

Buildings Energy Efficiency Portfolio of EESL

*Presentation by
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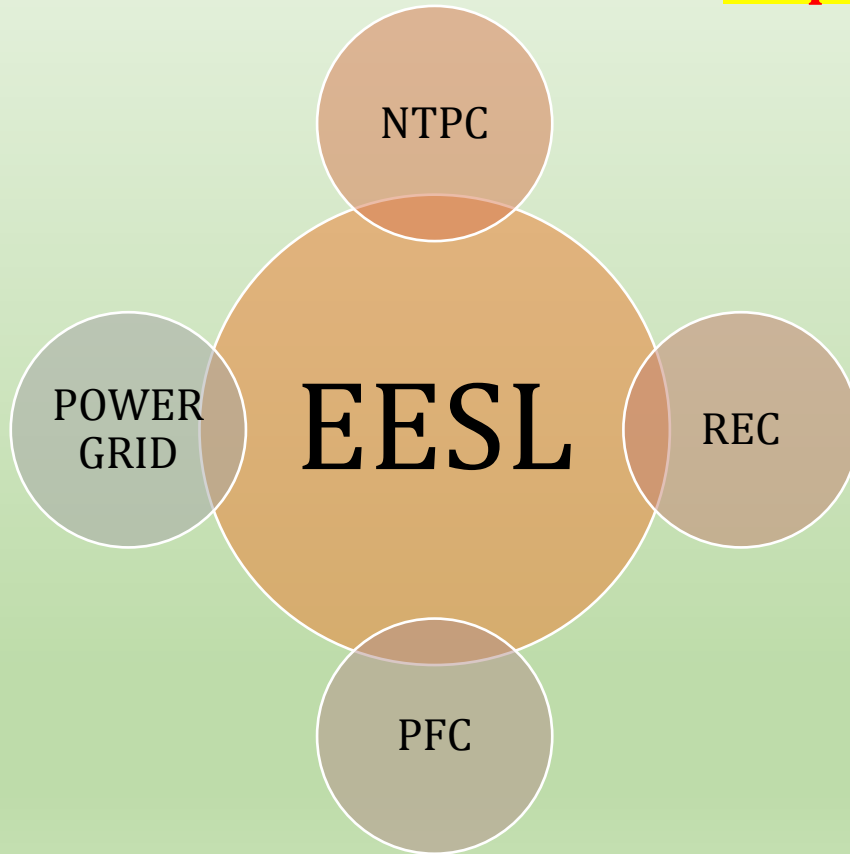
Date: 28th February, 2014

Venue: New Delhi



Energy Efficiency Services Limited: *Creating an Energy Efficient India*

Incorporated in 2009 as the implementing arm of MOP/ BEE



ESCO- DSM Projects

- Agriculture
- Municipal Functions
- Buildings
- Distribution Efficiency
- Tri-generation

Implementation of Central & State Gov. policies

- S & L Programs
- SDA capacity buildings
- Perform Achieve & Trade Scheme for industries

Consultancy Services

- CDM
- Annual Energy Savings Plan
- Policy advice to the government

Capacity Building

- Development of Private ESCOs
- SDA Capacity Building

Chiller Energy Efficiency Project CEEP



- Originally Approved by the WB EB in June 2009
- Effective Period: Nov 2009 to June 2014
- Total Grant Component USD 7.3 MN
 - GEF Grant = USD 6.3 Mn
 - Multi-lateral fund for MP = USD 1 Mn
 - Possibly leverage USD 5.85 Mn through carbon finance
- Envisaged to replace 215 chillers initially using grants to secure CERs for replication to another 155 chillers under carbon fund (SCF) - kFW
- Project Description: Provision of capital grant upto 20% of the cost of non-CFC chillers

CEEP Eligibility (Proposed)

