are many firms operating in these commodities who do not have access to subsidized coal. However, coal pricing is a sensitive issue because much of the coal produced in India is used to produce electricity.

New bid Registration of based Transactions Preallottees approved users Transaction Platform Owned CIL by CIL Preapproved long term Surplus Registration of FSA buyers from old Captive Allottees

Figure 3.5: CIL Owned Platform Design

Figure 3.6: Broader Transaction Platform Structure



37. As part of the coal transaction platform, one can ensure that a minimum percentage of coal is offered on long-term contracts, e.g., of five years or more. The demand side of this transaction would largely be power plants and this would assure supply of coal for electricity. While the supply is assured, it is possible that there will be an increase in the price of coal sourced from the transaction platform. However, it is important to recognize that this will only affect the additional capacity that is coming on line. Power distributors will still continue to receive power at current regulated rates for the bulk of their procurement. Over time, the share of this additional capacity will increase but concomitantly, one would expect that there would be significant action taken on power sector reforms leading to more viable distribution companies. These measures to improve the financial health of the utilities would include transparent and rational mechanisms of power purchase, tariff setting and subsidy disbursal, in short, ensuring that the current mechanism for regulation is allowed to work without hindrance at the State level. In such a scenario, there does not seem to be any reason to worry that distribution companies would not be able to afford the increase in the cost of power purchase, if any.

Fiscal Implications

38. By regulating the price of coal, the Union is actually giving an implicit transfer to power consuming states. The Central Electricity Regulation Commission (CERC) and State Electricity Regulation Commission (SERCs) use a cost-plus method to determine the price at which generators can sell power. The low cost of coal therefore is transformed into a low electricity price for baseload coal-fired thermal power. The benefit of such low priced power is available to states in the ratio in which they are allocated such power. As such, the system is inherently regressive since richer states consume more power. If coal were to be sold at market prices, then these states, if they wanted to maintain their electricity prices, would have to increase their subsidies. The move to a market based price of coal would thus transform an existing implicit Union transfer to an explicit state subsidy. The extent of the implicit transfer can be estimated by calculating the difference in old and new cost of power from linked plants. One can design an alternate mechanism to replace this transfer in a more equitable manner or the current FSAs of CIL can be allowed to continue for the life of the plants, so as to grandfather the system of existing allocation.

Extent of impact of Coal Price Increase on Electricity Price from Prospective Plants

39. While allocations of coal to power plants are assured, there is no specific assurance on prices and the prices of coal has been raised from time to time. However, despite the cost-plus nature of electricity price, the increases in coal prices are not reflected in overall electricity prices in the past decade. Figure 3.7 compares the changes in E grade coal prices with the change in the WPI for electricity. There are other determinants of electricity prices, which may be more inelastic with respect to coal prices than expected. This would allow further room for coal price liberalisation without affecting electricity prices severely. Furthermore, the results from a recent study on competitive bidding illustrated in Figure 3.8 which shows a range of simulated prices based on spot coal prices and actual prices based on recent competitive bids for power show that bids received for power plants running on imported coal are actually priced quite competitively relative to their domestic counterparts. This is because longer term coal contracts are concluded at a price lower than current spot price. One can expect similarly lower prices to prevail on the coal transaction platform, since the competition from imported coal would always act as an overall check on prices.

²⁶ This is not inevitable since the increase in supply from mines run by independent mining companies and the excess supply from the captive blocks allowed to dispose of their stocks by the Coal Controller could in some circumstances lead to a fall in the price.

Regulator

40. Even with a coal transaction platform, the rationale for a coal regulator may remain, since CIL would be, at least for some time to come, a disproportionately large player in the transaction platform. In addition to market surveillance, which in principle, could be entrusted to CCI, the coal regulator would have the technical expertise to oversee CIL's technical efficiency and mine closure practices, much in the same manner as the SERCs regulate state-owned utilities and try to ensure that their operations are run as efficiently as possible. This would be especially important if the windfall gains made by CIL were to be extracted by the government in some manner and also because the increased financial profitability would diminish the pressure to be operationally efficient. However, as more of the supply from the captive allottees come on the transaction platform, this pre-eminent position of CIL is likely to gradually erode.

Sustainability

- 41. Finally, the issue of sustainability cannot be separated from coal. Issues related to forests and mining more generally are covered in other sections of this report, but there are also some coal-specific issues which merit consideration here. The first issue is mine closure. Coal mines, both above ground and below ground, occupy considerable land area and reclaiming that land once mining activities have ceased is important, especially since land is such a contentious issue in India.
- 42. To this end, the MoC did issue guidelines for mine closure in 2009–2010. This kind of technical regulation is particularly important given the kind of damage mine fires can cause; in Jharia, Jharkhand an entire town is being relocated because of mine fires that have raged for almost a century. It is suspected that irresponsible mining practices were a major cause.²⁷

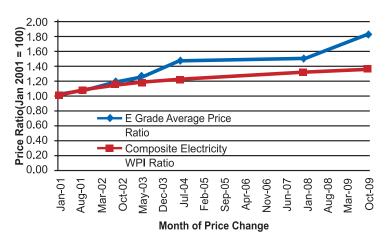


Figure 3.7: Coal Prices and Electricity Prices

Source: MoC submissions, Office of the Economic Affairs WPI statistics.

²⁷ See http://articles.timesofindia.indiatimes.com/2006-08-31/india/27787628_1_jharia-shibu-soren-new-township and http://edugreen.teri.res.in/explore/n_renew/jharia.htm. This problem is also described in the DRHP mentioned earlier.

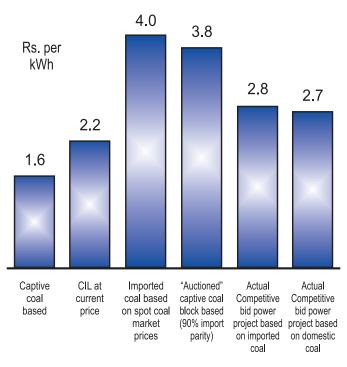


Figure 3.8: Electricity Tariffs from Different Sources

Source: Prayas Energy Group, "Transition from MoU to Competitive Bidding: Good take-off but turbulence ahead, Review of thermal capacity addition through competitive bidding in India", March 2011 http://www.prayaspune.org/peg/publications/item/download/254.html.

43. To minimize carbon dioxide emissions, low-grade coal should ideally be washed before use in thermal plants. Washing reduces the ash content, and increases the calorific value of the coal per kilogram. But as a recent article (see footnote 13) points out, the MoC's control of transportation and trading of coal, combined with the lack of coal market (because of linkage committee allocation) prevent coal washeries from getting legitimate coal linkages, even though washing is a notified end-use. As a result, quite a few coal power plants end up using run of the mine coal. Promotion of coal washing activities is something that merits serious consideration, and could become an important part of the coal supply chain if a transaction platform gradually develops.

Coal Technologies and Optimal Inter-temporal Extraction

44. The other sustainability issue has to do with the quality of Indian coal and the use of supercritical boilers. India's coal is known to be of relatively poor calorific quality; about 65% of India's coal is grade E or below. Given the relatively slow rate of coal extraction in India (compared to the scale of demand), and its low grade coal, there may be an opportunity available to India on the technology front. Currently, super-critical technologies are unsuited for Indian coal because of its low quality, which necessitates specific technological adaptation that is currently under development. Concomitantly, Indian boilers are unable to use high-grade coal. As of now, any super-critical plants which are currently being constructed are operating using imported foreign coal (typically from Indonesia, South Africa, or Australia). Since super-critical plants are more efficient, both from an energy and a carbon intensity perspective, it may make sense strategically to continue importing coal and using super-critical technologies while

concurrently adapting the same technologies for Indian coal.²⁸ This way, the efficiency of use of Indian coal will increase since it will use more efficient technologies once they are developed while the immediate requirement would be met by imported coal to fuel efficient power plants. This would also help to preserve domestic coal in the event of possible restrictions on coal imports that may arise in the future due to climate considerations, i.e., it may be better to import now because it will become more difficult to import later. The operative question here is: How quickly should domestic coal be extracted, given these various constraints? This issue is beyond the scope of this committee. However, it was felt that it deserves much deeper analysis.

45. Based on conventional mining, it may not be possible to mine all the coal energy that we are endowed with on considerations of economics, dense population and forest cover over coal bearing areas, and associated land acquisition and environmental issues. Under such circumstances, there is need to carry out intensive examination of the feasibility of pursuing and promoting *in-situ* gasification of coal—a technology that permits extraction of coal energy without mining.

Coal Reserves

46. A recent policy brief,²⁹ questions the fundamental assumption that India has considerable coal reserves. According to this brief, while India does have considerable geological reserves (the total amount of coal beneath the ground within India's geographic boundaries), its extractable reserves (the amount of coal that can be extracted economically given current technological and feasibility constraints) are significantly lower. According to the authors' calculations only 21.8 billion tonnes (BT) of CIL's 64.79 BT total reserves are extractable. And given current mining practices, which go to relatively shallow depths (150–300 m), much of the reserves (up to 40%) which are much deeper are often abandoned or rendered unfeasible. This also relates to the fundamental question of how much and when it should be mined, and the strategic value of importing coal, which is rarely asked. This is something that definitely merits further consideration.

Recommendations

- 47. The Committee recommends standardising the format of minutes for all Standing Linkage Committee (Long-Term) meetings, particularly for meetings where allocation decisions are made. These minutes should include specific justifications for both accepting and rejecting applications.
- 48. The Committee suggests improving the regularity of the quantity and predictability of location of e-auction coal to allow development of associated logistics.
- 49. The Committee advises increasing the number of approved end-uses by notification as permitted in Section 3 (3) (a) (iii) of the Coal Mines (Nationalisation) Act, 1973.
- 50. The Committee recommends allowing independent mining firms to take part in auctions for captive blocks, with suitably notified groups of end user firms as elaborated below.

²⁸ Chikkatur, Ananth and Ambuj Sagar. "Rethinking India's Coal Power Technology Trajectory." <u>Economic & Political Weekly</u>. Vol. XLIV. No. 46. November 14, 2009.

²⁹ Batra, R. K. and S. K. Chand. "India's coal reserves are vastly overstated: is anyone listening?" TERI Policy Brief. March 2011. http://www.teriin.org/policybrief/docs/TERI_PolicyBrief_Coal_March11.pdf.

- 51. The Committee recommends creating a platform for transaction of coal. This platform can be owned by CIL to meet current regulatory needs.
- 52. The platform can register all approved end-users, including those from new end-uses notified above, such that sales to any registered user through the platform would automatically satisfy the end use requirement. In particular, all genuine users seeking linkage can register on the platform
- 53. The Committee recommends allowing existing state owned allottees of captive blocks for commercial end use to sell to registered and approved end users through the CIL owned platform. A portion of the offered quantity would have to be in the form of long term contracts over five years, so that needs of power plants can be predictably met. This structure appears to be legally tenable under the CMN Act given the opinions of the Attorneys General over the years. However, this would need to be re-examined in the Ministry of Coal.
- 54. In the Committee's view, surplus coal from captive mines could be sold to the platform for onward sale to registered end users. This would be an extension of the current policy that allows excess captive production to be sold to CIL and would also need to be examined in Ministry of Coal.
- 55. Imported coal could also be offered through the coal transaction platform.
- 56. The Committee recommends expediting the clearance process for land acquisition, mining leases and forest clearances for explored blocks, especially those allocated to states for commercial use. In future, consider bidding out blocks for which clearances have been pre-obtained.
- 57. The Committee suggests conducting a study on the optimal rate of extraction given the current state of Indian coal technologies and reserves and examine whether it is prudent to increase coal imports in the short-term to preserve domestic options.

Conclusion

58. It is overwhelmingly clear that India needs more coal. With the majority of allocations happening through administrative mechanisms, it is no surprise that there are considerable gaps between producers and consumers. There needs to be a coordinated move towards establishing a common transaction platform, within the confines of the current rules and regulations. E-auctions were a good first step, but logistical problems constrain expansion. Captive mines could have solved the problem, but production is still limited because of administrative difficulties and incentive problems. This report has suggested many steps which can be taken to establish an incentive compatible coal transaction platform.

4. MINERALS

Introduction

- 1. The Union Ministry of Mines is responsible for survey and exploration of all minerals, other than natural gases, petroleum and atomic minerals; for mining and metallurgy of non-ferrous metals like aluminium, copper, zinc, lead, gold, nickel, etc. and for administration of the Mines and Minerals (Development and Regulation) Act (MMDR Act), 1957 in respect of all mines and minerals other than coal, natural gas and petroleum, but including offshore minerals. In performing its functions, the Ministry is assisted by the Geological Survey of India and Indian Bureau of Mines.
- 2. The State Governments are the owners of minerals occurring onshore. However, the Constitution mandates powers to the Parliament to regulate in the matter through legislation. Entry 54 of List I (Union List) provides for "Regulation of mines and mineral development to the extent to which such regulation and development under the control of the Union is declared by parliament by law to be expedient in the public interest". Similarly, Entry 23 of List II (State List) provides for "Regulation of mines and mineral development subject to the provisions of List I with respect to regulation and development under the control of the Union". In exercise of the powers vested by the Constitution of India, Parliament after declaring it to be in expedient in the public interest has enacted the Mines and Minerals (Development and Regulation) Act, 1957 (MMDR Act). The MMDR Act enables all the States to exercise their powers within a uniform national framework. However, since State Governments continue to be owners of onshore minerals in their respective jurisdiction, the royalty and other revenues are collected by the State Governments and credited to the Consolidated Fund of the State.
- 3. In case of offshore areas, the ownership of minerals vest exclusively in the Union Government as per Article 297 of the Constitution of India. In order to regulate the mining and development of minerals in the offshore areas, the Parliament has enacted the "Offshore Areas Minerals (Development and Regulation) Act, 2002" for this purpose. The Act empowers the Union Government to grant the mineral concessions for offshore areas and collect the royalty, which is credited to the Consolidated Fund of India. As per a Cabinet decision, the concession management in case of offshore areas has been allocated to the Indian Bureau of Mines, a subordinate office of the Ministry of Mines, which has been notified as the Administering Authority. This Committee has not examined the question of allocation of offshore minerals in

detail. However, the principles evolved for onshore minerals would apply *mutatis mutandis* for offshore minerals as well.

Notion of Allocation

- 4. Currently, there are three kinds of mineral concessions, viz., Reconnaissance Permit (RP), Prospecting Licence (PL) and Mining Lease (ML) for the allocation of mining and prospecting rights. RP is granted for preliminary prospecting of a mineral through regional, aerial, geophysical or geochemical surveys and geological mapping.¹ A RP holder has preferential right to obtain PL(s) in the area concerned. PL is granted for undertaking operations for the purpose of exploring, locating or proving mineral deposit.² A PL holder has preferential right to obtain ML in the area concerned. ML is granted for undertaking operations for winning any mineral.³
- 5. These three types of concessions are designed for specific purposes, based on the awareness of the State Government on the mineralization in an area. As per current practice, in case the State Government does not have any information on the mineralization, it is usual to award an RP, which is done on a regional scale with minimum intrusion into ground. Where basic data is available on mineralization in the area (through earlier exploration, historical data on mining in the region, etc.), but where the quantum of mineral reserve cannot be estimated, a PL (which involves close spaced drilling) may be granted for identifying the quantum of mineral reserves. Where the State Government is satisfied about the mineral quantity available in an area, then it may directly grant a ML. After the enunciation of the National Mineral Policy, 2008, the level of information is described in terms of the United Nations Framework Classification (UNFC) which provides a code for the purpose.

Existing Mechanisms for Allocation and Pricing

6. RP and PL are licences issued by the State Government while Mining leases are lease agreements entered into by the lessee (concessionaire) with the State Governments in the case of onshore minerals in terms of the section 5(1) of the MMDR Act. They are in the nature of a concession given to a person to only identify the minerals existing in an area through exploration, and do not give the concession holder any right to mine in the area. The Mining lease agreement describes the property with reference to the revenue records as maintained by the respective State Governments and allows the lease holder to mine and carry off the minerals, on payment of royalty to the State Government.

¹ The RP for any mineral or prescribed group of associated minerals is granted for three years and for a maximum area of 5,000 sq. kms., to be relinquished progressively. After two years, the area should be reduced to 1,000 sq. kms. or 50% of the area granted, whichever is less. At the end of 3 years, area held under an RP should be reduced to 25 sq. kms. In a State, a person can be granted a maximum area of 10,000 sq. kms under RP subject to the condition that no single RP exceeds 5000 sq. kms.

² A PL for any mineral or prescribed group of associated minerals is granted for a maximum period of three years. A PL can be renewed in such a manner that the total period for which a PL is granted does not exceed five years. In a State, a person can be granted a maximum area of 25 sq. kms in one or more PLs, but if the Union Government is of the opinion that in the interest of development of any mineral it is necessary to do so, the maximum area limit can be relaxed.

³ A ML for any mineral or prescribed group of associated minerals is granted for a minimum period of 20 years and a maximum period of 30 years. A ML can be renewed for periods not exceeding 20 years each. In a State, a person can be granted a maximum area of 10 sq. kms in one or more MLs, but if the Union Government is of the opinion that in the interest of development of any mineral it is necessary to do so, the maximum area limit can be relaxed.

7. Royalty for minerals is determined by the Union Government and levied by the State Government on either specific rates or on advalorem rates.⁴ Except for nine, minerals royalty is charged on ad valorem basis for all the major non-coal minerals.⁵

Draft MMDR Act

- It was submitted by the Ministry of Mines that in addition to lack of adequate survey and 8. exploration, one factor affecting the growth of the mineral sector in India is the methodology of grant of concessions. The decision making process involved in the grant of concessions is perceived as non-transparent, inefficient and subject to huge delays at all levels, resulting in poor investments in the sector, discontent in host populations for mining projects and illegal mining which is causing loss of revenues to State Governments. To look into these issues, following the mid-term appraisal of the Tenth Five-Year Plan, the Planning Commission constituted a High Level Committee (HLC) under the Chairmanship of Shri Anwarul Hoda, Member, Planning Commission. The HLC submitted its report to the Government on the July 20, 2006 with recommendations which included suggestions for evolving a mining code adapted to the best international practices, streamlining and simplifying procedures for grant of mineral concessions to reduce delays, strengthening the infrastructure for mining activities and recommendations on other issues for improving the environment for investment in the mining sector. Based on the recommendations of the HLC, the Government has enunciated the National Mineral Policy, 2008 (NMP). Following the NMP and considering that the existing law, i.e., the MMDR Act, had already been amended several times and that further amendments may not clearly reflect the objects and reasons emanating from the new mineral policy, it was felt that a new legislation would be preferable in order to clarify the legislative intent. Accordingly, the Ministry of Mines has framed a new Mines and Minerals (Development and Regulation) Bill, 2011, to replace the MMDR Act 1957, after intensive consultations with stakeholders. The Draft legislation has been referred to a Group of Ministers under the Chairmanship of the Hon'ble Finance Minister. The draft legislation has been vetted by Ministry of Law and Justice, and it is expected to be introduced in the Monsoon Session (2011) of the Parliament.
- 9. The Ministry of Mines was unable to share the current version of the draft Act with the Committee. However, a version of the draft Act (dated June 3, 2010) is available in the public domain. As such, the Committee decided that it would be more fruitful to examine the framework in the proposed legislation rather than focus on the existing practice, which is already in the process of being modified. However, to the extent that the proposed legislation is delayed and the existing MMDR Act 1957 continues, the discussion would apply, *mutatis mutandis*, to the existing framework.

Types of Concession under Draft MMDR Act

- 10. The draft MMDR Act envisages mineral concessions to be of four broad types, as compared to the earlier three, depending on the kind of exploration or development that is permitted. These are:
 - i. Reconnaissance Licence (RL), which involves "a systematic study to identify areas of enhanced mineral potential on a regional scale based primarily on the results of regional geological, geophysical and geochemical studies through remote sensing,

⁴ The state of West Bengal is disputing the Union's authority to determine the rates of royalty and levies its own rates. This matter is now sub-judice.

⁵ These nine minerals are chrysotile asbestos, dolomite, limestone, lime kankar, lime shell, monazite, ochre, slate and tungsten.

- aerial and ground sampling surveys including, preliminary field inspections, in order to facilitate further investigation for deposit identification". A licence for this is given for large areas and short periods of time, not exceeding three years.
- ii. Prospecting Licence (PL), which involves the "process of searching for a mineral deposit by narrowing down an area of promising enhanced mineral potential" leading to a "detailed three-dimensional delineation of a known deposit...[whose] size, shape, structure, grade of the deposit are established with high degree of accuracy". A licence for this is proposed for smaller areas but similar periods of time as a reconnaissance licence, not exceeding three years and extendable by a further two years.
- iii. Large Area Prospecting Licence (LAPL), which is a new type of mineral concession, combines the features of a RL and PL, i.e., it combines the large area character of an RL with the permissions for general and detailed exploration available under a PL and is thus given for larger areas and longer periods of time, not exceeding six years. According to the Ministry, since a LAPL can be only granted for deep-seated deposits for multiple minerals (other than iron ore, bauxite, limestone etc.) and primarily needs to commence from regional scale exploration over a large area, a bid value cannot be estimated at the start of the enterprise as the nature of deposit in terms of the minerals, their quantity, technology of the extraction etc. will not be known at the time of grant of concession. For this reason competitive bidding has not been recommended for LAPL, and it is proposed to grant this concession on the basis of chronological priority of the applicants, who would be required to furnish exploration data to the State Governments and mandatorily surrender a portion of the explored area to the State Government each year over the period of six years (which will be available to other applicants). LAPL as a concession is thus not an asset with a value; rather it is a method of locating an asset of value. However, the licence fee for LAPL is likely to be very high" (emphasis added). While section 13 (1) (b) of the draft MMDR Act (version June 3, 2010) does envisage bidding for LAPL, it was clarified by the Ministry during discussions that the current draft under consideration has removed this aspect.
- iv. Mining Lease "means a lease granted by the competent authority for the purpose of undertaking mining operations". A licence for this is given for well-defined smaller areas and long periods of time, between 20 and 30 years.
- 11. According to the Ministry, the overall approach of the draft MMDR Act is that where mineralization is known, allocation is optimized, and where mineralization is not known, exploration is optimized.

Security of Tenure in Draft MMDR Act

12. The draft MMDR act also incorporates the principle of security of tenure. This implies that an entity who has secured a RL, PL or LAPL, would be able to move to a PL or an ML for a smaller area within the earlier area of licence, consequent on it demonstrating sufficient evidence from its earlier exploration that there is evidence of possible mineralisation. Thus, once the RL or LAPL has been awarded, for example on a first come first served ("chronological priority") basis, the subsequent process of award of mining leases cannot be competitively bid. However, it is

⁶ Statement by the Minister of State (Independent Charge) for Mines, Shri Dinsha Patel, in the Rajya Sabha on March14, 2011.

conceivable that the government could use information generated by an LAPL and submitted by the licensee (as part of licence conditions) to invite competitive bids for a ML or PL.

Transferability of Licence in Draft MMDR Act

13. In the draft MMDR Act, the mineral concessions at all levels are transferable, i.e., a RL can be transferred by the licensee, along with the associated terms and conditions of the licence to another party. This facilitates a situation where the exploration, prospecting and mining may be done by firms with different types of expertise. The exploration firm can then transfer the RL and its associated security of tenure to a firm which may be interested in applying for a PL, based on the data generated during the reconnaissance period.

Methods of Allocation in Draft MMDR Act

Mining Leases

- 14. The draft MMDR proposes that "in such areas where prospecting has been conducted and sufficient evidence of enhanced mineralisation has been established through a prospecting report and feasibility study, and where no application for a mining lease is pending, the State Government may by notification invite applications in the form of competitive bids for any minerals excepting coal minerals, for grant of mining lease" (emphasis added).
- 15. Section 23(1) of the draft MMDR Act permits the State Government to notify certain areas for "reconnaissance or prospecting operation... to be undertaken [only] by the Geological Survey of India, the Atomic Minerals Directorate, the State Directorate, the Mineral Exploration Corporation Limited, the Central Mine Planning and Design Institute Limited or such other agencies as may be notified in this behalf" for a maximum period of six years. It was clarified in discussions of the Committee that this provision would be used to generate data for competitive award of mining leases. This is likely to be the case where the mineral is a bulk mineral occurring in large surfacial deposits like iron ore, bauxite, limestone, dolomite, etc.

Prospecting Licences

- 16. The draft MMDR Act also makes it possible to award PL in a competitively bid manner. It permits the State government to invite "competitive offers for any mineral except the coal minerals for grant of (a) a prospecting licence over any area where reconnaissance has been conducted and sufficient evidence of enhanced mineralisation of the specified minerals has been established; or (b) a large area prospecting licence over any area where survey shows that the geological potential is conducive to mineralisation of the specified minerals".
- 17. However, while it permits the bidding of PL, it also states that "the financial bid shall be to allow the State Government to recover a value for its efforts in managing the information relating to survey or regional exploration work, including computer database and samples for minerals, if such information leads to mining". Further, it states that "the weightage shall be numerical in character and enable a composite ranking based on numerical marks assigned for each of the criteria listed in the notification in order to determine the best offer".

Large Area Prospecting Licence

18. For LAPL, the position as now conveyed by the Ministry is that it will be available on the basis of chronological priority, i.e., FCFS. Subsequent to the award of LAPL, under the first to find system with security of tenure and transferability, licensees will have a right to progress directly to a mining lease. This process of award of ML will not be competitively bid.

Reconnaissance Licence

19. For RL, the position in section 20(3) of the draft MMDR Act is that except for coal,⁷ reconnaissance licences are to be granted to "every applicant who is eligible in accordance with the provisions of this Act and the rules made thereunder". Subsequent to the award of RL, under the first to find system with security of tenure and transferability, licensees will have a right to progress from a RL to a PL and eventually, if successful, a ML. This process of award will also not be competitively bid.

Issues with Bidding and Exploration

Draft MMDR Act and Bidding

- 20. At first blush, it seems that the draft MMDR Act appears to adhere to a competitively bid process for allocation of mineral concessions. The Ministry of Mines has clearly indicated that the draft legislation clearly provides that in case the State is aware of the quantum of mineralization, it would grant a direct mining lease by calling for competitive offers (including financial bids) through notification only. Where the State Government has some substantial (basic) data on mineralization (but not on quantum of mineral in the deposit), it may conduct further exploration itself and then call for competitive offer for grant of mining lease, or it could grant PL through competitive offer (with a bidding on royalty sharing or production sharing).
- 21. In practice, however, it forecloses such an option in many cases. The initial award of licence through a non-bid process, coupled with security of tenure, forecloses the use of a competitive bid process for the award of mining leases. In the case of a ML, a prospecting report and feasibility study have to be prepared. As defined in the draft MMDR, a prospecting report is prepared on the basis of results of prospecting, general exploration and detailed exploration giving details of ore bodies in terms of size, shape, grade, quantity of mineralization while a feasibility study, which builds on a prospecting report, assesses "in detail the technical soundness and economic viability of a mining project". As such, they presume a "detailed three-dimensional delineation of a known deposit...[whose] size, shape, structure, grade of the deposit are established with high degree of accuracy" is available. Thus, for ML, bidding is to be adopted only when the quality and extent of information available is very high (221, 121, 211 and 111), leaving almost no uncertainty for the bidder. In the absence of such detailed exploration by government agencies either directly or through third parties, and in a situation where the exploration effort, beyond reconnaissance would be conducted by private firms, this provision would appear to be infructuous, since the private firm would apply for a ML for such a well-defined deposit, using the principle of security of tenure.

⁷ Section 8 (6) of the draft MMDR Act states that a "reconnaissance licence, large area prospecting licence, prospecting licence or mining lease for coal minerals shall be granted …on such terms and conditions as may be prescribed and such licence or lease be granted through competitive bidding and auction in such manner as may be prescribed" [emphasis added].

- 22. For PL, the situation is not clear, for unlike ML, the extent that the qualifying threshold of information for allowing a PL to be bid is not specified. Nor is it clear how the survey evidence is to be obtained. Unless it is obtained in the six-year interregnum referred to in para 19 above, exploration information will be generated by private parties and any commercially valuable information is likely to be used to apply for a PL directly, using the principle of security of tenure or transferred to a mining firm who would then use it to apply for a PL. It is possible, however, that information generated from public sector reconnaissance, such as that undertaken by GSI, could be used for bidding of PL, if the indications in the data point to a relatively high possibility of mineralization.
- 23. However, while it permits the bidding of PL, the draft MMDR appears to restrict the format of the bid considerably. It states that "the financial bid shall be to allow the State Government to recover a value for its efforts in managing the information relating to survey or regional exploration work, including computer database and samples for minerals, if such information leads to mining", thereby implying that a financial bid that is based on sharing the profits from the resource is impermissible. Further, it appears to indicate that a pure financial bid (e.g., a two stage bidding system with a single parameter financial bid consequent on technical prequalification) would not be allowed since it states that "the weightage shall be numerical in character and enable a composite ranking based on numerical marks assigned for each of the criteria listed in the notification in order to determine the best offer."
- 24. Bidding is not even contemplated for LAPL and RL, except in the case of bulk minerals. While this is not clear in the June 3, 2010 draft of the MMDR Act, the Ministry informed the Committee that for bulk minerals, such as iron ore, bauxite, dolomite, limestone, etc., LAPL is not available, and thus it is possible that PL and ML for these bulk minerals would be allocated through bidding. The draft MMDR Act currently under discussion (and not in the public domain) has suitable provisions indicating that the LAPL is only for major minerals other than iron ore, bauxite, limestone, or other bulk minerals and an LAPL holder cannot apply for the ML for bulk minerals discovered in the explored areas by him.
- 25. One can thus expect under the draft MMDR Act that the MLs for bulk minerals such as iron ore, bauxite, limestone, dolomite, etc., will usually be competitively bid. However, the mining leases for other minerals, especially deep-seated minerals are likely to arise from the process of exploration and prospecting, using RL, PL and LAPL and the principle of security of tenure and transferability, whereby the possibility of mineralization for minerals will be discovered by a process of exploration and the exploration firms will apply eventually for a ML for an area they consider to be worthwhile. In this process, the licence will not be competitively bid, though these licences have an option value, as explained below.

Option Value of Licences

26. It is important to realize that in the draft MMDR Act, the security of tenure and transferability together generate a value for all licences, i.e., the RL, PL and LAPL, since all of them have the option of applying for an ML, if there is discovery of mineralization. Thus, there is an option being transferred to the licensee when it receives a RL, PL or LAPL. This option can acquire substantial value if there is discovery that leads to award of a mining lease. As such, it is not appropriate to argue that there is no value to the licences and all the value is there in the ML.

Ministry's Concerns about Bidding

- 27. In part, this hesitancy to adopt a competitive bid process especially for LAPL and RL appears to be related to concerns associated with the auction of reconnaissance and PLs and the manner of risk sharing. It is presumed that a competitively bid allocation process will have a negative impact on exploration efforts. According to the Ministry of Mines the benefits of first-come first-served (FCFS) method are as follows:
 - i. No subjectivity (this is predicated on the assumption that the proposed system is truly first-come first-served, without any pre-conditions, unlike the system that is currently prevailing today in India).
 - ii. Easy applicability and open, particularly well-suited to online application (as in the Quebec province in Canada).
 - iii. No discretion in the decision-making process and system is totally transparent and impartial (Quebec has enabled online grant of concessions).
 - iv. Since the reconnaissance and prospecting stages involve relinquishment of surveyed areas, it incentivizes the use of expertise to zero in minable areas.
- 28. However, they acknowledge that there are some shortcomings of the FCFS method, such as:
 - i. Grant of PL to incapable entities/individuals (who, presumably would then try to transfer their licence to interested parties).
 - ii. Speculative/hoarding tendency by persons who have obtained the concession.

The first is sought to be addressed by imposing high licence fees to exclude casual applicants and the second by strictly enforcing relinquishment norms.

- 29. The Ministry of Mines also recognizes the benefits of the auction method in (a) guaranteeing transparency in the granting of licences, (b) eliminating speculators from such transactions and (c) ensuring selection of a titleholder with sufficient experience and operational capacity for the exploration or exploitation of the area or deposit. However, according to them, the shortcomings of the method listed below make it inappropriate in many circumstances as the method of choice for allocation:
 - i. Risk of subjectivity and discrimination, in evaluation process if minimal conditions attached.
 - ii. Tender conditions, scoring, and evaluation criteria should be consistent and proportional to the information available on the potential of the area to avoid subjectivity and erroneous decisions.
 - iii. May lead to failure if auction conditions include restrictions based on deposit size alone, since demand for metals are cyclic. Also extractability of deposits is more difficult to estimate for metals than for oil and gas.
 - iv. Will favour large corporations with deep pockets leading to monopolies.
- 30. The Ministry thus concludes that auctions may not be practicable for the huge number of small deposits occurring in the country though it may be possible for large deposits and within them, better suited for large surfacial deposits.

31. In particular, the Ministry was emphatic in stating that auction is not feasible at stage prior to PL, since the identity of the mineral is established only after PL is completed. This is especially so since currently, licences are generally applied for by applicants with specific expertise and value addition capacities limited to particular minerals. In such a situation, the auctioning of a multi-mineral set of deposits as a block will be highly sub-optimal, unless the resulting PL/ML areas can be disposed of in parts to concessionaires with interest in a specific mineral. Furthermore, they submitted that the evaluation of bids for multi-mineral set of deposits is not feasible.

Evaluation of the Ministry's Concerns

- 32. The first three arguments of the Ministry of Mines in favour of FCFS in terms of transparency in para 29 above are also available for the auction method of allocation and are thus not compelling arguments for adopting FCFS, especially given the shortcomings also identified by the Ministry. Furthermore, FCFS is also inequitable in that it gives away valuable option rights to the first applicant and is unsustainable if it leads to a rush to the region by many investors following the first applicant. As for auctions, the Ministry's apprehensions, apart from its concerns about cornering of concessions by large firms, are related more to the form of the auction, i.e., it appears to disfavour indiscriminate and unconditional upfront cash-bid auctions, rather than a well-structured auction process. Furthermore, the apprehensions are more about the auction of RL and LAPL, while the Ministry agrees that ML and PL can be auctioned, especially for surfacial bulk minerals.
- 33. The critical argument for FCFS vis-à-vis competitive bids is thus whether it incentivizes the use of expertise to discover minable areas and if competitive bids can be appropriately structured to provide such incentives for exploration.

The New Exploration Licensing Policy (NELP) Experience

- 34. In this context, it is instructive to examine the experience of the oil and gas sector, where there has been substantial investment in exploration since the start of the NELP process, which is an allocation mechanism based on competitive bids.
- 35. In the current NELP system, the bid is on the pre-tax investment multiple. This is in essence a bid on the profit share, where all expenses in exploration and production are deducted prior to sharing. In the event of no discovery, the bidder does not face any additional financial burden as a result of the allocation being through a competitive bid process, since the payment is contingent on production. Even on commencement of production, the initial payments are limited to royalties and taxes (which is waived for the initial seven year period in India), as specified. The financial implication of the bid is relevant only when the expenses on exploration and production have been recovered to a considerable extent. In such a system, there is no additional burden on the firm during the exploration stage.
- 36. It is, however, correct that the profit stream of the firm in future is reduced during the production stage. The extent of this reduction is, determined through a bidding process, i.e., the prospective firms choose how much to share voluntarily and therefore viability is not an issue, except to the extent of normal business risk. The reduction in the profit stream, arrived at in this manner ensures that the firm continues to make an economically acceptable rate of return. Since, in the NELP mode, the payments to the government are based on the capture of "supernormal" quasi-rent, the effect on production incentives is also likely to be minimal.

37. Furthermore, it bears noting that the expenses involved in the exploration phase for oil and gas are substantial and in many instances, much more than what is involved in mineral exploration, where the extensiveness of exploration is usually greater but the cost of specific exploration actions, e.g., drilling, is lower by orders of magnitude. In the absence of discoveries, this entire exploration cost has to be written off. Despite such a high risk exploration phase, bidding for production sharing contracts is common in the oil and gas sector. As such, it is not clear why a similar system would imply an additional burden that would discourage exploration.

Iron ore Copper **Zinc** Lead Chromium Aluminium

Figure 4.1: Movement in Major Mineral Prices 1980–2011

Source: IMF, USGS

38. There is another factor to consider. Prior to the 1980s, oil concessions were not commonly on production sharing contracts. The 1970s however brought in OPEC and consequent price volatility into what was essentially a stable market. The volatility meant that a fixed take (even one proportional to production like royalty) unrelated to the profits left significant rents with the production company since the marginal cost of production is usually quite low, compared to the

capital expenditure. A similar situation is now possibly emerging in metals. As Figure 4.1 shows, an examination of prices over the last 30 years shows that there has been significant increase in prices and volatility in the recent past as compared to the past. The regime for metals now appears to be at an inflection point, perhaps similar to the situation that oil was in in the 1970s. Thus, while the existing international concession arrangements were perhaps acceptable in a stable environment, the time has perhaps come to look afresh at concession structures.

39. It is not the opinion of this Committee that the NELP system should be adopted wholesale for minerals. However, the NELP experience makes it evident that significant resources can be deployed in exploration even when the allocation is through on a competitively bid process, it is not necessary that exploration would be stifled. An appropriately structured and if necessary, mineral-specific and level specific bid framework could be examined for this purpose if the NELP model is found to be inappropriate for some reason.

Allocation of RL

- 40. The allocation of RL would pose special problems, especially if the company undertaking RL is a specialized exploration, who would normally not be in the mining business, but rather in the data acquisition and analysis business. Such firms undertake exploration for deep seated/concealed deposits. In Canada, they are popularly known as junior exploration companies and their expertise is in most cases linked to a particular mineral or group of minerals. They raise funds from venture capital firms and earn revenue by selling their data (and associated security of tenure), once they locate a possible indication of mineralization. These firms are in a high-risk high-reward situation. However, it is possible that these firms can be engaged on a contract basis, where their costs are mitigated, but they also receive an upside, possibly not as high, if they are successful in finding indication of mineralization. In addition, there are a number of firms that are in the business of collecting baseline data, largely on contract from national and provincial level survey agencies internationally. These firms are in a low-risk low-reward business.
- 41. Both these types of firms can be offered an outsourcing contract for the collection of baseline data, with a variation. The variation is that they will be paid a substantial bonus in case the RL generates data that can be successfully auctioned for a PL. In this case, the payment to the exploration firm is from the general budget, which is offset by the prospect of revenues from the successful PL auction. The rationale for payment from the general budget is that the award of RL along with security of tenure, without auction, transfers a valuable option to the licensee, which if exercised will lead to the government foregoing revenue from the auction of the ML.
- 42. This offers a new business model for the juniors, which is a lower risk model than their conventional model as well as for data acquisition firms to whom it offers a slightly more high-risk high-reward model. Such incentive-enhanced contracts can be used by GSI to outsource their complete its geophysical and geochemical mapping expeditiously.

Issues Relating to Mining and Local Employment

43. There has been some discussion on whether the auction for MLs should include a local end-use preference. The HLC Report appears to attach a significant value to end-use within the state in allocation decisions. It indicated that in the grant of LAPLs "preference should be given for the proposed investment in mine and industry based on the mineral within the state in the event of the applicant moving eventually to the next stage of [Mining Lease]". Furthermore,

even for grant of mining leases for ore bodies delineated by public agencies, it "agreed that the auction procedures could be waived in situations in which the applicant was willing to make a commitment to establish an industry based on the mineral within the state. In such cases, the full cost of exploration by the public agency concerned should be recovered from the lessee."

44. In this context, it is useful to consider the broad context of employment and the mining sector and its derivative industries. According to the National Sample Survey Report on Employment and Unemployment in India 2007–08, the mining and quarrying sector accounted for 0.5% of total employment in the country and about 1.2% of total non-agricultural employment in India. The manufacture of basic metals, which is the first direct end-use, comprised another 0.3% of the employment or about 0.7% of total non-agricultural employment. The employment in direct end-use industries is thus about three-fifths of the employment in mining and quarrying. For comparison, construction provides over ten times the employment of mining and textiles and apparel comprise about seven times the employment provided by mining and quarrying.

Table 4.1: Employment in Mining and Metal Industries as a share of Non-Agricultural Employment

Royc 2009 (Rs. La	-10	Non Ag. Emp.	Emp. in Textile	Emp. in Construction	Emp. in Mining	Emp. in Basic Metal	Emp. in Fabricated Metal	Emp. In All Metal
RAJASTHAN	98,745	39.9%	6.3%	26.6%	3.1%	0.4%	1.0%	1.4%
MEGHALAYA	727	33.0%	1.6%	17.3%	2.6%	0.0%	0.1%	0.1%
GOA	28,591	78.2%	1.4%	5.8%	2.5%	0.3%	0.5%	0.8%
CHHATTISGARH	47,440	18.5%	3.6%	14.2%	2.1%	3.8%	1.8%	5.6%
A.P.	37,038	41.0%	6.6%	14.7%	1.9%	0.4%	0.7%	1.2%
KARNATAKA	43,011	40.6%	6.2%	12.2%	1.9%	0.5%	1.5%	1.9%
ORISSA	89,444	33.5%	4.7%	15.6%	1.7%	1.3%	0.7%	2.0%
SIKKIM	Nil	45.7%	2.3%	14.6%	1.4%	0.0%	0.6%	0.6%
M.P.	35,145	29.8%	3.3%	23.4%	1.3%	0.4%	1.1%	1.5%
A&N		68.2%	0.4%	27.7%	1.2%	0.0%	0.6%	0.6%
JHAKHARAND	20,233	39.1%	2.6%	30.9%	1.2%	4.0%	0.1%	4.1%
KERALA	881	67.3%	8.0%	18.1%	1.1%	0.1%	1.4%	1.5%
MANIPUR		42.8%	17.1%	15.1%	1.0%	0.3%	0.4%	0.7%
W.BENGAL		55.1%	11.8%	11.1%	0.9%	0.7%	1.0%	1.8%
GUJARAT	19,291	45.6%	12.4%	9.3%	0.7%	1.8%	1.4%	3.2%
NAGALAND		30.0%	2.9%	7.3%	0.6%	0.0%	0.1%	0.1%
HARYANA		48.1%	5.7%	17.6%	0.6%	0.7%	2.6%	3.3%
TNADU	13,057	56.1%	15.7%	12.2%	0.6%	0.6%	2.1%	2.7%
U.P.		38.4%	10.1%	17.5%	0.4%	0.7%	1.4%	2.1%
MIZORAM	Nil	35.3%	1.8%	15.3%	0.4%	0.0%	0.2%	0.2%
H.P.	4,798	33.7%	3.8%	26.5%	0.3%	0.1%	1.5%	1.6%
ASSAM	94	35.2%	4.0%	9.2%	0.3%	0.0%	0.3%	0.3%
BIHAR		27.6%	4.6%	13.4%	0.2%	0.1%	0.8%	1.0%
MAHARASHTRA	8,486	45.4%	7.2%	9.9%	0.2%	0.6%	2.0%	2.6%
J&K		44.3%	15.5%	17.7%	0.0%	0.1%	0.8%	0.9%
TRIPURA		64.0%	0.6%	35.2%	0.0%	0.1%	0.8%	0.9%
LAKSHADWEEP	Nil	63.9%	2.6%	17.1%	0.0%	0.0%	0.9%	0.9%
PUNJAB		54.8%	10.2%	15.1%	0.0%	0.9%	1.8%	2.6%
CHANDIGARH		99.4%	2.0%	9.0%	0.0%	0.5%	5.4%	5.9%
UTTARAKHAND		46.6%	3.7%	24.7%	0.0%	0.0%	2.9%	2.9%
DELHI		99.4%	9.7%	6.8%	0.0%	0.8%	3.2%	4.0%
ARUNACHAL PR	7	28.7%	0.5%	16.6%	0.0%	0.0%	0.0%	0.0%
DAMAN & DIU		79.3%	8.6%	2.6%	0.0%	0.0%	2.2%	2.2%
DADRA NGR. HAVE	ELI	71.4%	13.3%	10.2%	0.0%	1.2%	3.3%	4.5%
PUDUCHERRY		72.9%	4.7%	15.3%	0.0%	3.1%	1.5%	4.6%

Source: Ministry of Mines Data, NSS Employment Survey.

- 45. As Table 4.1 shows, except for Chhattisgarh and Jharkhand and to some extent Orissa, the relationship between mining employment and employment in basic metal industries is limited and employment in basic metal industries is never a very large portion of total non-agricultural employment.
- 46. Even in these three states, the effect is pronounced due to the presence of large integrated steel plants (Bhilai in Chhattisgarh, Tata Steel and Bokaro in Jharkhand and Rourkela in Orissa) and the relatively low share of overall non-agricultural employment. These large plants do have the ability to generate some spillover effects due to the creation of urban centres but, as shown by the continuing relatively low share of overall non-agricultural employment, they have not been instrumental in generating more widespread growth in non-agricultural employment. Thus, even in these three states, where the benefits of the policy of end-use preference are likely to be the largest, it seems fairly limited.
- 47. The Committee recognizes the aspirations of State governments to develop local industry based on availability of natural resources. However, given the magnitude of employment benefits generated, it is questionable whether the state benefits from freely surrendering what could be significant auction revenues that could be used for broad-based economic development and concomitant employment within the state, in exchange for a "commitment to establish an industry based on the mineral within the state" by a prospective mining firm.

Issues with Respect to Benefit Sharing

- 48. The current proposal for sharing benefits with affected persons, while admirable and necessary in spirit, has certain limitations. It does not account for variations across minerals. Limiting to specific individuals may exacerbate inequality and brings out issues of absorptive capacity. Fundamentally, the institutional structure for this is not clear. In addition there are a number of other administrative problems, viz.,
 - i. Profits are volatile and calculations can be subject to manipulations. Besides, any social costs should logically be included as part of the cost of operations.
 - ii. Establishing transfer prices is a problem since in many instances the mining division of a steel company may not have separate accounts. Hence accounting separation has to be in place.
 - iii. Linking the rate to the royalty limits the extent to which royalty rates can be set since an increase in royalty will automatically trigger an increase in this payment.
- 49. The Committee undertook an analysis of what would be the likely distribution of royalties for the major minerals, viz. iron ore, bauxite, limestone, chromite, copper, zinc and lead on a district-wise basis.⁸ These minerals account for about 90% of total royalty revenue in 2009–10. This was done by distributing the state level royalty amounts for each of these minerals proportionately across districts, given the production share of the district in the state for the particular mineral. Twice the calculated royalty amount was then divided by the population of the district (2001 Census). Table 4.2 depicts the resulting distribution of revenue per capita by districts. As one can see, it is extremely skewed. Only 15 districts have a per capita royalty revenue of more than ₹1000 per person per year. Most districts (520) have no revenue to speak of and another 50 districts have a per capita royalty revenue of less than ₹100 per person per year. Details are given in Annex XVIII, XIX and XX.
- 50. An alternative structure would be to enhance royalty rates as appropriate. Of this <u>enhancement, a specific por</u>tion can be earmarked for transfer to non-lapsable funds in mining ⁸ The draft MMDR Act proposes sharing with project affected people, i.e., a smaller set as compared to the district. The district is being used as the unit of analysis, as it has an existing institutional structure.

districts. This could be done with state agreement or as part of licence conditions. This fund can be managed by Zilla Panchayat /DPC for which a structure could be evolved with flexible guidelines for permissible expenditures so as to adjust to circumstances.

Table 4.2: Distribution of Royalty by District

Twice Amount of Royalty per capita	Number of Districts	Percentage of Districts	Percentage of Population	Percentage of Royalty
Zero	520	82.9%	81.3%	0.0%
1-10	23	3.7%	3.8%	0.1%
11-50	16	2.6%	3.3%	1.2%
51-100	11	1.8%	3.0%	2.8%
101-250	17	2.7%	2.6%	5.2%
251-500	13	2.1%	2.4%	10.9%
501-1000	12	1.9%	1.8%	16.6%
Over 1000	15	2.4%	1.8%	63.3%

Source: Ministry of Mines, Census of India.

International Comparators for Royalty

51. In the context of enhanced royalty rates, it may be argued that the royalty rates are limited by international comparators. The HLC Report recommended that "the method of fixation of rates of royalty should move forward decisively on the basis of ad valorem rates". The move to ad valorem royalties has resulted in substantial increase in revenue, as seen earlier, and is an unexceptionable recommendation, endorsed by this Committee. In India, the presumed objective of increased exploration is the discovery of mineral resources for domestic use. In such a case, it would be the margins available, net of royalties and taxes, in the domestic market, as compared to their margins in the international export market that would determine appropriateness of royalties. Thus, instead of the effect of royalties on export competitiveness, it is the competitiveness of indigenous supply vis-à-vis imported resources that is an issue. As such, while international royalty rates can be a factor in determination of our royalty rates, they should not be used as a cap or a benchmark.

Issues Relating to Sustainability

- 52. Mining leads to depletion of forest cover and loss of biodiversity; water pollution and water level depletion; air pollution from mining activity /generated waste; and pollution from non-closure of mines. One also needs to flag plans for closure of mines, mandatory since 2003, before one can obtain a ML, with the exception of coal. Often, it is alleged that open cast mines are passed off as water bodies or water harvesting structures and mine closures remain little more than a formality.
- 53. However, environmental and forest clearances can also take time and contribute to uncertainty for the private sector. Under the draft MMDR Act, the forest clearance procedure needs to be approved before the invitation of bids. This would be the first stage of in-principle clearance, since the level of detail required for final clearances can only be developed by the

mine allottee. Like the UMPP project, a Special Purpose Vehicle (SPV) can be established and all clearances embedded in the SPV. This would enable the forest clearance process to be completed under the aegis of public ownership and therefore, presumably more immune to issues of impropriety.

54. Air pollution from mining waste can be limited by following best practices internationally. These include, excavation from a new pit to start only after the first is exhausted, so that excavations from the second pit can refill the first; separating out and managing the top soil to retain its fertility; following safety measures regarding height and slope of overburden dumps; and drainage systems to handle run-offs after rains, etc. Mine closure must be mandatory for all minerals, including coal. The closure plans need to pay attention to the rehabilitation of the workers and communities who were dependent on the mining activity for sustenance. The financial surety that is currently provided for needs to be increased substantially. In other words, the regulation related to mine closure also needs re-drafting.

Small Mines

- 55. Many of the aspects discussed above are specific to large mines, whereas small and medium scale mines have distinctly different characteristics. The mining industry in the country is characterized by a large number of small and medium scale mines.9 There are very few official statistics on small or medium scale mines. The Indian Bureau of Mines (IBM) Nagpur, does not monitor them, especially if they are engaged in extracting minor minerals like sand or stone. These small and medium scale mines are largely unregulated; many are illegal; produce small quantities; are labour intensive in nature; are hardly monitored and records are not kept; they practice little of either environment of mineral conservation; but cumulatively, have a huge potential to bring in sizeable revenue to the state. One of the reasons why these mines are not monitored or regulated and cause significant damage to the environment is that mines that have a lease area of less than 5 hectares (making them small mines) do not need Environmental Impact Assessments (EIA) to be done. And yet, small and medium scale mining is important. They generate considerable employment. They are also not seasonal and are even cost-effective. So they are a source of vital livelihood for the poor people from adjoining areas. Moreover, they are important from the revenue point of view. At the same time it needs to be ensured that they do not damage the environment/ecology in a significant way.
- 56. The government also needs to bring the small and medium scale mines under the ambit of a legal framework and then needs to monitor their activities, with the objective of bringing them back into the mainstream. Towards this end, the small and medium scale mines need a separate policy, which besides regulation and monitoring, also looks into the aspects of safety, better working conditions for the poor people engaged from the adjoining regions, and imparting education on scientific mining covering both environment and mineral conservation. The policy should also address issues specific to different clusters of small mines. The policy should be strict with illegal mines, as well as under-reporting practices of the value of the mineral. For example, under-reporting of the Fe content enables the iron ore mines to escape with a lower royalty payment. More mines or bringing more mines under regulatory and accounting ambits would naturally increase revenue generation.

Recommendations

57. Based on the discussion, the recommendations of the Committee are placed below.

⁹ Although there is no internationally accepted definition for small mines, the National Institute of Small Mines, Kolkata, defines small and medium scale mines based on production limits. It defines small mines as those that produce minerals up to 0.1 Million Tonnes Per Annum (MTPA) and medium scale mines as those that produce minerals between 0.1 to 0.5 MTPA. Other definitions are based on employment levels, level of mechanization, mining area or level of investment.

- 58. The Committee recommends that a scheme be evolved for reform linked capacity building of State mining departments with a view to improving their capability and resources for prospecting, public accessibility of information on fields based on information prior reconnaissance and prospecting, improving the monitoring and regulation of mines and production and reducing the time taken for approvals. Based on data from RL and LAPL, State governments should immediately develop the capability for analysing the generated data and offering suitable prospects for competitive award. Since the State mining departments will be primarily responsible for implementing reform in the proposed MMDR Act, this is an essential component for success.
- 59. The Committee advises that GSI complete its geophysical and geochemical mapping expeditiously, with the assistance of outsourcing and service contracts if necessary, so as to develop potential areas for prospecting, so that such prospects can then be competitively awarded, as provided in the legislation.
- 60. The Committee recognizes that the proposed MMDR Act is a significant step towards modernizing and reforming India's mining industry. It is therefore all the more important that the proposed Act impose only such restrictions as necessary and accommodate a variety of allocation mechanisms, provided they are open, transparent and competitive.

Accordingly, the Committee recommends that sections on bidding in the proposed new MMDR Act should be capable of accommodating a variety of policies and processes within the overarching National Framework and allow States to move towards clear and appropriate bidding processes. In particular, the Act should not preclude any form of open, transparent and competitive bidding.

Such guidelines, as felt necessary, can be issued as part of the Mineral Concession and Development Rules to allow the bidding mechanisms to reflect different levels of maturity in institutional evolution. This will enable incorporation of improvements from actual implementation experience.

- 61. The Committee recommends that for minerals likely to be found as surfacial deposits and where prospecting does not require high technology, State governments should be incentivized and enabled to take up prospecting and exploration so that adequately prospected ore bodies can be put to bid, as also advised by the Hoda Committee.
- 62. The Committee notes that the proposed MMDR Act precludes the award of certain types of licences through a competitive bid process. The Committee recognizes that LAPL is a special instrument for locating deep seated and concealed deposits of minerals and that it is important to incentivise high risk exploration in these areas. The Committee also recognizes that RL and LAPL are not awarded through a competitive process in many countries that have internationally recognized mining sectors. However, it is also true that the scenario for minerals, may be undergoing a shift, which can result in far reaching changes. As noted earlier, it is important that the proposed MMDR Act not preclude forms of allocation that are open, transparent and competitive. This is especially important at a time when the market fundamentals of sector may be in transition. The Committee would thus recommend that the appropriate provisions of the draft Act may be amended so that the Independent Regulator is tasked with reviewing licensing systems and can make recommendations to include suitable option of awarding any of the concessions through an appropriately designed competitive bid process.
- 63. The Committee recognizes the aspirations of State governments to develop local industry based on availability of natural resources. However, the decisions about location of industry for downstream value addition and end use are techno-economic decisions best

left to the entrepreneur. The location of industry is often decided more by the availability of infrastructure, human capital and levels of overall governance. The State will be able to more effectively incentivize the growth of local industry by transparent systems of optimizing revenue generation through bidding processes appropriately designed for the level of knowledge about mineralization and using the revenue for creating conducive overall conditions for investment.

- 64. The Committee recognizes that royalty in some form, whether ad-valorem or specific or profit related, is the primary continuing source of revenue from mining. This needs to be levied on scientific lines to realize better and more sustainable revenues on a transparent basis. However, currently the development of mineral-bearing areas, which generate the revenue, leaves much to be desired. The Committee recommends that the incidence and structure of royalty be reviewed at preset intervals through a transparent process so as to represent a fair value for the mineral. It also recommends that a significant portion of the revenue be used to ensure all round development of the mineral-bearing areas, for example, through a non-lapsable fund in the mining districts and transparent and flexible district level mechanisms including Zilla Panchayats and District Planning Committees.
- 65. The Committee recommends that regulations related to mine closure should be periodically revisited to ensure that the provisions therein, including the financial surety are adequate to pay attention to the rehabilitation of the environment to the maximum feasible level and support for workers and communities who were dependent on the mining activity for sustenance.
- 66. The Committee recommends that for large mining leases, an SPV, as in the case of the UMPPs, could be established in which all preliminary clearances can be embedded. This would enable the clearance process to be completed under the aegis of public ownership and therefore, presumably more immune to issues of impropriety.
- 67. The Committee recommends that immediate steps be initiated in association with the states to record the number of small mines and people engaged therein through extensive surveys.

Conclusion

Minerals are an essential part of the development strategy of a country. In most instances, Indian mineral production has struggled to catch up with the kind of demand that the recent spurt in economic growth has created. In other cases, notably iron ore, Indian production has helped to sustain economic growth in other countries. In the midst of all this, the perception persists that mineral bearing areas in India, as in other areas around the world, remain underdeveloped. Over the past few years, we have been engaged in an exercise that is trying to establish a balance between many aspects, viz.: balancing the need to discover minerals and provide for a extraction regime that shares the revenue fairly between the discoverer, the state and the affected people; balancing the need for mineral extraction and mitigating its social, intergenerational and environmental costs, etc. These trade-offs are present in many other sectors but appears most visibly in minerals. The suggestions of the Committee and the new framework of the MMDR Act are an attempt to strike the right balance. However, even as one does so, one must remember that the rightness of the balance is but an aspect of the times and the frameworks that are established need to be sensitive to an evolution in the sense of balance as our society progresses.

5. PETROLEUM

Introduction

1. Ever since oil was struck off the Maharashtra coast in the sixties and the first well sunk at Bombay High in 1974, it has been our fond hope that domestic supplies will one day be discovered to reduce our dependence on imported oil. Once that imperative was to conserve foreign exchange, today it is more strategic. Since that day, about 300 block allocations have been made, through various methods, to try and discover more oil in India and while some discoveries have been made, especially in gas, which is discussed in the next chapter and where the story is a little more positive, domestic oil production has not kept pace with growth in consumption and our dependence has only increased over time.

Notion of 'Allocation'

2. The notion of allocation in petroleum can, in principle, be extended to both the allocation of blocks for exploration and production (E&P) and to the allocation of the product, given that there is a regime for pricing and allocation of certain petroleum products. However, the Committee decided that in view of the number of recent reports on pricing of petroleum, it would focus on the issue of allocation of blocks alone.

Existing Mechanism

3. Petroleum regimes around the world can be classified into three broad groups, (a) Concessions, based on royalty and taxation, where the ownership of the resource is with the concessionaire (b) Production Sharing Contracts (PSC), where the sovereign retains the ownership and there is a contractually predetermined sharing of revenues and (c) Service contracts where the concessionaire's remuneration is not dependent on prices. Most structures in the real world are a mix of these varieties. In India, with the exception of Nomination Petroleum Exploration Licenses (PEL), we have a PSC type regime, along with royalty and corporation taxes for blocks awarded under New Exploration and Licensing Policy (NELP), which became effective in 1999 and about 28 exploration blocks signed prior to NELP.

Nomination Petroleum Exploration Licenses (PEL)

- 4. PELs were given to National Oil Companies (NOCs), viz. ONGC & OIL on nomination basis before NELP regime. NOCs were given PELs on 4+1+1 year basis as per P&NG rules 1959. Once the first cycle (6 years) was completed, on request from the NOCs, GoI used to give them second cycle of re-grant. This process of re-grant continues till NOCs convert the PELs to MLs or relinquish the blocks.
- 5. After implementation of NELP in 1999, awarding PELs on Nomination Basis was discontinued by Gol. It was found that there were still many nomination PELs where the NOCs were already actively working and investing. Gol decided to allow the NOCs to continue in these nomination blocks for a fixed period of time, and a new re-grant policy was implemented for such blocks, vide office memorandum No O-12013/3/95 ONG/ D-IV dated March 13, 2002.

6. As per that policy, NOCs were first allowed to carry out exploration activities for first 4 years of re-grant, after relinquishment of 25% of the original area. Extension for one more year is granted if the NOCs committed to drill at least 1 well in the PEL. If there is no lead or discovery in the PEL, the PEL stands relinquished after completion of 5th year. If there is any lead or discovery in the PEL, 2 more years are granted to appraise the lead, provided that operator relinquish 50% of the original area. Thus, at the end of a maximum of seven years, NOCs need to convert the area into ML or relinquish the PEL. The continuance of all these re-grants / extensions is subject to satisfactory performance and completion of work programme given by NOCs in respect of each PEL, as reviewed by DGH and the Ministry. Table 1 shows the area and number of nomination blocks with NOCs. All seventeen offshore blocks, with a area of 23,492 sq. km. are with ONGC, while thirteen of the remaining forty seven onshore blocks are with OIL (an area of 4408 sq. km.), the rest with ONGC. As per current policy, all nomination PELs will either be converted to ML or relinquished by 2013.

New Exploration Licensing Policy (NELP)

7. NELP, adopted since 1999 provides a level playing field to private investors as applicable to National Oil Companies (NOC) for exploration of acreages offered. Under NELP, the same fiscal and contract terms are offered to all domestic and foreign companies. Blocks are offered through an international competitive bidding system on the basis of transparent and quantifiable bid evaluation criteria indicated in the Notice Inviting Offers (NIO). The blocks are awarded to successful bidders based on the bid evaluation criteria, and on the recommendation of the Empowered Committee of Secretaries, after obtaining approval of the Cabinet Committee on Economic Affairs. Marketing rights are given under the laid down policies and contractual framework within the overall utilization policies.

Table 5.1: Area (in sq. km.) and Number of Nomination Blocks with NOCs

	2001	2002	2003	2004	2005	2006	2011	Total	
Offshore		2037 (2)	1296 (4)	19969 (9)	190 (2)			23492 (17)	
Onshore	794	2872	12450	7478 (11)	366	1590	531	26080 (47)	
Total	(4) 794 (4)	(6) 4909 (8)	13746	27447 (20)	(4) 556 (6)	(3) 1590 (3)	(2) 531 (2)	49572 (64)	

Source: MoPNG

- 8. Under NELP, so far eight rounds of bids have been completed and the ninth round, where 34 exploration blocks have been offered is ongoing, though bidding has been completed. Production sharing contract for 235 exploration blocks have been signed. Out of the estimated sedimentary area of 3.14 sq. km., a total of 58% has so far been brought under exploration. Investments made by Indian and foreign firms was of \$14.8 billion as of October 1, 2010.
- 9. These bids are structured such on the basis of a weighted average of the exploration commitment and the profit share, calculated as a pre-tax investment multiple (PTIM). This PTIM was a sliding scale profit sharing parameter till NELP VI and thereafter it is on a linear scale. It is the ratio of the Contractor's cumulative net cash flow to cumulative exploration and development

cost. It increases when the growth in cumulative net cash flow to the Contractor exceeds the growth in cumulative exploration and development cost.

- 10. So far, commercial production of oil and gas has commenced from three NELP blocks, as shown in Table 5.2 below. Crude oil procured by refineries from domestic oil producing companies, viz. ONGC, OIL as well as Private/Joint Ventures is based on international prices.
- 11. The PTIM makes NELP a variant of the PSC model. In addition, the Indian system also has a royalty component. In the NELP model, Government receives profit petroleum in addition to royalty as applicable on production. Royalty is receivable irrespective of whether project is profitable or loss making to the contractor and is not linked to the cost incurred by the contractor. The royalty rates are currently 12.5% for on-land areas, 10% for shallow and 5% for deep-water areas (beyond 400 metre iso-bath) for the first seven years and 10% thereafter. In the stand alone royalty model, only royalty is receivable and not profit petroleum. In the NELP model, the operator can substantially recover his costs before the sharing of profit. However, once these costs are recovered, the sharing with the government is often large.

Table 5.2: Production from NELP Blocks

Block	CB-ONN-2000/2 (Gas Field)		CB-ONN-2000/1		KG-DWN-98/3	
Year	Oil (MMT)	Gas (BCM)	Oil (MMT)	Gas (BCM)	Oil (MMT)	Gas (BCM)
2004-05	-	0.083	-	-	-	-
2005-06	-	0.105	-	-	-	-
2006-07	-	0.116	-	-	-	-
2007-08	-	0.102	0.021	0.0003	-	-
2008-09	-	0.096	0.029	0.0009	0.129	0.079
2009-10	-	0.089	0.032	0.0008	0.502	15.105
2010-11 (up to Feb,11)	-	0.053	0.031	0.0008	1.008	18.854

Source: MoPNG

Illustrative Example

- 12. It is instructive to consider a hypothetical example to clarify the difference between the royalty and the PSC system, especially since this also has relevance for the mineral allocation policy discussed in the previous chapter. This example is illustrative and does not represent the actual situation in the Indian hydrocarbon sector. For example, as noted above, India has elements of both royalty and PSC which are separated in the example for ease of exposition. Neither are the rates of royalty and production share related to an actual situation.
 - i. **Royalty**: A fixed royalty of 25% regardless of the price and the level of production.
 - ii. Production Share Contract (PSC): There is no royalty. The operator is allowed to

allocate revenue towards the recovery of cumulative investment, up to a maximum of 50% of the cumulative investment. Of the remainder, he has to share 40% with the government until such time as the cumulative investment is not recovered. Once it is recovered, he has to share 60% of the revenue.

- 13. The allocation of revenue is shown in Table 5.3 for two prices, viz. 40 and 100 units per quantity unit of production. The cumulative investment is assumed to be 10 billion units, production at 250,000 units of production per day. As one can see, at low prices, the royalty system generates revenue for the government, while the pure PSC system does not do so until the recovery of cumulative investment. Even when there is a large increase in prices, the pure PSC system does not generate proportional increase in revenue, while there is a proportionate increase in royalty revenue. However, once the cumulative investment is recovered, the PSC system generates substantially more revenue for the government than the royalty system, especially in a situation of high prices.
- 14. Once taxes are included, the pattern of the results does not change, though there is some government revenue in the pure PSC, even when cumulative investment is not recovered.

PTIM and Gaming

- 15. The Indian system, along with a royalty regime has a variant of the production share system called the pre-tax investment multiple, which is biddable. The bids are usually such that the sharing of revenue with the government increases rapidly once the ratio between the cumulative investment and net profit crosses certain thresholds. In such cases the operator will have an incentive to game the system, i.e., modify its investment behaviour in order to keep the ratio from crossing the threshold. The savings in sharing of revenue with the government often more than pays for the incremental investment undertaken. Similarly, there is an incentive to keep production below certain threshold levels in order to keep the rate of sharing with the government low. This kind of incentive is less in royalty systems. However, the present bidding of profit sharing on a linear scale, post NELP VI, has made 'investment management' or gaming, with a view to control profit sharing much more difficult, though this possibility exists to some extent in the PSCs signed prior to the change.
- 16. Figure 5.1 shows a particular example of the nature of such incentives. The relationship between the pre-tax investment multiple and the share of contractor profit petroleum changes dramatically once the PTIM crosses 2.5, with the government's share increasing from 28% to 85%. It is useful to remember that this schedule is bid by the operator and not determined by the government. A high share at some PTIM will help to win the bid, depending on the financial model of evaluation used, but it does raise concerns that such a radical change would provide very strong incentives for any operator to adopt all investment and strategies possible to ensure that the PTIM stays within the 2.5 limit. The institutional framework for determining the PTIM is thus crucial for proper management of the PSC.

Management Committee

17. For reasons noted above it is critical to be able to monitor the extent of investment taking place, first, during the exploration phase for the purposes of ensuring compliance with bid conditions and second, during production, to ensure that the appropriate revenue sharing takes place. In India, both these roles are performed by the Management Committee (MC), which approves the investment plan and has two nominees of the government and one from

Table 5.3: Example of Private and Government Shares in Royalty and PSC Models

	Royalty	at 25%	Production Sharing Contracts			
				covery of	After recovery	
Price (units per quantity unit)	40	100	40	100	100	
Cumulative Investment (million units)	10,000	10,000	1 10,000	10,000	10,000	
Annual accounting Amortization	2,000	2,000	2,000	2,000	2,000	
Quantity produced (quantity units per day)	250,000	250,000	250,000	250,000	250,000	
Revenue (million units)	3,650	9,125	3,650	9,125	9,125	
Royalty payments (million units)	913	2,281				
Cost allocable under PSC (million units)			I 3,650	5,000	-	
Revenue available for sharing (million units)			 	4,125	9,125	
PSC Revenue to Government (million units)	-		 	1,650	5,475	
Profit to Firm (million units)	738	4,844	1,650	5,475	1,650	
Increase in profit (%) (compared to royalty revenue at price of 40)		657%	 	742%	224%	
Increase in Government Revenue (%) (compared to royalty revenue at price of 40)		250%	I I n.a. I	181%	600%	
Tax at 30% of profit (million units)	221	1,453	495	1,643	495	
Firm share of revenue (million units)	2,516	5,391	3,155	5,833	3,155	
Government share of revenue (million units)	1,134	3,734	I I 495 I	3,293	5,970	
Increase in firm share (%) (compared to royalty revenue at price of 40)		214%	 	232%	125%	
Increase in Government share (%) (compared to royalty revenue at price of 40)		329%	44%	290%	527%	

Source: Committee's calculations

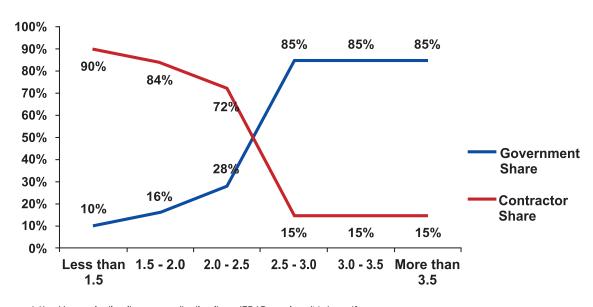


Figure 5.1: Contractor and Government Share of Profit Petroleum/Gas in a Specific PSC

Source: http://www.indiaoilgas.com/Indiaoilgas/EP/Overview/Nelp.pdf Note: The profit share to the government is at an annual cost recovery limit of 90%

each of the companies. In the PSC system therefore, the Management Committee is a critical institution. The government nominees are usually from DGH. The staffing of DGH largely is composed of persons on deputation from the NOCs who return to their parent company after a tenure at DGH. The monthly remuneration to staff is as per the rules of concerned parent organisation.

Open Acreage Licensing Policy (OALP)

18. The current NELP requires the government to select blocks for offer. The Committee was informed by the Ministry that a proposal to move to an OALP is being contemplated. This would allow firms to examine data available in an open access (could be subject to a small fee) National Data Repository and indicate to the government its desire to bid for a specific block. In such an instance, the selection of the block is by the market and not by the government and is likely to attract greater interest. However, the process of bidding out this block subsequent to such a request needs some attention.

National Data Repository

19. This would however require the creation of a National Data Repository (NDR). A NDR of reliable exploration and production data for India with provisions for seamless access and online data management would be an essential part of an OALP. Such a NDR would make non-proprietary data available after the mandatory period from explored and relinquished blocks. This is expected to give further momentum to oil and gas exploration activities in the Indian sedimentary basins. Under OALP, acreages can be chosen by the bidders on the basis of grid pattern, the data for which will be available and accessible through NDR. This will provide flexibility to the E&P companies for defining blocks of their choice, for subsequent award of the blocks by the Government on competitive bidding basis. The core objective of NDR is:

- i. To validate, store, maintain and reproduce high quality and reliable geoscientific data.
- ii. To facilitate efficient data reporting, data exchange, and data trading among existing players including all geo-scientific agencies.
- iii. To improve DGH's ability to monitor and control the E&P activities and reporting.
- iv. To support an open acreage system for an improved Global E&P Business Environment in India.

Issues with existing mechanisms

Transparency

- 20. On the face of it, the NELP award process is well established and reserves have increased over time. Production, especially of gas, has also increased. The bid process is well understood. However, the nature of the bid is such that there are likely to be post bid issues. This is for the following reasons.
 - i. First, the sharing with government requires that the exploration investment is monitored and audited. One can promise a large exploration investment to win the bid but then one may not follow through on the commitment. If so, there may be penalties involved. Figure 5.2 shows that in the first five NELP rounds, there are a number of blocks where actual expenditure was less than committed expenditure, even after accounting for relinquishment. In many of these, penalties have been levied, e.g. in round 1 blocks, penalties were levied in five of the eleven relinquished blocks where actual expenditure was less than committed expenditure.
 - ii. Second, during the PTIM production phase, there are reports of disagreement between DGH and the contractor over a feasible production plan in certain blocks. Similarly, there have been questions about whether expenditure has been overstated. The problem of gold plating is a problem in many other industries where there is costplus regulation, e.g. in the electricity sector in the United States and even in Indian SERCs. While it is difficult to resolve with complete certainty, the manner in which it is addressed in these industries is through an open and independent regulatory process where the cost submissions from the operator are put out in the public domain for contestation.
 - iii. Third, there have been complaints that the MC process is not administratively functioning as efficiently as it should.
- 21. In this context, the Ministry has clarified that the investment commitments at the bidding stage are in terms of work programme and not financial commitments. This explains the difference in Figure 5.2. The PSC has penal provisions for non-completion of minimum committed work programme. In case of non-fulfilment of committed exploration work programme, an in-built mechanism exists for levy of equivalent penalty which cannot be avoided. Till date, an amount of over USD 66 million has been levied as penalty. The block wise details of penalties are given in Annex XX. Further, under NELP, hiring of services and procurement of materials is as per the accounting procedures laid down in the PSC, which is based on competitive procurement and mandatory for all operators. Further, exploration and production expenditures are audited on

annual basis by the Government appointed auditors including CEAG. In addition, the annual work programme and budget of the NELP block is discussed, reviewed and approved in the Management Committee. Therefore, the gold plating of investment would be very difficult under the existing arrangement. Finally, MC meetings are being held as per the provisions of PSCs for all blocks.

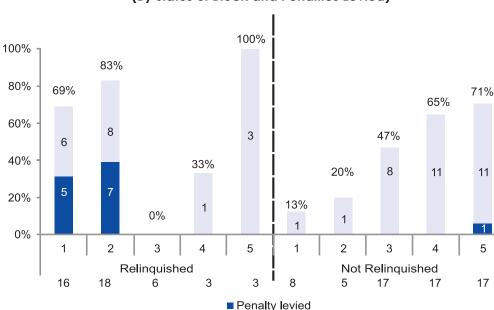


Figure 5.2: Percentage of blocks not meeting investment commitments by NELP round (By status of Block and Penalties Levied)

Source: MoPNG. Later blocks have not been included since sufficient time has not elapsed.

Figures within bars refer to number of blocks. Figures at bottom of bar refer to round number and total number of awarded blocks in the round by status of block (whether relinquished or not)

Note: Not meeting investment commitments will not attract a penalty, if work program is met.

Regulatory Transparency and Effectiveness

- 22. Another reason for the lack of transparency is the manner of contract administration and regulation. The PSCs provide for all major decisions to be approved by the MC, with recourse to the Government in a limited number of situations. As contracts moved into discovery and development stages, many decisions taken in the MC impact profit petroleum, and hence possibly have significant financial implications The MC, as noted earlier, has one nominee from each of the companies (two if the licensee is a single company) and two nominees of the government, who are also the Chairman and Deputy Chairman. The Government has been appointing Director General, DGH as the Chairman of the MC and his alternate usually participates in the meetings. Decision making is by super majority (with major decisions requiring unanimity) with a veto for the Government nominee. There are a number of issues that arise in the current situation, viz.:
 - i. Separation of the policy maker, the regulator and the operator: In this context, while there is an apparent organizational separation between MoPNG, DGH and the NOCs, government ownership of NOCs necessitates more attention to ensuring this separation. In this context, the nature of staffing of DGH, whereby DGH staff regularly return to the company they are regulating is a matter of concern, e.g., a MC for

- NOC operated blocks therefore consists of NOC staff and personnel on deputation from the NOC to DGH, who will return to the NOC in the future. This does not give an appearance of independent oversight.
- ii. **Inter se equity across Block**s: Concerns about differing principles being adopted in different MCs can be addressed if there is a common institutional structure with open and transparent functioning.
- iii. **Dispute resolution**: The same issue arises with dispute resolution in cases of disagreement in the MC. A separate institution will lead to the development of institutional precedence and limit the number of disputes by clarifying the contractual position. This will become more important as the number of contracts increase.
- iv. Approvals with implications for profit petroleum: A number of the decisions of the MC have financial implications since, given the structure of the PSC; government revenue, though its share of profit petroleum, depends on the PTIM. Both elements of the PTIM, cumulative revenue which is influenced by production and cumulative investment, are affected by MC approvals. Due to the cumulative nature, particular decisions have financial outcomes far into the future. Therefore, it is important that these decisions be entrusted to a body that has the ability to access resources to undertake the required financial and technical due diligence and the mandate to conduct itself in an open and transparent manner.
- v. Data access and Block Relinquishment: Apart from issues decided in the MC, there are others where the process is less than transparent. Data access and block relinquishment are two such examples. The creation of a fee-based open access data repository does not appear to have been a priority. Availability of high-quality data in a non-discriminatory manner is a key ingredient of making the exploration regime attractive. This includes making non-proprietary data available after the mandatory time period land and ensuring that blocks are relinquished after the specified period so that others, should they so wish, could explore them.
- 23. The DGH acts as a technical support arm of the Ministry. This could be an attached office of the Ministry, but the procedures should allow sufficient transparency as to the contract administration function, since it has large financial implications as well as corporate confidentiality issues. This would permit Government control over contract administration; housing of expertise in a technical organization to advise the Government and if appropriate procedures are followed, efficient and transparent contract administration. In addition, an independent upstream regulator can be established to focus on regulatory functions. Indeed, there have been many such recommendations, going back over ten years to the Naresh Narad Committee in 2001, which recommended the Upstream Hydrocarbon Regulatory Board be established, with a technoadministrative role for DGH, as part of the Ministry. The Expenditure Reforms Commission in its Sixth Report (20th June 2001) also notes that the government was "proposing to create a statutory authority for regulation of reservoir matters". Recently, the Integrated Energy Policy noted that the "current upstream regulation provided by DGH is neither independent nor comprehensive in a technical sense ...current arrangement needs to be strengthened and made independent". Both the technical attached office and the regulator need to have independent staff and not subsist with staff on deputation. Given the compensation in the oil and gas sector, this has implications for the compensation of regulatory staff. While staff can be drawn from NOCs and other regulated companies, there needs to be restrictions on subsequent employment in such regulated companies. Such a revolving door policy is not congruent with neutral regulation. There is also some concern whether the contractual institution of the MC can be consistent

with an independent regulator. Recently, the Supreme Court has stated: "A regulation... as a part of regulatory framework, intervenes and even overrides the existing contracts between the regulated entities inasmuch as it casts a statutory obligation on the regulated entities to align their existing and future contracts with the said regulations". The Indian experience in this regard is also that regulatory institutions have been formed where contractual arrangements were in existence in many infrastructure sectors. This, in itself, should not thus be a major impediment. Until such time as this is done, there should be greater disclosure of existing approval processes, such as the meetings of the MC. Documents approved by the MC and the reasons thereof should be in the public domain. The disclosure levels of the Norwegian Petroleum Directorate, on which the DGH was originally modelled can be a good starting point in this regard.

24. However, in the context of the above discussion, the Ministry's point of view is that a separate independent regulator for the upstream sector is not required for reasons that are given in a separate note submitted by MoPNG.

