Policy Framework for Promoting Market Based Energy Efficiency in India

Presentation by

Joint Secretary, Ministry of Power, Government of India

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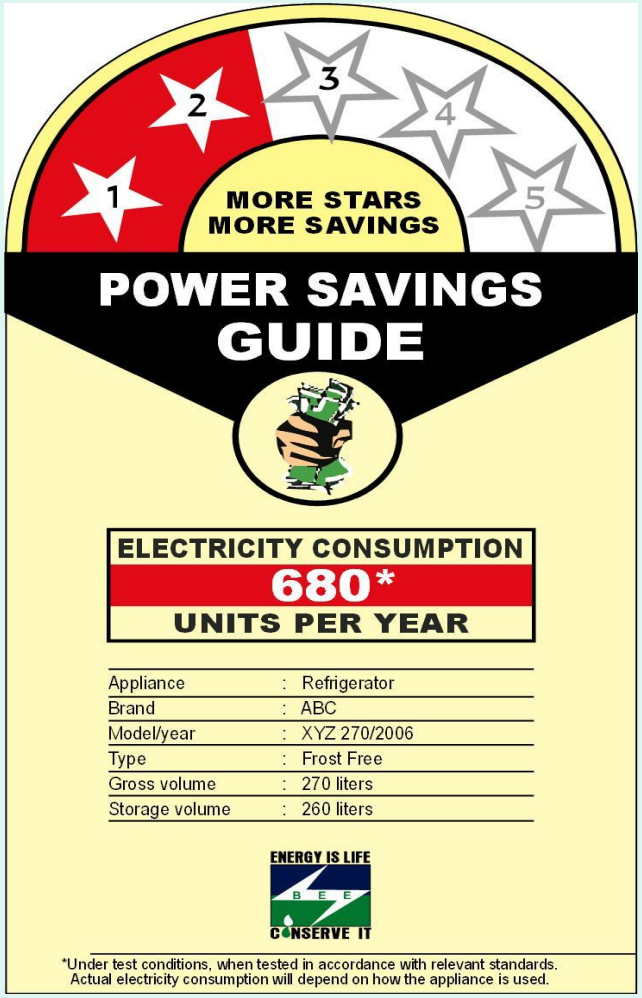
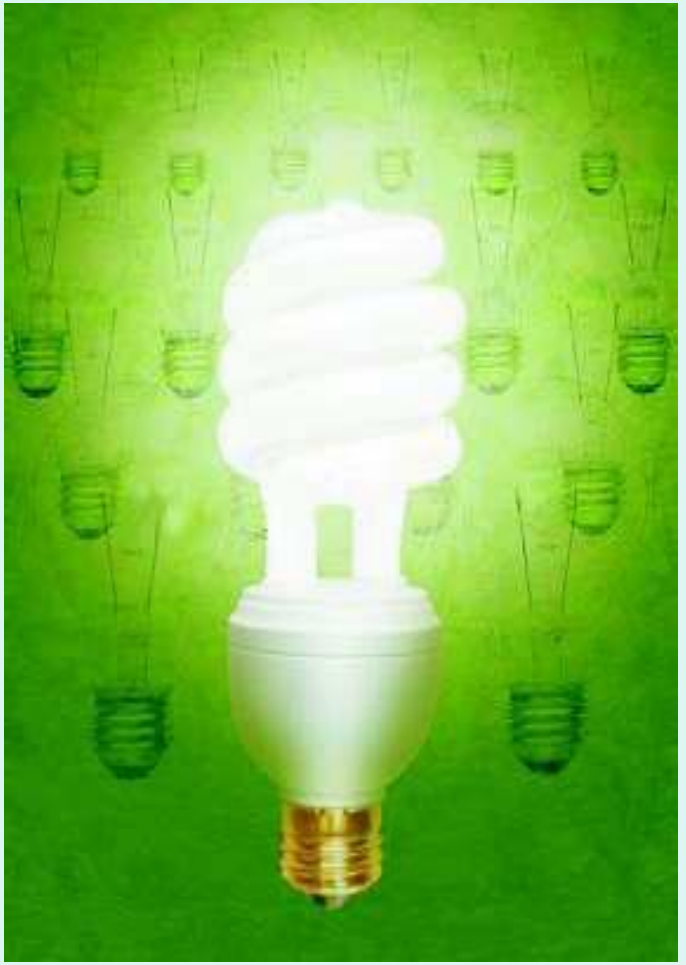
Item 1-3

