



Report

Roundtable on

Green Growth and Energy Transformation

Saturday, 30th April 2016, Jaipur

1. Background

The Electricity generation capacity of India currently stands at an estimated 281 GW of which 60 percent (170 GW) comes from coal based power plants while thermal power (coal, gas and diesel) together make up nearly 70% or 191 GW. Hydroelectric power too contributes to a significant percentage with a total installed capacity of 42 GW. The total installed capacity of grid interactive renewable energy is just 36 GW which consists of solar, wind, biomass and small hydro projects¹. Recurring shortage of coal in the past, volatile oil prices and global pressure to cut emissions, with focus on sustainability have further created the need to have a greater share of renewable energy in the overall energy mix. Accordingly, the Government of India (GoI) has set an ambitious target to build 100 GW of solar energy capacity by 2022 along with 60 GW of wind power. The current Prime Minister recently launched a global solar alliance comprising 120 countries stating India's intention towards collaborative action and adopting cleaner development.

Steps undertaken by the central government such as increasing the coal cess to fund clean energy, subsidies and incentives for solar and wind projects, subsidies for rural electrification, setting up of Bureau of Energy Efficiency amongst others indicate a simultaneous approach (energy efficiency and renewable energy) towards green growth in India. The ultimate objective of cleaner and efficient energy can be achieved with a combination of three crucial elements. Firstly, there has to be an adequate demand. Second, there has to be proportionate supply and third, the institutions, agencies and bodies looking after generation, transmission and distribution must perform in coordination and efficiently.

As per a recent report by Bridge to India², India may only add 40-60 GW of solar capacity until 2022 as against the government target of 100 GW. This indicates that there is a need to reassess all the crucial elements needed for green growth. Green growth strategies will also have an impact on employment generation as newer skills will be needed to manage new ways of production, generation and transmission. Accordingly, it will also need to be assessed what kind of human capital would be needed to propel green growth. In a country like India which is currently struggling to skill close to half of its population, this question assumes enormous significance.

Amongst other actors, businesses and financial institutions too will have to set newer examples not just towards their social responsibility but also their economic and environmental responsibilities. This is also a significant aspect as GoI and many state

¹ Renewable Energy – Future Growth by Tanmoy Adhikari, IL&FS, Panorama, Volume 1, Edition, January- March 2016

² Bridge to India's Solar handbook 2016

governments are working assiduously towards increasing the share of manufacturing in the Indian economy.

Given this background, CUTS International in collaboration with Friedrich-Ebert-Stiftung (FES) aims at creating a neutral, evidence based and non-partisan forum, where all stakeholders would be brought together with an aim to foster a dialogue resulting in an action oriented agenda. The inclusive nature of the process would take into account concerns of all stakeholders, thereby providing adequate legitimacy and ensure buy-in. The roundtable discussion held on 30th April was a step in that direction.

The keynote address at the roundtable discussion was delivered by **Shri Rao Rajendra Singh, Honorable Deputy Speaker, Rajasthan Legislative Assembly**. The roundtable discussion was chaired by Shri Bipul Chatterjee, Executive Director, CUTS International.

The roundtable discussion was attended by twenty four (24) experts drawn from energy sector, academia, politics, think tanks, businesses, social entrepreneurs and bureaucracy amongst others. The list of participant is provided in the last section of this report.

2. Key points as discussed in the Round Table

2.1 Concept

The roundtable focused on the subject 'Green Growth and Energy Transformation'. It elaborated on the concept of green growth and why energy transformation is a crucial component of green growth.

The concept of green growth can best be understood by keeping the focus on 'growth in the context of sustainability'. Growth is typically understood in the context of economic growth and employment generation. However, by prefixing the word 'green', its meaning would entail 'economic growth and employment generation while improving living conditions and addressing the imperatives of resource efficiency and environmental protection'.

In this context, the topic of green growth becomes an area of interest not just for environmentalists but also for political class, economists, media, academia, think tanks and citizens at large.

Since energy is the engine of economy and therefore central to growth, it is closely linked to the subject of green growth. In other words if increasing the access to energy is accompanied by improvements in the type of energy being generated for use, and

there is transition to cleaner sources of energy, evidence suggests, there are positive ramifications for sustainable economic development.

2.2 Opportunities and Challenges for India

From the economic standpoint, today India is in a sweet spot. India stands to gain from the fact that China is ageing and Japan is building a new geo-political alliance. Besides, the Indian leadership is shopping aggressively overseas and domestically to rejuvenate and expand the base of Indian manufacturing, with campaigns such as Make in India, Skill India, etc. This implies that in times to come India has a considerable potential of inviting FDI inflows which will expedite the process of industrialization in India. Besides, it is also vested with demographic dividend³ and cheap labour which gives it an additional competitive advantage.

