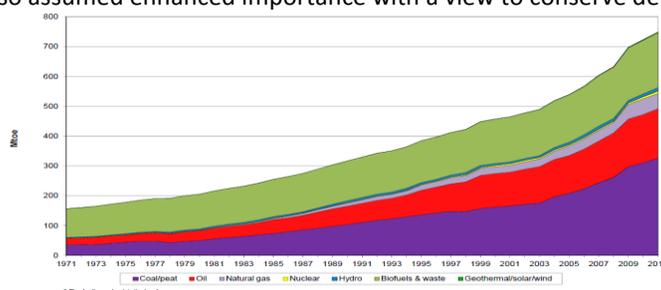


BUREAU OF ENERGY EFFICIENCY

Material for inclusion in Chapter- 10 relating to 'Energy Conservation'

The gap between electricity supply and demand in terms of both capacity (i.e. MW) and energy (i.e. MWh) has been steadily growing in India. Improving the efficiency with which energy is used to provide economic services meets the dual objectives of promoting sustainable development and of making the economy competitive. Recognizing the formidable challenges of meeting the energy needs and providing adequate and varied energy of desired quality to users in a sustainable manner and at reasonable costs, improving efficiency has become important components of energy policy. In addition, the environmental and health burdens arising out of the use of hydrocarbons may also force mankind towards energy efficiency and clean energy systems. Energy Efficiency and Conservation has also assumed enhanced importance with a view to conserve depleting energy resources.



Source: IEA

The Energy Conservation Act (2001) is the most important multi-sectoral legislation in India and is intended to promote efficient use of energy in India. The Act specifies energy consumption standards for equipment and appliances, establishes and prescribes energy consumption norms and standards for designated consumers, prescribes energy conservation building code for efficient use of energy in commercial buildings, and establishes a compliance mechanism for energy consumption norms and standards. Large scale energy savings can be realized through strengthening of the existing policies and schemes as well as expanding and reaching out to new areas i.e. Utility Demand Side Management, Human Resource Development Programme and Super-Efficient Equipment Programme in the 12th Five Year Plan.

Bureau of Energy Efficiency (BEE), a statutory body under Ministry of Power is responsible for spearheading the improvement of energy efficiency in the economy through various regulatory and promotional instruments.

Promoting Energy Efficiency in Buildings

Energy Conservation Building Code (ECBC) was developed and introduced in the 11th Plan. This code sets minimum energy performance standards for commercial buildings having a connected load of 100 KW or above or contract demand of 120kVA or above. While BEE has developed ECBC, its enforcement lies with the state government. 22 states are at various stages of adoption of the code. 8 States and Union Territories (Rajasthan, Odisha, Punjab, Andhra Pradesh, Telangana, Puducherry, Karnataka and Uttarakhand) have notified the ECBC. During the year the following achievements are highlighted:

- Energy Efficient Guidelines for Multi storey Residential Buildings developed for composite and Hot & dry climatic zone.
- Voluntary Star Labeling scheme for Hospital buildings launched.
- A report to identify and list energy efficient building material developed based on market study.
- The Second round of ECBC Master training programme for ECBC professionals was held at MNIT, Jaipur; CEPT, Ahmadabad and IIT, Hyderabad.

Standards and Labeling Scheme

Standards and labeling scheme was one of the standalone schemes initiated during 11th Five year plan. The key objectives of the S&L program is to provide the consumer an informed choice about various energy consuming equipment/appliances regarding the energy saving it would result based on the energy efficiency performance.

With the above objectives, the S&L scheme widely covers 19 equipments in which 4 equipments are mandatory and 15 covered under voluntary scheme. Thus Standards and labeling scheme was successfully achieved with the following benefits:

- It created good impact among consumers to purchase energy efficient equipment through a structured consumer awareness program.
- Market transformation occurred from non energy efficient products to energy efficient products.
- Resulted an avoided capacity generation of 7766MW in the 11th plan.