Energy Conservation and Efficiency- Potential and Action Plan



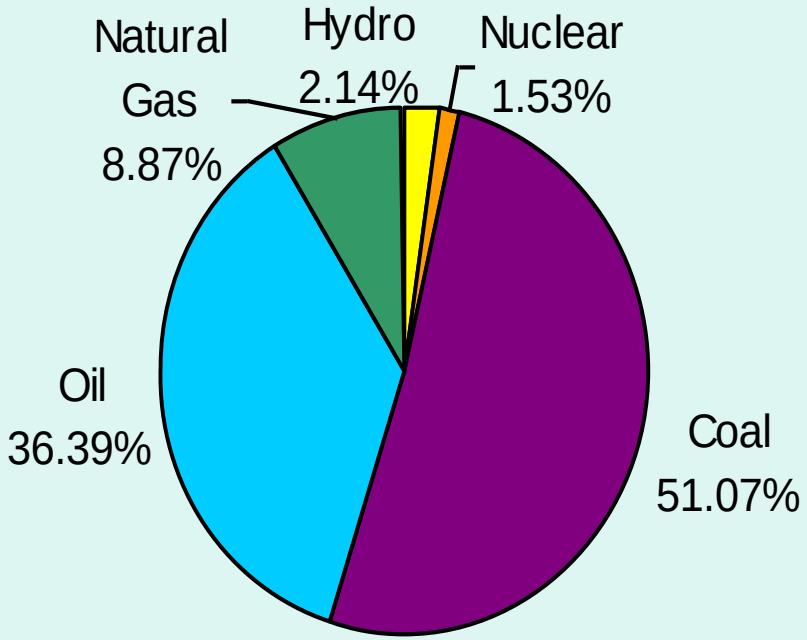


Portfolio Development for Energy Efficiency

- Enactment of enabling legislation (Energy Conservation Act, 2001)
- Institutional arrangements at central and state level for regulatory oversight (BEE and SDAs)
- Putting in place a multi- sectoral policy for energy efficiency – Integrated Energy Policy (IEP), 2006
- Energy Efficiency Action Plan – Medium Term- with aspirational goals
- National Mission for Enhanced Energy Efficiency for greater thrust on energy efficiency
- Public sector corporate entity Energy Efficiency Services Ltd (EESL) for implementation leadership being set up
- Independent monitoring and verification of energy savings- being undertaken by National Productivity Council (NPC)