National Data Repository

25. The issue of a NDR is hanging as noted above. It seems to have been in process for an inordinate amount of time and progress has been remarkably tardy. It seems that the data dissemination structure is taking time to put in place, though the data is accessible as per the contractual obligations. It is instructive that almost ten years ago, the Parliamentary Standing Committee on Petroleum and Chemicals for the Thirtieth Lok Sabha in 2000 had this to say:

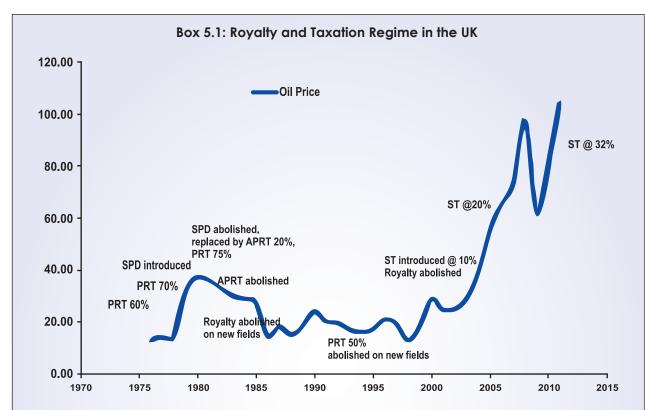
"The Committee are amazed to note that although DGH was created in 1993 as a custodian of all Upstream Petroleum data, the Ministry /DGH have not been able to finalise and implement the National E&P Data-base and Archive during the last 9 years. This was supposed to be done on priority basis. This shows the casual approach of the Government towards such an important issue of national priority."

- 26. The Committee was informed that DGH will be inviting bids for establishing NDR through international competitive bidding basis and the award of the job contract is likely to be completed within the current financial year, i.e., 2011-12. While DGH will have overall control of the NDR, its operation will be on a turnkey basis by the contractor, which will provide all the necessary goods and services to build, populate and operate the NDR. The estimated time for operationalization of NDR will be about two years after award of job contract.
- 27. However, given prior experience, it may be prudent to start complementary activities in parallel. Each firm has its own data repository, including the NOCs. A beginning could be made by encouraging the various firms who have undertaken exploration, including the NOCs to share the data for the relinquished blocks, which they have already submitted to DGH, on a publicly accessible server, using their own data repositories, so that the exploration data begins to come into the public domain, even though the data structure may not be completely uniform.

Fiscal Regime

28. There are occasionally some comparisons made between PSC regimes and royalty and taxation (R&T) regimes in terms of incentives for exploration, etc. Since the share of government is relatively high in a PSC, once the investment is recovered as shown in Figure 5.1 above, there is concern whether this may disincentivise production. Of course, similar questions are asked

about a R&T regime, since payments start even before exploration costs are substantially recovered. More to the point, in a world of volatile prices, it is difficult to preserve "fairness" in the share between government and contractor in a R&T regime. Box 1 shows how in the United Kingdom, the government constantly tried to fine tune the tax regime to adjust for the change in international oil prices. While this is not conducive to stability, the pressure on the government to maintain balance is very high, especially when petroleum firms are seen as benefiting through no effort of their own.



Concessions based primarily on royalty and taxation based often need frequent readjustment. As shown in the chart above, in the UK, as the price of oil rose from 1973 to 1981, PRT was increased, first from 45% to 60% and then to 70%, In 1981, a Supplementary Petroleum Duty (SPD) was introduced. When the price began to fall after 1983, some of these duties were reduced or removed. But after 2000, as the oil prices started to rise again, the UK government increased taxes twice within four years. This constant effort to adjust the fiscal regime in order to fairly share the gains and losses of price changes is a feature of oil concessions where the primary basis is royalties and taxes. Some countries like China and Madagascar try to build in flexibility in the royalty regime, by using a sliding scale linked to production instead of a fixed royalty rate, to avoid frequent changes in the regime though actual rates do change.

Source: Carole Nakhle Mining and Petroleum Taxation: Principles and Practice, presentation at IMF Conference on Revenue Mobilization and Development Washington DC, April 17-19, 2011, accessed at http://www.imf.org/external/np/seminars/eng/2011/revenue/pdf/nakhle.pdf

Note: PRT: Petroleum Revenue Tax. ST: Supplementary Tax. SPD: Supplementary Petroleum Duty. In addition, there is royalty and corporation tax.

29. In such a world, the key benefit of a PSC is that the share to the government rises as the price of petroleum increases. As such, the need to readjust is low, since the sharing is designed to accommodate changes in prices. However, even PSCs, like in India, have elements of royalty

and corporation tax in them. Adjustments to these make the fiscal regime unpredictable. Occasionally, however, non-discriminatory adjustments to corporation taxes are made that apply to all businesses in the country. Such changes are part of normal business risk and should not affect the investment climate unless they are frequent. To some extent, if needed, tax changes can be compensated for by recalibrating the royalty on petroleum exploration. Overall, however, as shown in Figure 3, India is a relatively attractive regime in that the share of of total pre-tax NPV returned to the government is around 56% (this number would vary if the prices of oil and gas stayed high, as currently). This puts it in the second lowest quartile among countries internationally, i.e. more fiscally attractive than Brazil, Norway and Indonesia.

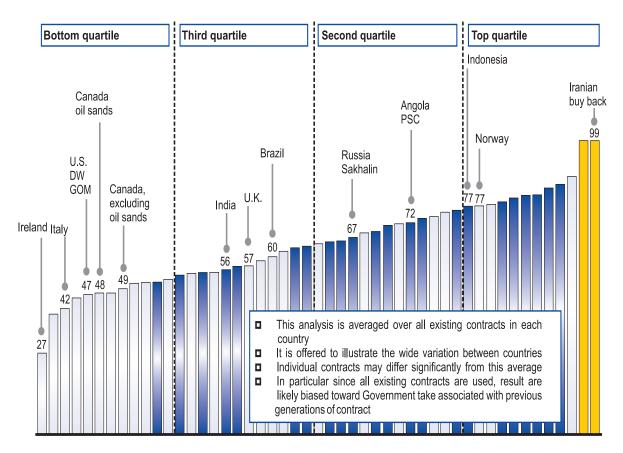


Figure 5.3: India is a relatively low-take regime

Source: Wood Mackenzie Global Economic Model (February 2009 version)

Note: Cashflows discounted at 8%. Taxes calculated on an "earned" basis. Brent price is held constant in real terms at \$ 60. Government take is defined as share of total pre-tax NPV.

Participation

30. While the overall level of participation seems robust, this picture is not as clear when block wise data is analysed. The level of participation, especially in offshore and deep-water blocks has been relatively low in recent NELP rounds. As Figure 5.4 shows, on average, there was only one bid per offshore and deep-water block in the eighth and ninth rounds. A more disaggregated analysis in Table 5.4 shows that few blocks have more than two bidders and interest is often restricted to only a few blocks per round. In the latest round, most of the blocks attracted only one bid and no shallow water and deep-water block had more than two bidders.

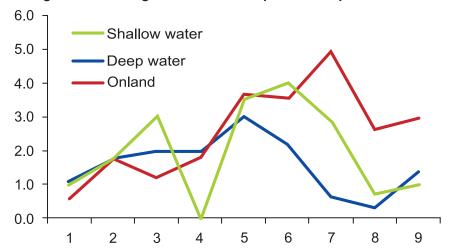
31. It is also the case that much of the investment and most of the blocks even in NELP are with NOCs. This is in addition to the PELs referred to earlier. Figures 5.5 and 5.6 show that while there has been some domestic private investment, foreign investment (not counting minority interests in consortia led by NOCs or domestic investors) has been consistently low, though as a share of investment, their contribution has been a little better.

Table 5.4: Distribution of Number of Bids by NELP Round and Type of Block

Number of Bids	1	II	Ш	IV	٧	VI	VII	VIII	IX
Deep water									
0	5	0	0	1	0	3	8	16	0
1	4	2	0	2	2	4	8	8	5
2	1	6	9	7	2	7	2	0	3
3	1	0	0	1	1	8	0	0	0
More than 3	1	0	0	1	1	2	0	0	0
Shallow water									
0	10	0	0	1	0	0	2	15	0
1	9	5	1	0	1	2	1	9	5
2	5	1	1	0	0	1	1	2	1
3	1	1	3	0	0	0	1	1	0
More than 3	1	1	2	0	1	3	4	1	0
Onland									
0	6	2	3	1	0	0	3	3	0
1	2	4	5	3	1	7	9	3	4
2	2	1	1	4	4	5	4	3	6
3	0	0	2	3	3	3	1	5	2
More than 3	0	2	0	0	4	10	12	4	7

Source: MoPNG

Figure 5.4: Average Number of Bids per block by NELP round



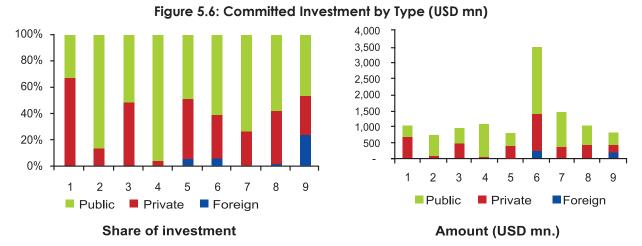
Source: MoPNG

Figure 5.5 Block winners by Type 60 100% 50 80% 40 60% 30 40% 20 20% 10 0 0% 4 7 7 9 1 2 4 5 6 8 3 Public Private Foreign Public Private Foreign

Number of Blocks

Source: Committee calculations from data provided by DGH

Share of Blocks



Source: Committee calculations from data provided by DGH

Table 5.5: Block and Investment by Ownership Type

		No. of Blocks	Committed	
	Total	NELP	PEL	NELP Investment (USD mm)
Public	222 (67%)	158 (59%)	64 (100%)	7,325 (62%)
RIL	40 (12%)	40 (15%)		2,474 (21%)
Other Domestic	57 (17%)	57 (21%)		1,486 (13%)
Foreign	13 (4%)	13 (5%)		495 (4%)
Grand Total	332	268	64	11,780

Note: This does not include the 28 blocks allocated outside the NELP and PEL processes. For NELP IX, since contracts are yet to be concluded, it considers preferred bidders as winners

- 32. Domestic investment interest has been considerable from the start of the NELP process, where they secured over half the blocks on offer and committed around two thirds of the total investment. However, NOCs have not lost their pre-eminence, bidding aggressively in all rounds. Indeed, they tend to offer both large commitments and high shares. As one can notice from comparing the first panel in Figure 5.5 and 5.6, the share of NOC investment is always slightly more than the share of blocks won.
- 33. As such, it cannot unequivocally be said that NELP has succeeded in attracting much foreign investment into the oil and gas sector. However, as seen in Table 5.5 there has been a significant, though minority share, from the domestic private sector. Foreign investors have usually chosen the joint venture (as part of both NOC and private led consortia) route to participate in Indian oil and gas exploration. To some extent, this can be because of reasons advanced above, where the ex-ante chances of finding oil or gas is low. However, it can also be due to other reasons that arose in the consultations of the Committee, viz.:
 - i. Appropriate firms, e.g. mid-size firms, are not being targeted during marketing
 - ii. Inappropriate blocks are being offered (the OALP would help in this aspect)
 - iii. Insufficient data is being provided
 - iv. Concerns about the sanctity of contracts
 - v. Concern about asymmetry of information during the pre-bid phase
 - vi. Concern about asymmetry of regulatory enforcement during the post bid phase
- 34. In response to these specific concerns, the Ministry has averred that:
 - i. The NELP Road Shows target all the companies, small, medium or big. Apart from major E&P Operators, several NELP blocks have been awarded to medium and small companies. Road Shows are strategically planned in various places to attract all types of Companies. Further, the "S" type on-land blocks, covering an area of less than 200 sq. km were specially designed to attract smaller/ medium-sized companies, which are not required to possess any prior E&P experience.
 - ii. The blocks to be offered under NELP rounds are selected on several criteria such as prospectivity, data availability, receipt of statutory clearances etc.
 - iii. The NELP data package is prepared based on data acquired in relinquished Nomination/Pre-NELP/NELP blocks, newly acquired seismic data by DGH (including speculative mode), exploration/production data of the adjacent blocks, Basin Data etc. Efforts are made to incorporate relevant and useful data to enable bidders for proper evaluation.
 - iv. The sanctity of the PSCs signed between the Contractors and Gol is strictly maintained and PSC provisions are adhered to.
 - v. All available and relevant information is contained in the Data Package and Information Docket. Hence the question of asymmetry of information during pre-bid phase does not arise.
 - vi. The NELP bid process is transparent. During bid opening all the bidders for a particular block are given each other's bid parameters. After the award of the blocks and contract signing, PSC stipulations and statutory regulations of the country are followed by both the parties. Hence the issue about post-bid asymmetry of regulatory enforcement does not arise.

35. It would thus appear that while the NELP system has much to recommend itself, there are still a number of areas of improvement that could perhaps be addressed. The move to OALP, the establishment of the NDR and release of blocks from the existing PEL held by the NOCs, as planned over the next couple of years, are all steps in that direction.

Recommendations

- 36. The Committee recommends expediting the creation of an NDR by linking databases of NOCs and other private firms to share the data for blocks for which information has been submitted to the government and which have to be in public domain, as per the contractual obligation. In addition, all other information available with DGH can be structured as a common database. This should assist in ameliorating concerns about asymmetry of data availability.
- 37. The Committee suggests allowing an OALP to operate on this database. Once a request for a block has been received, it would be offered through the normal tender process as in existing NELP, without any special provisions for the identifying bidder. Even this could be an improvement over the NELP.
- 38. The Committee recommends increasing focus on mid-size firms as part of the marketing process.
- 39. The Committee advises that DGH be reconstituted into an independent technical attached office of the Ministry for contract administration with transparent procedures for administration. This should ensure more public disclosure of issues relating to investment audit and exploration commitments and address concerns about the asymmetry in post bid monitoring. Until such time as this is done, there should be greater disclosure of existing approval processes, such as the meetings of the MC. Documents approved by the MC and the reasons thereof should be in the public domain. The disclosure levels of the Norwegian Petroleum Directorate can be a good starting point in this regard.
- 40. The Committee suggests establishing an Upstream regulator to focus on regulatory functions. This can be part of the current PNGRB or separate. Both the technical office and the upstream regulator should not have staff on deputation from any regulated companies.

With regard to the recommendations in paragraphs 39 and 40 above, Secretary, MoPNG, a Member of the Committee, expressed his reservations and submitted his Ministry's point of view that a separate independent regulator for the upstream sector is not required for reasons that are given in a separate note following this chapter.

Conclusion

41. The allocation process under NELP is seen as a benchmark for transparency in the natural resources sector. It is undeniable that the NELP model is distinctly ahead of the methods of allocation seen in other sectors examined by the Committee such as coal and minerals. However, it is not entirely apparent that the transparency in allocation has also resulted in efficiency and sustainability, in part because the post award process has not been as transparent as the award itself. The Committee's recommendations try to build on the inherent strengths of NELP to ensure that its objectives are as fully met as possible.

Note Submitted by Secretary, MoPNG, a Member of the Committee on the Ministry's Views on Issues regarding Upstream Regulator

The establishment of upstream regulator has been deliberated in the past and it was felt that normally a regulator in any field is required when level playing field to all the parties (private/foreign & public) needs to be provided. In the upstream sector, policies such NELP and CBM already provide a level playing field to all companies. Therefore, the Ministry has been of the view that a separate independent regulator for upstream sector is not required.

The DGH is the technical arm of the Ministry and carries out functions which can be broadly grouped into (a) Technical and (b) contract related. Under the technical function, DGH reviews and monitors the exploration programme, management of reservoir, maintaining all geoscientific data in a retrievable form and review of the development plan of the commercial discoveries. On the contact management side, DGH, inter alia, through Management Committees, exercises control on costs and budgets/work programme of contractors in accordance with the provisions of the respective PSCs.

The Government is the owner of sub-surface hydrocarbon resources and has the responsibility to ensure that natural resources are optimally exploited to the benefit of the country. Considering geological/reservoir complexities and uncertainties in upstream sector, the technical monitoring of upstream sector is carried out in several countries through the agencies under the Government. The same practice through DGH is being followed in India.

Regarding the contract management, it may be noted that the PSC is signed between the Government and the contractor. The PSC provides for the establishment of a management committee comprising of Government and contractor representative for taking decisions on petroleum operations. The Government as owner of natural resources has a major role to play in proper utilization of the resources and facilitating development of the upstream sector. Therefore, the idea that an independent regulator may regulate the contract may not be tenable at this stage of upstream development in the country.

Views have been expressed that the PSCs do not have appropriate mechanism for dispute resolution. In this regard, it may be noted that PSCs have adequate provisions on resolving dispute through sole expert, conciliation and arbitration, which is in line with international best practices in this regard. However, this Ministry is open to any meaningful suggestion on further enhancing the transparency of the PSC regime.

6. NATURAL GAS AND OTHER GAS-BASED FUELS

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6. NATURAL GAS AND OTHER GAS-BASED FUELS

Introduction

1. Gas (natural or from other sources such as coal-bed methane or shale gas) has often been cited as the 'transition fuel' to a low carbon future since its greenhouse gas (GHG) emissions are lower than other fossil fuels and its supplies are likely to outlast petroleum supplies. It has also been cited that gas would be the fuel of the 21st century just as oil was the fuel of the 20th century. The gas sector in India is also in the process of going through some significant changes as more discoveries are likely to come online, policies for shale gas exploration and gas pricing are being finalized, transmission pipelines are being authorized through auctioning, negotiations about the Turkmenistan-Afghanistan-Pakistan-India (TAPI) pipeline are progressing and block auctioning may move to Open Acreage Licensing. These developments are likely to have a significant impact on the sector in the years to come, and there is need to ensure that gas resources are managed in a fair and transparent manner.

Notion of Allocation of Gas

- 2. In natural gas ["gas"], there are two important kinds of allotments: the allotment of blocks, and the allotment of gas itself. Block allotment gives an entity the right to extract and market gas as per the production sharing agreement. Gas allotment, on the other hand, is done post production of gas, where it is allocated to specific end-uses like power and fertilizer etc.
- 3. The issues related to allotment of natural gas ["gas"] have to be viewed in the perspective of the supply-demand scenario, as it is likely to prevail in India, going forward. Natural gas (NG) constituted around 9% of the primary energy mix in 2009, as compared to 54% and 31% for coal and oil respectively. India consumed about 130 million cubic metres per day (mmscmd) of gas in 2009-10; while the power and fertilizer sectors together consume about 73% of the domestically produced gas, the power sector alone accounted for 45% of the total consumption. The overall consumption in India has been growing at around 9% per annum for the last 5 years and the share of gas, in the overall energy basket, is likely to go up to 25% by 2020-25.
- 4. The supply of gas in India is expected to go up to 150 mmscmd by 2012. The current supply is contributed by national oil companies (NOCs ONGC & OIL) to the extent of around 40%; by joint ventures under the 'discovered fields' regime and private companies under new exploration licensing policy (NELP) to the extent of 35%; and, re-gassified liquefied natural gas

¹ This chapter has relied for information, data and ideas on the paper 'Natural Gas in India: An analysis of Policy' by Anil Jain and Anupama Sen, Oxford Institute for Energy Studies Working Paper NG50 April 2011, University of Oxford. The specific references have been annotated throughout the chapter.

² The flow of gas from the KG basin off the east coast has made gas available to many gas-fired power plants that were otherwise idle or stranded.

³ These are fields which had been allocated to the NOCs and were auctioned by Government to Joint Ventures (JVs) in the 1990s, as part of the economic liberalization measures, under production sharing arrangements.

(R-LNG) to the extent of nearly 25%. The most prolific gas discovery under NELP has been in the D-6 block of the Krishna Godavari (KG) basin. There are no reliable medium/long term forecasts of gas availability in India. The demand estimations, while they all agree that gas consumption in India will go up steeply in the future, are not unanimous on the exact numbers: thus, while McKinsey and Co predict that the demand for gas in India is likely to be between 230 and 290 mmscmd in 2015 depending on the gas prices, the official forecast for the XI Five year plan is that India would consume between 245 to 280 mmscmd in 2011-12. Moreover, all the demand estimations assume that power and fertilizer sectors will continue to be the mainstay of gas demand, an assumption which is questionable from a strategic perspective, as discussed further later in this chapter.

- 5. The present mechanism is predicated on administrative allocation of gas (from all sources, public and private) as also administratively determined pricing. The supply and demand scenarios of gas draw from these assumptions. In contrast, a "...more market-oriented approach requires that the fiscal terms of exploration contracts are set to ensure that potential supply is brought into production, and that the price signals accurately reflect market signals...". While determining the optimal allocation of gas, therefore, it would be necessary to examine the feasibility of 'unshackling' both the supply and demand sides of gas availability.
- 6. The present chapter does not delve too deeply into the need and the options to revamp the exploration regime for natural gas (NELP). These issues have been addressed in chapter 5. The focus of this chapter is on the demand side and the possible roadmap to remove the constraints and make it more efficient. The demand side hinges on the existing system of gas allocations, which seek to maintain a balance between gas demand and supply, and the system of pricing and subsidies. Both these issues are discussed in some depth.
- 7. Besides, the chapter also discusses the alternative energy sources based on gas, such as shale gas.

Existing Mechanisms

Gas Pricing Policy

- 8. There are three gas pricing regimes in India: 5
 - i. Prices of administered pricing mechanism (APM) natural gas and natural gas produced from joint ventures (JVs) under the 'discovered fields' exploration policy are set by Government (for National Oil companies or NOCs) or according to a fixed formula (for private companies in the JV).
 - ii. Prices of re-gassified Liquefied Natural Gas (R-LNG) are determined on the basis of long term and short term contracts and spot purchases.
 - iii. The gas produced under the NELP regime, is subject to producers 'discovering' the price of gas themselves, but getting its 'value' approved by Government. This is an evolving regime.

⁴ Jain and Sen (2011)

⁵ Ibid.

9. The prevailing price scenario and the multiple prices inherent therein, are set out in Table 6.1:

Table 6.1: Prevailing Gas Prices in India (2010)6

S.No.	Source	Regime	Price (US US \$/mmbtu)
1	APM gas	APM	4.20
2	Panna Mukta Tapti (PMT) gas	Discovered field	4.60 – 5.65
3	Ravva field	Discovered field	3.50 – 4.30
4	Lakshmi and Gauri fields	Discovered field	4.60 – 4.75
5	Hazira field	NELP	4.65
6	D 6 of KG basin	NELP	4.20
7	LNG (spot prices)	Imported gas	7.00 – 10.00

10. It is instructive to note the manner in which price of gas from NELP fields has been fixed, using the instance of KG D6 basin. The price discovery of KG D6 gas was arrived at through the following formula:

Price in US
$$\frac{15}{mmbtu} = 2.5 + (CP - 25)^{0.15} + C$$

where:

- CP is the price of Crude Oil [Brent] in US US \$/bbl with a ceiling of US US \$ 60 and floor of US US \$ 25;
- C = Bid parameter in US US \$/mmbtu.
- The NELP regime, per se, does not contain specific guidelines for pricing of gas, except 11. that it is mentioned (Article 21.6.2 (c)) that "...gas shall be valued on the basis of arms' length sales in the region for similar sales under similar conditions..."; and, that (Article 21.6.3), "... formula or basis for pricing shall be approved by Government...". A Committee in the Ministry recommended in 2006 that price discovery shall be undertaken through a competitive bidding process. Accordingly, for gas from KG D6 basin, bids were invited from user segments (fertilizers and power) for the bidding factor, "C". While the value of "C" was fixed at 0.09 by the company (RIL), Government decided to use a value of 0 for this purpose and accordingly the price of KG D6 gas was fixed at US \$ 4.2/ mmbtu. The aforesaid process of price discovery incorporated an element of benchmarking to the international price of crude oil and signalled transition to market determined pricing of gas. The process of price discovery was introduced in the NELP contracts from NELP VII onwards, and the principles decided in this behalf were: gas was to be sold at 'market prices'; all consuming sectors were to have the same or common gas price; price discovery was to be done by the producers themselves; and Government take was to be reckoned with reference to the gas 'value' which was not defined per se but taken to mean a market determined price, in case the actual prices were fixed at levels lower than this, and equal to the price if price was higher than the market determined price.⁷

⁶ Ibid.

⁷ Source: Ibid.

12. Subsequently, the price of APM gas, which had remained fixed since 2005 was also brought at par with the KG D6 gas in June 2010.

Gas Utilization Policy

- 13. Gas allocations in the initial phase were made through the mechanism of the Gas Linkage Committee (GLC) which was set up in 1991 and made responsible for allocating administered pricing mechanism (APM) gas to users in a pre-defined order of priority (fertilizers, power and petrochemicals). The GLC lost much of its relevance after the initiation of NELP in 1999, reduction in the quantities available under the APM regime and arrival of R-LNG in India through Petronet. The GLC was wound up the GLC in November, 2005. As per a Cabinet decision, the APM gas is being supplied in the main to consumers in the power and fertilizer sectors.
- 14. Article 21.3 of the NELP contract allows the contractor '....freedom to market the gas and sell its entitlement...' within India. However, in order to retain Government control over the terms of gas allocation, in view of the social priorities and other public policy implications, Government in 2007 (i.e., from NELP VII onwards) amended Article 21.3 to read, '...the Contractor shall have freedom to market the gas and sell its entitlement as per Government policy for utilisation of gas among different sectors...'. A new clause, Article 21.3.1 was also inserted which read, '... for the purpose of Article 21, the Government may from time to time frame policy for utilisation of gas among different sectors.....which would cover issues relating to gas supplies to different consumer sectors...'.⁸
- 15. The current NELP PSC, therefore, while promising marketing freedom to contractors for the exploration and production of natural gas also imposes upon them the requirement to abide with the gas utilization policy, as fixed and decided by the Government from time to time.
- 16. In order to give effect to the NELP provisions, an empowered group of ministers (EGoM) was set up to decide on gas allocations under NELP (existing and future). Since the demand to meet the shortfall of existing plants in different sectors is more than the available gas, the EGoM decided that KG D6 gas will be first allocated to existing plants and there will be no reservation of gas. It has been decided by the EgoM, that, subject to availability of gas, necessary allocations from KG D6 fields will be made to projects in the pipeline, as and when such projects are ready to commence production. The following priority for allocations among sectors has been finalized:
 - i. Existing gas based fertilizer plants producing subsidized fertilizers.
 - ii. Existing gas based power plants and those to be commissioned in 2009-10.
 - iii. Existing gas based LPG plants.
 - iv. City Gas Distribution (CGD) entities for supply to domestic and transport sectors.
 - v. Existing gas based steel and petrochemical plants (only for feedstock and not for captive power requirement) and existing refineries.
 - vi. CGD entities for supply to commercial and industrial sector customers upto 50,000 scmd (standard cubic metres per day).
 - vii. Captive power plants.

⁹ Information provided by MoPNG.

⁸ Ibid.

17. The EGoM has finalized total allocation of 93.474 mmscmd produced from KG D6 field, with the sector wise allocation as per Table 6.2 below:

Table 6.2: Allocations Finalized by EgoM

C No	Saalar	Allocation (mmscmd)					
S No	Sector	Firm	Fallback	Total			
1	Power	32.677	12	44.677			
2	Fertilizers	15.708		15.708			
3	City Gas Distribution (CGD)	1.222	2.165	3.387			
4	Steel	4.190		4.190			
5	Refineries	5.000	6.000	11.000			
6	Petrochemicals	1.918		1.918			
7	LPG	2.594		2.594			
8	Captive power		10.000	10.000			
	Total	63.309	30.165	93.474			

Source: MoPNG.

- 18. The allocations to firms within each sector is being done on the basis of certain laid down principles, e.g., 100% fulfilment of demand for the fertilizer and steel sectors, allocation to power plants upto 70% plant load factor (PLF) satisfaction levels (75% in case of Andhra Pradesh), pro-rata allocation in the case of petrochemical companies and so on. There has been no subjectivity in the allocations done so far.¹⁰
- 19. The Hon'ble Supreme Court of India, while abjudicating on the dispute between RIL and Reliance Natural Resources Limited (RNRL), in its May, 2010 ruling has upheld the absolute Government ownership of gas, thus making it incumbent on Government to formally notify a Gas Utilization Policy. The provisions introduced in NELP VII (as referred to in para 14 ante) have ipso facto become applicable to all past and previous contracts entered into under NELP with regard to gas allocations.

Regulation

- 20. The Petroleum and Natural Gas Regulatory Board (PNGRB) Act was enacted by Parliament in March, 2006 and the Board was formally established with effect from October 01, 2007. The Act mandates for the Board to have one Chairperson and four full time members. The basic objectives of the PNGRB Act are to protect the interest of consumers and entities, to ensure uninterrupted and adequate supply in all parts of the country, to provide a level playing field and to promote competitive markets. The salient functions of the Board are defined in the Act as under:
 - i. Registering entities for marketing petroleum, petroleum products and natural gas, establishing and operating LNG terminals and establishing storage facilities.
 - ii. Authorizing entities for laying, building, operating or expanding a common carrier or contract carrier for transportation of natural gas or petroleum products; and, for laying, building, operating or expanding city or local natural gas distribution networks.

¹⁰ As per information provided by MoPNG.

- iii. Declaring pipelines as common carrier or contract carrier and specify access code for allowing access to such pipelines.
- iv. In respect of notified petroleum, petroleum products and natural gas: ensure adequate availability, monitor prices and take corrective measures to prevent restrictive trade practices and enforce retail service obligations and marketing service obligations.
- v. Lay down technical standards and specifications including safety standards in activities relating to petroleum, petroleum products and natural gas.

Issues for Consideration

20. The gas sector in India is in a state of flux. After a long history of purely administered pricing and allocations, substantive freedom ("arms length relationship") has been provided to gas producers to determine prices of their produce while selling to specified user segments. In this context, a number of issues have been raised in various debates on how to make the framework of gas allocation and pricing more rational and transparent. These are discussed in turn below.

Appropriate Uses of Gas in the Indian Context

- 21. As has been mentioned earlier, the main consumer segments of gas in India are power and fertilizers. Together, these account for nearly 75% of the total gas consumption. The issue, however, which merits consideration is whether these are indeed the most appropriate user segments, given the other alternative uses that gas can be put to.
- 22. Urea is the most commonly used fertilizer in India due to various reasons: first, it has more nutrients (nitrogen) in comparison with phosphates and potash; second, much (if not all) of the main input to urea production is indigenously produced (natural gas); and, third, India has insufficient reserves of phosphates and no reserves of potash, making imports necessary.¹¹ Government's policy objective is to achieve the maximum degree of self sufficiency in the production of nitrogenous fertilizers, based on utilization of natural feedstock. 12 Urea prices have witnessed tremendous volatility in the international markets (going from US \$ 150 per metric tonne (MT) in 2003-04 to US \$ 800 per MT in 2008-09), thus re-inforcing the argument for attaining self sufficiency in indigenous production. While around 30% of the Indian capacity of urea is based on naptha and fuel oil as feedstock, the ultimate aim is to convert all plants to gas based manufacturing, which are more energy efficient and have a lower capital investment requirement as compared to naptha and fuel oil based plants. 13 In order to achieve self sufficiency in urea production, a Urea Investment Policy has been announced in 2008, which inter alia benchmarks all new urea capacity to the NELP prices (to be revised every five years) and additions to existing capacity (through expansion, revamping and de-bottlenecking) to the APM prices. The policy requires that investors should make their own arrangements to procure gas and rules out LNG as a substitute fuel.
- 23. While the need to earmark gas for an important agricultural input like urea is patent and manifest, there is need also to be mindful of the fact that indiscriminate use of urea has distorted the ideal fertilizer mix, thus impacting negatively the agricultural productivity of soil in many

¹¹ Jain and Sen (2011)

 $^{^{\}rm 12}$ Report of the Working Group on Fertilizers sector, XI Five Year Plan (2007-2012).

¹³ Ibid.

regions of the country. Therefore, a nutrient based subsidy scheme should also be introduced for urea and urea prices should gradually be enhanced to make other fertilizers competitive visà-vis urea. The Budget Speech of 2011-12 mentions the commitment of Government to move towards a nutrient based subsidy regime for urea as well, which will, to a large extent, address the issue of appropriate and uniform pricing of nutrients across multiple fertilizers, thus removing the present bias in respect of urea. Moreover, it is possible that locating fertilizer plants close to areas with abundant gas would result in substantially lower input gas price, and thus cheaper fertilizer. For example, the Oman India Fertilizer project (OMIFCO) based on a MoU between the Governments of India and Oman is assured of gas at US \$0.77/mmbtu for 10 years commencing 2005, which is much cheaper than current gas prices. ¹⁴ The Department of Fertilizers claims that the Oman joint venture has saved about Rs 500 crore per annum in the subsidy bill. Therefore, this option should be considered seriously and its pros and cons examined, and if beneficial, fertilizer companies should be encouraged to import fertilizer or set up JVs overseas where gas is abundant and cheap. Such a move would release domestic gas for other applications such as those mentioned subsequently and for power generation, which is discussed next.

- 24. Having discussed the need to revamp fertilizer subsidy policy to reduce over-dependence on urea in the long term, and, also explore the potential to set up fertilizer plants overseas, there may still be a need to maintain adequate supplies of gas for indigenous production of urea in the meanwhile. This is important from the point of view of agricultural self-sufficiency and food security, keeping in mind the fact that in other chemical fertilizers, e.g., DAP and MoP, the country lacks the basic raw material for manufacture and thus has to depend almost entirely on imports. Thus, while per capita urea consumption should be gradually reduced and alternative sourcing of urea through OMIFCO type experiments continue to be explored, sufficient quantities of natural gas should be reserved for the fertilizer sector commensurate with indigenous production capacity from all domestic sources, including APM gas and gas from "discovered" and NELP fields.
- 25. In the short term, gas does not offer any significant cost advantages for base load power generation compared to coal (discussed in detail in Table 3 later) and the country has fairly large reserves of coal. Since the primary goal of the country should be to supply power to the 40% of the country that still does not receive electricity, and these consumers are highly cost sensitive, it would be preferable to continue using coal for base-load power generation to reduce the subsidy impact of providing improved access to electricity. But in the long term, it is possible that gas would have a role to play in base load power generation, as it is likely that coal would have to be imported and India may have to undertake more climate related obligations.
- 26. Thus, existing (and proposed) gas based power plants should ideally not be used for base load power but for intermediate or peaking power with, a time-of-day tariff that is higher at peak load hours if base load can be met through coal fired plants. One niche segment where gas based power would be viable is that of captive and merchant power plants, which are allowed to sell their power on commercial basis, outside long term contracts. Another segment is power that is traded across States, using trading platforms operated by 'power exchanges'.
- 27. The related issue is whether there is need for an explicit reservation of gas (under a utilization policy) for intermediate/peaking power plants. The country is presently challenged by a significant power deficit (the peak and energy deficits as on December 31, 2010 have been reported at 10.5% [~12,500 MW] and 8.2% [~5,800 million units {MUs}]), which can impede economic growth. Against the original target of capacity addition for the XI Plan period, of 14 http://fert.nic.in/projectdivision/completed project.asp accessed April 8 2011.

78,700 MW; and the revised target of 62,000 MW; the total capacity addition reported till May, 2010 is around 40,000 MW. In light of the significant shortfall expected against the projected capacity addition in the XI Plan, a tentative capacity addition target of 1,00,000 MW has been fixed for the XII Plan period. Assured availability of fuel is imperative for meeting these ambitious targets. Thus, over the medium term horizon (encompassing the period of the XII Five year plan, i.e., 2011-12 to 2016-17), there is need to explicitly reserve natural gas for intermediate/peaking power plants. However, this reservation of production capacity should only be applicable to such power plants, as have regulated tariffs (i.e. the advantage of which is transferrable directly and transparently to the end consumer. Earmarking of production capacity for other power plants, which are not willing to subject themselves to regulated tariffs is not intended and should be done away with even now.

- 28. Having examined the potential for utilization and/or substitution of gas as a fuel in the fertilizer and power segments, other uses of gas, such as for fuel in industries and for cooking and transport and for decentralized combined heating and power (CHP) applications which are much more efficient than centralized power generation are considered next.
- 29. Though coal is the largest contributor to India's energy basket, India's energy imports are mostly in the oil sector (though coal is also imported and these are likely to rise in future). The net oil imports in 2009-10 were about 132 million tonnes and worth about Rs 2.7 lakh crore (MoPNG, 2010). These imports formed about 88% of our total oil consumption of 150 million tons and the amount spent on them represents over 4% of our GDP for the year. 15 These imports are at an average cost of import equivalent to about US \$ 65 per barrel, while it is expected that international crude prices are likely to stay at over US \$100 per barrel for the foreseeable future. It may be noted that US US \$100 per barrel crude oil price is energy equivalent to approximately US \$18.5/mmbtu gas price – much more than domestic or even most imported LNG prices. In contrast, domestic and imported coal prices of Rs 1800/tonne and US \$ 50/tonne translate to roughly US \$ 2.2/mmbtu. These facts, combined with geo-political uncertainties traditionally associated with oil imports (such as the ongoing unrest in North Africa), suggest that oil imports are the largest threat to the country's energy security and it may be better to use gas to substitute for oil where possible, rather than coal. However, while attempting such substitution it needs to be ensured that domestic gas is given to such sectors at market driven prices. Further the impact on Government revenues would also need to be considered as the present price of MS and HSD comprises of 50% and 30% tax incidence respectively, while the tax on CNG is comparatively much lower.
- 30. In practice, the transport sector may only shift to CNG as the older petroleum driven fleet gets replaced by CNG driven fleet, as retrofitting vehicles is expensive. One also has to consider the impact on vehicle maintenance etc. of switching to CNG. But, since vehicle sales in the country are growing at over 10% p.a., it is possible that with the necessary distribution infrastructure and policy support, a significant part of the fleet would be CNG vehicles in the medium term.
- 31. A comparative analysis shows that the price of gas as a fuel substitute in the main gas consuming sectors, compares well with other fuel choices. Hence, given certain external changes, such as an increase in the opportunity cost of using other fuels, there is, potentially, a major role for gas in energy use. If gas forms 10% of the transport fuel consumed in 2020, it translates to a demand of about 45 mmscmd. If industry grows at 9% p.a. and gas forms 80% of industrial fuel used for heating in 2020, then it could contribute a demand of 110 mmscmd. If

¹⁵ In contrast, oil imports are less than 2% of GDP for countries such as USA, China or Japan.

the Government chooses to use gas to produce LPG in order to provide clean cooking fuels, it translates to a gas demand of about 80 mmscmd to supply gas-based LPG to 50% of households in the country. This shows that there would be a significant demand for gas, at market prices, even from an energy security or clean cooking fuel perspective.

- 32. In the long run, therefore, there may not be any need to earmark gas for any sector, or to have any gas utilization policy, except for ensuring that the needs of indigenous urea production are met in full. In the medium term, however spanning the XII Plan period there would be need to ensure that power plants are supplied gas in sufficient quantities to allow them to meet intermediate/peaking power requirements, for which purpose an indicative plant load factor (PLF) can be fixed by Ministry of Petroleum and Natural Gas (MoPNG) in consultation with Ministry of Power (MoP). At the end of the XII Plan period, the strategy for reserving gas for power can be reviewed depending on the state of the international LNG markets and the development of a robust domestic gas infrastructure (in the form of gas pipelines and re-gassification terminals). If the LNG prices plateau at reasonable levels and sufficient infrastructure is developed to allow free and unfettered sourcing of R-LNG, the need thereafter to reserve natural gas for power would no longer exist. Thereafter, natural gas should increasingly play the role of a substitute for oil applications (e.g., petroleum, diesel, LPG) which are important from a strategic point of view.
- 33. The aforesaid discussion is only relevant for future discoveries and allocations of natural gas. The existing allocations for fertilizers, power, steel, petrochemicals, LPG etc (from the current NELP fields; table 2, para 17 ante) can be continued subject to availability of gas, through the mechanism of the EGoM. Thus, the present policy of gas utilization from existing NELP supplies may continue as it is. However, for future supplies of NELP gas, the only reservation in terms of utilization should be for fertilizers to the full extent of the requirement; and, to power upto a defined level of plant load factor (PLF). The remaining sectors should be in a position to bid for the gas directly, an issue which is discussed in the succeeding paragraphs.

Present Mechanism of Price Discovery for Gas

- 34. Starting from NELP VII onwards, important provisions (referred to in paras 11, 14 and 15 ante) were introduced in the model PSC with a view to reconcile the divergent objectives of Government retaining the right to direct allocation of gas with that of marketing freedom to the contractors. Thus, "...on the one hand, producers were assured of their marketing freedom through the right to 'discover' the price of gas; while, on the other hand, Government retained its right to carry out prioritized gas allocations through the application of uniform prices to all consuming sectors..."

 16. However, this freedom is circumscribed by the provisions of Article 26.1.3 which mandate the contractor(s) to abide with the pricing formula or basis as approved by Government; and, the need to have uniform prices for all consumer segments, which was introduced with NELP VII.
- 35. There have, however, been comments on the validity of the 'price discovery' process, as evidenced in the only case of a NELP contract the gas from KG D 6 basin, to have conducted such an exercise. These are enumerated subsequently¹⁷:
 - i. The formula adopted employs a biddable component (refer para 10 ante). It has not been clear whether this component is meant to discover prices, or, potential demands from sectors, with a high bid indicating a higher demand.

¹⁶ Extracted from Ibid.

¹⁷ Source: Ibid.

- ii. The price 'quotes' were invited only from two sectors: power and fertilizers; for a part of the total produce. A wider representation from consuming sectors is required for the entire production to be sold in the market.
- iii. While the formula provides less volatility within the given floor and ceiling prices of the gas and hence protects both consumers and sellers, the gas price does not move in tandem with movement/trend in liquid fuel prices such as crude oil in international markets. On the whole, the formula seems to remain stuck within a predetermined and extremely narrow range of prices. To that extent, it cannot be deemed to be representative of market conditions.
- 36. The price discovery process, therefore, needs to be made more broad-based and rational so as to arrive at a true market valuation of the discovered gas. Since the economic value of gas is different in different sectors, the price discovery should ideally be made sector-wise and Government take should be calculated on this basis, rather than on a weighted average basis.

Can gas be priced freely without any administrative intervention?

- 37. The answer to this question is intimately linked to the possible uses to which gas should be put in the Indian scenario. As has been demonstrated in the previous sections, the present strategy of allocating gas to the fertilizer sector over a long term, and the power sector over the medium term, needs to continue. In this section, it needs to be examined as to whether there is need to subsidize gas (either through a price formula or otherwise) for the aforesaid sectors, and, also other potential user segments, such as industrial and commercial gas users, CGD networks and CNG based transport alternatives.
- 38. The only user segment, where there may be a strong case for administratively determined pricing of gas is fertilizers, i.e., for production of urea. For this sector, the key is not the removal of subsidies, but changes in the subsidy regime to a less economically damaging and more efficient system. With the recent rise in administered gas prices to US US \$ 4.2 per mmbtu, much of the highly distorting subsidy on the input of gas has been removed. Thus, the old system of "under-recoveries" on the price of gas, which were borne by the NOCs, has been substituted by explicit subsidies to the price of fertilizers via the federal budget a much less distorting and more transparent system. However, this method is also prone to misuses such as 'gold plating' of costs and inequitable transfer of subsidies to rich and large agriculturists, who stand to gain disproportionately from the subsidy regime.
- 39. An even more progressive measure, which has been proposed as a recent Budget announcement (para 27 of Budget Speech for 2011-12 of the Finance Minister), is to move towards direct transfer of cash subsidy to people living below the poverty line. This is a more transparent method of delivering subsidies, than through producer/manufacturer subsidies. Moreover, the gradual progression towards a nutrient based subsidy regime for urea will also bring down the subsidy requirements for this fertilizer and obviate the need for input subsidies through pricing of gas. However, till such mechanisms are instituted and have been operationalized a time horizon of 3-5 years can be earmarked for this purpose the pricing for the fertilizer sector can continue on the basis of a formula as approved by Government.
- The need, or absence of it for subsidizing the power sector indirectly through the price of natural gas, is a more complex issue. The assumptions about power tariffs need to factor the following facts:

- The average electricity tariff rates for domestic and industrial consumers are above Rs 5 per unit in a number of States, e.g., Gujarat, Bihar, Karnataka, Maharashtra and Delhi.¹⁸
- ii. Of the total electricity traded in February, 2011, which is almost 10% of the total electricity consumed in that month, the maximum prices reached range between Rs 6.25 per unit to Rs 17.46 per unit. The average UI rate for the SR grid is Rs 5.16 per unit.
- 41. The aforesaid data indicates that there is scope for gas to be absorbed in peak/intermediate plants. The prices of power would become even more rational when distribution sector reforms are undertaken in full measure. These reforms have now become urgent and immediate in view of the fact that the financial losses of state distribution utilities, which were Rs 48,858 crore in FY 2008-09 (based on a gap of Rs 1.04 per unit in tariffs to recover full costs), are likely to rise to Rs 116,089 crore by FY 2016-17 assuming the 2008 tariff levels. Among the reasons cited for this financial crisis are the fact that power purchase costs (which constitute 80% of the total costs) are increasing by 10% per annum and tariffs currently do not reflect these costs. In order to restore the financial health of the utilities, a number of reform measures would need to be instituted which would allow transparent and rational mechanisms of power purchase, tariff setting and subsidy disbursal.

Table 6.3: Short Term Transactions of Electricity¹⁹

c	Category of		Volume of trac (MUs)	de	Trading prices (Rs/unit)		
S. No.	transaction	Volume	Share of short term transactions	Share of total power consumption	Maximum	Minimum	Weighted average
1	Bilateral trades	3,230.61	49.60%	4.93%	6.99	2.50	4.24
2	Power exchanges 20	1,391.51	21.37%	2.12%	6.25 - 12.00	1.57 – 1.70	3.88 – 4.54
3	UI mechanism 21	1,890.66	29.03%	2.88%	12.22 - 17.46	0.00	3.00 - 5.16
4	Total traded power	6,512.77	100.00%	9.93%			
5	Total power consumed	65,566.23		100%			

42. The reforms would also need to address the anomaly where the cost of captive diesel generation, which is sometimes purchased by the grid, as in Pune, is more than Rs 10 per unit. Furthermore, the proportion of electricity that would be procured from such gas plants is relatively low, e.g., for the Southern grid lean day load profile it rises to more than 25% only for three hours in a day. If there is time of day pricing of electricity, the price can vary based on the proportion of expensive power that is used. Figure 6.1 shows an illustrative pricing scheme, based on the load profile that is sufficient to recover the cost of all the electricity supplied based on an average base load price of ₹3 per unit and an average intermediate/peak load price as high as ₹8 per unit. Even at such high base and peak load prices, none of the time of day prices seem unreasonable.

¹⁸ Table 1.33: State-Wise/Utility Wise Average Rate Of Electricity For Domestic & Industrial Consumers; Economic Survey, 2010-11.

¹⁹ Monthly report on "Short Term Transactions of Electricity"; February, 2011; CERC.

 $^{^{\}rm 20}\,$ Price ranges shown are for two exchanges, i.e., IEX and PXIL.

 $^{^{\}rm 21}\,$ Price ranges shown are for the two grids: NEW and SR.

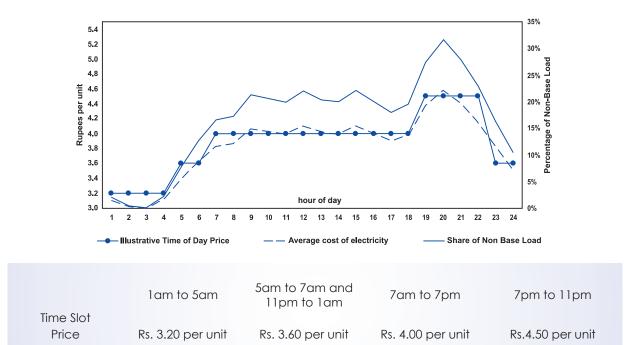


Figure 6.1: Illustrative Time of Day Pricing

- 43. There is thus sufficient merit in allowing market based pricing of gas for uses in power generation. In order to alleviate the fear that market based pricing of gas might reach unreasonable levels, an analysis has been made of the likely ranges in which the imported and re-gasified LNG prices might converge. Box 1 analyses the international scenario and concludes that as the exports from US come on stream, a price of \$ 10 to 12 per mmbtu for LNG prices going forward would appear to be an upper bound in Asia. This would determine the cap for domestic natural gas prices and enable their utilization (without any input subsidy) in the electricity sector, particularly as reforms set in on the distribution side and innovations such as time of day tariffs are operationalized by SERCs.
- 44. The aforesaid discussion establishes the need to move towards a complete market pricing of gas, through a more rational and broad-based price discovery process than was followed in the case of the KG D6 output. However, the existing price contracts can be preserved in their present form, and the pricing strategy being suggested is only to apply to future discoveries and contracts under NELP.

Is Price Pooling of Gas Feasible?

45. The stated objective of pooling gas prices is to prevent price shocks to gas consumers, particularly price sensitive users such as power generation and fertilizer companies, as gas supplies in the country are insufficient and users have to depend on imported LNG, the prices of which are volatile. A recent report by Mercados Energy Markets (Mercados, 2010) examines different ways of pooling gas prices and concludes that the best way to pool prices would be to create two sectoral pools, one each for power and fertilizer to be managed by a pools operator, who would be responsible for sourcing requisite amount of gas from various sources and supplying it to consumers in the pools at a common pooled price. It also recommends that Gas Authority of India Limited (GAIL) should be the pool operator given its experience in the field, and that merchant power plants can also be part of the power sector pool, while all power plants have the opinion of joining the pool or not.

Box 6.1: Sourcing of LNG in India

- 1. Asian LNG spot prices in Asia have risen sharply to around US\$ 12 to 13 per mmbtu from about USD 9 per mmbtu since January, following the nuclear accident at Fukushima and the increased demand from Japan for LNG cargoes. This blip in prices occurs at a time when there is radical change occurring in the LNG market. This change is being seen in both new supply sources as well as new pricing regimes emanating from the growth of the shale gas market in the United States.
- 2. In the past year, nine liquefaction terminals for export are being proposed in North America. Some of these are liquefaction trains at existing import terminals. In September last year, Cheniere Energy received US Department of Energy approval to export about 800 Bcf/year (about 16 Million tonnes per year) from its terminal at Sabine Pass, Louisiana and in November, the Macquarie Group and Freeport LNG announced an agreement to jointly develop and market liquefaction capacity that will allow the export about 1.4 Bcf/d from their existing LNG terminal in Freeport, Texas. Earlier this year, Dominion and Statoil of Norway announced a similar project in Cove Point, Maryland. Six other projects are in various stages of planning.
- 3. Not only are these new suppliers from an erstwhile importer of LNG going to add to the world supply and reduce demand from traditional sources of LNG, the prices of these supply sources are going to be based on a different pricing regime as compared to oil linked LNG prices.
- 4. The proposal for Sabine Pass LNG indicates a capacity charge of \$1.75 per MMBtu and a shipping and fuel cost to Europe of around \$ 1.40 to \$ 1.65 and to Asia of around \$ 2.80 to \$3.45 per mmbtu. These would be added to the Henry Hub prices. Thus, even in a high scenario as postulated by Cheniere Energy, or \$ 6.50 per mmbtu for Henry Hub, the price in Asia would be about \$ 11.70 per mmbtu and would be about \$9.50 per mmbtu at current Henry Hub prices. In real transactions, the use of swaps would most probably reduce the cost of transportation even further. This appears to be competitive relative to breakeven costs of competing Australian projects coming online in the targeted 2014-2016 timeframe. Factoring in the cost of liquefaction and transport, if Asian oil-linked LNG is priced about \$5.25 greater than Henry Hub prices, then it becomes viable to import from the US suppliers. This is likely to cap on JCC linked prices that depend on Henry Hub prices.
- 5. Consequently, as the exports from US come on stream, a price of \$ 10 to 12 per mmbtu for LNG prices going forward might appear to be an upper bound in Asia, based on the references cited in this write-up. At these prices, the cost of power would be about ₹4.75 to ₹5.50 per kwH at busbar, assuming the plants are close to the re-gassification site. If not, there would be additional transportation costs, would could add another 50 paise or so to the power tariff. This power is affordable for industrial and commercial load consumers, especially with time of day tariffs and open access.

Source:http://www.bloomberg.com/apps/news?pid=newsarchive&sid=aH0jhcEHz07shttp://www.platts.com/RSSFeedDetailedNews/RSSFeed/NaturalGas/6617360

http://www.petroleum-economist.com/Article/2801334/LNG-prices-firm-as-Asia-eyes-spot-cargoes.html

http://www.lngjournal.com/portal/index.php?option=com_magazine&func=show_edition&id=54&Itemid=47

http://www.bloomberg.com/news/2011-05-09/bg-southern-union-apply-for-lng-export-permit-from-louisiana.html

http://phx.corporaternet/External.File?item=UGFyZW50SUQ9ODgxMDV8Q2hpbGRJRD0tMXxUeXBIPTM=&t=1http://7marketspot.com/archives/1140.

- 46. The proposal to create sectoral pools for these applications needs to be decided keeping in mind that fertilizers should be assured of supplies, to the full extent of requirements on the basis of a formula to be decided by Government; and, peak/intermediate power requirements should be continued to be met subject to a market discovery of the price of gas. In this scenario, pooling, might also be operated at the plant level, depending on the access that the operator of the plant has to other sources of supply. Another critical factor is development of the gas infrastructure (in the form of re-gasification terminals and pipelines), for which purpose, efforts need to be initiated urgently as discussed later. Moreover, if gas is used for power generation, regulatory oversight would be required on the pooling process to ensure that gas being purchased for the power sector pool (or a general pool from which a power generator is sourcing gas) is being prudently purchased since fuel cost is often passed through, particularly where the power generation contracts are not bid out.
- 47. Apart from looking at pooling, efforts need to be made to develop gas markets. Thus, the gas being produced from the NELP fields (the present contractual supplies are not envisaged to be covered in this dispensation) - after allocation to fertilizers - can be allowed to be sold directly, either through an exchange, or on the basis of bilateral contracts between the producer and the seller(s) in various sectors. It may be provided that the demand from power producers would be met in full at the price discovered through a market mechanism. This would ensure that a market develops for gas and its uses are determined through a market mechanism. This would also ensure that gas is also directed to sectors which are more strategic from an energy security point of view. While the allocation to the fertilizer sector would be at the price discovered on the basis of the formula/principle approved by Government, the market discovered prices through the exchange/bilateral contracts would be the basis on which Government take would be calculated. The advantage of creating an exchange is that trading contracts can be standardized and the price discovery mechanism can become more efficient; hence, Government can consider creating this exchange immediately, which can, in the meantime, also start registering other bilateral contracts which are being done directly, in respect of imported LNG etc.
- 48. Another reason, why, In India, unlike other countries in the developed world, a competitive market for gas does not exist is the absence of independent marketers, who are also called aggregators or shippers (in India, transport companies act as the de facto marketers). The proposed idea of sectoral pools is a special case of the many generalized pools that would be created if a multitude of gas shippers or aggregators were to exist. In this case, power and fertilizer companies would be free to source their gas from any shipper that offers them the best deal. Therefore, expediting the creation of a competitive aggregators/shippers market is more important than creating sectoral pools. One possible way of developing such a market is for Government to take part of its profit share in kind and auction it in small lots. PSU gas producers and LNG importers could also be asked to follow the same practice at their landfall points for gas that has not already been contracted on long term basis. Future PSCs could also stipulate such a condition whereby gas producers would auction all or a significant portion of the production in small lots. This will ensure that a market develops for shippers thus driving competition. If some power and fertilizer plants need to get low cost gas, this could be achieved through direct subsidies or Government using its share of profit gas.
- 49. Thus, while examining the ideal scenario, adoption of gas pooling arrangement, it should be borne in mind that, in the long run, prices need be determined by a market driven mechanism, with gas being eventually allocated to its most optimal use, based on the specific

circumstance of each sector. Special dispensations, however, have been recommended in the case of fertilizers and power, for reasons elaborated earlier.

Present Allocation Mechanism

- 50. The present mechanism of allocation of gas through an EGoM, to a large extent, serves to ration subsidized gas. This mechanism is, in a sense, a manifestation of the Gas Utilization Policy, which, while it does not exist formally, is actually implemented and operationalized through the decisions of the EGoM. While the administrative method of allocating gas is appropriate in the present context, when the requisite reforms in sectors such as fertilizer have not reached their logical end, in the medium run, as and when the gas prices are fully freed up and distributional objectives can be met in a more direct manner, there may not be any need to have a formal gas utilization policy and concomitantly, an administrative mechanism to enforce the same.
- 51. For the present, though, the extant system of allocating gas to user segments through decisions of an EGoM can be continued. This arrangement should continue to allocate gas under existing committed supplies. In the medium term, the EGoM can also continue to direct supplies to the fertilizer sector.

Role of PNGRB

- 52. The creation of a gas market, eventually, rests on the existence of appropriate infrastructure in the form of gas pipelines and re-gasification facilities. The PNGRB Act empowers the Board to authorize laying and building of natural gas and petroleum product pipelines (as common carriers); and, also to register entities for establishing and operating LNG terminals. Under these provisions of the Act, the Board has received 10 Expressions of Interest (EoIs) for laying of pipelines, for initiation of the public consultation process; and, 5 pipelines have thereafter been put through a bidding process. The Board should be suitably encouraged to promote a national pipeline grid, connected with regional grids, for delivery of natural gas from all sources to anywhere in the country. However due caution is required during the bidding process, in order to ensure that actual infrastructure develops on the ground and the assets do not remain idle.
- 53. The Act also empowers the Board (Section 11(f)) to monitor prices and take corrective measures to prevent restrictive trade practices in respect of notified petroleum, petroleum products and natural gas. This section has still to be notified by the Ministry of Petroleum and Natural Gas (MoPNG). In a situation of freeing the market prices of natural gas, the role conferred upon the regulator by the legislation can be employed to ensure the market develops in an orderly and transparent manner and pricing remains competitive and fair.
- 54. The regulator should ensure open access to gas pipelines which are natural monopolies and ensure a transparent tariff regime for such assets. With competitive pricing and improved supplies, the role of Government or any regulatory agency in allocation and pricing would gradually diminish.

Recommendations

- 55. Based on the foregoing discussion, the recommendations of the committee on the issue of natural gas are as follows.
- 56. The demand for gas for fertilizers arises on account of the cost and efficiency advantages

that it lends to urea production. However, in the Committee's view, the slant or bias in favour of urea may be corrected through extension of the nutrient based subsidy scheme, which has been announced in the Budget for 2011-12. This, along with sourcing of urea from other jurisdictions where gas is available at a cheaper price (e.g., middle East and African countries) is likely to reduce the demand for gas for domestic urea production. However, keeping the critical importance of fertilizer availability for food security of the country, it would be necessary to ensure that domestic urea capacities continue to obtain natural gas, as per their requirements, which can be assessed on rational and transparent basis. Moreover, till such time that there is need to subsidize urea and the scheme for direct delivery of subsidies to the users (i.e., farmers) does not actually get operationalized - a time horizon of 3-5 years can be earmarked for this purpose - natural gas should be supplied to the fertilizer sector, on the basis of formula/principle as approved by Government.

- 57. New and existing gas fired power capacity should preferably be used only for intermediate or peaking power. As specific procurement contracts for such power along with a time of day tariff mechanism is expected to be shortly in place, given current regulatory developments in the electricity sector. However, keeping in mind the need to develop power capacities in the country expeditiously and bring down both the peak and energy deficits, there would be a need to ensure that the power sector demand for gas (for peak/intermediate capacities, up to a PLF as specified) is met in full, till the end of the XII Five year plan period. In view of the fact that distribution sector reforms are critical and need to be started expeditiously and to encourage time of the day tariff mechanisms, the price of the gas should be determined through a market mechanism, without there being any need to provide any input subsidies. However, since this segment is receiving the benefit of an earmarked supply, it is important to ensure that the benefit is passed on to the consumers of electricity. Hence, the Committee is of the opinion that the bidders in this market should be limited to such state-owned or private plants as are willing to subject themselves to regulated tariffs, i.e., merchant power plants would not be entitled to the benefit of earmarked supply. Since the price of imported LNG would act as a cap, it is expected that the power produced through market sourcing of gas would be in the range where it can eminently be absorbed for peaking/intermediate load applications.
- 58. In view of the strategic needs of the country the Committee thinks that gas should increasingly be viewed as a substitute for oil, and used as industrial fuel and for cooking, transport and other such applications if in these sectors, the use of gas is competitive vis-à-vis other competing POL based fuels without compromising Government revenue through taxes on liquid fuels. Thus, these uses should also be allowed to procure their requirements through the market, at a market determined price. Government may review taxation on piped gas/CNG beyond threshold usage. Merchant power plants can compete with such uses for their gas requirements.
- 59. However, the aforesaid allocation and pricing recommendations would only be applicable to future discoveries and contracts of gas. The existing contracts should be maintained. The existing contracted supplies can continue to be earmarked for various sectors, through the EGoM, as per extant practice; and, at the price discovered and approved by Government. However, the Committee would request the EGoM to revisit the earmarked allocation of gas for such power plants as are not willing to subject themselves to regulated tariffs. The EGoM can continue to allocate gas to the specific fertilizer units on the basis of the recommendations of the concerned administrative Ministries/Departments.

- 60. The freedom which currently exists in the NELP provisions for contractors to determine the prices of their gas produce should be employed to move towards free pricing of gas from NELP fields. The price discovery in respect of other sectors, besides fertilizers, for future supplies of gas, should, in the Committee's view, be on the basis of a market mechanism, either through an exchange or through bilateral contracts. This will ensure a continuing incentive to the contractors to produce and bring more and more gas in the market. However, the existing price contracts should be preserved in their present form. The subsidies, wherever required, should be transferred directly to the end consumer; or, otherwise met transparently through a budgetary mechanism.
- 61. A competitive gas market (on the sellers' side) should be ensured by development of a natural gas trading platform (exchange) which allows producers to effect market discovery of gas prices and sell gas competitively to other sectors, besides fertilizers. The exchange or bilateral arrangements, however, should ensure that power sector demand is met in full over the medium term (i.e., till 2016-17) horizon. Gas markets can also develop through creation of independent marketers in the form of aggregators and shippers. The existing linkage between transporters and marketers has potential for conflict of interest and does not bode well for development of a healthy gas market. To encourage the development of such a market, Government can take and then auction, in small lots, a part of its profit petroleum in kind under the PSC contracts. The development of a market for natural gas can be subject to the regulatory oversight of the downstream regulator.
- 62. It should be easy to buy, sell and use the commodity being traded. For gas, this means a good nation-wide transportation and distribution infrastructure, which is currently missing. Without such infrastructure, a national gas market will not exist. The Committee's opinion is that the most critical need in the medium term, therefore, is the rapid development of a national gas grid and gas distribution infrastructure. While PNGRB has begun this process, it would be good to expedite this. Of course, it goes without saying that such infrastructure development should be undertaken in a fully transparent manner and can be expected to synchronise with upstream gas availability or LNG terminals.
- 63. Open access and affiliate code regulations that have been created by the Petroleum and Natural Gas Regulatory Board (PNGRB) should be enforced. To further encourage competition, it may also be considered whether the percentage of capacity that must be reserved for open access should be increased. It should be noted that in well developed gas markets such as the US, the entire pipeline capacity is reserved for open access that is, transportation is completely unbundled from marketing.²²
- 64. The Committee recommends that as gas markets become increasingly competitive and supply improves, Government and regulatory agencies should gradually withdraw from their roles in deciding price and allocation. Instead, they should ensure that markets remain competitive and consumer interests are protected.
- 65. The idea pooling of gas prices can be further examined vis-à-vis the relative advantages of pooling being co-ordinated at the unit level, along with development of sufficient infrastructure (in the form of gas pipelines and re-gasification gasification terminals).

²² OECD (2000) Competition in the US Natural Gas industry, OECD working paper no. 2 on competition and regulation http://www.oecd.org/dataoecd/34/23/1920080.pdf. Currently, transporters are required to have 33% of contracted capacity as open access capacity – that is roughly, 25% of pipeline capacity would be open access capacity.

Shale Gas

- 66. The discovery of new techniques to tap reserves of gas trapped under shale rock formations has revolutionized the gas industry in the United States of America (USA), and promises to do so in the rest of the world. Europe and China have initiated steps to explore for shale gas formations. India also has begun taking earnest measures to identify and exploit this source of gas and has signed a MoU with the USA in this regard in November 2010. While proven reserves of conventional gas reserves in the country are around 50 trillion cubic feet (tcf), preliminary 'speculative' estimates for shale gas reserves in the country are anywhere in the region of 600 to 2000 tcf and a recent EIA study states that extractable Indian shale gas reserves could be around 70 tcf. ²³ Therefore, it is clear that shale gas has the potential to radically transform the country's gas market in particular and energy situation in general.
- 67. The technique to extract shale gas called hydraulic fracturing (or fracking) pumps large quantities of water laced with toxic chemicals into shale gas formations deep underground. As a result, there have been concerns about the possible impact of fracking on groundwater resources as the toxic chemicals may leach into aquifers. Some states in the USA, such as New York and Maryland have imposed a moratorium on fracking until its impacts are better understood. Since groundwater depletion is already a major concern in many parts of India and there is a reasonable possibility of overlap between areas with water scarcity and areas with shale gas availability (Figure 6.2), this issue is also important for India.
- 68. There is a high possibility that shale gas wells would have to be dug on lands that are privately owned requiring either land acquisition or leasing of a portion of the land. Given the history of problems with land acquisition for industrial purposes in India, it is advisable to take cognizance of this fact and develop a policy regime that is fair and mutually beneficial to the landowner as well as the gas producing company.
- 69. In addition, as with conventional gas, it is important that shale gas exploration, extraction and use are also governed to maximize public and consumer interest. This requires that shale gas exploration policies ensure both transparency in all aspects of dealing with the natural resource and competitiveness in the exploration and production business.
- 70. It is clear from the above discussion that shale gas policy formulation needs to balance multiple, potentially competing goals such as enhancing the nation's energy security, protecting environmental interests, offering a fair deal to land owners, making shale gas plays attractive to investors and ensuring adequate competition in shale gas exploration. This reinforces the need for adequate care during policy formulation.

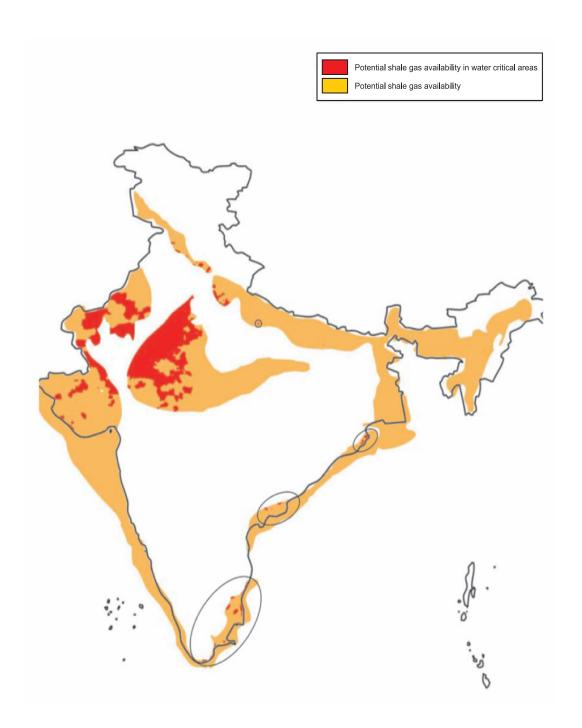
Recommendations

71. In the Committee's view, shale gas exploration policy should be drafted only after understanding the potential environmental impacts of fracking, and conducting a public consultation process particularly in areas likely to be affected by it.

²³ MoPNG (2010) Basic Statistics on Indian Petroleum and Natural Gas, Ministry of Petroleum and Natural Gas; Schlumberger (2010) Shale Gas: The Fastest Growing Hydrocarbon Play, Schlumberger presentation at the Infraline Roundtable on shale gas, December 2010; EIA (2011) World shale resources: an initial assessment of 14 regions outside the United States, Energy Information Administration, U.S. Department of Energy.

- 72. The Committee insists that there should be complete transparency regarding the chemicals used in the fracking of each well and their potential impacts, along with clearly defined liabilities for any negative impacts.
- 73. The Committee recommends that land acquisition issues should be factored ab initio in the allocation process.
- 74. The Committee suggests that a transparent policy should be put in place for shale gas exploration, which is not only attractive to investors but also leads to sufficient competition in the shale gas exploration business. The experience with NELP so far can inform this policy as well.

Figure 6.2: Potential Overlap between Areas of Water Scarcity and Shale Gas Availability



Conclusion

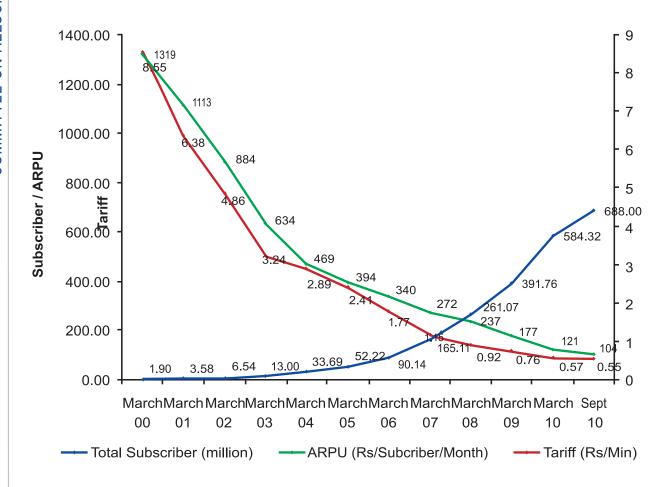
75. Gas will be a critical natural resource for India's development needs in the foreseeable future, primarily for its energy security but also for its food security. Hence, it is imperative that India explores its basins for available gas and uses the available gas effectively to maximize public interest. The way forward in this respect should take into account the following factors: undertaking an initiative to balance immediate energy needs with long term energy security; enhancing competition in the upstream and downstream segments through measures such as improving the PSC regime, developing a shippers market and implementing open access to transportation facilities; expediting development of transmission and distribution infrastructure to develop a national gas market; ensuring that gas is used efficiently and strategically to maximize energy security until a fully developed market is in place; protecting and enhancing lives of communities impacted by oil and gas production by ploughing back some of the revenue for all round local development; and, ensuring that oil and gas exploration (particularly shale gas exploration) does not happen at the cost of other precious natural resources (such as groundwater) and the environment.

7. SPECTRUM

Introduction

1. The Indian telecommunications sector has seen much growth and also much turmoil in the recent past. The number of mobile subscribers grew from 0.3 million in the first quarter of 1997 to 688 million in September 2010, of which 109 million were CDMA mobile subscribers.¹ There has been a concomitant increase in the teledensity, particularly rural teledensity, which was 31% in September 2010 (See Figures 7.1 and 7. 2). At the same time, mobile tariffs have plummeted from ₹ 16 per minute in the late 1990s to ₹ 1 per minute in 2010. The reduction in tariffs has been reflected in the declining average revenues per user (ARPUs) which have also come down sharply.

Figure 7.1: Growth in Subscriber Base, ARPUs and Tariffs over Time



Source: TRAI

¹ Telecom Regulatory Authority of India (TRAI)

2. In the recent past, there has been much discussion on the appropriateness of the existing telecom policy which was predicated on low entry barriers, enhanced competition in the market place and a level playing field between new and existing players. The fact that Unified Access Service (UAS) licences were issued in 2007 and 2008 at an entry fee fixed in 2001 and the auction of 3G licences in May, 2010 fetched substantial revenues for the exchequer, have underlined the need to review the manner in which telecom spectrum should be allocated. The discussion on separating the rights to use the spectrum from the service licences and moving to a more market related allocation of spectrum hinges to a considerable extent on the multiple uses of the spectrum in a convergent environment and on increasing the clarity on M&A transactions, which is needed if the industry structure is to develop appropriately. This note explores how such a transition can be accomplished. While this note focuses on telecommunication services, the principles apply equally to all other services that use radio frequency, e.g., FM radio, paging, trunk radio, etc.

160 147.88 140 120 119.73 100 89.4 80 66.16 63.6 60 40 20 March Sept10 Total Teledensity Rural teledensity Urban teledensity

Figure 7.2: Tele-density

Source: TRAI

The Notion of Allocation

3. Radio Frequency Spectrum (RFS) is a finite, global² natural resource that has the potential to provide significant economic, social and cultural benefits. All countries, under the International Telecommunications Union (ITU) convention, have equal and unfettered sovereign right of access to the RFS. Assignment of frequencies is governed by an international treaty formulated under the aegis of International Telecommunication Union (ITU), which is signed and ratified by Government of India. In accordance with the international treaty, the ITU allocates frequencies to different radio services at World Radio Conferences. Allocations are made on a regional basis and for different types of services. It is mandatory for all administrations to adhere to these allocations.³ For the purpose of spectrum allocation, each member country submits its proposals to ITU, based on their requirements and priorities for opening of the bands. During the conference, all the proposals are discussed and decisions are taken for opening of the bands for

² All frequency bands are shared by all countries for different types of radio communication services and there are no exclusive frequency allocations for a particular service, country, user or organization.

³ ITU Constitution article 48 makes a provision vide which member states retain their entire freedom with regard to use of spectrum for military radio installations and article 6 exempts member states from these obligations in accordance with the provisions of article 48 of this Constitution

new services or extension of the existing bands. These decisions are reflected in the International Frequency Allocation Table of radio regulation and other regulatory provisions for use of bands, which forms the basis for further assignment/allotment by the respective member countries. ITU has recognized 41 radio services to be operated in various frequency bands, which are listed in Table 7.1.

In the national context, the Indian Telegraph Act, 1885 and the Indian Wireless Telegraphy 4. Act, 1933 and rules and procedures made thereunder provide the legal basis for spectrum management. The Wireless Planning and Coordination Wing (WPC) under Department of Telecommunications (DoT) in Ministry of Communication and Information Technology (MoC&IT) is responsible for frequency spectrum management and caters to the needs of all wireless users (government and private) in the country. Standing Advisory Committee on Radio Frequency Allocation (SACFA) grants siting clearance of all wireless installations in the country. The National Frequency Allocation Plan (NFAP) forms the basis for development and manufacture of wireless equipment and spectrum utilization in the country. It contains the service options in various frequency bands for the country and also provides the channeling plan in different bands. The National Frequency Allocation Plan (NFAP) was first established in 1981 as a classified document. In pursuance of the recommendations of the New Telecom Policy - 1999 (NTP-99), the second NFAP was formulated in 2000 and made effective, as a public document, with effect from January 01, 2000; subsequently, another NFAP has been formulated in 2008 and made effective with effect from January 01, 2009. The next NFAP shall be ready in 2011, based on the recommendations of the International Telecommunications Union (ITU) in 2007. These plans do not give any ownership rights to any user of the spectrum, but are meant for development and planning purposes by industry and users.

Table 7.1: Radio Frequency Bands

Band	Nomenclature	Frequency	Typical applications
ELF	Extremely Low Frequency	3 - 30 Hz	
SLF	Super Low Frequency	30 - 300 Hz	
ULF	Ultra Low Frequency	300 - 3000 Hz	Earth quakes, Earth mode communication
VLF	Very Low Frequency	3 - 30 kHz	Near-surface submarine communication
LF	Low Frequency	30 - 300 kHz	AM broadcasting, Aircraft Beacons
MF	Medium Frequency	300 - 3000 kHz	AM broadcasting, Aircraft Beacons
			Skywave long range radio communication, Short-
HF	High Frequency	3 - 30 MHz	wave Broadcasting, military, maritime, amateur two- way radio etc
			FM radio broadcast, Television broadcast, Digital
VHF	Very High Frequency	30 - 300 MHz	Video Broadcasting, Terrestrial Personal Mobile Radio (PMR) etc
UHF	Ultra High Frequency	300 - 3000 MHz	PMR, Television broadcast, microwave oven, GPS, mobile phone communication (2G, 3G), WLAN etc
SHF	Super High Frequency	3 - 30 GHz	Satellite television broadcasting, WLAN microwave relays, Radars
EHF	Extremely High Frequency	30 - 300 GHz	Microwave Relays, Inter-satellite links, High resolution radar, Directed energy weapon, Security screening etc

Existing Mechanisms for Spectrum Allocation

- 5. In India, the radio frequencies are confined between 9 kHz and 3000 GHz and are being used for 41 different types of services like fixed communication, mobile communication, broadcasting, radio navigation, radio-location, fixed and mobile satellite service, aeronautical satellite service, radio navigational satellite service etc. A frequency which is being used in one place by one agency may be used by another agency for some other purpose in another place leading to frequency reuse on spatial basis. The applications are of two kinds: commercial and non-commercial. The commercial activities are licensed and the licensing authorities are the Department of Telecommunications (for mobile, internet, GMPCS services and so on) and Ministry of Information and Broadcasting [Mol&B] (for DTH, uplinking and related services). Spectrum is allocated by WPC Wing for commercial and non-commercial (including defence and public security purposes) use as per requirement and justification to Government organizations.
- 6. In respect of telecom services, presently 25 MHz spectrum in 900 MHz band (890 915 / 935 960 MHz) and 75 MHz in the 1800 MHz band (1710 1785 / 1805 1880 MHz) is earmarked for GSM services; and 20 MHz in the 800 MHz band (824 844 / 869 889 MHz) is earmarked for CDMA services. Besides, 60 MHz in the 2100 MHz band (1920 1980 / 2110 2170 MHz) is earmarked for 3G services. While GSM and CDMA licences have been allotted hitherto on a first-come-first-served (FCFS) basis, with the spectrum allocations also being done on a FCFS mode; 3G spectrum has recently been auctioned in India through an open ascending e- auction process and spectrum has been allotted based on the results thereof.
- 7. The broadcasting service providers require the spectrum usage for up-linking of television channels, teleports, Direct to Home (DTH) service, Headend in the Sky service, private FM Radio Services and Community Radio Services (CRS). As per the policy approved by the Cabinet for granting these permissions, the allocation of spectrum is required to be done by WPC Wing once a permission is granted by Mol&B as per the relevant guidelines. The permissions for up linking and down linking of television channels, teleports and DTH services as also for Community Radio Services is granted by Mol&B after obtaining security clearances and satisfying that the applicants fulfil the eligibility criteria. There is no upper limit prescribed on the number of permissions to be granted in these services except for the private FM radio services. As regards private FM radio, since the numbers of frequencies are limited, and the FM Phase-II policy provides for grant of permissions through closed-tender two-stage bidding processes as provided under the guidelines. Thus, in case of FM radio, allocation of the spectrum is being done through a tender process carried out by the MIB. For FM Phase-III policy, which is under consideration of the Government, a Group of Ministers (GoM) recently, in its recommendations, has recommended that instead of following the closed-tender two-stage bidding process, the open ascending e-auction process as followed for 3G auctions is required to be followed. Accordingly, the draft policy is being modified and will be placed before the Cabinet shortly for consideration.
- 8. The allocation of spectrum carries with it an annual fee in the form of a royalty and license fee. For telecom mobile services, the charges are usually indexed to the adjusted gross revenue (AGR) and are prescribed as a percentage thereof. However, when the 3G spectrum was recently auctioned, spectrum was allotted on payment of an upfront spectrum acquisition fee along with recurring annual spectrum usage charges. For other services, such as VSATs, DTH, teleports, etc., users have to pay spectrum usage charges as fixed by the Government, which are ₹ 35,000 per MHz presently. For non-commercial services, spectrum usages charges are levied as per the fixed formula, which is fixed on the basis of the link distance and number of channels assigned.

A decision has been taken that with effect from June 01, 2004, all Government departments will pay the applicable spectrum usage charges. For defence usage, however, the provisions of the MoU signed between DoT and Ministry of Defence (MoD)-referred to in paragraph 10 belowwould also need to be kept in mind.

- 9. Besides the spectrum usage charges, the commercial license holders (for both telecom and broadcasting services) have also to pay initial entry fee and annual license fee, in lieu of the right to hold the license. License fee varies from service to service and, in relation to Access licences, from service area to service area. For Access licences, telecom service providers have to pay 6%, 8%, and 10% of Adjusted Gross Revenue as license fee for Category C, B, and A/Metro service areas respectively.
- 10. It may be mentioned that some amount of spectrum in each frequency band has earlier been allocated to various agencies including Government Departments, defence forces, and Central Public Sector Undertakings (CPSUs). However, to meet the emerging needs of commercial telecom services, vacation of some parts of the spectrum by these agencies was needed. With a view to facilitating vacation of spectrum by defence services, an MoU was signed between DoT and MoD for release of spectrum in 2G and 3G frequency bands and establishment of an optical fibre cable (OFC) network to cater to the communication needs of defence services in lieu thereof.