With the continued efforts, BEE has now preparing to move the following three equipments from the voluntary stage to mandatory stage in 12th Plan period:

1. Direct Cooled Refrigerator
2. Electric Water Heater
3. Color Television

Out of the above, the star labeling scheme for DG Sets & DG Pumps was successfully launched in 2014. By the end of 12th plan period, it is planned to have 20 equipments under voluntary phase and 7 equipments under mandatory phase including the above said equipments. It is targeted to achieve an avoided peak capacity generation of 2308 MW at the end of 12th Five year plan.

Capacity Building of DISCOMS

Demand Side Management (DSM) measures in the Energy Sector is a cost effective tool. As a customer strategy, DSM programs encourage the installation of end-use technologies that consume less energy, thereby reducing and/or shifting the customer's overall electric bill. In the short term, DSM program can reduce energy costs for utilities, and in the long term, DSM programs can help limit the need for utilities to build new power plants, distribution, and transmission lines. In this context, Bureau of Energy Efficiency has launched a programme for capacity building of DISCOMS.

The objective of the programme is capacity building of DISCOMS for carrying out load management programme, energy conservation programme, development of DSM action plan and implementation of DSM activities in their respective areas. This programme would help the DISCOMS for reducing peak electricity demand so that they can delay building further capacity. This would overcome barriers affecting customer uptake including lack of information and knowledge about energy efficiency and financial considerations such as affordability, competing investment priorities or access to financing. These barriers can be removed through appropriate government policy and regulation, and by careful design of DSM programs.

The expected deliverables under the program are as follows:

- In first phase of this scheme, 30 DISCOMS will be selected and MoU will be signed between BEE and DISCOM.
- DSM cells would be established by the DISCOMS.
- Manpower support would be provided by BEE to these DISCOMS to facilitate DSM activities and providing support to officials of DISCOMS.
- About 500 Master trainers would be created under "Training of Trainers" activity. The trained professionals will impart training to other officials of DISCOMS.
- Consultancy support would be provided to each DISCOMS for load surveys, load research, load strategies etc. and preparation of DSM Action Plans.

Progress So far:

- Selection of DISCOMS: 30 DISCOMS selected by BEE.
- Signing of MoU: MoU signed between BEE and 30 DISCOMS.
- Establishment of DSM cell: DSM cell has been established in 26 DISCOMS under this programme.
- Man Power Support: Two DSM experts provided to each DISCOM for providing support to DISCOM.
- Load Survey: Load survey activity is ongoing in all DISCOMS.
- Creation of Master Trainers: Training needs assessment completed for the training need of each DISCOM.

Agriculture Demand Side Management (Ag-DSM)

Agriculture is an important sector of the Indian economy, according to Ministry of Agriculture it accounts for 14% of India's GDP, about 11% of its exports. This sector accounts for approximately 80 percent of India's total water consumption, and pumps are the most vital element of the irrigation process, presently approximately 20 millions in numbers consuming 18% of total National electricity consumption of India.

The sector is dominated by highly in-efficient pump sets having average efficiency range of 25%-30% while efficiency level of star rated energy efficient pump sets is 50%-55%. In order to tap the energy saving potential, Agricultural Demand Side Management (AgDSM) scheme of BEE was initiated during XI plan in eleven DISCOMS of selected eight states (Maharashtra, Haryana, Punjab, Rajasthan, Gujarat, Andhra Pradesh, Madhya Pradesh and Karnataka) which are agriculturally intensive and accounts for more than 70% of electricity consumption in this sector. Under this scheme, 11 Detailed Project Reports (DPRs) were prepared in 8 states covering about 20,000 pump sets connected on 87 feeders. These DPRs have been prepared to include baseline estimation, energy saving potential assessment, risk mitigation measures, cost benefit analysis etc.

