

Promoting Innovative Energy Efficiency Financing Mechanisms

Presentation by

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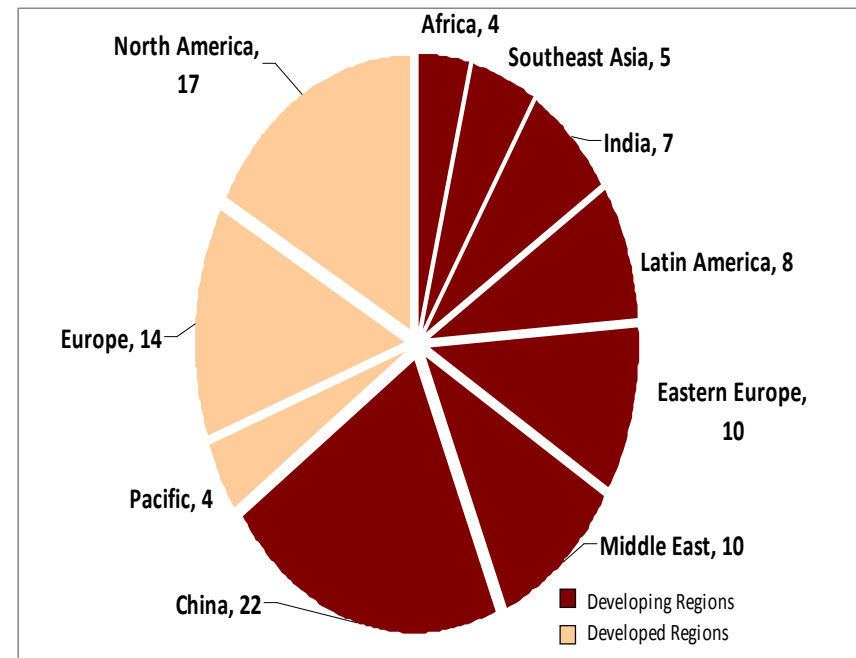
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Energy Efficiency Market Potential

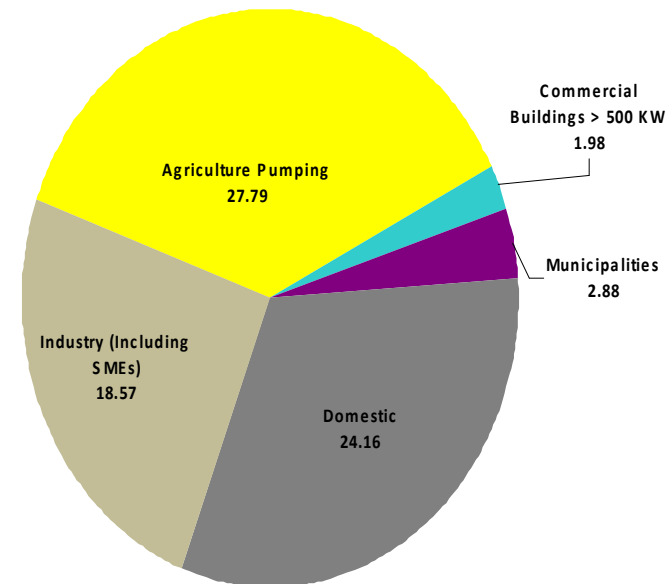
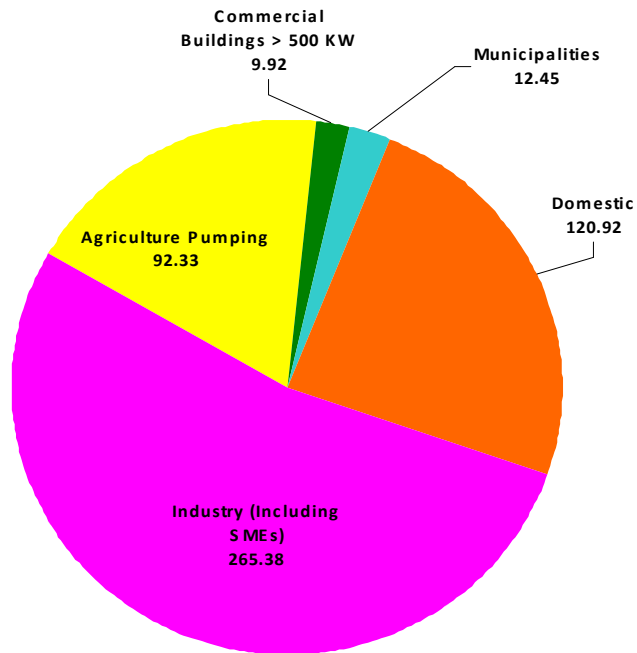
- Savings of \$ 600 b possible by 2020 – 65% in emerging markets
- A host of market failures and information asymmetries have discouraged creation of robust energy efficiency markets
- Lack of knowledge, information, experience etc. prevents provision of finance to these investments
- ESCO delivery mechanism marred by reluctance of banks stating lack of securities in the performance contract mechanism
- **EE market for India estimated at Rs. 74,000**



Source: McKinsey Global Institute, 2008

Electrical Energy Consumption and Conservation Potential in India

S. No.	Sector	Consumption	Saving Potential	% 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





Barriers To Financing Energy Efficiency

- Unfamiliarity with the many aspects of EE projects
- Weak credit strength of prospective borrowers, especially nascent ESCOs
- Perceived lack of collateral and/or guarantees to substantially eliminate repayment risk.
- Lack of appraisal capacities in banks required for EE projects.
- Lack of standardized protocols for performance contracts, monitoring and verification

One of the principle barriers to the implementation of energy efficiency projects, especially in the developing world, is the availability of financing from domestic sources, especially commercial banks.



