

BEE ENERGY STAR LABELLING PROGRAMME

Brief Overview on Implementation & Success Factors

Introduction

The first energy-efficiency standards that dramatically affected manufacturers and significantly reduced energy consumption were mandated by the state of California, US in 1976. These standards became effective in 1977, which were followed by the implementation of national standards in 1988.¹ Currently, the Energy Efficiency (EE) Standards & Labelling (S&L) programme is successfully implemented across many countries and is a common tool used by governments around the world to help overcome information barriers faced by consumers when purchasing new appliances.²

The programme brings in considerable benefits, such as availability of high quality EE labelled products in the market, energy and money savings for consumers, promoting healthy competition in consumer appliance product category through market transformation, controlling extra power generation and reducing overall carbon emissions³ of the implementing country.

For instance, the US Energy Star logo is recognised internationally as a mark of EE. The programme has saved US consumers' US\$34bn on their utility bills and saved over 2,000 metric tonnes of CO₂.⁴

¹Stephen Wiel, James E. McMahon, *Energy-Efficiency Labels and Standards: A Guidebook for Appliances, Equipment, and Lighting*, Collaborative Labelling and Appliance Standards Program (CLASP), US, February 2001. Accessible at: https://eta.lbl.gov/sites/all/files/publications/energy_efficiency_labels_and_standards_a_guidebook_for_appliances_equipment_and_lighting_lbnl-45387.pdf

² ACIL ALLEN Consulting, 'Energy Label Rating Review – Final Report Prepared for the Department of Industry on behalf of the Equipment Energy Efficiency Committee, March 2014. Accessible at: www.acilallen.com.au/cms_files/ACILAllen_EnergyRatingLabels2014.pdf

³ Chatterjee, Bipul and Suresh P. Singh, 'Energy Efficient Products and Indian Consumers', CUTS International, 2012. Accessible at: www.cuts-citee.org/pdf/energy_efficient_products_and_indian_consumers.pdf

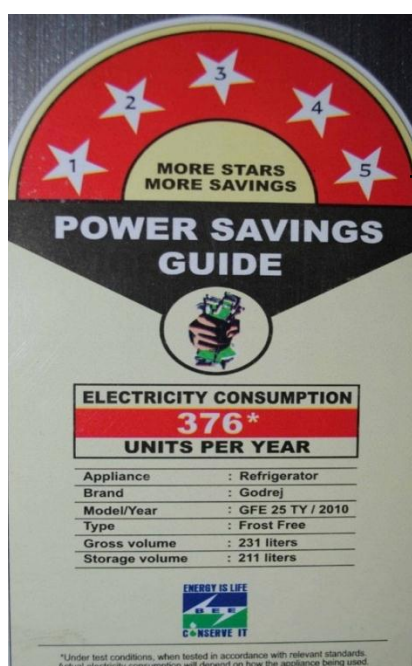
⁴ Accessible at: <http://clasp.ngo/Why-Standards-and-Labels>

BEE Star Labelling – Why?

In response to the worldwide popularity of such EE labelling schemes, the Government of India, through the Bureau of Energy Efficiency (BEE),⁵ launched the EE S&L programme in 2006 with the objective of providing a tool for consumers to make an informed choice on energy and cost savings on marketed household and other appliances.⁶ ‘Stars’ assigned from 1 to 5 in increasing order of efficiency, estimated annual energy consumption and brand details are displayed on the label for consumer benefit.

As on date, 21 appliances are covered under this scheme out of which 8 are mandatory and 13 are in voluntary phase.

BEE launched the labelling programme on a voluntary basis for fewer appliances and gradually transited these to a mandatory phase as market preparedness and receptivity increased. For the same, voluntary labelled products were tracked with a view to assess the penetration of these products in the market. Once the market share of voluntary labelled products became more than 50 percent, introduction of mandatory labelling for that product was considered.⁷



No. of Stars within red colour strip indicates the rating granted. More Stars, More Savings

Know the number of electricity units consumed in one year

Brand-specific details

BEE Logo

⁵A designated agency empowered by the Ministry of Power, Government of India, under EC Act 2001, BEE was set up in 2002 with the objective of developing programmes towards conservation and efficient use of energy within the country and reduce India’s energy intensity.

⁶21 appliances covered under the labelling scheme are: Room Air Conditioner, Tubular Fluorescent Lamps, Frost Free Refrigerator, RAC (Cassette, Floor Standing Tower, Ceiling, Corner AC), Distribution Transformer, Direct Cool Refrigerator, Colour Television, Electric Geysers (all under mandatory labelling scheme) and Ceiling Fan, Computer, Domestic Gas Stove, Induction Motors, Agricultural Pumpset, Washing machines, Ballast, Office Equipments (Printer, Copier, Scanner, MFD’S), Diesel Engine Driven Monoset Pumps, Solid State Inverter, Diesel Generator, Led Lamps, Variable Capacity Air Conditioners (under voluntary labelling scheme).