The first pilot Ag-DSM project was launched by the then Hon'ble Union Minister of Power Shri Sushilkumar Shinde in the Mangalwedha Sub-division of Solapur District in Maharashtra in February, 2009. Total 2209 in-efficient pump sets are replaced with star rated energy efficient pump sets reflecting 25 % savings equivalent to an estimated annual energy savings of 6.1 MU.

At the outset of XII five year plan, the objective is to reduce the energy intensity of agriculture pumping sector by carrying out efficiency up gradation agricultural pump sets through following four major interventions:

- i. Facilitate State government to issue State wide regulatory notification for mandating the use of BEE star labeled pump sets for new agriculture connections.
- ii. Facilitate implementation of DPRs prepared during XI plan.
- iii. Technical assistance and capacity development of all stakeholders

iv. Demonstration projects on Pumping efficiency up gradation in Rural Public Health & Drinking water system.

Selected agriculturally intensive States were requested to submit the willingness for implementation of AgDSM scheme and avail benefits of the scheme. In reply, 5 states responded and discussions are in progress for implementation of AgDSM scheme in these states. Pilot AgDSM projects are in consideration for implementation by State of Rajasthan and Andhra Pradesh. Chamundeshwari Electricity Supply Company (CESC) DISCOM, Karnataka is implementing pilot AgDSM DPR through M/s EESL.

Municipal Demand Side Management (Mu-DSM)

Identifying the immense energy saving potential in municipal sector, BEE initiates Municipal Demand Side Management (MuDSM) during XI plan. Bureau of Energy Efficiency has initiated a programme to cover 175 municipalities in the country by conducting energy audits and preparation of Detailed Project Reports (DPRs) and implementation through ESCO mode.

Poor financial health of ULBs makes it difficult for them to implement projects themselves and also ESCOs are apprehensive in receiving payment. Implementation of the project at the ground level is highly necessary which will create a market transformation among technology provider, implementing partners, financial institutions etc. In view of these facts, it is decided to take up implementation of ECMs in 15 ULBs on pilot basis during XII plan. Also, DPR preparation of water bodies in 20 water bodies where significant potential saving has envisaged will be undertaken. The overall broad objectives of the XII plan programme are as follows:

- To build the technical and managerial capacity of the energy conservation cell of ULBs.
- Realizing the energy saving through implementation of selective DPRs in few ULBs.
- Facilitation to other ULBs to replicate the implementation process through knowledge transfer.
- Involving various stakeholders to create a market transformation in energy efficiency.
- Initiating new energy conservation areas where municipalities/states will be benefited.
- Facilitating state Urban Development Departments to create institutional arrangements through which projects can be implemented.

Small and Medium Enterprises (SMEs)

BEE has been running a program to accelerate uptake of Energy Efficiency in SME sector since year 2009. During XI plan, BEE conducted a situational analysis study, and shortlisted 25 clusters with substantial potential for energy saving such as Foundry, Forging, Ceramic, Refractories, textiles etc.

BEE carried out a number of preliminary and detailed energy audits in clusters across India and prepared 375 nos of Detailed project reports for each of these clusters. These Detailed project reports were prepared to provide an informed choice to unit owners at the time of selecting a technology specific to their requirements.

Bureau also conducted a number of capacity building workshops on Energy efficiency and Energy Management techniques for the entrepreneurs in these 25 clusters.

However, in the FY 2013-14 of the XII plan, Bureau selected 5 high energy intensive clusters out of the earlier 25 SME clusters identified under the XI plan to demonstrate the technologies identified in XI plan. Bureau intends to implement technology demonstration projects in 5 clusters namely Varanasi (Brick), Pali (Textile), Ludhiana (Forging), Kochi (Sea Food), Indore(Food) in XII plan. In the FY2014-15 of the XII plan BEE focuses on following three activities in all five clusters.