Regulation

- 11. The TRAI is an independent regulator established in 1997 by the Government of India to regulate the telecommunications business in India. The function of the authority is to make recommendations, either suomoto or on a request from the licensor, on the following matters, namely:
 - i. need and timing for introduction of new service provider.
 - ii. terms and conditions of license to a service provider.
 - iii. revocation of license for non-compliance for terms and conditions of license.
 - iv. measures to facilitate competition and promote efficiency in the operation of telecommunication services so as to facilitate growth in such services.
 - v. technological improvements in the services provided by the service providers.
 - vi. type of equipment to be used by the service providers after inspection of equipment used in the network.
 - vii. measures for the development of telecommunication technology and any other matter relatable to telecommunication industry in general.
 - viii. efficient management of available spectrum.
- 12. The TRAI Act, 1997 (as amended in 2000) specifies that in respect of the first two functions, namely, need and timing for introduction of new service providers and terms and conditions of license to a service provider, the licensor shall have to seek the advice of the authority. However, the advice of TRAI in such matters is not binding and the Act empowers the Government to disagree with the advice.
- 13. In compliance of High Court directions, Government of India, vide order dated January

09, 2004 have brought broadcasting and cable services (carriage aspect) within the ambit of telecommunications services and TRAI currently also fulfills the function of a regulator for the broadcasting sector.

Issues for Consideration

14. The issues arising in spectrum allocation and pricing, which will be discussed in this section include: appropriate mechanisms for allocation, implications in the Indian context, de-linking of spectrum from licences, development of a market for spectrum, appropriate units of allocation, charging for existing operators and roadmap for spectrum vacation.

Appropriate Mechanisms for Allocation

15. A review of the international practice for spectrum allocation was carried out by the Committee.

Beauty Contest Auction 1996 - 2000 2001 - 2005 2006 - 2010 GSM GSM FWA UMTS **UMTS** FWA GSM **GSM GSM UMTS** 2.6 GHz FWA AR FWA GSM GSM **UMTS** 2.6 GHz 800 MHz Germany WLL T-DAB DVB-T Neutral 2.6 GHz **GSM UMTS GSM FWA** Holland **GSM** GSM **UMTS** GSM **UMTS** 2.6 GHz AR T-DAB DVB-T **FWA UMTS** GSM GSM **UMTS GSM** GSM UMTS **GSM** Austria **FWA** AR 2.6 GHz GSM GSM UMTS **FWA** Hungary GSM **UMTS GSM** Switzerland FWA

Figure 7.3: Allocations of Spectrum in Europe and UK.

Note: AR: Analogue radio spectrum; DVB-T: Digital TV spectrum; FWA/WLL: Fixed wireless access/Wireless local loop; T-DAB: Digital radio spectrum.

Source: 'Auctions and Beauty Contests in CEPT Administrations', May 2005, Electronic Communications Committee (ECC) within the European Conference of Postal and Telecommunications Administrations (CEPT); Regulator websites of countries mentioned.

Figure 7.4: Spectrum Allocations in the USA

rigule 7.4. Specifion Allocations in the USA							
1984 - 1990		1995 - 1997		1998 - 2000		2001 - 2005	2006 - 2010
Country divided into 306 MTA (urban) and 428 RSAs (rural) 2 licenses - A side (non-wireline operator); and B side (local wireline operator) Allocations planned to be on applications and competitive hearings Overwhelmed with the flow of applications, hearings utilised to allocate the top 30 MTAs and determined the		CS (1900 MHz) Band split into 6 blocks (A-F) A&B (Mar 1995) - US divided into 51 MTAs most licenses to highes bidders, 3 vital A-block licenses reserved as "pioneer preference awards for some of the innovators/ designers o PCS technology C (May 1996) - for 493 BTAs; group of BTAs form MTA D, E & F (Jan 1997)	66 66 67 77 78 78 78 78 78 78 78 78 78 78 78 78	C, D, E, and F Block Broadband PCS			Neutral Telecom license Digital audio radio 1700/2100 MHz (3G) 700 MHz (4G)
remaining markets through a lottery		split by BTA. D/E purchased by large telcos to fill coverage gaps; F reserved fo designated entities	;				

Notes: MTA – Metropolitan Trading Areas; BTA - Basic Trading Areas Source: http://wireless.fcc.gov/auctions/default.htm?job=auctions_all

T-DAB

Table 7.2: Countries and Revenues from 3G Spectrum Auctions

S. No.	Country	Revenue € billion
1	Germany	50.1
2	UK	36.1
3	Italy	12.2
4	Spain	3.5
5	Netherlands	2.7
6	France	1.2
7	Austria	0.8
8	Belgium	0.6
9	Denmark	0.5
10	Greece	0.5
11	Portugal	0.4
12	Finland	0.1
13	Sweden	0.0
Total		108.7

16. It was found that spectrum has been allotted using various methods, which broadly fall into three categories: administrative allocation, allocation on the basis of a 'beauty contest',⁴ and market related processes (including auctions). In figures 3 and 4, the manner in which spectrum allocations have altered over time in Europe and the USA have been demonstrated. The European experience show that beauty contests were widely used for

⁴ In a beauty contest, contestants have to submit a plan on how they will utilize the asset in future and demonstrate their credentials to make the plan trustworthy. The evaluation is on the basis of both the plan and the credentials.

allocation of GSM spectrum in the 1990-1997 era; and the year 2000 represents the beginning of the auction era. In the USA, bidding for telecom spectrum started earlier, in 1995, although in the period, 1984-1990, a number of telecom licences were allocated on the basis of administrative mechanisms. Even in the period between 1995-1997, some telecom licences were issued on the basis of administrative allotments. The examples cited above do seem to support the hypothesis, that in the initial years of tele-penetration, when the need is to enhance the subscriber base through rapid spread of telephony, telecom licences and spectrum are allocated administratively (or, through beauty contests) so as to keep the entry barriers low.

- 17. A large number of 3G allocations were made in key European countries during 2000/2002. This period represented the peak of the Internet/telecom bubble. 15 countries allocated 3G licences, 7 (Finland, Spain, France, Sweden, Portugal, Luxembourg and Ireland) using beauty contests; and, 8 (UK, Netherlands, Germany, Italy, Austria, Belgium, Greece and Denmark) using auctions. The total revenue realized was € 109 billion, as shown in Table 7.2.5
- 18. It has been widely reported that the auctions which carried high bid prices led to huge destruction of value and consequent delays in rollouts.

Box 7.1: 3G Auctions in Europe

- In Europe, during late 1990s and early 2000s, operators spent large amount of money bidding for UMTS (3G) licenses at the peak of the stock market.
- As a direct consequence of the 3G licensing processes, substantial value was extracted from the European mobile sector, both directly through very high license fees in certain Member States, and indirectly through deflating stock prices and worsening debt ratings to which 3G substantially contributed. This led in significant funding problems for several operators, and in many markets also led to delays in planned 3G network roll-outs.
- In some cases, governments held stakes in the incumbent operators, and the gain from license fees were, at least partially and momentarily, offset by the deterioration of the stock market position and the debt ratings of their respective incumbent operators.

- Caused by delays, downgraded expectations of overall Mobile Data business case (inflated expectations during the Internet Bubble), operators started adjusting down the value carried by the licenses and initiating different restructuring and strategic decisions:
 - Some operators decided to postpone their 3G developments. For example, Telefonica Moviles stopped investing in Italy, Germany, Switzerland and Austria. Also, France Telecom withdrew from the German market and Sonera (Finland) ceased its 3G operations in Germany and Spain
 - Infrastructure sharing deals (e.g. in Sweden)
 - Large organizational restructuring and asset divestments programmes were launched due to serious debt situation (e.g. France, Telecom, KPN)
- Operators also tried to influence the regulators to relax certain 3G license conditions, e.g. delays of coverage obligations and license fee payments, and infrastructure sharing considerations.
- 19. The visibility of the telecommunications sector; the practices adopted in the initial stages of telecom development in Europe and the USA; and the experience of 3G licensing in Europe and the UK have shaped the perspectives of several Asian regulators and policymakers including those in India in identifying appropriate mechanisms for allocation. The primary argument against market related processes (including auctions) as an allocation mechanism in the context of spectrum is that they increase the consumer prices and/or lead to unsustainable tariffs. This is particularly an issue when there is need to enhance tele-penetration and spur inclusive growth. Moreover, such processes typically favour incumbent players who have substantial financial wherewithal to bid high and act as entry barriers for new incumbents (i.e., the level playing field argument). These arguments are supported by the Indian experience also, wherein, the

⁵ The information in this paragraph is extracted from a paper by Rekha Jain on "Study for TRAI on Spectrum Allocation Methodologies" commissioned by TRAI on a request made by the Committee.

first and second cellular licensees of 1994 and 1995 had to be migrated to a revenue sharing regime in 1999, after the notification of the New Telecom Policy, 1999. Administrative methods of allocation, on the other hand often lead to contentions regarding transparency and /or the price at which the allocations are made. While it is generally held that market linked processes promote efficient usage of spectrum, it is also a fact that this can be incentivized through other means as well, such as fixing of subscriber linked criteria, roll out obligations, disincentivisation of inefficient usage, etc., for allocation of additional spectrum on scientific and rational basis.

- 20. The choice of the appropriate method of allocation of spectrum, therefore, depends critically on the context, market conditions and the objectives of extant telecom policy. In relatively well developed economies which have mature markets, where tele-penetration is no longer an issue of concern and affordability / paying capacity is not a serious consideration, market related processes (including auctions) have been found as an efficient way of allocating spectrum licences, both in terms of productive and allocative efficiencies. In the case of nascent markets and new technology, however, since the market is yet to develop, bidders may bid much higher for the resource. Hence the winners' curse may be more pronounced in the case of auctions.
- 21. Thus, while the mode of allocation of spectrum should become progressively more market related, it should also take into account both global experience as well as the context and specific requirements of the country, and status of the evolving market, technological developments, and extent and spread of coverage.

Implications in the Indian Context

- 22. The Indian telecom market has an average teledensity of 70.89% (as of March, 2011) with rural teledensity still at 33.79% with the total subscribers numbering 846.32 million. The growth in subscriber base has been driven in large part by one of the lowest tariffs in the world, making telecom services affordable to a large segment of the population. TRAI, in its recommendations of February 08, 2011, has noted that in its earlier recommendations of May, 2010, auction was not found to be a feasible option for allocating spectrum in the 2G bands (800, 900, 1800 MHz) on account of the fact that availability of spectrum was constrained. However, it is mentioned that TRAI had also recommended cancellation of a number of licences in the 800 MHz and 1800 MHz bands in November and December, 2010. If these licences are cancelled, surplus spectrum would be available in certain circles, after meeting the requirement of allocating spectrum up to the prescribed limit of 8 MHz (10 MHz in Mumbai and Delhi) to the existing operators. In that event, it should be possible for the government to auction this surplus spectrum and treat this auction price as the relevant price of spectrum beyond 6.2 MHz for the given LSA, provided the auction is conducted within 12 months of the decision of the government.
- 23. The recent recommendations of TRAI on "Spectrum Management and Licensing Framework" are under consideration in DoT and would be taken to the Telecom Commission and the competent authority for a decision on the recommendations. Therefore, in future, spectrum for telecom services should be made available through suitable market related processes to be evolved by DoT and approved by the competent authority after the consideration of the relevant TRAI recommendations in this regard.
- 24. As regards allocation of permission/spectrum for private terrestrial FM radio services, the Group of Ministers (GoM) on FM Phase-III has already recommended the allocation through

an e-auction process instead of a two stage closed tender bidding process. Community Radio Services being non-commercial in nature and fulfilling a public service obligation should continue to be allocated as per the extant policy of the Ministry of I&B.

In respect of space spectrum in 'C' and 'KU' Band, the present practice in the 25. broadcasting sector is to allocate spectrum for select Broadcasting Services (DTH teleports, uplinking, HITS, SNG/DSNG services) to all applicants who are found eligible as per sectoral guidelines and after receipt of security and other clearances. In its recommendations dated July 22, 2010 on 'Policy Issues relating to uplinking/downlinking of Television Channels in India', TRAI has not recommended any cap to be put on the number of channels to be uplinked from or downlinked into India. TRAI has recommended some increase with regard to permission fees for teleports and uplinking/downlinking of channels, which is already under consideration of the MOI&B. Thus in respect of these broadcasting services, it is the service provider who is to take a decision, depending on the market potential, as to whether to start a channel or service or not. While there does not seem to be any need to change the present system of allocation of spectrum as far as broadcasting Services are concerned, there is, however, a need for DoT and Department of Space (DoS) to review the spectrum charges and transponder charges. Spectrum allocation to the public broadcaster (Doordarshan and AIR) needs to be continued as per the present practice.

De-linking of Spectrum from Licences

26. In its recommendations of October 2003, TRAI had recommended that a "Unified Licensing" regime should be initiated within six months, for all services, covering all geographical areas, using any technology. The operator shall be required to approach the licensor separately for spectrum allocation. In this report, it had also been stated that "...since spectrum is a natural resource, it needs to be regulated separately..". On the decision of instituting a unified licensing regime encompassing all telecom and broadcasting services, TRAI, in its recommendations dated January 13, 2005 on 'Unified Licensing Regime' recommended, inter alia, that the unified license would cover all public networks, irrespective of media and technology, capable of offering voice and/or non-voice (data) services. It was also recommended that spectrum should be allotted separately. In its recommendations of May, 2010, TRAI has re-iterated these recommendations and stated as under:

"...Currently, the only access services licence that can be given is the Unified Access Services (UAS) licence which is bundled with spectrum. There may however be some service providers who wish to provide services without using spectrum. In order to make provision for such service providers, the Authority recommends that spectrum should be delinked from the licences to be issued in future and that the future licence be unified licence..".[para 2.62]

"...Spectrum will not be bundled with this licence at the time of renewal and must be applied for separately. However, keeping in view that a licensee would have a reasonable expectation that spectrum would be reassigned and also that, otherwise, service to millions of subscribers would be affected, the Authority recommends that while renewing the licence, Government should reassign spectrum but only upto the prescribed limits or the amount of spectrum assigned to the licensee before the renewal, whichever is less..."[para 2.173]

⁶ Including Internet Telephony, Cable Television (TV), Direct To Home (DTH), TV & Radio Broadcasting.

- 27. The reasons outlined for de-linking of spectrum from the license have been specified by the Authority in its recommendations as under:
 - "...Apart from the non-availability of spectrum, another reason for delinking the spectrum from the licence is that with the proliferation of technology and services in various bands, there could be many applicants who may like to offer access services using wireline networks or through fibre. In the existing licensing regime, such licensees are also required to obtain a UAS licence by paying the same entry fee prescribed therein, which is not economically feasible...".[para 2.61]
- 28. In line with the TRAI recommendations, therefore, and, for the reasons outlined therein, spectrum should be de-linked from licences and a unified license should be evolved which covers all the telecom services such as UASL/CMTS, NLD, ILD, Internet, IP-I and GMPCS.⁷

Creation of a Spectrum Market for Access Services

- 29. Trading/sharing of spectrum and consolidation of spectrum through mergers and acquisitions are processes which lead to creation of a spectrum market. These processes, when employed freely, ease pressure on the spectrum to the extent that there is variation in spectrum usage across regions and across operators. They are expected to address situations where a particular operator may be pressed for spectrum while the spectrum allocated for telecommunications as a whole remains underutilised. In this scenario, the service provider who has excess spectrum in some region can lease out her spectrum for a specified duration to another service provider, who would then save on the capital expenditure that would be needed to make more intensive use of her existing spectrum. There is thus visible merit in promoting such mechanisms.
- 30. TRAI, in its recommendations have expressed the following views on sharing of spectrum:
 - "....The Authority is of the opinion that allowing sharing of spectrum by the new operators is another form of facilitating consolidation of spectrum. Along with allowing merger which is primarily for the large operators, sharing of spectrum will enable the new operators to effectively compete with others. In order to facilitate consolidation in the telecom sector, permitting sharing of spectrum would appear to provide a reasonable solution subject to stipulation of relevant administrative guidelines by the Government. These include the maximum limit of spectrum holding after share, number of entities that can consolidate, the Government charges on the shared spectrum, the tenure of share, the amount of allocated spectrum that can be shared, and eligibility criteria for taking part in share of spectrum.....". [para 4.112]
- 31. Spectrum sharing has accordingly been recommended by TRAI subject to certain conditions.
- 32. Trading of spectrum, however, has not been recommended by TRAI for reasons as follows, which are excerpted from the recommendations of May, 2010:
 - "....The Authority has carefully studied the responses of the stakeholders and the International practices along with the volume of trading activity in the countries where trading has been permitted and has observed the following:

⁷ Global Mobile Personal Communications System.

- In countries where spectrum trading is permitted, the spectrum is normally assigned through market mechanism, i.e. auction. However, in India, the 2G spectrum till date has been either given along with the licence or given based on Subscriber Linked Criteria, without any additional charges for the spectrum. These licensees have not competed in the open market to buy spectrum. Now, to allow them to trade the scarce spectrum at a premium would not be proper. Regarding spectrum for 3G and BWA services, though the spectrum will be given through the auction process, but presently, the amount of spectrum available is limited and there is a restriction that no licensee can acquire more than one block of spectrum either in auction or subsequently through M&A. As such allowing trading in these bands will be premature and may not be of any benefit to the industry.
- Presently, there are operators who have been given licences some years back and have a stable and mature network and there are also operators, on the other hand, who have to either roll out their network or are in the process of doing so. It is possible that allowing spectrum trading at this juncture might result in anti-competitive conduct through consolidation/hoarding of spectrum or through an incumbent precluding the newcomers from providing service by buying out the spectrum necessary for such services. This would adversely affect the consumers and the growth of telecom services in India.
- Spectrum a national asset with sovereign right over it by the Government has only been assigned on a "right to use" basis for a fixed period to the service provider. A licensee has no ownership right to enable it to 'trade' in it. Accordingly, acquisition of spectrum through sale/purchase is not possible in the current context..". [para 4.141]
- 33. In the same recommendations, TRAI has recognized that "in the renewed competitive setup, it is necessary to ensure that the regulatory framework regarding mergers and acquisitions (M&A) in respect of telecom licences is so designed as to facilitate market consolidation. It has to be borne in mind that effective competition can exist only when there are sufficient numbers of competent and effective players in a market. It is only the number of such players in the market which decides the level of competition or the effectiveness of competition in the market. Thus, it becomes necessary to ensure that the M&A framework in the telecom sector leads towards improved competition benefiting the consumers and also ensuring, at the same time, that no resultant entity gains dominance in the market. The concepts of "significant market power" and "dominance in the market" would accordingly require to be appreciated properly with a view to framing appropriate new guidelines". M&A of access licences has, therefore, been recommended subject to certain conditions regarding the market share of the resultant entity, maximum quantum of spectrum to be held, minimum number of service providers in the relevant market, and so on.
- 34. M&A guidelines need to be liberalized for consolidation of resources, while ensuring a minimum number of service providers to ensure competition. Sharing of spectrum may also be allowed, since there is scarcity of spectrum, and the market may operate more efficiently if it is allowed to discover the optimal number of operators through merger/ sharing arrangements. The recommendations of TRAI in this regard need to be taken through the deliberative process and an appropriate framework established in due course in this regard.
- 35. On the issue of trading of spectrum, while TRAI has not advocated the same, at least at this stage, for reasons outlined in its report, considering the international experience in this

regard and the concomitant potential benefits in terms of efficiency gains and consolidation of spectrum, the issue of permitting spectrum trading needs to be considered at an appropriate stage in future.

Efficient Utilization of Spectrum

- 36. Spectrum is a scarce resource and it should be ensured that this scarce resource is utilized optimally, effectively, and efficiently by the licensees. While optimal pricing is one of the tools for ensuring continued efficient usage of spectrum, an appropriate mechanism to incentivize efficient use and disincentive lower usage levels requires to be put in place. This mechanism should include objective and measurable criteria for rollout obligation. This should be backed up by a rigorous oversight mechanism for spectrum usage audit.
- 37. Spectrum is being presently allotted LSA wise which are largely aligned with the jurisdiction of states. The geographical dimension of an LSA may not therefore have a uniform spectrum usage pattern across the LSA. Certain parts of an LSA could have a much higher usage than others. If spectrum is dis-aggregated into smaller units on a geographical basis, it would facilitate introduction of systems and mechanisms aimed at encouraging efficient usage and disincentivising inefficient usage. Due consideration, therefore, should be accorded to identify an appropriate geographical unit for allocation and measuring usage.

Table 7.3: Spectrum Released by MoD as per MoU⁸ dated May 22, 2009

	2G spectrum in 1710 – 1785 / 1805 – 1880 MHz		3G sp	980 MHz		
Triggers	To be released as per MoU	Already released	Yet to be released	To be released as per	Already released	Yet to be released
On signing of MoU	5 + 5 MHz	5 + 5 MHz (22.10.2009)	Nil	MoU 10 MHz	10 MHz (22.10.2009)	Nil
On placing of supply order and promulgation of Defence Band and DIZ	Nil	Nil	Nil	5 MHz	10 MHz (31.8.2010)	Nil
On supply of equipment order	5 + 5 MHz	5 + 5 MHz (31.8.2010)		5 MHz		Nil
On installation of equipment	5 + 5 MHz	Nil	5 + 5 MHz	5 MHz	Nil	5 MHz
On acceptance of testing & commissioning of exclusive OFC network.	5 + 5 MHz	Nil	5 + 5 MHz	Nil	Nil	Nil
Total	20 + 20 MHz	10 + 10 MHz	10 + 10 MHz	25 MHz	20 MHz	5 MHz

⁸ Refer paragraph 10 ante.

Vacation and Re-farming of Spectrum

- 38. The need to have adequate spectrum, particularly for telecom services, has been highlighted time and again by TRAI and other expert bodies. A Group of Ministers (GoM) on "vacation of spectrum and raising resources for the same" had been constituted in December, 2006. As per the directives of the GoM, and with a view to vacate spectrum from Defence, a Mo was signed between DoT and MoD for release of spectrum in 2G and 3G frequency bands and establishment of NFS to cater to the communication needs of Defence in lieu thereof. The status of release of spectrum by MoD is given in Table 7.3.
- 39. Spectrum would need to be earmarked for defence and national security purposes. No exclusive Defence Band exists in India presently. In May 2009, a MoU was signed between MoD and DoT, wherein promulgation of Defence Band and Defence Interest Zone (DIZ) was agreed to. Subsequently, consultations between MoD and DoT on identification of Defence Band and DIZ are near completion but formal notification and promulgation is yet to be made. This needs to be expedited. The process has to be taken to its logical conclusion urgently, sincethe quantum of spectrum available for telecom services needs to be firmed up. The quantum of spectrum actually available for allocation with the WPC wing of DoT needs to be firmed up after coordinating for further releases/requirement with Department of Space (DoS), Ministry of Information and Broadcasting, CPSUs, and so on.
- 40. Management of Spectrum is one of the most important facets of spectrum utilisation. Many countries have evolved their spectrum management legislations and procedures in accordance with the changes in spectrum utilisation and competing demands. WPC, which is responsible for management of spectrum in India, is currently facing the challenge of meeting India's changing spectrum needs. The Committee was also informed that a comprehensive re-look at spectrum management arrangements both for commercial and non-commercial (including defence and public security purposes) frequency bands is expected to the undertaken under the proposed Spectrum Act. In the interim, it may be feasible to examine the reconstitution of the Wireless Planning and Coordination Committee, as envisaged in Gol MoC (WPC Wing) letter No T-11018/1/99-CON dated 21 May 1999. Spectrum re-farming of existing bands should be immediately taken up. However, while re-farming existing spectrum, the interests of the defence and national security establishment should be adequately protected.

Spectrum Legislation and Regulation

41. The TRAI has released recommendations dated May 10, 2010 on the Spectrum Management and Licensing Framework have been received from the sector regulator TRAI. The following excerpts are taken from the recommendations:

"An assessment of the demand for spectrum involves both an assessment of the number of subscribers and the nature of telecommunication services in the next five years. Going by the growth trends, the availability of services as well as the emerging trends relating to urbanisation and teledensity in both urban and rural areas, it is estimated that the number of subscribers by the year 2014/15 would be of the order of 1000 million".[para 1.5]

"Simultaneously, the nature of Telecommunications itself is undergoing considerable change from provision of only voice communication to increasing provision of data as well as of applications. The next five years are going to see the spread

of 3G as well as the introduction of 4G services enabling subscribers to benefit from data and application services. An increasing availability of smartphones with significant processing capacity and a wide array of applications is resulting in higher requirements of spectrum. It is estimated that the total requirement of spectrum in the next five years would be of the order of 500 to 800 MHz including 275MHz for voice services alone". [para 1.27]

"On the other hand, the availability of spectrum is only to the tune of about 287 to 450 MHz. There is, therefore, need to bring in additional spectrum for commercial telecom services. In this direction, the Authority recommends that it should be entrusted with the task of carrying out a review of the present usage of spectrum available with the Government agencies so as to identify the possible areas where spectrum can be refarmed, and to draw up a suitable schedule. The Authority also recommends that a specific fund for spectrum refarming be created. The Authority would undertake regular spectrum audit to oversee the efficient utilisation of spectrum by the service providers". [para 1.30]

42. The TRAI recommendations are presently under examination in DoT. Concurrently, an exercise to formulate New Telecom Policy (NTP 2011) is also under way. In addition, the Government has constituted a Committee headed by Justice Shivaraj V. Patil, former Judge, Supreme Court of India to review and analyse the existing legislations relating to Spectrum Management and formulate a new comprehensive and integrated "Spectrum Act" which will put in place a statutory mechanism for spectrum management and licensing. A comprehensive and integrated legislative frame work for spectrum management should be put in place to ensure optimal and efficient use of the country's spectrum resources, after due consideration of the report of the Committee headed by Justice Shivaraj V. Patil.

Recommendations

- 44. The Committee recommends that all future telecom licences should be unified licences and spectrum should be de-linked from the licences.
- 45. The Committee suggests that vacation and re-farming of spectrum for commercial services should be expedited to ensure availability and certainty of adequate spectrum to facilitate optimal usage and revenue realization.
- 46. In future, spectrum for telecom access services should be made available through suitable market related processes.
- 47. In the context of space services, there is a need for the DoT and DoS to review the present rates for spectrum charges and transponder charges.
- 48. The Committee thinks effective measures should be taken to ensure continued efficient usage of spectrum by providing appropriate incentives/disincentives for efficient/inefficient usage including stipulation of rollout obligation, disincentives for lower usage levels, consideration of appropriate geographical unit for allocation and measuring usage and a rigorous oversight mechanism including audit, etc.
- 49. The Committee sees the need for more liberal mergers and acquisitions (M&A) guidelines keeping a minimum number of service providers to ensure competition. Spectrum sharing should

be permitted and suitable conditions should be laid down in this regard in consultation with TRAI. The issue of spectrum trading should also be looked into at an appropriate stage.

- 50. In the opinion of the Committee, the promulgation of Defence Band and Defence Interest Zone (DIZ) needs to be expedited.
- 51. The Committee sees the need for a comprehensive and integrated legislative framework for spectrum management to be put in place to ensure optimal and efficient use of country's spectrum resources.

Conclusion

- 52. In sum, this note argues for transitioning to market related processes for allocation of spectrum and development of a liberal regime by allowing mergers and acquisitions and spectrum sharing.
- 53. It is also felt that a more robust regime for spectrum regulation including spectrum legislation is needed which provides for adequate measures for efficient use of spectrum supported by conduct of periodic spectrum audits and necessary provisions for spectrum vacation and re-farming with a view to optimize utilization of the country's spectrum resources.

8. FORESTS

Introduction

1. Forest is a subject on the Concurrent list of the Seventh Schedule to the Constitution of India. The main Union legislation regulating the use and promoting the protection of forests is the Forest (Conservation) Act, 1980. According to Section 2 of this Act, no State Government can permit the use of forest land for non-forest purposes or de-reserve reserved forest land without the prior approval of the Union Government. Therefore, the Ministry of Environment and Forests (MoEF) as the nodal ministry of the Union Government on forest matters plays a pivotal role with regard to use and conservation of forest land. Under Section 2 of the Forest (Conservation) Act 1980, every State Government, before permitting investigation/survey/prospecting in forest land and diverting/de-reserving forest land for non-forest purposes, requires prior approval of the Union Government. Although forests in India continue to remain a major source of timber, the use of forest land for other purposes such as mining, laying of pipelines and transmission lines and road construction as well as diversion of forest land due to submergence caused by construction of dams/reservoirs are potentially more contentious in recent times.

Notion of 'Forest Allocation'

- 2. Prospecting of any mineral, done under PL granted under MMRD Act, which requires collection/removal of samples from the forest land, would be a stage between survey & investigation and grant of ML and as such permission under Forest (Conservation) Act, 1980 would be required. The statute for forest diversion requires the diversion in two stages. In Stage-I (i.e., 'in-principle approval'), the proposal is either agreed to or rejected. If agreed to, certain conditions largely relating to depositing the opportunity cost of forest land such as Net Present Value (NPV), Compensatory Afforestation (CA) and other expenses towards mitigating the environmental damages (Catchment Area Treatment, Wildlife preservation, Bio-diversity conservation and rehabilitation of displaced persons, if any) have to be fulfilled by the project authorities. Once this is done, Stage-II clearance is accorded by the Government. Following this the project authorities are handed over the forest land for use provided they have other requisite clearances.
- 3. In 1995 a petition was filed before the Supreme Court—T.N. Godavarman v. Union of India W.P. (C) 202/1995—which pointed out lacunae in the implementation of provisions of the Forest (Conservation) Act by the State and Union governments. In a judgement delivered on 12.12.1996, the Court directed that all on-going activities in any forest in the country which had

¹ However, in case of coal, lignite and metallic ores,- test drilling up to 20 boreholes of maximum 8" dia per 10 sq km and in case of non-metallic Ores excluding coal & lignite, – test drilling up to 16 boreholes of maximum 6.6" dia per 10 sq km for prospecting exploration or reconnaissance operations, without felling of trees, do not attract the provisions of the Act. In all other cases involving more number of drilling of bore holes, prior permission of Union Government under the Act is required.

commenced without the approval of the Union Government would have to cease immediately. This included running of saw mills and mining activities.

- 4. The Court also provided a new definition for 'forests'. It held that forest land was not only land which was classified as forests in the government records. Forests have to be understood in the 'dictionary sense' and ownership of the land was not a determining factor. In this way the Supreme Court extended the application of the Forest (Conservation) Act to land that was not forest land according to government records but could be described as a forest in the 'dictionary sense'. In the same decision the Supreme Court also removed the 'misconception' that only if forest land was being diverted for commercial use would prior approval be required from the Union Government.
- 5. This case has taken the form of a 'continuing mandamus' with the Supreme Court overseeing the proper implementation of the Forests (Conservation) Act by issuing directions and monitoring compliance over the last 16 years. Through orders delivered in this case, the Supreme Court has imposed a complete ban on felling of trees in forest except in accordance with Working Plans prepared by the State Governments as approved by the Union Government; directed the State Governments to identify areas in their states as 'ecologically sensitive areas' which would be totally excluded from any kind of exploitation; and restrained the removal of dead, diseased, dying or wind-fallen trees, drift wood and grasses, etc., from national parks and wildlife sanctuaries.
- 6. In another case, viz., the Center for Environmental Law, WWF v. Union of India W.P. (C) 337 of 1995, the Supreme Court prohibited the de-reservation of forests, wildlife sanctuaries and national parks without its approval.⁵ The MoEF moved the Supreme Court of India for deletion of the word "forests" from the above order. However, the Supreme Court of India on 09.02.2004 disallowed the request of the Ministry stating that "We see no ground to allow the application and delete the word forests" from the order dated 13th November. The application is accordingly dismissed."
- 7. In a subsequent case, the Hon'ble Supreme Court of India vide its order dated 23.01.2001 in IA. No. 703 in W.P. (Civil) No. 202 of 1995, also restrained the Union of India from permitting regularization of any encroachments whatsoever without their approval.
- 8. As the Court had taken upon itself the task of regulating and monitoring the use of forest land, the Court directed the setting up of an authority under the Environment (Protection) Act 1986 to monitor the implementation of the Court's orders and report instances of non-compliance.⁶ The Union Empowered Committee (CEC) was set up by a Notification issued by the MoEF.⁷ In 2007, when the term of the CEC expired, the Court vide its order dated 14.12.2007 re-constituted the CEC. The current CEC is therefore no longer a statutory body but a body set up by the Court with mainly advisory functions.

² Order dated 12.12.1996 of the Supreme Court in T.N. Godavarman v. Union of India.

³ Order dated 15.01.1998 of the Supreme Court in T.N. Godavarman v. Union of India. The minimum area of this land would be 10% of the total forest area in that State.

⁴ Order dated 14.02.2000 of the Supreme Court read with order dated 28.02.2000 of the Court in T.N. Godavarman v. Union of India.

⁵ Order dated 13.11.2000 of the Supreme Court in Center for Environmental Law, WWF v. Union of India.

⁶ Order dated 09.05.2002 of the Supreme Court in T.N. Godavarman v. Union of India.

⁷ Notification S.O. 1008(E) dated 17.09.2002 issued by the MoEF

Existing Mechanisms

- 9. As mentioned above, the use of forest land for non-forest purposes as well as dereservation of forest land requires a prior approval of the Union Government.⁸ This process, commonly known as the Forest Clearance process, starts with the Project Proponent making a proposal to be examined by officials of the State Forest Department. The part of the Form to be filled by the Forest Department has information about the nature of the forests including number of trees, density of vegetation, details of faunal diversity, etc. The officials of the Department may reject the proposal for forest clearance with reasons at this stage.
- 10. The process of forest clearance may be summarized as Figure 8.1 and Table 8.1.

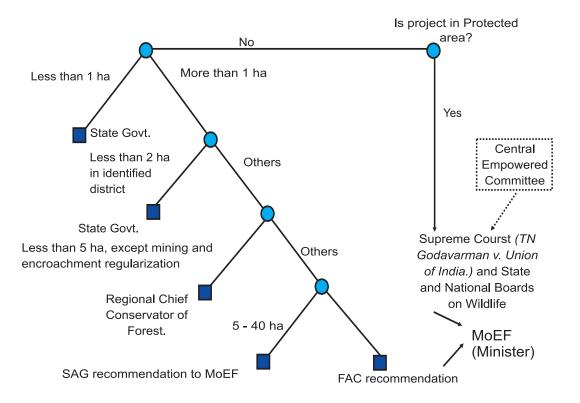


Figure 8.1: Schematic View of the Process of Forest Clearance

11. If the forest land is in a national park or wildlife sanctuary, additional approvals are required before the MoEF can grant forest clearance. The State Government has to place the proposal before the State Board for Wildlife set up under the Wildlife (Protection) Act 1972. The recommendations of the State Board are placed before the Standing Committee of the National Board Wildlife (NBWL) also set up under the Wildlife (Protection) Act 1972. The decision of the NBWL is conveyed to the State Government which then has to approach the Supreme Court of India for approval. The Supreme Court may take the assistance of the Union Empowered CEC while making a decision.

⁸ Diversion of forest land does not change the status of forest land. De-reservation of forest land changes the status of the forest land.

Table 8.1: Process of Forest Clearance

SI. No.	Land Area	Institutions involved/ Procedure
1.	0-1 ha.	General approval from the Union Government for certain developmental projects such as schools, dispensaries, drinking water etc. – letters dated 03.01.2005, 24.09.2007 and 11.09.2009. Does not include mining or regularization of encroachments. No change in status of the land; NPV has to be paid; land cannot be used for any other purpose than what it has been approved for; cannot be in a Protected Area; there cannot be felling of more than 50 trees.
2.	0-2 ha.	Final decision with the State Government In 95 districts of the country which are either affected by left wing extremism or are backward districts, developmental projects have been granted general approval by the Union Government Final decision with the State Government
3.	1-5 ha.	Considered by the Regional Offices of the MoEF headed by the Regional Chief Conservator of Forests (RCCF). Final decision with the MoEF (Regional Office).
4.	5-40 ha.	Considered by the Regional Offices of the MoEF headed by the RCCF in consultation with the State Advisory Group (SAG) consisting of representatives of the State Government, representatives of 2 NGOs and 2 experts. Based on the recommendations of the SAG, decision is taken by the MoEF (Union Office, Delhi).
5.	>40 ha.	Considered by the MoEF (Union Office, Delhi) and the Forest Advisory Committee (FAC). Based on the recommendations of the FAC, decision is taken by the MoEF (Union Office, Delhi). If the area of land is >100 ha. then a site inspection is carried out by the Regional Office of the MoEF.

Source: MoEF

- 12. According to the Forest (Conservation) Rules, 2003 which is currently in force, the time-limits prescribed for different levels are as follows
 - After receipt of renewal proposals, in the prescribed format and complete in all respects, from the User Agency, 60 (sixty) days for State / Union Territory Government.
 - ii. After receipt of fresh proposals, in the prescribed format and complete in all respects, from the User Agency, 90 (ninety) days for State / Union Territory Government.
 - iii. After receipt of the proposals recommended for approval from the State / Union Territory Government, 60 (sixty) days for the Union Government to take a decision.
- 13. After the coming in force of the Forest Rights Act, the MoEF has issued circulars to all State Governments directing them to provide evidence along with the proposal that the settlement of rights under the Act has either been completed or has been initiated and will be

completed before the final approval is granted to the project. Unless such evidence is provided to the MoEF, it may not consider the proposal for diversion.

Payments for Diversion of Forest Land

- 14. When forest land is diverted for non-forest purposes, the project proponent has to pay an amount equivalent to the Net Present Value (NPV) of the forests. NPV is currently calculated based on the formulae recommended by the CEC and accepted by the Supreme Court of India in its judgment dated 28.03.2008. According to this there are six classes of forests.
- 15. The Champion and Seth ¹⁰ classification of forests is the most widely used classification system for India's forests. Based on climatic factors such as moisture content and temperature, it lists 16 forest types. These 16 forest types have been further sub-divided into 221 types and sub-types. The classification was undertaken for management of forests under working plans. The CEC in its recommendations to the Supreme Court, re-classified the 16 forests types keeping in view the ecological role and value of the forests. "Based on experience and judgment" it proposed six eco-classes. The classification of forests does not represent any hierarchy in value of the forest but groups together forest types which have certain basic similarities. For instance, Eco-classes I and II are considered of equal ecological value. Table 8.2 presents details of the Eco-classes of forests

Table 8.2: Eco-Classes of Forest

Eco-Class	Nature of Forest
Eco-class I	Tropical Wet Evergreen Forests, Tropical Semi Evergreen Forests and Tropical Moist Deciduous Forests
Eco-class II	Littoral and Swamp Forests
Eco-class III	Tropical Dry Deciduous Forests
Eco-class IV	Tropical Thorn Forests and Tropical Dry Evergreen Forests
Eco-class V	Sub-tropical Broad Leaved Hill Forests, Sub-Tropical Pine Forests and Sub Tropical Dry Evergreen Forests
Eco-class VI	Montane Wet Temperate Forests, Himalayan Moist Temperate Forests, Himalayan Dry Temperate Forests, Sub Alpine Forest, Moist Alpine Scrub and Dry Alpine Scrub

- 16. Before assigning a monetary value to these classes of forests, a further sub-division was made based on the tree canopy density within these classes very dense (>70% crown density), moderately dense (40-70% crown density) and open (10-40% crown density. For calculating the NPV, the CEC took into consideration the value of the timber and the fuel wood, value of the non-timber forest produce, value of fodder, value of eco-tourism, value of bio-prospecting, value of ecological services of forest, value of flagship species, and carbon sequestration value. The average NPV per hectare of land is ₹8,00,000.
- 17. Where the forest land involved is in a Wildlife Sanctuary, the amount of NPV to be paid is five times the amount of NPV for that class of forests and if it is in a National park, then the amount is ten times. There are a series of orders of the Supreme Court which allow certain

⁹ Circulars in F. No. 11-9/1998-FC (pt) dated 30.07.2009 and 03.08.2009 issued by the MoEF.

¹⁰ Champion, F.W. and Seth, S.K. 1968. <u>A Revised Survey of the Forest Types of India</u>. Nasik, India: Manager.Government of India Press, Delhi, India, p.404.

exemptions and reductions in the amount of NPV to be paid by certain categories of projects. Schools, playgrounds, hospitals, basic services such as overhead tanks and village roads are exempt from paying NPV.¹¹

Table 8.3: Net Present Value by Forest Class

Eco Value Class	Very Dense Forest	Dense Forest	Open Forest	
1	10.43	9.39	7.30	
II	10.43	9.39	7.30	
III	8.87	8.03	6.26	
IV	6.26	5.63	4.38	
V	9.39	8.45	6.57	
VI	9.91	8.97	6.99	

18. Neither the Forest Conservation Act or the Rules explicitly provide for a public consultation process. However, the Guidelines issued by MoEF¹² require that "whenever any proposal for diversion of forest land is submitted, it should be accompanied by a resolution of the "Aam Sabha' of gram Panchayat/Local Body of the area endorsing the proposal that the project is in the interest of people living in and around the proposed forest land except in cases wherever consent of the local people living in one form or another has been obtained by the State or the project proponents and the same is indicated in the proposal explicitly. However, it would be required where the project activity on forest land is affecting quality of life of the people residing in nearby areas of the site of diversion; like mining projects, displacement of people in submergence area etc." (Guideline 2.1 (vii) (4)). This is not required when the project requires public hearing in order to get environment clearance (a copy of public hearing is needed along with the proposal in such cases) or for projects like construction of roads, canals, laying of pipelines/optical fibers and transmission lines etc., where linear diversion of forest land in several villages are involved, diversion of private forest lands and in case of small public utility projects like drinking water, schools, hospitals which are for the welfare of local people.

Issues for Consideration

Transparency

19. The forest clearances that are granted by the Union office of the MoEF (land area more than 40 ha.) are first considered by the FAC. Based on the recommendations given by the FAC, the MoEF decides whether or not to allow diversion of forest land for non-forest purposes. The FAC, to be able to give an informed opinion, has to be presented with complete and correct data about the proposed project and the impact of the project on the forest. The information before the FAC is that which is submitted in Form A (first time approval) or Form B (renewal of leases) by the project proponent and the State Forest Department.

 $^{^{\}rm 11}$ Order dated 09.05.2008 of the Supreme Court in T.N. Godavarman v. Union of India.

¹² Handbook of Forest(Conservation) Act, 1980, Forest(Conservation) Rules, 2003 Guidelines & Clarifications http://www.arunachalpwd.org/pdf/Hanbook%20on%20Forest%20(Conservation)%20Act,%201980%20(updated%202004).pdf.

- 20. The mechanism for verification or independent review of the information in Form A/B is not clear and the consequences of providing or abetting the provision of false/misleading information is not apparent. Nor is there a process where the information to be considered is available in the public domain for contestation. This appearance of non-transparency may then lead to contestations that delay the project. As guideline 2.1 (vii) (4), notes, "it has been observed that in respect of many proposals, the Union Government receives representation from NGOs/local public bodies against the diversion of forest land or loss of forest land, environment and ecological grounds." Making this information provided in Form A/B available in the easily accessible public domain would increase transparency and enable NGOs/local public bodies to put forward any objections that they may have at an early stage.
- 21. Similarly, while the minutes of FAC meetings are fairly detailed, at least in the recent past, a significant part of the decision making regarding the diversion of forest land takes place at the state/regional level. Information relating to these decisions is not publicly available in the same manner as the minutes of the FAC meetings. Making this available would clarify the process of arriving at the final decision and provide a sounder and more public basis for understanding and communicating the allocation decision.
- 22. The National Committee on Forest Rights Act 2006 in its report "Manthan" published in December 2010 has recommended that the requirements of the circulars issued by the MoEF with regard to the Forests Rights Act should be incorporated in the Forest (Conservation) Rules 'to remove ambiguity in interpretation'.

Time taken for Forest Clearances

- 23. As per procedure adopted under the Forest (Conservation) Act, 1980 each and every proposal received either in MoEF or its Regional Offices is accorded an ID no. (which is the same as file no.) during the year (from January 1 to December 31). According to the MoEF, the in-principle (stage-I) approval is regarded as the main approval under the Forest (Conservation) Act, 1980. The final (stage-II) approval depends on the report of compliance to the conditions stipulated in stage-I approval, to be submitted, by the user agency through the State Government. The time taken for both stage I and stage II clearances can be calculated from the information available on the website of the MoEF. This is considerably longer as shown in Figure 2. Furthermore, mining projects often take longer to clear since they involve complex examination such as those of mining plans and impact of excavation operations, etc.
- 24. However, as seen in Figure 8.2, while two-thirds of all projects receive first stage clearances within 60 days, only 11% of mining projects (possibly small projects) are cleared in the same period. Indeed, over half the mining projects take over a year for first stage clearance. Similarly, while 56% of all projects receive both clearances within a year, only 22% of mining projects and 19% of projects needing forest clearance for more than 40 hectares (and therefore referred to the FAC) are cleared in this timeframe. This could be due to level of complexity or due to staff issues at state level.
- 25. Figure 8.3 plots the time taken for both stage I and stage II clearance for mining, projects above 40 hectares and all other projects. It shows that the process of stage II clearance may take a long time indeed. While only 13% of all projects take more than three years, a third (33%) of mining and 40% of projects above 40 ha. take more than three years to receive both approvals.

Calculation of NPV

- 26. The amount of NPV may be varied according to the eco-sensitive zone that the forest falls in and the valuation currently accepted may be re-assessed. The valuation of NPV accepted by the Supreme Court is valid for three years and would then be subject to variation. While the Kanchan Chopra Committee had supported a case-by-case valuation, the CEC recommended the 6x3 matrix referred to above. The CEC itself in its recommendations to the Court had acknowledged the need for reassessment in future
 - "18. In the absence of the availability of location specific values of goods and services provided by the forest with different species composition and density, altitude, management practice, soil type and depth, slope, aspect, productivity, dependence of local population etc., the CEC is of the view that the above methodology is reasonably reliable and presently the best available option. [emphasis added]...
 - 19. It is understood that in an ongoing project, the FSI is carrying out state-level mapping of the Forest Types. The above exercise is expected to be completed within the next 12-18 months. Thereafter, the MoEF through the FSI, may consider carrying out district-wise mapping of Forest Types and its further classification into type / subtype on the basis of species composition and density, climate, altitude, soil type etc. Once the above exercise, which may take about another three years, is completed in each district for various sub-type of forest, the NPV may be assessed after quantifying the value of goods and services provided by each sub-type of forest."

90% 78% 80% 66% 70% Stage I all 60% 52% ■ Stage I Mining 50% Stage II all 40% Stage II Mining 30% 20% 1% 11% 9% 8% 8% 10% 0% 0-60... 60-120... 120-180... 180-240... 240-300... 300-365... >365...

Figure 8.2: Time Taken for Stage I and Stage II Clearance

Source: Calculated from data provided by MoEF.

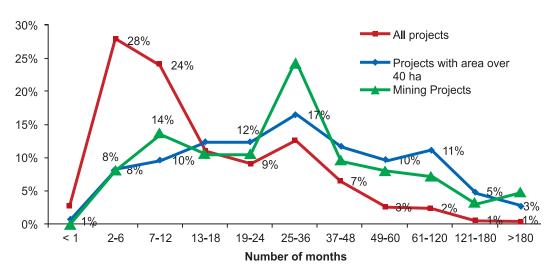


Figure 8.3: Time Taken Projects Receiving Stage II Clearance by Type of Project

Source: Calculated from data on MoEF website.

27. The process of calculation of the various components that constituted the NPV was based on a variety of sources and relatively limited information. While, as seen in Table 8.3, it was quite possibly the best that could be done under the circumstances, the quality of initial information input needs to be strengthened. It seems unreasonable that the NPV of forest land should be so substantially below the cost of land acquisition in states like Haryana and Uttar Pradesh. While the highest eco-class has a value of about ₹4 lakhs per acre, the current compensation for land acquisition in Haryana is ₹12 to 40 lakhs per acre depending on location. In addition, there is a solatium of 30% and an additional no litigation incentive of 20%, i.e., the amount is actually between ₹18 to 60 lakhs per acre. In this comparison, it appears odd that agricultural land should have a value that is so significantly more (between 4.5 to 15 times) than forest land.

28. The other aspect of NPV calculation is that while the process of its calculation is relatively transparent, the same cannot be said of other funds. Evolving guidelines similar to NPV payments for such funds too would help in improving transparency. In addition, it would be helpful to ensure that project wise payment details in to the various funds are available in the public domain.

Identification of Forest 'Zones'

29. Use of land which is notified as Forest land as well as land which has forest growth (dictionary definition of forest) for non-forest activities requires the approval of the Union Government as per Section 2 of the Forest (Conservation) Act 1980 and its interpretation by the Supreme Court of India in its 12.12.1996 order in T.N. Godavarman v. Union of India. There is no forest land that is excluded from this process. Thus, ab-initio, the prospect of divertibility for all forest land is similar, with the decision being taken on a case-by-case basis after submission of Form A. Therefore, even forest land falling within the boundaries of a wildlife sanctuary or a national park can be diverted for non-forest use, albeit with the approval of the Supreme Court and there are a number of instances of such diversion (see Annex XXIII). The forest clearance process varies depending on the area of land that has to be diverted for non-forest purpose and not on the nature and quality of forests, or its ecological value. Currently, this is decided

on a case-by-case basis, based on the Form A information. Thus, even in such cases, where the forest may not be available for diversion, the process is initiated and along with various appeals provisions, can occupy the system for some time. Part of the delay may be explained by this fact.

30. If the process factored in the type of forest beyond the classification adopted for purposes of NPV, it may become more streamlined. The process used by the CEC to arrive at the ecological value of the forests was based on relatively limited work, as discussed eariler for the relatively limited purpose of calculating NPV and not for purposes of divertibility. The proposed classification of forests could be based on criteria such as biological attributes, geo-climatic attributes, and stakeholder valuation. A similar classification is being considered by the Western Ghats Ecology Expert Panel constituted by the MoEF.¹³ This could permit the delineation of inviolate that are extremely eco-sensitive and would not be diverted for non-forest purposes under any circumstances or only for a defined set of limited circumstances.¹⁴

Table 8.4: Time Taken for Stage II Clearance for Mining Projects

Amount of Land Diversion Needed (ha.)	Number of Projects	Average Time Taken (months)	Average area of Project
Less than 1	27	23	0.50
1 to 10	34	30	3.61
10 to 40	16	67	26.12
40 to 100	22	60	63.50
More than 100	24	44	280.4

Source: Calculated from data on MoEF website.

- 31. Such a classification would require substantial capacity building of the state forest departments, who would be required to maintain a dynamic database of forest condition and use. It is necessary that the capacity of state forest departments be improved. A programme for reform linked capacity building of state forest departments would not only improve the knowledge of ecological services and enable more scientific preservation of forests, it could also reduce delay in the kind of decisions as seen in Table 8.4 for mining and large projects (these decisions could be negative or positive but they must be expeditious) by ensuring that the information necessary to take such decisions is updated on a continuous basis. As such, the efforts of the prospective project proponents would not be wasted by exploration in such areas and limited time of government officials would be better served by processing applications in other 'divertible' areas.
- 32. However, such 'divertible' classification would not mean an automatic approval for diversion. These other classes of 'divertible' forest would co-relate to a varying probability of forest clearance being granted which would correspond to varying time periods taken to take decision on the diversion due to the varying degree of scrutiny (compulsory site visit, additional

¹³ Madhav Gadgil, R.J. Ranjit Daniels, K.N. Ganeshaiah, S. Narendra Prasad, M.S. R. Murthy, C.S. Jha, B.R. Ramesh and K.A. Subramanian, 'Mapping Ecologically Sensitive, Significant and Salient Areas of Western Ghats: Proposed Protocols and Methodology', 100 (2) Current Science, 175 (January 25, 2011).

¹⁴ This would be in line with the order of the Supreme Court dated 15.01.1998 in T.N. Godavarman v. Union of India.

assessments), or a different institutional process (for example, diversion of an extremely ecosensitive area of land, even if measuring less than 40 ha. would require FAC scrutiny). This clarity would establish an ab-initio classification of forest that would be open for discussion by various stakeholders. It can also be expected to improve the predictability of clearances and reduce the time taken for the exercise.

Recommendations

- 33. The Committee recommends evolving a scheme for reform linked capacity building of state forest departments with a view to improving accessibility of information, improving the predictability and reducing the time taken for clearances.
- 34. The Committee suggests establishing an ab-initio classification of forest based on ecological value that would be open for discussion by various stakeholders with a view to improving the predictability of clearances for diversion of forest land. In this exercise, the Committee is aware that some parts of forest may become inviolate. Even this would be helpful in improving the predictability of clearances.
- 35. In the Committee's view, it is essential to ensure that all Form A/B submissions should be made available on the website of the Ministry of Environment and Forests and the respective state forest departments so that stakeholder comments can be received early in the process.
- 36. The Committee also suggests that all Minutes of the meetings of the SAGs should be made available on the website of the Ministry of Environment and Forests and the respective state forest departments to provide a sounder and more public basis for understanding and communicating the allocation decision.
- 37. The Committee recommends seeking the permission of the Supreme Court to evolve guidelines for de-reservation of such land currently classified as forest, which is not and conceivably cannot be reclaimed as forest
- 38. The Committee advises project-wise amounts paid under various mandates like NPV, compensatory afforestation, catchment area treatment, biodiversity conservation, etc. and evolve guidelines like NPV for other payments
- 39. The Committee recommends suitably re-adjusting payments under NPV and above schemes. Forest land has value over and above the value of land itself. This re-adjustment should achieve comparability with guidelines land valuation for other purposes, e.g. acquisition.

Conclusion

40. The contentiousness over the allocation of forests in India is largely for its conjunctive use, rather than for its use as timber as in countries like Indonesia and Brazil. Necessarily, therefore, the balance is between the value of the use for which the forest is needed, primarily for the extraction of some kind of mineral, and the value of the forest itself. This is complicated by the fact that the value of a forest is a conceptually complex

and thus administratively almost impossible to calculate to everyone's satisfaction. It will vary with people's current preferences and with their view of inter-temporal choices. Yet, choices have to be made and indeed, the primary function of the political process is the aggregation of disparate preferences. It is imperative however, that in doing so, the process be as well informed and transparent as possible and try to avoid decisions that foreclose future options. It is the Committee's belief that its recommendations are directed towards achieving such an outcome.



Introduction

- 1. India has experienced an accelerated pace of urbanization in the recent past. Land commands a scarcity premium, particularly in urban areas, due to ever increasing demand for developmental and/or industrialization activities. The situation is exacerbated on account of continued rural-urban migration in search of better life opportunities. The magnitude of the problem is underscored by the fact that while India has only 2% of the world's total land resources, it accounts for 17% of the global population and 18% of global livestock. The need to utilize the country's land resources with a great amount of care and planning is thus paramount.
- 2. Union Government Departments and Organizations have been the largest owner of landed property in the country. These lands were mostly acquired / allotted, when these areas were under-developed and there were minimal land requirements from other industries and developmental activities. However, most of these land parcels are in a position to command hefty premia as on date, with land prices having shot up due to the enhanced pace of development. These land parcels also face the threat of illegal occupation, land grabbing, encroachments and permanent alienation. There is, thus, a need to have a transparent and rational framework for management and allocation of Government lands, including through sale, leases and public private partnerships (PPPs).
- 3. The Constitution of India had originally contained provisions under Article 19(f) and Article 31, which constituted Right to Property. However, this led to striking down of various Acts enacted by the State Governments by courts in India, which, in turn, hampered the development of infrastructure in these States post-independence. Therefore, the Constitution (First) Amendment Act, 1951 was enacted and the Right to Property was done away with. Article 31(A) categorically states that no law which provides for acquisition by the state of an estate can be held void as being ultra vires Article 14 or Article 19. Presently, Entry 42 in concurrent list (List II) includes acquisition of property, which means that both the Centre and the State Governments can make laws on the matter. Land can be acquired either by the State or the Union government for the purposes listed under State and Union List respectively, unless the Union Government delegates the task to the State Government under article 258(1) of the Constitution. However, the maintenance of land records, survey of land for revenue purpose and records of rights, alienation of revenue, taxes on land and buildings come under the State List. There is a Union Act under the banner of Land Acquisition Act, 1894. Though it is Union Act, the Land Acquisition Collector is appointed by the State Government. Whenever any of the Government of India organizations other than Railways and Highways Authorities, who have separate laws for acquisition of land for specific purposes, require land to be acquired for their purpose, they do it furnishing a requisition with the concerned State Government. Even the compensation methodology is different from State to State. Government of India is basically a

promoting agency for updation and modernization of land records and for coordinating efforts related to land reforms. The Registration Act, though a Union Act, specifically empowers the State Governments to implement its various provisions by appointing registering authorities.

- 4. Land resources allocation policies and procedures in the country can be categorised into the following two broad categories, namely:
 - (i) Land alienation by Union Government Organisations/ Bodies. This category mainly relates to those cases, where surplus land is sold or otherwise alienated by these organisations for specified reasons; and,
 - (ii) Land alienation or allotment by the Housing Boards or Development Authorities, which are mostly under the control of respective State Governments.
- 5. In view of the above, it is clear that as land acquisition (entirely) and allocation (by State para-statals) falls within the domain of the respective State Governments, the committee shall restrict its scope to the land allocation/alienation policies of those parastatals, which are administratively under the control of the Union Government like the Delhi Development Authority (DDA)/Land and Development Office (L&DO) etc. and the land allocation/alienation policy of organization owned or controlled by the Union Government.

Notion of Allocation for Government Land

6. Many Union Government Departments and Union Public Sector Undertakings (CPSUs) have framed their own policies with the approval of the competent authority with regard to transfer or alienation of land. There are few CPSUs like NTC, etc., which sold off their surplus land to raise additional funds. Delhi Metro Rail Corporation (DMRC) and the Ministry of Civil Aviation / Airport Authority of India (AAI) also have or are in the process of developing policies to better exploit their land resources. Indian Railways have also established the Rail Land Development Authority (RLDA) as a statutory authority for development of vacant railway land for commercial use for the purpose of generating revenue through non-tariff measures. Ministry of Shipping (MoS) have their own approved land allotment policy with respect to land owned by port trusts. The following paragraphs attempt an overview of the land alienation policies of Union Government organizations.

Ports

7. The total area with the major ports is around 6,300 hectares. Many of these ports like Mumbai and Kolkata, are more than 200 years old and the old records are not readily available. Similarly, Paradeep Port is about 50 years old. However, efforts for mutation of land assets in favour of this port by Government of Orissa have only now been initiated. MoS had a land policy of 1989, which was later revised in 2004 for major ports. The latest version of the Land Policy for Major Ports and Ennore Port Ltd. was issued on January 13, 2011. This policy provides that every major port shall have a land use plan covering the entire land owned and/or managed by the Port. Such plans shall be approved by the Board and a copy forwarded to the Government. Any proposal for revision of land use plan shall be published on the web-site of the Port Trust, inviting objections and suggestions, and shall be finalized by the Board after considering the objections and suggestions received. The Land Allotment Policy provides that land can be allotted either on Licence or lease basis as per approved land use plan/zoning plan. As per the policy, land inside custom bound area shall be given on Licence basis only. The allotment of land in Custom bound area may be for activities directly related to Port operations or for

those which are not directly port related but aid the port activities and sea trade such as for setting up of duty free shops, communication centres, parking facilities, passenger facilities like shopping centres, cyber cafes, health clubs, etc., and security related activities. All such proposals should be subject to necessary statutory and administrative approvals. Licence of land outside custom bound area may be for both port related and non-port related activities, with preference to port-related activities. Licence of land outside custom bound area also will be governed by the same conditions as are applicable in case of land inside custom bound area. The land outside custom bound area can be leased only in accordance with the land use plan. Land should normally be leased through a competitive bidding process. However, land can be allotted on nomination basis to Government Departments, Central Public Sector Undertakings (CPSUs), State Public Sector Undertakings (SPSUs) or private parties in accordance with Schedule of Rates (SoRs) approved by the competent authority with due justification.

Delhi Metro

8. All allotments of commercial space are done by the DMRC in terms of Cabinet decision of the year 2009.

Civil Aviation

9. AAI manages 126 airports (including international airports, customs airports, civil enclaves and domestic airports). Total land holding of AAI at these airports along with communication stators spread throughout the country is 51,000 acres (approximately) at various locations. Out of 51,000 acres of land, 701 acre is under encroachment. At present, there are no codified rules / procedures for allotment. However, a draft is at an advanced stage of consideration. Broadly, land is allotted to various airlines for operational purposes at fixed rates as per SoRs. The Board of AAI has approved that 300 acres of land at 10 airports shall be allotted at market rates for commercial purposes through a competitive bidding process.

Department of Telecommunications

10. The Ministry of Posts and Telegraphs was bifurcated in the year 1985 and a separate Department of Telecommunications (DoT) was established under the Ministry of Communications and Information Technology (MoC&IT). Two autonomous public sector undertakings (PSUs), i.e., BSNL and MTNL were also created at that time along with Videsh Sanchar Nigam Limited (VSNL), which was set up to run international services. However, no formal bifurcation of land assets has been done till date. The creation of fixed assets register entails a massive exercise and money has already been sanctioned for hiring consultants to supervise this process. There are 38,000 telephone exchanges in the country, which also have substantial cumulative land resources with them. In the absence of details, it was informed by the DoT to the committee that no sale of land or any other resource is being contemplated as on date.

Department of Posts

11. There are 18,071 post offices around the country. Most of them are in rented buildings and there may not be much land available with them. However, there are still substantial land resources available with the Department of Posts (DoP), particularly in urban locations, which house post offices, offices and residential colonies. In these locations, a substantial quantity of surplus and unused land is available. At present, the DoP does not have any

policy for transfer of land. However, a policy for granting concessions for the use of land, on a public private partnership (PPP) basis is at an advanced stage of consideration.

Ministry of Railways

12. Indian Railways (IR) has approximately 4.31 lakh hectares of land, of which 90% is directly under tracks, yards, workshops and allied supporting infrastructure. Most of the remaining 10% of land is in the form of a thin strip along the tracks, which Railway has been utilizing or plans to utilize for its expansion for doubling, third line, quadrupling of track, gauge conversion, yard remodelling and other infrastructure, etc. Railways have also identified 1,520 hectares of land so far to examine feasibility of its commercial development by the RLDA, which has been set up as a statutory Authority, under the Ministry of Railways (MoR) through an Amendment to the Railways Act, 1989, for development of vacant Railway Land for commercial use for the purpose of generating revenue by non-tariff measures. As per existing practice, Railway land is given to developers for commercial development through a transparent bidding process on long term lease basis for development work, without any budgetary resources.

Ministry of Defence

13. All the defence lands are handled by "Defence Estates". The total defence land in the country is around 17.3 lakh acres, of which, 16 lakh acres is outside the cantonments. As per the Ministry of Defence (MoD) policy instructions dated July 11, 1986, defence land cannot be declared surplus; if at all any land is to be given, it should only be on the basis of exchange. The Prime Minister's Office (PMO) Office Order of August 22, 1997 has further laid down that no alienation of defence land will be permitted without Cabinet approval. An amendment issued in the year 2000 has permitted diversion of defence land for use by Public Sector Enterprises/State Governments/Public Utilities on short term lease basis, which does not lead to alienation. About 11,000 acres of defence land is under encroachments. There is no policy to transfer defence land for private use. Further, it has been clarified that the existing vacant land is required for defence projects; hence, at this juncture, there is no surplus land available for sale or transfer.

Land and Development Office of the Ministry of Urban Development

Land and Development Office (L&DO) was brought under the control of the then Ministry of Works, Housing and Supply (presently Ministry of Urban Development [MoUD]) with effect from October 01, 1959, and since then, it has been functioning as a subordinate office of the Ministry. L&DO is responsible for the administration of landed estates of Government of India in Delhi. The land and development officer (L&DO) was the custodian of the Union Government's lands, within and outside Delhi. Due to severe scarcity of land, large numbers of requests are pending from Union Ministries requesting for additional land allotment, which have not been satisfied. Similarly, even though the Cabinet had allowed allotment of land to political parties on payment of premium at full market value determined on the basis of rates prescribed by the Government of India from time to time, no allotment has been made due to paucity of surplus land. There is no land is available for private parties also and no land has been allotted to any private party during the period of last five years. SoR was last revised in the year 2000. There are three types of leases in respect of old Nazul lands, namely (i) residential, (ii) commercial, and (iii) institutional. Nazul leases are perpetual whereas rehabilitation leases are for 99 years. Except for one case, no allotment of land has been done through auction. All allotments of land on perpetual lease hold basis are made by the MoUD.

Delhi Development Authority (DDA)

- DDA is credited with being the first urban development authority in India. The first Master Plan for Delhi was formulated in 1962. The Master Plan—Delhi (2021) is now set to make Delhi a global metropolis and a world class city. The total area of Delhi is 1,483 km² and built-up area is around 702 km² in 2004. Development of 202 km² is planned under Master Plan (2021). There are 15 planning zones, out of which, eight zones are already developed. If green zones are excluded, five more zones are now left for development, which are proposed to be covered as urban extension zones. DDA first acquires the land and develops it. After development, the land is re-allotted and DDA does not retain anything with it. The land disposal department of DDA disposes its properties. There are four modes for disposing the land, i.e., Auction, Tender, Firm Allotment and Allotment through Draw. Allotment is done either on Leasehold basis, Freehold basis or Licence Fee basis and Temporary allotment is also done for specific purposes. Allotment to Group Housing Building Societies and Cooperative Housing Societies is made on the recommendation of Registrar of Co-operatives of the Government of NCT of Delhi. In case of co-operative societies, DDA provides land and the society distributes plots to individual members through draw; whereas, in case of Group Housing Societies, DDA allots land to the Group House Building Societies on the basis of number of members in the society. Societies build houses and allot flats to the members through a process of draw. DDA disposes commercial properties as commercial plots or as built up shops. Normally, the method of disposal is through auction/tender. Commercial plots are auctioned through process of open auction. Rule No. 5 & 20 of Delhi Development Authority (Developed Land) Nazul Rules, 1981 provides for allotment of institutional land for various purposes like social, cultural, religious, education activities, etc. The allotment of institutional land is divided into seven broad categories for (a) Hospitals (b) Community Halls (c) Clubs (d) Engineering Colleges / Professional Educational Institutes (e) Nursery, Private, Middle and Senior Secondary Schools (f) Religious Institutes and (g) Other Residual Categories. The mode of disposal in respect of Hospitals, Community Halls, Clubs, Engineering Colleges / Higher Professional Institutes is now through public auction.
- 16. The committee was informed during its deliberations that many other CPSUs like SAIL, BHEL, NTPC, etc., also have surplus land, which is routinely being disposed off. However, it was decided that the committee cannot examine these instances due to the short time at its disposal.

Issues for Consideration

Alienation of Land by Union Government Organizations

17. Each Ministry / Department/ Organization appears to be following a policy which has been approved internally. There may be instances, where the policies followed for alienation or transfer may not be similar amongst different Ministries / Departments / Organizations. The salient point of consideration is that there should be some uniformity in these policies, in terms of the broad guidelines to be observed while allocating/alienating land. These guidelines should be transparent and objective, which lead to optimal allocation of land resources available with these agencies.

Need for Union Depository of Land Records

18. There is lack of a detailed and credible inventory of land resources owned or occupied by the various Union Government Ministries / Departments/Organisations as also their current

status. This information—when compiled—will not only facilitate a transparent and efficient public land management with accountability, but it will also enable the Government to know its own land resources' balance sheet. The inventorization should be accompanied by satellite imagery or GIS mapping. This manner of stock-taking will make land records tamper-proof and reduce the menace of litigation associated with land disputes. It will also act as a safeguard against encroachment or embezzlement of government land, and facilitate law enforcement and public land recovery (in case of illicit allocation or encroachment).

Taking of all Realistic Steps Required for Optimum Realisation

19. The price discovery of land is difficult as the value depends on many factors such as land use, floor area ratio (FAR) and location, etc. Further, even a clear title can hugely inflate the value of land. Therefore it is very necessary that all possible steps must be taken before initiating any proposal for alienation of land to ensure that optimum value is realised by alienating such land. This, inter alia, also includes the need for change of land use to the most optimal land use in consultation with the State Government, so that true value for money is realised by the Government.

Need for a High Level Oversight Body

20. Discussions in the committee's meetings also revealed that in some cases, the land occupied by Government organisations was not mutated in its own name for one reason or the other. In a few cases, these lands are still in the name of respective State Governments. Similarly in some cases, no land records are available as land allotments were done many decades back. This may sometimes encourage encroachment and malafide allotment or alienation. It is therefore necessary that all land records should be updated to clearly reflect the title in the name of the Union Government organization to whom the land stands allotted; and, there should be some monitoring mechanism in this regard.

Need for Land Exchange Management Committee

21. There may be occasions, when a Union Government Department or Organisation may be in need of additional land for valid purposes, but no land is available in the vicinity or else is too costly. Similarly, some other Government Department or Organisation may have surplus land, which is lying idle or un-utilized with no need in near future. This surplus land is not only costly to maintain and protect but is also always under threat of encroachment, etc. Therefore, there should be mechanisms to allow easy transfer of surplus land from one Union Government Department or Organisation to another on mutually agreed terms and conditions. Similarly, there may be occasions when the respective State Government or Local Body may wish to regain a particular piece of land, which is required for their developmental activities. Therefore, there should be a mechanism, which allows Union Government Organizations to exchange lands in their possession with another appropriate land parcel available or on offer by the State Government or Local Body elsewhere. These circumstances necessitate creation of a 'Land Exchange Management Committee', which can approve appropriate terms and conditions for mutual exchanges between Union Government organizations and also between Union and State Government organizations.

Avoiding Alienation of Land on Lease Basis

22. Existing procedures allow the lands to be alienated or transferred either on long term lease basis or through outright sale. However, it is well known that it is difficult to regain the possession of land already given on long term lease. Further, the annual amount of lease rentals cannot keep pace with market factors / inflation and hence become progressively insignificant as compared to prevailing market rates after a certain period of time. Thus, it may be more optimal to alienate land through sale rather than a long term lease. In case of sale, an ascending e-auction methodology could be resorted to, like the one used by NTC for selling its Mumbai properties, which fetched record returns.

Alienation of Land by Land Owning Parastatals of the Union Government

23. There is need for clear instructions to be issued that all land allocation by land development agencies and housing boards, especially with respect to commercial, industrial or institutional properties must be on the basis of a transparent and competitive bidding process. However, the pricing for housing allotments to public at large, especially with respect to lower income groups or middle income groups must be at actual cost, with transparent and realistic norms for the purpose. Similarly, there may be a clear and transparent policy for allotments to services and utilities, including hospitals, educational institutions and religious places, subject to land availability, under transparent and published zonal plans.

Need for Transparency and Clarity in Policy for Land use Change

24. Even though, the instances of permitting change in land use by the land development authorities in Delhi may be few, it is felt that the the land owner in Delhi does not share anything with the Government for any increase in the notional value of his land on account of any change in land use or enhanced FAR permission. This may amount to undue enrichment of the land owner, especially in case of change of land use from "Agriculture" to "Commercial".

Need for Revision in the Amount of Ground Rent

25. The disposal of Nazul properties by the DDA is governed by "The Delhi Development Authority (Disposal of Developed Nazul Land) Rules, 1981". Sub-sections (3) and (4) of these rules provide that the allottee shall be the sub-lessee of the Union Government, unless Nazul land has been allotted on free hold basis either through auction or by tender for residential purpose or commercial purpose. Sub-Section (4) of this section provides that the rate of ground rent in all cases shall be subject to enhancement after a period of 30 years from the date of allotment. However, it seems that this enhancement in annual ground rent is not being done especially in case of very old leased out properties leading to revenue foregone by DDA.

Need for Periodic Updation of SoR

26. The SoR for land was not updated regularly. Since many of the allotments are on the basis of rates prescribed in the SOR, it is imperative that these are updated periodically or at least once in a year in line with the prevailing market rates.

Need for Action Plan to Utilize the Available Funds with DDA

27. DDA acts as custodian of Union Government properties (Nazul-II) also and DDA charges Union Government for this activity every year. A portion of these lands after development are transferred to DDA (housing wing) and another portion is alienated in accordance with the rules. The land transferred to the housing projects is sold to the public at large in the form of DDA Housing. The amount realised from sale or transfer of land is retained in the account of the Union Government in the books of DDA, which is outside the consolidated fund of both the Union Government and the State Government of Delhi. There are rules under which MoUD allows DDA to spend this money on prescribed infrastructure projects. However, this expenditure is much less than the realisations during last few years as is evident from the increase in amount of deposits & cash/ bank balances of the DDA as per its published accounts:

Table 9.1: Deposits and Cash/Bank balance by DDA (₹ crore)

	2009-10	2008-09	2007-08
GDA*	4,569.63	4,754.34	4491.49
Nazul-I	2.32	1.79	1.41
Nazul-II	12723.11	12224.46	10379.04
Total	17295.06	16980.59	14871.94

* Includes Reserve funds Investments

Source: DDA Accounts

- 28. It is clear from Table 1 that large amount of funds have been accumulated in DDA, which are lying as deposits in banks, etc. This is partly due to the lack of land acquisition by DDA during the last few years. Another reason could be the transfer price paid to the Union Government for lands which are internally transferred. Since the lands are eventually disposed of at a higher price in the future, this generates surpluses for DDA.
- 29. The income structure of General Development Account (GDA) of DDA is summarised in Table 9.2. It is clear from the table that income from investments now constitutes a significant share of the total income of DDA and was, in fact, 134.48% of income from Sale / Service by DDA during the year 2008-09. Therefore, there is emergent need for an action plan to utilize the available funds with DDA in performance of its statutory functions.

Table 9.2: Income structure of General Development Account of DDA (₹ crore)

	2009-10	2008-09	2007-08	2006-07
Income from Sale/ Service	385.43	379.80	1,166.90	452.24
Income from Investment	184.19	510.74	389.00	216.22
Other Income	42.14	76.78	93.77	59.77
Increase in stock/ works	345.95	233.28	-	113.84
Total	957.71	1,200.60	1,649.67	842.07

Source: DDA Accounts

Complete Transparency and Clarity in Accounts

30. There is yet another issue of the share of establishment & administrative expenses of DDA apportioned to the Union Government (Nazul-II) as is shown in Table 9.3. More clarity may be required on the basis adopted for allocation of these expenses as reflected in the table below. In part, this lack of clarity is because there is only a receipts and payments account for Nazul-II and no income and expenditure account or Balance Sheet is available for Nazul-II accounts. This points to the need for more transparency with respect of the accounts of the DDA. As an initial step, an 'Asset Statement' of all the Union Government lands or other assets in the custody of the DDA can be publicly disclosed and placed on its web site. If any of these assets are used by the DDA, payment to the Union Government on an appropriate basis needs to be made, in the same manner as it charges establishment and administrative expenses from the Union Government.

Table 9.3: Establishment and Administrative Expenditure Structure of DDA (₹ crore)

2009-10	2008-09	2007-08	2006-07
135.45	119.69	133.18	78.80
6.79	5.78	5.64	5.43
177.26	186.68	186.50	162.18
83.58	51.21	7.64	0
1.71	1.29	0.94	0.72
6.58	1.84	1.02	1.09
411.37	366.49	334.92	248.22

Source: DDA Accounts

Need for the Regulatory Body for Land Development and Housing Parastatals

31. It also emerged during the discussions that there is need for a Regulator in the Lands & Housing Sector as well. For example, in case of DDA, it is acting in all capacities, i.e., as a regulator, as well as a Housing Board and a Builder. MoUD clarified that they are considering the issue relating to appointment of regulators in the area of urban governance, who may, inter alia, also oversee land development authorities.

Recommendations

Alienation of Land by Union Government Organizations

- 32. Based on the discussions during the meetings, the committee came to the conclusion that the following measures, if taken, may lead to optimum realisation of value from the landed assets of Union Government. The broad principles suggested here in this report can be uniformly extended to similar organizations under the Union government.
- 33. The Committee perceives an imminent need for having an institutional framework for a centralized and transparent data bank, which should include the complete ownership details, area allotted and possible land uses along with actual status as regards utilisation and encroachments etc., in addition to the satellite images and GIS Mapping. This will facilitate a transparent and efficient public land management with accountability.

- 34. All the Union Government Departments or Organizations may need to ensure that their land resources are put to their optimum use by striving for not only using the maximum permissible F.A.R. available but also the most optimum land use. This may generate the surplus land resources for other alternative uses by the Government to the benefit of the country.
- 35. The land market is complex and diverse. Land prices are often the result of multiple interactions of many factors. Availability of all the ownership documents, limitations on transfer, land use controls, nearby land uses, whether leasehold or free hold, availability or absence of utilities and transportation facilities and anticipated economic growth in the area etc. are some of the factors affecting the market price of land. Therefore, unless complete facts are disclosed transparently, it may be difficult to realize value for money for the government. In the Committee's view the Union Government should issue an immediate direction that all steps as are necessary must be taken before any proposal for alienation of land is initiated to ensure that optimum value is realised by alienating such land. It also includes the need to have clear title, sale permission, if required and change of land use to the most optimal land use in consultation with the concerned State Government or local body. In view of above, it is imperative that when land is alienated through sale, a transparent auction methodology is used.
- 36. The Committee thinks it may be preferable to have a policy for out-right sale of land, unless there are legal constraints on account of original terms of allotment, rather than a long term lease arrangement, which is difficult to resile or cancel when the lease tenure is about to come to an end. The policy in cases of lease should consider specifying that an amount similar to the estimated sale value of land on the date of transfer shall be received upfront before entering into any long term lease with nominal amount of lease every year thereafter.
- 37. The Committee sees an immediate need for a high level oversight body to ensure that there is a monitoring mechanism for oversight and monitoring of all cases of land alienation by the Union Government Organisations. The Central Depository of Land Records as recommended in para 33 ante should also be accountable to this high level oversight body. This will bring improved accountability and transparency in alienation of public land assets.
- 38. The Committee also finds an urgent need to have a Land Exchange Management Committee to supervise or permit any exchange of land or transfer of surplus land from one Union Government Department or Organisation to other Union Government or Organisation after comprehensive scrutiny of the complete facts. This body will also allow the respective Union Government Organization to exchange the particular piece of surplus land with the concerned State Government or Local Body for another appropriate piece of land elsewhere. This land exchange body shall examine each request for land exchange and take a view on merits. It may be chaired by Secretary, MoUD and include representatives of Ministry of Finance, concerned administrative Ministry/Department and Department of Legal Affairs (DoLA). Alienation of land by land owning parastatals and housing boards under the control of Union Government
- 39. In the Committee's view, there should be transparency and clarity in form of guidelines or policy, on all land related issues, with some mechanism to share the notional gains by the land owner for generating funds for public welfare.
- 40. The lease deed for all the lands alienated on lease-hold basis provide for revision in the amount of annual ground rent or lease rent after a certain period, say thirty years. It seems that

there is no policy in place for such revisions. This needs to be done in all the cases, especially those cases, where allotments have originally been made on nominal rates. The Committee thinks there should be a clear policy prescribing the procedure for revision of rates, and as far as possible, the amount of revised ground rent should be fixed at its optimum value to enable resource generation.