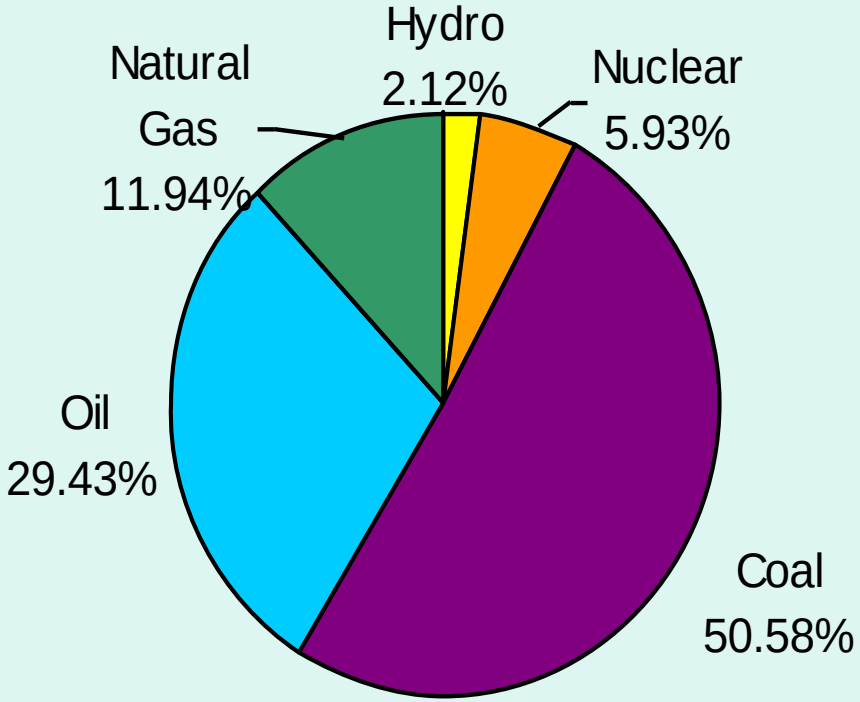
Indian Energy Sector

Total Primary Commercial Energy Demand (2003-04)



327 Mtoe

Total Primary Commercial Energy Demand (2031-32)



1858 Mtoe

Energy requirement to increase at a CAGR of 6.4% (2004-2032) and coal to remain the mainstay

Source: Planning Commission, 2006

The Energy Scenario(Selected Energy Indicators)

Region/Country	GDP Per Capita-PPP (US $ 2000)	TPES Per Capita (kgoe)	TPES/GDP (kgoe/ $-2000 PPP)	Electricity Consumption Per Capita (kWh)	kWh/ $-2000 PPP
China	4838	1090	0.23	1379	0.29
Australia	28295	5630	0.20	10640	0.38
Brazil	7359	1094	0.15	1934	0.26
Denmark	29082	3852	0.13	6599	0.23
Germany	25271	4210	0.17	6898	0.27
India*	2732	439	0.16	553	0.20
Indonesia	3175	753	0.24	440	0.14
Netherlands	27124	4983	0.18	6748	0.25
Saudi Arabia	12494	5805	0.46	6481	0.52
Sweden	27869	5751	0.21	15397	0.55
United Kingdom	26944	3906	0.14	6231	0.23
United States	35487	7835	0.22	13066	0.37
Japan	26636	4052	0.15	7816	0.29
World	7868	1688	0.21	2429	0.31

