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# Scaling Up Energy Efficiency in India

**Neelima Jain**

**18<sup>th</sup> November, 2015, Tokyo**

**Energy Efficiency Services Limited**

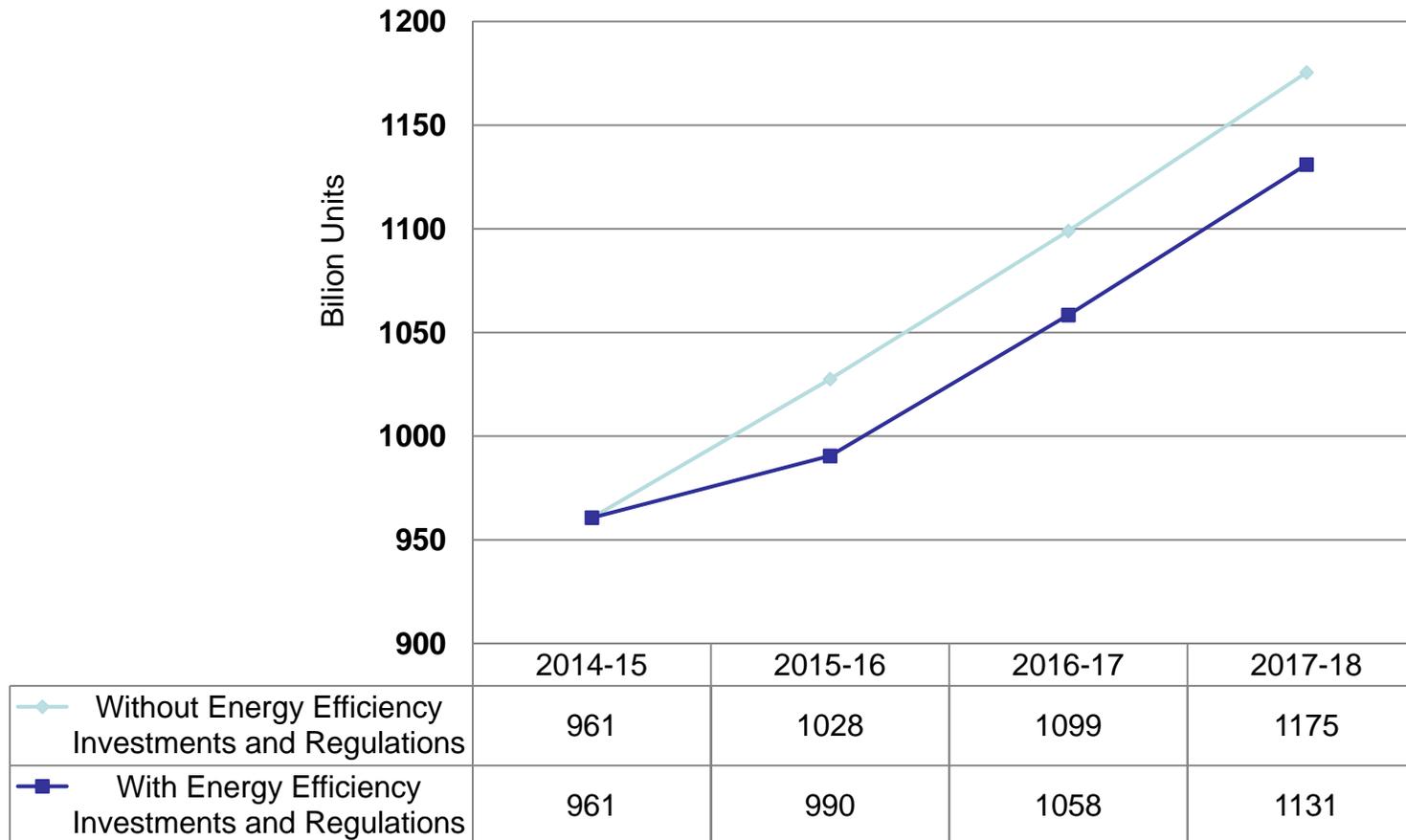
*(A JV company of PSUs of Ministry of Power, Govt of India)*