1. **Implementation of Demonstration projects:** Implementation of 2 energy efficient technologies in 20 units in the cluster with a provision to subsidize 50% of the technology demonstration cost maximum to Rs10 lakhs.
2. **Capacity building workshops:** Information dissemination workshop for wider replication of the technologies in remaining units of cluster.
3. **National workshop:** For dissemination of the savings achieved in the cluster through implementation of demonstrations.

BEE has already initiated its activities in the units of all five clusters and they are at different stages of implementation.

BEE will also initiate the activity on energy mapping of the SMEs on pan India basis which can be further classified on a region-wise/ sector-wise/ product-wise basis in the FY2015-16 of the XII plan.

Strengthening Institutional Capacity of State Designated Agencies (SDAs)

During the XII plan, the Ministry of Power has approved a scheme for "Strengthening of State Designated Agencies (SDAs) on efficient use of energy and its conservation". The total outlay of the scheme approved during the XII plan is Rs. 205.31 crores and comprises of following components:

1. Providing financial assistance to the State Designated Agencies to strengthen their institutional capacities and capabilities.
2. Contribution to State Energy Conservation Fund (SECF)
3. Human Resource Development for promoting Energy Efficiency

During the financial year 2012-13, an amount of Rs 25.23 crores was disbursed to 21 SDAs for implementation of components namely, demonstration projects to showcase the effectiveness of the most energy efficient technology including LED Village

Campaign, institutionalization of enforcement machinery at the state level programmes, manpower support to smoothly coordinate, regulate and enforce energy efficiency in the States and dissemination of knowledge to various stakeholders through workshops, training programmes, impact analysis, publicity / awareness, maintenance of internet platform etc. Furthermore, for the financial year 2013-14, amount of Rs 27.493 crores has been disbursed to SDAs.

Contribution to State Energy Conservation Fund (SECF)

Clause 16 (1) of the Energy Conservation Act 2001 requires State Governments / U.T. Administrations to constitute a fund called SECF for the purpose of promotion of efficient use of energy and its conservation within the State. In this context, a scheme titled Contribution to State Energy Conservation Fund (SECF) by the Government of India was approved during the 11th plan with an outlay of Rs 66 crores and is continued during the 12th plan with a budget outlay of Rs 50 crores. It is to be used as an instrument to facilitate implementation of energy efficiency projects through market transformation. For undertaking energy efficiency projects major part of the funds disbursed under SECF is to be earmarked separately as Revolving Investment Fund (RIF). The total outlay proposed for this sub-scheme during the XII plan is Rs. 50.00 crores. Till date, 25 states have constituted SECF out of which about 15 states have also provided matching contribution.

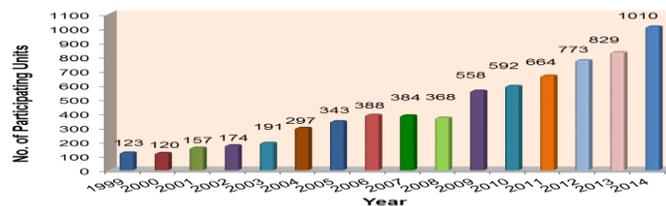
National Energy Conservation Award and Painting Competition

The National Energy Conservation Awards are presented to industry and other establishments and prizes to the winners of the annual Painting Competition on Energy Conservation for school children every year by the Ministry of Power with the objective of promoting energy conservation among all sectors of economy.

National Energy Conservation Awards

The annual energy conservation awards recognize innovation and achievements in energy conservation by industries and other establishments. The scheme has motivated industry and other establishment to adopt energy efficiency measures.