Integrated Energy Policy ,Planning Commission ,2006

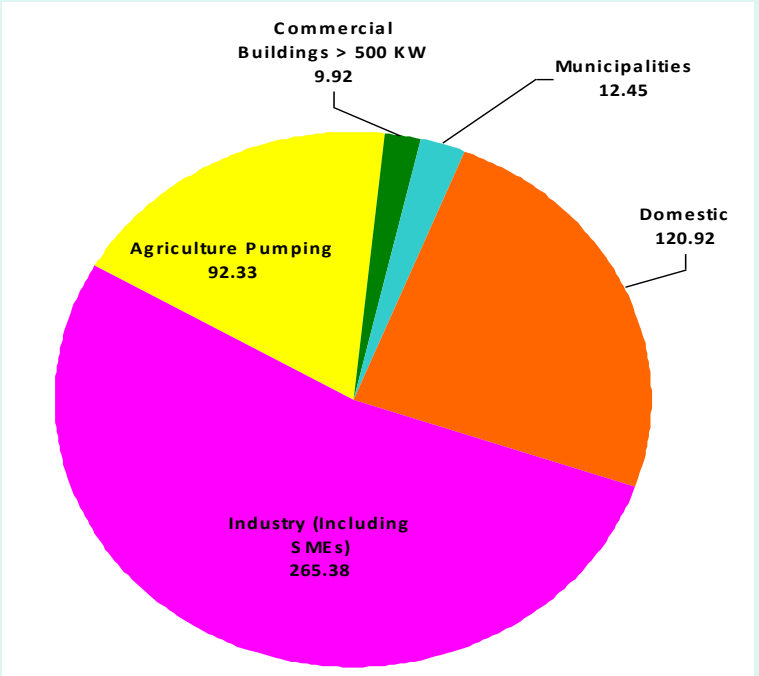
Energy Efficiency Potential and Outcome

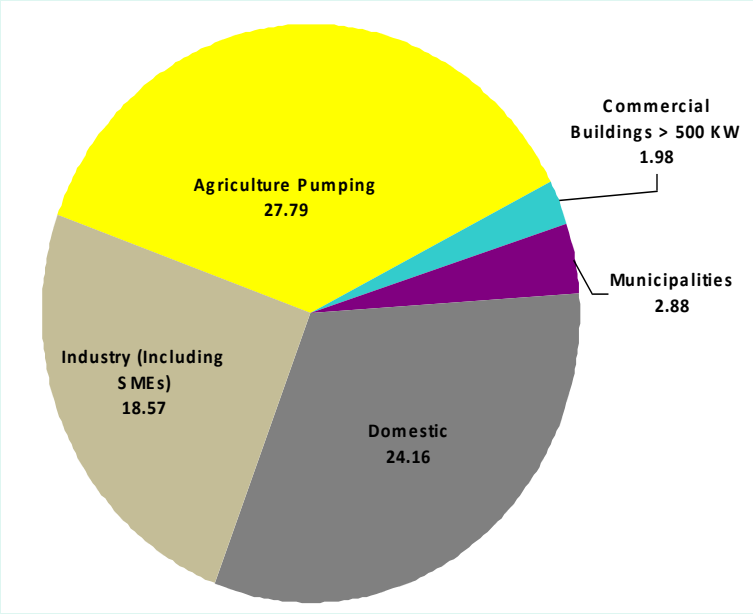
Energy Conservation potential assessed as at present (IEP) (15% by DSM and 25% overall)	-	**20000MW**
Verified Energy Savings :		
-During X Plan period	-	**877 * MW**
-During 2007-08 and 2008-09		**2127 MW**
-Target for 2009-10		**2600 MW**
-Target for XI Plan period (5% reduction of energy consumption)	-	**10000 MW**

* *Only as indicated by participating units in the National Energy Conservation award scheme, for the previous five years.*

Electrical Energy Consumption and Conservation Potential

S. No.	Sector	Consumption (KWh)	Saving Potential (KWh)	% Savings
1.	Agriculture Pumping	**92.33**	**27.79**	**30.09**
2.	Commercial Buildings/ Establishments with connected load > 500 KW	**9.92**	**1.98**	**19.95**
3.	Municipalities	**12.45**	**2.88**	**23.13**
4.	Domestic	**120.92**	**24.16**	**19.98**
5.	Industry (Including SMEs)	**265.38**	**18.57**	**6.99**
	Total	**501.00**	**75.36**	**15.04**