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# Energy efficiency measures in India offer the opportunity to reduce over 10% of India's energy consumption



All India Electricity Consumption in billion units



**The regulatory/ policy measures and the market based energy efficiency investments together can reduce the electricity consumption by 122 billion units**

# Investment Potential of \$ 30 b

Market segment	Year	Scale of deployment (no.)	Tentative investment (INR crores)	Annual Energy Savings (million kWh)	GHG Emission Reductions (tCO2)
LED Lighting	2015-16	1,740,000	914	447	239,623
	2016-17	1,914,000	1005	492	263,586
	2017-18	2,105,400	1105	541	289,944
	2018-19	29,240,600	15,359	7,519	4,026,851
LED self ballasted lamps for households	2015-16	99,250,000	893	13,534	5,412,797
	2016-17	109,175,000	983	14,887	5,954,077
	2017-18	120,092,500	1,081	16,376	6,549,485
	2018-19	441,482,500	3,972	60,202	24,077,130
BEE 5 star Ceiling Fans for Households	2015-16	1,000,000	110	115	112,896
	2016-17	2,500,000	275	288	282,240
	2017-18	5,000,000	550	576	564,480
	2018-19	7,500,000	825	862	846,720
LED self ballasted tubular lamps for households	2015-16	1,000,000	95	26	25,725
	2016-17	2,500,000	238	66	64,313
	2017-18	5,000,000	475	131	128,625
	2018-19	7,500,000	712	195	192,937
Solar agriculture pumping	2015-16	500,000	15,000	2,238	2,193,240
	2016-17	1,000,000	30,000	4,476	4,386,480
	2017-18	1,500,000	45,000	6,714	6,579,720
	2018-19	2,000,000	60,000	8,952	8,772,960
BEE 5 star air conditioners for households	2015-16	100,000	100	79	77,162
	2016-17	200,000	200	157	154,325
	2017-18	500,000	500	394	385,811
	2018-19	10,00,000	1000	790	771,620
<b>Total (Cumulative)</b>			<b>180,392</b>	<b>140,057</b>	<b>72,352,747</b>

# Energy Efficiency Services Limited

*Creating Energy Efficient India*



## Who we are..

- Promoted by Ministry of Power, Government of India
- 100% public owned company
- Governed by all rules and procedures of Government of India
- Board of Directors represented by Ministry of Power and Bureau of Energy Efficiency (BEE)
- Authorized share capital of 95 Million USD
- Line of credit from KfW & AFD. In process: ADB, KfW, and JICA

## What we do..

- Implement energy efficiency projects for Central and State Government
- Implement Demand Side Measures:
  - Domestic
  - Municipalities
  - Agriculture
  - Buildings
  - Industry
- Pipeline of 151 EE projects in Domestic Sector worth 160 mln USD
- Pipeline of 240 projects in EE Street Light worth 800 mln USD

## Key Achievements

- Our projects have helped avoid capacity addition of 285 MW in 2014-15
- Implemented largest EE street lighting project in India – replaced 92,000 street lights in 6 weeks
- Implemented largest domestic efficient lighting project in India – replacement of 5 million conventional lamps in 4 months
- EESL's LED programmes adopted as national programmes that will cover 100 cities

- **Replacement of 10 mln street lights and 200 mln conventional domestic lamps over next 2 years across India**
- **Pipeline of \$1.5 bln**

# EESL – Replicable Business Models



- Aggregating demand to bring economies of scale
- Strong Public Private Partnership (PPP) model
- Deemed savings approach – demonstration of energy savings upfront
- Third party investments in efficient equipments by EESL
- Monetization of energy savings
- Turnkey implementation by EESL including performance and warranties
- Awareness and outreach in project areas
- Risk mitigation – technical risk through back to back arrangement with suppliers.
- Financial risk – BG, ESCROW and Revolving LCs – Approval by regulatory bodies, State govt guarantees

