
EESL – Creating and Sustaining Markets for Energy Efficiency in India

12th February, 2015, Delhi

Energy Efficiency Services Limited

(A JV company of PSUs of Ministry of Power, Govt of India)

Who we are..

- Created by Ministry of Power (MoP), Government of India
- Implementation arm of MoP and Bureau of Energy Efficiency
- Leading the market related activities under one of the 8 national mission under Prime Minister's National Action Plan on Climate Change

EESL's Portfolio

- Implementation of BEE-Demand Side Management programme for 30 DISCOMs
- Completed EE projects in 15 states – 30 ongoing
- Completed 25 consultancy projects worth Rs. 80 crores
- Strong pipeline of projects

EESL business model

- Strong PPP model
- Enable financing for PPP projects at reasonable rates
- Investment de-risking
 - Mitigates political, regulatory, and payment risks
- Upfront investments (equity and debt) for project implementation

EESL – Replicable Business Models



- No upfront capital investment by states/ ULBs
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- Incentives for participating entities – LED bulbs at Rs. 10 to household consumers, free EE pumps for farmers, maintenance free LED street lights
- Deemed savings approach – demonstration of energy savings upfront
- Risk mitigation – technical risk through back to back arrangement with suppliers.
- Financial risk – BG, ESCROW and Revolving LCs – Approval by ERCs for bulb and agriculture programme (part of ARR) and state govt guarantee for Street Lights
- Awareness and outreach in project areas

Street Lights

- ✓ 3.5 crore estimated street lights - 8.5 b KWh consumption annually (2012-13) – growing at CAGR of 7%
- ✓ Potential savings of upto 55% possible by retrofits by LEDs
- ✓ Additional 15-25% savings by intelligent street light management – daylight savings/ dimming, etc
- ✓ Savings of **5 b KWh** possible at national level
- ✓ Cost savings of **Rs. 2500 crores** annually
- ✓ **Investment potential – Rs. 25,000 crores**

Home Lights

- ✓ 120 crore bulbs and CFLs sold every year - CAGR of 15%
- ✓ 70% ICLs and 30% CFLs
- ✓ Share of LEDs insignificant due to high cost and lack of awareness
- ✓ Potential savings of 88% (ICLs) and 55% (CFLs) possible by retrofits by LEDs
- ✓ Savings of **25 b KWh** possible at national level
- ✓ Cost savings of **Rs. 20000 crores** annually
- ✓ **Investment potential – Rs. 20,000 crores**

National Programme for Home and Street Lighting



- ✓ Launched by Prime Minister on 5th January, 2015 – to cover 100 cities in 2 years
- ✓ Focus on affordable home lighting and conversion of street lights
- ✓ EESL business model to be used – no or low upfront cost and repayments over a period of time

DELP

Street Light

No of incandescent bulbs replaced in Puducherry and Guntur	25 lakhs
Expected annual energy savings	140 million KWh
Expected reduction of installed load	132 MW
Actual capital investment	Rs. 50 crore
Estimated cost savings to DISCOM every year for reduced peak power	Rs. 35 crore
Annual payments to EESL for 5 years (inclusive of O&M costs)	Rs. 15 crore
Payment Security	Revolving LC

No of street lights replaced in Vizag	90,000
Expected annual energy savings	24 million KWh
Expected reduction of installed street light load	3.90 MW
Actual capital investment	Rs. 64 crore
Estimated cost savings to municipalities every year	Rs. 31 crore
Annual payments to EESL for 7 years (inclusive of O&M Costs)	Rs. 18.5 crore
Payment Security	ESCROW

Projects Pipeline - DELP



Name of the State	Number of Cities	Estimated Number of Consumers targetted (Lakhs)	Estimated Number of LED Bulbs to be distributed (Lakhs)	Planned Start Month	Planned End Month
Andhra Pradesh	2	15	30	Feb-15	Mar-15
Delhi	1	40.00	80.00	March-15	December-15
Andhra Pradesh	9	75.00	150.00	February-15	March-16
Rajasthan	14	45.00	90.00	March-15	December-15
Maharashtra	1	55.00	110.00	April-15	December-15
Kerala	9	75.00	150.00	April-15	March-16
Uttar Pradesh	6	10.00	50.00	April-15	November-15
Tripura	1	3.30	6.60	May-15	June-15
Himachal Pradesh	7	18.00	54.00	June-15	December-15
Madhya Pradesh	5	10.00	20.00	June-15	December-15
Orissa	4	5.00	10.00	August-15	February-15
Karnataka	4	20.00	40.00	July-15	January-16
Punjab	4	10.00	20.00	July-15	December-15
Goa	1	10	30	May-15	Oct-15
Total	68	391.3	840.6		