- 41. The Committee sees an imperative need for regular updating of Schedule of Rates (SoRs), preferably in line with the corresponding market rates. This will ensure that there is less pressure for allotments at the SOR Rates especially in case of institutional allotments or other allotments at highly subsidized rates. Further, all lease allotments at higher rates will also imply a higher annual income in form of ground rent etc.
- 42. The Committee feels that there should be more transparency in the Accounts of land owning parastatals such as development authorities and other organisations involved in land development and public housing, and these should be put in the public domain so that the public at large also stands apprised as to the efficiency of these bodies. The terms of handling the assets of Union Government must also be fair and transparent with proper Income & Expenditure Account and Balance Sheet.
- 43. The objective of any housing board should be to make housing available at reasonable costs to public at large, especially economically weaker sections or low income groups. Therefore, the opinion of the Committee is that these organizations should not be governed by the profit motive, except to the point that it reflects their overall fund management efficiency. It is therefore, suggested that the pricing policy be transparently formulated. However, all commercial and institutional allotments should be at market prices, preferably through competitive bidding. This committee further suggests that the cost audit of the pricing of all the internal land transfers to all housing authorities, including DDA and L&DO, be done by the Cost Accounts Branch of the Department of Expenditure, Ministry of Finance, to ensure the reasonability of the transfer costs. The Cost Accounts Branch may also be asked to indicate the areas with scope for cost control and cost reduction, if possible.
- 44. The Committee notes that there are substantial balances that are currently available with DDA and suggests that there is immediate need to develop an action plan to utilize the available funds with DDA in performance of its statutory functions. Therefore, DDA should immediately chalk out the action plan in this regard. The position on available balances with DDA may be reviewed after a suitableperiod, say three years and appropriate action may be taken accordingly.
- 45. The Committee finds an imminent need for a common centralised depository of all land resources for the National Capital Territory of Delhi (NCTD) on the same lines as suggested in para 33 above for Union Government land, with complete ownership details, area allotted and possible land uses along with actual status as regards utilisation and encroachments etc., in addition to satellite images and GIS Mapping for reliable identification. This will not only facilitate the proper planning of the region, but will also ensure that all land / housing transactions are immediately updated on real time basis. It is further suggested that all the properties should be dematerialised on the lines of equity shares. This will not only enable the Government to know the details of all the properties owned by any particular individual, but will also simplify the purchase and sale of all properties without getting into much difficulties / hurdles. This will also not only be a step forward towards the rightful collection of government revenue but will also highlight the benami properties.

- 46. The Committee recommends a transparent competitive bidding or e-auction methodology for all cases of land alienation especially in case of commercial and institutional properties. It may be possible that this may not be feasible in exceptional cases. A composite policy in this regard for competitive allocation and allowable exceptions should be prepared and submitted for approval to the Cabinet. Subsequently, if in some exceptional cases, e-auction or competitive bidding is not found feasible, the land should be allotted only after the specific approval of Cabinet on a case to case basis.
- 47. The Committee recognized that a separate dispensation may be needed for the case of educational institutions. Of the plots that are identified for primary and secondary schools under the zonal plans / master plan, a substantial percentage, say 50%, should be earmarked and allotted for Government run schools. Of the remaining plots identified for primary and secondary schools, a small percentage, say 10%, can be allotted through a transparent reasoned mechanism with the approval of Cabinet on case to case basis. The remaining plots should be alienated through the auction process or competitive bidding to pre-qualified bidders in the field of education, as per the existing practice.
- 48. The Committee suggests for an immediate constitution of the Regulatory Body for the housing sector to take over the monitoring and oversight functions from DDA. This may be necessary to bring transparency in this sector.

Conclusion

49. The land sector is very critical for the country and its economy considering the high stakes involved. This sector is characterised by apparent non transparency and subjectivity in the disposal policy of the land assets. This leads to sub-optimal use of land in many instances. Hence, it is imperative that a transparent and uniform policy is framed with respect to alienation of land, which is followed by all the Government Ministries / Organizations including Government controlled statutory authorities. Similarly, all housing boards under the control of the Union Government should have a broad uniformity in their policies and with the presence of a Regulatory Body, it is hoped that sufficient housing at reasonable cost shall become a reality with Government also realising its true value for money.

10. WATER

Introduction

1. In the constitutional scheme, water is treated as a state subject, but is subject to Union intervention on issues such as inter-State rivers and inter-State water disputes to the extent legislated by Parliament. This reflects the prevailing situation when the Constitution was being drafted, when primacy was accorded to inter-State river water disputes rather than issues of drinking water, groundwater management and integrated use of water. The relevant entries relating to water in the Constitution of India are listed hereunder:

Entry 17, State list: Water, that is to say, water supplies, irrigation and canals, drainage and

embankments, water storage and water power subject to the provisions

of entry 56 of List I.

Entry 56, Union List: Regulation and development of inter-State rivers and river valleys to

the extent to which such regulation and development under the control of the Union is declared by Parliament by law to be expedient in the

public interest

Entry 21, State List: Fisheries

Entry 57, Union List: Fishing and fisheries beyond territorial waters

2. Besides the above, the Union legislates on matters enumerated in Entries 24, 25 and 27 of the Union List which talk about shipping and navigation on national waterways, on tidal and territorial waters and ports. However, by virtue of the 42nd Amendment Act, 1976, the entry "Forests" was added to the Concurrent list vide Entry 17A and this has been used by the Union to intervene in traditionally states' affairs on the pretext of protecting the environment and forests.

Actions taken by the Central Government

- 3. In pursuance of the powers vested in it to regulate inter-state river matters; the Union enacted the River Boards Act, 1956 and the Inter-State River Water Disputes Act, 1956 for those issues between states which could not be resolved through negotiations Environmental concerns have in recent years led to the centralization of powers under Entry 17A of the Concurrent List, with the enactment of various legislations such as the Water (Prevention & Control of Pollution) Act, 1974 and the Rules adopted there under in 1975, the Water (Prevention & Control of Pollution) Cess Act, 1977 etc.
- 4. The National Water Development Agency (NWDA) was constituted as an autonomous society in July 1982 to carry out water balance and other studies on a scientific and realistic basis for the optimal utilization of water resources; although, without any statutory basis. In 1983, the National Water Resources Council (NWRC) was created by a Union Government resolution adopted the National Water Policy in 1987. The National Water Policy has assigned the highest

priority for drinking water supply needs followed by irrigation, hydro-power, navigation and industrial and other uses. However, the NWRC does not provide for any specific dispute resolution mechanisms, nor does it delegate sideways to achieve commitment possibilities. Further, like the NWDA, it does not have any statutory force. The National Water Board (NWB) was constituted in September, 1990 with Secretary, Ministry of Water Resources (MoWR), as Chairman to report to the NWRC and review the process of implementing the stipulations of the National Water Policy.

Notion of allocation of water

- 5. The report of the National Commission on Integrated Water Resource Development Plan (NCIWRDP), 1999 has estimated that while the total usable water resource is around 1,086 billion cubic metres (BCM) and the present consumption is around 600 BCM; the rate of water consumption is expected to go upto 1,000 BCM by 2050. While there are considerable differences with regard to the estimates of availability, and the overall figures of the demand-supply balance are debatable, the critical fact is that there are wide variations in the availability of water, between different regions of the country, at different points of time in the seasonal cycle. There is a sense of an impending 'water crisis' in many parts of the country. The problems related to irregular and uncertain water supply in urban areas; rural areas lapsing frequently from 'covered' to 'uncovered' status; overuse and depletion of groundwater; inefficient use of water at various places, especially in the command of big and medium irrigation projects; and, persistence of water related conflicts and disputes are symptoms of this crisis. In this scenario, the allocation of water related issues require to be addressed on an urgent basis.
- 6. There are multiple dimensions to the issue of allocation of water. The primary dimension relates to the use of water for agriculture and irrigation, through allocations made from multipurpose dams and other storage systems. Apart from unviable pricing (which does not even cover the operations and maintenance [O&M] costs), the allocation of water through these systems poses problems of command area development (CAD), conflicts between upper and lower riparian consumers/users and lack of a system of regular repair and refurbishment of the assets created.
- 7. The dimension which causes greatest concern in the present day context is, however, the unrestricted use of groundwater for agricultural pumping sets, which has steadily led to a depletion of the groundwater levels across the country, with the problem especially pronounced in certain states of the north, e.g., Punjab and Haryana. The Central Ground Water Board (CGWB) has been constituted as an authority under Section 3(3) of the Environment (Protection) Act, 1986 for "regulation and control of ground water management and development". The Authority was constituted into a permanent body in November, 2000. Central Pollution Control Board (CPCB) has asked all State Pollution Control Boards (SPCBs) to refer cases where ground water extraction is involved to the Central Ground Water Authority (CGWA) for clearance. CGWA – under the administrative control of Ministry of Water Resources (MoWR) – regulates the withdrawal of groundwater in 1,615 over exploited, critical and semicritical blocks. The requirement of groundwater withdrawal by new as well as industries/ projects under expansion is examined on a case to case basis before grant of No Objection Certificate (NoC). The applications have to be submitted with a referral letter from statutory organizations such as the State Pollution Control Board (SPCB), Ministry of Environment and Forests (MoEF), Bureau of Indian Standards (BIS) and so on for further processing of the cases. All projects are required to submit detail designs for rain water harvesting, the implementation of which is mandatory in areas falling in critical blocks. Whenever permission/NoC for ground

water withdrawal is accorded by CGWA, a mandatory clause for rain water harvesting and artificial recharge of ground water by the industry/infrastructure project is included therein.

- 8. While the policy guidelines for according NoCs to industries/infrastructure projects are decided in the meeting of the CGWA, the following guidelines are currently being followed:
 - Permission to use groundwater is declined in cases of severely over-exploited areas, which are devoid of any deeper potential aquifers.
 - Permission to use groundwater is granted to industries/projects in critical blocks, subject to mandatory implementation of rain water harvesting/ground water recharge matching the proposed draft.
 - Permission to use groundwater is granted to industries/projects in semi-critical blocks, subject to implementation of rain water harvesting/groundwater recharge systems.
- 9. A related dimension in the allocation of water is its use for drinking water in urban and rural locations and the concomitant issue of sub-optimal pricing which leads to huge transmission and distribution losses, on one hand, and irregular and scanty supply to the population, on the other. This issue is being addressed presently through urban reforms initiated through the Jawaharlal Nehru Urban Renewal Mission (JNNURM) and reform linked incentives being offered under the rural drinking water schemes of Government of India, such as the Rajiv Gandhi National Drinking Water Mission.
- 10. Finally, water is allocated indirectly through allocation of sites for hydro projects, particularly in the Himalayan States, which also has an indirect ecological impact.
- 11. This report discusses allocation issues of water in the context of the first two instances cited above, i.e., water allocations for agriculture and irrigation from major and medium irrigation projects, and, reforms needed to rationalize allocations of groundwater. As will be shown, in these areas, there is scope for substantial intervention at the level of the Union Government. The aspect relating to drinking water (both rural and urban) and allocation of sites for hydro plants is largely in the domain of the State Governments (notwithstanding the role of Ministries of Urban Development and Rural Development in implementing Central Sector and Centrally Sponsored Schemes to address problem areas and provide funding). Thus, these aspects are not taken up further. In addition to the above facets, this chapter also examines the need for basin level planning for water and legislative changes in the framework for water, including shifting water to the concurrent list (List III of the Seventh Schedule) of the Constitution. The chapter, in the main, considers frameworks to look at water issues in an integrated manner, and also discusses suggestions to make water allocation mechanisms more efficient, transparent and sustainable.

Issues for Consideration

Allocation of water through irrigation systems¹

12. Irrigation is a State subject but the Centre complements the efforts of the States through the Central scheme known as the Accelerated Irrigation Benefit Programme (AIBP). Of the targeted irrigation potential of AIBP under the 'Bharat Nirman', of 13.5 million hectares (MHa) over 2005-06 to 2010-11, the physical achievement till the end of 2009-10 has been

¹ This section is based substantially on the submission entitled "Issues pertaining to water resources management", made to the National Development Council (NDC) by Mihir Shah, July, 2010, which was shared with the Committee.

of the order of 9.16 MHa, or 68%². Moreover, there is a gap between the potential created and potential realized, and the average decadal increase in the net irrigated area (NIA) through canals has come down between the 1990s and the first decade of the 21st century.

- 13. The biggest problem in fully utilizing the irrigation potential of major and medium storage systems is the inefficient management of the command area, leading to inefficiency and wastage. Further, continuing and recurring upgradation of the physical infrastructure is inhibited by the fact that most irrigation systems are financially impoverished, with the current water charges covering only upto about 15% of the operations and maintenance (O&M) costs. Many projects are taken up without any assessment of the cost-benefit analysis. This leads to sub-optimal and water-intensive cropping patterns, which, in turn lead to conflicts between upper and lower riparian consumers. Finally, there is inadequate participation of the farmers as stakeholders in the management of the command area, which is further compounded by lack of adequate capacity in the irrigation department functionaries.
- 14. There are multiple facets to addressing the weaknesses of the present irrigation systems. First and foremost, command area development (CAD) should occur pari-passu with the creation of infrastructure. It should not happen that the dam is constructed but the distribution system is not making headway making the investment idle and at times infructuous. There is a strong case for re-integrating CAD programme with the AIBP. Certain funds should be earmarked for micro-irrigation and improvements in agricultural practices, and an agricultural improvement programme focused on improving water use efficiency and agricultural productivity must be dovetailed into each project.3 The existing allocations available under the MGNREGS4, AIBP and other schemes of Ministry of Agriculture should be earmarked for this purpose. Water Users' Associations (WUAs) should be set up and provided the legal and statutory powers to allocate water, resolve disputes and set prices. The capacity profile of irrigation department officials should also be upgraded. Funds available from multilateral/bilateral agencies, supported by technical assistance on the basis of similar successful experiments in other countries, should be employed for this purpose. Secondly, volumetric pricing should be introduced and rates raised progressively to full coverage of O&M costs, in a transparent and participatory manner, so that the financial position of the irrigation sector is made viable at least on O&M. Finally, projects should be taken up only after a proper cost benefit analysis and no major investments should be made on project development, until the issues of land acquisition, relief and rehabilitation and forest clearances are sorted out. Further, "...creation of irrigation potential should only be recognized where there are no gaps in the main branch canals....(and) all the associated minors and distributories stand completed5".

Groundwater management⁶

- 15. There has been rapid spread of groundwater in India since the 1970s. The <u>number of groundwater irrigation</u> structures is now around 27 million with every fourth ² MoWR
- ³ For example, extensive use of flood irrigation of paddy wastes a great deal of water compared to the alternative system of rice intensification (SRI), which saves upto 50% water and also increases the yield by also upto 50%. Similar savings can be obtained through drip irrigation also. If one acre of paddy cultivated were shifted from the flooding method to the SRI method, there would be a saving of upto 45 lakh litres of water. This would suffice to provide for the domestic water needs of a habitation of 300 persons for one year @ 40 litres per capita per day (lpcd).
- ⁴ Mahatma Gandhi National Rural Employment Guarantee Scheme.
- ⁵ Refer footnote (fn) 1 supra.
- ⁶ The facts and ideas in this section derive considerably from the paper on "India's groundwater challenge and the way forward", by PS Vijay Shanker, Himanshu Kulkarni and Sunderrajan Krishnan, Economic and Political Weekly, January 8, 2011.

rural household owning at least one such irrigation structure. The share of groundwater in irrigation is around 70% now, with the share of tube-wells alone being around 40%. It has been stated that India is fast approaching a stage of "groundwater anarchy".

Legend Safe Semi - Critical Critical Over Exploited

Saline

Figure 10.1: Categorization of Ground Water Assessment Units

Source: Groundwater Scenario of India 2009-2010, CGWB

- 16. The stage of ground water development for the country as a whole is 58%. The status of ground water development is comparatively high in the states of Delhi, Haryana, Punjab and Rajasthan and UT of Daman & Diu and Pondicherry, more than 100%; which implies that in these states the average annual ground water consumption is more than average annual ground water recharge. In the states of Gujarat, Karnataka, Tamil Nadu and Uttar Pradesh the average stage of ground water development is 70% and above. In rest of the states / UTs the stage of ground water development is below 70%. The States of Punjab, Haryana and Rajasthan, especially, have shown a decline in water table to the extent of nearly 0.33 metres per annum between 2002 and 2008. A pictorial sketch of the groundwater scenario in India can be seen in Figure 10.1
- 17. Out of 5723 assessed administrative units (Blocks/ Taluks/ Mandals/ Districts), 4078 units are 'Safe', 550 units are 'Semi-critical', 226 units are 'Critical', 839 units are 'Over-exploited'⁸ and 30 units are 'Saline'. The number of over-exploited and critical administrative units are significantly higher (more than 15% of the total assessed units) in Andhra Pradesh, Delhi, Gujarat, Haryana, Karnataka, Punjab, Rajasthan and Tamil Nadu and also the UTs of Daman & Diu and Pondicherry. The proportion of "unsafe" districts in India (i.e., districts in the category of semi-critical, critical and over-exploited) has grown from 9% in 1995 to 31% in 2004, the area under these districts has gone up from 5% to 33% and the population affected from 7% to 35% in this short timeframe. Among the "safe" districts, a large number (almost 45%) suffer from quality problems of iron, arsenic, fluoride or salinity. Thus, nearly 60% of the total districts of the country have problems related to the quantitative availability of quality of groundwater. Another 11% of the total districts are on the verge of joining the "unsafe" category.
- 18. The rapid expansion of groundwater irrigation can threaten drinking water security since they share a common resource. Though drinking water supply is a small percentage of total water use (~7%), in rural areas, as much as 85% of its is drawn from groundwater resources. Out of 16.58 lakh rural habitations in the country, almost 70% are covered with adequate and safe drinking water for their entire population. The remaining habitations have inadequate or no safe drinking water source. The number of such slipped back habitations was 3.31 lakh in 2005 at the launch of the "Bharat Nirman" programme. More than 4.87 lakh slipped back habitations have been covered since then. However, even now there are as many as 5.07 lakh slipped back habitations reported by the States. The situation of habitations constantly slipping back from covered status due to inadequate or unsafe drinking water sources is the bane of the rural drinking water sector. The most common reason of this slippage is the drying up of groundwater resources.
- 19. A model groundwater control bill was prepared by the Government of India in 2005 for adoption by the States. Based on this model bill, several State Governments (11 so far) have enacted their own groundwater laws. These acts rely on a 'command and control' mechanism, such as restricting the sinking of new tubewells in areas with falling water tables while allowing existing tubewells to continue. The acts and do not address the central problem of limiting exploitation to appropriate levels and confer a monopoly on existing tubewell owners who could continue to extract more water than needed for their own use for sale to other landowners. These acts do not clearly prioritize the uses of groundwater, nor do they differentiate clearly between the commercial and non-commercial uses. The NoCs being given by the CWGB (refer para 7 ante) are also not too effective in stemming indiscriminate use of groundwater. The NoCs

⁷ Source: Groundwater scenario of India 2010; Central Ground Water Board, Ministry of Water Resources, Government of India, June, 2010.

⁸ In this classification, stages of groundwater development at (0-70%), (70-90%), and (90-100%) are classified as safe, semi-critical, critical and overexploited respectively.

⁹ Department of Drinking Water Supply (DoDWS), Government of India.

or lack thereof does impact availability of electricity connections, which can be circumvented through use of diesel for agricultural pumpsets.

- 20. In this scenario, there is need to initiate action on several levels in order to stem the problem of rapid exploitation of groundwater resources. The strategy being proposed has the following broad elements:
 - i. Re-articulation of the legal framework to treat groundwater as a public resource and allow State intervention in cases of excessive exploitation.
 - ii. Emphasis on community management of groundwater resources.
 - iii. Institutionalizing aquifer level planning.
 - iv. Breaking the "energy-irrigation gridlock" 10.
- 21. The legal framework created needs to be sensitive to the common property rights (CPR) aspects of groundwater¹¹. Under the 'public trust' doctrine, the state is perceived of, not as owning the water resources of the country, but as holding them in trust for the people (including future generations). As a trustee, the state will of course have to be empowered to legislate, regulate, allocate, manage, and so on, and all this must involve a degree of control. This principle has been upheld in the landmark judgement of the Kerala High Court in the Coca-Cola case (Perumatty Grama Panchayat vs State of Kerala), where it has been held that, "...the state is the trustee of all natural resources which are by nature meant for public use and enjoyment.... the state is under a legal duty to protect the natural resources...". The public trust doctrine has also been held as part of the Indian law in the case of M.C.Mehta v. Kamal Nath and Others¹². Acceptance of the public trust doctrine means that the right to water is to be de-linked from the right to land. The existing difference in law as between surface water and groundwater must be discarded¹³. If the public trust doctrine is sound in relation to surface waters, it is equally sound in relation to groundwater, and must be so extended. In other words, groundwater, like surface water, must be regarded as a community resource held in public trust by the state. The recently enacted Andhra Pradesh Water, Land and Trees Act (APWALTA) and the proposed Maharastra Groundwater (Development and Management) Bill, 2009, empower the state to act as the trustee of public good and interfere with individual rights wherever they comes into conflict with public interest.
- 22. Legal provisions for State intervention notwithstanding, groundwater must not be managed by the state. Legislation needs to be supported with community management of CPRs, subject to the role of the state in laying down principles, providing institutional mechanisms for the resolution of disputes, and creating frameworks for development of aquifer users' associations, along with conferring on them legal backing, as in the case of water users' associations (WUAs) under the participatory irrigation management (PIM) programme. While the basic legislations need to be at the level of the States, there is need to also have

¹⁰ See fn 1 supra.

The law in India recognizes 'private property' in the case of groundwater, where the ownership of land carries with it the ownership of the water that lies under the land. Even if the groundwater of an landowner is adversely affected by that of his neighbour, under common law, this consequence is damnum absque injuria (not actionable under law). This creates serious difficulties for the regulation of groundwater. Besides, this difference in law between surface water and groundwater (private property being recognized in the latter case but not in the former)) is a legacy of the past which is no longer tenable.

¹² "These resources meant for public use cannot be converted into private ownership. Thus the public trust doctrine is a part of the law of the land."

¹³ If the linking of ownership of groundwater to the ownership of land derives from common law, then the de-linking may not require amendments to existing laws such as the Indian Easements Act 1822 or The Transfer of Property Act 1822. A new law stating that groundwater is CPR and asserting the public trust principle may be needed.

arrangements for inter-State coordination, where the aquifer cuts across State boundaries. Regulation of use will then be through a combination of legal restrictions and social sanctions. As has been shown in the Andhra Pradesh Farmer Managed Groundwater Systems (APFAMGS) programme¹⁴, if farmers are given the necessary awareness and skills to measure and manage their water resources, community monitoring and self-regulation of water resources, both ground and surface, becomes a reality. Similarly, in Ralegaon Sidhi and Hiwre Bazar of Maharashtra, the local community has imposed self-regulation on extraction of groundwater. In Ralegaon Sidhi, the community agrees to drilling of new irrigation borewells only if the farmer installs drip or sprinkler irrigation. Other such community based groundwater management approaches in externally aided watershed management projects and community based tank management projects have also shown that the farming community can achieve both high agricultural productivity and drinking water security through careful garnering of water resources.

- 2315. There is need to have a web-enabled water resources information system, which will construct and disseminate information – on real time basis - on aquifers and aquifer typologies at a dis-aggregated level, after incorporating variations in hydrogeological and socio-economic contexts. The dis-aggregated maps can then be aggregated at a more regional level. Along with mapping, there is also need to build a comprehensive database on the groundwater flow systems and groundwater availability in each hydrogeological setting. The need for this exercise flows from the common property characteristics of groundwater, which is an "invisible, nonstationary, 'fugitive' resource, which does not respect boundaries set by landholdings"16. Thus, one user, engaged in competitive exploitation of groundwater, can squeeze out the water of others in the community. There is, therefore, a need to ensure equitable use of groundwater by the entire community, which depends on one aquifer, the boundaries of which may not be co-terminus with that of a village or a group of villages. The information support, thus constructed, needs to be made available to the local community to enable informed decision making as regards the sustainable yield of an aquifer. The community can then work out the apportionment of the water amongst competing users with drinking water security as the primary objective. Supply and demand side management techniques can be undertaken by the community such as protection of the recharge area, controlling the depth and spacing of wells, regulating capacity and efficiency of pumps used, water-saving irrigation methods and overall regulation of cropping pattern. The core concept of the APFAMGS project referred to earlier is that "sustainable management of groundwater is feasible only if users understand its occurrence, cycle and limited availability...the project employs participatory hydrological monitoring, by engaging farmers in data collection and analysis, and building their understanding of the dynamics and status of groundwater in local aquifers....complimented with crop water budgeting, whereby the quantity of water required for dry crops is assessed at the aquifer level and compared with the amount of groundwater actually available....crop water budgeting is conducted in aquifer wide meetings at which the budget is produced with thousands of farmers in attendance".17
- 24. A major factor contributing to rapid fall in water tables in India is the availability of free or cheap power. This is a vicious cycle, which once set off, is difficult to be broken. While electricity subsidies cannot be completely eliminated, the scheme of feeder separation¹⁸, where tubewell feeders are separated from other rural electricity feeders, and the former are supplied high

¹⁴ This programme is funded by the Food and Agriculture Organization (FAO) and implemented by NGOs in seven drought-prone districts of Andhra Pradesh.

 $^{^{15}}$ The source of this idea is the reference at fn 6 supra.

¹⁶ Ibid.

¹⁷ fn 1 supra.

¹⁸ e.g., the Jyotigram scheme of Gujarat.

quality, reliable and predictable electricity for around 8 hours a day, is a via media which can be tried out. This scheme has made possible, in Gujarat, "..real-time co-management of electricity and groundwater of which there are few other examples across the globe..." 19.

Need for a basin level planning²⁰

- 25. The basic framework for water allocation is that there should be a match between total water entitlements of an area and water availability in that area. Water availability may be considered on the basis of local available water resources, potential to augment local water resources, and the potential to bridge the gaps between local water availability and entitlements through exogenous supply. The affordability of exogenous supply will also be an important consideration in deciding the availability of exogenous supply.
- 26. A generic watershed based approach to planning will require a cascading and integrative approach starting from small basins (sizes of 500 to 1,000 hectares) to the highest order drainage of a river basin. All water resources may be considered in an integrated manner including local surface water resources, ground water resources, exogenous water supply and recycling of treated waste water for the management of water resources at the level of the above defined basic management unit. This calls for a scientific approach to water conservation, harvesting and recharge starting with the objective of improving water availability to the uplands in the watersheds, and also maximizing the use of local waters and minimizing the use of exogenous water.
- 27. While there is a need for a holistic ecological/ hydrological overview and harmonization at the river-basin or sub-basin level, at present, there are no institutional arrangements for this. The River Boards Act (RBA), 1956 enacted under entry 56 of the Union List has not found requisite support from the States. The possibility of making greater use of Entry 56 and of re-activating the RBA needs to be explored. The existing RBA would need to be amended to allow a holistic level planning at the basin level, after including within its ambit the management of groundwater resources as well; as also conferring a 'management role' on the RBAs, as opposed to a planning and overview role contemplated presently. The example of the European Water Framework Directive 2000 can be looked at, which places primacy of water management on basin level planning.

Multiplicity of legislations: lack of clear ownership²¹

28. As mentioned earlier, the Constitution of India does not clarify as to who is the owner of water, even though water is a State subject. This is in contrast to the situation, e.g., in the United States of America (USA), where water has been stated to be private property and therefore, 98% dams have private ownership. The existing water law framework in India is also characterized by the co-existence of varied principles, rules and acts enacted over the years including common law principles. Conformity to the National Water Policy is not a binding requirement and States often enact their own water policies, such as the Orissa or Tamil Nadu water policy, which are often not in consonance with the national policy. The "multiplicity of principles and rules, a

¹⁹ Ibid

²⁰ This section draws from inputs provided by CII and the paper on "Transforming water policy and law: A water manifesto for the Government of India" by Ramaswamy R.lyer.

²¹ This section relies on the paper on "Transforming water policy and law: A water manifesto for the Government of India" by Ramaswamy R.lyer.

multiplicity of instruments and the lack of an overall framework" has created a situation where the principles adopted by the Union and State Governments come in conflict and the basic ambivalence inherent in law is accentuated.

- 29. The need for a comprehensive national legislation on water is to be seen in this context. While centralization of authority has not been recommended by either the Sarkaria Commission or the National Commission on Integrated Water Resource Development Plan, the time does appear to be opportune now for enacting a 'framework legislation' which will lay down "core" principles of water management for adoption at the levels of Central agencies, States and local authorities, and provide the grounds or basis within which decisions and actions will be taken by various levels of governance in exercise of their own powers. To re-iterate, the intention of the proposed legislation is not to shift water management to the Union. Thus, water will continue to be managed at the level of the State Governments, subject to the devolution of local water management to panchayats and nagar-palikas under Schedules 11 and 12, and subject further to the increasing participation of civil society institutions in water management at every level.
- 30. The act is justified in light of the following reasons: a perusal of the international practice reveals that many nations of the world have national water laws and codes (the European Water Framework Directive of 2000 being the most important); water is as important and basic as a number of other subjects such as environment, forests, wildlife, biological diversity, etc, which are all technically in the States' domain, and in regard to which, national legislations exist; the extent of divergence which is being witnessed in the laws and policies being enacted by various States on water related issues is likely to pose several problems of management; and, a national law needs to define the position on riparian rights, so as to resolve inter-State disputes amicably. It was in recognition of the need for a minimal national consensus on certain basic perceptions, concepts and principles that led to the adoption of the National Water Policy (NWP) of 1987 and the new NWP of 2002 what is being suggested is merely that the NWP be revised substantially (or redrafted) and given a statutory status.
- 31. The proposed framework legislation would embody the recognition that there are multiple dimensions of water use and allocation, with the primary use being that of life-support. The legislation would also reflect a consensus position on how different roles of water (e.g., for agricultural, industrial and other economic purposes) should be harmonized, particularly vis-à-vis the fundamental right as life-support. The roles of multiple actors, viz., the state, community and individual would be de-lineated through the proposed legislation, and an effort could be made to ensure that the 'public trust' doctrine is firmly embedded in the governance frameworks of all sources of water. In recent times, there has been considerable debate on the need to ensure use efficiency in all facets of water-use, including drinking water, agriculture and industrial use. The use of optimal pricing has been cited in this regard, with a view to create incentives to promote efficient usage. The principles of water use efficiency arrived at through consensus would need to be reflected in the legislation, for adoption at all levels thereafter. Finally, the proposed legislation would also embody principles to govern water-allocations to and water-sharing between different uses, areas, sectors, States.
- 32. The proposed framework is not meant to be confer administrative authority on the Union Government, by way of issuing licenses and clearances. What is intended is a kind of umbrella legislation under which laws will be enacted, policies framed, rules and orders issued,

and executive decisions and actions taken, at different levels. Those laws, policies, actions, etc, will have to conform to the provisions of the umbrella legislation, and the legislation itself will of course be justiciable.

33. The case for an umbrella or framework law on water at the national level seems self-evident. There are two ways to operationalize it: either 'water' as a subject can be shifted to the Concurrent List (list III of the Seventh Schedule) [a note on this is at Annex XXIV]; or, a Central legislation can be enacted on a State subject, after taking consensus of a majority of the States. The latter strategy has been employed in enacting the Water (Prevention and Control of Pollution) Act 1974. The legal options available in this regard can be examined through consultations with constitutional and other legal experts.

Recommendations

- 34. The Committee sees an urgent need to have a comprehensive national legislation on water. This can be either done through bringing water under the Concurrent List and then framing the appropriate legislation; or, by obtaining consensus from a majority of the States that such a "framework law" is necessary and desirable as a Union enactment. The legal options in this regard need to be examined by the Ministry of Water Resources. The national legislation should clarify a common position on a number of issues, e.g., need to consider all water resources as a conjunctive, unified whole; water as a common property resource; principles of allocations and pricing and so on. The framework legislation should recognize that pollution also leads to conjunctive use of water, which makes the resource unusable for other purposes.
- 35. In the meantime, the Committee recommends amending the River Boards' Act, 1956 and include groundwater in its ambit, while assigning the River Boards Act (RBA) a managerial role in management of water resources. The process of seeking political consensus from States for making the Act more effective should be taken up pro-actively by the Union Government Ministry of Water Resources.
- 36. The Committee recommends aquifer level mapping, along with hydrogeological studies, and pilot projects to be initiated in different settings to address the problem of groundwater management urgently. Each of these pilots should cover an area of 5,000 to 10,000 hectares or boundaries of an aquifer, whichever is less. Comprehensive programmes of aquifer management can be built up based on these studies, in respect of these pilots. For better results, these pilots should be designed so that they converge seamlessly into ongoing schemes like the NREGA, IWMP²², and ongoing drinking water and sanitation projects. The pilots should take into account community awareness and participation, self-regulation of groundwater, enhancement of coverage of water saving methods, including changes in cropping pattern and so on.
- 37. Finally, the Committee suggests that the focus on command area management should be restored and merger of CAD programmes with the AIBP scheme can be contemplated in this regard.

²² Integrated watershed management programme

Conclusion

38. Water is essential to life and also to holistic growth of the eco-system. For over six decades of post Independence existence, the issues of holistic water management have not engaged adequate attention of the planners at the national and States' levels. This has led to the prospect of a water crisis, especially with respect to un-mitigated exploitation of groundwater resources. There is need to have a holistic legislation, with participation of both the Centre and the States to give water its due importance and ensure that all stakeholders share a common vision for its exploitation and use.

11. AUCTION VARIETIES¹

Introduction

- 1. In many chapters of this report, market related mechanisms have been recommended as a method of efficiently allocating natural resources. Competitive auctions are one form of such a market related mechanism. However, it is important to understand that there are various forms of auctions. Ab initio, it is difficult to make generic recommendations regarding the best auction format for any case because many factors such as the item being auctioned, its market structure, bidder preferences, the possibility of collusion, etc., need to be considered. This chapter is meant to illustrate a few types of auctions and the conditions under which they may be useful. While by no means comprehensive, it is meant to demonstrate the variety of options and highlight factors that need to be kept in mind when using an auction.
- 2. Auction design is a specialist activity and in most cases, auction designs are developed with professional help. For example, in the 3G and broadband wireless access (BWA) spectrum auction, the DoT gave Rothschild and Sons, an investment bank, the contract for designing the auction mechanism². Rothschild, in conjunction with DotEcon, an economic consultancy, then designed an online auction platform based on multiple rounds³. Similarly, in many other countries, consultants and academics are often involved in the design of auction processes. In the UK, the telecom regulator, Ofcom engaged the services of the Smith Institute, a mathematics consultancy, to design the auction mechanism for the 10-40 GHz spectrum band as well as check its software implementation⁴. Similarly in the US, Market Design Inc., a consultancy established by academic economists, has been responsible for designing the power exchange auctions for many states⁵.
- 3. Auctions can take very many forms and shapes. The two most familiar methods are the sealed bid tender, used for awarding most contracts, where there is only one round and no information is disclosed on the bids of other contenders during the auction process and the open outcry auction, familiar in popular depictions, where there are multiple rounds and bidders gain information about bids submitted by other contenders. As will be seen below, there are critical differences between these two popular forms and modern auction methods build on them. The advent of information technology now allows forms that were not practicables.

¹ Significant sections of this chapter are based on Cramton, Peter (2009) "How Best to Auction Natural Resources" Handbook of Oil, Gas and Mineral Taxation. Daniel, Philip et al. (eds.) Washington, DC: IMF http://www.cramton.umd.edu/papers2005-2009/cramton-auctioning-natural-resources.pdf

² http://articles.economictimes.indiatimes.com/2008-10-02/news/27727694 1 auctions-radio-frequencies-rothschild-and-sons

http://www.business-standard.com/india/news/3g-bwa-auction-no-scope-for-unrealistic-bids/391108/

⁴ http://www.smithinst.co.uk/cs-ofcom.php

⁵ http://www.marketdesign.com/projects-electricity.html

4. On occasion, the two types of bidding processes are mixed. One such example is the allocation of the fourth cellular license in India. For this auction, GoI used what it called the "informed ascending bidding" process. The bidding process had three rounds. The highest offer in the first round of bidding was treated as the reserve price for subsequent rounds. If there were four or more bidders in any round, the lowest bidder in any round was not allowed to participate in the next round. In case there were only two bidders, both would qualify for the next round. The highest bidder in the third and final round was declared the winner. Thus, while the initial two rounds were like an open outcry auction, the final round was a sealed bid round.

Bidder Preferences and Values

- 5. Auctions are meant to elicit valuations of bidders in the form of a bid; the extent to which this is accomplished determines how successful the auction is. Thus, perhaps the most important part of designing an auction is the structure of valuations of bidders. The three standard valuation types of bidder preferences are,
 - i. **Private Values**: Each bidder's value for an item or a package is independent of the private information of other bidders
 - ii. **Common Values**: Items or packages of items have the same common value to all bidders; but the actual value is unknown and bidders' differing estimates, based on their own private information about the common value reflects that uncertainty
 - iii. **Interdependent (or Correlated) Values**: Each bidder's value of an item or package depends on her private information as well as the values of other bidders. Thus, if a bidder receives information that allows her to update her estimate of the valuations of other bidders, her own valuation could change

Private Value

6. The same item may have a private values feature in one situation and a common value feature in another. For example, in the e-auction of coal, the value of the coal to a power plant operator can be largely seen as a private value, if the final selling price of electricity is contracted. In such a case, the generating company would be willing to pay a price for coal that would assure him normal profits at the contracted price of electricity. This would vary among bidders to a small extent, depending on the location of the plant (and hence the transportation cost that would be incurred), the efficiency of the boiler that would determine the amount of electricity that could be generated from a tonne of coal, etc. However, in the same e-auction, a coal trader's value would be closer to a common value, being the price at which he could resell the coal to other users.

Common Value

7. Indeed, as noted by Cramton (2009), natural resources often conform to the model of common values, especially for traded commodities like oil. For example in the NELP auctions, all companies value the oil at the international price of oil, but in a given block, the quantity of reserves and the cost of extraction are uncertain. Prior to the bid process, each company forms its private estimate of the reserves and cost, based on available information provided in the data package (which is based on geological surveys, seismic tests, etc.) which is analysed by its

own engineers. However, availability of the analysis of the other bidders would enable each of them to improve their estimates and reduce the uncertainty. The common value thus depends not just on a single bidder's estimate of value, but on all estimates. In practice, there are also a number of features that conform to the private value model, such as the bidder's expertise in exploration and development, its experience of working on similar or neighbouring blocks, its relationship with the sovereign government, etc. The extent to which each of these elements is important would vary from situation to situation, but it is reasonable to infer, like Cramton (2009), that the "oil rights setting has interdependent values with strong common value elements".

Interdependent Value

- 8. Interdependent values are essentially an intermediate, more realistic depiction that incorporates elements of both private and common values. As noted, common values typically occur because bidders base their valuations on a common market price, but companies hire different consultants, interpret geological data differently, have different risk profiles etc., all of which lead to slightly different valuations, even if common values dominate. Consequently, bidders would change their valuations if they had knowledge of other's valuations. Depending on the relative weight, interdependent values could be closer to common or private values.
- 9. Ordinarily, pure private values are not the primary feature in natural resource auctions, because the benchmark used to come up with valuations is the market prices⁶ which is inherently common. However, it is important to note that the regulatory regime may change the nature of the valuation model significantly. Unlike oil where the production company receives international market prices, if the gas firm receives an administered price, it could increase the valuation weight on elements such as the relationship with the sovereign government, as compared to the extraction cost, thereby reducing the common value feature of the valuation. Similarly, in marginal blocks, i.e., where the amount of reserves and/or the probability of finding them are low, it is possible that the private values of bidders (their exploration and development costs) are more important than the value of the output.
- 10. It is therefore important not only to accurately identify the existence of different valuation features (there are clearly elements of all three) but also prioritize them by importance. As we shall see, this determination plays a significant role in selecting which auction form is most appropriate.

Valuation and Forms of Auction

- 11. From the short description of the two canonical forms of auction and the different types of valuation, it is tempting to argue that sealed bid tenders should be used for items with private value features while open outcry or multiple round ascending bid auctions should be used for items with common or interdependent value features. This is because auctions are about bidders revealing their true value in the bid. Since there is no information to be gained from other bidders in a private value scenario, a sealed bid (which does not reveal information about other bidders' valuations) is suitable for such scenarios; while a multiple round ascending bid auction is suitable for interdependent values since each bidder can update her information using the bids of the other contenders. However, while this is a reasonable point of departure, auction design has to incorporate a number of other elements, of which two will be considered here, viz.
- i. Collusion
- <u>ii. Packaging</u>

Collusion

- 12. A critical role of auction design is to prevent any form of collusive behaviour. Apart from reduced realizations, the main consequence of collusion is allocation to inefficient bidders, which completely negates the purpose underlying auctions. Collusion can happen in various ways. When there are fewer bidders, the possibility of collusion is larger since it is easier for them to coordinate their actions. Further, enforcement of collusion usually needs either multiple rounds or sequential auctions, since the individual member deviating from the agreement needs to be disciplined, either in later rounds of the auction or in subsequent auctions.
- 13. One of the most common methods of collusion is price signalling. In any kind of auction with multiple rounds or in sequential auctions, bidders can arrange to condition their actions based on the kind of bids that they see during the auction. This kind of coordination is generally dependent on the amount of information that bidders receive from the auction mechanism. Identity of bidders is an important element of enforcing collusion. Deviation from a collusive agreement by an individual member can be punished by other members by changing their bid strategies in subsequent stages of the auction, e.g. the deviating member can be either denied the item or forced to pay an extremely high price. Knowing this, an individual member will usually not deviate from a collusive agreement.
- 14. However, enforcement of collusion in this manner would be difficult if it was not possible to determine which member had actually deviated from the agreement. Thus, by controlling the nature of the information released in the auction mechanism, some collusion related problems can be mitigated. For example, in a typical open outcry auction both the bid and the identity of the bidder are revealed but, in an internet based auction, it is possible to release only the highest bid for an item in a given round, without revealing the identity of the bidder or the bids of other bidders. Furthermore, sealed bid auctions are particularly suited to situations in which there is weak competition; since there is no information given back to bidders, and no scope for price signalling. This kind of auction is also appropriate when the market structure of the bidding industry is asymmetric; large and small companies all have one chance to express their valuation and there is no chance of being scared off by aggressive initial bidding.

Reserve Prices

- 15. Reserve prices are one method of protecting against collusion. Natural resource rights should not be sold for unusually low values. The auctioning agency should therefore have a sense of the minimum value of the items being auctioned. This is often quite difficult given the uncertainty associated with the items being auctioned. Price discovery in auctions in other countries can only provide limited guidance, since the regulatory environment, the probability of discovery and the size of the market differs across countries.
- 16. Reserve prices can be open, e.g., when the auction is started at the reserve price, or sealed. However, if the reserve price is too high, then the whole price discovery process is negated in an open reserve price model. Besides, the impact of open reserve prices on collusion is limited. Therefore, it may be useful to have a sealed reserve price (unknown to bidders), which is revealed after the auction is over. The auctioning agency can make a decision regarding allocation to the winner ex post depending on whether the winning bid crosses the reserve price. In this case the auction would intentionally start at a low price, and then price discovery would take its course.

Packaging

- 17. Often the auction is not about a single item, but a group of items. This can be a number of LSAs, as in the recently concluded 3G spectrum auctions or it can be a number of exploration blocks as in the NELP auction. In such cases, the value of a package of items may be different from the sum of the values of the individual items themselves. For example, a reason for the value of a package of items to be less than the sum of the values of the individual items (known as sub-additivity) can be a scenario where an oil company with limited capacity for exploration and refining may lack the resources to efficiently exploit two blocks while its valuation for the two oil fields individually may be relatively higher, since it will be able to exploit either one of them optimally. More often, the value of a package of items is more than the sum of the values of the individual items (known as super-additivity), e.g., the value of a national telecom license could be much greater than individual service areas since the operator would be able to offer roaming services without negotiating agreements with competitors. Similarly, having adjacent oil fields may help to reduce exploration costs by allowing a firm to optimize on staff and equipment to accomplish the same output. Keeping these factors is essential to designing an efficient auction.
- 18. The NELP and the 3G auction design approach the issue of packaging differently. In NELP, it is assumed that there is no super-additivity or sub-additivity. Each block receives a sealed bid and the winner is decided on a block by block basis. The 3G auction design however allowed bidders to construct their packages by allowing them to bid on multiple service areas. Since the purpose of auction design is to elicit the true valuation of the bidder, an auction design that allows the endogenous construction of packages by bidders is likely to result in both more efficient allocation and higher revenue realization.

Issues for Consideration

19. A well-known result in auction theory is the revenue equivalence theorem: under particular assumptions, the first-price sealed bid, second-price sealed bid, English ascending, and Dutch descending all result in the same expected revenue for the seller, and if an appropriate reserve price is set, it also maximizes revenues among all trading mechanisms. However, this does not mean that auction design is unimportant. The assumptions required for this result are quite special: (a) it has to be auction of a single item, (b) values must not be interdependent, (c) bidders must be risk neutral, (d) there must be no collusion or corruption, and all bidders must appear identical (aside from their private information). In practice many of these assumptions do not hold. The lack of each of these will affect the performance of alternative auction designs. A good design must take into account the particular real life setting.

Items and Bid parameter

20. It is essential to have clarity on what item is being bid for and what the bid variable is. In the NELP auction, for instance, the item is not just the block; it also includes the various statutory payments, the penalties that will apply if exploration commitments are not met, the fiscal regime, including the length of the tax holiday, the royalty regime, etc.; in short any characteristic of the concession that would have a financial bearing. Similarly, the spectrum comes along with specified usage charges, etc. Changing these items post-bid would thus affect the sanctity of the allocation process.

- 21. It is also possible that a change in the bid parameter can change the risk character of the item, and change its nature from a common value item to a private value item. For example, if instead of a PSC, a block is awarded based on a service contract, the item moves from being a common value item to largely a private value item, since the contractor is now trying to minimize cost of extraction, an element over which there is little interdependence with other operators. Similarly, to take another example from outside natural resources, if a toll road is auctioned using a capital grant model, then it is a common value item, since all bidders are trying to form an estimate of the revenues from toll, while if it is auctioned as an availability payment (annuity model) or a least present value of revenue contract, it is a private value item, since the core determinant of the bid is the cost of construction of the road, which is privately known to each bidder.
- 22. Similarly, the bid variable may be single valued, as in the 3G auction which had one parameter for evaluation or multiple valued, as in the NELP auction, which evaluates bids on the basis of work programme (exploration commitments) and production share offered. Multiparameter bids need to have a separate aggregation mechanism to convert them into a rank order, so that bidders can be ranked. In case of NELP, it uses a financial model to do this. The actual realizations may however be very different as compared to the model that was used to select the winning bidder since the assumptions of the model may prove incorrect over time. A single-parameter bid variable avoids these complications, but it does tie down the flexibility of the bidder to some extent.
- 23. Thus, to the extent that the chosen auction design depends on the nature of valuation, i.e., private, common or interdependent value, which in turn is dependent on nature of the item and the bid variable, it is important to consider these elements as a whole while determining the allocation process since they all influence each other.

Sealed Bid Auctions

24. Perhaps the easiest kind of auction to administer is a first price sealed-bid auction. In this kind of auction, each bidder submits a single sealed bid (no one else knows the value), and after all the bids are collected the highest bidder wins the auction. There is only a single round of bidding, so there is no price discovery. Sealed bid auctions are generally appropriate when private values are most prominent. When private values dominate, information revealed during the auction would not change their valuation because their own constraints and abilities determine their valuation of the item. However, their actions and bids may change. For example, if information was revealed during the auction about the valuations of other bidders, the highest value bidder would simply have to bid a little higher than the second highest value bidder to win the auction, rather than bid their private valuation.

Winner's Curse and Second Price Auctions

25. This eliciting of information regarding private values is also the main shortcoming of sealed bid auctions is that bidders may end up overpaying for the item. Since there is only one round, there is no chance to increase or decrease the bid. A bidder intent on winning the auction would have to express a relatively higher valuation in order to win the item. This is however not

⁷ This is common for works contracts awarded on the basis of bills of quantities. The selection of the bidder is done on the basis of least cost, given the estimated quantities and bid prices. The actual payments are done based on actual quantities used. Since there is a difference between the estimated and actual quantities, the final payment can differ from the bid price, at which it was awarded.

a case of strict private value. In this case, even though the value is private, it is not certain and thus when the bids of the others are revealed, the value to the winning bidder is presumed to change. While this may be suitable in terms of maximizing revenue, it is not entirely appropriate if the higher bid translates higher costs of the natural resource into a higher price. Consequently, the idea of a second-price auction has become fairly standard. In such an auction, the highest bidder still wins the auction, but only has to pay the second highest bid price. This replicates the situation in an ascending bid auction where the winning bidder has to bid only slightly more than the second highest bidder.

26. Sealed bid auctions are also used for simultaneous auction of multiple items, our NELP auctions being one such example. This is not a problem if the valuations of these items are not related (in terms of sub-additivity and super-additivity described above in the discussion on packaging), i.e., when the value of a package of items is equal to the sum of the individual values of the items in the package. When there are elements of interdependent value across items in a package, other auction formats may be more appropriate.

Open Ascending Bidding

- 27. Open ascending bidding is almost the diametric opposite of sealed bid auctions. The typical English auction, in which people sit in a room and openly state their bids on an item until someone states a high enough price which no one is willing to match, is the quintessential open ascending auction. Open ascending auctions are useful when there are elements of common values in bidders' valuations. The advantage of open bidding is that in the course of bidding information regarding bidders' various valuations is revealed. The uncertainty in bidders' valuations of items is mitigated by the information revealed in the auction process (being able to observe other bidders' valuations). This reduction in uncertainty leads bidders to be more willing to reveal their estimated valuations and this is likely to lead to higher revenues.
- 28. Packaging is more relevant in open ascending auctions, because when multiple items are up for auction, as knowledge of other bidders' valuations allows bidders to customize their own bids accordingly. One important issue here is whether items are auctioned sequentially or simultaneously.

Temporal Structure: Sequential vs. Simultaneous

- 29. A major trade-off in auction design relates to the temporal structure of the auction. Is it more efficient to sell items simultaneously or sequentially? The main argument for simultaneous bidding is that there is less guessing and speculation involved. Bidders can see these prices (for however many items are up simultaneously) change in real-time. This allows for a greater variety of bidding strategies because bidders can switch the items they are bidding for in response to the information they receive during the auctions. Consequently, there is less chance of regretting buying too early or too late.⁹
- 30. However, this flexibility of simultaneous bidding is also a weakness, since there is also more room for collusive strategies. Deviation from collusive bidding in such auctions can be punished

⁸ In the UK spectrum auctions, it is argued that overbidding may have resulted in higher mobile telephony costs. When such services have broader public value, such outcomes may not be appropriate or optimal.

⁹ Simultaneous ascending auctions have been used successfully in many countries around the world for spectrum auctions

more easily because nothing is assigned until the auction ends.¹⁰ While simultaneous bidding may be desirable, it is definitely sensible to space out sessions of simultaneous bidding to ensure that the not too much is at stake during a single auction at a single time.¹¹ Simultaneous auctions are also administratively a little more complicated, although advances in electronic auction services make this much easier, as evidenced by the recent 3G auctions.

31. In contrast to simultaneous auctions, in sequential auctions (whether for a single item or a package of items), bidders must guess the prices of future auctions when bidding. This involves making judgements about future supply and demand. To some extent, this can be mitigated by trying to provide some certainty on the supply side by announcing a schedule of offerings or a plan of release, e.g., for future supply of spectrum, release of gas or coal supplies, exploration blocks, land etc. While the uncertainty on the demand side will remain, this will allow for better planning by bidders in a current auction. Of course, it is important that these release schedules be adhered to; else the lack of credibility will lead bidders to bid aggressively in a current auction, since the availability of future supplies will be discounted.

Clock Auctions

32. A useful alternative to price-bidding auctions is clock auctions. The main difference in clock auctions is rather than bidding a price, the bidder must bid the desired quantity at a given price, which is gradually changed by the auctioneer. Simultaneous clock auctions¹² are well-suited for cases where interdependent values dominate, and the item being auctioned is divisible¹³ into discrete lots. In such an auction, the information policy during the price discovery process can be controlled. In a simultaneous clock auction, for example, bidders can be informed only about the excess quantity bid at a given price. This gives bidders enough information to shape their bidding strategy, but also prevents against potential collusion since no specifics regarding individual bidders is known to the others.

Activity Rules

33. Activity rules are an essential feature of multiple round auctions. They determine who will be allowed to continue bidding and bid increments (the amount by which the bid can be increased) and rules for changing bids. For example, a common activity rule in clock auctions is to require that quantities cannot increase with increasing prices. Similarly, in the recently concluded 3G telecom, auctions the bid increment was related to the number of bidders for a service area. Activity rules ensure an orderly progression of the auction. They also protect against attempts to take advantage of the system such as punitive bidding wars, bids conveying false information and collusive signalling.

Supplementary Rounds

34. Supplementary rounds are also used along with multiple round auctions. This is for primarily two reasons. One is to allow bidding for packages which otherwise were not bid upon. The second is to move towards a marginally more efficient outcome. For example, if a clock auction

¹⁰ In contrast, sequential auctions face an advantage because early winners have no reason to hold back in later auctions, which ensures sufficient competition.

¹¹ Often, the option of simultaneous auction may not actually exist, since it is not feasible to sell all possible items at once, such as selling all the NELP blocks at once instead of over multiple rounds.

¹² Clock auctions have been used successfully in many countries to auction electricity, gas, pollution allowances and spectrum

¹³ the case of indivisible quantities like a block of spectrum instead of mmscmd of gas, the bid would simply be a yes or a no depending on the bidder's decision to accept or reject the price offered.

is stopped when only two bidders remain, and then a supplementary round with a final sealed-bid opportunity (with the stopping point of the clock auction as the reserve price) is presented, then there is a good chance that the final outcome will improve on the outcome of continued clock bidding. As noted above, the auction for the fourth cellular license had, possibly inadvertently, included an element of this feature.

Conclusion

35. Regardless of how well an auction is designed, and now sophisticated the mechanism is, there are a few key pre-conditions to make any auction successful. The first is a well-advertised properly defined description of the exact items being sold through the auction. This usually consists of two elements, the contractual terms (including those which can be bid for) and the geographic specification. Secondly, the auction process must be well advertised and consultative. There must be absolute transparency in how the process is conducted, and if information needs to be released beforehand (e.g. seismic information, mineralization reports etc.), then this information should be equally available to all bidders. Considering that companies are expected to participate in this process, their feedback should be sought before finalizing the form (the recently released coal captive bidding documents is a good example of this). Finally, there must be a commitment to the auction process, and it should preferably be conducted by a trusted third party to prevent any sort of discretionary interference. Considering that many auctions are now conducted electronically, this is not particularly difficult. The partial transition to e-auctions in coal has done this quite successfully.

12. OVERARCHING ISSUES

Introduction

- 1. During the deliberations of the Committee, a number of issues that arose were seen to cut across multiple sectors. It was felt that the broad approach to be adopted with regard to these be outlined in a consolidated manner. This chapter thus brings together the following issues, viz.:
 - i. **Use of policy rather than rules:** There is some concern over use of policy statements to provide guidelines on matters of allocation rather than the use of rules under the relevant legislation, which was looked into by the Committee.
 - ii. **Nature of independent regulatory institutions**: Many of the sectors that were examined either have a proposed regulator or have one that was formed recently. In this context, if the recommendations of the Committee were to be implemented, it may affect the role of these institutions.
 - iii. **Legacy issues**: This refers to prior commitments made by Government that would be inconsistent with the proposed new dispensation would be a feature of almost all sectors. It was necessary to evolve a defensible approach to address such issues in a manner that would not violate the commitments made by Government.
 - iv. **Mechanisms for expediting clearances**: Administrative measures such as the embedding of clearances in blocks that are competitively offered.
 - v. **Complementary Investments**: These could be in physical infrastructure like enhanced rail capacity and new ports or even specific educational specialisations.

Table 12.1: Policies guiding the allocation of natural resources

Coal New Coal Distribution Policy

Minerals National Mineral Policy

Petroleum and Natural Gas New Exploration and Licensing Policy

Spectrum New Telecom Policy

Water National Water Policy

Forest National Forest Policy

Use of Policy rather than Rules

2. Table 12.1 outlines the various policies across sectors that are currently in force. As compared to legislation and rules framed under such legislation, policies have limited legislative oversight and varied levels of influence on actual decisions. Furthermore, the justiciability of policies is uncertain. Therefore, there is some concern about making policy documents the basis for major decisions about a sector.

- The courts have held that contents of a policy document "cannot be read and 3. interpreted as statutory provisions. Too much of legalism cannot be imported in understanding the scope and meaning of the clauses contained in policy formulations." At the same time however, the government, "cannot at its sweet will and pleasure give a go-by to the policy guidelines evolved by itself". However, since the executive adopts various policy norms in a bid to increase transparency and accountability, it "should make a real and earnest attempt to apply the criteria laid down by it" while exercising its delegated legislative power. While mere breach or contravention of the policy document by the subordinate legislation does not provide sufficient grounds to challenge the law, it can be argued, often successfully, that the government was both the author of the policy and the delegated legislation and thus laws have to "broadly and substantially" be compliant with the guidelines to prevent an Article 14 challenge on the grounds of arbitrariness.3 On this, the Supreme Court has stated: "By reason of any legislation whether enacted by the legislature or by way of subordinate legislation, the State gives effect to its legislative policy. A subordinate legislation, it is trite, must be reasonable and in consonance with the legislative policy as also give effect to the purport and object of the Act and in good faith."4
- 4. These principles (of arbitrariness) however apply in those cases when the same governmental entity which makes the policy, acts contrary to it while making the delegated legislation. When the maker of the policy is the Centre and the framer of the delegated legislation is one of the States, the situation becomes more complex and, usually in such cases, states are given greater leeway. The Union policy then becomes "advisory or persuasive and do not constitute any direction from the Government of India to the State nor any statement of policy on the part of the Union of India" In fact, the Court has gone on to note that even if the Union Policy was assumed to have contained directions, the same was not law under Article 253 of the Constitution and hence was not binding on the states.
- 5. Under these circumstances, while policy documents can be used as an initial stage for evolving a consensual approach to a sector and for laying down broad principles, it is better that such documents be translated into appropriately conforming rules, under the delegated legislative power of the executive, within a reasonable period of time. Such rules, being justiciable, are a more transparent instrument for governing a sector.

Regulatory Institutions

6. As part of the allocation and pricing process, a number of natural resource sectors either delegate or propose to delegate key functions to a separate regulatory authority. This report has also recognized the proposed creation of such authorities in sectors like coal, mineral, spectrum and forests and has recommended that the Director General of Hydrocarbons be reconstituted as a separate technical advisory body and a regulatory body independent of the Ministry.

¹ Secretary, Ministry of Chemicals & Fertilizers, Government of India v. Cipla Ltd. & Ors, (2003) 7 SCC 1

² ld.

³ Id.

⁴ Bombay Dyeing & Mfg. Co. Ltd v. Bombay Environmental Action Group & Ors, AIR 2006 SC 1489.

⁵ Karan Dileep Nevatia, Proprietor v. Union of India, 2010(2) ALL MR 81

⁶ Article 253 of the Constitution states that "Notwithstanding anything in the foregoing provisions of this Chapter, Parliament has power to make any law for the whole or any part of the territory of India for implementing any treaty, agreement or convention with any other country or countries or any decision made at any international conference, association or other body."

Table 12.2: Existing and Proposed regulators in natural resource sectors

Coal Regulatory Authority

Minerals

Petroleum and Natural Gas

Spectrum

Telecom Regulatory Authority of India
Spectrum Management Agency (proposed)

Water

Central Groundwater Authority

Land

Forest

Coal Regulatory Authority

Director General of Hydrocarbons

Telecom Regulatory Authority of India
Spectrum Management Agency (proposed)

Central Groundwater Authority

National Green Tribunal

- 7. Independent regulatory authorities are an important part of the process towards increased transparency in allocation and efficiency and sustainability in the utilization of natural resources. A key benefit of such authorities, as demonstrated by the experience of existing bodies such as the Electricity Regulatory Commissions and the TRAI, is their ability to undertake an open and transparent consultation process so as to bring a diversity of stakeholder views within the ambit of decision makers. Such a process is difficult to undertake within the confines of an administrative department. The outcome of such a consultation is usually an order or a recommendation that is reasoned. Thus, even those who disagree with the order or recommendation have a much better idea of the thought process that underpinned it and are therefore able to frame their disagreements more precisely and cogently, thereby making the process of appeal, if any, that much shorter and constructive. The outcome of this to and fro is likely to be a much more widely accepted approach to issues of the sector than would have been possible under a purely administrative arrangement, however impartially and reasonably conducted.
- 8. A second benefit, especially when the government is the owner of many firms that compete with private firms for the same marketplace, is the separation of the service provider and the regulator. Justice must not only be done, but, in order for it to be acceptable, it must also be seen to be done. The comingling of regulatory and service provision roles detracts from the appearance of justice in regulatory functions. This is even more so when the staff of regulatory authorities are drawn from service providers that are regulated and indeed return to them after their stint in the regulator, the DGH being a particular case in point.

Institutional Features

- 9. A critical feature of these existing and proposed regulatory institutions is therefore their independence. While it is difficult to ensure an independent mindset in a specific regulatory official, there are some structural features which can support such an outcome. These can be broadly classified as follows:
 - i. Appointment and removal of regulators: This process needs to be distanced from the administrative ministry and entrusted to a statutorily defined body. The ministry may play a convening and facilitative role in this process, but should typically not have a decision-making function. Furthermore, the criteria for selection should not be limited to a narrow group or specialization. The depth of specialization in a regulatory body needs to be in the permanent staff of the institution and not necessarily in the person of the regulator.
 - ii. Staffing of the regulator: There needs to be an independent cadre, separate from

the ministry and the bodies they regulate. While people may join the regulator from industry firms, and this may be necessary in order to ensure the appropriate expertise in the regulator, they should not be allowed to rejoin their former employer or any other industry firm regulated by the authority, at least for a sufficiently long period after they have left the regulator. Thus, the practice of staff on deputation should be strongly discouraged.

- iii. **Funding of the regulator:** It should be either charged to the budget or funded out of small industry charges and fees. Such an arrangement is possible in the natural resource sectors. While the regulator should be accountable for its expenditure and overall actions, though public scrutiny and legislative oversight, such accountability should not be exercised by the administrative ministry. In this context, it is instructive to remind ourselves of the example set by the Commissioner on Railway Safety, which does not report to the Minister for Railways, but instead to a separate ministry. Neither can the Commissioner on Railway Safety, who is usually a senior railway official take up a position in the Railways, subsequent to accepting the appointment.
- iv. Salary and perquisites of the regulator: Concomitant with the appointment process, the salary needs to be such as not to discourage public spirited citizens from the private sector from applying for the position. This is not to say that the regulator's salary should be benchmarked to that of the regulated entities, though in some cases, for specialist contractual staff, this may be necessary.
- v. **Directions to the regulator:** The power to issue such directions needs to be appropriately defined such that it is restricted from influencing individual decisions involving specific regulated entities. Furthermore, all such directions need to be personally approved by the Minister concerned and be accompanied by suitable justification in order to it be effective and any financial impact of such a direction needs to be accompanied by suitable budgetary provisions before they can be implemented.

Technical Domain

Regulatory Capacity

10. A number of these regulators will go beyond economic regulation and address complex technical problems. This is necessary because the resolution of such issues is best done in a transparent manner, for which, as we have argued earlier, independent regulatory institutions are well suited. This will include the management of spectrum (in co-ordination, where necessary, with defence agencies), monitoring of license conditions, especially with respect to mineral exploration, including the closure of mines. Similarly, in the case of petroleum and gas, it would involve the approval of exploration and investment plans; a process in which the technical arm of the current DGH is likely to participate to present the Ministry's point of view, as distinct from the regulated entity. All of these imply that the regulator possess substantial technical capacity and have the ability to access specialized technical knowledge and use it effectively. The staffing of the regulatory therefore has to be appropriately supported.

Licencing

11. With regard to licencing, a number of draft regulatory provisions appear to assign this function to the regulator. While, for reasons of transparency stated above, it is helpful to have the regulator make recommendations about licensing, it is perhaps better from the point of

accountability to assign the licensing of the natural resource to the owner of the resource, i.e., the government. In exercising this function, the government can be guided by the recommendations of the regulator, but not necessarily bound by them.

Economic Domain

- 12. In addition to technical decisions, the regulators may be called upon to make economic decisions, including pricing decisions. Indeed, the approval of the investment plan referred to above, which has a substantial technical component, is also a major economic decision. Broadly, however, the economic decisions can be said to fall into the following categories, viz.
 - i. Decisions about payments to the sovereign
 - ii. Decisions about prices paid by end users
 - iii. Decisions inter-se regulated entities, including that of mergers and acquisitions

In the latter two functions, the sector regulator's role would overlap with that of the competition regulator, the Competition Commission of India (CCI). The regulatory legislation would have to take this into account and institute appropriate role separation and mechanisms for consultation so as to ensure regulatory coherence.

Payment to the Sovereign

13. These payments are in the nature of statutory levies. As such, the final decision about payments, such as royalties and license fees, should rest with the sovereign and not necessarily with an independent regulatory authority. However, the regulatory authority can be tasked with evolving recommendations for this purpose.

Prices paid by End Users

14. In many of the sectors, the price paid by the end user is a product of market decisions and will not in general require the oversight of the regulator, though the regulator may well have the power. For example, TRAI has exercised forbearance in determination of telecom tariffs, in recognition of the progress of market forces. However, in sectors where there is a single large supplier, there may be a role for such price oversight in the short to medium term.

Actions Inter-se Regulated Entities

15. Finally, decisions about actions inter-se regulated entities, including mergers and acquisitions, will fall in the domain of the CCI. However, there are many aspects, such as issues that affect the determination of the relevant market are often better understood by sector regulators. It is therefore desirable that the sector regulator and the competition regulator work in tandem within a commonly agreed regulatory philosophy. For this, necessary co-ordination mechanisms need to be evolved. On occasion they may evolve naturally from actions taken by regulators themselves, such as the Forum of Indian Regulators, which has since been given a statutory status, but one cannot wait in the hope of such developments.

⁷ For example, is the market for coking coal different from that of coal in general? The answer to such questions may determine whether or not there is likely to be abuse of dominance following a proposed acquisition. Sector regulators are often better equipped to address such questions.

Legacy Issues

- 16. It is but natural that legacy issues are scattered across all sectors. These vary in form and intensity but are present in almost all sectors, as seen below:
 - i. In coal, there are the captive blocks that have been allocated, especially since 2003. Many of these have been allocated to state enterprises and all but a few are in a relatively early stage of development. In addition, there are earmarked supplies from Coal India Limited in form of existing linkages at non-market prices, though many of them do not receive their full linked allocation. In a move towards markets, these allocations are likely to increase in value.
 - ii. Similarly, in minerals, existing lessees have obtained their licensees without going through a bidding process. If future mining leases are bid out, then existing lessees would be at an advantage.
 - iii. The same is the case with gas, which is currently allocated by an empowered group of ministers, at an ostensibly market discovered price. Entities that receive gas at these prices would be at an advantage to others who may buy gas at LNG related prices, if they are in the same market.
 - iv. In spectrum too, existing allocations have been made at prices that may vary from that of prices which may be discovered as part of a market related process. This is a looming possibility for existing licensees whose licenses will expire in a few years.
- 17. Even though these issues exist, it is not necessary that they have to be addressed. In a business environment, it is quite natural that the rules of engagement evolve over time. This is well accepted by firms, e.g. the fact that TISCO and SAIL have access to large captive iron ore mines does not deter other firms from entering the sector. Of course, TISCO and SAIL are at an advantage compared to the newer firms but not so much so that it discourages others from entering. Similarly, the advantages of the early entrants in telecom did not discourage entry by latter entrants in the sector. This is also true in petroleum, where the presence of pre-NELP allocations did not affect the conduct of the NELP bidding rounds. To some extent, this is helped by the fact that the concessions were on a production sharing basis, which automatically levels the playing field to some extent. However, in the NELP round, the data package was acquired by paying an often substantial fee, which was not the case in the pre-NELP allocations. Broadly speaking, there is less resistance to legacy advantages when the future market size is large relative to the past, which would be the case when the economy is growing at a high rate.

Box 12.1: Windfall Tax in the United Kingdom

In 1997 the Labour government in the United Kingdom levied a windfall tax on the excess profits of the privatised utilities at a rate of 23 per cent on the difference between company value and the value placed on the company at the time of flotation. The company value was calculated by multiplying average annual profits after tax over a period of up to four years following privatisation by a price/earnings ratio of 9 (nine). The tax applied to companies privatised by flotation and regulated by the relevant privatising statutes, i.e., in telecommunications, airports, gas, water, electricity and railways. The tax was charged on the floated companies and raised over GBP 5 billion.

In Finland, a tax has recently been proposed on unearned income by nuclear and hydro power companies due to the rise in their revenue from carbon credits.

Source: Lucy Chennells (1997) The Windfall Tax Fiscal Studies v. 18, no. 3, pp. 279–91

http://archive.treasury.gov.uk/pub/html/budget97/ir1.html

http://www.world-nuclear-news.org/NP-Finnish_government_plans_nuclear_fuel_tax-0702114.html

Windfall Taxes

18. However, where there seems to be inordinate windfall gains as a result of the change in policy, it may be necessary to try and 'level the playing field' to some extent. This is used rarely since it involves a drastic change in fiscal regime, though there have been some examples in the United Kingdom and now in Finland. However, it is not necessary that windfall taxes be levied by changing the fiscal regime. In instances where the regulatory regime is being changed, e.g., where an existing mine is allowed to access a broader customer base or where telecom firms are allowed to move to a different unified license, a special levy may be charged as the condition for moving to a license. In this case, the move to a new regime is voluntary and therefore does not attract the criticism of an alteration in the fiscal regime.

Expedited Clearances

- 19. In many parts of this report, especially in the chapters relating to coal and minerals, it has been pointed out that the allocation of resources is subject to specific clearances, such as land acquisition, environment and forest clearances, etc. While most of these clearances are part of normal business practice, it does seem to be the case that allocation of mine blocks, whether coal or minerals, without acquiring land, in-principle (Stage I) clearances on forest diversion and acceptance of the terms of reference for environment clearance only leads to substantial delays in operationalizing the mine. This is even more of a problem if the process of allocation is based on competitive market mechanisms, since the bidders will discount the delay in their price and more importantly, bidders who believe are better able to obtain clearances will tend to bid higher, as compared to bidders who would be more efficient and sustainable in their operational activities.
- 20. It is therefore sensible to try and embed the clearances within a special purpose vehicle and offer the SPV as the object for bidding. This has been done with some success in the UMPP bids and industry has reacted positively to this approach. The problem with this approach is the incentive structure of the people in the SPV to obtain clearances expeditiously is limited since the SPV is sold once the clearances are obtained. This process has therefore to be administratively monitored strictly to ensure that the relevant co-ordination does occur. This is a challenge as shown by the delays in the clearances for blocks awarded to PFC for other UMPP projects.

Complementary Infrastructure

Physical Infrastructure

21. While focusing on the extraction of natural resources, it is important to remember that the use of many of these resources requires investment in complementary infrastructure. Coal needs to be moved from the pit head or the port to the power plant or other user locations. The same is true for other bulk minerals like limestone, iron ore and bauxite. In the case of coal and minerals, their transportation needs compete with other users of the road and rail network. In other sectors like petroleum and natural gas, resource-specific infrastructure, such as a pipeline network is needed. Sometimes, investment in one form of infrastructure creates capacity elsewhere, e.g. pipeline infrastructure for petroleum led to the decline in the use of rail tanker wagons and thus opened up rail capacity Even for spectrum, a broadband backhaul backbone that seamlessly integrates into the wireless network can enhance performance substantially. Such networks are a critical element of developing a national market for resources.

22. It is therefore extremely important that such complementary investment be kept in mind when considering the allocation of natural resources. Without sufficient co-ordination, the risk remains that decisions about a sector will lock in structures that will not be optimal once other complementary investments come on stream. The location of coal fired power plants within state boundaries instead of at pitheads is one such example. Conversely, load-centre gas-fired plants to meet intermediate and peaking load may be pre-empted by base load plants built near the coast, if electricity transmission lines are available but not gas pipelines. Without the foresight and sagacity to avoid such lock in, increased efficiency in allocation of natural resources may well be frittered away in the inefficiency of their use.

Social Infrastructure

23. Complementary investments are not just for physical infrastructure alone. In the Committee's deliberations, it was constantly reminded about the lack of adequate high quality educational infrastructure in fields like geology, geophysics, geochemistry, forestry, fluid dynamics, and myriad other fields. The odd good department in an university is not sufficient to meet the scale of such needs as are evolving with India's rapid growth. The lack of critical mass in such fields means that lack of available faculty will be a critical bottleneck in expanding education in these fields rapidly. Innovative thinking is needed to overcome such challenges

Recommendations

- 24. The Committee recommends that policy documents should be converted into suitably conforming rules, under the delegated legislative power of the executive, within a reasonable time. Such rules, being justiciable, are more transparent instruments for governing a sector. While stand-alone policies may be useful in many contexts, the allocation process should be formalized in delegated legislation.
- 25. The Committee has suggested a few broad institutional ground rules for regulators and allocation of functions. These include distancing the administrative ministry from appointment and removal of regulators and entrusting it to a statutorily defined body, having an independent cadre for the regulator with appropriate remuneration and service conditions and ensuring that it has a stable budget. Appropriate support for the staffing of the regulator is essential to create conditions for ensuring that the regulator possess substantial technical capacity and have the ability to access specialized technical knowledge and use it effectively. The power to issue policy directions to the regulator also needs to be appropriately defined, accompanied by suitable justification and personally approved by the Minister concerned. Any financial impact of such directions needs suitable budgetary provisions before implementation.
- 26. The Committee is of the opinion that powers to license and to determine statutory levies like royalties and license fees should rest with the sovereign, though it may be fruitful for the regulator to evolve suitable recommendations after a consultative process. Finally, given the necessity of interaction between sector regulators and the Competition Commission of India, it would be productive for a formal consultative mechanism to be instituted for the purpose.
- 27. The Committee recommends that where it is deemed necessary, as a result of legacy issues, to try and 'level the playing field', the government may consider moving to a new licensing regime and allowing existing licensees the opportunity to move voluntarily, after paying a special levy. Windfall taxes should used sparingly since it involves a drastic change in the fiscal

regime. It is also important to note that in a business environment, it is quite natural that the rules of engagement evolve over time and it is not necessary to address all anomalies.

- 28. The Committee recommends that, wherever feasible, the government should endeavour to embed the necessary clearances, such as stage-I forest clearances for mining, land use changes before alienation or lease of land, security clearances, etc. within an SPV, before bidding. This will reduce the time taken and generate better value.
- 29. The Committee recognizes that transparent mechanisms of allocation of natural resources need to be supported by investment in complementary physical and social infrastructure in order for markets to work effectively and for the process to be efficient and sustainable. To this end, it is necessary that allocation choices avoid the tendency to base decisions on the current state of complementary infrastructure and keep its continuing evolution in mind. This will need a high level of inter-ministerial policy co-ordination to be effective.

Conclusion

30. This chapter has considered a few of the overarching issues that underlie the allocation process. There are no doubt other important issues that impinge on the process, such as the stability of overall fiscal and investment regime, the policies with respect to international trade and most importantly perhaps, policies that influence the overall energy and resource intensity of the growth path that India will travel on. The policies for natural resource allocation will be but a part of this overall architecture, which has to stand together consistently with each other.

13. COMPILATION OF RECOMMENDATIONS

Recommendations on Coal

- 1. The Committee recommends standardising the format of minutes for all Standing Linkage Committee (Long-Term) meetings, particularly for meetings where allocation decisions are made. These minutes should include specific justifications for both accepting and rejecting applications
- 2. The Committee suggests improving the regularity of the quantity and predictability of location of e-auction coal to allow development of associated logistics
- 3. The Committee advises increasing the number of approved end-uses by notification as permitted in Section 3 (3) (a) (iii) of the Coal Mines (Nationalisation) Act, 1973
- 4. The Committee recommends allowing independent mining firms to take part in auctions for captive blocks, with suitably notified groups of end user firms as elaborated below
- 5. The Committee recommends creating a platform for transaction of coal. This platform can be owned by CIL to meet current regulatory needs.
- 6. The platform can register all approved end-users, including those from new end-uses notified above, such that sales to any registered user through the platform would automatically satisfy the end use requirement. In particular, all genuine users seeking linkage can register on the platform
- 7. The Committee recommends allowing existing state owned allottees of captive blocks for commercial end use to sell to registered and approved end users through the CIL owned platform. A portion of the offered quantity would have to be in the form of long term contracts over five years, so that needs of power plants can be predictably met. This structure appears to be legally tenable under the CMN Act given the opinions of the Attorneys General over the years. However, this would need to be re-examined in the Ministry of Coal.
- 8. In the Committee's view, surplus coal from captive mines could be sold to the platform for onward sale to registered end users. This would be an extension of the current policy that allows excess captive production to be sold to CIL and would also need to be examined in Ministry of Coal.
- 9. Imported coal could also be offered through the coal transaction platform.

- 10. The Committee recommends expediting the clearance process for land acquisition, mining leases and forest clearances for explored blocks, especially those allocated to states for commercial use. In future, consider bidding out blocks for which clearances have been pre-obtained.
- 11. The Committee suggests conducting a study on the optimal rate of extraction given the current state of Indian coal technologies and reserves and examine whether it is prudent to increase coal imports in the short-term to preserve domestic options.

Recommendations on Minerals

- 12. The Committee recommends that a scheme be evolved for reform linked capacity building of State mining departments with a view to improving their capability and resources for prospecting, public accessibility of information on fields based on information prior reconnaissance and prospecting, improving the monitoring and regulation of mines and production and reducing the time taken for approvals. Based on data from RL and LAPL, State governments should immediately develop the capability for analysing the generated data and offering suitable prospects for competitive award. Since the State mining departments will be primarily responsible for implementing reform in the proposed MMDR Act, this is an essential component for success.
- 13. The Committee advises that GSI complete its geophysical and geochemical mapping expeditiously, with the assistance of outsourcing and service contracts if necessary, so as to develop potential areas for prospecting, so that such prospects can then be competitively awarded, as provided in the legislation.
- 14. The Committee recognizes that the proposed MMDR Act is a significant step towards modernizing and reforming India's mining industry. It is therefore all the more important that the proposed Act impose only such restrictions as necessary and accommodate a variety of allocation mechanisms, provided they are open, transparent and competitive.

Accordingly, the Committee recommends that sections on bidding in the proposed new MMDR Act should be capable of accommodating a variety of policies and processes within the overarching National Framework and allow States to move towards clear and appropriate bidding processes. In particular, the Act should not preclude any form of open, transparent and competitive bidding.

Such guidelines, as felt necessary, can be issued as part of the Mineral Concession and Development Rules to allow the bidding mechanisms to reflect different levels of maturity in institutional evolution. This will enable incorporation of improvements from actual implementation experience.

- 15. The Committee recommends that for minerals likely to be found as surfacial deposits and where prospecting does not require high technology, State governments should be incentivised and enabled to take up prospecting and exploration so that adequately prospected ore bodies can be put to bid, as also advised by the Hoda Committee.
- 16. The Committee notes that the proposed MMDR Act precludes the award of certain types of licenses through a competitive bid process. The Committee recognizes that LAPL is a special instrument for locating deep seated and concealed deposits of minerals and that it

is important to incentivise high risk exploration in these areas. The Committee also recognizes that RL and LAPL are not awarded through a competitive process in many countries that have internationally recognized mining sectors. However, it is also true that the scenario for minerals, may be undergoing a shift, which can result in far reaching changes. As noted earlier, it is important that the proposed MMDR Act not preclude forms of allocation that are open, transparent and competitive. This is especially important at a time when the market fundamentals of sector may be in transition. The Committee would thus recommend that the appropriate provisions of the draft Act may be amended so that the Independent Regulator is tasked with reviewing licensing systems and can make recommendations to include suitable option of awarding any of the concessions through an appropriately designed competitive bid process.