Legal Framework for Energy Efficiency

- Energy Conservation Act enacted in 2001
- Bureau of Energy Efficiency set up as the nodal central agency
- State Designated Agencies at the state level created for implementation of the Act.
- Energy Conservation Act, 2001, overcomes some market barriers by enabling:
 - Setting of minimum energy standards for, and affixing energy-consumption labels on appliances and equipment
 - Promulgation of Energy Conservation Building Codes
 - Energy use monitoring, verification and reporting by large energy users, and the establishment of energy consumption norms for these consumers- Creation of cadre of Energy Management professionals in the country

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.



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 at 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.

NMEEEE-4 New Initiatives

- A market based mechanism to enhance cost effectiveness 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 NMEEEE

- 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
 - CO₂ 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 Initiatives under NMEEE – Fiscal Incentives

Tax/ Duty Exemptions for Promotion of Energy Efficiency

- Graded excise duty for STAR labelled equipments in favour of higher efficiencies
- Income and Corporate tax incentives for ESCOs/ Venture Capital funds, etc. in energy efficiency
- Providing infrastructure status to ESCO business



Government Initiatives under NMEEE – Financial Instruments

- (a) Providing comfort to lenders by provision of a risk guarantee for performance contract (Partial Risk Guarantee Fund (PRGF))*
- (b) Venture Capital Fund for Energy Efficiency (VCFEE)*
 - Initial seed capital from Government budget-can be expanded by contributions from other agencies as well.
 - The two instruments (PRGF and VCFEE) may be used for promoting energy efficiency in manufacturing of energy efficient products in small and medium sector government buildings and municipalities through the ESCO route
 - Fund can be managed by the institutional framework of EESL



Promoting EE Financing

- ✓ BEE has initiated an Energy Efficiency Financing Platform (EEFP) with the objective of improving access to commercial lending to ESCO projects.
- ✓ 2 FIs have already joined the platform (PTC and SIDBI).
- ✓ Under the NMEEEP Partial Risk Guarantee Fund (PRGF) and Venture Capital Fund for EE (VCFEE) being set up to stimulate commercial lending to ESCO projects.
- Exploring the opportunity of providing a line of credit exclusively for energy efficiency
- Capacity building and training to banks and financial institutions through BEE and/ or EESL



EE Financing -Innovative Instruments

- ✓ INTEREST SUBSIDY FOR ECBC COMPLIANT BUILDINGS – to incentivise compliance to energy efficient building code
- ✓ FINANCING MUNICIPAL DSM & EE IN BUILDINGS THROUGH EESL – Debt funds chanelised through EESL which in turn would lend to the ULBs/ ESCOs for implementation of projects on guaranteed savings model or technology based projects
- ✓ HOTELS EE FINANCING - KfW funding being explored for EE projects in hotel industry can be structured either as a direct loan to these hotels or technology tied credits for application of trigeneration or heat pump technologies.
- ✓ FINANCING FOR EE OF PUBLIC BUILDINGS - The kfW line of credit may be given directly to the CPWD through Ministry of Urban Development and the projects can be implemented under guaranteed savings model of the ESCO contract.
- ✓ TAKE OUT FINANCING FOR ESCO PROJECTS- ESCO projects could be bought by the fund (Bank) after the project has proven its viability for a certain period (1 year).

EESL- Strategy to Overcome Barriers

- ✓ Financing Barriers for Energy Service Companies (ESCOs) to project financing for investment
- ✓ High Transactions Costs as energy efficiency projects are relatively small
- ✓ Inadequate Information and Awareness in banks about the financial business model
- ✓ Institutional barriers of asset based lending stipulation of RBI that does not provide banks with adequate freedom to look at non-recourse lending without security
- ✓ Low credibility of ESCOs in India
- ✓ Lack of experience in performance contracting