Projects Pipeline – Street Lights



Name of the State	Number of cities planned for commencement	Estimated number of streetlights	Start Month	Time for implementation	End Month
Andhra Pradesh	13	38,000	Feb-15	3	Apr-15
Chattisgarh	5	66,000	Sep-15	4	Dec-15
Delhi	4	4,77,000	Mar-15	10	Dec-15
Goa	1	1,66,000	Mar-15	6	Aug-15
Gujarat	10	85,000	Nov-15	4	Feb-16
Kerala	1	10,000	Feb-15	3	Apr-15
Maharashtra	26	9,20,000	Apr-15	9	Feb-16
Puducherry	1	46,000	Jul-15	3	Sep-15
Rajasthan	13	2,40,000	Mar-15	6	Aug-15
Telangana	1	3,40,000	Mar-15	6	Aug-15
Tripura	1	45,000	Feb-15	3	Apr-15
Uttarpradesh	3	1,13,000	Jul-15	5	Nov-15
West Bengal	2	3,00,000	Oct-15	5	Feb-16
Total	81	28,46,000			

Streetlight Pilot Project in Marine Drive



Marine Drive Energy Saving Proposal

Luminaire Type	Average Power consumption (W) per unit including 35 W Chock	Qty (Nos)	Hours of operation	Connected Load (KW)	Annual Energy Consumption (Kwh Units)
HPSV 250 W (35W Chock)	285.00	639.00	12.00	182.12	7,97,663.70
LED 140 W	140.00	639.00	12.00	89.46	3,91,834.80
Annual Energy Saving					4,05,828.90
Annual Energy Saving = 51 %					
Annual Cost Saving @ Rs 9 / Unit = Rs 36.53 Lac					

Before

After



Questions	(%)		
	Yes	No	Don't Know
1. Do you think that the replacement of Old Traditional Street Lights in your area by L.E.D Street Lights (Energy Efficient) have improved the visibility in your area?	99%	1%	0%
2. Do you think you feel comfortable because of the improved visibility due to installation of new L.E.D Street Lights during night hours?	94%	5%	1%
3. Do you think that because of new L.E.D Street Lights the long distance visibility has increased and will help in improvement of safety of Citizens (Especially Women)?	94%	1%	5%
4. Do you think that because of the installation of new L.E.D Street Lights pedestrian and normal vehicular traffic has improved?	78%	9%	13%
5. Do you think that because of the installation of new L.E.D Street Lights business of Street Vendors and working hours of working individuals and local transport has improved?	81%	9%	10%

Energy savings of over 50% at no upfront cost to BMC

Simple payback of 4 years

High level of public satisfaction

Sustainability of the Programme



- ✓ Commitment at the highest political level
- ✓ Good response from the stakeholders
- ✓ Increasing number of players in the industry
- ✓ High level of stakeholder satisfaction

No of LED lights to be replaced	20 Crore
Expected annual energy savings	10.5 billion KWh
Expected reduction of installed load	5,000 MW
Estimated capital investment (excluding O&M)	Rs. 3000 Crore
Estimated cost savings to DISCOMs every year	Rs. 3150 Crore
Estimated annual payments to EESL/ Third party to service investments (including O&M)	Rs. 1200 Crore

No of street lights to be replaced	90 lakhs
Expected annual energy savings	2400 million KWh
Expected reduction of installed street light load	390 MW
Estimated capital investment(excluding O&M)	Rs. 5000 Crore
Estimated cost savings to municipalities every year	Rs. 3000 Crore
Estimated annual payments to EESL/ Third party to service investments(including O&M)	Rs. 1700 Crore

INR Crores

	Financials Years						
	2010-11	2011-12 A	2012-13 A	2013-14 A	2014-15 E	2015-16 E	2016-17 E
Equity Capital	100.00	100.00	90.00	90.00	190.00	500.00	1,000.00
Investment	-	-	-	2.61	267.62	3,375.84	4,051.01
Turnover	11.16	21.78	26.33	26.42	77.19	300	2,059.98
Profits	3.37	5.01	6.34	1.02	8.04	135.76	282.12

Other Untapped Sectors for EE



Sector	Investment (Rs. Cr)	Energy Savings b kWh	MW	Simple Payback (years)
Industrial	12,100	49.00	7 000	0.5
Generic energy efficiency	4,200	23.70	3 400	
Process energy efficiency	7,900	25.30	3 600	
Commercial	570	1.71	553	0.7
Government-owned offices	340	0.76	360	1.0
Government-owned hospitals	85	0.87	140	0.2
Privately owned hotels	145	0.18	53	0.6
Municipal Pumps	1,300	3.70	1 688	0.9
Agriculture	30,000	30	5 095	—
Total	44,000	74.40	14 336	—

Replacement market for other energy using equipments with EESL business model like fans (30 m sold every year), ACs (3 m annually), refrigerators (5 m), Tubelights (300 m) – estimated potential investment Rs. 7,500 for EE equipments

KfW Line of Credit



- ✓ € 50 m line of credit already operational. So far € 8 m already disbursed or under advanced stage of disbursement
- ✓ Request for advancing the payments for the next 2 FYs already made
- ✓ Pipeline of projects with EESL requires an immediate requirement of funds of Rs. 300 crore which EESL is planning to source from REC and/ or PFC
- ✓ Request for additional line of € 100 m already submitted to MOP

Thank You

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