- 17. The Committee recognizes the aspirations of State governments to develop local industry based on availability of natural resources. However, the decisions about location of industry for downstream value addition and end use are techno-economic decisions best left to the entrepreneur. The location of industry is often decided more by the availability of infrastructure, human capital and levels of overall governance. The State will be able to more effectively incentivise the growth of local industry by transparent systems of optimising revenue generation through bidding processes appropriately designed for the level of knowledge about mineralisation and using the revenue for creating conducive overall conditions for investment.
- 18. The Committee recognizes that royalty in some form, whether ad-valorem or specific or profit related, is the primary continuing source of revenue from mining. This needs to be levied on scientific lines to realise better and more sustainable revenues on a transparent basis. However, currently the development of mineral bearing areas, which generate the revenue, leaves much to be desired. The Committee recommends that the incidence and structure of royalty be reviewed at preset intervals through a transparent process so as to represent a fair value for the mineral. It also recommends that a significant portion of the revenue be used to ensure all round development of the mineral bearing areas, for example, through a non-lapsable fund in the mining districts and transparent and flexible district level mechanisms including Zilla Panchayats and District Planning Committees.
- 19. The Committee recommends that regulations related to mine closure should be periodically revisited to ensure that the provisions therein, including the financial surety are adequate to pay attention to the rehabilitation of the environment to the maximum feasible level and support for workers and communities who were dependent on the mining activity for sustenance.
- 20. The Committee recommends that for large mining leases, an SPV, as in the case of the UMPPs, could be established in which all preliminary clearances can be embedded. This would enable the clearance process to be completed under the aegis of public ownership and therefore, presumably more immune to issues of impropriety.
- 21. The Committee recommends that immediate steps be initiated in association with the states to record the number of small mines and people engaged therein through extensive surveys.

Recommendations on Petroleum

22. The Committee recommends expediting the creation of an NDR by linking databases of NOCs and other private firms to share the data for blocks for which information has been

submitted to the government and which have to be in public domain, as per the contractual obligation. In addition, all other information available with DGH can be structured as a common database. This should assist in ameliorating concerns about asymmetry of data availability.

- 23. The Committee suggests allowing an OALP to operate on this database. Once a request for a block has been received, it would be offered through the normal tender process as in existing NELP, without any special provisions for the identifying bidder. Even this could be an improvement over the NELP.
- 24. The Committee recommends increasing focus on mid-size firms as part of the marketing process.
- 25. The Committee advises that DGH be reconstituted into an independent technical attached office of the Ministry for contract administration with transparent procedures for administration. This should ensure more public disclosure of issues relating to investment audit and exploration commitments and address concerns about the asymmetry in post bid monitoring. Until such time as this is done, there should be greater disclosure of existing approval processes, such as the meetings of the MC. Documents approved by the MC and the reasons thereof should be in the public domain. The disclosure levels of the Norwegian Petroleum Directorate can be a good starting point in this regard.
- 26. The Committee suggests establishing an Upstream regulator to focus on regulatory functions. This can be part of the current PNGRB or separate. Both the technical office and the upstream regulator should not have staff on deputation from any regulated companies. With regard to the recommendations in paragraphs 25 and 26 above, Secretary, MoPNG, a Member of the Committee, expressed his reservations and submitted his Ministry's point of view that a separate independent regulator for the upstream sector is not required for reasons that are given in a separate note following this chapter.

Recommendations on Natural Gas

- 27. The demand for gas for fertilizers arises on account of the cost and efficiency advantages that it lends to urea production. However, in the Committee's view, the slant or bias in favour of urea may be corrected through extension of the nutrient based subsidy scheme, which has been announced in the Budget for 2011-12. This, along with sourcing of urea from other jurisdictions where gas is available at a cheaper price (e.g., middle East and African countries) is likely to reduce the demand for gas for domestic urea production. However, keeping the critical importance of fertilizer availability for food security of the country, it would be necessary to ensure that domestic urea capacities continue to obtain natural gas, as per their requirements, which can be assessed on rational and transparent basis. Moreover, till such time that there is need to subsidize urea and the scheme for direct delivery of subsidies to the users (i.e., farmers) does not actually get operationalized a time horizon of 3-5 years can be earmarked for this purpose natural gas should be supplied to the fertilizer sector, on the basis of formula/principle as approved by Government.
- 28. New and existing gas fired power capacity should preferably be used only for intermediate or peaking power. A specific procurement contracts for such power along with a time of day tariff mechanism is expected to be shortly in place, given current regulatory developments in the electricity sector. However, keeping in mind the need to develop power capacities in the country expeditiously and bring down both the peak and energy deficits, there would be a

need to ensure that the power sector demand for gas (for peak/intermediate capacities, up to a PLF as specified) is met in full, till the end of the XII Five year plan period. In view of the fact that distribution sector reforms are critical and need to be started expeditiously and to encourage time of the day tariff mechanisms, the price of the gas should be determined through a market mechanism, without there being any need to provide any input subsidies. However, since this segment is receiving the benefit of an earmarked supply, it is important to ensure that the benefit is passed on to the consumers of electricity. Hence, the Committee is of the opinion that the bidders in this market should be limited to such state-owned or private plants as are willing to subject themselves to regulated tariffs, i.e., merchant power plants would not be entitled to the benefit of earmarked supply. Since the price of imported LNG would act as a cap, it is expected that the power produced through market sourcing of gas would be in the range where it can eminently be absorbed for peaking/intermediate load applications.

- 29. In view of the strategic needs of the country, the Committee thinks that gas should increasingly be viewed as a substitute for oil, and used as industrial fuel and for cooking, transport and other such applications if in these sectors, the use of gas is competitive vis-à-vis other competing POL based fuels without compromising Government revenue through taxes on liquid fuels. Thus, these uses should also be allowed to procure their requirements through the market, at a market determined price. Government may review taxation on piped gas/CNG beyond threshold usage. Merchant power plants can compete with such uses for their gas requirements.
- 30. However, the aforesaid allocation and pricing recommendations would only be applicable to future discoveries and contracts of gas. The existing contracts should be maintained. The existing contracted supplies can continue to be earmarked for various sectors, through the EGoM, as per extant practice; and, at the price discovered and approved by Government. However, the Committee would request the EGoM to revisit the earmarked allocation of gas for such power plants as are not willing to subject themselves to regulated tariffs. The EGoM can continue to allocate gas to the specific fertilizer units on the basis of the recommendations of the concerned administrative Ministries/Departments.
- 31. The freedom which currently exists in the NELP provisions for contractors to determine the prices of their gas produce should be employed to move towards free pricing of gas from NELP fields. The price discovery in respect of other sectors, besides fertilizers, for future supplies of gas, should, in the Committee's view, be on the basis of a market mechanism, either through an exchange or through bilateral contracts. This will ensure a continuing incentive to the contractors to produce and bring more and more gas in the market. However, the existing price contracts should be preserved in their present form. The subsidies, wherever required, should be transferred directly to the end consumer; or, otherwise met transparently through a budgetary mechanism.
- 32. A competitive gas market (on the sellers' side) should be ensured by development of a natural gas trading platform (exchange) which allows producers to effect market discovery of gas prices and sell gas competitively to other sectors, besides fertilizers. The exchange or bilateral arrangements, however, should ensure that power sector demand is met in full over the medium term (i.e., till 2016-17) horizon. Gas markets can also develop through creation of independent marketers in the form of aggregators and shippers. The existing linkage between transporters and marketers has potential for conflict of interest and does not bode well for development of a healthy gas market. To encourage the development of such a market, Government can

take and then auction, in small lots, a part of its profit petroleum in kind under the PSC contracts. The development of a market for natural gas can be subject to the regulatory oversight of the downstream regulator.

- 33. It should be easy to buy, sell and use the commodity being traded. For gas, this means a good nation-wide transportation and distribution infrastructure, which is currently missing. Without such infrastructure, a national gas market will not exist. The Committee's opinion is that the most critical need in the medium term, therefore, is the rapid development of a national gas grid and gas distribution infrastructure. While PNGRB has begun this process, it would be good to expedite this. Of course, it goes without saying that such infrastructure development should be undertaken in a fully transparent manner and can be expected to synchronise with upstream gas availability or LNG terminals.
- 34. Open access and affiliate code regulations that have been created by the Petroleum and Natural Gas Regulatory Board (PNGRB) should be enforced. To further encourage competition, it may also be considered whether the percentage of capacity that must be reserved for open access should be increased. It should be noted that in well-developed gas markets such as the US, the entire pipeline capacity is reserved for open access that is, transportation is completely unbundled from marketing (OECD 2000).
- 35. The Committee recommends that as gas markets become increasingly competitive and supply improves, Government and regulatory agencies should gradually withdraw from their roles in deciding price and allocation. Instead, they should ensure that markets remain competitive and consumer interests are protected.
- 36. The idea of pooling of gas prices for selected sectors can be further examined vis-à-vis the relative advantages of pooling being co-ordinated at the unit level, along with development of sufficient infrastructure (in the form of gas pipelines and re-gasification terminals).

Shale Gas Recommendations

- 37. In the Committee's view, shale gas exploration policy should be drafted only after understanding the potential environmental impacts of fracking, and conducting a public consultation process particularly in areas likely to be affected by it.
- 38. The Committee insists that there should be complete transparency regarding the chemicals used in the fracking of each well and their potential impacts, along with clearly defined liabilities for any negative impacts.
- 39. The Committee recommends that land acquisition issues should be factored ab initio in the allocation process.
- 40. The Committee suggests that a transparent policy should be put in place for shale gas exploration, which is not only attractive to investors but also leads to sufficient competition in the shale gas exploration business. The experience with NELP so far can inform this policy as well.

Recommendations on Spectrum

41. The Committee recommends that all future telecom licenses should be unified licences and spectrum should be de-linked from the licences.

- 42. The Committee suggests that vacation and re-farming of spectrum for commercial services should be expedited to ensure availability and certainty of adequate spectrum to facilitate optimal usage and revenue realization.
- 43. In future, spectrum for telecom access services should be made available through suitable market related processes.
- 44. In the context of space services, there is a need for the DoT and DoS to review the present rates for spectrum charges and transponder charges.
- 45. The Committee thinks effective measures should be taken to ensure continued efficient usage of spectrum by providing appropriate incentives/disincentives for efficient/inefficient usage including stipulation of rollout obligation, disincentives for lower usage levels, consideration of appropriate geographical unit for allocation and measuring usage and a rigorous oversight mechanism including audit etc.
- 46. The Committee sees the need for more liberal M&A guidelines keeping a minimum number of service providers to ensure competition. Spectrum sharing should be permitted and suitable conditions should be laid down in this regard in consultation with TRAI. The issue of spectrum trading should also be looked into at an appropriate stage.
- 47. In the opinion of the Committee, the promulgation of Defence Band and DIZ needs to be expedited.
- 48. The Committee sees the need for a comprehensive and integrated legislative frame work for spectrum management should be put in place to ensure optimal and efficient use of country's spectrum resources.

Recommendations on Forests

- 49. The Committee recommends evolving a scheme for reform linked capacity building of state forest departments with a view to improving accessibility of information, improving the predictability and reducing the time taken for clearances.
- 50. The Committee suggests establishing an ab-initio classification of forest based on ecological value that would be open for discussion by various stakeholders with a view to improving the predictability of clearances for diversion of forest land. In this exercise, the Committee is aware that some parts of forest may become inviolate. Even this would be helpful in improving the predictability of clearances.
- 51. In the Committee's view, it is essential to ensure that all Form A/B submissions should be made available on the website of the Ministry of Environment and Forests and the respective state forest departments so that stakeholder comments can be received early in the process.
- 52. The Committee also suggests that all Minutes of the meetings of the SAGs should be made available on the website of the Ministry of Environment and Forests and the respective state forest departments to provide a sounder and more public basis for understanding and communicating the allocation decision.

- 53. The Committee recommends seeking the permission of the Supreme Court to evolve guidelines for de-reservation of such land currently classified as forest, which is not and conceivably cannot be reclaimed as forest.
- 54. The Committee advises project-wise amounts paid under various mandates like NPV, compensatory afforestation, catchment area treatment, biodiversity conservation, etc. and evolve guidelines like NPV for other payments.
- 55. The Committee recommends suitably re-adjusting payments under NPV and above schemes. Forest land has value over and above the value of land itself. This re-adjustment should achieve comparability with guidelines land valuation for other purposes, e.g. acquisition.

Recommendations on Land

- 56. The Committee perceives an imminent need for having an institutional framework for a centralized and transparent data bank, which should include the complete ownership details, area allotted and possible land uses along with actual status as regards utilisation and encroachments etc., in addition to the satellite images and GIS Mapping. This will facilitate a transparent and efficient public land management with accountability.
- 57. All the Union Government Departments or Organizations may need to ensure that their land resources are put to their optimum use by striving for not only using the maximum permissible F.A.R. available but also the most optimum land use. This may generate the surplus land resources for other alternative uses by the Government to the benefit of the country.
- 58. The land market is complex and diverse. Land prices are often the result of multiple interactions of many factors. Availability of all the ownership documents, limitations on transfer, land use controls, nearby land uses, whether leasehold or free hold, availability or absence of utilities and transportation facilities and anticipated economic growth in the area etc. are some of the factors affecting the market price of land. Therefore, unless complete facts are disclosed transparently, it may be difficult to realize value for money for the government. In the Committee's view the Union Government should issue an immediate direction that all steps as are necessary must be taken before any proposal for alienation of land is initiated to ensure that optimum value is realised by alienating such land. It also includes the need to have clear title, sale permission, if required and change of land use to the most optimal land use in consultation with the concerned State Government or local body. In view of above, it is imperative that when land is alienated through sale, a transparent auction methodology is used.
- 59. The Committee thinks it may be preferable to have a policy for out-right sale of land, unless there are legal constraints on account of original terms of allotment, rather than a long term lease arrangement, which is difficult to resile or cancel when the lease tenure is about to come to an end. The policy in cases of lease should consider specifying that an amount similar to the estimated sale value of land on the date of transfer shall be received upfront before entering into any long term lease with nominal amount of lease every year thereafter.
- 60. The Committee sees an immediate need for a high level oversight body to ensure that there is a monitoring mechanism for oversight and monitoring of all cases of land alienation by the Union Government Organisations. The Central Depository of Land Records as recommended in para 33 ante should also be accountable to this high level oversight body. This will bring improved accountability and transparency in alienation of public land assets.

- 61. The Committee also finds an urgent need to have a Land Exchange Management Committee to supervise or permit any exchange of land or transfer of surplus land from one Union Government Department or Organisation to other Union Government or Organisation after comprehensive scrutiny of the complete facts. This body will also allow the respective Union Government Organization to exchange the particular piece of surplus land with the concerned State Government or Local Body for another appropriate piece of land elsewhere. This land exchange body shall examine each request for land exchange and take a view on merits. It may be chaired by Secretary, MoUD and include representatives of Ministry of Finance, concerned administrative Ministry/Department and Department of Legal Affairs (DoLA). Alienation of land by land owning parastatals and housing boards under the control of Union Government.
- 62. In the Committee's view, there should be transparency and clarity in form of guidelines or policy, on all land related issues, with some mechanism to share the notional gains by the land owner for generating funds for public welfare.
- 63. The lease deed for all the lands alienated on lease-hold basis provide for revision in the amount of annual ground rent or lease rent after a certain period, say thirty years. It seems that there is no policy in place for such revisions. This needs to be done in all the cases, especially those cases, where allotments have originally been made on nominal rates. The Committee thinks there should be a clear policy prescribing the procedure for revision of rates, and as far as possible, the amount of revised ground rent should be fixed at its optimum value to enable resource generation.
- 64. The Committee sees an imperative need for regular updating of Schedule of Rates (SoRs), preferably in line with the corresponding market rates. This will ensure that there is less pressure for allotments at the SOR Rates especially in case of institutional allotments or other allotments at highly subsidized rates. Further, all lease allotments at higher rates will also imply a higher annual income in form of ground rent etc.
- 65. The Committee feels that there should be more transparency in the Accounts of land owning parastatals such as development authorities and other organisations involved in land development and public housing, and these should be put in the public domain so that the public at large also stands apprised as to the efficiency of these bodies. The terms of handling the assets of Union Government must also be fair and transparent with proper Income & Expenditure Account and Balance Sheet.
- 66. The objective of any housing board should be to make housing available at reasonable costs to public at large, especially economically weaker sections or low income groups. Therefore, the opinion of the Committee is that these organizations should not be governed by the profit motive, except to the point that it reflects their overall fund management efficiency. It is therefore, suggested that the pricing policy be transparently formulated. However, all commercial and institutional allotments should be at market prices, preferably through competitive bidding. This committee further suggests that the cost audit of the pricing of all the internal land transfers to all housing authorities, including DDA and L&DO, be done by the Cost Accounts Branch of the Department of Expenditure, Ministry of Finance, to ensure the reasonability of the transfer costs. The Cost Accounts Branch may also be asked to indicate the areas with scope for cost control and cost reduction, if possible.

- 67. The Committee notes that there are substantial balances that are currently available with DDA and suggests that there is immediate need to develop an action plan to utilize the available funds with DDA in performance of its statutory functions. Therefore, DDA should immediately chalk out the action plan in this regard. The position on available balances with DDA may be reviewed after a suitableperiod, say three years and appropriate action may be taken accordingly.
- 68. The Committee finds an imminent need for a common centralised depository of all land resources for the National Capital Territory of Delhi (NCTD) on the same lines as suggested in para 56 above for Union Government land, with complete ownership details, area allotted and possible land uses along with actual status as regards utilisation and encroachments etc., in addition to satellite images and GIS Mapping for reliable identification. This will not only facilitate the proper planning of the region, but will also ensure that all land / housing transactions are immediately updated on real time basis. It is further suggested that all the properties should be dematerialised on the lines of equity shares. This will not only enable the Government to know the details of all the properties owned by any particular individual, but will also simplify the purchase and sale of all properties without getting into much difficulties / hurdles. This will also not only be a step forward towards the rightful collection of government revenue but will also highlight the benami properties.
- 69. The Committee recommends a transparent competitive bidding or e-auction methodology for all cases of land alienation especially in case of commercial and institutional properties. It may be possible that this may not be feasible in exceptional cases. A composite policy in this regard for competitive allocation and allowable exceptions should be prepared and submitted for approval to the Cabinet. Subsequently, if in some exceptional cases, e-auction or competitive bidding is not found feasible, the land should be allotted only after the specific approval of Cabinet on a case to case basis.
- 70. The Committee recognized that a separate dispensation may be needed for the case of educational institutions. Of the plots that are identified for primary and secondary schools under the zonal plans / master plan, a substantial percentage, say 50%, should be earmarked and allotted for Government run schools. Of the remaining plots identified for primary and secondary schools, a small percentage, say 10%, can be allotted through a transparent reasoned mechanism with the approval of Cabinet on case to case basis. The remaining plots should be alienated through the auction process or competitive bidding to pre-qualified bidders in the field of education, as per the existing practice.
- 71. The Committee suggests for an immediate constitution of the Regulatory Body for the housing sector to take over the monitoring and oversight functions from DDA. This may be necessary to bring transparency in this sector.

Recommendations on Water

72. The Committee sees an urgent need to have a comprehensive national legislation on water. This can be either done through bringing water under the Concurrent List and then framing the appropriate legislation; or, by obtaining consensus from a majority of the States that such a "framework law" is necessary and desirable as a Union enactment. The legal options in this regard need to be examined by the Ministry of Water Resources. The national legislation should clarify a common position on a number of issues, e.g., need to consider all water resources as

- a conjunctive, unified whole; water as a common property resource; principles of allocations and pricing and so on. The framework legislation should recognize that pollution also leads to conjunctive use of water, which makes the resource unusable for other purposes.
- 73. In the meantime, the Committee recommends amending the River Boards' Act, 1956 and include groundwater in its ambit, while assigning the River Boards Act (RBA) a managerial role in management of water resources. The process of seeking political consensus from States for making the Act more effective should be taken up pro-actively by the Union Government Ministry of Water Resources.
- 74. The Committee recommends aquifer level mapping, along with hydro-geological studies, and pilot projects to be initiated in different settings to address the problems of groundwater management urgently. Each of these pilots should cover an area of 5,000 to 10,000 hectares or boundaries of an aquifer, whichever is less. Comprehensive programmes of aquifer management can be built up based on these studies, in respect of these pilots. For better results, these pilots should be designed so that they converge seamlessly into ongoing schemes like the NREGA, IWMP, and ongoing drinking water and sanitation projects. The pilots should take into account community awareness and participation, self-regulation of groundwater, enhancement of coverage of water saving methods, including changes in cropping pattern and so on.
- 75. Finally, the Committee suggests that the focus on command area management should be restored and merger of CAD programmes with the AIBP scheme can be contemplated in this regard.

Recommendations on Overarching Issues

- 76. The Committee recommends that policy documents should be converted into suitably conforming rules, under the delegated legislative power of the executive, within a reasonable time. Such rules, being justiciable, are more transparent instruments for governing a sector. While stand-alone policies may be useful in many contexts, the allocation process should be formalized in delegated legislation.
- 77. The Committee has suggested a few broad institutional ground rules for regulators and allocation of functions. These include distancing the administrative ministry from appointment and removal of regulators and entrusting it to a statutorily defined body, having an independent cadre for the regulator with appropriate remuneration and service conditions and ensuring that it has a stable budget. Appropriate support for the staffing of the regulator is essential to create conditions for ensuring that the regulator possess substantial technical capacity and have the ability to access specialized technical knowledge and use it effectively. The power to issue policy directions to the regulator also needs to be appropriately defined, accompanied by suitable justification and personally approved by the Minister concerned. Any financial impact of such directions needs suitable budgetary provisions before implementation.
- 78. The Committee is of the opinion that powers to license and to determine statutory levies like royalties and license fees should rest with the sovereign, though it may be fruitful for the regulator to evolve suitable recommendations after a consultative process. Finally, given the necessity of interaction between sector regulators and the Competition Commission of India, it would be productive for a formal consultative mechanism to be instituted for the purpose.

- 79. The Committee recommends that where it is deemed necessary, as a result of legacy issues, to try and 'level the playing field', the government may consider moving to a new licensing regime and allowing existing licensees the opportunity to move voluntarily, after paying a special levy. Windfall taxes should used sparingly since it involves a drastic change in the fiscal regime. It is also important to note that in a business environment, it is quite natural that the rules of engagement evolve over time and it is not necessary to address all anomalies.
- 80. The Committee recommends that, wherever feasible, the government should endeavour to embed the necessary clearances, such as stage-I forest clearances for mining, land use changes before alienation or lease of land, security clearances, etc. within an SPV, before bidding. This will reduce the time taken and generate better value.
- 81. The Committee recognizes that transparent mechanisms of allocation of natural resources need to be supported by investment in complementary physical and social infrastructure in order for markets to work effectively and for the process to be efficient and sustainable. To this end, it is necessary that allocation choices avoid the tendency to base decisions on the current state of complementary infrastructure and keep its continuing evolution in mind. This will need a high level of inter-ministerial policy co-ordination to be effective.

No.483/1/1/2011-Cab GOVERNMENT OF INDIA (BHARAT SARKAR) CABINET SECRETARIAT (MANTRIMANDAL SACHIVALAYA) RASHTRAPATI BHAVAN

New Delhi, dated the 31st January, 2011

ORDFR

With a view to enhance transparency, effectiveness and sustainability in utilization of natural resources, consistent with the needs of the country to achieve accelerated economic development. It has been felt desirable to adopt an open transparent and competitive mechanism for allocation, pricing and utilisation of the natural resources.

In pursuance of the above, the Group of Ministers (GoM) constituted to consider measures that could be taken by the Government to tackle corruption, has in its meeting held on 21st January 2011, decided, *inter-alia*, to constitute a Committee to deliberate on the above issues. Accordingly, the Committee is constituted with the following composition:

Shri Ashok Chawla

Presently Finance Secretary -Chairman Secretary, Ministry of Petroleum and Natural Gas -Member Secretary, Ministry of Environment and Forests -Member Secretary, Ministry of Coal -Member Secretary, Department of Telecommunications -Member -Member Secretary, Ministry of Defence -Member Secretary, Ministry of Mines Secretary, Ministry of Water Resources -Member Secretary, Department of Land Resources -Member Additional Secretary, Department of Expenditure -Member Representative of Planning Commission -Member

(not below the rank of Adviser) Shri Chandrajeet Banerjee

Director–General, Confederation of Indian Industry -Member Shri Rajiv Kumar, Director–General, FICCI -Member

Shri Govind Mohan, Joint Secretary -Member Secretary -Member Secretary

Cabinet Secretariat

- 3. The Chairman of the Committee may co-opt additional members and engage short-term consultants, as considered necessary. Engagement of consultant(s) will be governed by the provisions of the General Financial Rules, 2005.
- 4. The Terms of Reference of the Committee will be as under:
 - (a) to identify major natural resources which are allotted /allocated /distributed by the Government of India and the institutional framework for utilisation of such resources:
 - (b) to examine the efficacy and suitability of existing legal and regulatory frameworks and rules and procedures in this regard:
 - (c) to suggest measures to optimise the benefits of such utilization for all stakeholders, while ensuring sustainability of the resources.

- (d) to suggest measures for promoting transparency and enhancing effectiveness in allocation, pricing and utilisation of these resources.
- (e) to suggest changes in legal institutional and regulatory framework to implement the above recommendations; and
- (f) any other issue(s) related to the above
- 5. Logistics support including transport and secretarial assistance will be provided by the Department of Economic Affairs, Ministry of Finance. Requisite inputs for analysis and research, wherever required, will also be provided by the Department of Economic Affairs.
- 6. The Committee will submit its report to the Cabinet Secretarial within a period of four weeks.
- 7. The Chairman of the Committee will be entitled to a lump sum remuneration of Rs 3 lakhs. The details of entitlement of TA/DA, etc. of the Chairman and the Members of the Committee shall be issued separately by the Department of Economic Affairs, Ministry of Finance. The entire expenditure in this regard will be borne by the Department of Economics Affairs.

(\$ D Sharma)
Deputy Secretary to the Government of India
Tel: 23792204

To

Chairman and Members of the Committee

Copy to:

Member-Secretary, Planning Commission

Secretary, Department of Personnel and Training

Secretary, Department of Economic Affairs

Secretary, Ministry of Petroleum and Natural Gas

Secretary, Ministry of Environment and Forests

Secretary, Ministry of Coal

Secretary, Department of Telecommunications

Secretary, Ministry of Defence

Secretary, Ministry of Mines

Secretary, Ministry of Water Resources

Secretary, Department of Land Resources

Secretary, Department of Expenditure

Copy also forwarded to:

Director - General, Confederation of Indian Industry

Director-General, Federation of Indian Chambers of Commerce & Industry

Copy for kind information to:

Principal Secretary to the Prime Minister

S D Sharma Deputy Secretary to the Government of India

No.483/1/1/2011-Cab GOVERNMENT OF INDIA (BHARAT SARKAR) CABINET SECRETARIAT (MANTRIMANDAL SACHIVALAYA) RASHTRAPATI BHAVAN

New Delhi, dated the 4th March, 2011

ORDER

The undersigned is directed to refer to Cabinet Secretariat Order of even number dated 31.01.2011 constituting a Committee to deliberate on issues regarding open, transparent and competitive mechanism for allocation, pricing and utilization of natural resources and to say that the Committee had been mandated *inter-alia* to submit its report within a period of four weeks.

- 2. The matter has since been examined and it has been decided, with the approval of the Prime Minister, that the time period for the Committee be extended by another eight weeks so as to enable the Committee to submit a comprehensive report on the subject.
- 3. The Committee will, accordingly, submit its report to the Cabinet Secretariat within the extended time period.

(S D Sharma)

Deputy Secretary to the Government of India

Tel: No.2379 2204

То

Shri Ashok Chawla, formerly Finance Secretary

Secretary, Ministry of Petroleum and Natural Gas

Secretary, Ministry of Environment and Forests

Secretary, Ministry of Coal

Secretary, Department of Telecommunications

Secretary, Ministry of Defence

Secretary, Ministry of Mines

Secretary, Ministry of Water Resources

Secretary, Department of Land Resources

Additional Secretary, Department of Expenditure

Dr. Nagesh Singh, Adviser to Deputy Chairman, Planning Commission

Shri Chandrajeet Banerjee, Director –General, Confederation of Indian Industry

Shri Rajiv Kumar, Director –General, FICCI

Shri Govind Mohan, Joint Secretary, Cabinet Secretariat

Copy to:

Member-Secretary, Planning Commission Secretary, Department of Personnel and Training Secretary, Department of Economic Affairs Secretary, Ministry of Petroleum and Natural Gas

Secretary, Ministry of Environment and Forests

Secretary, Ministry of Coal

Secretary, Department of Telecommunications

Secretary, Ministry of Defence

Secretary, Ministry of Mines

Secretary, Ministry of Water Resources

Secretary, Department of Land Resources

Secretary, Department of Expenditure

Copy also forwarded to:

Director –General, Confederation of Indian Industry
Director-General, Federation of Indian Chambers of Commerce & Industry

Copy for Information to:

Principal Secretary to Prime Minister

(\$ D Sharma)

Deputy Secretary to the Government of India

MOST IMMEDIATE

No.483/1/1/2011-Cab GOVERNMENT OF INDIA (BHARAT SARKAR) CABINET SECRETARIAT (MANTRIMANDAL SACHIVALAYA) RASHTRAPATI BHAVAN

New Delhi, 13th May, 2011

ORDER

The undersigned is directed to refer to Cabinet Secretariat Orders of even number dated 31.01.2011 and 04.03.2011.

- 2. The matter has been examined and it has been decided, with the approval of the Minister of Finance, that the time period for the Committee be extended up to 16.05.2011 so as to enable the Committee to submit a comprehensive report on the subject.
- 3. The Committee will, accordingly, submit its report to the Cabinet Secretariat within the extended time period.

(\$ D Sharma)

Deputy Secretary to the Government of India

Tel: 2379 2204

То

Shri Ashok Chawla, formerly Finance Secretary.

Secretary, Ministry of Petroleum and Natural Gas.

Secretary, Ministry of Environment and Forests.

Secretary, Ministry of Coal.

Secretary, Department of Telecommunications.

Secretary, Ministry of Defence.

Secretary, Ministry of Mines.

Secretary, Ministry of Water Resources.

Secretary, Department of Land Resources.

Additional Secretary, Department of Expenditure.

Dr. Nagesh Singh, Adviser to Deputy Chairman, Planning Commission.

Shri Chandrajeet Banerjee, Director –General, Confederation of Indian Industry.

Shri Rajiv Kumar, Director – General, FICCI.

Shri Govind Mohan, Joint Secretary, Cabinet Secretarial.

Copy to:

Member-Secretary, Planning Commission.

Secretary, Department of personal and Training.

Secretary, Department of Economic Affairs.

Finance Secretary and Secretary, Department of Expenditure

(\$ D Sharma)
Deputy Secretary to the Government of India

Copy for information to:

Principal Secretary to Prime Minister.

(S D Sharma)
Deputy Secretary to the Government of India

Record Note of Discussion

First meeting of the Committee on Allocation of Natural Resources February 08, 2011; 11 am; Room No. 41, North Block

- 1. Cabinet Secretariat, vide order dated January 31, 2011, constituted a Committee on Allocation of Natural Resources (CANR) with a view to enhance transparency, effectiveness and sustainability in utilization of natural resources, consistent with the needs of the country to achieve accelerated economic development. The first meeting of the Committee on allocation of Natural Resources was held on February 08, 2011 in Room No. 41, North Block.
- 2. At the outset, the Chairman welcomed the members and explained that a Group of Ministers (GoM) had been constituted to consider measures that could be taken by Government to tackle corruption. The GoM, which is headed by the Finance Minister, had, in its first meeting held on January 21, 2011, decided, inter alia, to constitute a committee to deliberate on measures to be instituted for transparent allocation of natural resources. He briefed the members about the terms of reference (ToRs) and clarified that the Committee shall restrict its scope to such of the natural resources, which are allotted / allocated / distributed by the Government of India (Gol). He opined that while revenue maximization is the default objective in the process of allocation of natural resources, there are other competing objectives as well, such as sustainability and public welfare. The task of the committee is to suggest a matrix or framework, which can be adopted for each of the natural resources identified by the committee, after taking into consideration the context, past practice and future exploitation possibilities of that particular resource. He further stated that it may neither be possible nor desirable to have a uniform policy or approach valid for all the natural resources across the board. The Chairman informed that the committee shall also examine the efficacy and suitability of existing legal and regulatory frameworks, with regard to their allocation/distribution, and rules/procedures in this regard, to arrive at its final conclusions. He also informed that the Cabinet Secretariat has also formed another committee under the chair of Shri Vinod Dhall, formerly Secretary, Ministry of Corporate Affairs to put in place a Comprehensive Public Procurement Policy. He appreciated the presence of representatives from the industry associations, namely, FICCI and CII, and stressed the importance of feedback from their constituents and members. The Chairman also welcomed the representatives of Centre for Policy Research (CPR) who had been appointed as advisors to the Committee, to assist it in its deliberations with their multi-disciplinary expertise. Finally, he requested the members to immediately provide the complete information with regard to their Ministries/Departments to the Committee, as the time was short, and the Committee had only been allotted four weeks' time to complete its deliberations and submit its report.
- 3. Member-Secretary, Planning Commission expressed appreciation that a Committee of this nature, with its specific terms of reference, had been set up at this juncture, when issues related to transparent allocation of natural resources were occupying much of Government's time and attention. She emphasized that the natural resources available for allocation to the State are scarce and are keenly sought. There are often inter-state or inter-border (international) disputes on exploitation of these resources. There is also the issue of sub-optimal utilization, or plain wastage, which results on account of the resource being supplied at much below the economic cost. She felt that optimum utilization of natural resources must not be lost sight of, whether it is for creation of huge capacities for export of ore or import of inefficient power plants from China, which use double the energy and are at least 25% less efficient. She also felt that there is need for co-ordination amongst different Ministries and Departments as the lack of

coordination may sometimes result in infructuous expenditure. She suggested that the views of Federation of Indian Mineral Industries (FIMI) and the National Manufacturing Competitiveness Council (NMCC) be also obtained as they may have valuable suggestions to offer in this regard. Finally, Member Secretary elaborated that encroached lands are one of the zones of conflict for policy making in this regard.

- 4. Secretary, Ministry of Environment and Forests (MoEF) clarified that the impact of any allocation of resource on the environment cannot be ignored, though the MoEF is generally not involved in direct allocation of natural resources. He stressed that at times, differences arise between the concerned Ministry/Department involved in the allocation of the natural resource, and the MoEF, due to lack of accurate information about a particular resource or rules/ acts governing such resource. Therefore, there is imminent need for having an institutional framework for accessing a centralized and transparent data bank, with respect to all the natural resources handled by the Central Government. This data base should be accessible to all in a transparent fashion, so that clearances could be rationalized and expedited, and no delays caused due to the same information being asked for by different Departments. Other way could be by interlinking the existing data bases of all the Ministries/Departments. It was also highlighted that this sort of data base shall ensure co-ordination amongst different Ministries / Departments and shall obviate many of the legal disputes pending in various courts of law, which occupy a large amount of the resources available with MoEF.
- 5. Economic Advisor, Ministry of Petroleum and Natural Gas (MoPNG) explained that they are entrusted with the responsibility of exploration and production of oil and natural gas, the refining, distribution and marketing etc. of petroleum products and Liquified Natural Gas (LNG). She also explained in brief that the policy followed by the MoPNG for allocation of petroleum products is transparent and competitive. She further clarified that allocation is done with the approval of Empowered Group of Ministers (EGoM).
- 6. Secretary, Ministry of Water Resources (MoWR) stated that all activities related to planning, development and management of water resources are undertaken by the respective States. The Constitution provides for regulation and development of inter-State rivers and river valleys by the Union Government, to the extent to which such regulation is declared as expedient in public interest by the Parliament through legal enactment. The inter-State issues are addressed through mutual agreements among the co-basin States. However, in case of non-agreement, the disputes are adjudicated as per Article 262, which provides for setting up of Tribunals for adjudication of disputes. Secretary, MoWR was of the view that the ToRs of the committee are diverse and the time available is short. Therefore, each resource and its peculiar context may have to be examined in detail separately by the experts and then common links need to be established.
- 7. Joint Secretary, Ministry of Coal (MoC) clarified that though coal was also a state subject, all coal mines were taken over by Central Government through promulgation of the Coal Mines (Nationalization) Act, 1973, leaving a few captive mines for Steel sector. Subsequently, Coal blocks are being allotted for captive end use for manufacturing/generation of power, steel, cement industries also. Though there is significant demand for coal from private industry, there is no competitive sale so far. Notified prices are not market determined and are almost half of the cost of imported coal or market price. There is no incentive for upgrading technology as there are no norms for coal consumption in the priority sector and all coal is supplied at notified prices only. He further clarified that most of the coal production comes through public sector

undertakings (PSUs), namely Coal India Ltd. and Singareni Collieries Co. Ltd. (SCCL). Pricing of coal has been decontrolled from the year 2000. Government has now approved allocation of coal blocks through a bidding process. It was also clarified that exploration and operation of coal and lignite blocks are guided through statutes such as Mines and Minerals (Development & Regulations) Act, 1957, Mines Act 1952, Coal Bearing Land Acquisition Act, 1957 and Coal Mines (Development and Conservations) Act, 1974 and the rules framed thereunder.

- 8. Joint Secretary, Ministry of Mines (MoM) explained that mining is a state subject and resources are owned by the respective State Governments. Central Government can only regulate these resources. He further clarified that though 100% foreign direct investment (FDI) is allowed in the mining sector, all proposals have to come from the State Government after their recommendations. He further explained that even though it was commonly agreed that India is endowed with large mineral resources, the full potential of these deposits is not known due to lack of adequate survey and exploration activities. Therefore, investment has been lacking in high-risk exploration ventures and the work done by geological survey of India (GSI) continued to be the main basis for investment in mining. There was a need to attract high risk investment in the interest of discovering commercially exploitable deposits. On one hand, almost 3,000 mines are lying abandoned; on the other hand, illegal mining is also continuing, in regard to which, necessary action lies in the domain of the State Governments. Environment issues are also relevant in context of mining inudstry. Some of the main factors affecting the growth of mineral sector (non-fuel) in India could be attributed to delays in grant of concessions, poor investment in the sector, and illegal mining.
- 9. Joint Secretary, Ministry of Defense (MoD) explained that all the defense lands are handled by 'Defense Estates'. The total defense land in the country is around 17.3 lakh acres, of which, 16 lakh acres is outside the cantonments. As per the Ministry of Defense (MoD) policy instructions dated July 11, 1986, defense land cannot be declared surplus; if at all any land is to be given, it should only be on the basis of exchange. Prime Minister's Office (PMO) Office Order of August 22, 1997 has further laid down that no alienation of defense land will be permitted without Cabinet approval. An amendment issued in the year 2000 has permitted diversion of defense land for use by Public Sector Enterprises/State Governments/Public Utilities on short term lease basis, which does not lead to alienation. He clarified that about 11,000 acres of defense land was under encroachments. JS, MoD clarified that the existing vacant land is required for defense projects; hence, at this juncture, there is no surplus land available for sale or transfer. He requested that keeping in view the fact that MoD has no other natural resource to offer, the Chairman may agree to remove MoD as a member of the committee. It was clarified that this may not be possible since orders for the committee's constitution have been issued by the Cabinet Secretariat.
- 10. Advisor (Planning Commission) was of the view that apart from the defense cantonments; there are lands belonging to Indian Council for Agricultural Research (ICAR) and the Ministries of Railways and Civil Aviation, which are located in highly priced urban pockets, and which can be commercially exploited. Similarly, shifting from controlled pricing to market pricing may ensure not only efficient use of coal by the power sector but may also ensure efficiency in use of petroleum products by the fertilizer industry. Therefore all socio-political and economic factors, along with issues of public welfare must be considered by the committee while evaluating the optimum matrix for allotments.
- 11. Director General (DG), Department of Economic Affairs (DEA) noted that his Department had circulated a draft note for the Committee of Secretaries (CoS) on use of "e-auction" for sale

and disposal of Government assets. The stipulations and recommendations in this note need to be considered by the committee. He also felt that the term 'natural resources' may need to be defined. Finally, DG, DEA opined that use of appropriate technology for optimal utilization of natural resources should be taken into consideration by the committee at the recommendation stage.

- 12. Additional Secretary, Department of Expenditure (DoE) was of the view that the term 'natural resources' will need to be defined. She suggested that the committee may restrict its scope to those natural resources, which are under the realm of Central Government. Any policy framework must be based on best practices. She felt that there must be inbuilt incentives for use of latest innovations or state of art technologies for public welfare.
- 13. Special Secretary, Department of Land Resources (DoLR) explained that all lands belong to the State Governments. He further explained that the maintenance of land records, survey of land for revenue purpose and records of rights, alienation of revenue, taxes on land and buildings come under the State List. Entry 42 in concurrent list (List II) includes acquisition of property. There is a Central Act under the banner of Land Acquisition Act, 1894. Though it is Central Act, Land Acquisition Collector is appointed by the State Government. Whenever any of the Government of India organizations other than Railways and Highways Authorities, who have separate laws for acquisition of land for specific purpose, require land to be acquired for their purpose, they do it furnishing requisition with the concerned State Government. Even the compensation methodology is different from State to State. Government of India is basically a promoting agency for updation and modernization of land records and for co-ordinating efforts related to land reforms. The Registration Act, though a Central Act, specifically empowers the State Governments to implement its various provisions by appointing registering authorities. Therefore, he felt that that DoLR does not have a direct role in allocation of any land related resources. It only provides funds for modernization/updation of land records and for improving the productivity of dry lands in rain fed areas following a watershed approach. He further felt that in big cities, a major chunk of land is owned by Ministries of Civil Aviation, Railways, Defence and Ports Trust etc, which is presently lying idle. This surplus land can be used for revenue generation using transparent and competitive bidding methodologies.
- 14. Joint Secretary, Ministry of Urban Development (MoUD) explained that his Ministry is considering the issue relating to appointment of regulators in the area of urban governance. It was felt that a uniform matrix or framework may be explored for all the land resources available. A national level management information system (MIS) was required for keeping stock of land resources available with different agencies of the Central Government.
- 15. Member (Finance), Department of Telecommunications (DoT) informed that the Department conducted a successful bidding for 3G Spectrum and circulated a Manual on its salient features and methodology followed to all the Government Departments and Ministries. The Department is committed to ensuring optimal use of spectrum available with it.
- 16. Principal Counsellor (CII) thanked the Government for inviting them to the Committee. She assured that the feedback from its members will bring clarity to this important and topical area. She further suggested that there should be transparent availability of reliable data base of natural resources from all the Ministries, which should be easily accessible. There should be no overlapping in the work of different ministries, which often lead to delays. She agreed that sustainability is necessary, while allocating the natural resources.

- 17. The representative from FICCI felt that there should be effective co-ordination amongst the Ministries and environmental clearances should not lead to delays. He further suggested that open bidding should be transparent and the reserve price should not be kept very high.
- 18. Mr. Pratap Bhanu Mehta and Mr. Partha Mukhopadyay from Centre for Policy Research explained that their approach encompassed the following elements: current methodology or approach including the issue of inventory of natural resources; impact on the end users of any increase in the prices of natural resources i.e., impact on cost of power and fertilizers, if the prices of coal and other petroleum products are enhanced; and, measures to curtail immense inefficiencies existing in various areas, which lead to an enhancement of the subsidy burden on the exchequer.
- 19. The Committee agreed that the ambit of the committee shall be restricted to those natural resources, which are not man-made and are under the direct control of Central Government or any of its agencies. These will include land, water, minerals (including petroleum products like oil and gas) and radio frequency (spectrum). The Chairman summarized the general consensus that the broad framework or the parameters to suggest measures for promoting transparency and enhancing effectiveness in allocation, pricing and utilization of these resources shall have to consider multiple issues, such as public welfare, revenue maximization, sectoral precedents and so on. The policies, therefore, would be tailored differently, depending the context of each sector. It was decided to document the different approaches being followed in each sector and devise a policy matrix to suggest the changes required in the extant methodology being pursued in different Ministries/Departments/agencies of Government of India. Chairman stressed upon the members to immediately provide the complete information with regard to their Ministries/Departments as the Committee has been given only four weeks to submit its Report. It was agreed that the next meeting of the committee would take place at 11 am on Friday, the February 18, 2011.
- 20. The meeting ended with vote of thanks to the Chair.

The list of participants is annexed.

List of Participants

S No	Name	Designation	Organization
1	Ashok Chawla	Chairman	
2	Sudha Pillai	Member Secretary	Planning Commission
3	T Chatterjee	Secretary	Ministry of Environment and Forests
4	D V Singh	Secretary	Ministry of Water Resources
5	Chinmay Basu	Special Secretary	Department of Land Resources
6	Bimal Julka	Director General, Directorate of Currency (DoC)	Department of Economic Affairs
7	Vilasini Ramachandran	Additional Secretary	Department of Expenditure
8	Vijayalakshmy K Gupta	Member (Finance)	Department of Telecommunications
9	R K Mahajan	Joint Secretary	Ministry of Coal
10	G Srinivas	Joint Secretary	Ministry of Mines
11	Dr Ashok	Mines Advisor	Ministry of Mines
12	Nagesh Singh	Advisor	Planning Commission
13	A K Mehta	Joint Secretary	Ministry of Urban Development
14	Ashok Kumar Gupta	Joint Secretary	Ministry of Defense
15	Dr Archana Mathur	Economic Advisor	Ministry of Petroleum and Natural Gas
16	V К Тора	Advisor	Federation of Indian Chamber of Commerce and Industry (FICCI)
17	Shweta Choudhary	Advisor	Federation of Indian Chamber of Commerce and Industry (FICCI)
18	Seema Arora	Principal Counsellor	Confederation of Indian Industry (CII)
19	Pratap Bhanu Mehta	President and Chief Executive	Centre for Policy Research (CPR)
20	Partha Mukhopadhyay	Senior Fellow	Centre for Policy Research (CPR)
21	Govind Mohan	Joint Secretary	Cabinet Secretariat

Record Note of Discussion

Second meeting of the Committee on allocation of Natural Resources (focused meeting on Land)

February 11, 2011; 3 pm; Room No. 41, North Block

- 1. Cabinet Secretariat, vide order dated January 31, 2011, constituted a committee on allocation of natural resources (CANR) with a view to enhance transparency, effectiveness and sustainability in utilization of natural resources, consistent with the needs of the country to achieve accelerated economic development. The second meeting of the Committee was held on February 11, 2011 in Room No. 41, North Block. The meeting was convened with a view to ascertain the extant mode of allotment/allocation/disposal of land belonging to Central Government by various Government Departments/Ministries.
- 2. Chairman welcomed the members and briefed them about the context of the meeting. He broadly explained the terms of reference and clarified that the Committee was interested in ascertaining, from the major land-owner Ministries/Departments and organizations of the Central Government, the details as regards the total land available with Ministries/Departments and their agencies; the total amount of land which is available for allotment/allocation/disposal, after keeping their own requirements of Ministries/Departments in mind; the extant system of allotment/allocation/disposal of land being followed including the legal/regulatory architecture; and, changes, if any, contemplated in the existing system. He thereafter invited comments from the participants.
- 3. Joint Secretary (Ports), Ministry of Shipping (MoS) explained that the country is serviced by 12 major ports and 187 notified minor and intermediate ports. The total area under the ports is around 6,300 hectares. Many of these ports like Bombay and Calcutta, are more than 200 years old and the old records are not readily available. Similarly, Paradeep Port is about 50 years old. However efforts for mutation of land assets in favour of this port by Government of Orissa have only now been initiated. MoS had a initial land policy of 1989, which was later revised in 2004 for major ports. The latest version of the Land Policy for Major Ports and Ennore Port Ltd. was issued on January 13, 2011. This policy provides that every major port shall have a land use plan covering the entire land owned and/or managed by the Port. Such plans shall be approved by the Board and a copy forwarded to the Government. Any proposal for revision of land use plan shall be published on the web-site of the Port Trust, inviting objections and suggestions, and shall be finalized by the Board after considering the objections and suggestions received. The Land Allotment Policy provides that land can be allotted either on license or lease basis as per approved land use plan/zoning detailed as under:

Land inside Custom bound area

4. Normally, land inside custom bound area shall be given on license basis only. The license may be granted by the Chairman of the Port Trust. It may be granted up to a maximum period of 11 months and shall normally be in accordance with the Scale of Rates (SOR) approved by the competent authority. Any concession shall be given only with the approval of the Board. At the discretion of the Chairman, such license any also be given by inviting tenders. The Chairman may also allot land inside the custom bound area on medium term lease basis, up to 10 years, to port users for setting up of certain port related structures such as conveyors, silos, pipelines, temporary transit sheds, bagging and stitching plants, weigh-bridges but not permanent structures like tank farms, godowns and warehouses etc., with the prior approval of the Board. Such allotments may

be either on tender basis or for captive use. Alternatively, ports may create such infrastructure on common user facility basis and recover charges form port users either on monthly basis or per unit basis as applicable to each facility. The allotment of land in Custom bound area may be for activities directly related to Port operations or for those which are not directly port related but aid the port activities and sea trade such as for setting up of duty free shop, communication centres, parking facilities, passenger facilities like shopping centers, cyber cafes, health clubs etc. and security related activities. All such proposals should be subject to necessary statutory and administrative approvals.

Land outside Custom bound area

- 5. License of land outside custom bound area may be for both port related and non-port related activities, with preference to port-related activities. License of land outside custom bound area also will be governed by the same conditions as are applicable in case of land inside custom bound area. The land outside custom bound area can be leased only in accordance with the land use plan. Land can be leased up to 30 years by the Port with the approval of the Board. Cases of fresh lease above 30 years and for a maximum period of up to 99 years shall be sent with the recommendation of the Port Trust Board to the Ministry for the consideration of the Empowered Committee. In the case of Kochi port, a 60 years lease was allowed for real estate development. Land should normally be leased through a competitive bidding process. Land can be allotted on nomination basis to Government Departments, Central Public Sector Undertakings (CPSUs), State Public Sector Undertakings (SPSUs) or private parties in accordance with Schedule of Rates (SoRs) approved by the competent authority with due justification. It was assured by the Ministry that a copy of Land Policy for Major Ports 2010 shall be provided to the committee along with broad details of the land available with various ports.
- 6. Joint Secretary, Ministry of Urban Development (MoUD) explained broadly the land allotment procedures followed by Delhi Development Authority (DDA) and Land & Development Office (L&DO) of MoUD. Land and Development Office (L&DO) was brought under the control of the then Ministry of Works, Housing and Supply (presently Ministry of Urban Development) with effect from October 01, 1959, and since then, it has been functioning as a subordinate office of the Ministry. It was also clarified that the issues related to Metro Projects are handled by the Metro Wing in the Urban Development Ministry. All allotments of commercial space are done by the Delhi Metro Rail Corporation (DMRC) in terms of Cabinet decision of the year 2009. It was further assured that the copies of all rules and procedures with respect to both DDA and L&DO shall be submitted to the Committee.
- 7. L&DO, MoUD informed that his office is responsible for the administration of landed estates of Government of India in Delhi. He further informed that large numbers of requests are pending from Central Ministries requesting for additional land allotment. Similarly, Cabinet had allowed allotment of land to political parties on payment of premium at full market value determined on the basis of rates prescribed by the Government of India from time to time. However, this has not been found possible due to paucity of surplus land. It was also stated that no land is available for private parties also and no land has been allotted to any private party in the last five years. It was also informed that the Schedule of Rates (SoR) was last revised in the year 2000. There are three types of leases in respect of old Nazul lands namely (i) residential, (ii) commercial, and (iii) institutional. Nazul leases are perpetual whereas rehabilitation leases are 99 years. Except for one case, no allotment of land has been done through auction. All allotments of land on perpetual lease hold basis are made by the MoUD

- Vice Chairman (VC), DDA explained that DDA is credited with being the first urban 8. development authority in India. Its vision focused on the first Master Plan for Delhi as far back as 1962 and 1982 with a mission up to 2001. The Master-Plan – Delhi 2021 is now set to make Delhi a global metropolis and a world class city. He informed that the total area of Delhi was 1,483 km² and built-up area was about 702 km² in 2004. The development of 202 km² is planned under Master Plan-2021. There are 15 planning zones, out of which, 8 zones are already developed. If green zones are excluded, five more zones are now left for development, which are proposed to be covered as urban extension zones. It was also informed that the DDA acquires the land and develops it. After development, the land is re-allotted and DDA does not retain anything with it. The broad procedure for acquisition of land under the provision of Land Acquisition Act 1894 was also explained. It was further explained that Section 48 (i) of the Land Acquisition Act 1894 provides that except in cases provided for under section 36(i), the Government shall be at liberty to withdraw from the acquisition of any land of which possession has not been taken. Thus, the power to withdraw any land from acquisition has been created under the statute, which provides that the land can be de-notified, the possession of which has not been taken over by the Government. However, this power has to be exercised in a judicious manner and on the basis of guidelines framed by the Government.
- 9. The land disposal department of DDA disposes the property. There are four modes for disposing the land i.e., Auction, Tender, Firm Allotment and allotment through Draw. Allotment is done either on Leasehold basis, Freehold basis or License Fee basis and Temporary allotment is also done for specific purposes. The residential property for societies is divided in two parts i.e., Group Housing or Co-operative Society. Allotment to Group Housing Building Societies and Cooperative Housing Societies is made on recommendation of Registrar of Co-operatives of the Government of NCT of Delhi. In case of co-operative societies, DDA provides land and society distributes plots to individual members through draw; whereas, in case of Group Housing Societies, DDA allots land to the Group House Building Societies on the basis of number of members in the society. Societies build houses and allot flats to the members through a process of draw. DDA disposes commercial properties as commercial plots or as built up shops. Normally, the method of disposal is through auction/tender. Commercial plots are auctioned through process of open auction. The Rule No 5 & 20 of Delhi Development Authority (Developed Land) Nazul Rules, 1981 provides for allotment of institutional land for various purposes like social, cultural, religious, education activities etc. The allotment of institutional land is divided into 7 broad categories for (a) Hospitals (b) Community Halls (c) Clubs (d) Engineering Colleges / Professional Educational Institutes (e) Nursery, Private, Middle and Senior Secondary Schools (f) Religious Institutes and (g) Other Residual Categories. The mode of disposal in respect of Hospitals, Community Halls, Clubs, Engineering Colleges / Higher Professional Institutes is now through public auction. Vice Chairman agreed to provide a copy of detailed rules/procedure regarding institutional allotments.
- 10. Joint Secretary, Ministry of Civil Aviation (MoCA) informed that the Airports Authority of India (AAI) manages 126 airports (including international airports, customs airports, civil enclaves and domestic airports). Total land holding of AAI at these airports along with communication stators spread throughout the country is 51,000 acres (approx.) at various locations including 20 non-airports. Out of 51,000 acres of land, 701 acre is under encroachment. It was also informed that presently, there are no codified rules / procedures for allotment. However, these are in final stages under consideration. Broadly, land is allotted to various airlines for operational purposes at fixed rates as per Schedule of Rates (SoRs). The Board of AAI has approved that 300 acres of land at 10 airports shall be allotted at market rates for commercial purposes through a competitive bidding process. A statement showing the detailed break-up of land holdings at each of the Airports was also handed over during the meeting. It was assured that the copies of all rules and procedures shall also be submitted soon.

- 11. Additional Secretary, Department of Telecommunications (DoT) informed that Ministry of Posts and Telegraphs was bifurcated in the year 1985 and a separate Department of Telecommunications (DoT) was established under the Ministry of Communications. It was also informed that two autonomous public sector undertakings (PSUs) i.e., BSNL and MTNL were also created at that time along with Videsh Sanchar Nigam Limited (VSNL), which was set up to run international services. However, no formal bifurcation of land assets has been done till date. The creation of fixed assets register entails a massive exercise and money has already been sanctioned for hiring consultants to supervise this process. There are 38,000 telephone exchanges in the country. Therefore, there may be significant quantity of land resources available. However, in absence of details, it was informed that no sale of land or any other resource is being contemplated as on date. Additional Secretary also agreed to the request of Chairman to confirm subsequently as to whether there is any Cabinet approved policy or at least Board approved policy in this regard.
- 12. Deputy Director General (DDG), Department of Posts informed that there are 18,071 post offices around the country. Most of them are in rented buildings. Therefore, there may not be much land available there. It was further clarified that at present the Department does not have any policy for transfer of land. Director (SR & Estates) also provided a copy of information regarding number of vacant plots available. However, it was felt that the plots were purchased / acquired for construction of Post Office buildings, Administrative Office buildings and Staff Quarters. Therefore, these plots are still required for the same purpose. Moreover, land is allotted to them for a specific purpose of 'Post Office'. So any sale or transfer of land may necessitate change of 'land use' also, which may not be very easy. It was agreed by the Department of Posts that they shall be handing over the copies of cabinet note and other relevant documents regarding the issues raised by the committee.
- 13. Executive Director, Ministry of Railways informed that the most of the land property available with railways is under tracks. Indian Railways (IR) has approximately 43,000 hectares of vacant land. Land which is not required for operational purposes in the foreseeable future would be identified by the zonal railways and the details thereof would be advised to Railway Board. Such plots of land would thereafter be entrusted to Rail Land Development Authority (RLDA) by Railway Board in phases for commercial development. Railways have already identified 15,002 hectares of land so far, which has been divested on lease for 35 years. Railways have also established the Rail Land Development Authority (RLDA) as a statutory Authority, under the Ministry of Railways through an Amendment to the Railways Act, 1989, for development of vacant Railway Land for commercial use for the purpose of generating revenue by non-tariff measures. As per existing practice, Railway land is given to developers for commercial development through a transparent bidding process on long term lease basis for development work without any budgetary resources. It was assured that the copy of cabinet note along with copy of final agreement signed with RLDA shall be given on Monday.
- 14. The meeting ended with vote of thanks to the Chair.

The list of participants is annexed.

List of Participants

C NI .	N	B. d. de P.	
S No	Name	Designation	Organization
1	Ashok Chawla	Chairman	
2	G S Patnaik	Vice Chairman	Delhi Development Authority
3	S R Rao	Additional Secretary	Department of Telecommunications
4	Rakesh Srivastava	Joint Secretary	Ministry of Shipping
5	Dr M M Kutty	Joint Secretary	Ministry of Urban Development
6	Alok Sinha	Joint Secretary	Ministry of Civil Aviation
7	Jagdip Rai	Executive Director (Land & Amenities)	Ministry of Railways
8	S C Chhatwal	Member (Finance)	Airports Authority of India
9	Y K Sadhu	Principal Commissioner	Delhi Development Authority
	Y P Rai	Deputy Director General (Estates)	Department of Posts
10	Subhash Chander	Director (Estates)	Department of Posts
11	S K Singh	Land & Development Officer	Ministry of Urban Development
12	Deepak Trivedi	-	Delhi Development Authority
13	B K Jain	-	Delhi Development Authority
14	Partha Mukhopadhyay	Senior Fellow	Centre for Policy Research (CPR)
	Rohit Chandra	-	Centre for Policy Research (CPR)
15	Govind Mohan	Joint Secretary & Member Secretary	Cabinet Secretariat

Record Note of Discussion

Second meeting of the Committee on allocation of Natural Resources February 18, 2011; 3 pm; Room No. 41, North Block

- 1. Cabinet Secretariat, vide order dated January 31, 2011, constituted a committee on allocation of natural resources (CANR) with a view to enhance transparency, effectiveness and sustainability in utilization of natural resources, consistent with the needs of the country to achieve accelerated economic development. The second meeting of the Committee on allocation of Natural Resources was held on February 18, 2011 in Room No. 41, North Block. The first meeting was earlier held on February 08, 2011 at the same venue.
- 2. Chairman welcomed the members and briefed them about the progress so far starting from the first meeting about ten days back. He also informed about his other meetings with various land owning Ministries / Departments as the Committee was interested in ascertaining, from the major land-owner Ministries/Departments and organizations of the Central Government, the details as regards the total land available with Ministries/Departments and their agencies; the total amount of land which is available for allotment/allocation/disposal, after keeping their own requirements of Ministries/Departments in mind; the extant system of allotment/allocation/disposal of land being followed including the legal/regulatory architecture; and, changes, if any, contemplated in the existing system. He further informed the Committee about hiring of the Centre for Policy Research (CPR) as short term consultants to assist the committee with their multi disciplinary expertise. The chairman then invited the Member-Secretary to present the status report in respect of existing institutional framework, legal status and overarching issues with respect to various natural resources falling within the purview of the committee.
- 3. Member-Secretary, Shri Govind Mohan informed that the Committee has received information from many Ministries / Departments. However, few others are still to provide the information. Therefore, complete facts could not be added for these sectors in this presentation. He requested these Ministries / Departments to provide the same urgently to enable the Committee to complete its task in the minimum possible time. He clarified that this presentation is mainly to validate the factual position with respect to various sectors, based on the information given by respective Ministries / Department so that closure could be achieved in this respect. He stressed that there should be no dispute about the facts after this meeting.
- 4. It was explained that the term "resource" connotes a potential commercial value. Therefore, freely available commodities may not come under the purview of the term 'resource'. Similarly, the term "natural" signifies being not man made on a large commercial scale. Further, the natural resource could be renewable like spectrum, renewable with cost or non-renewable / non-reproducible (on a large commercial scale) like coal etc. It was amplified that the scope of the committee is limited to those natural resources, which are allotted / allotted / distributed by the Government of India. In other words, the committee shall restrict its scope to those natural resources, where the Union Government has a significant existing or potential role in allocation, pricing and utilization. The mandate of the Committee was to examine the current framework for allocation / allotment and disposal with respect to each of these resources and suggest alternatives with a view to promote transparency, efficiency and sustainability. The natural resources sought to be covered by the Committee, in its deliberations and recommendations are: minerals; coal; land; water; environment and forests; petroleum and natural gas; coal bed methane, shale gas and other petroleum products; and spectrum.

5. A copy of the presentation made by the Member-Secretary to the Committee is herewith annexed. The discussion that took place, sector wise, pursuant to the presentation, is summarized in the following paragraphs.

Minerals

- Joint Secretary (JS), Ministry of Mines (MoM) was of the view that the committee is supposed to look into those natural resources only, which are under the direct control of the Central Government. The effective control in respect of minerals, however, vests with the State Governments, who are responsible for executing leases. The Central Government is not doing any allotments and merely administers the Act. Therefore, the scope of the committee should be restricted. He referred to entry at serial No. 23 of List II (State list) of the Constitution, which provides that 'Regulation of mines and mineral development subject to the provisions of List I with respect to regulation and development under the control of the Union', are within the purview of States. He sought to explain the steps taken towards bringing about transparency and sustainability. The general principle followed in granting mineral concessions for minerals other than minor minerals is, other things being equal, the principle of 'first in time'. However, a person who has undertaken reconnaissance operations under a reconnaissance permit (RP) has the preferential right for obtaining a prospecting lease (PL), and similarly, a person who has prospected for the mineral under a PL has the preferential right for obtaining a mining lease (ML). He said that rates of royalty, once fixed, stay so for a minimum period of three years, with a view to provide stability. These rates are likely to be increased shortly. There is a continuous shift towards ad valorem royalty rates. Presently, only 9 minerals out of a total about 62 minerals have a fixed rate of royalty unlike earlier times, when most of them used to be on fixed specified rate basis. Most of the items on fixed royalty rates are bulky items with comparatively lesser per unit rates. These minerals are sold in large quantities and therefore, fixed rates are charged.
- 7. Member Secretary of the Committee was of the view that the Committee could consider the framework for allocation of mining leases, since Central Government "has a significant existing or potential role in allocation, pricing and utilization". JS, MoM explained on a query raised by Member Secretary, Planning Commission, whether multi-mineral RPs were possible, that even though RP is for a single mineral, generally, other minerals can always be subsequently added. Advisor (Planning Commission) explained that where more than one mineral is occurring, this is called co-mining. JS, Ministry of Environment and Forests (MoEF) further added, based on his past association with MoM, that generally RP is taken for the main mineral and other minerals of lesser value are accounted for as by-products. For example, copper is a by-product of gold mining.
- 8. A suggestion made in the presentation, for undertaking mineral reconnaissance through private parties on the basis of a specified fee, was discussed at length. This was sought to be justified on grounds of securing better value for money, if competitive bidding is resorted to at the stage of grant of mining lease on the basis of a confirmed mineral deposit. Thus, what is lost on the swing is more than made up on the roundabout. This idea was supported by Advisor (Planning Commission) who was of the view that de-risking of mineral exploitation activities could fetch rich dividends. The representative from CPR also endorsed this suggestion, adding that this methodology would add substantially to the existing data-bank for large parts of the country, which are currently non-mineralized. JS, MoM, however, felt that this may not be justified since a specialist agency like the Geological Survey of India (GSI) existed for geological mapping and mineral resource assessment on a regional basis. Thus, taxpayers' money could not be expended

on private reconnaissance of minerals. The answer could lie in capacity augmentation of GSI to enhance the pace and quality of mineral assessment. It was further explained that the proposed amendments to the MMDR Act provide for the entity doing the RP related activities to also sell its data to other buyers, who are keen to pursue the mineral exploration. However, the entity which is successful in locating a mineral find continues to have preferential rights for obtaining PL/ML.

- 9. JS, MoM pointed out that an Empowered Group of Ministers (EGoM) headed by the Finance Minister is currently looking into the amendments to the MMDR Act, 1957, and most of the issues raised in the presentation are under its consideration. This includes issues related to the district fund, to be created out of enhanced royalties/profit sharing arrangements, as proposed by the Ministry of Mines. He suggested, therefore, that these issues may not be explored further by the Committee. Chairman explained that the Committee's mandate is to suggest mechanisms for ensuring sustainability, transparency and efficiency in allocation of mineral resources. Thus, while it will not encroach into the areas specifically being looked at the by the EGoM, it would still be within its rights to make generic recommendations with regard to its terms of reference.
- 10. DG, FICCI was of the view that India's exclusive economic zone is explored and exploited to the maximum possible extent. The Ministry of Earth Sciences (MoES) and its agencies should be entrusted with the task of sea-bed exploration and mining.

Coal

- 11. Director, Ministry of Coal (MoC) re-iterated the fairness of existing broad procedures starting with the fact that the exploration and operation of coal sector is guided through statutes such as Mines and Minerals (Development & Regulations) Act, 1957, Mines Act, 1952, Coal Bearing Land Acquisition Act, 1957 and Coal Mines (Development and Conservations) Act, 1974 and the rules framed there under. He explained the provisions related to allocation for captive mining. He also explained that coal gasification and coal liquefaction have been notified as valid end uses under captive mining policy (besides power, steel and cement) and few coal blocks have already been allotted for development of coal to liquid (CTL) plants. He further informed that the Coal Regulatory Bill is under consideration of a Group of Ministers.
- Director, MoC confirmed the view that had been posed in the presentation that captive mines could be allotted to mining companies, with ultimate sale being restricted to specified end users. This interpretation of the Coal Mines (Nationalization) Act, 1973 had also been confirmed by the law officers of Government. However, the extant practice was to allot coal mines only to allowed captive industries, rather than mining companies. Director, MoC also informed that the Ministry is not resorting to e-auction of coal allocation as the prices of essential items like Power, Steel, Cement etc. may go up as a consequence of this.
- 13. AS & DG (DoC), Department of Economic Affairs felt that environmental issues holding up this sector needed to be taken on board, along with other issues of efficiency and transparency. He also felt that innovative steps needed to be devised to incentivise State Governments to share their mineral resources with the nation.

Lands

14. Joint Secretary, Ministry of Urban Development (MoUD) clarified that the land and development officer (L&DO) was the custodian of Central Government's lands, within and

outside Delhi. He opined that price discovery of land is very difficult as the value depends on many factors such as land use, floor area ratio (FAR) and location etc. The issue of land use is critical and in the domain of the respective State Governments. Further, he felt that even a clear title can inflate the value of land.

15. Advisor Planning Commission was of the view that various PSU's like SAIL, BHEL, NTPC etc. have lot of surplus land. However, it was clarified that the committee cannot get in touch with individual Ministries/Departments due to the short time at its disposal for giving its report. Additional Secretary, Department of Telecommunications (DoT) stated that land use change by the State Government in Delhi is much less, unlike other states, where it is more frequent. However, he felt that the land owner in Delhi does not share anything with the Government for increase in the value of his land on account of change in land use or FAR. He felt that there should be some mechanism to share this for generating funds for public welfare. Secretary, Department of Land Resources (DoLR) agreed with this view and gave the example of Gurgaon, where the entire city has been built based on land use change. She felt that the states resort to town planning and not country planning. The latter must also be given the requisite importance given the huge amount of land resources presently declared as wasteland, which can be re-generated quite easily for commercial usage. DG FICCI was of the view that this whole process of land use change is shrouded in mystery and is non-transparent. He said there is undue enrichment of land owner with change of land use from agriculture to commercial. He was of the view that the real issue is the acquisition process, where processes are arbitrary and non-transparent. He stated that India has 2% of world's total land with 17% of the population and 18% of live stock. It is therefore, very pertinent that the land resources are used prudently. He endorsed the view of Secretary, DoLR that 50 million hectare waste land be used first for commercial / residential purposes and then only land use conversion of agricultural land be allowed. Representatives of CII assured that they would provide further inputs on this issue shortly.

Water

16. DG FICCI informed that 80% of ground water is used in agriculture. He said that there is a Group of Ministers (GoM) on water related issues and assured to give a note on this sector for consideration of the Committee. Additional Secretary, Ministry of Water Resources (MoWR) informed that the issues of water fall within the State list. However, there is a patent need to bring them under the concurrent list. He stressed the importance of basin level water planning at the national level, with a view to conserve water and ensure integrated water management of both surface and ground water resources. It was felt that this sector needs a comprehensive review. Planning Commission agreed to give more information on this sector.

Petroleum and Natural Gas

17. The Member-Secretary informed that the New Exploration Licensing Policy (NELP) has been in existence since 1999 for accelerating the pace of hydrocarbon exploration in the country. This policy has been very successful and given impetus to exploration and production (E&P) activities in the country. Significant hydrocarbon discoveries have been established after remarkable investment in E&P and infrastructure by the private sector. However, there are issues in this sector. The foremost issue is non-participation by world leaders like BP or Shell etc in the exploration process. There can be three reasons for this lack of interest. The first reason could be that the country has very thin or fragile reserves, which are not attracting these global giants.

It could also be due to the fact that the country has large unexplored areas with uncertain prospectivity. In other words, large unmapped areas are holding back these giants because there are significant risks associated with exploration. The second reason could be fiscal terms, which, though are fairly attractive as compared to international standards. India is in the third quartile of nations based on attractiveness of fiscal terms. The last reason could be the poor country rating based on stability with respect to the exploration regime. These reasons could be holding back the entry of big players into this sector. In terms of movement forward, the new Open Acreage Licensing Policy (OALP) may be a step forward. However, it is felt that much like the mines sector, there may be need for de-risking E&P activities in this sector as well. The availability of reliable data may restore confidence and may attract more international competition. Finally, the issue of gas pricing on a market determined basis would also need to be addressed.

- 18. Chairman was of the view that generally the rules of the game should not be allowed to change midway. This is important from the point of view of restoring confidence of the international investors in the Indian petroleum and gas sectors. The representative of the CPR was of the view that the country rating for perception of risk for the petroleum sector was below some very small countries, such as Cote d' Ivor. The industry representatives felt that the prospective bidders may be concerned about quality of blocks on offer, asymmetry of seismic data availability and quality of seismic data.
- 19. The Member Secretary requested the Ministry of Petroleum and Natural Gas (MoPNG) to make available information and data on coal bed methane and shale gas, which were also being looked at by the committee.

Spectrum

- 20. AS, DoT was of the view that we should strive towards efficient usage of spectrum. He also felt that the country now needed an overarching regulator for spectrum, who could ensure seamless vacation by users such as defence and space.
- 21. DG FICCI was of the view that there is no other recourse but to auction spectrum, irrespective of the band. He also argued for spectrum trading as an efficient mechanism of signalling price. He questioned the policy of no cap on the number of telecom operators, as supportive of competition, since oligopoly can also generate competition, if conducted with fairness and transparency. He also agreed that the spectrum size allocation should be made smaller to encourage trading, although allocations below 4.4 MHz are generally not considered efficient. Finally, he expressed a view that market based pricing cannot be substituted by an administratively determined market price, since the variables and parameters used for estimation of this price can always be questioned.
- 22. Representative of CPR felt that auction generates efficient usage of spectrum, although the frequency bands need to be made more discrete, both in terms of bandwidth and in terms of geographical coverage. The second was especially important as the price discovery of spectrum could be much more efficient once spectrum allocations in areas of high usage, such as the metros etc, are de-linked from spectrum allocations in rural and remote locations. He argued for spectrum trading as a mechanism for market forces to signal the true value of

spectrum.

Environment and Forests

- 23. JS, Ministry of Environment and Forests (MoEF) explained that the country should have 33% forest area as per international standards or benchmarks. The actual forests are much less as compared to the 25% forests shown on paper. Therefore, environmental and forest clearances are important from the point of view of sustainability. He stressed the need to evolve a balance between the needs of development and environment; as also the importance of preventing illegal mining and other forms of environmental degradation. The environment clearances are founded on the principles of cost benefit analysis. There is a need to weigh the cost of environmental impact against the benefit of development, so as to facilitate a better understanding of the issues involved. He clarified that the forest clearance aspects derive legal sanctity from the Forest (Conservation) Act, 1980 as amended in 1988. However, the entire debate of 'go' and 'no go' areas is more a media creation than anything tangible. A proper understanding of the law can go a long way in dispelling doubts and apprehensions. JS, MoEF felt that all approvals shall be received on time, if efforts for environmental clearance are made simultaneously with other project activities. However, in actual practice, environment clearances are sought at the fag end of the project preparation activities. This sometimes, leads to delays, as the procedural requirements have to be adhered to. Finally, the inefficient practice in the coal sector, of only mining the top layers was referred to, along with the practice in the mining sector, where more area than allotted is being mined. This is causing environmentally unsustainable mining, which cannot go on forever.
- 24. JS, MoEF agreed to provide information on the issues raised in the presentation, namely, the classification of 'go' and no go' areas; principles employed in diversion of forest lands for non-forestry purposes; practices adopted by States for allotting minor forest produce; and, need for improvements in environment clearance procedures.

Overarching Issues

- 25. Member Secretary, finally took up the overarching issues for the consideration of the Government. He said that the first issue was how to define the competitive process; whether the simple test could be for multiple participants on a non-discriminatory entry; or, did it necessarily imply auctions. The relationship of the allocation procedures to the market structure was also important. Thus, would the rules of the game change for the coal sector, with an overarching public sector entity from the minerals sector, with multiple players? A predictable release plan, and an appropriate relationship between the allocation mechanism and the probability of finding a resource were also significant. Finally, the issue of treating resources, which were intermediate inputs into the final product, e.g., coal of coal feeding into electricity tariffs, cost of spectrum determining telecom rates etc, merited detailed deliberation.
- 26. AS (Telecom) appreciated the presentation. He agreed with the delineation of the overarching issues, especially risk associated with finding a resource. He said while location of oil is an issue but location of spectrum may not be so. Thus, the categorization of various natural resources could have been based on three uniform categories included in the definition itself, i.e., renewable resources, renewable with cost resources and non-renewable / non-reproducible resources. This may facilitate the discussion on a proper allocation strategy for each category of

resource.

- 27. Chairman expressed the appreciation of the committee for the presentation. He complimented the representatives of CPR for having delivered a quality level of analysis of issues involved within a reasonably short time. He informed the committee that apart from meeting the representatives of FICCI and CII, he would also be having focused meetings on water and spectrum related issues in the next week. The date of the next meeting of the committee would be informed in due course.
- 28. The meeting ended with vote of thanks to the Chair.

The list of participants is annexed.

List of Participants

Name	Designation	Organization
Ashok Chawla	Chairman	
Sudha Pillai	Member Secretary	Planning Commission
Anita Chaudhary	Secretary	Department of Land Resources
Vilasini Ramachandran	Special Secretary	Department of Expenditure
Bimal Julka	Director General, Directorate of Currency (DoC)	Department of Economic Affairs
S R Rao	Additional Secretary	Department of Telecommunication
Vijayalakshmy K Gupta	Member (Finance)	Department of Telecommunications
G Mohan Kumar	Additional Secretary	Ministry of Water Resources
Rajiv Kumar	DG	Federation of Indian Chamber of Commerce and Industry (FICCI)
C. Banerjee	DG	Confederation of Indian Industry
G Srinivas	Joint Secretary	Ministry of Mines
Hem Pande	Joint Secretary	Ministry of Environment and Forests
Nagesh Singh	Advisor	Planning Commission
A K Mehta	Joint Secretary	Ministry of Urban Development
Dr Archana Mathur	Economic Advisor	Ministry of Petroleum and Natural Gas
K C Samria	Director	Ministry of Coal
Seema Arora	Principal Counsellor	Confederation of Indian Industry (CII)
Rajesh Menon	Senior Director	Confederation of Indian Industry (CII)
Partha Mukhopadhyay	Senior Fellow	Centre for Policy Research (CPR)
Rohit Chandra		Centre for Policy Research (CPR)
Govind Mohan	Joint Secretary	Cabinet Secretariat
	Ashok Chawla Sudha Pillai Anita Chaudhary Vilasini Ramachandran Bimal Julka S R Rao Vijayalakshmy K Gupta G Mohan Kumar Rajiv Kumar C. Banerjee G Srinivas Hem Pande Nagesh Singh A K Mehta Dr Archana Mathur K C Samria Seema Arora Rajesh Menon Partha Mukhopadhyay Rohit Chandra	Ashok Chawla Sudha Pillai Anita Chaudhary Vilasini Ramachandran Bimal Julka Bimal Julka Director General, Directorate of Currency (DoC) S R Rao Additional Secretary Vijayalakshmy K Gupta G Mohan Kumar Rajiv Kumar C. Banerjee G Srinivas Hem Pande Nagesh Singh A K Mehta Dr Archana Mathur K C Samria Principal Counsellor Rajesh Menon Partha Mukhopadhyay Rohit Chandra

Note of Discussion

Meeting of the Committee on allocation of Natural Resources (focused meeting on Water Sector) February 24, 2011; 3 pm; Room No. 41, North Block

- 1. Cabinet Secretariat, vide order dated January 31, 2011, constituted a committee on allocation of natural resources (CANR) with a view to enhance transparency, effectiveness and sustainability in utilization of natural resources, consistent with the needs of the country to achieve accelerated economic development. A focused meeting of the Chairman of the Committee with the concerned Ministries / Departments on water related issues was held on February 24, 2011 in Room No. 41, North Block to understand the frameworks inherent in water allocations.
- Chairman welcomed the members and briefed them about the constitution of the 2. committee, its terms of reference and exact scope. He stated the purpose of the focused meeting on water related issues and requested the Member Secretary to highlight the overarching issues. The Member-Secretary informed that water being a state subject (entry 17 of the State list), the administrative control and responsibility for development and allocation of water resources rests with the State Governments. The Central Government intervenes in water related issues through entry 17A of the concurrent list concerning forests. The Central Government has been given original powers (entry 56 of the Union list) only in respect of "..Regulation and development of inter-State rivers and river valleys to the extent to which such regulation and development under the control of the Union is declared by Parliament by law to be expedient in the public interest..". He further clarified that the National Water Policy has assigned the highest priority for drinking water supply needs followed by irrigation, hydro-power, navigation and industrial and other uses. He further added that presently there is no transparency in water pricing which often leads to allegations of arbitrary behaviour. The Member Secretary highlighted the four overarching issues as were earlier posed during the second meeting of the committee. He left the forum open for discussions after highlighting these issues. The issues were:
 - (a) A multiplicity of principles, rules and instruments and a lack of an overall framework;
 - (b) Intervention of the Centre in water related issues is often using the concurrency of "Forests" as a vehicle for environmental and pollution-related issues;
 - (c) National Water Policy and National Water Resources Council have no binding requirements, albeit an agenda setting power for State level institutions has been often exercised;
 - (d) No umbrella legislation at the national level results in some conflicting principles between Centre and States.
- 3. Secretary, Ministry of Water Resources (MoWR), in his opening remarks contended that the Constitution does not clarify as to who is the owner of water, even though water is a state subject. He gave the example of USA, where water has been stated to be private property and therefore, 98% dams have private ownership. He felt that there may be no straight answers to this question, as Entry 56 allows the Central Government authority for regulation and development of inter-state rivers and river valleys to the extent to which such regulation and development under the control of the Union is declared by Parliament by law to be expedient in the public interest. However, Parliament has used this power very rarely. He then referred to the Inter-State Water Disputes Act, 1956, and the River Boards Act, 1956, under which consultations

go on endlessly without any results. He referred to the case of Renuka Dam over river Yamuna in Himachal Pradesh, where four State Governments, namely Himachal Pradesh, Delhi, Uttrakhand and Haryana are involved. He said that while all the states had agreed to a water sharing formula earlier, the agreement seemed to be breaking up now.