- Cut-off date 1.1.2003 – i.e installed on or before the cut-off date
- The existing inefficient HCFC chillers to be replaced must be located in India
- The existing chiller and the new chiller are driven by electrical energy
- Replacement of all existing HCFC-based Centrifugal / Screw/ Reciprocating/ Scroll type chillers/system by new energy efficient non-HCFC chillers/System.
- The replacing new non-HCFC chillers must be duly rated to achieve specific energy consumption equal or lower than 0.63 kW /TR at current ARI (AHRI)/ Eurovent (for smaller chillers) or any other Govt Approved Indian/International Agency approved conditions or at the site conditions as confirmed during commissioning.
- The beneficiary would be required to maintain adequate data logbook for monitoring operation of new chillers/system installed under the project. Adequate reporting to EESL/ WB required
- The beneficiary chiller owners must follow environmental safeguards that are built into the project

Restructuring

- To Include Chillers using HCFC (R-22) given that R-12 chillers are virtually replaced and India has begun phaseout of HCFC
- Noting the failure of carbon markets – energy efficiency also being promoted
- Initially IDBI was the lead Indian entity – EESL is now mandated to aggregate the project in ESCO mode and pass on the subsidy available
- Part of the savings to be given to a revolving fund to ensure sustenance of the project after the grant is exhausted.
- IDBI will remain the financial intermediary

- EESL will be project aggregator, facilitator and implementer
- Develop 300 HCFC chiller replacement projects on ESCO mode and undertake investment of Rs. 96 Crores through own funds
- Focus of projects with low transaction costs by bundling of projects
- Procurement, Installation and commissioning of chillers as per relevant market conditions
- Maintain the chiller to ensure generation of sufficient energy cost savings to get paid back for investment,
- Use 20% capital subsidy by
 - Reduced project pay back period for facility owner and/ or reduced payoffs
 - Set up a revolving fund to sustain the activity over time

EESL –Comprehensive Solution



Initial project development including energy audits and financial analysis to ascertain energy savings potential

Finalization of contractual agreements between EESL and consumers

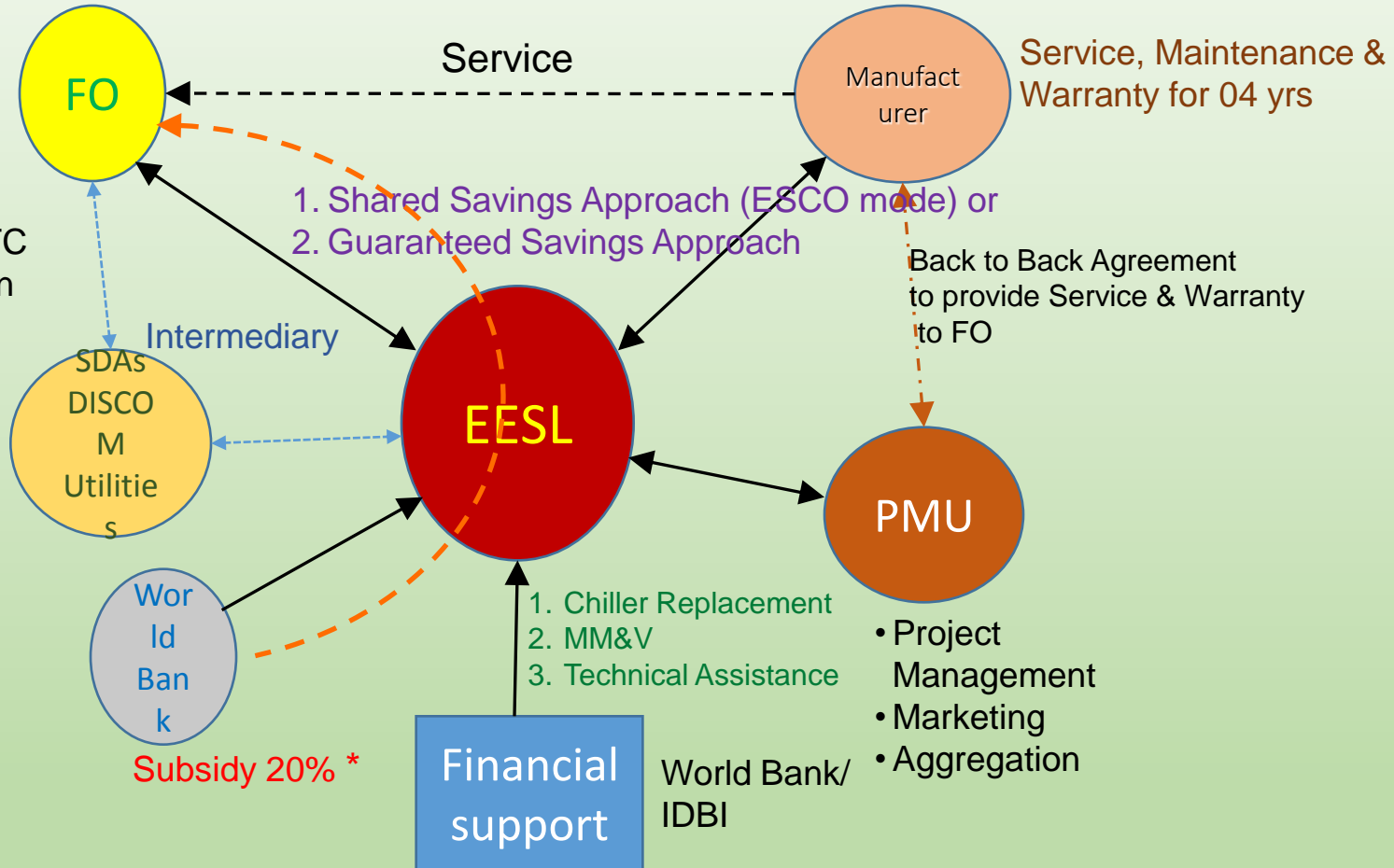
Site installations and replacement of old chillers with energy efficient chillers