ENCOURAGING RESPONSE FROM INDIAN INDUSTRY AND OTHER ESTABLISHMENTS IN THE NATIONAL ENERGY CONSERVATION AWARD SCHEME (1999-2014)



ELECTRICAL ENERGY SAVINGS IN TERMS OF EQUIVALENT AVOIDED CAPACITY (MW) PER YEAR BY THE PARTICIPATING UNITS THROUGH IMPLEMENTATION OF ENERGY SAVING PROJECTS (1999-2014)



Salient achievements of EC Award 2014:

- Participating units invested Rs. 9091 Crores in energy conservation measures, and achieved monetary savings of Rs. 4817 Crore.
- Participating units also saved electrical energy of 5197 Million kWh, which is equivalent to the energy generated from a 751 MW thermal power station.
- 22% increase in participation w.r.t. 2013
- All 41 Ordnance factories of India participated
- This year also saw excellent participation from Building Sector- 149 Office buildings, 9 BPOs, 32 Hotels, and 46 Hospitals
- 41 First prize, 37 second prize and 44 units were selected for certificate of merit.

Hon'ble Minister of State (Independent Charge) for Power, Coal and New and Renewable Energy , Shri Piyush Goyal presented the awards to winners on 14th Dec, 2014 at Vigyan Bhawan.



(The Minister of State (Independent Charge) for Power, Coal and New and Renewable Energy, Shri Piyush Goyal presenting the National Energy Conservation Award, at the National Energy Conservation Day function, in New Delhi on December 14, 2014.)

Painting Competition on Energy Conservation for School Children

The habit of conservation is best introduced and inculcated at the school age. It has been seen that the Children are the best agents of change and in this case we need to equip them with the information and knowledge on energy conservation and create interest among them on this important subject.

In this regard, Ministry of Power has taken an initiative and has been organizing Painting competition on Energy Conservation for students since the year 2005.

The competition is held in three stages, namely, School, State and National Level since 2005. In order to strengthen the campaign, higher classes of 7th, 8th and 9th standards are also being included from this year onward in addition to existing classes of 4th, 5th and 6th Standards. Students of 4th, 5th & 6th standard students under **Category 'A'** and for 7th, 8th & 9th standard students under **Category 'B'** are eligible to participate in the competition.

The National Painting Competition on Energy Conservation 2014 was a resounding success. Across the country, about **60.17** lakhs students from all over the country have participated.



(The Minister of State (Independent Charge) for Power, Coal and New and Renewable Energy, Shri Piyush Goyal presenting the National Painting Competition Prize, at the National Energy Conservation Day function, in New Delhi on December 14, 2014.)

Interaction with Students

As part of the Government's efforts for promoting energy conservation, Shri Piyush Goyal, Minister of State (I/C) for Power, Coal and New & Renewable Energy interacted with school children across the country through video link. Hon'ble Minister also launched a web portal called "Energy Savers" (www.energysavers.co.in) at the National Energy Conservation Day function on 14th December, 2014. The portal provides tools to help children assess and improve energy usage in their schools and at their homes. The Hon'ble Minister hoped that they could then also influence their neighbours and friends so that a cascade of impact is set up. This "catch-them-young" strategy to influence the energy consuming behaviour of the children would make them the ambassadors of Energy Conservation.

School children from 18 cities namely Bhubaneswar, Hyderabad, Shimla, Patna, Itanagar, Jalandhar, Lucknow, Pune, Bhopal, Raipur, Thiruvanthapuram, Bangalore, Agartala, Gandhinagar, Puducherry, Port Blair, Kavaratti and Haridwar participated in the interactive session.



(The Minister of State (Independent Charge) for Power, Coal and New and Renewable Energy, Shri Piyush Goyal discussing the energy conservation issues with the children, at the National Energy Conservation Day function, in New Delhi on December 14, 2014. The Secretary, Ministry of Power, Shri Pradeep Kumar Sinha and the Secretary Ministry of New & Renewable Energy (MNRE), Shri Upendra Tripathy are also seen.)