EESL to enable the EE market in India



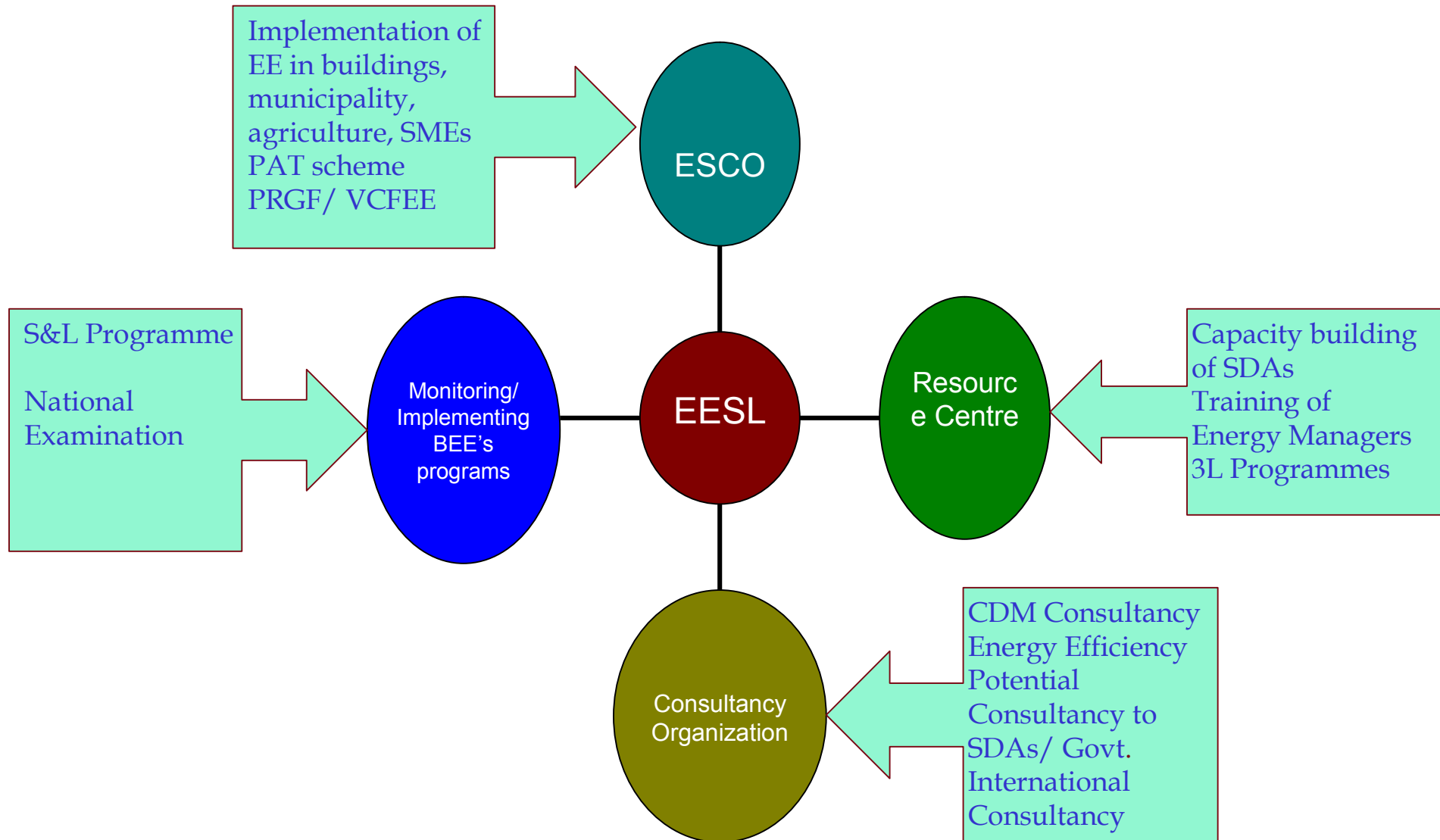
EESL as a Super ESCO

BARRIERS TO EE PROJECT IMPLEMENTATION IN THE PUBLIC SECTOR	HOW THE SUPER ESCO CAN ADDRESS THESE BARRIERS
Low awareness and interest on the part of public agencies in energy efficiency (EE) projects	Super ESCO can conduct "marketing campaign" to increase awareness and interest
Zero budgeting policy of many governments provides little incentive for saving energy costs	Super ESCO can develop incentive mechanisms for public agencies
Budgeting Issues for public agencies - Capital Expenditure vs. Operating Expenditure	Agency can avoid issue by having project financed by a Super ESCO
Lack of procurement regulations that would allow ESCOs and Performance Contracting	Contracting with a Super ESCO can overcome this problem
Limited capacity in public agencies for performance contracting using ESCOs	Super ESCO can develop standard contracts customized for public agencies
Lack of interest on the part of local financial institutions to fund public sector projects	Financing can be provided by Super ESCO
Local financial institutions generally unwilling to provide "project financing" for EE projects	Super ESCO can provide "project financing" for public agency EE projects
Private ESCOs unwilling to invest in public sector projects	Super ESCO can invest in public agency EE projects
Public agencies not used to contracting with private sector for energy services	Public agencies may find it easier to contract with a Super ESCO

EESL- Scope of Work

- (a) Main implementation arm of the National Mission for Enhanced Energy Efficiency
- (b) Lead in implementing energy efficiency projects on performance contracting
- (c) Create of partial risk guarantee fund/ venture capital fund to provide the necessary risk mitigation to ESCOs and take EEFP forward
- (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.

EESL- Roles



Thank you