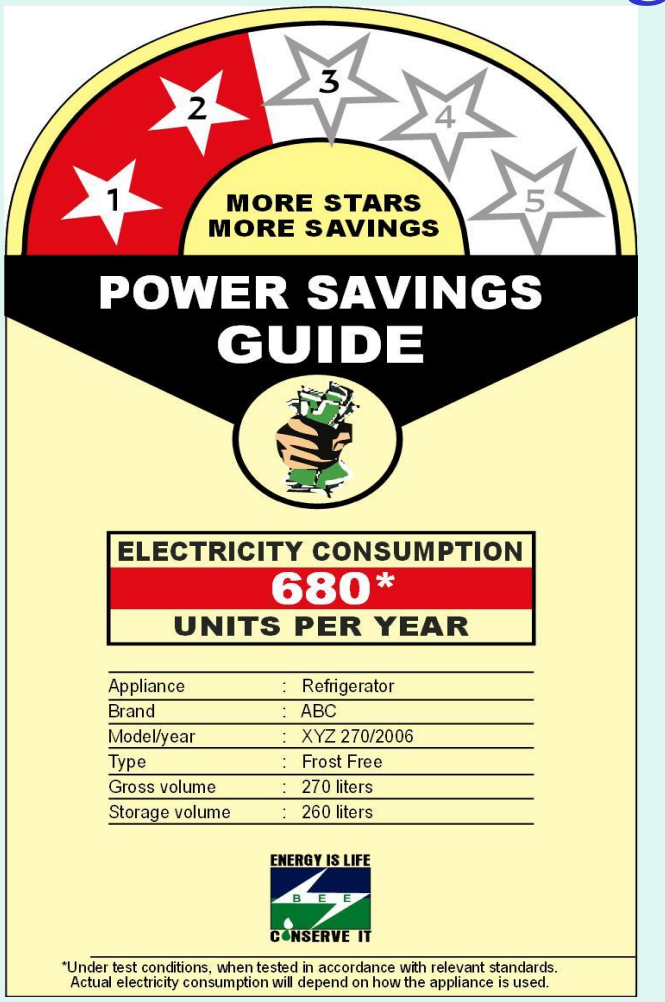


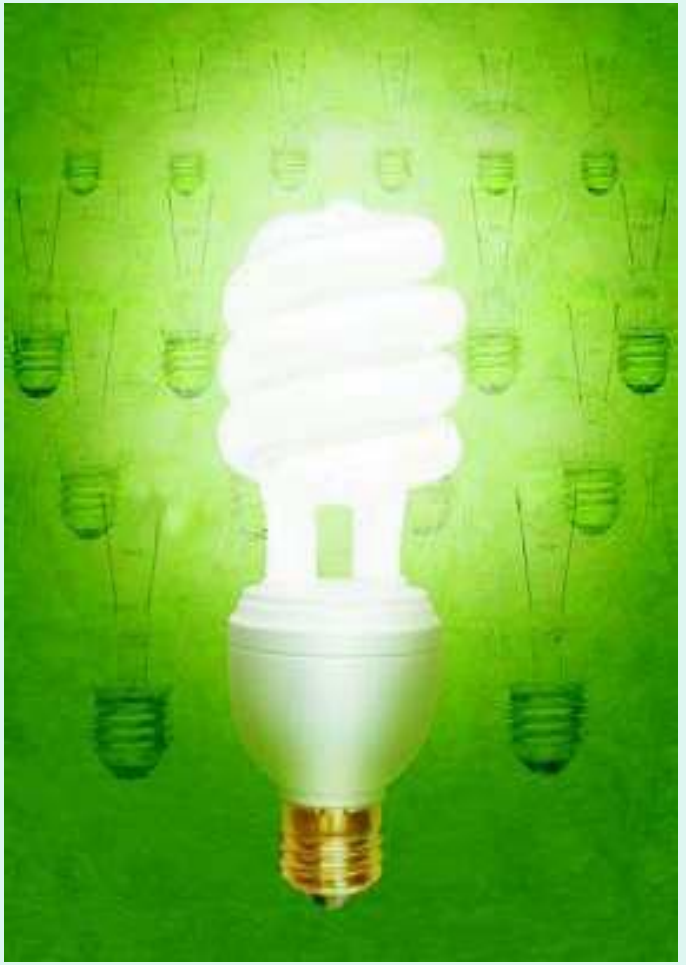
Source: BEE/ NPC Study 2009

Energy Efficiency – Action Plan

- Bachat Lamp Yojana to promote energy efficient and high quality CFLs as replacement for incandescent bulbs in households.
- Standards & Labeling Scheme targets high energy end use equipment and appliances to lay down minimum energy performance standards.
- Energy Conservation Building Code (ECBC) sets minimum energy performance standards for new commercial buildings.
- Agricultural and Municipal DSM targeting replacement of inefficient pumpsets, street lighting, etc.
- Operationalising EC Act by Strengthening Institutional Capacity of State Designated Agencies (SDAs) : The scheme seeks to build institutional capacity of the newly created SDAs to perform their regulatory, enforcement and facilitative functions in the respective States.
- Energy Efficiency Improvement in Small and Medium Enterprises (SMEs): To stimulate energy efficiency measures in 25 high energy consuming small and medium enterprise clusters.