⁷BEE Standards and Labelling Programme to cover washing machines, The Financial Express, Aug 27 2010. Accessible at: www.financialexpress.com/archive/bee-standards-and-labelling-programme-to-cover-washing-machines/673324/

The need for S&L programme in India was because of multiple reasons. First, India was gradually rising as an energy-consuming country, owing to population growth and economic development. Second, information available for energy consumption of products was often skewed or uneasy to understand and third, was due to gradual rise in manufacturing and sale of sub-standard appliances.⁸

Growth of Energy Appliances

Although India was the world’s 5th largest energy consumer (see Table 1) when work on the labelling programme was initiated in 2002,⁹ the country had a very low saturation rate¹⁰ of appliances, especially for refrigerators and air conditioners (see Table 2).

Table 1: Top Energy Consuming Countries (Year 2002)

Rank	Country	Unit (million tonnes of oil equivalent - Mtoe)
1.	US	2256
2.	China	1326
3.	Russia	623
4.	Japan	510
5.	India	462
6.	Germany	339
7.	France	261
8.	Canada	248
9.	UK	219
10.	South Korea	201
11.	Brazil	196
12.	Italy	173

Source: <https://yearbook.enerdata.net/>

⁸Energy efficient appliances: Look for energy label. Accessible at: <http://cseindia.org/content/energy-efficient-appliances>

⁹BEE established in 2002, is responsible for spearheading the improvement of energy efficiency in the economy through various regulatory and promotional instruments. One such initiative was the energy efficiency label.

¹⁰Saturation Rate: The penetration rate of an electrical appliance in households of a geographical area.

Table 2: Saturation of Appliances in Indian Households during 2002

Appliance Type	Saturation (in %)
Refrigerator	10.84
Air conditioner	0.63
Fan	48.94
Television	37.79%

Source: Alexander Boegle, Daljit Singh and Girish Sant, Energy Saving Potential in Indian Households from Improved Appliance Efficiency, Prayas Energy Group, Pune. Accessible at: www.prayaspune.org/peg/media/k2/attachments/energy_saving_potential_from_indian_households_from_appliance_efficiency_108A01.pdf

Significant penetration was expected for both refrigerators and air conditioners, which consumed up to 20 percent of Indian household electric power consumption. These appliances were not EE as there was no specific programme or incentive to promote EE then. Hence, any initiative to ensure EE of such appliances would significantly impact the total energy consumption in the country.

Lack of Consumer Awareness

Before the introduction of BEE label, price was the most determining factor for Indian consumers while purchasing electrical appliances, followed by energy consumption and running costs of appliance. Absence of a standard information on energy consumption led to information asymmetry and confusion among consumers. With the introduction of Energy Labelling Scheme, the situation transformed considerably. Consumers, though still price sensitive,¹¹ were more sensitised and aware about electricity consumption of their appliances.

Acceptance of BEE Star Labelling – How?

Since Indian consumers were more price sensitive, awareness campaigns were primarily focussed on associated cost benefits in the long term. Also, taking into confidence all relevant stakeholders from beginning and ensuring their active involvement in the implementation process were the most important factors for the success of energy efficiency movement in the country.

¹¹ Neha Dhingra et al., Measuring the Impact of India's Standard and Labelling Programme, International Energy Policies & Programmes Evaluation Conference, Amsterdam, 2016. Accessible at: www.iepeec.org/wp-content/uploads/2016/05/Paper-Dhingra-1.pdf

Stakeholder Involvement

Due to BEE's credibility, all relevant stakeholders showed significant interest in the S&L programme. BEE worked closely with various key stakeholders through its Steering & Technical committees for effective implementation and monitoring of the programme. Various stakeholders, including energy economists from within BEE, Bureau of Indian Standards (BIS), National Accreditation Board for Testing and Calibration Laboratories (NABL), appliance manufacturers, manufacturers' associations, test laboratories, independent experts and consumer groups are proactively invited to meetings of Technical Committee. Collaborative Labelling and Appliance Standards Programme (CLASP), an international non-profit organisation, is also present in these meetings as an observer.¹²

Lack of Technical Capacity A Major Concern

Ensuring multi-stakeholder participation in fora, such as the Technical committees reduces the risk of capture by any one interest group (for example, by manufacturers). Admittedly, several decisions made during the implementation of S&L programme are highly technical and lack of capacity, particularly among CSOs, to engage in this technical space is a major concern. Other than one or two organisations based in New Delhi, no CSOs represented in meetings of Technical Committee in India.