- 4. Secretary, MoWR stated that the major rivers of the country are mostly inter-state rivers. There has been an increasing demand for water in all sectors, sometimes leading to inter-State disputes on sharing of water. Efforts are being made to resolve disputes through negotiations amongst the basin States with the assistance of the Central Government. However, in case of non-agreement, the disputes are adjudicated as per Article 262 of the Constitution. "Inter-State River Water Dispute Act" enacted under Article 262, provides for setting up of tribunals for adjudication of disputes, which provides for settlement of disputes by negotiations failing which, the disputes are to be referred to a tribunal for adjudication, whose decision is binding. However, there should be a mechanism to ensure that the decision making by tribunals is time bound. As regards water pricing, he stated that the urban bodies have the power for pricing and distribution of water. Moreover, most of the urban bodies do charge money for water supply like in Delhi etc. He said that while 85% of all water is used in irrigation, 5% water is used for drinking purposes, 5 to 6% water is used for industrial purposes and balance is used for ecological purposes. However, there is no regular pricing mechanism for ground water used for irrigation. He gave the example of Punjab and Haryana, where quantity of ground water consumed is 150% to 170% of the water quantity recharged. Further, he said that there are no regulations on use of ground water leading to inefficiencies and wastage. Further, the excessive use of chemical fertilizers may render the entire ground water un-usable after 10-15 years. Even if any Act is enacted by the State Government, it is not followed. He said that overall 61% to 65% of the water usage is ground water, which is otherwise, less than surface water. According to Secretary, MoWR, the main issues in the water sector are mechanism to re-charge ground water; and, deteriorating quality of water. He further informed that an Empowered Group of Ministers (GoM) had been constituted on generic issues related to water policy and management. Secretary, Ministry of Water Resources informed that the Planning Commission is also working on a presentation to PM / EGoM on water related issues.
- 5. Secretary, Department of Drinking Water Supply (DoDWS) felt that drinking water may not be a major issue as overall consumption is very less. He believed that water for irrigation is the main issue especially in the context of sustaining ground water resources. Secretary, DoDWS gave the example of Punjab, where subsidy up to Re 1 lakh is given for installation of tube well and electricity is supplied free of cost. Therefore, there is no control on water mining and enormous quantity of water is wasted. Secretary, DoDWS added that except for eastern states (e.g., Jharkhand, where ground water is under-utilized) or some portions of central India, water is over drawn in all other places, leading to deterioration of ground water resources. The extent of water stress is dependent on the onset and intensity of monsoons. Additional Secretary, MoWR informed that ground water is already at critical level at 70% of places. It was informed by the representatives of MoWR and Ministry of Environment and Forests (MoEF) that the Central Ground Water Board (CGWB) was engaged in carrying out the functions of survey and mapping etc. The CGWB also gives no objection certificates (NoCs) for use of groundwater for various purposes, which however are not very effective.
- 6. Advisor (Planning Commission) felt that the lack of NOC is mainly used to deny the electricity connections. This can be easily circumvented by using diesel for pumping sets. He said that power to the Centre flows from environmental provisions like the advisory issued on

water mining in critical areas. He gave the example of Punjab, which is over exploiting the ground water and there is no enforcement, though directions are issued on paper. He further informed that separate Command Area Development and Water Management Program (CADWM) schemes cannot be taken up under NREGA. Advisor (Planning Commission) further informed that the ground water classification survey, referred to by Secretary, DoDWS is based on 2004 data, and the latest survey, which will come out shortly based on 2010 data, will classify the areas of eastern and central India also as water stressed. Advisor (Planning Commission) assured to give further information on water related issues, including the agenda notes for the GoM and comments of Planning Commission thereupon. He further informed that a committee set up by the Planning Commission in the year 1997 had recommended the recovery of cost for operations and management of surface water used for irrigation. However, till date, only about 15% to 20% of the costs are being recovered. He also referred to the recent statement of Deputy Chairman (Planning Commission), where he said that water is the most critical resource and needs proper regulation.

- 7. Secretary, MoWR felt that the respective State Governments would need to be sensitized. Both ground water and surface water have to be taken together for proper coordinated resource management. There is a need for a holistic ecological/ hydrological overview and river basin management plans are required, but at present there are no institutional arrangements for this. River Basin Management Authorities need to be created for this purpose, which requires strong political will. He added that MoWR can create the necessary institutional frameworks for this purpose, which can co-opt the State Governments thereafter. To a pointed query, it was clarified that no amendments are needed in the existing legislation to declare certain areas as "river basins" under the control of the Central Government. Secretary, MoWR clarified that the Central Government does not need any amendment for basin declaration. However, the River Boards Act, 1956 needs to be amended to include ground water as well.
- 8. Joint Secretary, Ministry of Environment & Forests (MoEF) referred to the provisions for development and regulation of mineral resources in Indian territorial waters, continental shelf, exclusive economic and other maritime zones under the Offshore Areas Minerals (Development and Regulation Act), 2002. He was of the view that the Central Government may, by an Act of Parliament or through an ordinance, bring water to the union list or concurrent list, which shall make its regulation feasible by Central agencies. JS, MoEF felt that there should be appropriate laws like in USA, where if some damage is done to the eco-system, the polluter has to pay for the damage. He said that the average depth for bore-well water is now about 200 ft. He said 40 million people are drawing ground water at this level. This itself shows the enormous quantities of water being drawn everyday. Similarly, for drinking water, the quality of water or toxicity in water is a critical issue now.
- 9. Secretary, MoWR referred to the issues raised in the note given by him in the meeting, wherein he has drawn attention to the fact that the growing population coupled with industrialization and urbanization has resulted in increase in the demand of water for various uses of water. With a view to addressing this challenge, MoWR has emphasized efficient management of water resources to ensure availability of water for all the uses. This is more so in view of the climate change and its likely impact on water resources. Almost all the studies in this regard point towards a definite impact on the hydrological cycle, which could result in intensification of the temporal and spatial variation in the availability of water resources. He also informed that the Government of India has launched a National Action Plan on Climate Change, which envisages institutionalization of eight national missions, including a "National

Water Mission". The objectives of "National Water Mission" are conservation of water, minimizing wastage and ensuring its more equitable distribution both across and within States through integrated water resources development and management. Important goals of the National Water Mission are to increase the water use efficiency by 20% and promotion of basin level integrated water resources management. Secretary, MoWR suggested that building structures and industrial establishments, including thermal power plants need to be given a "blue" rating, on the lines of the "green" ratings given for environmental purposes.

- Secretary, MoWR was of the view that there should be a comprehensive Central Act on 10. water and also that water should be added to the concurrent list; though there are practical political problems in making this happen. He felt that water trading could also start in a few years time. Member Secretary was of view that after 73rd Amendment or 74th Amendment, water may not even be under State control and passed down to the local bodies and Panchayats. This view was contested by Secretary, MoWR, who felt that the limited devolution to the local bodies would be for the purpose of allocation and pricing. Secretary, MoWR also opined that while the current use of water for industrial purposes is only around 5%, this proportion is likely to go up substantially in the future, as industrial development gains momentum in India. The Chairman agreed that water is an important resource, which needs a basin level planning approach through legislation. Moreover, there should be stringent rules for regulation of groundwater. 100% of the costs on operation and management should be recovered for use of surface water. A long term architecture, spanning 15-20 years was therefore needed for both enforcement and regulation. Member Secretary felt that the overarching legislation on water could be enacted on the lines of the "Electricity Act, 2003", which was evolved after a consensus was reached amongst majority of the State Governments, electricity being a concurrent list subject.
- 11. Secretary, DoDWS was of the view that Entry 56 of the Central list and Entry 17A of the Concurrent list do not, at present, give an impression that Central Government has overriding powers on water related issues. Thus, in order to enable water related issues to be dealt with cogently, using integrated approaches, the idea of the overarching legislation should be pursued. If pursued from now onwards, something tangible may emerge after 5-10 years. This issue should be posed for an appropriate decision to the EGoM on water related issues. He also felt that there should be mapping of the whole country to know the exact status of all water resources, with empirical evidence. He further suggested that the MoEF should look into the quality of water issue also; hence, the Water Quality Assessment Authority needs to be suitably empowered. He also felt that realistic pricing of water supply for industry, agriculture and urban is required as existing cost recoveries are minimal. He informed that the re-use of waste water is less in cities like Delhi (less than 5%) despite the fact that the per capita supply of water is highest in the world. In other words, water pricing and re-use of water are important issues. Secretary, DoDWS clarified that his Department is not engaged in popularizing or endorsing RO water filter sets in rural areas, although some States like Punjab are giving subsidies for this purpose, leading to a high proportion of water wastage. He also felt the there should be more devolution of powers to Gram Panchayats as they are often active on pricing front and are able to charge for water supplies. He clarified that the Central Schemes envisage a small window of 10% for introducing water reforms, including pricing. Secretary, DoDWS assured to forward the papers prepared in his Department on issues of drinking water.
- 12. Joint Secretary, Ministry of Urban Development (MoUD) highlighted the visible stress across the country on water resources. He said that there is lot of inefficiency in water management, both in collection of water as well as its distribution. Almost 50% water is lost at various stages. He

felt that the huge inefficiency in distribution is a key problem, which manifests itself, among other things, in an iniquitous allocation of water amongst various sections/areas of the same city. This wastage shall have to be controlled with efficiencies in collection and distribution of water. This highlights the need for efficient regulation, especially in big cities and metros. He further added that 80% water bodies in urban areas are polluted. He informed that out of 423 cities/towns, the water quality is satisfactory in 39 cities only. Moreover, he added that water and sanitation have to be dealt together and not separately. JS, MoUD stressed the need to have a rational pricing policy for water, adding that people are willing to pay for water, provided the quantum and quality are ensured. JS, MoUD agreed that water issues need to be seen as an integrated whole, without any distinction between ground and surface water. Similarly, rain water harvesting has to be part of overall water management. Overall, the country is facing huge water stress and things need to be done urgently. The observations of JS, MoUD were re-iterated by both Advisor (Planning Commission) and Secretary, DoDWS. To the observation of Secretary, MoWR that pricing of water may be seen as a means of taxing the poor, Advisor (Planning Commission) stated that the poor end up paying more than the rich for water, since the deficit has to be met from market sources at exorbitant prices.

- 13. Chairman concluded the meeting by summarizing that the water sector in India is marked by poor service standards, operational inefficiencies, inappropriate pricing, mounting investment needs and compromised access to quality services, especially by the poor. The current governance and regulatory mechanisms and fiscal incentives for sectoral objectives have not yielded desired results. This may call for immediate action for developing an appropriate mechanism for overall water management, including systemic monitoring. This may be possible, if appropriate steps are taken to enact an overarching water legislation at the Central level.
- 14. The meeting ended with vote of thanks to the chair.

The list of participants is attached.

Attendance Sheet Committee on allocation of Natural Resource

24th February, 2011, (3:00 P.M.)

List of Participants

S No	Name	Designation	Organization
1	Ashok Chawla	Chairman	
2	D V Singh	Secretary	Ministry of Water Resources
3	Arun Kumar Misra	Secretary	Department of Water and Sanitation
4	G Mohan Kumar	Additional Secretary	Ministry of Water resources
5	Nagesh Singh	Advisor	Planning Commission
6	A K Mehta	Joint Secretary	Ministry of Urban Development
7	Hem Kumar Pande	Joint Secretary	Ministry of Environment and Forests
8	Partha Mukhopadhyay	Senior Fellow	Centre for Policy Research (CPR)
9	C Srinivas	-	Centre for Policy Research (CPR)
10	Govind Mohan	Joint Secretary	Cabinet Secretariat

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Record Note of Discussion

Meeting of the Committee on allocation of Natural Resources (focused meeting on Telecom Sector)

February 24, 2011; 04:30 pm; Room No. 41, North Block

- 1. Cabinet Secretariat, vide order dated January 31, 2011, constituted a committee on allocation of natural resources (CANR) with a view to enhance transparency, effectiveness and sustainability in utilization of natural resources, consistent with the needs of the country to achieve accelerated economic development. A focused meeting of the Chairman with the concerned Ministries / Departments on spectrum related issues was held on February 24, 2011 in Room No. 41, North Block. This meeting was held to know the complete facts of the spectrum related issues, which have bearing on its allocation, utilization and pricing.
- 2. Chairman welcomed the members and briefed them about the constitution of the committee, its terms of reference and exact scope thereof. Member Secretary started the discussion with the statement that that this sector is important and unique. He explained that the spectrum is not consumed upon its usage, which is unlike other natural resources. However, it is wasted to the extent that it is not used optimally and efficiently. Further, he added that the spectrum available is shared amongst the various potential users in conformity with the provisions of national and international laws. The issues to be discussed in the present meeting were explained as follows: quantum of spectrum available and its present usage pattern; optimal methods of allocation, with reference to international best practices; the quantum of spectrum in use by defence forces and the roadmap for its release; methods available for pricing spectrum, with a view to promote spectral efficiency and maximization of total public welfare, or social optimum. Member Secretary informed that the representatives of Department of Space had regretted their inability to attend the meeting.
- 3. Wireless Advisor (WA), Department of Telecommunications (DoT) informed that the International Telecommunication Union (ITU) at the World Radio Communication Conferences allocates spectrum frequencies for the use of various countries. Allocations are made on a regional basis and for different types of services. It is mandatory for all administrations to adhere to these allocations. For the purpose of spectrum allocation, each member country submits its proposals to ITU, based on their requirements and priorities for opening of the bands. During the conference, all the proposals are discussed and decisions are taken for opening of the bands for new services or extension of the existing bands. These decisions are reflected in the International Frequency Allocation Table of radio regulation and other regulatory provisions for use of bands, which forms the basis for allotment by the respective member countries. He further clarified that the range of "radio frequencies" is a matter of international convention. All countries of the world have been separated into the three formal ITU RF allocation regions based largely on longitude. The ITU categorizes states into three Radio regulatory Regions:
 - Region 1: Europe, Middle East, Africa, the former Soviet Union, including Siberia; and Mongolia;
 - Region 2: North and South America and Pacific (East of the International Date Line);
 - Region 3: Asia, Australia and the Pacific Rim (West of the International Date Line).
- 4. Radio Frequency (RF) spectrum is a limited natural resource. In India, the radio frequencies are confined between 9 kHz and 3000 GHz and are being used for 40 different types of services like fixed communication, mobile communication, broadcasting, radio navigation,

radiolocation, fixed and mobile satellite service, aeronautical satellite service, radio navigational satellite service etc. The Wireless Planning and Coordination Wing (WPC) under Department of Telecommunications (DoT) in Ministry of Communication and Information Technology (MoC&IT) is responsible for frequency spectrum management and caters to the needs of all wireless users (government and private) in the country. Standing Advisory Committee on Radio Frequency Allocation (SACFA) makes recommendations on major frequency allocation issues, formulation of the frequency allocation plan, issues related to International Telecom Union (ITU), problems referred to the committee by various wireless users, siting clearance of all wireless installations in the country etc. The National Frequency Allocation Plan (NFAP) forms the basis for development and manufacture of wireless equipment and spectrum utilization in the country. It contains the service options in various frequency bands for the country and also provides the channeling plan in different bands. He felt that considering the growing need of spectrum for communication services, there is a need to make adequate spectrum available by relocating surplus spectrum. He said appropriate frequency bands have historically been assigned to defence and other users. In fact, defence is one of the major users of spectrum. There is a need to review these spectrum allocations in a planned manner so as to have optimal utilization of spectrum without in any way compromising the security of the country.

- 5. WA, DoT explained that internationally, national regulators have adopted a variety of mechanisms to allocate the electromagnetic spectrum. In some cases, segments of the spectrum are made available to the highest bidder using various auction mechanisms. In other cases, regulators allocate spectrum use based on adopted policy guidelines or other criteria, which are often described as "beauty contests". He said that many countries have spectrum legislation also in place to guide allocation and pricing of spectrum. Australia and New Zealand are one of the most progressive nations in regard to spectrum management, where spectrum trading is also allowed.
- 6. The National Frequency Allocation Plan (NFAP) was first established in 1981 as a classified document. In pursuance of the recommendations of the New Telecom Policy 1999 (NTP-99), the second NFAP was formulated in 2000 and made effective, as a public document, with effect from January 01, 2000; subsequently, another NFAP has been formulated in 2008 and made effective with effect from January 01, 2009. The next NFAP shall be ready in 2011, based on the recommendations of the International Telecommunications Union (ITU) in 2007. He further added that presently 25 MHz spectrum in 900 MHz band (890 915 / 935 960 MHz) and 75 MHz in the 1800 MHz band (1710 1785 / 1805 1880 MHz) is earmarked for GSM services. However, out of this total 75 MHz, only 15 MHz in GSM 1800 band is available for use as the remaining 60 MHz is still to be vacated by the defense department. Also, out of the total 25 MHz in GSM 900 band, a total of 20.2 MHz is available for GSM networks and Railways' train safety systems.
- 7. Member (Finance), DoT suggested a 'Spectrum Audit' for usage and allocation of spectrum. She felt that it may be better to have proper audit by an independent entity regularly, which is an international practice. Secondly, the One Man Committee (OMC) comprising of Justice (Retired) Shivraj Patil, a former judge of the Supreme Court, has recommended appropriate legislation in the form of a Spectrum Act, along with a Spectrum Authority. She felt that the proposed Spectrum Authority should be the owner of the entire national spectrum, irrespective of its user whether defence, space or civil. On a query by the Member Secretary, it was clarified that the proposed spectrum authority would also subsume the role and functions of the WPC.
- 8. Additional Secretary, DoT explained that if spectrum is likened to a piece of land, at present, there is no owner and no accountability as regards efficiency and utilization. Wireless

Advisor clarified that they have the ability and technology to monitor all the signals in the air, whether authorized or non-authorized. He added that they have all the necessary data to show the actual usage of spectrum by any user. Therefore, the usage patterns of spectrum can be determined with absolute certainty. However, the necessary legal and administrative teeth to bring about an efficient allocation of spectrum frequencies, by getting them vacated from various users and re-assigning them subsequently, is not available with the WPC wing presently.

- 9. On a query from the Chairman, whether legislation is necessary for ensuring optimum utilization of spectrum, Member (Finance), DoT informed that a steering committee is already looking into this issue. However, she felt that in future, the licenses should be unbundled from spectrum. This is unlike the earlier policy, where 4.4 MHz of spectrum was bundled with the license. Since spectrum is a scarce resource, it should be unbundled and auctioned to realize its market value. Further, she felt that spectrum trading can also be allowed with revenue sharing with Government, so that those who need spectrum can buy from those who do not need it presently. In other words, Government has to ensure that spectrum allocation and pricing are market driven and not arbitrary. Additional Secretary (DoT) felt that the views of Member (Finance) notwithstanding, the other view is that instead of auctioning, spectrum should be allotted through an administrative process, lottery or on first come first served basis. The administrative processes for deciding who receives the right to use the spectrum, sometimes dubbed "beauty contests", have the advantage of flexibility. Government can impose whatever criteria it chooses, and can thereby use the process to address its policy goals. The main drawback of administrative processes is their lack of transparency. The European Union countries and Canada used administrative processes to assign mobile-communication licenses in early 90s. Perhaps Canada is still using this as it guarantees the best fit against their policies and criteria.
- 10. Member Secretary queried about the future road map for spectrum, say by 2015, in terms of how much spectrum shall be available and how much will be allocated. He also wanted to know as to how many departments were using spectrum for commercial usage. Wireless Advisor (DoT) replied that only DoT and I&B are using spectrum for commercial usage. No other department including Department of Space is using this for commercial purposes. However, he felt that in future, there will be amalgamation of all frequency bands, on similar lines as the extant practice in France. While there is a move to vacate spectrum from the defence forces, for commercial purposes, the Department of Space has already vacated 20 MHz of spectrum for alternative allocations. Moreover, spectrum allocations for transponders hosted on satellites are planned much in advance (a time cycle of 7 years is followed for this purpose) so that frequency bandwidths are available for strategic and commercial purposes without any interference.
- 11. Advisor (Planning Commission) highlighted the need to ensure that there is no loss to the Government on account of difference between Gross Revenue (GR) and Adjusted Gross Revenue (AGR), since telecom sector revenues are indexed to AGR. Member Secretary replied that the difference between GR and AGR is mainly due to incidence of service tax. In fact, 90% of the difference can be explained on account of service tax alone. Other factors could be miscellaneous income derived from sale of hardware etc. Advisor (Planning Commission) raised another issue about the move to shift to digital platform by the Ministry of Information and Broadcasting. He wanted to know as to how much additional spectrum shall be made available on account of such shifting. He said that since spectrum has a value, is it possible to do a cost benefit analysis by knowing as to much money should the Government invest now to ensure the digital platform by the year 2015 deadline. Otherwise, the shift would get extended say to 2020 and spectrum will not be available to the Government for another five years. The process was similar to the shift made by the armed forces to optical fibre, for which purpose funds were made available by Government, thus releasing spectrum in the bargain.

- Joint Secretary, Ministry of Information & Broadcasting (MIB) explained the broad 12. procedures followed in the Ministry in respect of spectrum related issues. He said that the broadcasting service providers under the MIB require the spectrum usage for up-linking of television channels, teleports, Direct to Home (DTH) service, Headend in the Sky service, private FM Radio Services and Community Radio Services (CRS). As per the policy approved by the Cabinet for granting these permissions, the allocation of spectrum is required to be done by WPC automatically once a permission is granted by this Ministry as per the relevant guidelines. The permissions for up linking and down linking of television channels, teleports and DTH services as also for Community Radio Services is granted by the Ministry after obtaining security clearances from Ministry of Home Affairs and in some cases necessary consultations with Department of Revenue and Department of Corporate Affairs also for all those who fulfil the eligibility criteria. There is no upper limit prescribed on the number of permissions to be granted in these services except for the private FM radio services. The permission-holders are required to complete the formalities for getting the spectrum allocated and getting the wireless operating licenses issued from WPC and are required to pay the prescribed fixed annual charges for the usage of the spectrum. As regards private FM radio, since the numbers of frequencies are limited, the FM Phase-II policy provides for grant of permissions through closed-tender two-stage bidding processes as provided under the guidelines. Thus, in case of FM radio, allocation of the spectrum is being done through a tender process carried out by the MIB rather than by the DoT. However, even in this case, the prescribed spectrum usage charges are required to be paid to WPC as per the guidelines. For FM Phase-III policy, which is under consideration of the Government, a Group of Ministers (GoM) recently, in its recommendations, has recommended that instead of following the closed-tender two-stage bidding process, the open ascending e-auction process as followed for 3G auctions is required to be followed. Accordingly, the draft policy is being modified and will be placed before the Cabinet shortly for consideration.
- He further informed that the digitization scheme is presently under finalization. However, 13. since the sole user of spectrum is the public service broadcaster, with the other broadcasters being on satellite transponders, the vacation of spectrum by MIB would demand a policy call on the utility of maintaining public service broadcasting functions with Prasar Bharati. It was informed that the present practice has been approved by the Cabinet. It was further explained that there is no separate pricing policy for spectrum. Users have to pay spectrum usage price as fixed by the Government. Wireless Advisor informed that the fixed price is Rs. 35,000 per MHz, which is being revised presently. Joint Secretary, MIB stated that there are different usages under different policy guidelines. For example, in case of DTH Services, the Licensee pays an initial nonrefundable entry fee of Rs.10 crore before the issue of letter of intent to him by the Licensor, and, after the issue of the Wireless Operational License by the Wireless Planning and Coordination (WPC) Wing of the Department of Telecommunication, an annual fee equivalent to 10% of its gross revenue in that particular financial year has to be paid. However, in case of HITS, no annual fee is payable, even though the applicants are required to pay a non-refundable entry fee of Rs. 10 crore. Further, the permission holder has also to pay in addition the license fee and royalty for the spectrum used as prescribed by Wireless Planning and Coordination Authority (WPC) under the Department of Telecommunication. In case of IPTV, the telecom service providers are subjected to percentage of Adjusted Gross Revenue (AGR) as license fee as applicable from time to time which is presently 6%, 8%, and 10% for access service licensees in category "C", Category "B" and category "A" circles and 6% for ISPs. WA, DoT assured that the exact quantum of spectrum being used by licensees of MIB is embedded in the NFAP 2008 and will be supplied to the committee.

- 14. The representatives of Ministry of Defence (MoD) started their discussion with a clarification that it is a standard practice worldwide to reserve spectrum bandwidths for security purposes. Historically, the major user of band width from 1700-2000 has been the Defence establishment. Hence, all defence development requirement is restricted to this bandwidth. He further added that the issue of spectrum for defence services is already under the consideration of a Committee of Secretaries (CoS). As regards Spectrum Audit, he clarified that the defence spectrum is for the exclusive security needs of the country, whether it is actually used or not. All this band width is pan India and cannot be geographically shared. He gave the example of the National Telecommunications and Information Administration (NTIA) in USA. He clarified that NTIA is an agency in the U.S. Department of Commerce, which is principally responsible for advising the President on telecommunications and information policies. NTIA inter alia also manages the Federal use of spectrum; including resolving technical telecommunications issues for the Federal government and private sector; and administers infrastructure and public telecommunications facilities grants. He further added that the authorities in other countries ensure that the requirements of defence and non-defence are fully met and they co-exist. The MoD representatives felt that there should not be any user charges for spectrum used for security purposes. They also informed that they will come to know about the surplus spectrum available, if any, once the Defence Plan is promulgated. It was argued that the security interests of the country should not be compromised in any way. Additional Secretary, DoT added that the Ministry of Defence (MoD) and the Department of Telecommunications (DoT) have signed a memorandum of understanding (MoU) to free radio spectrum by the defense forces over the next few years. This entails vacation of spectrum by the defense forces in a phased manner once DoT builds an alternative optical fiber cable (OFC) network for them. DoT has asked staterun telecom operators - Bharat Sanchar Nigam Ltd (BSNL) and Mahanagar Telephone Nigam Ltd (MTNL) - to build the OFC, the cost of which will be reimbursed by the department. BSNL and MTNL have already been building an OFC for the Indian Air Force, which will be reimbursed by DoT. Once the OFC is up and running, the defense forces would have vacated around 35 MHz of spectrum, of which 25 MHz is 3G spectrum.
- 15. Member Secretary informed the Committee Members for their information that the MoU inter alia provides that the defence will be paid about Rs. 9,000 crore to Rs. 10,000 crore for dedicated optical fibre. They will get the spectrum also for defence interest band and defence usage. The balance surplus spectrum shall be released by them. Defence will not be squatting on any spectrum other than defence planning needs after the year 2013. WA, DoT was of the view that Defense forces are only the possessors of spectrum, not its owner. He added that while DoT would receive 35 MHz of spectrum under the MoU, of which 20 MHz has been released, the defence requirement would be nearly 35 MHz spectrum even subsequently. Chairman was of the view that the committee is not mandated to revisit the defence requirements. Its purview is limited to transparency, efficiency and optimum utilization of spectrum.
- 16. Member Secretary wanted to know whether there is any other agency sitting on spectrum? Wireless Advisor informed that M/s Power Grid Corporation and some other PSUs had some spectrum, which they are to vacate now. It was explained by the Chairman that spectrum, as a national resource, has acquired value only now, unlike in the past, when it was allocated to various Ministries/Departments/CPSUs, without any estimation of the commercial value that it could ideally fetch. The MoD representatives were asked whether it would be possible to release the bandwidth under their custody in selected geographical locations, or, whether the use of the entire bandwidth was pan India? MoD representatives were of the view that that in light of security constraints, they need the same frequency all over the country without any overlapping

by others, whether there is any actual usage or not. They will not like to share their bandwidth or frequency with any other entity, even if it is technically possible to do so.

- 17. Chairman summarized the main conclusions of the meeting by stating that spectrum, as a national resource has now acquired immense commercial value and would need principles of pricing and allocation, which are followed by all users; however, over-riding national security needs are paramount and will have to be respected. He asked the DoT to expedite the ongoing work on development of proper principles of spectrum audit, regulation and pricing.
- 18. The meeting ended with thanks to the Chair.

The list of p	participants is	annexed.
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Attendance Sheet Committee on allocation of Natural Resource

24th February, 2011, (4:30 P.M.)

List of Participants

S No	Name	Designation	Organization
1	Ashok Chawla	Chairman	
2	S R Rao	Additional Secretary	Department of Telecommunication
3	Vijayalakshmy K Gupta	Member (Finance)	Department of Telecommunications
4	Dr. Ashok Chandra	Wireless Advisor	Department of Telecommunications
5	AVM PR Sharma, AVSM	ACID(ICT)HQ IDS	Ministry of Defence
6	Brig. L B Chand, VSM	DACIDS, JCES	Ministry of Defence
7	C Muralikrishna Kumar	Senior Advisor	Planning Commission
8	Nagesh Singh	Advisor	Planning Commission
9	Arvind Kumar	Joint Secretary	Ministry of Information and Broadcasting
10	Partha Mukhopadhyay	Senior Fellow	Centre for Policy Research (CPR)
11	C Srinivas	-	Centre for Policy Research (CPR)
12	Govind Mohan	Joint Secretary	Cabinet Secretariat



Confederation of Indian Industry Since 1895

Interactive Session With
Cabinet Committee on Allocation of Natural Resources
1630-1830 Hrs: Friday 25 February 2011
CII Headquarters, Lodi Road, New Delhi

Minutes

List of participants is attached

Mr Chandrajit Banerjee, Director General, Confederation of Indian industry welcomed all the participants at the Interactive Session with Cabinet Committee on Allocation of Natural Resources. During the session Mr Banerjee briefed the members about the objective of this committee which is to review & develop the institutional framework for utilization of the natural resources, examine the effectiveness and suitability of existing policies and regulatory framework and to ensure effectiveness in allocation, pricing and utilization of these resources. Mr Banerjee subsequently requested Mr Ashok Chawla, Chairman, Cabinet Committee on Allocation of Natural Resources to address the members.

Mr Chawla in his remarks informed about the Group of Ministers (GoM) looking into the entire issue of corruption and this is one of the Committees that would provide inputs to the GoM. Mr Chawla also mentioned that this Committee is of the view that they need to go beyond generic issues. The Committee started—off by looking at macro issues in the Allocation & Pricing of Resources (APoR) and is now getting into sector—specific issues. This committee is also assisted by the Centre for Policy Research (CPR) and McKinsey & Co and they would be interacting with "Subject—Matter—Experts" & would submit their recommendations to the Committee over the next 3–4 months. This would provide an opportunity to Sectoral Associations for providing their inputs to this Committee.

Mr Hari S Bhartia, President, CII during his address mentioned about the key issues which are required to be addressed while Government looks at the allocation of Natural resources which are :

- Transparent & competitive process: should be an be underlying principle for any allocation of resources. A non-discriminatory process and participation from multiple entities is required.
- Market linked Allocation principle: The process should be flexible to address the
 unique requirements of each sector. For example while the primary objective for
 the allocation of Natural Gas may be to address the needs of key sectors like Power
 & Fertilisers, the objective for the allocation of land for SEZ's may be somewhat
 different.
- Stable policy regime predictable and certain: Investors tend to stay away from
 areas of uncertainty. So, if the Government is serious about attracting investment,
 it should provide a stable fiscal, policy & regulatory regime for the allocation of
 resources.

- Alignment between Centre & the States: is particularly apparent in the case of Minerals. The proposal to amend the policy – under consideration by the GOM – is a welcome step in this direction. He hoped that the new framework will clearly delineate the role of the Centre and the States.
- **Single-window clearance:** getting multiple approvals from multiple authorities is one of the major reasons for the underdevelopment of allocated resources. Simplifying clearance processes in a time-bound manner is long overdue and will go a long way in developing our natural resources.
- Impact on the end-user: should be the ultimate barometer for evaluating what is good for the country, particularly when it comes to sensitive issues such as Land, Water & Environment in keeping with the principles of inclusive growth. Free & fair competition is the best way to ensure that the end consumer gets the best deal in terms of price & service delivery. The development of the telecom sector is the best example of that.

Mr B Muthuraman, Vice President, CII during his remarks mentioned that by allocation of any resource always cover the following decisions:

• **To whom**: Three principles should guide this decision i.e. What is the "dominance" of the cost of natural resources in the cost of product made out of natural resources: Are the end users an industry or set of several individual and Is there intense technology required to process the natural resources into useable form.

For example, In the case of metals like zinc, copper, aluminium, steel and ferro alloys, the cost of the mineral is a substantial part of the cost of the finished product made out of the mineral. In the case of steel, the cost of mineral raw materials, even at their cost of extraction, constitute about 40-50% of the cost of steel (At current market prices of mineral resources, it is about 70-75% of the cost of steel).

The consumer of the mineral resources in the metal industries are "industries" and not millions of individuals. In such cases the natural resources (mineral resources) should be allotted to the end users – viz the Aluminium producer, steel producer etc, as the case may be.

In the case of diamond, for example, the end users are individuals & are in millions and the diamond processing industry is small & large in numbers. Therefore, the allottee should be the mineral processing industry and not the diamond making industry.

In the Automobile industry the cost of steel input is only about 10-15% of the cost of the automobile – not a dominant cost. Hence the automobile industry, strategically, need not own steel plants or minerals deposits.

• How & What is the process: Once a decision is taken, based on the above principle as to who should be the allottee, whether it is the end user who produces finished products out of natural resources or a separate industry, then the process of allocation should be through a transparent auction process among the allottee sector, subject to certain qualification like financial capability, technical expertise, experience etc. A set of criteria needs to be drawn for each natural resource.

In such an allotment, existing players need to be given preference from the point of continuity and efficient use of public money that has been already spent in establishing the industry.

If there are relatively large number of end users (but not in millions) then they should be asked to club their requirements together so that economical extraction of natural resources can taken place.

- How much: The allocated quantity of natural resources should be such that the
 allottee can derive economic benefit and the nation can drive economic benefit
 from the extraction over the life of the allotted natural resource. This is based on the
 consideration that the capital expenditures involved are substantial.
- What institutional mechanism: For each natural resource, a Regulatory Authority is to be appointed to ensure proper and transparent allocation based on the principles and policies laid out for each natural resource. The principles and policy of allocation in terms of to whom will be different for different natural resources based on the three principles enunciated above.
- Pricing: By pricing, we mean the royalty, taxes and levies to be charged to the
 extractor of the natural resource. While deciding on pricing, it is important to take into
 account the total cost and the usefulness of the product for the nation as a whole
 in bringing about economic prosperity for the nation. There should be a balance
 between Revenue maximization for the Government and public good and it will vary
 from one natural resource to another.

In general, the total costs (like royalty, cess, taxes, corporate tax etc) – which are other than extraction and operation costs – should be roughly 30-35% of the profit before tax of the business of extracting the natural resource and making it useful to the next stage of value addition. This is the global norm and aims to have a healthy margin to the extractor for sustainable operation. In the case of mineral extraction in India, this figure is about 30-35% and compares well with global norms – which are 33% in OECD countries, 34% in Africa, 40% in Latin America.

The principles of "Pricing"should take into account the twin objectives of popularizing the product for the nations long term growth and revenue earnings to the Government.

During the discussions members raised the following issues:

Land:

Mr Vinayak Chatterjee, Chairman, Feedback Ventures mentioned that before we get into the specific solutions for each sector, it is imperative to first focus on the overall objectives for each sector. If the objective is not clearly defined, then implementation will be flawed.

For example:

Water – is the objective to make potable water accessible to the entire population OR focus on the Revenue potential

Telecom – is the objective to ensure affordable tariffs as an outcome of healthy competition OR maximise revenues

Mr Chatterjee mentioned that it is extremely important to have an independent Regulator – the new legislative architecture needs to be designed accordingly and anomalies in existing policies need to be addressed – for example – the Land Acquisition Bill stipulates that 70% of the land for any project must be 1st acquired by the Private sector & the Govt will then consider providing assistance for acquiring the balance 30%.

Market mechanism may not work in all sectors – the State must play a role to ensure certain levels of delivery at certain price points for some sectors. It is critical at this juncture to decide which sectors should be the prerogative pf the Govt.

One possible solution for the Land Acquisition Policy is to first develop a Land Zoning Policy whereby land can be categorized into zones for specific purposes, viz:

- Forest zone
- School / Hospital zone
- Industry zone
- Residential zone
- etc

Water

Mr Niranjan Khatri, General Manager, WelcomEnviron Initiatives, ITC Ltd-Hotels Division mentioned that India has 17% of the world's population but only 2% of the world's drinking water and a body like BEE is also required to set up for water conservation.

Government of India needs to make it mandatory for industry to do water audit – what is measured is monitored.

In India 5%, 10% & 85% water is being consumed by Domestic, Industry & Farming consumers respectively. Focus on the Eco System is required and one of the key challenges today is linking of rivers.

Electronic gadgets such as Dishwashers, Washing Machines, etc., must be made water efficient & we need to explore the possibility of fixture of water consumption report in the annual report of the companies.

Set-up a Water Consumption Innovation Centre (WCIC) that can look into opportunities to save water – for example – in process industries such as Hotels – there is potential to save water by converting urinals to waterless urinals.

Mr Praveen Agarwal, General Manager, Coca Cola India mentioned that Water should not be subject to market mechanisms. It is essential for life – civil society will object and Institutionalise water trading is required.

We need to find innovate means for attracting investments to the water sector and also need to review our Food Security policy – farm sector reforms (as it is one of the largest consumers of water).

Water efficiency needs to be incentivise and Water consumption in Industry & for Domestic use will grow – this growth has to be offset from the Farm sector.

Hydrocarbons

Mr Rajnish Gupta, Country manager, BHP Billiton mentioned while NELP is a very good mechanism for allocation of Oil & Gas blocks, there is cope for the following improvements:

- Post bidding there should not be any changes in the terms & conditions
- There should be an option for bidders to provide comments during the bidding process
- There should not be a long time gap between opening of the bid & signing of the PSC.
- Some of the NELP clauses need to be fine-tuned.
- There should be a market based mechanism for the price discovery of Natural Gas.

Mr A K Biswas, Group General Manager, ONGC Ltd raised the issues with the Coal Bed Methane (CBM) blocks:

- Coal mining license issued to another party for the same block that ONGC has been issued a CBM license. CBM projects are languishing as such cross-leasing is making it extremely difficult for project development.
- The solution could be to provide a single–window clearance for 3–4 Natural Resources such as CBM, Shale Gas, Underground Coal Gasification, etc. This will ensure that there are no overlaps.

Mr Biswas also mentioned the Issues with NELP is that Govt needs to be faster in it's decision making process (signing of PSC after bid-opening, takes a long time).

- More number of blocks should be offered to investors. Quality of data needs to improve.
- New conditions are emerging after awarding the blocks SEZ, Defence (blocks in the path of missile tests) etc. Pre–clearances are required for blocks to be auctioned.
- Bunching of unattractive blocks (category 3 & 4) with attractive ones (category (1 & 2) will ensure better response from investors as well as better development of the blocks.

Mr Ashu Sagar, Seceretary General, Association of Oil & Gas Operators mentioned that the NELP mission was to:

- Attract Private & Foreign investment for the development of Indian Oil & Gas blocks
- Get better technology particularly offshore drilling

Neither of the above have been really achieved & the percentage of Private capital investment has progressively been going down in this sector.

One of the key reasons for this is the unattractive fiscal terms in the bid evaluation (50% share goes to the Govt). Why would anyone invest high-risk capital in this sector?

While the NELP process is transparent till the bid-opening stage, it becomes opaque thereafter. Decision making is very low. Every policy should have a policy conflict resolution mechanism. There should be freedom of marketing & transparent price discovery mechanism as this industry requires high-risk capital investment. An independent & empowered regulator is urgently required for this sector.

Coal & Minerals

Mr A N Joshi, Vice President, Sesa Goa Ltd mentioned that in India while there is Revenue Land, Forest Land, etc., there is no classification for Mining Land. There should be guidelines for each category of land. The guidelines can be based on – what kind of bio–diversity is desirable, what kind of water recharging is essential. There should be an obligation for giving–up surface rights.

During allocation of Mining Resources preference should be given to companies with proven track record, RFP & RFQ should be transparent & should be put on the internet, land with all approvals in place should be made available to the winning bidder, NELP kind of system is required for the Minerals sector & allocation should be made by auction.

Mr Nersh Lalwani, Assistant General Manager, JSW Steel mentioned the following:

- There have been 3 changes in the Mineral Policy by Gol. Such frequent policy changes tends to deter investors who prefer a stable policy regime.
- Mining projects have become very attractive with a one year Rol. As a result it is attracting all kinds of players.
- There should be an auction mechanism for the allocation of resources the NELP policy can be used as a model.
- Impose penalties on parties that acquire Mineral Resources & do not develop them.
- Value-adders should be given preference over plain vanilla miners.

Telecom

Ms Jyoti Pawar, Director, Airtel mentioned the following:

- Natural Resources allocation policy should be fair & transparent.
- Need to have level playing field for all participants.
- In the Telecom sector, when several matters are sub-judice, policy making tends to slow down.

Mr S C Khanna, Secretary, General, AUSPI made the following points:

- TRAI recommendations should be implemented
- Problems are arising because sufficient spectrum is not being released by Defence.
- Additional spectrum should be released by auction.

Mr Vikram Tiwathia, Senior Director, COAI mentioned that Public interest should be given prime importance in the allocation of spectrum or any other Natural Resource.

- A market driven process should be used for the allocation of Resources.
- Audit of Resource utilization should be done, after it has been allocated.
- Regulatory continuity in the use of Natural Resources must be maintained after allocation.
- Resource allocation must be aligned with Global Best Practices.

Mr T V Ramachandran, Resident Director, Vodafone Essar made the following points:

- Allocation of scarce resources must be done in an open & transparent manner.
- Artificial barriers must be removed in the sharing/trading of resources & services.
- Fragmentation of Spectrum is leading to inefficiencies in the system. For example

 more mobile phone towers with accompanying diesel gensets are required for redundancy.
- 5 MHz of 3G spectrum is not sufficient to cope with the demand for mobile broadband services. USA used to have a cap of 45 MHz per carrier that cap has been removed. India is struggling to release 50–60 MHz spectrum for all carriers combined.

Mr Rajat Mukarji, Chief (Corporate Affairs), Idea Cellular mentioned that

- More spectrum needs to be released to cope with increasing demand. Current spectrum is not enough for mobile broadband services.
- There is an urgent need for a roadmap for the release of additional spectrum.
- There is nothing wrong with the Telecom Policy there are issues with implementation.

Conclusion

Mr Ashok Chawla, Chairman of the Committee agreed that overall objectives for the pricing & allocation of Resources should be set—out sectorwise and mentioned that we need to strike a balance between public welfare & revenue maximization. He briefed the members that the mandate of this committee is limited to working—out the conceptual architecture / framework for the pricing & allocation of Resources. Sector–specific details will be worked—out by the line Ministries.

The Committee is open to recommendations on the framework for setting the price for allocation of Resources & there will be multiple inputs coming in to this Committee from several sources such as the Justice Shivraj Patil Committee.

Mr Hari S Bhartia, President, CII mentioned that one of the issues that needs looking into is the process for change in use of land – commercial complexes are coming—up in residential areas. Unless resolved, this can create the potential for corruption. This needs to be evaluated in the overall context of Urban Governance.



Interactive Session With Cabinet Committee on Allocation of Natural Resources 1630-1830 Hrs: Friday 25 February 2011 CII Headquarters, Lodi Road, New Delhi

List of Participants

1.	Mr Hari S Bhartia	President Confederation of Indian Industry	
2.	Mr B Muthuraman	Vice President Confederation of Indian Industry	
3.	Mr Chandrajiti Banerjee	Director General Confederation of Indian Industry	
4.	Mr Ashok Chawla	Chairman Cabinet committee on Allocation of Natural Resources	
5.	Mr Govind Mohan	Member Secretary Cabinet committee on Allocation of Natural Resources	
6.	Mr Vinayak Chatterjee	Chairman Feedback Ventures Ltd	
7.	Mr S Sen	Principal Advisor Confederation of Indian Industry	
8.	Mr Rajnish Gupta	Country Manager BHP Billiton Petroleum Ltd	
9.	Mr A K Biswas	Group General Manager ONGC Ltd	
10.	Mr Ashu Sagar	Secretary General Association of Oil & Gas Operator	
11.	Mr Manu Kohli	Senior Manager BP India Services Ltd	

12.	Mr Niranjan Khatri	General Manager WelcomEnviron Initiat ives, ITC Ltd
13.	Mr Praveen Agarwal	General Manager Coca Cola India Ltd
14.	Mr A N Joshi	Vice President Sesa Goa Ltd
15.	Mr B Verma	Advisor Essar Mineral Resources Ltd
16	Mr Partha Mukhopadhyay	Senior Fellow Centre for Policy Research
17.	Mr Hermit Singh Sethi	Vice President JSW Ispat
18.	Mr Naresh Lalwani	Assistant General Manager JSW
19.	Mr Chankya Choudhary	Resident Director Tata Steel
20.	Ms Jyoti Pawar	Director Bharti Airtel Ltd
21.	Mr Rajat Mukherji	Chief (Corporate Affiars) Idea Cellular Ltd
22.	Mr T V Ramachandran	Resident Director (Regulatory Affirs) Vodafone Essar Ltd
23.	Mr S C Khanna	Secretary General AUSPI
24.	Mr Vikram Tiwathia	Senior Director COAI



Federation of Indian Chambers of Commerce & Industry

Interactive Meeting With Shri Ashok Chawla, Chairman, Committee on Allocation of Natural Resources

25 February 2011 Federation House, Tansen Marg, New Delhi

DRAFT MINUTES OF THE MEETING

- Meeting started with the welcome remarks by **Mr Anjan Roy**, Advisor, FICCI. Mr Roy thanked Mr Chawla for sparing his time to interact with the industry.
- Shri Ashok Chawla, Chairman, Committee on Allocation of Natural Resources briefed the delegates about the objectives of the Committee and expectations from the industry. Shri Chawla also said that the Centre for Policy Research and Mckinsey were also assisting the Committee.
- List of attendees is given at the end.
- Following suggestions were given by the representatives of industry in the meeting:

Mr Virat Bhatia, AT&T

- Spectrum allocation policy should pass the test of level playing field and adding economic value.
- Allocation process needs to balance the public interest and consumer interest
- Government needs to release massive spectrum to address the shortage in this sector
- Built-in sufficient safeguards in the allocation process to avoid market failures
- The contract should clarify whether one can sell it further in the market
- In the event of demand exceeding supply, there are two ways of determining the
 price- administrative pricing and the market determined pricing. There is a need to
 have transparent auction process which is a market driven process and can award
 spectrum fairly.
- Predictability of availability of resources will help in making the auction system more
 effective.
- Industry also needs to give suggestions to the Committee as to what are options for allocation when the demand does not exceed supply.

Mr S C Khanna, AUSPI

- The Committee should consult the sector associations also.
- Indian model of telecom sector is one of the best in the world.
- Need for immediately releasing the spectrum from defense for auction

Mr B K Syngal, Dua Consulting

- Auction is the best way of allocation in today's scenario
- Need for ensuring that some percentage of profit is shared with the Government if a national resource (whether spectrum, oil, minerals, land, water, etc) is later resold in the market by original allottee. Government should get its share every time resources are re-valued and sold at revised market rate.

- Need for independent regulator in the sector
- Need for pre-qualification criteria in the allocation process
- An Institutionalized Re-farming policy for vacation of spectrum, as well as all other natural resources should be made mandatory, in order to address the new applications due to technological evolution
- There is a need for pre-bid qualification process to weed out speculators

Mr Rana Som, CMD, NMDC

- Present system of allocation of minerals need to be dispensed with. In the current system, Minerals are the natural assets which are passed onto the private players at a relatively very low price.
- National assets need to be allocated on the basis of two essential principles which
 are:- First, they need to be auctioned to the highest bidder; Second, State should not
 dispense with the entire asset at one go. Government should retain some part of this
 asset and operate through State agencies. The draft MMDR Act does not provide for
 any reservation for State players.
- Pricing alone should not be the criteria for allocation. Pre-bidding parameters like technology, value addition etc should also be considered.

Mr D K Sahni, IMFA

- Mineral resources are locked-up with PSUs and States and are not being released for utilization. If the resources have been allotted, they need to be utilized for value addition. Around 217 coal blocks have been allotted but only 30 odd blocks have come under actual implementation.
- Pre-bidding criteria is very important. In the past, there were players who had no experience in mining and have been allotted mines.
- Strong weightage is given for value addition before allocation. In Kazakhstan, taxation incentive is provided proportionate to the value addition of minerals.
- Land procurement issues should be addressed before the auction of mines. Currently, it takes minimum 6 years on average for forest clearance.

• Dr K C Narang, Cement Manufacturers Association & Dalmia Cements

- Allocation of minerals particularly Limestone, & Coal to captive plants has to be different from the policy of allotment to the merchant company. In case of captive plant, large investments are made and there is need for commitment of resources like limestone, coal etc for setting-up such plants on long term basis. (minimum 40 years)
- Allotment of shares or annuity equal to 26% shares as compensation to the surface owner is neither feasible nor favorable to either of the two (lease holder and land owner), particularly for captive users of minerals such as cement/steel etc where requirement is rather large and also will cover large number of land owners. It is unfair to ask lease holder to offer 26% shares for land alone, as the project involves large investments in other activities (infrastructure, plant and other utilities.). Further, payment of return on equity is subject to the company making profits which is generally not feasible in first 7 years of any mining based project, hence the land owner does not get his returns. This will mean forming a separate company for mining and this may not be sustainable on its own and hence will not yield returns for land owners.. Since share holding means sharing profits and loss both, it will be unfair to both.

- Present system of grant of PL/ML based on evaluation of applicant's capability to exploit the resources gainfully is serving well and should be retained.
- The recent conditions imposed by MoEF in TOR with regard to buying entire land for plant and mining before presenting case to EAC is for EC not feasible and hence should be removed. Provision of buying land or consent before the stage of execution of mining lease should be continued.
- The process of obtaining coal linkages for cement industry is very slow and needs to be time bound. There have been instances where coal linkages have been given but the supply is not provided. Once a linkage is granted supply should be ensured. Also a percentage of coal resources should be reserved for cement industry.
- Allocation is being done for only known resources and there is no emphasis on the exploration of new resources.
- The recent condition of committing to spend 5% of the project cost on CSR during the period of 10 years is not feasible. It is too high a component, particularly, when used together with conditions of surface rights acquisition rules.
- Obtaining Forest clearances and wildlife clearances even when these are established negative will result in spending extra time for project proponent. It is suggested that resources allocation may be done together with their clearances. (Such as Forest clearance, Wild Life clearances and preliminary Environment Impact clearance)

• Mr Sharma, Cement Manufacturers Association

- Supply of coal to cement plants is a major problem. A large number of cement plants
 had made applications for coal linkages three years back in 2007 and thereafter
 but nothing has happened after that though three years have passed since the last
 meeting was held on 20.11.2007. No meeting of linkage committee has taken place
 since then. There is no feedback from the authorities to concerned cement plants.
- Some of the Brownfield/Greenfield cement plants were sanctioned Coal Linkages by Standing Linkage Committee (Long-Term) in November'2007. As a follow up to Linkage, the Fuel Supply Agreements (FSAs) were required to be signed between individual cement co. and the coal co. to commence coal supplies as per the LT linkage. However, we find that for signing of FSA large number of documents are required to be submitted by the coal cos. as a proof of completing the specified Milestones. The paperwork required to be done is not only voluminous but also difficult to comply. There have been various discussions and meetings, and even after 3 years the FSAs have not yet been signed for one reason or the other and the coal supplies against these linkages have also not commenced.
- As of now cement industry is receiving just about 45% of their requirement against linkage and the rest has to be procured from other source like import etc. at exorbitant cost.

Mr Amandeep, Dalmia Cements

- Govt. should help in acquisition of land, once a project has been cleared by the Govt. /and or a lease has been granted. This could be done through local administration of the district and possibly through combination of one time and monthly payment thereafter for a defined period. This will bring transparency and long term security for the land owner. Haryana model of land acquisition can be considered in this regard.
- System of reserving the minerals by State needs to be transparent.

• Mr Mattoo, Adani Mining Private Limited

- In mineral allocation there need not be any reservation for PSUs/State
- Need for complete details, information about the potential of the blocks offered for auction
- Need for land Acquisition Process & having Environmental and Forest Clearances in place on the lines of UMPP Model before allocation of blocks

• Mr Parveen Tugnait, MSPL Ltd

- With the new MMDR Act, old applications of RP/PL/ML should not lapse and a two year window should be kept for transition.
- Most States insist for value addition within their district/State. This condition needs to be dispensed with. Value addition of the same mineral, if done in other State by the same Company / Group Company, should also be considered at par.
- Reservation of mineral resources by State Government in favour of State PSUs, have deprived private players from the exploitation of such minerals
- Due weightage needs to be given to the technical expertise of exploration company
 while allocating mineral blocks as most of the mineral blocks require extensive
 exploration before mining can be taken up. ML applications to be dispensed away
 as per Section 11 of MMDR. Auctioning of blocks not a valid method.

Mr Harmit Sethi & Mr Lalwani, JSW Ispat/JSW

- Auction is best way for allocation of resources.
- Penalty for not sticking to deadlines as per the work programme agreed to at the time of allocation
- Value addition needs to be given weightage in allocation
- Approval from Ministry of Environment & Forests should be secured before allocation

Mr Ashu Sagar, Association of Oil & Gas Operations

- Auction system for allocation
- Need for independent regulators
- Committee should also look into the problematic areas after the allocation process is over as the after the allocation, the process could be very opaque.
- Pre-bid qualification need not be a criteria for allocation
- Financial resources need not be the only criteria
- Allocation process should have written down clear mission statement

Mr Rajeeb Mallick, Alstom

- Grant higher priority / weightage to such power plants that adopt/comply with each 1% incremental efficiency, over the stipulated minimum plant of threshold.
- Grant higher priority for allocation / utilization of gas for CCPP's (Combined Cycle Power Plant Developers) that have lower NOx emission levels (eg NOx emission of 25ppm throughout the Gas turbines operating range of 40% to 100% load against MoEF's current standards of NOx emission of 50ppm).

Mr Ravindra Sewak, Safe Water Network

- Free electricity results in overexploitation of ground water. Need to have some measure to check the utilization of this precious resource.
- After allocation, it needs to be monitored that the industry recharges the ground water along with other activities

Need for large amount of funding for augmenting water resources

FICCI Officials

- Mrs Rita Roy Choudhury- The pricing process should be a defined minimum floor price incorporating the environmental cost and as well as relief and rehabilitation (R&R) for the local community. Natural Resource Management Authority should be formed with responsibilities like investigation, mapping of resources, future availability, developmental needs, research needs etc.
- Mr Vivek Pandit- Need for independent regulator in the upstream hydrocarbon sector, as currently the Directorate General of Hydrocarbons is performing dual roles of a market regulator and a body that awards Oil and gas blocks. For ushering in transparency and predictability in the bidding process a UMPP like model could be considered for land acquisition.
- Dr Baskar Reddy- State governments should be proactive in aquiring non-agriculture land and creating land banks. As and when the state wants to attract large private investments, the land from such land banks could be used, thereby reducing conflicts arising out of land acquisition for industrial development.
- Mr Romit Sen- The current model groundwater act does not have guidelines for limiting the extraction of groundwater; it only focuses on regulating the number of extraction units. This fundamental aspect needs to be included in the act and look at aquifer based groundwater management.
- Shri Ashok Chawla in the end thanked the industry representatives and said that the interaction was useful. He further said that they would be later engaging domain knowledge experts through CPR.
- Meeting ended with a vote of thanks by Mr Anjan Roy.

LITS OF PARTICIPANTS

TITLE	NAME	SURNAME	DESIGN	ORGAN
Mr	Ashok	Chawla	Former Finance Secretary	Chairman of the Committee
Mr	Govind	Mohan	Joint Secretary	Cabinet Secretariat (& Member Secretary of Committee)
Mr	Anjan	Roy	Advisor	FICCI
Mr	Ravindra	Sewak	Country Director - India	Safe Water Network
Mr	Somnath	Acharya	Dy. Manager (Liaison)	NMDC Limited
Mr	MP	Srivastava	Regional Head	NMDC Limited
Mr	Parveen	Tugnait	Executive Director	MSPL Limited
Mr	Ashu	Sagar	Secretary General	Association of Oil & Gas Operations
Mr	K K Roy	Chowdhury	Consultant (Technical)	Cement Manufacturers Association Indian Metals &
Mr	DK	Sahni	Sr. Advisor (Mines)	Ferro Alloys Ltd.
Mr	Sanjay	Jain	Vice President-Resource Recovery	Lafarge India Pvt. Ltd.
Mr	R L	Mattoo	Asstt. Vice President-Corporate Affairs	Adani Mining Private Limited
Dr	KV	Reddy	General Manager (Environment)	UltraTech Cement Limited Ispat Industries
Mr	Harmit Singh	Sethi	Vice President-Corporate Affairs	Limited
Mr	Naresh Kumar	Lalwani	Asstt. General Manager	JSW Steel Limited
Mr	Rajeeb Ranjan	Mallick	Regional Director	Alstom
Dr	KC	Narang	Technical Advisor	Dalmia Cement (Bharat) Ltd.
Mr		Amandeep	Executive Director	Dalmia Bharat Enterprises
Mr	s C	Khanna	Secretary General	Association of Unified Telecom Service Providers of India
Mr	Brijendra K.	Syngal	Senior Principal	Dua Consulting
Mr	Virat	Bhatia	President - External Affairs, AT&T South Asia	AT&T India
Mr	Rana	Som	Chairman-cum-Managing Director	NMDC Ltd
Mr	Vivek	Pandit	Director	FICCI
Mrs	Rita	Roy Choudhury	Director	FICCI
Dr	Baskar	Reddy	Joint Director	FICCI
Mr	Romit	Sen	Deputy Director	FICCI
Mr	Samir	Mathur	Senior Assistant Director	FICCI
Mr	Chetan	Bijesure	Additional Director	FICCI

Record Note of Discussion

Meeting of the Committee on allocation of Natural Resources (focused meeting with FIMI on Mining Sector) March 07, 2011; 03:30 pm; Room No. 41, North Block

- 1. Cabinet Secretariat, vide order dated January 31, 2011, constituted a committee on allocation of natural resources (CANR) with a view to enhance transparency, effectiveness and sustainability in utilization of natural resources, consistent with the needs of the country to achieve accelerated economic development. A focused meeting of the Chairman of the committee was held with the Federation of Indian Mining Industries (FIMI) and the Ministry of Mines (MoM) on mining related issues on March 07, 2011, to know the views of FIMI on mining related issues, which have bearing on its allocation, utilization and pricing.
- 2. Chairman welcomed the members, especially the FIMI representatives and briefed them about the constitution of the committee, its terms of reference and exact scope thereof. He then invited the Secretary General, FIMI to submit his views on the issue. Secretary General started the discussions by introducing FIMI as having over 44 years of experience in mining technology solutions for the mineral Industry. He further added that the mining and mineral production interests in India were earlier represented by regional associations of mine operators and individual lease holders. In 1966, the individual mine operators and associations established an all-India federation, in the form of a non-profit corporate body, under the Companies Act, 1956, to promote the interests of mining, mineral processing, metal making and other mineralbased industries. FIMI is now a 350-member body, which represents the entire non-fuel mining and mineral processing activities of the nation. He felt that there are a few misconceptions about the mining industry in general, mainly relating to windfall profits being earned by the mining industry. He clarified that the profit margins vary over different minerals; and, within individual mineral, for different deposits based on their geology, geometry, geography and complexity. He added that mining being a risky business, with long gestation periods for bringing a deposit into profitable production, commensurate profit margins are necessary for mining investments to become attractive to the investors so that they bring necessary technologies and level of investments required for scientific and socially beneficial mining operations as well as closure. He further added that some of the increases in prices can be attributed to recent demand from China also. He submitted a copy of his submissions to the Chairman. He informed that the exploration and consequent exploitation of various minerals are governed by the market forces, i.e. the prices they command for the metal(s), and the efforts to establish new resources/reserves and exploration will only be undertaken if there is the prospect of a viable return on investment. The main views and suggestions of FIMI are listed below:
 - (a) A policy of no reservation for Government agencies or PSUs for any mineral/mining areas except in circumstances of national security or where no private sector interest exists;
 - (b) Guaranteed security of tenure;
 - (c) Transferability of exploration and mining leases without prior approval;
 - (d) Faster approvals for obtaining exploration/mining licenses;
 - (e) If the State Governments are unable to grant leases within the stipulated time frame, Central Government should be empowered to hear the case;
 - (f) Allocation of mining permits through first-in-time principle only, not through auctions or bids, and through prescribed and transparent criteria, to disable any discretion;
 - (g) Thorough review of various levies/ royalties and taxes being charged;

- (h) A single agency, like Indian Bureau of Mines (IBM), should be made responsible for overseeing the overall mining development, approvals and inspections, from a mining as well as environmental perspective.
- 3. Secretary General, FIMI submitted that the mining industry in India is one of the most heavily taxed sectors and the royalty rates are amongst the highest in the world. It is now also being asked to share 26% of its profits with local, State and Central Governments. He further added that unless immediate action is taken, the mining industry in India will be outpaced and no foreign direct investment (FDI) or new technology shall come to India in this sector. Chairman was of the opinion that States do not get anything out of mining, except royalty, and more revenue generation is necessary to provide funds for welfare activities.
- 4. Secretary General further informed that transparency and governance are other issues, especially in the context of the States. He gave the example of Canada, where lot of funds are invested by venture capitalists as applications are 'on-line' enabled and anybody can apply and get the license on the basis of 'first in first out'. Secretary General stated that technology is also a constraint with GSI especially in the context of deep-seated exploration. The latest technology is however, available with private parties. It is therefore, imperative that private sector is involved in reconnaissance and prospecting activities. He added that detailed exploration is a specialized job done by exploration companies, popularly known as junior exploration companies. Their exploration expertise is in most cases linked to a particular mineral or group of minerals. For exploration job, they bank on venture capital or hedge funds. Mineral rich countries such as US, Canada, Australia, Brazil, South Africa, Chile, and Mexico etc. do not want to spend tax payers' money on risky ventures like exploration. These countries therefore encourage private companies to undertake detailed exploration activities by providing various incentives and security of tenure, besides priority in grant of concessions as well as freedom to sell (both prospecting licenses and/or mining leases). Joint Secretary (MoM) was however, of the view that the Government funding may be necessary for the overall development as private sector will always go for selective areas only. He further clarified that the MMDR Act and the rules framed there-under require revision in royalty rates every three years. However, there are delays and the last revision was during the year 2003. Therefore, there may not be any truth in the allegation that royalty rates are high. He clarified that a GoM is inter-alia also looking into this aspect. He further clarified that MoM are also reviewing certain clauses of the proposed amendments in the Act, which are related to profit sharing. Therefore, it is difficult to say at this stage, how much profit sharing shall actually be mandated in the end.
- 5. Joint Secretary (MoM) was of view that the entire country should not end up getting over-exploited from the mineral mining point of view, just to satisfy the demand emanating from China. This would be sub-optimal exploitation of our natural resources, with no long term benefit to the industry. The representative of FIMI, on the other hand, was of the view that if a mineral is not being used, technological advancements will render it obsolete, as in the case of mica; hence, there is no advantage to be gained from hoarding the country's mineral wealth. He further clarified that the Geological Survey of India (GSI) is an active and vibrant organization. Its activities are comparable with the best exploration organizations worldwide. It conducts geological surveys and studies, which are then placed on its website. Everybody has access to this data, which forms the basis of investments in this sector. He further clarified that the Indian Bureau of Mines (IBM) is responsible for compilation of the mining exploration data and mineral maps for providing complete information on the new mines and fields in India. He further clarified that about 14% of the total area is mapped and that GSI has now been amply funded to ramp up its operations. However, it has constraint of outmoded technology, which enables it to estimate the possibility of a resource occurring, without any indication with regard to its actual quantum.

- FIMI further felt that the allocation of captive mines to steel, aluminum or cement plants 6. is a distortion in the operation of market forces, mainly due to the fact that the size of the area given as captive to the finished industry is disproportionate to the requirements of that industry. Further, since cost of production is a transfer price, it leads to the wasteful/inefficient use of resources and the resource industry is deprived of the benefit of ploughing back the surplus in exploration, leading to discovery of more resources and scientific mining. He gave example of the steel plants which have captive mines, and have hardly added any additional capacity, whereas those who do not have captive mines have significantly added to their capacities over the last few years. He further added that the differentiation between public and private sector is another distortion of market forces, when there is no such clause for any preferential treatment to public sector in the present MMDR Act, 1957 or in the proposed draft MMDR Bill 2010. He said that State/Central PSUs were sitting on large resources without any benefits of the same accruing to society. These entities do not have technical/scientific personnel or financial resources to explore and exploit the resources. Therefore, these companies in turn were giving these areas for exploitation to private persons/companies, who were exploiting them unscientifically and selectively, which defeats the whole objective of scientific and efficient mining. Joint Secretary (MoM) however, denied this and unequivocally clarified that there is no reservation for PSUs. Even the Hoda Committee has also recommended a level playing field, which supports the views of FIMI.
- 7. Secretary General, FIMI submitted that auction of any resource, howsoever scarce, leads to ultimate destruction of the deposit, as the main effort of the entrepreneur, who buys the deposit in auction will be to maximize profit at the cost of proper and scientific development of the resource and its proper utilization. In an effort to recover costs quickly, the selected company will resort to selective mining, leaving low grade minerals in the ground, which will be a huge wastage of resources and will increase the cost of the final product(s). Deep seated minerals/ metals like gold, nickel, copper, lead, zinc, diamond cannot be auctioned for the simple reason that there has to be intense exploration with state-of-the-art technology, which requires heavy upfront investment, as a risk capital. Further, except Kyrgyzstan and Russia, no other country follows tender/auction process. Auctions usually lead to cartelization and perpetuation of monopolistic practices. On being asked by the Chairman as to whether the auction template followed in the petroleum sector, namely, the New Exploration Licensing Policy (NELP) methodology can be extended to this sector as well, Secretary General, FIMI replied that petroleum and minerals are entirely different. Metal prices are very volatile and huge risks are involved in mineral mining. Joint Secretary (MoM) agreed that GSI may not be able to give basic data, like the Directorate General of Hydrocarbons (DGH) does in case of petroleum products.
- 8. A view was expressed that auctions introduce transparency and efficiency of operation. The mining industry is also resorting to auctions, as stated by the FIMI, in Russia and Kyrghzstan. The FIMI representative clarified that Russia and Kirgizstan are both not mining countries. Joint Secretary (MoM) was of the view that auctions may not be feasible as very few details are available at the time of allocation and very high risks are involved. No major country wants to waste money on reconnaissance and they leave this for venture capitalists. Therefore, no other country is following the auction method. Joint Secretary (MoM) clarified that de-risking may not be feasible for minerals. He said that if auctions are recommended for this sector, it may sound the death knell of the industry. He added that for unknown areas, where there has been no prior exploration, LAP (Large Area Prospecting) licenses are given and the concept of 'first in time' is followed for deep areas; the private sector is expected to take a call on whether to undertake exploration or not. He also assured to give para wise comments to all the issues raised by FIMI.

- 9. Chairman desired that a meeting may also be scheduled with GSI and DGH to understand why the exploration methodologies for essentially deep seated mineral deposits are different between petroleum products and other minerals like iron, copper etc.
- 10. The meeting ended with thanks to the Chair.

The list of participants is annexed.

Attendance Sheet Committee on allocation of Natural Resource

7th March, 2011, (3:00 P.M.)

List of Participants

S No	Name	Designation	Organization
1	Ashok Chawla	Chairman	
2	G Srinivas	Joint Secretary	Ministry of Mines
3 4	R.K. Sharma Sahil Anand	Secretary General Executive Officer	Federation of Indian Mineral Industries Federation of Indian Mineral Industries
5	Ms. Shibani Ghosh	Senior Fellow	Centre for Policy Research (CPR)
6	Govind Mohan	Joint Secretary	Cabinet Secretariat

Record Note of Discussion

Meeting of the Committee on allocation of Natural Resources (focused meeting with DGH and GSI)

March 14, 2011; 03:00 pm; Room No. 41, North Block

- 1. Cabinet Secretariat, vide order dated January 31, 2011, constituted a committee on allocation of natural resources (CANR) with a view to enhance transparency, effectiveness and sustainability in utilization of natural resources, consistent with the needs of the country to achieve accelerated economic development. A focused meeting of the Chairman of the Committee with the officials of Geological Survey of India (GSI) and Directorate General of Hydrocarbons (DGH) along with the senior officials of their administrative ministries on exploration related issues was held on March 14, 2011 in Room No. 41, North Block to seek clarity on scope for uniform approach for exploration in petroleum and mining sectors.
- 2. Chairman welcomed the members and briefed them about the constitution of the committee, its terms of reference and exact scope thereof. He then invited the Member Secretary to start the discussions. Member Secretary briefed the members briefly about the discussions held during earlier meetings of the committee on exploration related issues and the similarities in the prevailing exploration scenarios of both petroleum and mining sectors. He explained that acreage is offered to participating companies through an open and transparent competitive bidding process in the petroleum sector, whereas in case of minerals, Ministry of Mines (MoM) feels that auction may not be appropriate as there is great risk during reconnaissance and prospecting stages. Further, it is also felt that the Geological Survey of India (GSI) may not be equipped to provide the type of details or information, as are provided by DGH and may be required for necessary due-diligence before any auction or competitive bidding. He explained that this meeting has been called to understand the manner in which the information is disseminated by both the organizations in their respective fields, so that a view can be taken as to whether a similar methodology can be applied to both the sectors. He also wanted to know as to how GSI can be equipped to provide such details as are necessary for due diligence in any competitive bidding process. Both the organizations had offered to make short presentations, copies of which are attached herewith. He first invited the Director General of Hydrocarbons (DGH) to make a short presentation.
- 3. DGH started his presentation by highlighting the growth in Indian exploration activities in the petroleum sector during the last decades. He was of the view that a slew of reforms instituted since the mid 1990s have fundamentally changed the landscape of the exploration and production (E&P) sector in India. He informed that India has an estimated sedimentary area of 3.14 million square kilometers, comprising 26 sedimentary basins, out of which 1.35 million square kilometers area is in deep water and 1.79 million square kilometers area is on land and shallow offshore. These 26 basins have been have been divided into four categories based on their degree of prospectivity as presently known. The total constitutes about 4% of the world's sedimentary area. Exploration activity has already initiated in 15 basins. The total quantity of established reserves as on April 01, 2010 is estimated at 70 billion barrels, with total prognosticated resources being quantified at 205 billion barrels for 15 basins only. He divided the history of E&P Regimes in the country into three different periods, namely, the period up to 1990 as the 'Nomination Era', when the exploration activity was dominated by public sector firms, such as Oil and Natural Gas Corporation Ltd. (ONGC) and Oil India Limited. (OIL). This sector received a major boost in 1974, when the massive Mumbai High fields were discovered off India's West Coast. Realizing that these fields would gradually deplete over time and no major discoveries

were being brought into production, Government initiated the process of de-regulating and delicensing the petroleum sector, which culminated in the New Exploration Licensing Policy (NELP), which was introduced with the aim of encouraging the foreign and Indian private companies to supplement efforts of National Oil Companies (NOCs) in the discovery of hydrocarbons. The NELP was formulated by the Government during 1997-98 to provide a level playing field to both the public and private sectors, through allocating acreages on the basis of open competitive bidding as opposed to the nomination basis as earlier with Directorate General of Hydrocarbons (DGH) acting as a nodal agency for its implementation. This era is termed as the 'NELP Era', which started during the year 1997. He said that the first bidding round under NELP was done in the year 1999. The period between 1990-1996 is termed as 'Pre- NELP Era'. The development of E&P sector has been significantly boosted through this policy of Government of India, which opened up E&P for private and foreign investment, where 100% Foreign Direct Investment (FDI) is allowed and acreages are offered to the participating companies through the process of open competitive bidding. The terms and conditions of this open and transparent policy rank amongst the most attractive in the world.

- 4. The Indian Oil and Gas sector has seen a paradigm shift after the NELP licensing rounds in terms of discoveries and increase in production. The important features of NELP are award of licenses through international competitive bidding; international pricing for crude oil & market driven prices for natural gas; biddable Work Program; cost recovery biddable up to 100%; sharing of profit / petroleum with Government on biddable pre-tax investment multiple; and full repatriation of profits besides fiscal stability as part of the contract. He highlighted some of the major successes in the E&P industry including the discoveries made by Cairn Group in Barmer (Rajasthan) and by the RIL-NIKO consortium in the East coast basis in India. The Bid Evaluation Criteria under NELP and CBM is quantitative and transparent thereby enhancing investor confidence in the policies. Bids are evaluated on the basis of technical capacity, work programme and fiscal package, where pre-defined weights are assigned to each parameter. He said that the number of bids received were used to be around double of the blocks awarded during the period 1999 to 2003. However, it is more than three times now as is evident from the fact that the number of bids received was 165 and 181 respectively during the years 2006 and 2008 as against the number of blocks awarded being 52 and 41 respectively during these years. The number of blocks offered during these years was 55 and 57 respectively. He then informed that as against one company with one producing basin in the year 1947, there were 82 companies with 10 producing basins during the year 2011. He said that the country scores in the medium risk range (B) in terms of Entry Risk, while many resource holders are in the 'D' to 'F' range. Similarly, the country scores in the low risk range (B) in terms of Oil Sector Operations Risk. He also informed that Oil Sector Entry scores of the country are higher compared to other Deepwater major resource holders such as Mexico and Brazil.
- 5. NELP licensing rounds have opened up more acreage and given significant impetus to investments in exploration and infrastructure, leading to an increased exploration work. There has been manifold growth in demand for ultra-deepwater rigs and high-specification jack-up rigs to get into the increasingly difficult and harsh environment and typical well construction challenges. He sought to justify his contention by giving the time series data about area (in square kms) under license (active blocks), which showed a 100% increase in area during the year 2009-10 as compared to 1999-2000. He further stated that every E&P operator in India is obliged to provide all data elements pertaining to the entire E&P value chain to Government of India. This includes but is not limited to geological, geophysical, petro physical, geochemical, log, map, production data, tapes, cores, cuttings, other interpretation and analytical reports etc. DGH being the nodal agency of Ministry of Petroleum and Natural Gas (MoPNG) on

upstream E&P affairs, has started receiving E&P data from operators gradually subsequent to NELP regimes. This E&P dataset is stated to be a national asset. This is valid in view of the ever increasing technological advancement in the field of data processing, data interpretation etc, when even age old E&P datasets might give new results as a consequence of technological improvements.

- 6. He further informed that the CBM policy for exploration and production of CBM was formulated by the Government in July 1997 for carrying out CBM exploration activity in the country. The 17,300 km² area has been opened up for CBM exploration with total CBM resources being estimated at 92 TCF. The established CBM resources are 9 TCF with 400 wells drilled so far. The estimated production is likely to be 7.41 MMSCMD by 2014-15. The investment commitment in the exploration phase is Rs. 1,51,86.44 crore. DGH concluded his presentation by informing that they are also getting independent bench marking of the Indian E&P programme by a US based agency for last 2-3 years, which evaluates 59 countries on 27 parameters. The position of India, even in deepwater, is 4th internationally, which is better than Indonesia etc. However, as of now, there is no systematic assessment of shale gas. However, DGH has started the process now to evaluate the shale gas reserves. They are simultaneously working on policy and legislative changes to allow for an auction methodology. He further informed that gradually, NELP will give way to an Open Acreage Policy which will reply on 'open sky' exploration on the basis of a National Data Depository. This will facilitate round the year bidding, on the basis of a swiss challenge methodology.
- On a query from the Chairman, whether the same process could also be adopted for the mining sector, Secretary, MoPNG opined that the emphasis should be on more and more competition with the best suited bidder being awarded the contract. The representative of CPR wanted to know as to how the expenditure is calculated so as to obviate the possibilities of 'gold plating' through cost benchmarking; and, work plans are monitored and penalties imposed, if the work plan commitment is not met. DGH informed that reliance is placed on world class experts and consultants for these purposes; on the basis of past experience, while 60% companies exceeded their minimum commitment, the balance 40% met the same. He also informed that if the minimum commitments are not met, there are penalties, which are large enough to be a deterrent. Liquidated damages are also pre-determined. So, bidders always knows the incidence of penalties, in case of any default. He also added that since there is global tendering, approximate standard levels of investments are known and cost recovery is based on audited results of the contractors. The prices are so volatile that bench-marking may not be feasible. He gave the example of hiring charges of ships, which may vary widely, depending on the point in the value cycle when they are adopted. There are two to three levels of audit and out of them, one is by the government appointed auditors. In reply to another question, DGH further explained that all procedures are well defined. Production sharing agreements prescribe the procedures of procurement also. He added that the work plan is approved along with budget by the Management Committee, which comprises representative of both the DGH as well as the contractor. There is no clash of interest as the Management Committee is not part of audit. Further, the Contractor is a joint venture or consortium of two or three numbers, so there is no scope for gold plating.
- 8. Additional Secretary (Mines) informed that they are also contemplating the validity of competitive bidding. However, he felt that competitive bidding may be possible in some of the specific sectors only. For example, competitive bidding may not be possible in case of deep seated minerals, which are scattered. He said that large costs and risks are involved for undertaking mining operations in India. The blanket auction process would drive up the cosst of

minerals unnecessarily and may render the blocks economically unviable, resulting in lost years before the block is forfeited. It will also make the costs non-competitive.