National Mission for Enhanced Energy Efficiency (NMEEE)





NMEEE-4 New Initiatives

- A market based mechanism to enhance cost effec-tiveness of improvements in energy efficiency in energy-intensive large industries and facilities, through certification of energy savings that could be traded. (**Perform Achieve and Trade**)
- Accelerating the shift to energy efficient appliances in designated sectors through innovative measures to make the products more affordable. (**Market Transformation for Energy Efficiency)**)
- Creation of mechanisms that would help finance demand side management programmes in all sectors by capturing future energy savings. (**Energy Efficiency Financing Platform (EEFP)**)
- Developing fiscal instruments to promote energy efficiency namely **Framework for Energy Efficient Economic Development (FEEED)**

Objectives of NMEEE

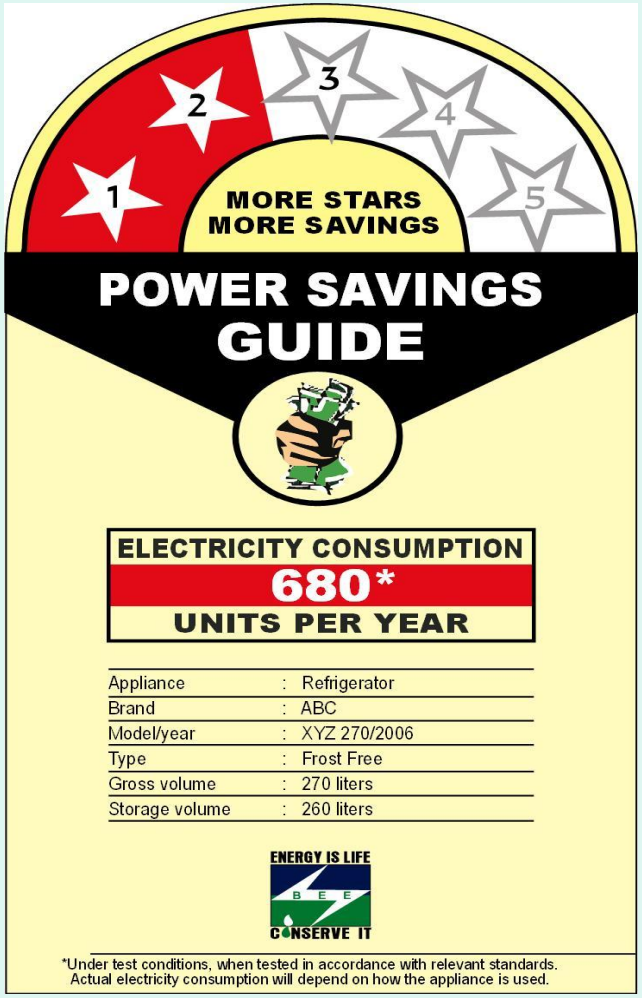
- The basic tenet of the mission is to ensure a sustainable growth by an appropriate mix of **4 E**'s namely- **Energy, Efficiency, Equity** and **Environment**.

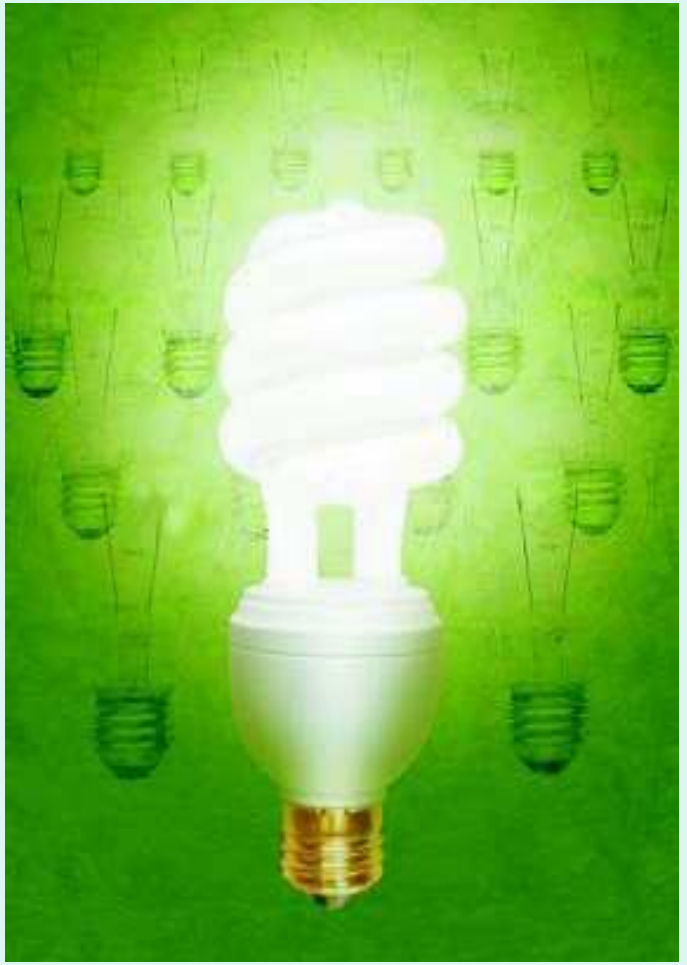
- Promote development objectives, while also yielding co-benefits for addressing climate change effects.