Source: Bharath Jairaj, Sarah Martin and Neelam Singh Robust, Recognizable, and Legitimate: Strengthening India's Appliance Efficiency Standards and Labels through Greater Civil Society Involvement, 2013. Accessible at www.wri.org/sites/default/files/robust_recognizable_legitimate.pdf

Besides, S&L programme in India is actively supported by several international funding agencies (for technical assistance as well as direct costs) including the following through CLASP:¹³

- US Agency for International Development (USAID)
- US Environmental Protection Agency (USEPA)
- United Nations Foundation (UNF)

Reports indicate that several major appliance manufacturers and their associations participated in the programme and continue to do so. In its Annual Report for the year 2007-2008, BEE noted that 80 percent of refrigerator manufacturers, 90 percent of tube

¹²Jairaj Bharath, Sarah Martin and Neelam Singh Robust, *Recognizable, and Legitimate: Strengthening India's Appliance Efficiency Standards and Labels through Greater Civil Society Involvement*, 2013. Accessible at: www.wri.org/sites/default/files/robust_recognizable_legitimate.pdf

¹³Tanmay Tathagat, *India Labelling Program Impacts: Case Study, Collaborative Labelling and Appliance Standards Programme (CLASP)*, 2007. Accessible at: <http://clasp.ngo/en/Resources/Resources/PublicationLibrary/2007/India-labeling-program-impacts-case-study>

light manufacturers, and 80 percent of air conditioner manufacturers participated in the programme.

Campaigns/advertisements

Awareness is the key to ensure success of labelling programme, and there is no short cut to awareness generation campaigns. The Government of India, vide Ministry of Power, Ministry of Information & Broadcasting and Telecom Regulatory Authority of India, actively and successfully propagated BEE's nationwide consumer awareness campaigns for almost 11 years and continue to do so. Also, the Energy Conservation Act 2001 and the Electricity Act 2003 provide legal basis, *inter alia*, for such public information campaigning.

In order to gear up propagation of energy conservation and efficiency in every part of the country, services of media were embarked upon from the beginning. This resulted in BEE's radio and television advertisements reaching out to Indian citizens, along with inspiring messages and information amplified via national dailies, and sensing the pulse of energy consciousness through energy saving slogans flashing on electronic display boards at various geographic locations. BEE also organised frequent exhibitions on power sector with a dedicated stall to display the achievements of BEE. The promotional materials, such as leaflets/brochures were also distributed among visitors.

A study undertaken by CUTS¹⁴ showcased that the S&L programme of BEE has made significant progress. Consumer awareness on the use of EE products is increasing and their willingness to know more about EE and also to pay a premium is also steadily rising. Another important observation that emerged from the study is that almost 43 percent consumers had shown the intent to shift towards EE products.

Regular Assessment

BEE periodically conducts assessment of its programme on market transformation, consumer awareness and energy savings. The first impact assessment was carried out in 2010 followed by another in 2014, both of which were supported by CLASP. According to the 2014 assessment:

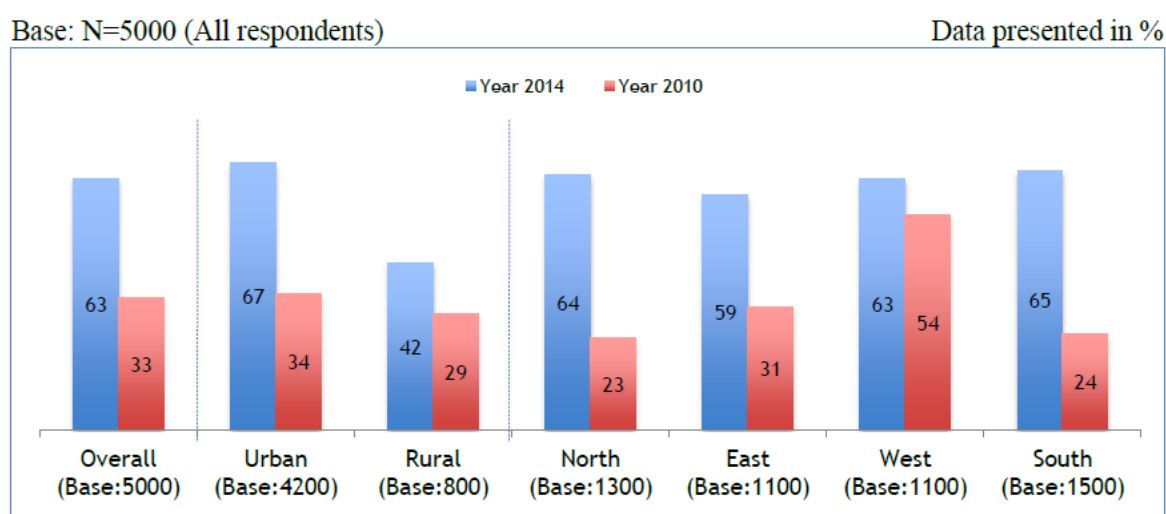
- 63 percent of all respondents were aware or had seen energy labels, as compared to 33 percent reported in 2010
- Awareness level almost doubled as compared to last survey but was yet to reach a significant proportion of people