But at the same time, India needs to weigh these attributes against the imminent mechanization in production methods which inevitably would mean that some of these attributes will disappear. Increased mechanized industrialization would increase the energy consumption and replace manual jobs with machines thus bringing about a new challenge for employment generation and ensuring sustainability of economic activity, if there continues to be heavy reliance on non-renewables.

If one observes the western industrial economies, a trend that can be observed is that today western economies see energy transformation as a way to maintain their industrial productivity. Related to the concept of energy transformation is the fact that in the short term the prices of renewable energy may go up but in the long term it will eventually come down as technology becomes cheaper and demand surges. There is already evidence that indicates that solar power is likely to become cheaper than/or equivalent to conventional thermal energy prices over the next 2-3 years and reach Rs 4-4.5 per unit by 2017-18 in India⁴.

Therefore, there is a need to assess what India needs to do to overcome imminent challenges. To this end, a stock taking exercise needs to be carried out. We need to assess what we have and what we need to prepare ourselves for a foreseeable future.

Like in any other federal country, the nation is a sum of its parts viz states. In India too it is the states whose actions will determine the nation's destiny. Hence, an evaluation needs to be done at the level of each state. In this context, Rajasthan is an apt beginning due to its huge potential in renewable energy sector.

³ By 2020, the average Indian will be only 29 years of age, compared with 37 in China and the U.S., 45 in Western Europe, and 48 in Japan. That means India will experience an age advantage for at least three decades, through 2040

⁴ <http://timesofindia.indiatimes.com/business/india-business/Solar-power-tariff-will-reach-grid-parity-by-2017-18-India-Ratings/articleshow/48188434.cms>, visited on 26th May, 2016

2.3 Rajasthan – An Assessment

2.3.1 Attributes: Rajasthan has the potential to become a significant producer of wind and solar energy. There are 330 sunny days with 10 hours of sunshine per day and vast swathes of uninhabited land where wind energy can be produced. The national and state government policy packages speak of state commitments. Additionally, administrative environment in the state is enabling and there is an existence of industrial, heritage or tourism coalitions that can be brought into the discourse of energy transformation.

2.3.2 Gaps: Broadly, the following are the felt gaps in the state:

- Willingness of entrepreneurs to invest in the renewable energy industry
- Willingness of consumers to pay for renewable energy products as it may, in the short term, include a potential cost hike compared to conventional energy
- Willingness on part of the Government to create a complete ecosystem with appropriate policies, regulations and incentives to encourage participation of entrepreneurs and consumers

2.3.3 Challenges: In addition to the above there are also following challenges at the State level:

- ✓ **Shortage of funds:** Rajasthan currently is under an immense debt. In addition, under UDAY scheme, the state government has assumed significant chunk of liabilities of distribution companies. This has put state under financial stress which precludes the state from having sufficient funds to expand the use of renewables. Besides, it also lowers state's ability to approach financial institutions for financial loans.
- ✓ **Cheap fossil fuel:** Given the current global situation, the fossil fuel prices are sliding rapidly. This makes conventional energy relatively cheaper. However, in recent times solar tariffs have also come down to levels comparable with conventional energy, as mentioned above, albeit with support of land and capital subsidies. The question, therefore, is how to make renewable energy competitive if the government does not provide subsidy? This question is significant question in light of the fact that subsidies add further burden to the financial health of the state and are not sustainable.
- ✓ **Lack of capacity of energy department to trade carbon credits:** The state has been sluggish in trading carbon credits and has missed several opportunities when the trading could have been done at favorable rates.

- ✓ **Frequent elections:** The country and states are always in an election mode. There is general election, assembly elections, bye- elections and local elections. Therefore, a transformative strategy has to account for political priorities and will. Moreover, a long term agenda runs the risk of being ignored by the political community due to conditions imposed by frequent elections.
- ✓ **Lack of platform which could vet projects on technical, commercial and political feasibility:** There is in general lack of platform to test ideas or projects across three parameters namely technical, commercial and political to get wider acceptability.
- ✓ **Lack of a win-win strategy with involvement of DISCOMs:** There is a general lack of support from DISCOMs to install decentralized solar infrastructure. A general notion is that this will cut into their business, which is already pressed for finance.
- ✓ **Lack of availability of technical manpower:** There is also lack of availability of technical manpower to install and maintain the decentralized solar rooftop systems.
- ✓ **Addition of more thermal power stations:** In the recent times, the state has added thermal power plants. These are long term investments and thus will exert pressure on the proliferation of renewables.
- ✓ **Lack of a sustained media campaign:** There is a need to bring Media on board as a partner in creating a transformative push towards renewables and energy efficiency. Therefore there is a need to sensitise media on this issue and develop long term partnerships.
- ✓ **Lack of policy coherence:** In the recent times, Rajasthan has coined several policies for the promotion of renewable energy. Some of these policies include polices on solar (2014), wind (2012) and biomass (2010). In addition, there are other national and state level economic and social policies, which are being put in place for the overall development of the state. There is a need to create policy coherence to accelerate the adoption of renewables and energy efficiency in the state. For instance, National Fibre Optics Network comes with a promise of linking 250,000 panchayats with broadband which in lieu can create number of ICT related jobs. But this would be useless if there is no affordable access to electricity in the rural areas. Therefore, policy coherence is essential to determine technical, commercial and political feasibility.