- 9. Member Secretary thanked the DG, DGH for his very well informed presentation and then invited the Director General, GSI to make a short presentation. DG, GSI started his presentation with 'India's Mineral Scenario'. He informed that the country produces 86 minerals, which include 10 metallic elements included in Part-C of the First Schedule of the Mines and Minerals Development and Regulation (MMDR) Act. The total value of mineral production (excluding atomic minerals) during 2009-10 is estimated at Rs.1,27,921.42 crore. He also added that India is surplus in iron ore, bauxite, thermal coal, manganese ore, cement grade limestone, barytes, mica, etc. However, the country is deficient in base metals like copper, lead, nickel, noble metals (gold, platinum group of elements), primary rare earths, strategic minerals and diamonds. He said that the total land area of the country was 3.28 million km², which constitutes about 2.4% of the world land area. This 2.4% land area supports 16% of the world population. The mineral deposits can occur at either shallow depths with surface indications, or, deeper depths as concealed or blind deposits. Concealed/blind deposits are those that are covered to such a substantial depth with overburden of alluvium/soil/ deep weathered zone, rock mass, etc. that they do not show any surface mineralization. He added that iron ore, manganese ore, bauxite, limestone, coal, potash, phosphorite, etc. (mostly associated with sedimentary deposits) are stratiform, stratabound, tabular and blanket type deposits. These generally occur at shallow depth with surface indications. However, base metals, noble metals, rare earths, diamond, etc. occur as lenses, veins and pockets, stock-works, and irregular shaped, modest to small sized bodies of all dimensions. He contended that the baseline surveys are not merely useful but actually essential for identification of potential areas of mineralization, particularly surface deposits such as iron ore, bauxite, or any other mineral having surface manifestation. This generally requires inputs from surveys of different or multiple parameters needing to be interpreted jointly to reach preliminary conclusions. The more the number of the parameters surveyed and larger the scale of the map, the better the chance of locating mineralization. However, the concomitant benefits have to be set off against the cost of exploration. He also added that the baseline data, though necessary to narrow down potential areas for deep seated mineralization (obvious geological potential), need high-end technology involving aero-geophysical and geophysical surveys, to locate mineralization occurring at depths. This involves aircraft and heli-borne surveys at low altitude (60-80 meters height), expensive sensors, often with proprietary technologies which can be hired but not bought, and use of very sophisticated and specialized software. Cost and time are the ruling factors. He further added that even though baseline surveys help in bringing out the geology and geological processes at different depths based on the nature of the survey, mineral investigations are site specific and mineral specific. Mineral investigation is taken up in stages with progressively large-scale mapping, physical-chemical surveys and drilling. At each stage, the potential is assessed before deciding whether it would be worthwhile to go for the next stage. Such assessment is based on grade of the mineral and its depth, and demand-supply and price factors. Normally, in GSI, the drilling of potentially mineralized area is done up to 120m vertical depth based on the nature of the baseline survey and cost considerations of the drilling operations, which may be inadequate in the case of deep-seated mineralization.
- 10. DG, GSI further explained the methodology of targeting concealed and deep seated deposits, where mineral specific concept oriented methodology is required since different minerals are formed in different geological environments. Generally, detailed geophysical investigations are done to identify anomalous zones of gravity, magnetic, EM, seismic and deep resistivity. Simultaneously, chemical analysis of the mineralized body samples is done to know the grade and commercial value. Finally, techno-economic feasibility studies are required,

including beneficiation techniques in order to estimate the bankability of the project. He also explained the procedure for grant of Mineral Concessions. He said that based on GSI baseline data, applications can be made for Reconnaissance Permit (RP). The GSI baseline data are generally insufficient for Prospecting License (PL) since identification of the mineral may not be possible. However, with G-4 / G-3 exploration work which generates enough data for identification of mineralized body, PL applications for shallow deposits (up to 120 m vertical depth) can be made. PL for deep seated minerals will, in most cases, not be practicable since neither identification of the minerals nor the geometry of mineral body can be deciphered from surface/shallow subsurface investigations. He concluded his presentation by referring to Hoda Committee Recommendations (HLC) which have stated that most nations maintain geological surveys that collect an array of information though it is rare for government agencies to explore for mineral deposits. Instead, they focus their limited budget in providing the type of information that could assist the private sector in its search for deposits, e.g. provision of regional geological, geophysical and geochemical data and maps. Therefore, geological surveys have shifted financial allocation to acquire new technologies that allow them to use and interpret data better and build web-based information dissemination system. He further stated that a policy decision to attract Canadian junior type companies to invest in the risky business of exploration and prospecting is imperative and for this the law needs to be amended. National Mineral Policy (NMP) has recommended GSI to continue to be the principal agency for geological mapping and regional mineral resources assessment of the country. It further provides that data filing by concessionaire should be enforced and released data integrated with State data and made available to other prospectors. Therefore, GSI's role under NMP is to facilitate private sector in locating deep seated mineralization, upgrade GSI portal to world class by placing all spatial data in GIS platforms, link to reports for use by concession applicants, develop system to receive, authenticate, integrate and display third party data from concessionaires for use by future concessionaires, and, develop geophysical repository and core library.

A view was expressed that if both DGH and GSI are relying on the same kind of data (G-3 and G-4 surveys) for attracting private investments, the same allocation methodologies could be adopted for both the sectors. Additional Secretary (Mines) clarified that even though baseline exploration is similar in both the sectors, the credibility of DGH data is higher since petroleum deposits are spread out over a larger area, and, the technology required for exploring and surveying deeper depths for concealed or blind deposits is much more advanced and typically not available with State geological agencies. He re-iterated that mining projects are high-risk ventures because a prospector's investment may or may not result in finds of commercially exploitable deposits. Therefore, investment has been lacking in such high-risk ventures. In fact, the full potential of India's mineral deposits are not known because of inadequate survey and exploration activities. Additional Secretary (Mines) further added that mineral deposits are scattered and the country is deficient in these resources. Competitive bidding for minerals is not being resorted to even in developed jurisdictions like Australia and Canada, although Canada has the system of 'junior companies' who do prospecting activities exclusively. Joint Secretary (Mines) added that the oil and mineral sectors are essentially incomparable both in terms of prospectivities as well as commercial exploitation. Additional Secretary (Mines) opined that the competitive bidding can be resorted to wherever the country has biddable reserve knowledge; in all other cases, the extant system of RP/PL/ML will need to be followed, which is the provision that has been adopted in the case of the draft amendment to the MMDR Act. Thus, competitive bidding will not be followed for deep seated or non-bulk minerals; however, this may be done in case of bulk deposits, where bidding may be considered under the proposed regime. He agreed to give a comprehensive note covering all the aforesaid points.

- 12. Chairman then sought the views of Secretary, MoPNG on the issue of de-risking. Secretary, MoPNG replied that the bidder takes all the risk, whenever a bid is put up on offer. In case of failure, he goes without compensation and if successful, he gets his contracted rewards. Thus, risk mitigation can be suitably inbuilt within the contract provisions and may be tried out for the minerals sector also. Additional Secretary (Mines) re-iterated that the draft Bill also provides for competitive bidding for select minerals, as per international best practice. Further, the concept of 'large-area prospecting licence' is aimed at incentivising high-tech exploration, which would take a company from the reconnaissance and prospecting stages through to mining approvals, if a discovery is made. It will also be easier to buy and sell concessions, which should attract both junior explorers and larger companies looking to acquire their discoveries. He said that mineralized areas will go for auction and non-mineralized shall go on first come first serve basis. To expect non-mineralized areas to also go in for competitive auction on the basis of negligible data would not be possible at this stage.
- 13. Chairman closed the meeting at this point and requested the Ministry of Mines to send the promised Note along with approximate magnitude in terms of total deposits and how much of this is liable to auction. The Note should also clarify as to why the mineral regime is not similar to the extant regime for hydro-carbons.
- 14. The meeting ended with thanks to the Chair.

The list of participants is annexed.

Attendance Sheet Committee on Allocation of Natural Resource

14th March, 2011, (3:00 P.M.)

List of Participants

S No	Name	Designation	Organization
1	Ashok Chawla	Chairman	
2	S Sundareshan	Secretary	Ministry of Petroleum and Natural Gas
3	S K Srivastava	Additional Secretary	Ministry of Mines
4	A. Sundara Moorthy	Director General	Geological Survey of India
5	S K Srivastava	Director General	Director General of Hydrocarbons
6	G Srinivas	Joint Secretary	Ministry of Mines
7	D N Narasimha Raju	Joint Secretary	Ministry of Petroleum and Natural Gas
8	Dr. S C Sharma	OSD (Petroleum)	Planning Commission
9	L P Sonkar	Consultant	Planning Commission
10	S K Tripathy	Chief Geologist	Director General of Hydrocarbons
11	Dr. Prabhas Pande	Add. Director General	Geological Survey Of India
12	S Rath	Deputy Director General	Director General of Hydrocarbons
13	T P Rao	HOD (NELP)	Director General of Hydrocarbons
14	Sanjay Chawla	HOD (Alternate Energy)	Director General of Hydrocarbons
15	Anurag Gupta	HOD (PSC)	Director General of Hydrocarbons
16	Gautam Sinha	HOD (Production)	Director General of Hydrocarbons
17	M S Jairam	Director	Geological Survey of India
18	G S Jaggi	Director	Geological Survey of India
19	Partha	Senior Fellow	Centre for Policy Research (CPR)
	Mukhopadhyay		
20	Govind Mohan	Joint Secretary	Cabinet Secretariat

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Record Note of Discussion

Third meeting of the Committee on allocation of Natural Resources April 20, 2011; 3 p.m.; Room No. 41, North Block

- 1. Cabinet Secretariat, vide order dated January 31, 2011, constituted a committee on allocation of natural resources (CANR) with a view to enhance transparency, effectiveness and sustainability in utilization of natural resources, consistent with the needs of the country to achieve accelerated economic development. The third meeting of the Committee was held on April 20, 2011 in Room No. 41, North Block.
- 2. The Chairman welcomed the members and briefed them about the progress made so far. He said that the committee had held wide ranging consultations with numerous stakeholders. The committee has now reached the last lap of finalizing its recommendations. Chairman referred to the presentation on the draft recommendations, which had been forwarded to each of the members for their views / comments and requested the members to contribute their considered comments / views so that the final recommendations could be firmed up with a view to the actual writing of the detailed report. He said that the report writing may take about two weeks more and hoped that the committee will submit its report by the end of April/first week of May, 2011. He then asked the Member-Secretary to make the presentation and initiate further discussions. A copy of the presentation made in the meeting is annexed.
- 3. Member-Secretary started his presentation by saying that even though the draft recommendations were forwarded to all the members on April 15, 2011, comments have been received only from Ministry of Mines (MoM) so far. He therefore, requested all the members to offer their views / comments during the meeting as the minutes of this meeting shall also constitute the basis for drafting the report. He said that his presentation has been divided in five parts i.e., background, introduction, sectors, overarching issues and conclusions. He added that in the 'sectors' part, each of the eight categories or sectors of natural resources shall be discussed in detail. He also said that the terms of reference of the committee included one omnibus clause, which has not been used and five basic terms of reference. Out of these five terms, first two terms of reference were discussed in detail and the framework was agreed upon during the earlier meetings. He said that the balance three terms of reference will be presented now in detail for the committee to decide.
- 4. He stated that the term 'transparency' along with 'sustainability' in government functioning often connotes open, transparent and competitive market mechanisms. He explained that the basic issue is whether achievement of public policy goals is consistent with migration to transparent market mechanisms. If the answer to this question is 'yes', market mechanisms can be used for allocations, otherwise alternative mechanisms may need to be explored. He further elaborated as to how both operational efficiency and exploration efficiency are necessary for overall efficiency or the most optimum utilization of resources. He further explained the factors constituting sustainability and also referred to inter-temporal trade-off in terms of optimal extraction rates, e.g., whether maximizing the mining output at present time is the best outcome vis-à-vis extraction at a later date. He also raised the issue of protection against future climate restrictions and said that even though, these questions are not being posed today, but these are important nevertheless. Special Secretary, Ministry of Environment & Forests (MoEF) intervened at this stage and stated that even though he agrees with the principles, the term 'climate restrictions' should be changed to the term 'possible climate restrictions'. This was agreed by the Committee.

- Member Secretary, then started his presentation on the mining sector i.e., minerals and 5. broadly explained the draft allocation and pricing mechanism under the proposed draft MMDR (Amendment) Bill. He clarified that the committee was not looking into the existing allocation process as consultations on the draft Bill are already underway.. He then explained the apprehensions with regard to the provisions of the draft Bill. At the outset, even though the draft MMDR (Amendment) Bill provides for competitive bidding of Prospecting and Mining Licenses in areas of known mineralization, it over-specifies the bid process in the main legislation itself and limits it to using a points system for selection. Defining bid procedure in legislation is constrictive and may not allow changes later. Further, the bid process contemplated in the draft Bid process may not be appropriate as it rules out the traditional two-stage method, ascending E-Auction or other popular or sometimes more appropriate variants of competitive bidding. Therefore, he recommended for making the sections on bidding in the draft Bill more generic, so as to allow flexibility for a variety of bid mechanisms to be used. It was stated that these can always be specified through issuance of guidelines or through rules, in order to give flexibility. Otherwise, any change may necessitate an amendment in the Act, which is procedurally difficult. Moreover, it is not clear whether it is feasible or possible for the State Government to award a mine purely on the basis of financial bid after technical evaluation of bidders Secretary, MoM replied that the mining sector is different from the petroleum sector. In the petroleum sector, there will be only two or three bids in a year. However in States, there are thousands of applicants at the district level and there will be total chaos if discretion is given to them, as district level officers are often not very well versed in these rules. DG (FICCI) agreed that that the proposed system of specifying the bid procedures in the legislation will avoid malpractices and obviate scope for arbitrariness and unwarranted discretion. He further explained that the industry would be supportive of the present formulation. The representative of CPR was of the view that this philosophy goes against the concept of decentralization, and lack of capacity at the States' level cannot be assumed without any evidence to support the same. Secretary, MoM responded that the minerals are the property of the State and about 56% of the mining leases (out of 4000-5000 mining leases given every year) are of less than 10 hectares. MoM cannot manage or monitor the bidding process for each one of them from the Centre. The provisions of the draft Bill are a refinement of the existing provisions. Also, some of the provisions of the earlier version of the Bill (which is hosted on the MoM website) have been given more clarity now as against the earlier provisions.. Secretary (Mines) further added that all revenues from mines, whether royalty, bonus or upfront payments, everything goes to the State Government(s). So consultation with the State Government(s) is necessary. He further said that mines have a long gestation period and the revenues start flowing in after three years only. Therefore, it may not be possible to structure bids only on the basis of financial quotes, although the proposed Bill does give the flexibility to go for pure financial bidding. Member Secretary added that the committee is advocating on behalf of the State Government(s). If States are the owner and all revenues are going to them, why not leave the specifics of the bidding process to them. Secretary (Mines) replied that there are companies, which operate in multiple states. So there should be uniformity in the legislation and in the bidding and royalty regimes. . Representatives of CII also agreed with the propositions of MoM.
- 6. Member Secretary continued his presentation by saying that 91% of mining royalties are obtained from a limited set of minerals i.e., limestone, iron ore, copper or lead or zinc, chromite and bauxite. Therefore, he recommended for increased investment in gaining knowledge of mineralization for these specified minerals, either through GSI or through third parties contracted by GSI, so that at least G2 level information is available for bidding out of MLs. Secretary (Mines) clarified that Copper, Lead and Zinc constitute a small amount only in the overall royalty collection. He also explained that the high royalty yielding minerals are at surface and often up

to 15m depth only. So they are easy to locate. However, there is a need to go deep with latest technology for exploring base, noble and rare minerals. He gave the example of diamonds and said that there is almost no royalty from diamonds because there has been little exploration in this direction. Therefore, he said that the thrust should be on exploration and not only on the amount of royalty being collected.

- 7. The Member Secretary continued further and sought to clarify that the enhanced information will also provide scope for mineral-specific terms for mining leases i.e., leases with (i) signing bonus with royalty, (ii) royalty alone and (iii) with production sharing. He said that the proposed Bill does not specify the nature of mining leases. This may mean that production sharing contracts etc. may not be possible under the proposed Bill. Similarly, it does not mandate for value addition to promote the domestic industry. Secretary (Mines) confirmed that Model Lease Agreements or License Agreements will provide for all these possibilities. He reiterated that there will be 'special conditions', which will be mineral specific or location specific. Ministry of Mines will develop them after the draft Bill is approved.
- 8. Member Secretary continued his presentation by highlighting the difference between the exploration efforts required for minerals vis-à-vis those for the oil and gas sector. Ministry of Mines and other stakeholders often say that these are not comparable as mineral blocks extend for only a limited extent and do not occur in clusters. Further, predictability of oil and gas is higher compared to evaluation of deep seated mineral deposits. Moreover, while oil and gas are homogenous, many minerals may occur in a cluster and some of them may not be exploited if the licensee does not have expertise in those minerals. However, the Member-Secretary felt that even though the dispersed nature of mineral deposits involves greater intensity of exploration than oil and gas, the greater intensity is balanced by lower per unit cost of exploration. Thus, the risk return trade-off is not substantively different as compared to oil and gas, which may be even riskier. He also added that market pressure will ensure that economic deposits of associated minerals are exploited if multi-mineral rights are granted. He therefore, recommended for bidding out of high potential areas on the basis of G4 level information for LAPL / PL, with security of tenure for transition to ML, as in the draft. For other areas, multi-mineral reconnaissance permits (RP) could be bid out at G4 level with transferability, clear security of tenure and format for ML. Open Sky policy may be followed in areas where reconnaissance has not occurred and urgent discovery of the mineral is important for national purposes.
- 9. Secretary (Mines) was of the view that as far as Ministry of Mines is concerned, allocation is secondary to their thinking. Their primary objective is exploration. If they ignore the exploration, it will have huge negative implications. Therefore, there is need to incentivize exploration and optimization of exploration is equivalent to optimization of resources. He clarified that this is the intention behind the proposed Act, even though this may not have been stated in these many words. He also gave the example of RL given to De Beers for diamonds, who need to explore hundreds of kilometers and may not be successful at all at the end. He also gave an instance of exploration in known mineralization areas, which had a very high probability area as per the GSI data book, but revealed nothing eventually and led to losses for the exploring companies. He further clarified that categorization under the heads 'known mineralization' or 'unknown mineralization' may not be relevant at all. Therefore, the draft Act provides that if the State Government feels, it can straightaway go for bidding or an auction. He further added that aero-geophysical surveys are not sufficient for bidding process. Bidding can be resorted to only if there is bankable information. The information requirements are highly graded and mineral specific. These are indexed to the the UN Framework Classification (UNFC) for sub-soil assets, which has three dimensions or criteria: economic and commercial viability, field project

status and feasibility and geological knowledge. This 3-dimensional system is further specified into categories, which define areas that can be posed for bidding. The State Governments can use this classification to categorize the deposits where bids can be invited.

- 10. Secretary (Mines) again sought to clarify that the initial survey is not mineral specific. It is only when the initial reconnaissance is done that knowledge of mineralization is obtained; prospecting is required to estimate the kinds of minerals which are available; and, their quantum is known only at the mining stage. There are specialized companies, which are in the business only for exploration and which sell this data to potential buyers. Member Secretary agreed and submitted that these junior companies can come and participate in the bidding process. When sufficient data is available, they will sell and exit. Petroleum sector also has similar provisions. Secretary (Mines) replied that LAPL is given for a total area of about 5000 sq. kms. They will shed one-sixth of this every year. Member Secretary replied that these provisions can be phased away to offer better security of tenure. Secretary (Mines) clarified that even now, if bidding is done without bankable knowledge, a license fee of Rs. 50 per hectare is charged, which is fairly high. This kind of flat fee is preferable because it facilitates repeated exploration. Moreover, he felt that GSI cannot be equipped to handle this volume of work. At the most, they can do only about 30 square kms. every year. He was of the opinion that GSI's limited capacity should be used for regional exploration and not G2 level detailed exploration. He further clarified his apprehensions that if he outsources this work to the junior companies, they may not give the correct data to the government and may instead sell the data to other companies for making quick returns. Hence, these companies cannot be trusted to do mere exploration. Even the Hoda Committee Report, which was considered by the experts agreed with this view point. . .
- 11. Member Secretary resumed his presentation and said that the proposed Bill provides for sharing of 26% of the profit from mining or 100% of royalty, whichever is higher. He felt that this proposal has limitations as it does not account for variations across minerals. Moreover, profits are volatile and can be manipulated and may render operations unviable. He also recommended earmarking specific portion of royalty for transfer to non-lapsable funds in mining districts. Secretary (Mines) replied that the royalty goes to the Consolidated Fund of the States and they cannot move any funds out of this sum. Hence they had asked for a separate stream in the proposed Act. He said that thr 26% may be reduced, but should not be made payable at the exploration stage, as in case of bidding, as it will be a step backward. Member Secretary gave the example of the petrol cess, which is collected and routed through Consolidated Fund of India for specific purposes. Chairman intervened at this stage and stated that the issues relating to the mines sector needed to be discussed separately. He directed that a standalone meeting be organized with the representatives of MoM at a later date. Representatives of CII commented that they support the allocation under open market mechanism on the lines of NELP, where the resource identification is possible; otherwise, the emphasis has to be on exploration.
- 11. Member Secretary started his presentation on the coal sector by explaining the matrix of coal allocation. He inter-alia stated that most decisions in the sector need to be made more transparent. Moroever, allocation to non-priority sectors is limited and coal imports are rising even for use in power, which constitutes for over two-thirds of total consumption. JJS, Ministry of Coal (MoC) intervened at this stage and clarified that the minutes of the linkage committees should be read with the agenda of the meeting to make them complete and comprehensive. Further Coal India Limited (CIL) has already introduced dual pricing system for the regulated other sectors since February 2011. As regards draft captive bid guidelines, he clarified that these have been placed on the web site merely for seeking comments from various stakeholders. Based on the suggestions received, necessary due diligence shall be done and the draft guidelines shall be amended accordingly.

- 12. Member Secretary continued with his presentation and clarified that the committee is not recommending expanding the current e-auction in its present form as the amount offered is not predictable by location and quantity and the supplies are not assured over a time long enough to develop associated logistics to evacuate the coal. He further clarified that the entire auction amount/quantity is not lifted even though domestic supply is limited and prices are substantially above notified prices. JS (Coal) confirmed at this point that most of the auctioned coal is lifted and used by the actual consumers, although logistic problems have been highlighted by some participants. The MoC have also introduced a forward e-auction exchange since last year. Forward contracts for next one year can be traded in this exchange. Member Secretary then elaborated the draft recommendations of the committee. He stated that the captive production is a fraction of possible output as only 15% of allotted mines are in production and they are producing 4% of possible peak output of the allocated mines. There is apprehension that this may be due to to use of imported coal by these units by holding back their reserves for the future use. Therefore, one of the recommendations is to incentivize the production through captive mines by allowing them to sell in the market directly. This would effectively de-link the activity of mining from any designated end-use, further encouraging the involvement of private mining firms. Given the current shortfall in domestic supply, private mining companies are more likely to increase rates of extraction quickly and in an economically efficient fashion. J.S. (Coal) replied that there is a screening committee under the chair of special secretary, which reviews the progress of all the mines. Ten to fifteen mines have already had their licences cancelled for non-production and action is being taken against many others as well. Further, he explained that the cost of imported coal after adjustment of calorific value is almost double of the price of the domestic coal. Hence, use of imported coal by persons having captive mines is unlikely.
- 12. Member Secretary then elaborated upon the other recommendations. He said that the next recommendation is an implicit union transfer on introduction of market based pricing which would reduce the distortionary effects of the current subsidization regime in both the power and coal sectors. He explained that the retail prices of electricity are regulated by state level regulators and subsidy is given to the DISCOM from the state budget. Therefore, the regulated price of coal for power generation acts like a Union transfer to the consuming states because if coal were supplied to power at market price, the bulk cost of power would rise and the State subsidy would have to increase to keep consumer prices stable. Further, if coal is sold at market price, an implicit Union transfer becomes an explicit State subsidy. However, the committee feels that the final impact may be less due to long term contracts as existing competitively bid projects on imported coal show reasonable tariffs. J.S. (Coal) felt that the prices of power and electricity will rise, if they are asked to use imported coal or domestic coal at market price. He assured that a detailed note shall be separately given with all the facts. Member Secretary concluded his presentation on the coal sector by recommending for allowing mining firms in future mine block sales. He also recommended increase in the number of approved uses by notification. This increase in number of approved end-uses will expand the market to be accessed by 'captive' mines. Approved end-uses can cover most large consuming industries. The representatives of CII supported these proposals. The representative of DEA raised the issue of mine closure, which he submitted is not happening, even though there are provisions in this regard. This affects the sustainability of the area. He suggested that a reclamation fee may be proposed to ensure these closures. J.S (Coal) replied that they have already taken action in this regard by issuing mine closure guidelines and a deposit of Rs. 6 lakh per hectare for mine closure. Regarding environmental clearances, it was suggested to the committee that coal mining projects, and mining projects more generally should ideally get environmental clearances before any bid or auction processes so that clearances do not become a major bottleneck.

- 13. Member Secretary then shifted to the petroleum sector. He inter-alia explained that even though the NELP model appears to be successful, the extent of participation is declining over time in terms of declining number of new players from NELP VII onwards. He also recommended targeting the mid-size firms, instead of very large firms as per the existing practice. This would prevent the emerging trend of a few large domestic companies cornering most of the licenses. He also recommended separating the DGH into an autonomous body with an independent cadre. This would allow for more transparency in the NELP process, and prevent any conflicts of interest between the concerned Ministry and the regulator. Further, he also recommended for monitoring post-award obligations more closely especially with reference to investment audits and exploration commitment audits. Further, he added that all Production Sharing Contracts (PSCs) commitments should be honoured as any post contract re-negotiation decreases investor (especially external) confidence; this may explain the hesitation of big foreign players to participate in NELP. DG (DGH) replied that the gestation period is fairly long between the discovery and the production. He said that in bidding for NELP IX, twenty bids went to private sector out of total 33 blocks offered for bidding. (PSUs could get only 13). He further added that out of total successful bids received for US \$ 730 million, US \$ 440 million was from the private sector. This is for the first time that the private sector has been so successful. He said that investment audit is already a part of existing system and no contractor can walk away without fulfilling his commitments. CII supported the move to open acreage gradually. The representative of CII requested that the recommendations should include the requirement for obtaining all approvals before the actual bidding. On being asked about his comments on the independence of DGH, DG, DGH replied that on this issue, it is for MoPNG to take a view.
- 14. Member Secretary then started his presentation on the next sector i.e., Natural Gas. He said that like in case of coal, it is felt that the argument for subsidizing gas as input for power is weak since most of the outputs are sold in competitive markets, and it is not clear if input subsidies have actually led to lower market prices. Moreover, the intent of government is also to move fertiliser to a consumer based subsidy. This removes the argument for subsidizing gas as input even for the fertilizer sector. Therefore, he recommended for moving gas to market pricing. This may mean that contractually committed sellers can sell to government agency at agreed price and agency can then resell to market or to allocated consumers. Pricing for allocated consumers may be market based. The committee was not in favor of a 'gas pooling' arrangement. He also suggested for accelerating development of pipeline infrastructure so that new gas producers can sell in the market. Since there were no further comments to offer, the Member Secretary shifted to next sector.
- 15. Member Secretary then shifted to the allocation of spectrum issues. He said that the existing units of allocation of spectrum in the form of a bandwidth of a certain size, for a telecom circle, is not optimum from the point of view of spectrum utilization. He said that there may be shortage or scarcity of spectrum in Mumbai, but that does not mean that there is scarcity of spectrum in entire Maharashtra or Nagpur or Pune etc. He therefore, recommended for redefining spectrum into standard units i.e., unit defined by geographical location and frequency. He further recommended for re-allocation of existing spectrum based on standard units. This allocation should be based on 'actual users' after de-linking of spectrum from all future and existing licenses. He also suggested for clear demarcation of existing spectrum into commercial and non-commercial (primarily defence and public security) uses. The Wireless Planning Cell should be strengthened and made into an autonomous agency. Wireless Advisor clarified that the term 'non-commercial' spectrum includes 41 types of services and other types of services. The use of bands for commercial and non-commercial purposes is dynamic. No band is specific for a purpose. However, the recommendation to demarcate bands as commercial and non-

commercial was accepted 'in principle'. Member Secretary also suggested for allowing trading in spectrum. Revenue from spectrum trading can be treated differently in terms of government 'take'. Further, price discovered in spectrum market can be used as a basis for determining spectrum charges for legacy allocations. Member Secretary at this stage also raised the issue as to whether the band width of less than 4.4 MHz can be allocated. Wireless Advisor replied that during 1994, small cities were taking very small band width i.e., 1.2 MHz or 2.2 MHz, when the concept of AGR was not there. Today, that concept has gone. Therefore, service to service, units will vary. Member Secretary expressed his concern regarding geographic units i.e., 22 circles is not an efficient method of allocation by totally ignoring the paying capacity. Wireless Advisor agreed with the principles of presentation. However, he clarified that spectrum trading has not been recommended by TRAI either. Member Secretary gave a hypothetical example that suppose Bharati wants to give 1 MHz to Idea Cellular. The government should not have any problem so long as it also get a share of proceeds. Additional Secretary (DoT) added that this recommendation is more complex than earlier recommendations. However, they agree with the recommendations 'in principle' Advisor (DoT) then suggested that we should use the term 'spectrum revenue / charges' in place of the term 'spectrum charges'. This was agreed by the committee. Additional Secretary (DoT) added that the regulator should not get involved in policy making. The representative of Ministry of Defence (MoD) stated that it was agreed during an earlier meeting that the Defense Band was outside the purview of this committee. So, the committee should not include anything in its recommendations with respect to this band. The representative of Defense further added that defense spectrum is over and above that meant for public security. He lastly added that Ministry of Defence shall be managing their spectrum and DoT or the Office of Wireless Advisor shall not be involved in its management. This, he said, was based on the USA model, which they had selected after reviewing the international best practices. The representative of CPR clarified that this issue will have to be covered in the new Spectrum Act which is currently being formulated. Wireless Advisor made it clear that the management of defense spectrum shall be with WPC and DoT. Chairman concluded the discussions for this sector by saying that this committee is not meant for adjudicating differences amongst the ministries / government departments.

- Member Secretary then moved on to the forest sector. He started his presentation by 16. explaining the complete matrix of forest clearances. He recommended for reform linked capacity building of state forest departments to reduce delay in decisions as all decisions, positive or negative, should be expeditious subject to proper due diligence. He also recommended for making all minutes of forest clearance decisions available. Even though, FAC minutes are available on the web site, these are not comprehensive and do not provide the rationale for other decisions. Similarly, project-wise amounts paid under various mandates like NPV, compensatory afforestation, catchment area treatment, biodiversity conservation, etc. may be published and guidelines may need to be evolved like for NPV for other payments. He suggested for increase in stakeholder involvement at fact-finding stage by public consultation in Forest clearance process. Increased stakeholder involvement at fact-finding stage will reduce delay by reducing the probability of appeal to National Green Tribunals (NGT) and making NGT's decisions faster in case of appeal. He concluded his presentation by recommending for clearly demarcating forests by eco-sensitivity with highest category being generally "non-divertible". While technically open, the probability of getting clearance is low and time taken longer in such forests. Further, clear ab-initio guidelines in the matter will reduce unproductive efforts. Since there were no further comments to offer, the Member Secretary shifted to next sector.
- 17. Member Secretary then started his presentation by raising issues on the land sector. He said that the land inventory is incomplete in many agencies and the records of land holding is

scattered. He said that without location, value of land is difficult to ascertain. He further added that the policies on sales and acquisition of land vary considerably by department and agency. Further, change of use and building permissions is usually left to the buyers in case of sales with extensive allotment of land at administered prices. Therefore, he suggested that all land holdings of the central government should be inventoried with GIS based location maps of these properties to ensure proper protection from encroachments and proper monitoring. He further suggested that this inventory should be made public for transparency. He also recommended for accounts of Development Agencies to be made public. He concluded his presentation on land sector by suggesting that the government agencies should change the land use and building permissions to the most optimal possible in consultation with the local government before alienating land. All sale of land should be through sealed-bid auction, if land is being sold on as is where is basis. He also suggested for use of land to develop sustainable PPP concessions. He also suggested for transfer between Union government departments / agencies through High Powered Committee

- 18. Member Secretary then moved on to the water sector. He started by saying that the Union has presently a limited role in water allocations. He recommended for moving water to the concurrent list. This requires a constitutional amendment. Therefore, Central Government is trying to regulate groundwater through the Central Groundwater Regulatory Authority only. Additional Secretary (Ministry of Water Resources) felt that even though there is a strong case for moving water to the concurrent list, presently there is no framework to regulate water sector especially in case of states like Punjab and Haryana, which are overdrawing their water resources and do not come for consultations also. However, he felt that the constitutional amendment was very difficult. He added that the framework, where the state governments enact a law would be more efficient. A framework law would provide model legislation to state governments and make it obligatory for state legislatures to enact certain laws with respect to the governing of water. Member Secretary also suggested for reviving the River Boards Act. In any case, there is need to remove private property aspect of groundwater. He felt that this requires only amendment of Union laws such as the Easements Act. However, this may go against evolving community management practices. This can also differentially affect poorer users of groundwater. Additional Secretary (Water Resources) felt that Easements Act has several technical issues as well like it defines water as a channel and all ground water reserves are channels. Chairman concluded the presentation on water sector there by recommending the movement of water to the concurrent list. Alternatively, he suggested for having a legislative framework, which provides for community management of water. He also referred to the Article 252 of the constitution. He gave example of VAT, which he felt has been very successful.
- 19. Member Secretary sought to conclude his presentation by raising few overarching issues, which need to be considered before taking final decision. Some of these are the existing captive blocks and existing linkages in case of coal allocations and existing licensees in case of minerals and petroleum (pre-NELP and post-NELP) in addition to existing allocations and existing pricing decisions in case of gas. In case of Spectrum, the legacy issues are existing licensees, and expiry of existing licenses. He felt that there are two options. The first option is to ignore these as an evolution of policy. The second option could be to attempt to 'level the playing field' to the extent possible. He also referred to the prevalence of extensive use of policy instead of legislation and rules. The instrument (laws, rules, policies, office memoranda) used to propagate these principles will be important in determining their reach and efficacy.
- 20. The meeting concluded here with vote of thanks to the Chair.

List of Participants

S No	Name Ashok Chawla	Designation Chairman	Organization
2	S. Vijay Kumar	Secretary	Ministry of Mines
3	Vilasini Ramachandran	Spl. Secretary	Department of Expenditure
	J M Mauskar	Spl. Secretary	Ministry of Environment and Forests
4	G. Mohan Kumar	Additional Secretary	Ministry of Water Resources
5	S.R. Rao	Additional Secretary	Department of Telecommunication
6	Sh. S.K. Srivatava		DGH
7	R K Mahajan	Joint Secretary	Ministry of Coal
8	G Srinivas	Joint Secretary	Ministry of Mines
9	Sadhana Dikshit	Advisor	Department of Telecommunication
10	Dr Ashok Chandra	Wireless Advisor	Department of Telecommunication
11	Nagesh Singh	Advisor	Planning Commission
12	T. P. Rao	DGM & HEAD	NELP
13	Brig. L.G. Chand, VSM	DACIDS, JT (JCES)	Ministry of Defence
14	Col. Ashutosh Upadhyay	Director, JCES	Ministry of Defense
15	Gautam Sinha	Head -Production	DGH
16	R. Kumar	DG	Federation of Indian Chamber of
17	Seema Arora	Principal Counsellor	Commerce and Industry (FICCI) Confederation of Indian Industry (CII)
18	G.S. Jaggi	OSD	Ministry of Mines
19	P.K. Mishra	Director	Department of Economic Affairs
20	Rajesh Menon	Senior- Director	Confederation of Indian Industry (CII)
21	Charanjit Singh	Director	Department of Land Resources
22	E. P. Nivedita	Director	Ministry of Urban and Development
23	Partha Mukhopadhyay	Senior Fellow	Centre for Policy Research (CPR)
24	Rohit Chandra		Centre for Policy Research (CPR)
25	Shibani Ghosh		Centre for Policy Research (CPR)
26	Govind Mohan	Joint Secretary	Cabinet Secretariat

Annual Coal Production Statistics

Total1.4: TOTAL PRIMARY SUPPLY (TPS) of Coal Lignite: 2000-2010 (Mill tones)

Year	Fuel type	Production	Imports	Exports	Net Import	Opening Stock	Closing Stock	Stock Change	TPS
1	2	3	4	5	6	7	8	9	10
	Coal	313.696	20.93	1.292	19.638	29.318	21.432	7.886	341.22
	Lignite	24.247			0	0.839	0.498	0.341	24.588
2000-01	Total	337.943	20.93	1.292	19.638	30.157	21.93	8.227	365.808
	Coal	327.787	20.548	1.903	18.645	21.432	18.124	3.308	349.74
	Lignite	24.813			0	0.498	0.742	-0.244	24.569
2001-02	Total	352.6	20.548	1.903	18.645	21.93	18.866	3.064	374.309
	Coal	341.272	23.26	1.517	21.743	18.124	19.394	-1.27	361.745
	Lignite	26.018			0	0.742	0.731	0.011	26.029
2002-03	Total	367.29	23.26	1.517	21.743	18.866	20.125	-1.259	387.774
	Coal	361.246	21.683	1.627	20.056	19.394	21.291	-1.897	379.405
	Lignite	27.958			0	0.731	0.212	0.519	28.477
2003-04	Total	389.204	21.683	1.627	20.056	20.125	21.503	-1.378	407.882
	Coal	382.615	28.95	1.374	27.576	21.291	23.969	-2.678	407.513
	Lignite	30.411			0	0.212	0.536	-0.324	30.087
2004-05	Total	413.026	28.95	1.374	27.576	21.503	24.505	-3.002	437.6
	Coal	407.039	38.586	1.989	36.597	23.969	34.334	-10.365	433.271
	Lignite	30.228			0	0.536	0.525	0.011	30.239
2005-06	Total	437.267	38.586	1.989	36.597	24.505	34.859	-10.354	463.51
	Coal	430.832	43.081	1.554	41.527	34.334	44.348	-10.014	462.345
	Lignite	31.285			0	0.525	1.002	-0.477	30.808
2006-07	Total	462.117	43.081	1.554	41.527	34.859	45.35	-10.491	493.153
	Coal	457.082	49.794	1.627	48.167	44.348	46.779	-2.431	502.818
	Lignite	33.98			0	1.002	0.328	0.674	34.654
2007-08	Total	491.062	49.794	1.627	48.167	45.35	47.107	-1.757	537.472
	Coal	492.757	59.003	1.655	57.348	46.204	47.317	-1.113	548.992
	Lignite	32.421				0.229	0.903	-0.674	31.747
2008-09	Total	525.178	59.003	1.655	57.348	46.433	48.22	-1.787	580.739
	Coal	532.062	67.744	2.171	65.573	47.222	64.027	-16.804	580.83
	Lignite	34.071				0.041	0.155	-0.114	33.957
2009-10	Total	566.133	67.744	2.171	65.573	47.263	64.182	-16.918	614.787

Note: Total Primary Supply as sum of indigenous production, Net Import & Stock Change. For simplicity, only stock change of pit head stock is taken.

Provisional coal Statistics: 2009-10 Source: Coal Comptroller's Organisation

Captive Block Selection Guidelines

GUIDELINES FOR ALLOCATION OF CAPTIVE BLOCKS & CONDITIONS OF ALLOTMENT THROUGH THE SCREENING COMMITTEE

A. GUIDELINES

- 1. Applications for allocation of coal blocks for captive mining for the specified end uses shall be made to the Director (CA-I) in the Ministry of Coal in five copies. The application shall be accompanied by the following in addition to any other relevant documentation that the applicant may submit:
 - Certificate of registration showing that the applicant is a company registered under Section 3 of the Indian Companies Act. This document should be duly signed and stamped by the Company Secretary of the Company. (1 copy).
 - Document showing the person/s who has/have been authorised to sign on behalf
 of the applicant company while dealing with any or all matters connected with
 allocation of the sought coal block/s for captive mining with the Government/its
 agencies. This document should be duly signed and stamped by the Company
 Secretary of the Company. (5 copies)
 - Certified copy of the Memorandum and Articles of Association of the applicant Company. (5 Copies)
 - Audited Annual Accounts/reports of last 3 years. (5 copies)
 - Project report in respect of the end use plant. If the report is appraised by a lender, the appraised report shall also be submitted. (5 copies)
 - Detailed Schedule of implementation (milestones and time-line for each milestone) for the proposed end use project and the proposed coal mining development project in the form of bar charts (5 copies). However, the overall timeframe proposed should not exceed the normative time ceiling prescribed.
 - Detailed schedule of exploration (milestones and time-line for each milestone) in respect of unexplored blocks. However, the overall timeframe proposed should not exceed the normative time ceiling prescribed.
 - Scheme for disposal of unuseables containing carbon obtained during mining of coal or at any stage thereafter including washing. This scheme must include the disposal/use to which the middlings, tailings, fines, rejects, etc. from the washery are proposed to be put. (5 copies)
 - Demand draft for Rs.10,000/- in favour of PAO, Ministry of Coal payable at New Delhi.
 - A Soft Copy of details, as filled in the Application Form, is also to be furnished in the specified Database Form(in MS-Excel format) in a CD along with the Application.

Applications without the above accompaniments would be treated as incomplete and shall be rejected.

2. In respect of fully explored blocks, geological data may be obtained from CMPDIL, NLC or the State agency concerned, as the case may be, on nominal charges. However, full cost of

exploration and geological reports would be reimbursed to the agency concerned within six (6) weeks of date of issue of allotment letter.

- 3. Where only regionally explored blocks are offered for allocation, the detailed exploration/prospecting in the said blocks shall be done by the allocattee company under the supervision of CMPDIL.
- 4. Replacement of linkage with coal to be produced from the allocated captive coal block can be permitted by the Screening Committee subject to safeguarding the interest of CIL and its subsidiaries.
- 5. **Disposal of production during the development phase** of the captive mine to the local CIL Subsidiaries has been allowed at a price to be determined by the Government.
- 6. In order to promote scientific and proper mining the larger blocks shall not be sub blocked into smaller ones. Only natural sub-blocks will be formed.

Allotment of Captive blocks to consortium of group of companies

- (i) If requirement of coal by an applicant does not match with the reserves in a natural block then clubbing of requirements may be resorted to and in case a number of applicant companies form a consortium for utilisation of a block for their captive use, the same may be considered for allocation under a legally tenable arrangement.
- (ii) More than one eligible and deserving companies will be allowed to do captive mining of coal by forming a joint venture coal mining company. The constituent applicant companies would hold equity in the joint venture company in proportion to their assessed requirement of coal and the coal produced would be exclusively consumed in their respective end use projects. Distribution of coal would be in proportion to their respective assessed requirements.
- (iii) One or more companies (to be called leader companies) from amongst the selected, could be allowed to do mining of coal in one or more captive blocks and the other companies (to be called associate companies) would get coal from the captive block in proportion to their assessed requirements. The local Coal India subsidiary could facilitate this arrangement by taking a nominal service charge. Leader companies will deliver coal to associate companies at a transfer prices to be determined by the Central Government.

8. Mining of Coal by allottee companies

The following dispensations are permitted for mining of coal from captive blocks:

- (i) Any of the companies engaged in approved end-uses can itself mine coal from a captive coal block; or
- (ii) A company engaged in any of the approved end-uses can mine coal from a captive block through a mining company supplying the coal on an exclusive basis from the captive coal block to the end-user company or to its subsidiary company, provided the end-user company has firm tie up with mining company for supply of coal, supported by legally binding and enforceable contract / agreement.
- (iii) An independent coal/lignite mining company can also be allocated a captive block

on the condition that the entire coal/lignite so mined would be transferred to an end user company(ies) for their captive consumption in the specified end uses;

Provided that the said mining company has firm back-to-back tie up with the specified end user company(ies), supported by legally binding and enforceable supply contract/agreement.

- 9. Inter-se priority for allocation of a block among competing applicants for a captive block may be decided as per the following guidelines:
 - Status (stage) level of progress and state of preparedness of the projects;
 - Networth of the applicant company (or in the case of a new SP/JV, the networth of their principals);
 - Production capacity as proposed in the application;
 - Maximum recoverable reserve as proposed in the application;
 - Date of commissioning of captive mine as proposed in the application;
 - Date of completion of detailed exploration (in respect of unexplored blocks only) as proposed in the application;
 - Technical experience (in terms of existing capacities in coal/lignite mining and specified end use);
 - Recommendation of the Administrative Ministry concerned;
 - Recommendation of the State Government concerned (i.e. where the captive block is located);
 - Track record and financial strength of the company

Preference will be accorded to the power and the steel sectors. Within the power sector also, priority shall be accorded to projects with more than 500MW capacity. Similarly, in steel sector, priority shall be given to steel plants with more than 1 million tonne per annum capacity.

B. CONDITIONS OF ALLOTMENT

- 10. Upon allocation of captive coal block by the Screening Committee the applicant would submit an **affidavit** in the prescribed format to the effect that all coal mined from the captive block shall exclusively be used in the proposed end use project for which the said block has been allocated and that in case of any slippage in implementation of the end use project or the captive coal mine development project, as per the schedule of implementation/bar charts submitted and agreed to by the Ministry of Coal, the said block shall be deallocated without any liability to the Government /its agencies, whatsoever.
- 11. The normative **time limit ceilings** have been provided to ensure that the coal production from the captive blocks shall commence within 36 months (42 months in case the area is in forest land) of the date of issue of letter of allocation in OC mine and in 48 months (54 months in case the area fall under forest land) from the date of said letter in UG mines.
- 12. In respect of an unexplored block, the allocattee company shall apply for a prospecting license within three months of the date of issue of allotment. The exploration shall be completed

and geological report prepared within two years from the date of issue of prospecting license.

- 13. Any slippage in meeting with the above time limits, unless previously agreed to by the Screening Committee, for special reasons to recorded in writing, may lead to forfeiture of bank guarantee, or/and cancellation of allocation, previous approval under Section 5(1) of the MMDR Act, 1957 or mining lease, as the case may be.
- 14. The allocattee company shall be required to submit a bank guarantee equal to one year's royalty amount based on mine capacity as assessed by CMPDIL or NLC, as the case may be, and the weighted average royalty within 3 months of the date of letter of allotment. Subsequently, upon approval of the mining plan the Bank Guarantee amount will be modified based on the final peak/rated capacities of the mine.
- 15. 50% of the bank guarantee shall be linked to the milestones (time schedule) set for development of captive block, and the remaining 50% to the guaranteed production. The bank guarantee shall be liable to be encashed in the following eventuality:
 - (i) There shall be an annual review of progress achieved by an allocattee company. In the event of lapses, if any, in the achievements vis-à-vis the milestones set for that year, a proportionate amount shall be encashed and deducted from the bank guarantee.
 - (ii) Once production commences, in case of any lag in the production of coal/lignite, a percentage of the bank guarantee amount will be deducted for the year. This percentage will be equal to the percentage of deficit in production for the year with respect to the rated/peak capacity of the mine, e.g., if rated/peak capacity is 100, production as per the approved mining plan for the relevant year is 50 and actual production is 35, then (50-35)/100x100= 15% will lead to deduction of 15% of the original bank guarantee amount for that year. Upon exhaustion of the bank guarantee amount, the block shall be liable for de-allocation/cancellation of mining lease.
 - (iii) The allocattee shall ensure that the bank guarantee remains valid at all times till the mine reaches its rated capacity or till the bank guarantee is exhausted. Any lapses on this count shall lead to de-allocation/cancellation of mining lease.
- 16. The Company shall obtain the geological report (in respect of fully explored blocks), on payment of requisite charges, from CMPDIL, NLC or the State Government agency concerned, as the case may be, within six weeks of the date of issue of allotment letter.
- 17. In respect of a fully explored block, the company shall submit a mining plan for approval by the competent authority under the Central Government within six months from the date of issue of the letter of allocation.
- 18. In respect of an unexplored block, the mining plan shall be submitted for approval by the competent authority within two years and six months from the date of issue of the letter of allocation.
- 19. Mine opening permission shall be considered only after financial closure for the proposed end use project is achieved.

20. In case a captive block is offered/allocated for washing-cum-end-use all the beneficiated coal from the washery would exclusively be used in the proposed end use project of the allocatee company as approved by the Central Government and not for commercial use or otherwise. All middlings, tailings, or rejects from the washery, as the case may be, and all unusables containing carbon obtained during the mining of coal or in any process thereafter, if any, shall be used for captive consumption only by the allocattee in his proposed end use project or as per the scheme for disposal submitted by the applicant and agreed to by the Screening Committee. In the event that disposal is allowed by the Government, the modalities of disposal of surplus coal/middlings/rejects, if any, would be as per the prevailing policy/instructions of the Government at the relevant point in time and could also include handing over such surplus coal/ middlings/rejects to the local CIL subsidiary or to any person designated by it at a transfer price to be determined by the Government.

Source: Ministry of Coal website

Annex XVI

Details regarding Individually Allocated Captive Mining Blocks

Block Status (excluding	UMPF	and d	lealloca	ated bl	ocks)					
	Till 2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
Production started	8	9		4		1				22
Exploration on-going					18	19	2	4		43
EMP clearance pending						1				1
Forest Clearance pending		3		1	4	6				14
Land Acquisition pending	3	8	4	12	4	7				38
Mining Lease pending						5	5			10
Unworkable/Rejected				1	1	3				5
Total	11	20	4	18	27	42	7	4		133
"No-Go" Blocks	2	1	2	1	5	11	2	0		24

State wise blocks (excluding UMPP, deallocated, unworkable and rejected blocks)

States	Private		Pu	blic		Total Public
	Total	Co	ommercial	Other end	Total for all	and Private
	Total	Total	In exploration	uses	end uses	Blocks
Arunachal Pradesh		1			1	1
Andhra Pradesh				2	2	2
Chhattisgarh	8	6	4	8	14	22
Jharkhand	16	10	9	15	25	41
Maharashtra	11	2	2	7	9	20
Madhya Pradesh	6	7	3	4	11	17
Orissa	6	1		4	5	11
West Bengal	2	6	5	6	12	14
Total	49	33	23	46	79	128

Status-wise,	sector-wis	e Block	S
		Comont	

	Cement	Comm'l	CTL	Pig Iron	Power	Sponge Iron	Steel	Total
Production started	1	2		1	12	4 (1)	2 (1)	22 (2)
UMPP					10 (7)			10
Exploration ongoing		23 (3)	2		16 (3)	2		43 (6)
EMP clearance pending						1		1
Forest Clearance pending		5 (1)			6 (1)	3 (1)		14 (3)
Land Acquisition pending		3 (2)			17 (5)	13	5	38 (7)
ML pending	2				4 (3)	3	1	10 (3)
Deallocated		1					2	3
Rejected, unworkable, etc.		1 (1)		1 (1)	3 (1)			5 (3)
Total	3	35	2	2	68	26	10	146
Note: Number of blocks in pa	arenthesis	are in "no-go'	' area, as	s intimated	by Ministr	y of Coal		



20. (1) The Authority shall,-

- (a) grant authorisation under section 5 to any person for undertaking mining operations, production and supply of coal and for establishing washeries;
- (b) specify terms and conditions for authorisation;
- (c) specify standards of performance and operational norms;
- (d) specify grades or quality of coal;
- (e) determine the price of coal, including coal produced from captive mines;
- (f) monitor and enforce closure of mines and develop mechanisms for funding the cost towards closure of mines and land restoration;
- (g) call for information, record or other documents from the entities and publish statistics and other data in relation to the coal industry;
- (h) monitor utilisation of funds for implementation of coal conservation and development;
- (i) take measures including providing incentives for taking up clean coal technologies, coal bed methane, gasification etc.
- (j) determine and levy fees in such manner as may be specified;
- (k) monitor movement of coal from producers to consumers;
- (I) specify price of coal washing and washed coal and any other by-product generated during the process;
- (m) specify procedure for automaitic coal sampling and weighment;
- (n) encourage competition and promote efficiency in the coal industry so as to facilitate growth of industry.
- (2) The Authority may advise the Central Government on all or any of the following, namely:-
 - (a) formulation of policies in coal sector, including allotment or earmarking of coal blocks for any purpose, through any mode, and coal linkage;
 - (b) promotion of competition, efficiency and economy in activities of the coal industry;
 - (c) promotion of investment in coal industry;
 - (d) development of various mining technologies, beneficiation methods to improve mining and conservation of coal resources;
 - (e) any other matter referred to the Authority by the Central Government.

Provided that if the Central Government, having considered that advice of the Authority, comes to a prima facie conclusion that such advice cannot be accepted or need modifications, it shall refer the advice back to the Authority for its reconsideration, and the Authority may within fifteen days from the date of receipts of such reference, forward to the Central Government its advice after considering the reference made by that Government and after receipt of further advice if any, the Central Government shall take a final decision.

Royalty Collection in respect of minerals during 2009-10 (As on 15.2.2011) (excluding fuel and minor minerals)

Share of total		40.7%	30.2%	12.8%	3.3%	3.1%	2.9%	1.4%	%8.0	%2.0	%2.0	0.7%	0.3%	0.2%	0.2%	0.2%	0.2%
Total from mineral		1,82,071	1,35,151	57,198	14,769	13,653	12,741	6,088	3,613	3,199	3,035	2,907	1,376	1,059	1,001	954	929
	Guj	1	14,633	1	41	1,949	1	-	-	10	533	160	-	476	-		-
	Goa	28,547	-	1	0	45	1	-	-	1	-	-	-		-	-	1
	НР		4,790									9				0	
	MP	212	25,954	ı	1,703	1,746	ı	88	2,252	1	247	2,562	1	12	1	1	1
	Mah	129	4,357	1	2,151	1,595	0	1	-	1	48	1	-	1	-		1
	Ori	66,845	1,942	0	1,569	4,893	12,730	-	-	1	823	-	-	8	-	-	1
ح	АЬ	2,986	23,900	ı	9,200	1	ı	1	1	1	1	1	1	1	ı	952	ı
In Rs lakh	Ker	ı	309	ı		1	ı		1	ı	1		1	190	ı	1	1
_	Raj	52	26,174	57,197	31	1	ı	6,000	666	3,180	230	178	1,374	269	-	2	922
	N	ı	12,048	ı	-	17	ı	1	-	6	ı	1	-			1	2
	Kar	31,960	966'6	ı	73	113	1	1	1	1	46	1	2	15	ı	1	2
	Jha	15,443	1,148			1,754			368		241	-	-	89	1,00,1		2
	Chh	35,898	9,093		1	1,540	ı	1	1	1	898	1	1	0	1	1	0
	Meg	ı	713	ı	1	1	ı	1	1	1	1	1	1	ı	ı	1	1
	Ass	1	94	ı	1	1	ı	ı		1	1	ı	1	1	ı	1	1
		Iron ore	Limestone	Lead & Zinc	Manganese ore	Bauxite	Chromite	Rock phosphate	Copper	Gypsum	Dolomite	Other major minerals	Silver	China clay/ Kaolin	Uranium	Barytes	Soapstone/ Talc/Steatite

																				1
Share of total		0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	%0.0	%0:0	%0:0	%0:0	%0.0	%0.0	%0.0	%0:0	%0:0
Total from mineral		924	691	620	909	593	503	462	427	309	290	208	200	170	158	133	122	105	92	84
	Guj	279	0	112	1	ı	494	462	9	42	0	75	1	1	-	1	1	-	-	-
	Goa	ı	1	ı	1	1	1	1	1	1	1	-	1	1	1	1	1	1	1	1
	HP	7																		
	MP	ı	1	ı	1	ı	6	ı	i	105	20	25	i	156	1	ı	1	1	1	
	Mah	51	1	66.6	1	1	1	1	1	15	-	1	1	1	117	1	1			
	Ori	321	1	11	1	1	1	1	-		0	33	185	10	-	1		-		-
_	AP	ı	1	ı	1	1	1	1	1	1	-	1	1	1	1	ı	1	1	1	
In Rs lakh	Ker	36	1	0	1	ı	1	1	1	38	-	-	1	1	-	1	1	105	96	1
	Raj	209	673	383	2		1	1	416		244	0	1	2	-	0	121	1		1
	NT	15	17	32	604	1	1	1	5	1	-	51	1	1	-	131	1	1	1	84
	Kar	33.14 3.13	_	6	1	290	1	ı	1	110		-	1	1		2	-	1	1	
	Jha			40		3					27	22	16	2	41					
	Chh	7	1	17	1	1	ı		ı	1	1	1	ı	ı	1	ı	1	1	1	
	Meg	1	1	14	1	1	1	1	1	1	-	-	1	1		1	1	1	1	1
	Ass	ı	1	1	ı	1	1	1	ı	1	-	-	i	1	-	1	1	1	1	1
		Silica sand Moulding sand	Felspar	Quartz	Garnet	Gold	Clay (Others)	White clay	Ballclay	Laterite	Ochre	Fireclay	Pyroxenite	Pyrophyllite	Sand(Stowing)	Maganesite	Calcite	Ilmenite	Zircon	Marl

ire ital		%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%0
Share of total		%0.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	%0'0	0.0%	0.0%	%0'0	0.0%	0.0%	0.0%	0.0%	100 0%
Total from mineral		12	7.1	62	55	45	4	26	25	24	16	14	12	7	7	4	က	-	-	4 46 980
	Guj	1		ı	ı	ı	ı	ı	ı	16	ı	1	ı	ı	ı	ı	ı	ı	ı	10 201
	Goa	1		ı	ı	ı	ı	ı	ı	1	ı	1	ı	ı	ı	ı	ı	ı	ı	28 501
	H																			4 708
	MP	ı		ı	54	1	ı	ı	1	1	ı	Ī	1	1	ı	ı	1	ı	ı	35 145
	Mah	ı		1	1	1	1	1	1	9	9	-	I	1	-	1	1	1	-	8 486
	Ori	34		ı		1	28	1	1	1	2	1	ı		7	4	1	ı	1	89 444
£	AP	1		ı	ı	ı	ı	ı	ı	1	ı	1	ı	1	1	ı	1	ı	ı	37 038
In Rs lakh	Ker	0		38	1	45	ı	25	ı	1	ı	1	ı	1	1	ı	ı	ı	ı	188
_	Raj	1	71	1	1	ı	1	-	ı	2	1	14	ı	9	ı	1	ı	0	1	98 745
	NL	22	1	0	1	ı	1	ı	17	1	1	-	1	1	-	ı	ı	1	1	13.057
	Kar	2	1	23	1	ı	5	1	8	1	3	1	ı	1	1	1	3	0	1	43 011
	Jha	17	1				11				9			-						20 233
	Chh	0	i	ı	1	ı	ı	1	ı	i	ı	ì	12	ı	ı	1	ı	ı	1	47 440
	Meg	ı	1	1	1	ı	1	0	ı	1	1	1	1	1	1	ı	ı	1	1	7.07
	Ass	ı	ı	ī	1	ı	ī	1	ı	ı	ī	ı	1	ı	1	1	ı	ī	1	94
		Graphite	Wollastonite	Limeshell	Diamond	Rutile	Quartzite	Sillimanite	Dunite	Florite	Kyanite	Selenite	Tin ore	Mica	Gemstone	Serpentinite	Felsite	Vermiculite	Asbestos	Total of major

District wise production of top royalty minerals

LIMESTONE LIMESTONE AP ADILABAD THT LIMESTONE AP ANANTAPUR THT LIMESTONE AP CUDDAPAH THT LIMESTONE AP GUNTUR THT LIMESTONE AP KARIMNAGAR THT LIMESTONE AP KRISHNA THT	ion Production amount
LIMESTONE AP ANANTAPUR THT LIMESTONE AP CUDDAPAH THT LIMESTONE AP GUNTUR THT LIMESTONE AP KARIMNAGAR THT LIMESTONE AP KRISHNA THT	
LIMESTONE AP CUDDAPAH THT LIMESTONE AP GUNTUR THT LIMESTONE AP KARIMNAGAR THT LIMESTONE AP KRISHNA THT	3,536
LIMESTONE AP GUNTUR THT LIMESTONE AP KARIMNAGAR THT LIMESTONE AP KRISHNA THT	1,657
LIMESTONE AP KARIMNAGAR THT LIMESTONE AP KRISHNA THT	6,671
LIMESTONE AP KRISHNA THT	3,286
	1,565
	4,038
LIMESTONE AP KURNOOL THT	9,049
LIMESTONE AP NALGONDA THT	15,878
LIMESTONE AP RANGAREDDI THT	3,644
LIMESTONE ASS KARBI ANGLONG THT	193
LIMESTONE ASS NORTH CACHAR HILLS THT	210
LIMESTONE BIH ROHTAS THT	560
LIMESTONE CHH BASTAR THT	22
LIMESTONE CHH BILASPUR THT	19
LIMESTONE CHH DURG THT	964
LIMESTONE CHH JANJGIR-CHAMPA THT	2,338
LIMESTONE CHH KAWARDHA THT	-
LIMESTONE CHH RAIGARH THT	5
LIMESTONE CHH RAIPUR THT	13,140
LIMESTONE CHH RAJNANDGAON THT	-
LIMESTONE GUJ AMRELI THT	7,334
LIMESTONE GUJ JAMNAGAR THT	1,616
LIMESTONE GUJ JUNAGARH THT	8,025
LIMESTONE GUJ KUTCH THT	2,514
LIMESTONE GUJ PORBANDAR THT	2,189
LIMESTONE HP BILASPUR THT	3,850
LIMESTONE HP SIRMUR THT	924
LIMESTONE HP SOLAN THT	3,405
LIMESTONE J&K PULWAMA THT	251
LIMESTONE JHA BOKARO THT	44
LIMESTONE JHA GARWAH THT	7
LIMESTONE JHA HAZARIBAGH THT	49
LIMESTONE JHA PALAMAU THT	51
LIMESTONE JHA RANCHI THT	-
LIMESTONE JHA SINGHBHUM (WEST) THT	1,767
LIMESTONE KAR BAGALKOT THT	1,234
LIMESTONE KAR BELGAUM THT	47
LIMESTONE KAR CHITRADURGA THT	253
LIMESTONE KAR GULBARGA THT	16,051
LIMESTONE KAR SHIMOGA THT	48
LIMESTONE KAR TUMKUR THT	201
LIMESTONE KER PALAKKAD THT	532
LIMESTONE MP DAMOH THT	1,574

Mineral	State	District	Production unit	Production amount
LIMESTONE	MP	JABALPUR	THT	-
LIMESTONE	MP	KATNI	THT	3,490
LIMESTONE	MP	NIMACH	THT	5,033
LIMESTONE	MP	REWA	THT	7,003
LIMESTONE	MP	SATNA	THT	10,516
LIMESTONE	MP	SIDHI	THT	927
LIMESTONE	MAH	CHANDRAPUR	THT	7,982
LIMESTONE	MAH	YEOTMAL	THT	1,030
LIMESTONE	MEG	JAINTIA HILLS	THT	1,250
LIMESTONE	MEG	KHASI HILLS EAST	THT	2,090
LIMESTONE	ORI	BARGARH	THT	674
LIMESTONE	ORI	KORAPUT	THT	203
LIMESTONE	ORI	SUNDARGARH	THT	1,897
LIMESTONE	RAJ	AJMER	THT	1,744
LIMESTONE	RAJ	BUNDI	THT	722
LIMESTONE	RAJ	CHITTORGARH	THT	12,141
LIMESTONE	RAJ	JAIPUR	THT	2,424
LIMESTONE	RAJ	JAISALMER	THT	2,122
LIMESTONE	RAJ	KOTA	THT	1,911
LIMESTONE	RAJ	NAGAUR	THT	611
LIMESTONE	RAJ	PALI	THT	13,084
LIMESTONE	RAJ	RAJSAMAND	THT	10,004
LIMESTONE	RAJ	SIKAR	THT	10
LIMESTONE	RAJ	SIROHI	THT	11,605
LIMESTONE	TN	ARIYALUR	THT	7,824
LIMESTONE	TN	COIMBATORE	THT	1,058
LIMESTONE	TN	DHARMAPURI	THT	1,030
LIMESTONE	TN	DINDIGUL	THT	2,801
LIMESTONE	TN	KARUR	THT	35
		MADURAI	_	
LIMESTONE	TN	_	THT	2
LIMESTONE		NAMAKKAL	-	
LIMESTONE	TN	PERAMBALUR	THT	4,260
LIMESTONE	TN	SALEM	THT	59
LIMESTONE	TN	TIRUCHIRAPALLI	THT	1,068
LIMESTONE	TN	TIRUNELVELI	THT	1,574
LIMESTONE	TN	TOOTOKUDI (TUTICORIN)	THT	633
LIMESTONE	TN	VIRUDHUNAGAR	THT	339
LIMESTONE	UP	SONBHADRA	THT	2,070
CHROMITE				
CHROMITE	KAR	HASSAN	TONNE	6,457
CHROMITE	MAH	BHANDARA	TONNE	75
CHROMITE	ORI	DHENKANAL	TONNE	20,068
CHROMITE	ORI	JAJPUR	TONNE	32,92,330
CHROMITE	ORI	KEONJHAR	TONNE	93,937
BAUXITE				
BAUXITE	СНН	KANKER	TONNE	366

Mineral	State	District	Production unit	Production amount
BAUXITE	СНН	KAWARDHA	TONNE	5,11,310
BAUXITE	СНН	SURGUJA	TONNE	11,74,873
BAUXITE	GOA	SOUTH GOA	TONNE	31,050
BAUXITE	GUJ	AMRELI	TONNE	45,084
BAUXITE	GUJ	JAMNAGAR	TONNE	19,75,894
BAUXITE	GUJ	JUNAGARH	TONNE	48,733
BAUXITE	GUJ	KUTCH	TONNE	4,74,682
BAUXITE	GUJ	PORBANDAR	TONNE	79,176
BAUXITE	GUJ	SABARKANTHA	TONNE	4,250
BAUXITE	JHA	GUMLA	TONNE	9,75,610
BAUXITE	JHA	LATEHAR	TONNE	23,994
BAUXITE	JHA	LOHARDAGA	TONNE	6,70,356
BAUXITE	KAR	BELGAUM	TONNE	3,300
BAUXITE	KAR	SOUTH KANARA	TONNE	1,20,016
BAUXITE	MP	KATNI	TONNE	1,68,018
BAUXITE	MP	REWA	TONNE	45,425
BAUXITE	MP	SATNA	TONNE	76,394
BAUXITE	MP	SHAHDOL	TONNE	7,32,500
BAUXITE	MP	SIDHI	TONNE	4,079
BAUXITE	MAH	KOLHAPUR	TONNE	13,89,698
BAUXITE	MAH	RAIGAD	TONNE	1,76,885
BAUXITE	MAH	RATNAGIRI	TONNE	3,37,415
BAUXITE	ORI	KEONJHAR	TONNE	_
BAUXITE	ORI	KORAPUT	TONNE	48,78,888
BAUXITE	ORI	SUNDARGARH	TONNE	664
BAUXITE	TN	SALEM	TONNE	3,342
COPPRE, LEAD AND ZINC				
COPPER CONC	JHA	SINGHBHUM (EAST)	TONNE	13,054
COPPER CONC	MP	BALAGHAT	TONNE	64,915
COPPER CONC	RAJ	JHUNJHUNU	TONNE	46,502
COPPER ORE	JHA	SINGHBHUM (EAST)	TONNE	387314
COPPER ORE	MP	BALAGHAT	TONNE	1932965
COPPER ORE	RAJ	JHUNJHUNU	TONNE	907388
LEAD & ZINC CONC	RAJ	BHILWARA	TONNE	12,45,054
LEAD & ZINC CONC	RAJ	RAJSAMAND	TONNE	95,073
LEAD & ZINC CONC	RAJ	UDAIPUR	TONNE	73,048
LEAD & ZINC ORE	RAJ	BHILWARA	TONNE	5135725
LEAD & ZINC ORE	RAJ	RAJSAMAND	TONNE	945997
LEAD & ZINC ORE	RAJ	UDAIPUR	TONNE	1020250
IRON ORE				
IRON CONC FINE AND LUMPS	GOA	NORTH GOA	THT	19,179
IRON CONC FINE AND LUMPS	GOA	SOUTH GOA	THT	20,141
IRON CONC FINE AND LUMPS	AP	ANANTAPUR	THT	5,102
IRON CONC FINE AND LUMPS	AP	CUDDAPAH	THT	753
IRON CONC FINE AND LUMPS	AP	KRISHNA	THT	3
IRON CONC FINE AND LUMPS	AP	KURNOOL	THT	347

Mineral	State	District	Production unit	Production amount
IRON CONC FINE AND LUMPS	AP	PRAKASAM (ONGOLE HQ)	THT	-
IRON CONC FINE AND LUMPS	CHH	DANTEWARA	THT	17,766
IRON CONC FINE AND LUMPS	CHH	DURG	THT	8,192
IRON CONC FINE AND LUMPS	CHH	KANKER	THT	518
IRON CONC FINE AND LUMPS	CHH	RAJNANDGAON	THT	-
IRON CONC FINE AND LUMPS	JHA	SINGHBHUM (WEST)	THT	23,008
IRON CONC FINE AND LUMPS	KAR	BAGALKOT	THT	385
IRON CONC FINE AND LUMPS	KAR	BELLARY	THT	34,142
IRON CONC FINE AND LUMPS	KAR	CHITRADURGA	THT	6,577
IRON CONC FINE AND LUMPS	KAR	TUMKUR	THT	1,913
IRON CONC FINE AND LUMPS	MP	GWALIOR	THT	-
IRON CONC FINE AND LUMPS	MP	JABALPUR	THT	1,055
IRON CONC FINE AND LUMPS	MP	SAGAR	THT	23
IRON CONC FINE AND LUMPS	MAH	CHANDRAPUR	THT	90
IRON CONC FINE AND LUMPS	MAH	GADCHIROLI	THT	12
IRON CONC FINE AND LUMPS	MAH	GONDIA	THT	7
IRON CONC FINE AND LUMPS	MAH	SINDHUDURG	THT	142
IRON CONC FINE AND LUMPS	ORI	KEONJHAR	THT	57,255
IRON CONC FINE AND LUMPS	ORI	MAYURBHANJ	THT	385
IRON CONC FINE AND LUMPS	ORI	SUNDARGARH	THT	21,634
IRON CONC FINE AND LUMPS	RAJ	ALWAR	THT	-
IRON CONC FINE AND LUMPS	RAJ	JAIPUR	THT	12



District wise Production of Other Minerals

Mineral_Type	STATE	District	Unit	Total
Agate	GUJARAT	Bharuch	Tonne	11
Apatite	ANDHRA PRADESH	Visakhapatnam	Tonne	3288
	WEST BENGAL	Purulia	Tonne	2110
Asbestos	ANDHRA PRADESH	Cuddapah	Tonne	233
Ball Clay	ANDHRA PRADESH	Godavari West	Tonne	205634
	GUJARAT	Bharuch	Tonne	45486
		Kutch	Tonne	30
		Patan	Tonne	9650
	RAJASTHAN	Bikaner	Tonne	614740
	TAMIL NADU	Cuddalore	Tonne	22585
Barytes	ANDHRA PRADESH	Cuddapah	Tonne	2123723
,		Khammam	Tonne	8082
		Prakasam (Ongole H.Q.)	Tonne	360
	HIMACHAL PRADESH	Sirmur	Tonne	306
	RAJASTHAN	Udaipur	Tonne	5985
Calcite	RAJASTHAN	Sikar	Tonne	0
0 0.101.10		Sirohi	Tonne	17502
		Udaipur	Tonne	32040
Chalk	GUJARAT	Jamnagar	Tonne	10185
OTTOIR	003/110/11	Junagarh	Tonne	4704
		Porbandar	Tonne	143492
		Rajkot	Tonne	25312
Clay (Others)	ANDHRA PRADESH	Adilabad	Tonne	5109
Cidy (Officia)	ANDIRATRADESIT	Anantapur	Tonne	6640
		Godavari East	Tonne	30875
		Godavari West	Tonne	36900
		Krishna	Tonne	13900
		Kurnool	Tonne	48490
		Nalgonda	Tonne	10470
		Rangareddi	Tonne	54812
	GUJARAT	Jamnagar	Tonne	28240
	GUJARAT	Kutch	Tonne	367641
	AAADUVA DDADESU			
	MADHYA PRADESH	Jabalpur	Tonne	120 234907
	DATACTITANI	Katni	Tonne	
Carrinadium	RAJASTHAN	Bikaner	Tonne	178289
Corundum	MAHARASHTRA	Bhandara	Kg	6.6
Crude Mica	ANDHRA PRADESH	Khammam	Kg	0
	III A BIZILAN IB	Nellore	Kg	1210.569
	JHARKHAND	Giridih	Kg	0
		Kodarma	Kg	0
	RAJASTHAN	Ajmer	Kg	0
		Bhilwara	Kg	1.95
		Rajsamand	Kg	0
Diamond	MADHYA PRADESH	Panna	Carats	
Diaspore	MADHYA PRADESH	Chhatarpur	Tonne	9133
		Shivpuri	Tonne	2117
		Tikamgarh	Tonne	617
	UTTAR PRADESH	Jhansi	Tonne	277
		Lalitpur	Tonne	12554
		Mahoba	Tonne	1771

Mineral_Type	STATE	District	Unit	Total
Dolomite	ANDHRA PRADESH	Anantapur	Tonne	57635
		Cuddapah	Tonne	1900
		Khammam	Tonne	600642
		Kurnool	Tonne	878585
	CHHATTISGARH	Bilaspur	Tonne	1062211
		Durg	Tonne	18299
		Janjgir-Champa	Tonne	126440
		Raipur	Tonne	0
	GUJARAT	Vadodara	Tonne	250847
	JHARKHAND	Garwah	Tonne	422016
		Singhbhum (West)	Tonne	0
	KARNATAKA	Bagalkot	Tonne	317849
		Belgaum	Tonne	49182
		Tumkur	Tonne	3170
	MADHYA PRADESH	Balaghat	Tonne	8504
		Chhindwara	Tonne	191
		Jabalpur	Tonne	24065
		Jhabua	Tonne	16728
		Katni	Tonne	9980
		Khargaon (W Nimar)	Tonne	13550
		Mandla	Tonne	107895
		Seoni	Tonne	17131
	MAHARASHTRA	Chandrapur	Tonne	123
	TVI II I	Nagpur	Tonne	11620
		Yeotmal	Tonne	68597
	ORISSA	Sundargarh	Tonne	943015
	RAJASTHAN	Alwar	Tonne	0
	10 (3) (6) 11 / (1)	Banswara	Tonne	0
		Bhilwara	Tonne	0
		Dausa	Tonne	0
		Jaipur	Tonne	0
		Jhunjhunu	Tonne	0
		Rajsamand	Tonne	108541
		Sikar	Tonne	232
		Sirohi	Tonne	0
		Udaipur	Tonne	61389
	UTTARANCHAL	Bageshwar	Tonne	01307
	OTIVITY (INCITIVE	Pithoragarh	Tonne	1947
Dunite	KARNATAKA	Chikmagalur	Tonne	1996
Dornie	KAKNATAKA	Mysore	Tonne	35350
	TAMIL NADU	Salem	Tonne	19836
Felsite	KARNATAKA	Mandya	Tonne	492
reisile	KAKNATAKA	Mysore	Tonne	828
Felspar	ANDHRA PRADESH	Khammam	Tonne	020
reispai	ANDREA FRADESH	Krishna	Tonne	0
		Mahbubnagar	Tonne	174650
		Nalgonda	Tonne	30017
	IIIADKIIAND	Nellore	Tonne	38816
	JHARKHAND	Deogarh	Tonne	1958
		Dumka	Tonne	1513
		Hazaribagh	Tonne	602
		Jamtara	Tonne	984
		Latehar	Tonne	6265

Mineral_Type	STATE	District	Unit	Total
<u> </u>	KARNATAKA	Bangalore	Tonne	3100
	MADHYA PRADESH	Chhatarpur	Tonne	0
	MAHARASHTRA	Sindhudurg	Tonne	0
	RAJASTHAN	Ajmer	Tonne	49064
		Alwar	Tonne	261
		Bhilwara	Tonne	53791
		Rajsamand	Tonne	13327
		Sikar	Tonne	100692
		Tonk	Tonne	5985
	TAMIL NADU	Coimbatore	Tonne	400
		Dindigul	Tonne	33
		Madurai	Tonne	18
		Namakkal	Tonne	0
	WEST BENGAL	Birbhum	Tonne	4044
Fireclay	ANDHRA PRADESH	Godavari East	Tonne	15076
	7	Godavari West	Tonne	4204
	GUJARAT	Kutch	Tonne	4510
	0037 (107 (1	Surendranagar	Tonne	31141
	JHARKHAND	Dhanbad	Tonne	1607
	3117 (((((1) ((1)))	Hazaribagh	Tonne	1487
		Latehar	Tonne	8783
	KARNATAKA	Hassan	Tonne	5523
	KAKIYAIAKA	Kolar	Tonne	0
		Shimoga	Tonne	0
		Tumkur	Tonne	0
	MADHYA PRADESH	Katni	Tonne	18678
	MADHTA FRADESH	Satna	Tonne	1258
		Sidhi	Tonne	0
		Umaria	Tonne	14150
	A A A L I A D A CLITD A	Amravati	Tonne	6744
	MAHARASHTRA		Tonne	0/44
	ORISSA	Sindhudurg	Tonne	1800
	ORISSA	Bargarh		
		Cuttack	Tonne	46800
	DA IACTIIANI	Jharsuguda	Tonne	859
	RAJASTHAN	Bikaner	Tonne	186114
	TAMIL NADU	Cuddalore	Tonne	0
		Perambalur	Tonne	23260
	WEST BENGAL	Bankura	Tonne	5107
		Birbhum	Tonne	33300
		Purulia	Tonne	0
Fluorite (Graded)	MAHARASHTRA	Chandrapur	Tonne	4932
	RAJASTHAN	Jalore	Tonne	64
Fluorite Conc.(A)	GUJARAT	Vadodara	Tonne	1879
Fluorite Conc.(M)	GUJARAT	Vadodara	Tonne	6907
Garnet	andhra pradesh	Nellore	Tonne	7
		Srikakulam	Tonne	107595
	ORISSA	Ganjam	Tonne	11081
	TAMIL NADU	Kanyakumari	Tonne	67820
		Tiruchirapalli	Tonne	98168
		Tirunelveli	Tonne	1191318
		Tootokudi (Tuticorin)	Tonne	89590
Gold Ore	JHARKHAND	Singhbhum (East)	Tonne	5066
	KARNATAKA	Raichur	Tonne	512533
	L.			