¹⁴Supra Note 3

- Awareness levels were higher amongst urban consumers as compared to rural. The campaigns were not targeted at urban populations necessarily but they impacted urban population due to their greater exposure and access to print and visual media
- A significant percentage of consumers, especially those that belong to lower socio-economic groups and in rural areas, remained unaware of energy label and its associated benefits

(Figure 1 shows awareness levels of consumers across zones as well as rural and urban areas.)

Figure 1: Level of Awareness of the BEE Labelling Programme



Source: Neha Dhingra et al., Measuring the Impact of India's Standard and Labelling Programme, International Energy Policies & Programmes Evaluation Conference, Amsterdam, 2016. Accessible at: www.iepeec.org/wp-content/uploads/2016/05/Paper-Dhingra-1.pdf

The primary source of awareness was television, followed by retailers and word of mouth as seen in Table 3. Almost 76 percent of those surveyed in 2014 responded that they became aware about BEE star labelling through advertisement in television while 53 percent heard from their friends and family. However, in 2010 study percentage of response for television was slightly greater with 81 percent.

Table 3: Primary Sources of Awareness for Consumers

	All (in %)		Urban (in %)		Rural (in %)	
	2010	2014	2010	2014	2010	2014
Television	81	76	82	76	73	77
Retail	45	30	47	32	27	19
Word of mouth – Friends, relatives etc.	51	53	54	58	52	28
Print/Magazine	19	14	20	14	11	15
POS in shops	14	12	15	10	4	23
Newspapers	13	47	14	49	7	33
Banners	5	9	6	9	1	9
Radio	3	12	4	13	1	7
Cinema/Theatres	-	2	-	1	-	9
Websites/Online	-	8	-	9	-	5

Source: Neha Dhingra et al., Measuring the Impact of India's Standard and Labelling Program, International Energy Policies & Programmes Evaluation Conference, Amsterdam, 2016. Accessible at <www.ieppecc.org/wp-content/uploads/2016/05/Paper-Dhingra-1.pdf>

Box 1: Indicators of Successful S&L Programme

Based on experience in 10 countries, seven common indicators identified for a successful S&L programme:

- Strong legal, regulatory and policy basis
- Prior experience and maturity of programme
- Sufficient capacity, resources and funding
- Strong communications strategy
- Effective monitoring and compliance mechanism
- Extensive stakeholder engagement
- Periodic impact evaluation and revision

Source: Bharath Jairaj, Sarah Martin and Neelam Singh - Robust, Recognizable, and Legitimate: Strengthening India's Appliance Efficiency Standards and Labels through Greater Civil Society Involvement, 2013. Accessible at: www.wri.org/sites/default/files/robust_recognizable_legitimate.pdf

Conclusion

The results of BEE's S&L programme have been impressive, which has created significant impact among consumers to purchase EE equipment through a structured consumer awareness programme. Market transformation occurred from non-EE products to EE products, resulting in energy conservation of 7766MW as per the 11th Five-year plan (2007-2012).¹⁵ The following remarks maybe summarised from the programme on how it may be applied to foster a more widespread implementation of similar labelling programmes in other sectors of the Indian Industry:

1

Phased Approach – Implementation of any labelling programme must have a phased approach. The 1st phase may focus on communicating voluntary acceptance of the label and once relevant consumer demand picks, the same may be mandated.

2

Role of Relevant Ministry – Involvement of relevant sectoral ministry in the labelling programme from the very beginning is crucial so as to give direction and thrust to all stakeholders to ensure smooth implementation.

3

Capacity Building – Trainings, workshops and awareness programmes oriented towards importance, benefits and usage of labelling tool must be organised for all relevant stakeholders.

4

Stakeholder Involvement – Building positive relations with market players is critical as their cooperation and buy-in is important to make the label a success, which may be complimented by understanding their schedules and constraints. It is also essential to work with consumer attitudes as acceptance or rejection of any new label is ultimately in their hands.

5

Regular Quality Assessment – It is also vital to maintain standards and quality once the label is introduced. The labelled product or service should be regularly assessed to determine if an increase in efficiency criterion is required, along with monitoring quality features of the product or service.

¹⁵ Material for inclusion in Chapter- 10 relating to 'Energy Conservation', Bureau of Energy Efficiency. Accessible at: <https://beeindia.gov.in/sites/default/files/ctools/12.pdf>