2.3.4 Need to formulate a green growth strategy in Rajasthan:

Given the above, it is clear the gaps and challenges are closely related. A careful analysis of gaps and challenges throw ample light on the fact that despite the availability of all the natural attributes, Rajasthan has only been able to move ahead in a limited way.

Therefore, there is a need to scale-up initiatives into broader transition strategies, strengthen political discourses and form societal coalitions. These strategies will have to consider the political economy of reforms, incorporate questions of social justice and address the interests of key stakeholders.

Therefore, way forward would entail building a social coalition of groups exhibiting different interests and priorities yet converging on a common vision. To help this social coalition bring in a transformative change, the following four point strategy could be created:

- ✓ Create a vision: This would entail a vision for the future where interests of all the relevant stakeholders will converge. This future vision must be broken into foreseeable targets so political will accompanies the vision.
- ✓ Discourse alliance: A discourse alliance is to comprise of actors from different backgrounds but with a common goal. These people will identify issues that can be converted into projects that will catalyze the change to transformation.
- ✓ Vetting of the ideas: The change bearing ideas would need to be vetted from the lens of political, commercial and technical feasibility.
- ✓ Narrative: The narrative will entail a story that justifies the vision.

3. Catalytic ideas identified in the Roundtable:

In the backdrop of gaps and challenges the roundtable concluded that the following ideas can be vetted further through a mechanism of a seed community comprising of experts drawn from various sections of society.

- ✓ **Solar roof-top**: The solar rooftop is workable idea since it can be financed by the middle class, can create jobs for installation and maintenance, and can lead to opportunities for local entrepreneurs.
- ✓ **Rural electrification**: This assumes significance as the Government of India has set a target to electrify 18,452 villages by May 1, 2018. Also, this could facilitate creation of jobs at the village level.

In order to scale-up these and other emerging initiatives into broader transition strategies the following way forward is envisaged.

4. Way Forward

The way forward would entail examining and vetting these issues by a group comprising experts from technical, political, business, media, academia and think tank that would constitute a **Seed Community** in the state of Rajasthan. It is also proposed that committee on Environment, Rajasthan State Assembly is an important body and therefore must be included as a key stakeholder in this project.

5. List of Participants

S No.	Name (in alphabetical order)	Particulars
1.	A K Godika	Executive Director, Rajasthan Chamber of Commerce & Industry
2.	Abhishek Kumar	Associate Director CUTS International
3.	Bipul Chatterjee	Executive Director CUTS International
4.	Chhavi Chawla	Research Scholar Massey University
5.	D S Agarwal	Consultant Rudraksh Energy
6.	G S Verma	Assistant Director (Technical), Rajasthan Electricity Regulatory Commission (NERC)
7.	Gaurav Jha	Research Associate CUTS International
8.	Keya Ghosh	Adviser CUTS Calcutta Resource Centre
9.	Madan Mohan Vijayvergia	Adviser and Principle consultant Solar, Wind & Biomass Project CVK Solar Enterprises
10.	Madhusudan Sharma	Senior Project Coordinator CUTS International
11.	Marc Saxer	Resident Representative Friedrich-Ebert-Stiftung (FES)
12.	N K Parnami	Director Rajasthan Electricity Regulatory Commission (NERC)

S No.	Name (in alphabetical order)	Particulars
13.	R K Bhandari	Director (Technical) Rajasthan Renewable Energy Corporation Limited
14.	Rakshat Hooja	Director IDA Education Pvt. Ltd
15.	Rao Rajendra Singh	Deputy Speaker, Rajasthan State Assembly
16.	Rashmi Dickinson	Co-Founder India Inspiration Initiative
17.	Rohit Brandon	Honorary Professor Institute of Development Studies (IDS), Jaipur
18.	S S Gupta	Tech. Consultant Rajasthan Electricity Regulatory Commission (RERC)
19.	Sahej Malik	Programme Adviser, Economy of Tomorrow Friedrich-Ebert-Stiftung (FES)
20.	Sahil Bansal	Indian Green Buildings CII Rajasthan
21.	Sayantan Sengupta	Programme Officer, CUTS - CRC
22.	Shanti Prasad	Ex-Chairman Rajasthan Electricity Regulatory Commission (RERC)
23.	Surbhi Singhvi	Assistant Policy Analyst CUTS International
24.	Surya Chandak	Professor Emeritus BIMTECH
25.	Udai S. Mehta	Director CUTS International