Commissioning support

Annuity paid by the consumers to EESL for a an agreed period

CEEP-Business Model

- Qualifying Criteria**
1. Chillers using HCFC
 2. Chillers installed on or after 1-1-2001
 3. Having ≥ 100 TR



Subsidy Route

* Part of the subsidy shall be retained by EESL for revolving fund

Buildings EE

- DPR prepared for DPS – involved student during audit
- Proposal submitted to DPS for implementation – 26% savings guaranteed over a 4 year period – in principle approval by Management Committee for phased implementation
- Yojana Bhavan implementation under way – to be completed by 31 March
- DPR preparation of 5 hospitals and High Court in Maharashtra to start
- Based on Yojana Bhavan and DPS projects – model templates to be evolved that could be used for other government buildings and public schools – discussions with Kendriya Vidyalaya initiated

Buildings EE(2)

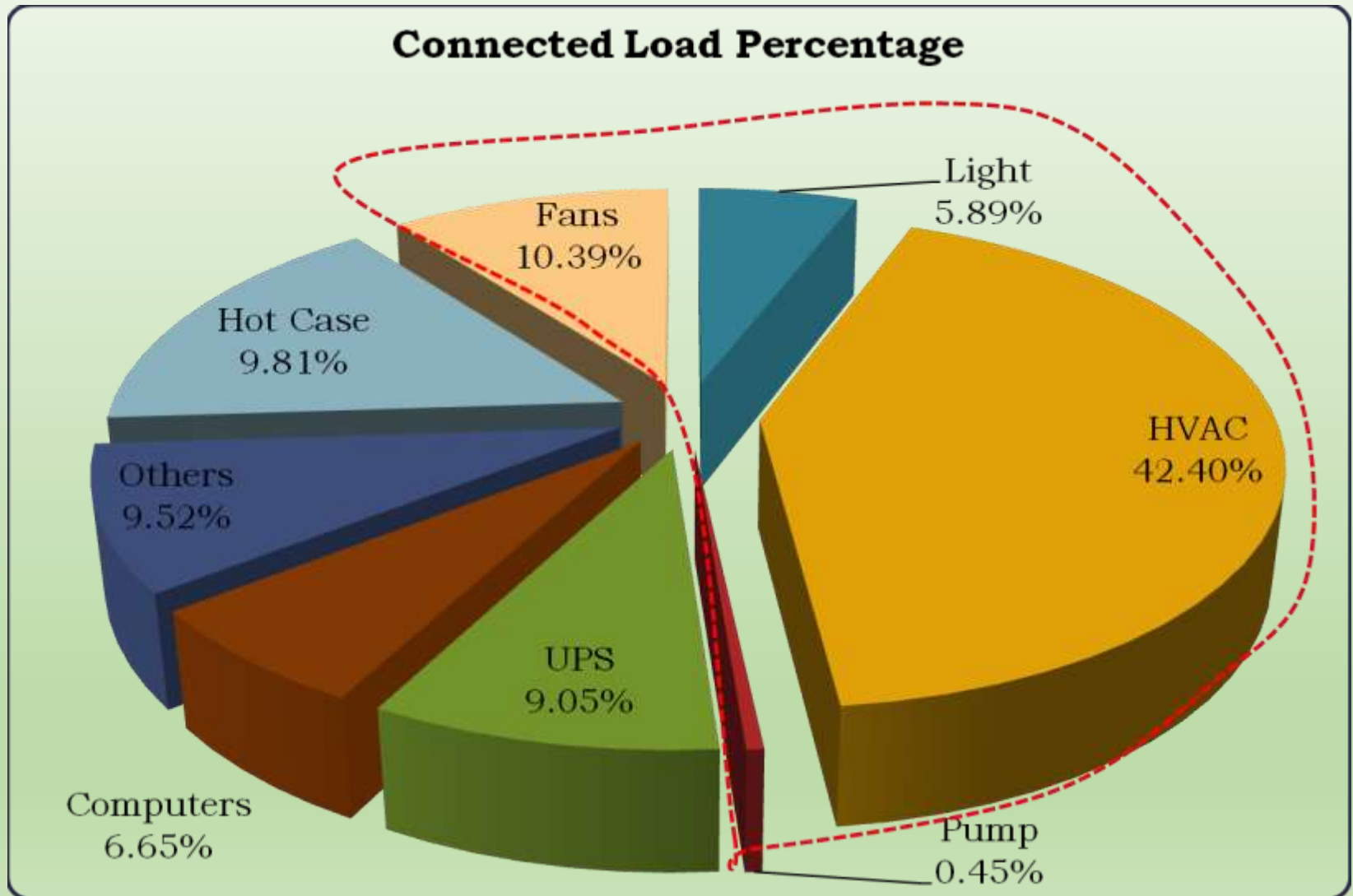
- DPR being prepared for Trigeneration plant in FICCI – implementation expected in 2014-15
- DPR prepared for 2 Hotels of Taj Group using geo-thermal cooling – implementation likely to commence in January 2014 – total investment Rs. 5 crores
- DPR for REC and PTC office prepared
- DPR for Taj Lands End, Mumbai using Trigeneration being examined

Yojana Bhawan – Snapshot

- State of the art infrastructure facility located in central Delhi
- Covered Area of 23116 sq. m
- Conditioned area of 15206 sq. m
- Working area of 19007 sq. m
- Supply from NDMC – HT 11 KV high reliability feeder (CD 875 kVA)
- 2 Xmers – each 100 kVA
- Annual energy consumption from Grid (kVAh) – 30 Lac Units
- Annual Electricity Bill – Rs. 167 Lacs (Jun' 12 – May' 13)

Description	Value	Unit
Built up area per floor	23116	m²
Total no of employees	700	
Annual energy consumption	2999301	kVAh (As per RFP)
EPI, Energy Performance Index	129.75	kWh/ Annum/ m²

Load Distribution



Yojana Bhavan – A Precursor for other Govt Buildings

- Model templates to be prepared post implementation
- Barriers with regard to rules and procedures to be overcome
- Aggregation of buildings by EESL under oversight by BEE and MOP
- Yojana Bhavan to become a 5 STAR rated building post implementation

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