- By 2014-15:
  - Annual fuel savings in excess of 23 million toe
  - Cumulative avoided electricity capacity addition of 19,000 MW
  - CO_2 emission mitigation of 98 million tons per year

- Market based approach to implementation of energy efficiency – market size of USD 18 b to be unlocked

Government Leadership in Creating EE Market in India





Creating Demand for Energy Efficiency

-Preparation of bankable projects in various sectors like Government Buildings, Municipalities, Agriculture, SMEs- **About 1200 projects to be ready for implementation in one year with an estimated investment of about USD 1 billion**

-Mandating all large Government buildings to undertake energy efficiency in 3 years- **about 8000 large buildings with investment potential of USD 2 billion**

-Setting appliance standards and making them mandatory

-Setting up norms for large energy intensive industries like Thermal Power, Fertilizer, Cement, Pulp & Paper, Chlor Alkali, Steel, Textiles, Railways and Aluminum – **Investment in new technologies of USD 6 b expected**

-Massive mass media campaign to enhance awareness amongst stakeholders

-National Energy Conservation Awards for best performing industries in energy efficiency

-National Painting Competition to enhance awareness amongst young children – over 2 million children participated in last 4 years

Promoting Supply of Energy Efficiency Goods and Services

-Promotion of ESCOs – 35 ESCOs empanelled and rated through leading rating agencies of India (CRISIL/ ICRA)
-List of ESCOs being expanded to t least double this number
-Bi-annual National Examination for certification of Energy Management Professionals – 8 exams conducted and 8000 Energy Managers and Auditors certified
-10 equipments covered under the Standards and Labeling programme (ACs, Refrigerators, Tubelights, Distribution Transformers, Ceiling Fans, Pumps, Motors, Colour TVs, Geysers and LPG Stoves). Standards for first 4 equipments to be mandatory by January, 2010.
-Training of energy efficiency professionals in all sectors like the states, buildings, appliances, SMEs, etc.

Enabling Finance for Energy Efficiency Goods and Services

-Creation of Energy Efficiency Financing Platform (EEFP) to provide non-recourse financing to ESCO projects- 2 Financial Institutions have joined and commenced financing (PTC India Ltd and SIDBI)

-Provision of Partial Risk Guarantee Fund for provide partial guarantees to ESCO projects- part of NMEEE and World Bank and GEF providing Technical Assistance for setting it up

-Setting up of Venture Capital Fund to provide last mile equity to enable financial closure of ESCO projects – part of NMEEE

-Training modules for banks and financial institutions prepared and training initiated to enhance awareness about performance contracting and appraisals thereof.

- Tax incentives for ESCOs being proposed

Creation of Energy Efficiency Services Ltd (EESL)

(a) Joint Venture between 4 Public Sector Companies under MOP- Main implementation arm of the National Mission for Enhanced Energy Efficiency **– initial equity of USD 45 million**.

(b) Lead in implementing energy efficiency projects as a 'Super ESCO'

(c) Provide partial risk guarantee fund/ venture capital fund to ESCOs

(d) Leverage multilateral and bi-lateral financing

(e) Enter into partnerships, JVs with other implementing partners like ESCOs, industry, etc. to promote energy efficiency.

(f) Provide consultancy services to private and public sector in the areas of energy efficiency, CDM, etc.

(g) Take up revenue generating activities of BEE like implementing Standards and Labeling Programme, National Examination, etc.

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