Mineral_Type	STATE	District	Unit	Total
Gold Primary	JHARKHAND	Singhbhum (East)	Kg	0.014
	KARNATAKA	Raichur	Kg	2.092
Graphite	JHARKHAND	Latehar	Tonne	5213
		Palamau	Tonne	23142
	ORISSA	Bargarh	Tonne	3576
		Bolangir	Tonne	10632
		Kandhamal	Tonne	0
		Nawapara	Tonne	9633
		Raygada	Tonne	4691
	TAMIL NADU	Madurai	Tonne	955
		Sivaganga	Tonne	50764
Gypsum	GUJARAT	Kutch	Tonne	1611
	JAMMU & KASHMIR	Doda	Tonne	598
	RAJASTHAN	Bikaner	Tonne	2194689
		Ganganagar	Tonne	90855
		Hanumangarh	Tonne	162097
		Jaisalmer	Tonne	686894
		Jalore	Tonne	66511
		Nagaur	Tonne	218549
Iolite	ORISSA	Kalahandi	Kg	0
Kyanite	JHARKHAND	Singhbhum (East)	Tonne	4419
,	MAHARASHTRA	Bhandara	Tonne	1134
Laterite	ANDHRA PRADESH	Godavari East	Tonne	471697
		Rangareddi	Tonne	144256
	GOA	South Goa	Tonne	0
	GUJARAT	Kutch	Tonne	184740
		Porbandar	Tonne	100
	JHARKHAND	Gumla	Tonne	1036
		Lohardaga	Tonne	3280
	KARNATAKA	Belgaum	Tonne	159078
	KERALA	Alapuzha (Alleppy)	Tonne	15650
		Kannur	Tonne	9142
		Kasargod	Tonne	43364
		Thiruvananthapuram	Tonne	932
	MADHYA PRADESH	Jabalpur	Tonne	213
		Katni	Tonne	0
		Satna	Tonne	79021
	MAHARASHTRA	Chandrapur	Tonne	108901
		Kolhapur	Tonne	0
	TAMIL NADU	Niligiris	Tonne	0
Lime Kankar	ANDHRA PRADESH	Vizianagaram	Tonne	780
	TAMIL NADU	Virudhunagar	Tonne	334285
Limeshell	KARNATAKA	North Kanara	Tonne	37715
		Udupi	Tonne	1676
	KERALA	Kottayam	Tonne	22335
Magnesite	KARNATAKA	Mysore	Tonne	6250
5	TAMIL NADU	Salem	Tonne	221601
	UTTARANCHAL	Bageshwar	Tonne	46564
		Pithoragarh	Tonne	11968
Manganese Ore	ANDHRA PRADESH	Adilabad	Tonne	11874
		Vizianagaram	Tonne	238542
	GOA	North Goa	Tonne	0
		South Goa	Tonne	570
		, 000 000	1 1011110	

Mineral_Type	STATE	District	Unit	Total
	GUJARAT	Panchmahals	Tonne	54733
	JHARKHAND	Singhbhum (West)	Tonne	5558
	KARNATAKA	Bellary	Tonne	250210
		Chitradurga	Tonne	4189
		Dawangere	Tonne	50929
		Shimoga	Tonne	221
		Tumkur	Tonne	7100
	MADHYA PRADESH	Balaghat	Tonne	530574
		Chhindwara	Tonne	1558
		Jabalpur	Tonne	0
		Jhabua	Tonne	78996
	MAHARASHTRA	Bhandara	Tonne	413185
		Nagpur	Tonne	179232
	ORISSA	Keonjhar	Tonne	323342
		Sundargarh	Tonne	280643
	RAJASTHAN	Banswara	Tonne	8443
Marl	GUJARAT	Amreli	Tonne	2261043
		Junagarh	Tonne	975592
		Porbandar	Tonne	463781
	TAMIL NADU	Ariyalur	Tonne	77396
		Tiruchirapalli	Tonne	849400
Moulding Sand	KARNATAKA	Haveri	Tonne	0
Natural Kaolin	ANDHRA PRADESH	Adilabad	Tonne	4840
		Cuddapah	Tonne	2600
		Godavari East	Tonne	4421
		Godavari West	Tonne	0
		Visakhapatnam	Tonne	30188
	GUJARAT	Amreli	Tonne	0
		Jamnagar	Tonne	0
		Kutch	Tonne	1054251
		Patan	Tonne	187044
		Sabarkantha	Tonne	4350
	JHARKHAND	Lohardaga	Tonne	0
		Sahebganj	Tonne	16433
		Singhbhum (West)	Tonne	47971
	KARNATAKA	Kolar	Tonne	2400
	KERALA	Kollam	Tonne	71785
		Thiruvananthapuram	Tonne	632218
	MADHYA PRADESH	Katni	Tonne	15700
		Satna	Tonne	1325
	ORISSA	Bargarh	Tonne	700
		Koraput	Tonne	0
		Mayurbhanj	Tonne	70
	RAJASTHAN	Bhilwara	Tonne	63132
		Chittorgarh	Tonne	211330
		Dausa	Tonne	0
		Jaipur	Tonne	48450
		Pali	Tonne	3000
		Sikar	Tonne	0
		Udaipur	Tonne	0
	WEST BENGAL	Birbhum	Tonne	94144
Ochre	ANDHRA PRADESH	Godavari West	Tonne	22400
OCHE	VIADLIKY I KYDEJU	Guntur	Tonne	0
		Guilla	Torine	1

Mineral_Type	STATE	District	Unit	Total
		Kurnool	Tonne	10123
	CHHATTISGARH	Rajnandgaon	Tonne	0
	GUJARAT	Patan	Tonne	650
	JHARKHAND	Singhbhum (West)	Tonne	0
	KARNATAKA	Bellary	Tonne	2700
	MADHYA PRADESH	Jabalpur	Tonne	0
		Rewa	Tonne	1400
		Satna	Tonne	30060
		Umaria	Tonne	2082
	RAJASTHAN	Bhilwara	Tonne	0
		Bikaner	Tonne	23034
		Chittorgarh	Tonne	906917
		Udaipur	Tonne	23817
Phosphorite	MADHYA PRADESH	Chhatarpur	Tonne	18669
		Jhabua	Tonne	97362
		Sagar	Tonne	64838
	RAJASTHAN	Udaipur	Tonne	1365873
Processed Kaolin	GUJARAT	Mehesana	Tonne	9280
Trocossou Ruomi		Sabarkantha	Tonne	18259
	JHARKHAND	Sahebganj	Tonne	15102
	3177 (((((1) (1) (1)	Singhbhum (West)	Tonne	13554
	KARNATAKA	Hassan	Tonne	3593
	IC/ (ICI V/ CI/ CIC/ C	Shimoga	Tonne	0.00
	KERALA	Kannur	Tonne	7609
	KEKALA	Kasargod	Tonne	1200
		Kollam	Tonne	6604
	ORISSA	Mayurbhanj	Tonne	1388
	WEST BENGAL	Birbhum	Tonne	5296
Pyrophyllite	ANDHRA PRADESH	Cuddapah	Tonne	34
Гугорпуште	JHARKHAND	Saraikela-Kharaswan	Tonne	1007
	MADHYA PRADESH	Chhatarpur	Tonne	154520
	MADITIATRADESIT	Shivpuri	Tonne	27789
		Tikamgarh	Tonne	28707
	MAHARASHTRA	Bhandara	Tonne	1484
	ORISSA	Keonjhar	Tonne	11926
	RAJASTHAN	Bhilwara	Tonne	0
	UTTAR PRADESH	Jhansi		1392
	UTTAK FRADESH		Tonne	+
		Lalitpur Mahoba	Tonne	10221
Dyrayanita	ILLADVILANID		Tonne	5317
Pyroxenite	JHARKHAND	Singhbhum (East)	Tonne	49308
	O DICC A	Singhbhum (West)	Tonne	0
<u> </u>	ORISSA	Jajpur	Tonne	229694
Quartz	ANDHRA PRADESH	Anantapur	Tonne	17
		Godavari West	Tonne	0
		Khammam	Tonne	456
		Krishna	Tonne	445
		Kurnool	Tonne	1495
		Mahbubnagar	Tonne	96023
		Medak	Tonne	40215
		Nalgonda	Tonne	2600
		Nellore	Tonne	7456
		Rangareddi	Tonne	8
		Visakhapatnam	Tonne	9159

Mineral_Type	STATE	District	Unit	Total
		Vizianagaram	Tonne	10305
	CHHATTISGARH	Jashpur	Tonne	384
		Raigarh	Tonne	0
	GUJARAT	Panchmahals	Tonne	85611
	JHARKHAND	Deogarh	Tonne	1604
		Dumka	Tonne	7418
		Hazaribagh	Tonne	1174
		Jamtara	Tonne	3046
		Latehar	Tonne	18119
		Ranchi	Tonne	30
		Saraikela-Kharaswan	Tonne	20136
		Singhbhum (East)	Tonne	14530
		Singhbhum (West)	Tonne	0
	KARNATAKA	Bagalkot	Tonne	0
		Bangalore	Tonne	275
		Bellary	Tonne	0
		Tumkur	Tonne	0
	MADHYA PRADESH	Chhatarpur	Tonne	0
	MAHARASHTRA	Bhandara	Tonne	10061
		Chandrapur	Tonne	98
	ORISSA	Sundargarh	Tonne	5570
	RAJASTHAN	Ajmer	Tonne	20426
		Alwar	Tonne	219
		Bhilwara	Tonne	8853
		Chittorgarh	Tonne	359
		Jaipur	Tonne	7853
		Rajsamand	Tonne	9962
		Sikar	Tonne	4675
		Sirohi	Tonne	4090
		Tonk	Tonne	90194
		Udaipur	Tonne	1015
	TAMIL NADU	Coimbatore	Tonne	1092
	.,	Dharmapuri	Tonne	230
		Dindigul	Tonne	634
		Karur	Tonne	1055
		Madurai	Tonne	469
		Namakkal	Tonne	3474
	WEST BENGAL	Bankura	Tonne	13305
	77201 32110712	Birbhum	Tonne	1158
		Purulia	Tonne	1442
Quartzite	ANDHRA PRADESH	Cuddapah	Tonne	122
QUALIZITO	BIHAR	Monghyr	Tonne	53782
	CHHATTISGARH	Rajnandgaon	Tonne	0
	JHARKHAND	Singhbhum (East)	Tonne	9117
	KARNATAKA	Belgaum	Tonne	7537
	MAHARASHTRA	Bhandara	Tonne	2481
	ORISSA	Jharsuguda	Tonne	23692
	OKIOO/ (Keonjhar	Tonne	1862
		Mayurbhanj	Tonne	3290
		Sonepur	Tonne	769
	DAIACTUANI			
Dook Salt	RAJASTHAN	Sawai Madhopur	Tonne	5427
Rock Salt	HIMACHAL PRADESH	Mandi	Tonne	1837
Sand (Others)	ANDHRA PRADESH	Adilabad	Tonne	616904

Mineral_Type	STATE	District	Unit	Total
		Karimnagar	Tonne	1135694
		Vizianagaram	Tonne	10899
		Warangal	Tonne	0
	MAHARASHTRA	Chandrapur	Tonne	395910
Selenite	RAJASTANA	Barmer	Tonne	1063
		Bikaner	(Blank)	
Shale	ANDHRA PRADESH	Anantapur	Tonne	430
		Kurnool	Tonne	21136
		Nalgonda	Tonne	58636
		Rangareddi	Tonne	62495
	HIMACHAL PRADESH	Bilaspur	Tonne	285800
		Solan	Tonne	386700
	KARNATAKA	Gulbarga	Tonne	936182
		Kolar	Tonne	0
	MADHYA PRADESH	Rewa	Tonne	637088
	MAHARASHTRA	Chandrapur	Tonne	0
		Yeotmal	Tonne	404430
Silica Sand	ANDHRA PRADESH	Kurnool	Tonne	3018
00 0 10	7.12	Nellore	Tonne	892515
	GUJARAT	Bharuch	Tonne	319668
		Kutch	Tonne	50656
		Sabarkantha	Tonne	6190
		Surat	Tonne	30
		Surendranagar	Tonne	6887
	JHARKHAND	Sahebganj	Tonne	100434
	KARNATAKA	Belgaum	Tonne	2525
	10 44 7 47 40 4	Dawangere	Tonne	232
		Gulbarga	Tonne	13250
		Haveri	Tonne	16967
		Kolar	Tonne	0
		North Kanara	Tonne	13920
		Udupi	Tonne	47508
	KERALA	Alapuzha (Alleppy)	Tonne	32247
	MAHARASHTRA	Ratnagiri	Tonne	10844
	W C C C C C C C C C C C C C C C C C C C	Sindhudurg	Tonne	274916
	ORISSA	Sundargarh	Tonne	2800
	RAJASTHAN	Alwar	Tonne	5896
	10 (5) (611) (1)	Bharatpur	Tonne	89248
		Bhilwara	Tonne	0,240
		Bikaner	Tonne	4030
		Bundi	Tonne	79979
		Chittorgarh	Tonne	111600
		Dausa	Tonne	14690
		Sikar	Tonne	23130
	TAMIL NADU	Kanchipuram	Tonne	2975
	17 (IVIIL IV) (DO	Villupuram	Tonne	3188
	UTTAR PRADESH	Allahabad	Tonne	144487
	OTIVIK LIVADESH	Chitrakut	Tonne	8882
Sillimanite	KERALA	Kollam	Tonne	7933
Juli Figitile	MAHARASHTRA	Bhandara	Tonne	8640
	ORISSA	Ganjam	Tonne	14117
	TAMIL NADU			14117
	IAMIL NADU	Kanyakumari Raichur	Tonne	0.218

Mineral_Type	STATE	District	Unit	Total
Slate	MADHYA PRADESH	Mandsaur	Tonne	0
Steatite	ANDHRA PRADESH	Anantapur	Tonne	6158
		Kurnool	Tonne	66629
	BIHAR	Monghyr	Tonne	2052
	CHHATTISGARH	Kanker	Tonne	80
	GUJARAT	Sabarkantha	Tonne	2291
	KARNATAKA	Bellary	Tonne	0
	ORISSA	Mayurbhanj	Tonne	0
	RAJASTHAN	Alwar	Tonne	0
		Banswara	Tonne	4957
		Bhilwara	Tonne	188932
		Dausa	Tonne	752
		Dungarpur	Tonne	49532
		Jaipur	Tonne	6311
		Jhunjhunu	Tonne	0
		Karauli	Tonne	3445
		Rajsamand	Tonne	15419
		Udaipur	Tonne	353042
	TAMIL NADU	Coimbatore	Tonne	630
	UTTARANCHAL	Bageshwar	Tonne	128060
		Pithoragarh	Tonne	6830
Tin	CHHATTISGARH	Dantewara	Tonne	0
Tin Concentrate	CHHATTISGARH	Dantewara	Kg	59.015
Tourmaline	MAHARASHTRA	Bhandara	Tonne	0
Vermiculite	ANDHRA PRADESH	Nellore	Tonne	9617
		Visakhapatnam	Tonne	1628
	TAMIL NADU	Vellore	Tonne	1602
Waste/Scrap Mica	ANDHRA PRADESH	Khammam	Kg	0
		Nellore	Kg	4297.78
	RAJASTHAN	Bhilwara	Kg	3290.533
		Rajsamand	Kg	410.671
Wollastonite	RAJASTHAN	Sirohi	Tonne	34102
		Udaipur	Tonne	98283

Annex XXI

Details of Penalties levied on account of Unfinished Work Program as on 31.03.2011

SI. No.	Operator	Block	Amount (US\$)
1	ONGC	GS-DWN-2000/1	3,929,906
2	ONGC	GS-DWN-2000/2	7,364,082
3	ONGC	KK-DWN-2000/4	2,533,920
4	ONGC	MB-DWN-2000/1	11,633,852
5	ONGC	MB-DWN-2000/2	5,680,314
6	ONGC	MB-OSN-97/4	2,734,769
7	ONGC	CY-OSN-2000/1	3,266,677
8	ONGC	CY-OSN-2000/2	4,334,052
		Sub- Total (A)	41,477,572
1	RIL	KG-OSN-97/3	7,275,700
2	RIL	KG-OSN-97/4	2,645,475
3	RIL	GK-OSN-97/1	2,903,466
4	RIL	MB-OSN-97/3	6,984,902
		Sub-Total(B)	19,809,543
1	Geopetrol,NTPC,Canaro, Brownstone	AA-ONN-2003/2	4,735,783
2	Essar Oil Ltd.	CB-ON/3	7,805
		Total	66,030,703

Petroleum Block wise details

S No	Block	Block type	Bids	Round	Relinquished	Committed Investment (USD MM)	Exp Cost (USD MM)	Development cost (USD MM)	Consortium	Classification
1	CY-OSN-97/1	Shallow water	1	1	Relinquished	10.2	9.3	0.0	Mosbacher-20%, HOEC-80%	Public
2	KG-OSN-97/4	Shallow water	2	1	Relinquished	33.6	23.3	0.0	RIL-100%	Private
3	KG-OSN-97/3	Shallow water	4	1	Relinquished	73.9	32.6	0.0	RIL-100%	Private
4	KG-OSN-97/2	Shallow water	2	1	Relinquished	33.8	47.1	0.0	RIL-100%	Private
5	KG-DWN-98/1	Deep water	1	1		40.4	148.1	0.0	RIL-100%	Private
9	KG-DWN-98/3	Deep water	3	1		145.8	6'926	7310.7	RIL-90%,Niko- 10%	Private
7	KK-OSN-97/2	Shallow water	1	1	Relinquished	18.6	48.1	0.0	RIL-100%	Private
8	MB-OSN-97/2	Shallow water	1	1	Relinquished	34.1	22.5	0.0	RIL-100%	Private
6	MB-OSN-97/3	Shallow water	2	1	Relinquished	63.0	6'28	0.0	RIL-100%	Private
10	SR-OSN-97/1	Shallow water	1	1	Relinquished	29.4	1.8	0.0	RIL-100%	Private
11	GK-OSN-97/1	Shallow water	2	1	Relinquished	42.8	9.08	0.0	RIL-100%	Private
12	NEC-OSN- 97/2	Shallow water	2	1		42.4	482.2	8.1	RIL-90% NICO 10%	Private
13	NEC-OSN- 97/1	Shallow water	1	1	Relinquished	35.5	27.5	0.0	GAZPROM 100%	Private
4	MN-DWN-98/2	Deep water	7	_		130.2	86.4	0.0	RIL 100%	Private
15	GV-ONN-97/1	On land	2	1	Relinquished	9.2	15.7	0.0	ONGC-40%, IOC- 30%,CEIL(15) &CEEPC(15)	Public
16	MB-OSN-97/4	Shallow water	1	1	Relinquished	33.4	11.9	0.0	ONGC- 70 %, 10C- 30%	Public
17	MN-OSN-97/3	Shallow water	1	1	Relinquished	18.6	41.3	0.0	ONGC-85% , GAIL 15%	Public
18	KK-OSN-97/3	Shallow water	1	1	Relinquished	19.5	6:0	0.0	ONGC-100%	Public
19	KG-OSN-97/1	Shallow water	1	_	Relinquished	6.7	21.7	0.0	ONGC -100%	Public

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Classification	Public	Public	Public	Public	Public	Private	Private	Private	Private	Private	Public	Public	Public	Public	Public	Public	Public	Public	Public	Public	Public	Public
Consortium	ONGC - 55 % BG 30% OIL 15%	ONGC - 85 % OIL 15%	ONGC -65% CEIL 10% PIBBV 15% HOEIBV 10%	% OIF- 100	%04 ∨18-BV 40%	NIKO 100%	RIL 100%	RIL 100%	RIL90 %,Hardy 10%	RIL 90%,HEPI 10%	ONGC 100%	ONGC 100%	ONGC 100%	ONGC85%, GAIL 15%	ONGC85%, IOC 15%	ONGC50%, GAIL15% IOC 15%, OIL 10%, GSPC 10%.	ONGC 75%, IOC 15%, GSPC 10%	%001 29NO	ONGC 40%, GAIL 20%, IOC 20%, OIL 20%	ONGC 85%, IOC 15%	ONGC 85%, GAIL 15%	%001 29NO
Development cost (USD MM)	0.0	0.0	0.0	0.0	0.0	17.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exp Cost (USD MM)	154.1	7.1.7	464.9	0.4	153.8	36.3	5.1	3.9	6.4	231.8	6.5	26.9	28.1	16.7	5.4	4.5	67.3	5.3	77.8	103.8	1.7	2.8
Committed Investment (USD MM)	45.2	44.3	94.0	31.3	47.0	23.5	5.9	5.8	6.5	61.2	19.2	38.4	103.5	115.6	97.5	46.6	70.1	6.3	12.0	59.3	23.3	31.7
Relinquished				Relinquished		Relinquished	Relinquished	Relinquished			Relinquished	Relinquished	Relinquished	Relinquished	Relinquished	Relinquished	Relinquished	Relinquished		Relinquished	Relinquished	Relinquished
Round	1	1	-	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Bids	1	1	4	3	1	4	1	1	7	1	1	2	2	2	2	2	4	1	1	3	2	7
Block type	Deep water	Deep water	Deep water	Shallow water	Deep water	On land	Deep water	Deep water	On land	Shallow water	Shallow water	Shallow water	Deep water	Deep water	Deep water	Deep water	Shallow water	Shallow water	Shallow water	Shallow water	Deep water	Deep water
Block	KG-DWN-98/4	KG-DWN-98/5	KG-DWN-98/2	CY-OSN-97/2	MN-DWN-98/3	CB-ONN- 2000/2	KK-DWN- 2000/1	KK-DWN- 2000/3	AS-ONN- 2000/1	GS-OSN- 2000/1	CY-OSN- 2000/1	CY-OSN- 2000/2	GS-DWN- 2000/1	GS-DWN- 2000/2	MB-DWN- 2000/1	MB-DWN- 2000/2	MB-OSN- 2000/1	MN-OSN- 2000/1	MN-OSN- 2000/2	WB-OSN- 2000/1	KK-DWN- 2000/2	KK-DWN- 2000/4
oN o	20	21	22	23	24	-	2	3	4	5	9	7	8	6	10	11	12	13	14	15	16	17

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Block	Block type	Bids	Round	Relinquished	Committed Investment (USD MM)	Exp Cost (USD MM)	Development cost (USD MM)	Consortium	Classification
	On land	-	3		6.9	10.5	0.0	ONGC 80%, IOC 20%	Public
	On land	2	3		21.9	7.5	0.0	ONGC 85%& OIL 15%	Public
1 .	On land	-	3		7.3	0.2	0.0	ONGC 100%	Public
1 .	On land	-	3		10.2	9.6	0.0	ONGC 100%	Public
1 .	On land	1	3	Relinquished	17.1	18.0	0.0	ONGC 30% & OIL 40% SUNTERA 30%	Public
1 .	On land	3	3		14.2	19.1	0.0	ONGC70%, CEIL15%& CED15%	Public
PG-ONN- 2001/1	On land	7	3	Relinquished	3.2	3.2	0.0	ONGC 100%	Public
CB-ONN- 2002/2	On land	3	4	Relinquished	9.5	11.6	0.0	JOGPL(30), GSPC(60) &GGR(10)	Public
1 .	On land	2	4		10.9	51.6	0.0	JOGPL-30, GAIL-50, GSPC-20	Public
NEC-DWN- 2002/1	- Deep water	2	4		35.2	31.2	0.0	RIL-90, HARDY-10	Private
	On land	3	4		16.1	57.4	0.0	GSPC-55, JEL-20, PPCL-15, GGR-10	Public
GV-ONN- 2002/1	On land	1	4	Relinquished	13.5	26.6	0.0	CEIL-50, CESL-50	Private
	On land	3	4		14.0	47.5	0.0	JOGPL-20, GAIL-80	Public
	Deep water	-	4	Relinquished	70.5	12.7	0.0	ONGC-100	Public
	Deep water	2	4		45.3	26.4	0.0	ONGC-80,HPCL-20	Public
	Deep water	1	4		46.2	111.8	0.0	ONGC-80 ,HPCL-20	Public
	Deep water	2	7		176.9	87.8	0.0	ONGC-70% OIL-20,BPCL-10	Public
MN-DWN- 2002/1	Deep water	2	4		137.4	86.7	0.0	ONGC-36%, ENI 34% OIL-20, BPCL-10	Public
MN-DWN- 2002/2	Deep water	2	4		132.0	77.2	0.0	ONGC-100	Public
NEC-DWN- 2002/2	- Deep water	5	4		166.4	150.7	0.0	ONGC-100	Public
AN-DWN- 2002/1	Deep water	2	4		119.7	68.3	0.0	ONGC-100	Public
AN-DWN- 2002/2	Deep water	2	4		108.9	50.4	0.0	ONGC-100	Public

Block type Bids	Committed Relinquished Investment (USD MM)		Exp Cost (USD MM)	Development cost (USD MM)	Consortium	Classification
On land 2 4	7.8		6.0	0.0	OIL-20 ONGC-70 SUNTERA10	Public
On land 2 4	3.5	5	0.1	0.0	ONGC-90, OIL-10	Public
On land 1 4	5.2	2	2.0	0.0	OIL-60 , ONGC-40	Public
On land 1 4	4.8		6.1	0.0	ONGC-60, BPRL-40	Public
On land 2 4	11.4		12.6	0.0	ONGC-70, CEBGI-30	Public
Deep water 2 5	29.3		37.3	0.0	ONGC 100%	Public
Shallow 6 5 awater	58.2		44.1	0.0	ONGC 100%	Public
Shallow 1 5 Relinquished water	shed 31.0		8.0	0.0	ONGC 51% & CE7L 49%	Public
On land 2 5	6.03		1.7	0.0	OIL 85% & HPCL 15%	Public
Deep water 1 5 Relinquished	shed 29.1		3.0	0.0	RIL 100%	Private
Deep water 1 5 Relinquished	shed 29.1		2.8	0.0	RIL 100%	Private
Deep water 9 5	87.6		180.0	0.0	RIL 90% & HEPL 10%	Private
Deep water 3 5	79.1		59.5	0.0	RIL 85% & NR(V)L 15%	Private
Deep water 2 5	122.0		64.4	0.0	ENI 40%, ONGC 45% &GAIL 15%	Public
On land 3 5	7.0		0.5	0.0	JOGP 10% ,JSPL 35%, GSPC 20% &GAIL 35%	Public
On land 6 5	34.5		0.1	0.0	GPI 30%, NTPC 40% & CRL15% & Brownstone15%	Foreign
On land 2 5	13.6		7.0	0.0	CEIL 24%, CE1L 25% &ONGC 51%	Public
On land 1 5	10.3		7.6	0.0	ENI 34 ONGC 36 CEIL 30	Public
On land 3 5	53.4		46.4	0.0	ENI 34%, ONGC 36%, CE2L 30%	Public
On land 6 5	119.7		10.3	0.0	FEL 10% & BIL 40% & XOH 50%	Private
On land 5 5	19.8		44.1	0.0	RIL 100%	Private
On land 9 5	17.1		17.0	0.0	GSPC 50% , GAIL 20%, JSPL 20% &GGR 10%	Public

S No	Block	Block type	Bids	Round	Relinquished	Committed Investment (USD MM)	Exp Cost (USD MM)	Development cost (USD MM)	Consortium	Classification
18	DS-ONN- 2003/1	On land	7	2		9.6	9.0	0.0	GGR 100%	Foreign
19	KG-ONN- 2003/1	On land	2	9		21.8	29.6	0.0	CEIL 49% , ONGC 51%	Public
20	CY-ONN- 2003/1	On land	ဗ	2		23.9	33.7	0.0	NR(V)L 100%	Private
-	KK-DWN- 2004/1	Deep water	1	9		55.9	7.8	0.0	ONGC(45%)-CAIRN INDIA LTD.(40%)- TATA(15%)	Private
2	CY-DWN- 2004/1	Deep water	2	9		81.8	5.7	0.0	ONGC(70%)-GSPC(10%)-HPCL(10%)- GAIL(10%)	Public
3	CY-DWN- 2004/2	Deep water	2	9		0.77	7.7	0.0	ONGC(70%)-GSPC(10%)-HPCL(10%)- GAIL(10%)	Public
4	CY-DWN- 2004/3	Deep water	2	9		151.3	11.5	0.0	ONGC(70%)-GSPC(10%)-HPCL(10%)- GAIL(10%)	Public
2	CY-DWN- 2004/4	Deep water	-	9		76.0	10.6	0.0	ONGC(70%) -GSPC(10%)-HPCL(10%)- GAIL(10%)	Public
9	CY-PR-DWN- 2004/1	Deep water	-	9		151.9	43.8	0.0	ONGC(70%)-GSPC(10%)-HPCL(10%)- GAIL(10%)	Public
7	CY-PR-DWN- 2004/2	Deep water	-	9		90.4	10.7	0.0	ONGC(70%) -GSPC(10%)-HPCL(10%)- GAIL(10%)	Public
œ	KG-DWN- 2004/1	Deep water	က	9		150.2	16.0	0.0	ONGC(70%) -GSPC(10%)-HPCL(10%)- GAIL(10%)	Public
6	KG-DWN- 2004/2	Deep water	3	9		76.3	11.5	0.0	ONGC(60%)-GSPC(10%)-HPCL(10%)- GAIL(10%)-BPCL(10%)	Public
10	KG-DWN- 2004/3	Deep water	3	9		9.08	8.9	0.0	ONGC(70%) -GSPC(10%)-HPCL(10%)- GAIL(10%)	Public
1	KG-DWN- 2004/5	Deep water	3	9		81.3	10.6	0.0	ONGC(50%)-GSPC(10%)-HPCL(10%)- GAIL(10%)-OIL(10%)-BPCL(10%)	Public
12	KG-DWN- 2004/6	Deep water	3	9		130.8	10.1	0.0	ONGC(60%)-GSPC(10%)-HPCL(10%)- GAIL(10%)-OIL(10%)	Public
13	GS-OSN- 2004/1	Shallow water	1	9		58.3	21.0	0.0	ONGC (100%)	Public
14	KG-OSN- 2004/1	Shallow water	2	9		117.8	39.5	0.0	ONGC (55%)-BGEPI (45%)	Public
15	PA-ONN- 2004/1	On land	4	9		66.5	22.8	0.0	ONGC (100%)	Public
16	MZ-ONN- 2004/1	On land	2	9		186.9	10.7	0.0	OIL(75%) -SUNTERA(10%)-SHIV-VANI (15%)	Public
17	AA-ONN- 2004/1	On land	5	9		18.3	5.9	0.0	OIL(85%) -SHIV-VANI (15%)	Public
18	AA-ONN- 2004/2	On land	5	9		29.7	9.6	0.0	OIL (90%)-SUNTERRA (10%)	Public
19	GV-ONN- 2004/1	On land	2	9		35.5	3.9	0.0	ONGC (100%)	Public

20 VANDANA, DOMBA 7 6 38.3 4.3 0.0 ONGC (100%) 21 VANDANA, DOMBA 7 6 27.7 10.9 0.0 OUL(50%)-GEOGLOGAL (25%) 22 RAJONNA On land 3 6 47.8 7.4 0.0 OUL(50%)-GEOGLOGAL (25%) 24 CEDONA On land 2 6 5.3 4.8 0.0 OUL(50%)-GEOGLOGAL (25%) 25 CEDONA On land 2 6 5.3 4.8 0.0 OUL(50%)-GEOGLOGAL (25%)-HECL 26 CEDONA On land 2 6 23.6 13.1 0.0 OUL(50%)-GEOGLOGAL (25%)-HECL 26 CEDONA On land 2 6 23.6 13.1 0.0 OUL(50%)-SEN/HECAL 27 CEDONA On land 2 6 23.6 13.1 0.0 OUL(50%)-SEN/HECAL 28 CEDONA On land 2 6 0 0 OUL(50%)-SEN/HECAL 29	S No	Block	Block type	Bids	Round	Relinquished	Committed Investment (USD MM)	Exp Cost (USD MM)	Development cost (USD MM)	Consortium	Classification
WHONNH- 2004/N-	20	VN-ONN- 2004/1	On land	-	9		36.3	4.3	0.0	ONGC (100%)	Public
RJ-ONN+ 2004/3 On land 5 6 47.8 7.4 0.0 RJ-ONN+ 2004/3 On land 3 6 38.0 6.1 0.0 CB-ONN+ 2004/3 On land 2 6 5.3 4.8 0.0 CB-ONN+ 2004/4 On land 10 6 28.0 8.2 0.0 CB-ONN+ 2004/4 On land 2 6 11.0 3.9 0.0 CB-ONN+ 2004/4 On land 2 6 11.0 3.9 0.0 CB-ONN+ 2004/4 On land 3 6 96.3 0.8 0.0 CB-ONN+ 2004/4 On land 7 6 18.7 3.1 0.0 CB-ONN+ 2004/4 Deep water 3 6 165.3 4.5 0.0 KG-DWN+ C-DWN+ ANDWN+ ANDWN+ ANDWN+ Deep water 3 6 146.5 3.5 0.0 MN-DWN+ ANDWN+	21	VN-ONN- 2004/2	On land	-	9		27.7	10.9	0.0	ONGC (100%)	Public
R-DONN- CB-DNN-	22	RJ-ONN- 2004/2	On land	2	9		47.8	7.4	0.0	OIL (75%)-GEOGLOBAL (25%)	Public
CB-ONN- 2004/1 On land 2 6 5.3 4.8 0.0 CB-ONN- 2004/3 On land 10 6 29.5 13.1 0.0 CB-ONN- 2004/3 On land 10 6 28.0 8.2 0.0 CB-ONN- 2004/1 On land 2 6 28.0 8.2 0.0 KG-ONN- 2004/1 On land 7 6 96.3 0.8 0.0 CY-ONN- 2004/1 On land 7 6 18.7 3.1 0.0 KG-DWN- 2004/1 Deep water 3 6 155.3 4.5 0.0 KG-DWN- 2004/7 Deep water 3 6 155.3 4.5 0.0 MN-DWN- 2004/7 Deep water 2 6 155.3 4.5 0.0 MN-DWN- 2004/3 Deep water 2 6 155.3 6.8 0.0 MN-DWN- 2004/4 Deep water 2 6 155.3 6.8 0.0 MC-DWN- 2004/4 Deep water<	23	RJ-ONN- 2004/3	On land	3	9		38.0	6.1	0.0	OIL(60%)-GEOGLOBAL (25%)-HPCL (15%)	Public
CB-ONN- 2004/3 On land 3 6 29.5 13.1 0.0 CB-ONN- 2004/3 On land 1 6 28.0 8.2 0.0 CB-ONN- 2004/1 On land 2 6 11.0 3.9 0.0 CY-ONN- 2004/1 On land 7 6 20.1 5.0 0.0 CY-ONN- 2004/3 On land 7 6 20.1 5.0 0.0 CY-ONN- 2004/3 Deep water 3 6 20.1 5.0 0.0 KG-DWN- 2004/3 Deep water 2 6 155.3 4.5 0.0 MN-DWN- 2004/3 Deep water 2 6 155.3 6.0 0.0 MN-DWN- 2004/3 Deep water 2 6 155.3 6.0 0.0 MN-DWN- 2004/1 Deep water 2 6 47.2 25.3 0.0 MC-DWN- 2004/1 Deep water 6 6 90.9 0.8 0.0 MC-DWN- 2004/1 Shallow <th>24</th> <td>CB-ONN- 2004/1</td> <td>On land</td> <td>2</td> <td>9</td> <td></td> <td>5.3</td> <td>4.8</td> <td>0.0</td> <td>ONGC (50%)-GSPC (40%)-HERAMEC (10%)</td> <td>Public</td>	24	CB-ONN- 2004/1	On land	2	9		5.3	4.8	0.0	ONGC (50%)-GSPC (40%)-HERAMEC (10%)	Public
CB-ONN- 2004/3 On land 10 6 28.0 8.2 0.0 CB-ONN- 2004/4 On land 2 6 11.0 3.9 0.0 KG-ONN- 2004/1 On land 7 6 18.7 3.1 0.0 CY-ONN- 2004/1 On land 7 6 20.1 5.0 0.0 CY-ONN- 2004/1 On land 7 6 20.1 5.0 0.0 CY-ONN- 2004/1 Deep water 3 6 20.1 5.0 0.0 KG-DWN- CZ-OWN- CZ-OWN- CZ-OWN- CZ-OWN- CZ-OWI Deep water 2 6 146.5 3.5 0.0 MN-DWN- ZOO4/2 Deep water 2 6 146.5 3.7 0.0 MN-DWN- ZOO4/4 Deep water 2 6 3.6 0.0 MN-DWN- ZOO4/4 Deep water 2 6 3.4 0.0 MC-DWN- ZOO4/1 Deep water 6 6 3.2 25.3 0.0 MC-DWN- ZOO4/1 Water 6	25	CB-ONN- 2004/2	On land	3	9		29.5	13.1	0.0	ONGC (50%)-GSPC (40%)-SUNTERA RES. LTD. (10%)	Public
CB-ONN- 2004/4 On land 2 6 11.0 3.9 0.0 KG-ONN- 2004/1 On land 9 6 96.3 0.8 0.0 CY-ONN- 2004/1 On land 7 6 18.7 3.1 0.0 CY-ONN- 2004/2 On land 3 6 0.0 0.0 KG-DWN- 2004/3 Deep water 3 6 0.0 0.0 KG-DWN- 2004/7 Deep water 2 6 0.0 0.0 MN-DWN- 2004/1 Deep water 2 6 146.5 3.5 0.0 MN-DWN- 2004/3 Deep water 2 6 146.3 3.2 0.0 MN-DWN- 2004/4 Deep water 2 6 0.0 0.0 MC-DWN- 2004/1 Deep water 2 6 0.0 0.0 MC-DWN- 2004/1 Deep water 4 6 0.0 0.0 MC-DWN- 2004/1 Deep water 4 6 0.0 0.0 MB-OSN- 2004/1<	56	CB-ONN- 2004/3	On land	10	9		28.0	8.2	0.0	ONGC(40%)-GSPC(35%)-ENSEARCH (25%)	Public
KG-ONN- 2004/1 On land 9 6 96.3 0.8 0.0 CY-ONN- 2004/1 On land 7 6 18.7 3.1 0.0 CY-ONN- 2004/2 On land 3 6 20.1 5.0 0.0 KG-DWN- 2004/7 Deep water 3 6 4.5 0.0 KG-DWN- 2004/7 Deep water 2 6 0.0 0.0 MN-DWN- 2004/7 Deep water 2 6 155.3 6.8 0.0 MN-DWN- 2004/2 Deep water 2 6 155.3 6.8 0.0 MN-DWN- 2004/4 Deep water 2 6 0.0 0.0 MN-DWN- 2004/4 Deep water 2 6 0.0 0.0 NEC-DWN- 2004/4 Deep water 4 6 0.0 0.0 NEC-DWN- 2004/2 Deep water 4 6 0.0 0.0 NEC-DWN- 2004/2 Shallow 9 6 0.0 0.0 CB-OSN- 2004	7:	CB-ONN- 2004/4	On land	2	9		11.0		0.0	ONGC (50%)-GSPC (40%)-HERAMEC (10%)	Public
CY-ONN- 2004/1 On land 7 6 18.7 3.1 0.0 CY-ONN- 2004/2 VG-DWN- MN-DWN	80	KG-ONN- 2004/1	On land	6	9		8.96	0.8	0.0	OIL (90%)-GEOGLOBAL (10%)	Public
CY-ONN- 2004/2 On land 3 6 20.1 5.0 0.0 KG-DWN- 2004/4 Deep water 3 6 155.3 4.5 0.0 KG-DWN- 2004/7 Deep water 2 6 146.5 3.5 0.0 MN-DWN- 2004/3 Deep water 2 6 146.5 3.7 0.0 MN-DWN- 2004/3 Deep water 2 6 146.5 3.7 0.0 MN-DWN- 2004/3 Deep water 2 6 0.0 0.0 MN-DWN- 2004/4 Deep water 2 6 0.0 0.0 MC-DWN- 2004/3 Deep water 4 6 0.0 0.0 MC-DWN- 2004/4 Deep water 4 6 0.0 0.0 MC-DWN- 2004/1 Shallow 9 6 90.9 0.8 0.0 MB-OSN- 2004/1 Shallow 4 6 0.0 0.0 0.0 MB-OSN- 2004/1 Shallow 4 6 0.0 0.0	6	CY-ONN- 2004/1	On land	7	9		18.7	3.1	0.0	ONGC (80%)-BPCL (20%)	Public
KG-DWN- 2004/4 Deep water 3 6 155.3 4.5 0.0 KG-DWN- 2004/7 Deep water 2 6 146.5 3.5 0.0 MN-DWN- 2004/2 Deep water 2 6 6 8 0.0 MN-DWN- 2004/3 Deep water 2 6 6 146.3 3.7 0.0 MN-DWN- 2004/3 Deep water 2 6 7 47.2 25.3 0.0 MN-DWN- 2004/4 Deep water 2 6 36.6 3.4 0.0 NEC-DWN- 2004/5 Deep water 4 6 90.9 0.8 0.0 CB-CDWN- 2004/1 Deep water 4 6 90.9 0.8 0.0 CB-CDWN- 2004/1 Water 6 6 90.9 0.8 0.0 MB-OSN- 2004/1 Shallow water 4 6 0.0 0.0 MB-OSN- 2004/1 Water 4 6 0.0 0.0 MB-OSN- 2004/1 Water	0	CY-ONN- 2004/2	On land	3	9		20.1	2.0	0.0	ONGC (80%)-BPCL (20%)	Public
KG-DWN- 2004/7 Deep water 3 6 155.3 4.0 0.0 MN-DWN- 2004/3 Deep water 2 6 146.5 3.5 0.0 MN-DWN- 2004/3 Deep water 2 6 146.5 3.7 0.0 MN-DWN- 2004/4 Deep water 2 6 3.2 0.0 MN-DWN- 2004/4 Deep water 2 6 36.6 3.4 0.0 NEC-DWN- 2004/1 Deep water 6 6 88.2 25.3 0.0 NEC-DWN- 2004/1 Shallow 9 6 88.2 26.2 0.0 CB-OSN- 2004/1 Water 4 6 90.9 0.8 0.0 MB-OSN- 2004/1 Water 4 6 0.0 0.0 0.0	2	KG-DWN- 2004/4	Deep water	3	9		155.3		0.0	RIL(100%)	Private
MN-DWN- 2004/1 Deep water 2004/2 2 6 146.5 3.5 0.0 MN-DWN- 2004/3 Deep water 2004/4 2 6 155.3 6.8 0.0 MN-DWN- 2004/4 Deep water 2004/4 2 6 146.3 3.7 0.0 MN-DWN- 2004/5 Deep water 2004/1 2 6 36.6 3.4 0.0 NEC-DWN- 2004/1 Deep water ACC-DWN- 2004/1 6 6 88.2 25.3 0.0 CB-OSN- 2004/1 Shallow water Account 9 6 90.9 0.8 0.0 MB-OSN- 2004/1 Water Water 4 6 0.0 0.0 0.0	2	KG-DWN- 2004/7	Deep water	3	9		155.3	4.0	0.0	RIL(100%)	Private
MN-DWN-DWN-DWN-DWN-DWN-DWN-DWN-DWN-DWN-DW	3	MN-DWN- 2004/1	Deep water	2	9		146.5	3.5	0.0	RIL(100%)	Private
MN-DWN- 2004/3 Deep water 2 6 155.2 3.7 0.0 MN-DWN- 2004/5 Deep water 2 6 146.3 3.2 0.0 MN-DWN- 2004/5 Deep water 2 6 36.6 3.4 0.0 NEC-DWN- 2004/1 Deep water 4 6 47.2 25.3 0.0 NEC-DWN- 2004/1 Deep water 6 6 88.2 26.2 0.0 CB-OSN- 2004/1 water 9 6 90.9 0.8 0.0 MB-OSN- 2004/1 water 4 6 0.0 0.0 0.0	4	MN-DWN- 2004/2	Deep water	3	9		155.3	6.8	0.0	RIL(100%)	Private
MN-DWN- 2004/4 Deep water 2 6 146.3 3.2 0.0 MN-DWN- 2004/5 Deep water 2 6 36.6 3.4 0.0 NEC-DWN- 2004/1 Deep water 4 6 88.2 25.3 0.0 NEC-DWN- 2004/1 Deep water 6 6 88.2 26.2 0.0 CB-OSN- 2004/1 water 9 6 90.9 0.8 0.0 MB-OSN- 2004/1 water 4 6 0.0 0.0 0.0	2	MN-DWN- 2004/3	Deep water	2	9		155.2	3.7	0.0	RIL(100%)	Private
MN-DWN-DWN-DWN-DWN-Deep water 2 6 36.6 3.4 0.0 NEC-DWN-Deep water NEC-DWN-DWN-DEGDWN-DWN-DWN-DWN-DWN-DWN-DWN-DWN-DWN-DWN-	9	MN-DWN- 2004/4	Deep water	2	9		146.3	3.2	0.0	RIL(100%)	Private
NEC-DWN- 2004/1 Deep water 4 6 47.2 25.3 0.0 NEC-DWN- 2004/2 Deep water 6 6 88.2 26.2 0.0 CB-OSN- 2004/1 Shallow water water 9 6 90.9 0.8 0.0 MB-OSN- 2004/1 Shallow water 4 6 51.1 0.6 0.0	2:	MN-DWN- 2004/5	Deep water	2	9		36.6	3.4	0.0	RIL(100%)	Private
NEC-DWN- 2004/2 CB-OSN- Shallow 6 6 6 88.2 26.2 0.0 CB-OSN- 2004/1 WB-OSN- 2004/1 Shallow water 9 6 90.9 0.8 0.0	88	NEC-DWN- 2004/1	Deep water	4	9		47.2	25.3	0.0	SANTOS INTERNATIONAL OPERATIONS PTY.LTD. (100%)	Foreign
CB-OSN- Shallow 2004/1 water 2004/1 water Shallow ader 3004/1 water 6 90.9 0.8 0.0 MB-OSN- water and 2004/1 water 4 6 51.1 0.6 0.0	6	NEC-DWN- 2004/2	Deep water	9	9		88.2	26.2	0.0	SANTOS (100%)	Foreign
MB-OSN- 2004/1 Shallow water 4 6 51.1 0.6 0.0	0:	CB-OSN- 2004/1	Shallow water	6	9		6.06	0.8	0.0	FOCUS(10%)-NEWBURY (90%)	Foreign
	Ξ	MB-OSN- 2004/1	Shallow water	4	9		51.1	9.0	0.0	GSPC(20%)-IOC(20%)-GAIL(20%)- HPCL(20%)-PETROGAS (20%)	Public

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Classification	Public	Private	Private	Private	Private	Private	Private	Public	Private	Foreign	Public	Private	Private	Private	Private	Private	Private
Consortium	PETROGAS(20%) -GAIL(20%)-IOC(20%)- GSPC(20%)-HPCL(20%)	CAIRN ENERGY(10%)- CAIRN INDIA(25%)-ONGC(35%)-TATA(30%)	NAFTOGAZ(10%)-RNRL(10%)- GEOPETROL(10%)-REL (70%)	ESSAR ENERGY(90%)-ESSAR OIL (10%)	ADANI ENTERPRISES (35%)-ADANI PORT (20%)-NAFTOGAZ(10%)-JAYCEE (MUMBAI) (35%)	ESSAR ENERGY(90%)-ESSAR OIL (10%)	PRIZE PETROLEUM (10%)- JAIPRAKASH ASSOCIATES LTD. (90%)	GSPC (20%)-GAIL(20%)-HPCL(20%)- HALLWORTHY(PANAMA) (10%)- NITINFIRE(NEW DELHI) (10%)- SILVERWAVE(MAYANMAR) (10%)-BPCL (10%)	ADANI ENTEREPRISES (35%)-ADANI PORT (20%)-NAFTOGAZ (10%)- WELSPUN (35%)	GEOGLOBAL RESOURCES (BARBADOS) (100%)	GSPC (40%) -GAIL (40%)-PETROGAS (20%)	BHP Billiton Petroleum International Pty.Ltd. 26% & GVK Oil and Gas Ltd. 74%	BHP Billiton Petroleum International Pty.Ltd. 26% & GVK Oil and Gas Ltd. 74%	BHP Billiton Petroleum International Pty.Ltd. 26% & GVK Oil and Gas Ltd. 74%	BHP Billiton Petroleum International Pty.Ltd. 26% & GVK Oil and Gas Ltd. 74%	BHP Billiton Petroleum International Pty.Ltd. 26% & GVK Oil and Gas Ltd. 74%	BHP Billiton Petroleum International Pty.Ltd. 26% & GVK Oil and Gas Ltd. 74%
Development cost (USD MM)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exp Cost (USD MM)	5.4	21.8	1.6	2.6	3.1	0.1	9.9	23.1	5.2	0.2	10.3	0.0	0.0	0.0	0.0	0.0	0.0
Committed Investment (USD MM)	41.7	62.8	12.6	6.9	23.3	5.7	19.3	36.5	23.2	8.5	20.2	2.5	11.7	2.5	2.5	2.5	2.5
Relinquished																	
Round	9	9	9	9	9	9	9	9	9	9	9	2	2	2	2	2	2
Bids	2	-	9	-	N	-	1	2	7	-	1	_	-	-	1	-	-
Block type	Shallow water	Shallow water	On land	On land	On land	On land	On land	On land	On land	On land	On land	Deep water					
Block	MB-OSN- 2004/2	PR-OSN- 2004/1	MZ-ONN- 2004/2	AA-ONN- 2004/3	AA-ONN- 2004/4	AN-ONN- 2004/5	SR-ONN- 2004/1	RJ-ONN- 2004/1	CB-ONN- 2004/5	DS-ONN- 2004/1	KG-ONN- 2004/2	MB-DWN- 2005/2	MB-DWN- 2005/3	MB-DWN- 2005/4	MB-DWN- 2005/5	MB-DWN- 2005/7	MB-DWN- 2005/9
S No	42	43	4	45	46	47	48	49	20	51	52	-	2	3	4	5	9

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Classification	Private	Public	Public	Private	Public	Public	Private	Private	Public	Public	Public	Public	Public	Public	Public	Public	Public	Public	Public	Private	Private
Consortium	BHP Billiton Petroleum International Pty.Ltd. 26% & GVK Oil and Gas Ltd. 74%	ONGC 90%, GSPC 10%	ONGC 70%, IOCL 20%, GSPC 10%	BP Exploration (Alpha) Ltd. 30%, RIL 70%	ONGC 90%, OIL 10%	ONGC 80%, GSPC 20%	Adaani Welspun Exploration Ltd. 100%	Essar Exploration & Production Ltd. 50%, Nobel Energy International Ltd. 50%	ONGC 70%, GSPC 30%	ONGC 80%, GSPC 20%	ONGC 60%, GSPC 20%, HPCL- Mittal Energy Ltd. 20%	ONGC 80%, HPCL-Mittal energy 20%	ONGC 60%, OIL 30%, ACL 10%	ONGC 100%	ONGC 100%	ONGC 100%	ONGC 100%	ONGC 75% , OIL 25%	ONGC 80%, Tata Petrodyne 20%	Deep Energy Lic 10%, Deep Industries Ltd. 70%,Kanvel Finance Ltd. 10% & Savla Electroniocs Pvt. Ltd.	HOEC 25%, BPRL 25% , JSPL 25%, & IMC 25%
Development cost (USD MM)	0:0	0.0	0:0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0:0
Exp Cost (USD MM)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Committed Investment (USD MM)	7.8	12.7	235.7	33.1	11.5	88.1	110.6	15.6	75.5	71.8	147.5	89.2	26.7	10.4	9.7	22.8	30.2	46.6	4.6	8.7	69.0
Relinquished																					
Round	7	7	2	2	7	7	7	7	2	2	7	2	2	2	2	2	2	2	2	2	7
Bids	0	-	2	2	-	က	9	-	4	2	9	4	1	1	1	1	2	1	1	1	2
Block type	Deep water	Deep water	Deep water	Deep water	Deep water	Shallow water	Shallow water	Shallow water	Shallow water	Shallow water	Shallow water	Shallow water	On land	On land	On land	On land	On land	On land	On land	On land	On land
Block	KK-DWN- 2005/1	KK-DWN- 2005/2	KG-DWN- 2005/1	KG-DWN- 2005/2	AN-DWN- 2005/1	MB-OSN- 2005/1	MB-OSN- 2005/2	MB-OSN- 2005/3	MB-OSN- 2005/5	MB-OSN- 2005/6	KG-OSN- 2005/1	KG-OSN- 2005/2	AA-ONN- 2005/1	PA-ONN- 2005/1	PA-ONN- 2005/2	WB-ONN- 2005/2	WB-ONN- 2005/3	WB-ONN- 2005/4	GV-ONN- 2005/3	SR-ONN- 2005/1	RJ-ONN- 2005/1
S No	7	8	6	10	5	12	13	4	15	16	17	18	19	20	21	22	23	24	25	26	27

Block type Bids Round Relinquished Investment (USD MM) MM) RJ-ONN- On land 3 7 5 51.9 0.0 0.0	Bids Round Relinquished Investment (USD MM) 3 7 51.9 0.0	Round Relinquished Investment (USD MM) 7 51.9 0.0	Relinquished Investment (USD MM) MM)	Committed Cost Investment (USD MM) MM)	Cost (USD MM)		Developi cost (U MM)	nent ISD	:L & Mittal	Classification Public
On land 2 7 26.1 0.0	2 7 26.1 0.0	7 26.1 0.0	26.1 0.0	0.0	0.0		0:0		Energy Ltd. 20% GSPC 60%, ONGC 40%	Public
On land 11 7 34.3 0.0	11 7 34.3 0.0	7 34.3 0.0	34.3 0.0	0.0	0.0		0	0.0	IOCL 100%	Public
On land 5 7 8.0 0.0	5 7 8.0 0.0	7 8.0 0.0	8.0 0.0	0.0	0.0		_	0.0	Mercator Petroleum Pvt Ltd. 100%	Private
On land 18 7 6.9 0.0	18 7 6.9 0.0	7 6.9 0.0	6.9	0.0	0.0			0.0	ONGC 51%, GSPC 49%	Public
CB-ONN- 2005/5 On land 17 7 7.9 0.0	7 7.9	7 7.9	7.9			0.0		0.0	Omkar Natual Resources Pvt. Ltd. 100%	Private
CB-ONN- 2005/6 On land 9 7 7.5 0.0	9 7 7.5	7 7.5	7.5			0.0		0.0	Omkar Natual Resources Pvt. Ltd. 100%	Private
CB-ONN- 2005/7 On land 17 7 70.4 0.0	7 7 70.4	7 70.4	70.4			0.0		0.0	IOCL 100%	Public
CB-ONN- 2005/8 On land 8 7 24.6 0.0	8 7 24.6	7 24.6	24.6			0.0		0.0	Vasundhara Resources Ltd. 100%	Private
CB-ONN- 2005/9 On land 13 7 21.4 0.0	13 7 21.4	7 21.4	21.4			0.0		0.0	Mercator Petroleum Pvt Ltd. 100%	Private
CB-ONN- 2005/10 On land 6 7 14.8 0.0	6 7 14.8	7 14.8	14.8			0.0		0.0	ONGC 51% , GSPC 49%	Public
CB-ONN- 2005/11 On land 4 7 55.2 0.0	4 7 55.2	7 55.2	55.2			0.0		0.0	Quest Petroleum Pvt. Ltd (QUEST) 20%, Quippo Oil and Gas Infrastructure Ltd. (QQVS) 40%, SREI Infrastructure Finance Ltd. (SREI) 20%, Vectra Investments Pvt. Ltd. (VIPL2) 10% & Primera Energy Resources Ltd. (PRIM) 10%	Private
PR-ONN- On land 2 7 7.9 0.0	2 7 7.9	6.7 7	6.7			0.0		0.0	ONGC 80%, Tata Petrodyne Ltd 20%	Public
CY-ONN- On land 2 7 15.7 0.0	2 7 15.7	7 15.7	15.7			0.0		0.0	GAIL (India) Ltd. 40%, GSPC 30%, Bengal Energy International Inc. 30%	Public
MB-DWNN- Deep water 1 8 18.0 0.0	1 8 18.0	8 18.0	18.0			0.0		0.0	Cairn Energy India Pty Limited10(OP), Caim India Ltd (90)	Private
KG-DWN- Deep water 1 8 1.0 0.0	1 8 1.0	1.0	1.0			0.0		0.0	BG Exploration and Production India Ltd(30)OP, OIL(15), ONGC(45), Andhra PradeshGas Infrastructure Corporation Pvt Ltd(10)	Foreign
AN-DWN- 2009/1 Deep water 1 8 2.8 0.0	1 8 2.8	8 2.8	2.8			0.0		0.0	ONGC(70%-OP) & OIL(30%)	Public
AN-DWN- 2009/2 Deep water 1 8 2.3 0.0	1 8 2.3	8 2.3	2.3			0.0		0.0	ONGC(60%-OP) & OIL(40%)	Public
AN-DWN- 2009/3 Deep water 1 8 2.3 0.0	2.3	8 2.3	2.3			0.0		0.0	ONGC(60%-OP) & OIL(40%-OP)-Jt. Op.	Public

 Block type	Bids	Round	Relinquished	Committed Investment (USD MM)	Cost (USD	Development cost (USD MM)	Consortium	Classification
Deep water	-	80		2.3	0.0	0.0	ONGC(90%-OP) & GSPC(10%)	Public
Deep water	7	8		2.3	0.0	0.0	ONGC(70%- OP),NTPC(10%),GAIL(10%)	Public
Deep water	1	80		2.3	0.0	0.0	ONGC(60%-OP),OIL(30%),GAIL(10%)	Public
Shallow water	2	8		70.2	0.0	0.0	ONGC(40%- OP).GSPC(20%),AWEL(20%),IOCL(20%),	Public
Shallow water	-	8		63.0	0.0	0.0	ONGCL40(OP), Adani Welspun Exploration Ltd30, IOC(30)	Public
Shallow water	-	8		1.0	0.0	0.0	BHP Billiton Petroleum International Exploratory Pty Ltd	Foreign
Shallow water	-	8		6.0	0.0	0.0	BHP Billiton Petroleum International Exploratory Pty Ltd	Foreign
Shallow water	-	80		6.0	0.0	0.0	BHP Billiton Petroleum International Exploratory Pty Ltd	Foreign
Shallow water	-	8		2.0	0.0	0.0	Bengal Energy International Inc(100)	Foreign
Shallow water	-	8		79.5	0.0	0.0	Oil India Ltd(OIL-50)-Oil And Natural Gas Corporation Ltd(ONGC-50)	Public
Shallow water	2	8		86.0	0.0	0.0	ONGC(80%-OP), APGIC(10%),NTPC (10%),	Public
Shallow water	-	80		79.3	0.0	0.0	ONGC 90% & Andhra Pradesh Gas Infrastructure Corporation Pvt. Ltd10%	Public
Shallow water	2	80		250.0	0.0	0.0	CAIRN ENERGY INDIA PTY. LTD.(CEIL-10)-Caim India Limited(CIL-90)	Private
Shallow water	က	80		8.79	0.0	0.0	ONGC(50%), OIL(30%), NTPC(10%) & Andhra Pradesh Gas Infrastructure Corp. Pvt.Ltd.(APGIC)(10%)	Public
On land	3	8		26.5	0.0	0.0	JUBILANT OIL & GAS PVT. LTD.(JOGPL-47)-JUBILANT ENERGY (KHARSANG) PVT. LTD.(JEKPL-17)- JUBILANT OFFSHORE DRILLING PVT. LTD(JODPL-36)	Private
On land	3	8		17.5	0.0	0.0	JUBILANT OIL & GAS PVT. LTD.(JOGPL-47)-JUBILANT ENERGY (KHARSANG) PVT. LTD.(JEKPL-17)- JUBILANT OFFSHORE DRILLING PVT. LTD(JODPL-36)	Private
On land	1	8		28.1	0.0	0.0	ONGC-50% & OIL-50%	Public
On land	2	8		43.8	0.0	0.0	ONGC-50% & OIL-50%	Public
On land	2	8		5.6	0.0	0.0	ONGC(100)	Public

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Classification	Private	Private	Private	Public	Public	Private	Private	Private	Public	Public	Public	Public	Public	Public	Public	Public	Public	Public	Public	Public	Public
Consortium	Esveegee Steel (Gujarat) Pvt Ltd	Esveegee Steel (Gujarat) Pvt Ltd	Harish Chandra (INDIA) Ltd	Oil And Natural Gas Corporation Ltd(ONGCL-50) GUJARAT STATE PETROLEUM CORPORATION LTD(GSPC-50)	NTPC	Harish Chandra (India) Limited	Esveegee Steel (Gujarat) Pvt. Ltd.(ESGPL) (100%-OP)	Jay Polychem (India) Limited-87% & Jay Polychem PTE Ltd.L-13%	ONGC 40-OIL 40-GAIL 20	ONGC 35-OIL 35-GAIL 30	ONGC 40-OIL 40-BPRL 20	OIL & NATURAL GAS CORPN. LTD.	OIL & NATURAL GAS CORPN. LTD.	ONGC 60- OIL 30- GAIL 10	ONGC 90-GAIL 10	ONGC 40-OIL 30-IOC 30	ONGC 40-OIL 30-IOC 30	ONGC 40-OIL 40-HPCL-20	OIL 50-HPCL 30-BPRL 20	OIL40-ONGC30-GAIL20-EWP10	OIL40-ONGC40-BPRL20
Development cost (USD MM)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0													
Exp Cost (USD MM)	0:0	0.0	0:0	0.0	0.0	0.0	0.0	0.0													
Committed Investment (USD MM)	25.2	22.3	23.9	15.6	37.6	19.5	16.9	13.0	1.6	1.9	2.7	1.6	1.2	154.3	161.0	0.9	6.0	0.9	24.3	28.2	8.9
Relinquished																					
Round	8	8	8	8	8	8	8	8	6	6	6	6	6	6	6	6	6	6	6	6	6
Bids	3	2	7	4	3	3	7	5	1	1	1	1	1	2	1	1	1	1	1	2	1
Block type	On land	On land	On land	On land	On land	On land	On land	On land	Deep water	Deep water	Deep water	Deep water	Deep water	Shallow water	Shallow water	Shallow water	Shallow water	Shallow water	Shallow water	On land	On land
Block	CB-ONN- 2009/1	CB-ONN- 2009/2	CB-ONN- 2009/3	CB-ONN- 2009/4	CB-ONN- 2009/5	CB-ONN- 2009/6	CB-ONN- 2009/7	CB-ONN- 2009/8	GS-DWN- 2010/1	MB-DWN- 2010/2	KK-DWN- 2010/1	AN-DWN- 2010/1	AN-DWN- 2010/2	GK-OSN- 2010/1	GK-OSN- 2010/2	KK-OSN- 2010/1	KK-OSN- 2010/2	KK-OSN- 2010/3	MB-OSN- 2010/2	AA-ONN- 2010/2	AA-ONN- 2010/3
S No	25	56	27	28	53	30	34	32	1	2	3	4	5	9	7	8	6	10	11	12	13

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Classification	Foreign	Private	Private	Private	Private	Private	Private	Private	Private	Private	Private	Foreign	Private	Private	Private	Private	Private	Private	Private	Private
Consortium	BGEPIL 50-BHPB 50	RELIANCE INDUSTRIES LTD.	RELIANCE INDUSTRIES LTD	PRIZE20-ABG80	DEL10-KGNI90	DEL10-DNRL15-SWEPL75	DEL10-KGNOG90	DEL10-KGNOG90	ISHAR GASOIL PVT. LTD.	ISHAR GASOIL PVT. LTD.	ISHAR GASOIL PVT. LTD.	FOCUS10-BIL90	PRATIBHA OIL AND NATURAL GAS PVT. LTD.	PIC20-FIL80	CHINNAR COMMERCE PVT. LTD.	CHINNAR COMMERCE PVT. LTD.	SANKALP OIL & NATURAL RESOURCES LTD.	SANKALP OIL & NATURAL RESOURCES LTD.	SANKALP OIL & NATURAL RESOURCES LTD.	ESSAR OIL LTD.
Development cost (USD MM)																				
Exp Cost (USD MM)																				
Committed Investment (USD MM)	125.0	3.9	1.4	48.1	1.7	5.9	4.9	5.2	8.0	11.0	9.9	75.0	19.6	8.8	9.5	14.1	23.4	22.2	22.2	19.4
Relinquished																				
Round	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Bids	2	2	2	4	1	2	2	3	1	9	4	9	2	3	2	1	9	2	9	9
Block type	Deep water	Deep water	Deep water	On land	On land	On land	On land	On land	On land	On land	On land	On land	On land	On land	On land	On land	On land	On land	On land	On land
Block	MB-DWN- 2010/1	AN-DWN- 2010/3	AN-DWN- 2010/4	AA-ONN- 2010/1	VN-ONN- 2010/1	VN-ONN- 2010/2	CB-ONN- 2010/3	CB-ONN- 2010/1	GV-ONN- 2010/1	RJ-ONN- 2010/1	CB-ONN- 2010/2	RJ-ONN- 2010/2	CB-ONN- 2010/4	CB-ONN- 2010/5	CB-ONN- 2010/6	CB-ONN- 2010/7	CB-ONN- 2010/8	CB-ONN- 2010/9	CB-ONN- 2010/10	CB-ONN- 2010/11
S No	41	15	16	11	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33

Annex XXIII

List of Diversion of Forest Land in National Parks and Sanctuaries

National Parks / Sanctuaries	Activities Allowed
Chambal Wildlife Sanctuary, Uttar Pradesh ¹	Diversion of land by State Government. Allowed subject to fulfilment of conditions
Ratnapani Sanctuary, Madhya Pradesh ²	Laying of optical Fibre cable by Power Grid Corporation. Allowed subject to fulfilment of certain conditions.
Renuka Wildlife Sanctuary, Himachal Pradesh ³	Diversion of land for Renuka Dam. Approved subject to conditions
National Chambal Sanctuary, Rajasthan ⁴	Construction of Kota Bypass on NH-76. Approved subject to conditions.
Jawahar Sagar Wildlife Sanctuary, Rajasthan ⁵	Two transmission lines of power from Rajasthan Atomic Power Plant.
Chambal National Wildlife Sanctuary, Madhya Pradesh ⁶	Ministry of Railways for laying a new railway line.
Cauvery Wildlife Sanctuary, Karnataka	Water Supply to Malai-Mahedeshwara Hills. Recommendation of CEC modified to the extent that instead of 5% Project cost the proponent was directed to deposit Rs. 25 Lakhs in CAMPA Fund for Conservation and Protection of Cauvery Wildlife Sanctuary.
Rajiv Gandhi Wildlife Sanctuary, Andhra Pradesh. ⁷	Construction of Weir at Sri Sailam Dam. The recommendations of CEC were partially accepted since the CEC had recommended that the officers responsible for allowing the work to commence prior to approval being granted should be imposed a penalty of Rs. 2 Crores. The Court reduced this amount to Rs. 1 Crore and allowed the work on the project to continue.
Askot Wildlife Sanctuary, Uttarakhand. ⁸	Diversion of Sanctuary land for drinking water supply. Allowed. Subject to conditions.
Ken Ghadiyal Sanctuary, Madhya Pradesh	Bariyarpur Project. Allowed. Subject to conditions.
Ratnapani Wildlife Sanctuary, Madhya Pradesh ⁹	Water supply to Bhopal town.

¹ I.A. No. 1609-1610.

² I.A. No. 1632; Order dated 08.09.2006.

³ I.A. No. 1660; Order dated 18.11.2006.

⁴ I.A. No. 11626; Order dated 17.11.2006.

 $^{^{5}}$ I.A. No. 1655-1657; Order dated 30.03.2007.

⁶ I.A. No. 1635 & 1636; Order dated 05.04.2007.

⁷ I.A. No. 1609-1610; Order Dated 05.04.2007.

⁸ I.A. No. 77; Order Dated 03.08.2007.

⁹ I.A. No. 1641 in I.A. No. 1548; Order Dated 06.09.2007.

National Parks / Sanctuaries	Activities Allowed
Kaziranga National Park, Assam ¹⁰	Permission to lay optical fibre allowed on the condition that Oil India Ltd. would pay Rs. 5 Lakh to Park authorities for purchase of petrol and diesel for vehicles used in the National Park.
Pulicat Bird Sanctuary, 11	Construction of road. Allowed.
Madhav National Park, Madhya Pradesh. ¹²	Laying of Optical Fibre through forest land. The Chief Wildlife Warden of Madhya Pradesh had granted permission for laying of the optical fibre cable even before the matter was taken by CEC. The Court took a serious view of the conduct of the Chief Wildlife Warden and the fact that Reliance Telecom Ltd. had laid down the cable without taking the prior approval under Forest Conservation Act, as well as from the Supreme Court. The Court directed Reliance Telecom Ltd. to pay a sum of 1 Crore in the CAMPA Fund.
Ramnagar Wildlife Sanctuary, Jammu and Kashmir ¹³	Water supply to Jammu city. Approved. Subject to usual conditions. With an additional condition that the EIA study to be done by user agency forthwith.
Nargu Wildlife Sanctuary, Mandi District, Himachal Pradesh ¹⁴	Construction of 1.5 MW hydro power project. Approved subject to certain condition.
Balram Ambaji Wildlife Sanctuary, Gujarat ¹⁵	Widening of National Highway No. 14 by National Highway Authority of India. Allowed subject to certain conditions.
Narayan Sarovar Sanctuary, Gujarat ¹⁶	Mining activities in the vicinity of the Sanctuary. Allowed on the condition that the State Government will ascertain that the same is beyond 2.5 kms of the Sanctuary.
Peechi Vazni Wildlife Sanctuary, Kerala ¹⁷	Transmission line of Power Grid Corporation. Allowed subject to certain conditions.
Panna Tiger Reserve and National Park, Madhya Pradesh ¹⁸	Diamond Mining. Approved subject to certain conditions.
Papikonda Wildlife Sanctuary, Andhra Pradesh ¹⁹	Indrasagar Polavaram project. Diversion of 187.29 Ha of forest land approved subject to the condition that 50,000 Ha (500 Sq Km) of forest land adjoining the sanctuary be notified as National Park in addition to up gradation of Papikonda Wildlife Sanctuary as a National Park.

 $^{^{10}}$ I.A. No. 1398 in I.A. No. 1289; Order dated 02.11.2007.

¹¹ I.A. No. 2072 and 2083; Order dated 23.11.2007.

¹² I.A. No. 1167; Order Dated 05.04.2007.

¹³ I. A. No. 2089.

¹⁴ I.A. No. 2171 in I.A. No. 940; Order dated 04.04.2008.

¹⁵ I.A. No. 2145-46; Order dated 09.05.2008.

 $^{^{16}}$ I.A. No. 12, 55 & 58-59 in SLP (C) No. 13658/1996; Order dated 09.05.2008.

¹⁷ I.A. No. 2257 in I.A. No. 1093; Order dated 09.05.2008.

¹⁸ I.A. No. 1485 and 1507.

¹⁹ I.A. No. 1572, 1578.

National Parks / Sanctuaries	Activities Allowed
Desert National Park, Rajasthan ²⁰	Upgradation and maintenance of road. Approved subject to the condition that no widening and new black topping be done.
Jambughoda Wildlife Sanctuary, Gujarat ²¹	Construction of road. Approved subject to the condition that the width of the road is reduced from 10mts to 6 mts.
Marine National Park, Gujarat ²²	Ex Post facto approval sought by Indian Oil corporation after oil pipeline has been laid. Approval granted subject to payment of NPV.
Kumbalgarh Wildlife Sanctuary, Rajasthan ²³	Permission for exclusion of the area of a temple from the Reserve forest and Sanctuary. Partially allowed as only 'permissive possession' of 9.81 hectares of forest land allowed for the temple trust without de-reserving the forest or Sanctuary.
Rajaji National Park, Uttarakhand ²⁴	Construction of Hill bypasses Road. Allowed subject to certain condition.
Rajaji National Park, Uttarakhand ²⁵	Widening of National Highway No 58 and 72. Project approved on the condition that the project proponent would construct a flyover of at least six metres height and 731 metres length on NH 58 (Chilla Motichur corridor) so as to provide connectivity for movement of wildlife. Two additional flyover were directed to be constructed. It was further directed that on the completion of these three flyover, vehicular traffic on the existing strips of road will be completely stopped so that in due course these get merged with the surrounding forests thereby facilitating the movement of wild animals.
Sariska Tiger Reserve, Rajasthan ²⁶	Construction of five roads falling in Sariska Tiger reserve. Allowed subject to specific conditions which includes the closure of the Tehla –Sariska road which passes through the Core area of the Tiger reserve. Also restrictions have been imposed on night traffic.
National Chambal Sanctuary, Madhya Pradesh ²⁷	Construction of Bridge across Chambal River. Allowed on the certain conditions to be fulfilled.
Ratnapani Wildlife Sanctuary, Madhya Pradesh ²⁸	Construction of Interpretation Centre. Allowed

²⁰ I.A. No. 2339-41; Order dated 10.11.2008.

²¹ I.A. No. 2432; Order dated 28.11.2008.

²² I.A. No. 2433; Order dated 05.12.2008.

²³ I.A. No. 2670; Order dated 30.10.2009.

²⁴ I.A. No. 2643; Order dated 11.09.2009.

²⁵ I.A. No. 2147-2148; Order dated 24.07.2009.

²⁶ I.A. No. 2068; Order dated 08.05.2009.

²⁷ I.A. No. 2252-53; Order dated 08.05.2009.

²⁸ I.A. No. 2276; Order dated 08.05.2009.

National Parks / Sanctuaries	Activities Allowed
Satpura Tiger Reserve, Madhya Pradesh ²⁹	Continuance of fishing rights in Tawa and Barna Reservoirs. As interim measure, the Court held that permission for fishing may be granted subject to the certain condition which includes that no mechanised boat will be used by the fishermen and exotic fish would not be introduced in the reservoir.
Gangotri National Park, Uttarakhand ³⁰	Improvement of Road. Allowed subject to fulfilment of conditions.
Askot Wildlife Sanctuary, Uttarakhand ³¹	Improvement of Ginji-Kutti Jolingkong Road. Allowed subject to fulfilment of conditions.
Changthang Cold Desert Wildlife Sanctuary, Ladakh, Jammu and Kashmir ³²	Widening and improvement of Phobrang-Marsmikal road. Allowed subject to fulfilment of certain conditions.
Marine National Park, Gujarat ³³	Use of land by M/S GSFC. Allowed subject to fulfilment of conditions which includes formation of a Society for the protection and conservation of the Sanctuary.
Wild Ass Sanctuary, Gujarat ³⁴	Construction of Kachchh Branch canal. Allowed subject to fulfilment of certain conditions.
Marine Sanctuary, Gujarat ³⁵	Construction of Watermanship Training Centre at Valsura. Allowed subject to fulfilment of certain conditions.
Narayan Sarovar Wildlife Sanctuary, Gujarat ³⁶	Exclusion of area of sanctuary in view of rationalisation of boundaries. Allowed on the condition that the area excluded from sanctuary shall not be used for mining.
Marine Sanctuary, Gujarat ³⁷	Use of land by Gujarat State Electricity Corporation ltd. Allowed subject to fulfilment of certain conditions.
National Chambal Ghariyal Sanctuary, Rajasthan ³⁸	Laying of transmission lines for Chambal Thermal Power Station. Allowed subject to fulfilment of certain conditions.
National Chambal Sanctuary, ³⁹ Madhya Pradesh.	Laying of underground Pipeline. Project recommended subject to fulfilment of conditions.

²⁹ I.A. No. 1697 in I.A. No. 548.

³⁰ I.A. No. 2137; Order dated 17.04.2009.

³¹ I.A. No. 2140; Order dated 17.04.2009.

³² I.A. No. 2136; Order dated 17.04.2009.

³³ I.A. No. 2524; Order dated 17.04.2009.

³⁴ I.A. No. 2525; Order dated 17.04.2009.

 $^{^{\}rm 35}$ I.A. No. 2528; Order dated 17.04.2009.

 $^{^{\}rm 36}$ I.A. No. 2529; Order dated 17.04.2009.

³⁷ I.A. No. 2571; Order dated 17.04.2009.

³⁸ I.A. No. 2555; Order dated 20.03.2009.

³⁹ I.A. No. 2273-2274; Order dated 23.01.2009.

National Parks / Sanctuaries	Activities Allowed
Purna Wildlife Sanctuary, Gujarat ⁴⁰	Permission to remove gregariously flowered dead bamboo. Allowed subject to the condition that the same should be done in accordance with Section 29 of the Wildlife (Protection) Act, 1972. Further, the removal of the same should be done trough eco development committee's and the area fom which the dead bamboo's are removed should be regenerated by allowing natural regeneration of Bamboo.
Wild Ass Sanctuary, Gujarat ⁴¹	Laying of pipeline by Indian Oil Corporation. Allowed subject to fulfilment of conditions.
Wild Ass Sanctuary, Gujarat ⁴²	Transmission line by Adani Power Ltd. Allowed subject to fulfilment of certain conditions.
Rajaji National Park, Uttarakhand ⁴³	Parking for Kumbh Mela. Allowed for four months
Hastinapur Wildlife Sanctuary, Uttar Pradesh ⁴⁴	Construction of embankments on the left bank of River Ganga. Allowed subject to fulfilment of certain conditions.

Source: Ritwick Dutta and Bhupender Yadav, Supreme Court on Forest Conservation 3rd ed., Universal Law Publishing Co., New Delhi, 2011) 26-32

⁴⁰ I.A. No. 2486; Order dated 30.01.2009.

⁴¹ I.A. No. 2804; Order dated 09.04.2010

⁴² I.A. No. 2845; Order dated 09.04.2010

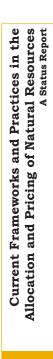
 $^{^{43}}$ I.A. No. 2735; Order dated 04.01.2010

⁴⁴ I.A. No. 2708; Order dated 29.01.2010

Annex XXIV

Extract from a note on the question of shifting water to the Concurrent List

- 1. There is a view that the structure of entries relating to water in the Constitution is not appropriate; that it limits the role that the Centre can play; and that water should be shifted to the Concurrent List. There are two main reasons for saying so.
- 2. First, if we are thinking primarily of river waters and of irrigation, as the Constitution-makers seem to have been doing, it might appear appropriate to assign the primary role to the States, and provide a specific role for the Centre in relation to inter-State rivers. However, even from that limited perspective, most of our important rivers are in fact inter-State, and inter-State (or inter-provincial) river water disputes were an old and vexed problem even at the time of the drafting the Constitution: a primary rather than a secondary or exceptional role for the Centre might well have been warranted. Further, even in single-State rivers, interventions might have consequences beyond the boundaries of the State in question.
- 3. Secondly, Entry 56 in the Union List is only about inter-State rivers and does not enable the Centre to legislate on water per se. Water is larger than rivers; ponds and lakes, springs, groundwater aquifers, glaciers, soil and atmospheric moisture, and so on, are all forms of water and constitute a hydrological unity; and there is more to water than irrigation. If the environmental, ecological, social/human, and rights concerns relating to water had been as sharply present to the makers of the Constitution as they are to us, it seems very probable that the entries in the Constitution would have been different. Besides, many laws and rules not directly about water have a bearing on water.
- 4. The theoretical case for water being in the Concurrent List is very strong indeed. Of all the subjects that are or ought to be in the Concurrent List, water ranks higher than any other. The practical and political difficulties of shifting it there remain, but these would need to be overcome.
- 5. However, if a constitutional amendment to put water into the Concurrent List seems politically impossible, then we have to settle for the second best course of greater use by the Centre of the legislative powers relating to inter-State rivers provided for in Entry 56 in the Union List, and of re-activating the dormant River Boards Act 1956. Even this 'second best' course, however, would still entail considerable political effort.



February 18, 2011





Terms of Reference

- allocation, pricing and utilization of natural resources Enhance transparency, efficiency and sustainability in the through open, transparent and competitive mechanisms
- allotted / distributed by the Government of India and the To identify major natural resources which are allotted institutional framework for utilization of such resources
- To examine the efficacy and suitability of existing legal and regulatory framework and rules and procedures in this regard
 - To suggest measures to optimize the benefits of such utilization for all stakeholders, while ensuring sustainability of the resources
- Effectiveness in allocation, pricing and utilization of these resources
- To suggest changes in legal, institutional and regulatory framework to implement the above recommendation and
- Any other issue(s) related to the above



Scheme of Presentation

3. Overarching Issues 1. Introduction Sectors 7

6. Conclusions

COMMITTEE ON ALLOCATION OF NATURAL RESOURCES I ANNEXES



Proposed Scope

- be to resources natural considered by the Committee: Jo Characteristics
- A "resource" signifies a potential commercial value
- "Natural" signifies being freely available in nature, not man made (on a large commercial scale)
- The natural resource could be renewable, renewable with cost or non-renewable
- Non-reproducible (on a large commercial scale)
- Significant existing or potential role of the Union government in allocation, pricing and utilization
- To examine the current frameworks for allocation/allotment and disposal and suggest alternations with a view to promote transparency, efficiency and sustainability.



Instruments of Allocation, Pricing and Utilisation

- ▶ How is the will of the Government expressed?
- Acts
 - Rules
- Regulations
- Guidelines Policies
- Office Memoranda
- Frequent use of policy rather than legislation
- Policy document cannot be read or interpreted as statutory provisions Not enforceable in court
- However. government cannot wilfully ignore the guidelines set by policy, but there is a aspect discretionary
- and earnest attempt to apply criteria laid down" There must be "...a real adherence
- legislation, must be coordinated to avoid a possible Article 14 delegated grounds arbitrariness avoid a challenge



Sectors under Consideration

- Minerals Coal
- Specified

Post and Telegraph Airports Authority

Defence Estates

Land Disposal

- Others
- Petroleum
- Others

Vrban Land Agencies under

Railways

Ports

Govt. of India

- Coal Bed Methane Shale Gas
- Shale Oil Hydrates
- Direct, e.g. timber Forests
- Allocation of forest land for development
- Telecommunication services Ground water Spectrum

Surface water

Water

- Other uses, e.g.,
- broadcasting



Scheme of Presentation