National Mission for Enhanced Energy Efficiency (NMEEE)

The Cabinet approved the National Mission for Enhanced Energy Efficiency (NMEEE) with a financial outlay of Rs. 235.35 crores in 24th June, 2010. Continuation of NMEEE for XII Plan was approved by Cabinet on 6th August, 2014 with a total outlay of Rs. 775 crore

The Ministry of Power (MoP) and Bureau of Energy Efficiency (BEE) have been entrusted with the task of preparing the implementation plan for the NMEEE. NMEEE is comprised of the following four initiatives:

- Perform Achieve and Trade (PAT)
- Market Transformation for Energy Efficiency (MTEE)
- Energy Efficiency Financing Platform (EEFP)
- Framework for Energy Efficient Economic Development (FEEED)

• Perform Achieve and Trade (PAT)

After the launch of NMEEE, PAT scheme has been initiated. PAT is a market based mechanism to enhance energy efficiency in large industries in India. Eight Industrial sectors has been identified in PAT Cycle I. Bureau has prepared Energy Conservation Rules, 2012 (PAT rules) and also notified Energy consumption reduction targets for 478 Designated Consumers (DCs) on 30th March, 2012. The expected Energy saving from PAT Cycle I is 6.686 Million Tonne of Oil Equivalent at the end of 2014-15.

In the first cycle of PAT (ending in year 2014-15), 478 industrial units in 8 sectors (Aluminum, Cement, Chlor- Alkali, Fertilizer, Iron & Steel, Paper & Pulp, Thermal Power, Textile) have been mandated to reduce their specific energy consumption (SEC) i.e. energy used per unit of production. Overall, the SEC reduction targets aim to secure 4.05% reduction in the energy consumption in these industries totaling an energy saving of 6.686 million tonne of oil equivalent.

Bureau of Energy Efficiency (BEE) has prepared Sector Specific Form-1 (annual energy return form) along with Sector specific Normalization Factors to streamline the monitoring and verification (M&V) process. The sector/ sub-sector specific Normalization Factors were developed to neutralize the effects on specific energy consumption (SEC) in the assessment year as well as baseline year so that undue advantages or disadvantages could not be imposed on any DCs while assessing the targets.

• Market Transformation for Energy Efficiency (MTEE)

➤ Super Efficient Equipment Program (SEEP)

SEEP forms a part of MTEE initiative, under NMEEE. The primary objective of MTEE is to accelerate the shift to energy efficient appliances in designated sectors through innovative measures to make the products more affordable.

SEEP is a program designed to bring accelerated market transformation for super efficient appliances by providing financial stimulus innovatively at critical point/s of intervention. SEEP for ceiling fans aims to leapfrog to an efficiency level which will be about 50% more efficient than market average by providing a time bound incentive to fan manufacturers to manufacture super efficient (SE) fans and sell the same at a discounted price.

➤ Bachat Lamp Yojna (BLY)

Bureau of Energy Efficiency (BEE) had conceptualized the "Bachat Lamp Yojana" (BLY) scheme during XIth plan to promote energy efficient lighting in India. Compact Fluorescent Lamps (CFLs) consume only 1/4th to 1/5th of the energy used by incandescent lamps to provide the same level of light. The development of Clean Development Mechanism (CDM) projects was voluntary action on the part of BEE, Investors and Distribution Companies (DISCOMs). Further, BEE on behalf of the Government of India takes the responsibility of monitoring of all project areas, included under the BLY programme.

Under this programme, about 29.5 million CFLs have been distributed and an avoided generation capacity of 415 MW has been achieved. The Monitoring & Verification process of energy saving achieved for the first monitoring period from 30.05.2010 to 31.12.2012 for 44 projects has been completed. Based on Monitoring & Verification report of BEE, 15,20,248 Certified Emission Reductions (CERs) equivalent to as many tones of CO₂ reduction, have been issued by United nations Framework Convention on Climate Change (UNFCCC) to BEE which in turn transfers the CERs to the project implementers for trading with buyers in developed countries.

Activities Proposed under XIIth Plan:

Since BEE has already created the entire necessary infrastructure and the institutional structure for the BLY Programme, it will continue the scheme during the XIIth plan considering the existing energy savings potential in the residential sector in the coming years and also for the monitoring & verification of the completed projects. It will also use this infrastructure to facilitate Rural Electrification Corporation (REC) in distribution of LED bulbs under RGGVY scheme and monitoring and verification of the projects.

• **Framework for Energy Efficient Economic Development (FEEED)**

Framework for Energy Efficient Economic Development (FEEED), seeks to develop fiscal instruments to promote energy efficiency including innovative fiscal instruments and policy measures like the Partial Risk Guarantee Fund for Energy Efficiency (PRGFEE) and Venture Capital Fund for Energy Efficiency (VCFEE).

➤ **Partial Risk Guarantee Fund for Energy Efficiency (PRGFEE)**

Partial Risk Guarantee Fund for Energy Efficiency (PRGFEE) is risk sharing mechanism to provide financial institutions with a partial coverage of risk involved in extending loans for energy efficiency projects. The amount paid out will be equal to the agreed-upon percentage of the outstanding principal and will not cover the interest or other fees owed to the bank. The Guarantee will not exceed Rs 3 crores per project or 50% of loan amount, whichever is less. Initially the support was provided to only government building and municipalities, however, in the twelfth plan it has been extended to cover SMEs and industries too. Status of Implementation/Activities of the scheme

- i) Supervisory Committee (SC) has been constituted and its two meetings were convened
- ii) PRGFEE rules approved in April 2012 have been revised and comments have been sought from SC members
- iii) RFP for hiring Implementing Agency has been retendered on 4th Dec'14

➤ **Venture Capital Fund for Energy Efficiency (VCFEE)**

The Venture Capital Fund for Energy Efficiency (VCFEE) is a fund to provide equity capital for energy efficiency projects. A single investment by the fund shall not exceed INR 2 Crores. The Fund shall provide last mile equity support to specific energy efficiency projects, limited to a maximum of 15% of total equity required, through Special Purpose Vehicle (SPV) or INR 2 Crores, whichever is less. The support under VCFEE is limited to Government buildings and municipalities. Status of Implementation/Activities of the scheme

- i) VCFEE rules approved in April 2012 have been revised and for notification sent to Ministry of Power
- ii) Board of Trustees for VCFEE has been constituted
- iii) RFP for selection of Fund Manager has been prepared and shall be floated soon

➤ **Fiscal incentives**

BEE has been making proposal for tax exemptions (including direct as well as indirect tax) for promotion of energy efficiency for the Union Budget. However, in the Union Budget 2012-13, following benefits have been given in indirect tax regime:

- Full exemption from basic customs duty is being extended to tri band phosphor for use in the manufacture of Compact Fluorescent Lamps (CFL).
- LEDs required for the manufacture of LED lamps are also being exempted from Special Additional Duty.
- Excise duty on LEDs has been reduced from 10% to 6%.

• **Energy Efficiency Financing Platform (EEFP):**

The objective of EEFP is to provide a platform to interact with financial institutions and project developers for implementation of energy efficiency projects.

BEE has also conducted round table meeting with financial institutions for financing of energy efficiency projects in designated consumers sectors. These meeting initiated one to one interaction between designated consumers and financial institutions.

In 2014-15, two conferences on "Addressing Financing issues for Energy Efficiency Projects in India" have been organized in Pune and Chandigarh, and two training workshops for financial institutions and ESCOs have been organized in Delhi and Mumbai.

• **Public Procurement of Energy Efficient Appliances**

BEE has initiated Public Procurement Policy for promotion of energy efficiency in procurement of energy consuming products, which are sold in a competitive market. In this regard, on the basis of life cycle cost analysis carried out by BEE for Split Air Conditioners, Frost Free Refrigerators, Ceiling fans and Water Heaters, the Ministry of Finance had issued an Office Memorandum on 21st January, 2013 for all Ministries/Departments and their attached and subordinate offices. As per this Office Memorandum, these agencies while procuring appliances mentioned above, will ensure that the appliances carry a threshold or higher BEE star rating as specified in the OM.