# National LED Lighting Programme



**PM launches: Scheme for LED bulb distribution under Domestic Efficient Lighting Programme in Delhi**

# National LED Programmes – Ambitions & Achievements



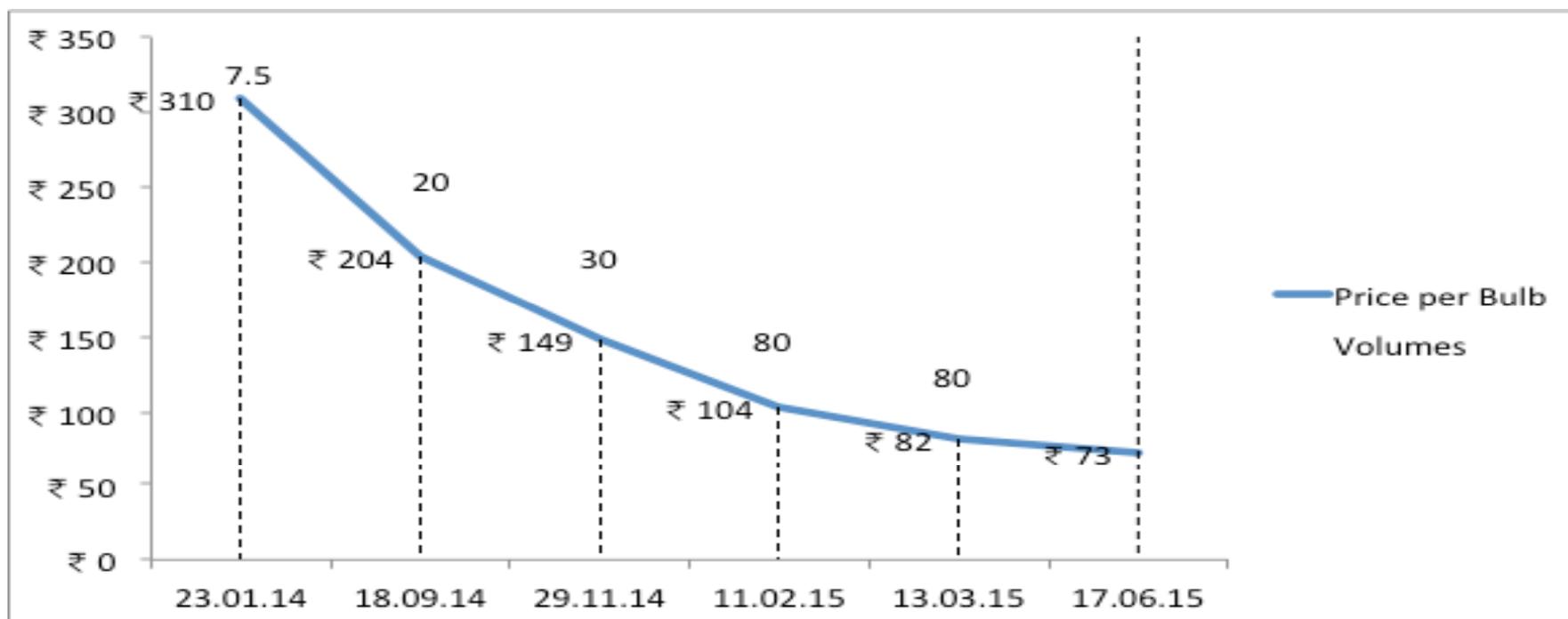
Domestic Efficient Lighting Programme (DELP)	Target	Achievement
No of LED bulbs to be replaced	770 million	27 m
No of towns where work in progress/ complete	Entire country	99/7 = 106
Estimated annual energy savings	105 b KWh	3.41 b KWh
Estimated reduction of peak load	20,000 MW	850 MW
Estimated cost reduction of bills of consumers	\$ 6.7 b	\$ 226 m
Estimated annual estimated GHG emission reductions	79 mt CO2	5.9 mt of CO2

Street Light National Programme (SLNP)	Target	Achievement
No of street lights to be replaced	35 million	0.44 m
No of towns where work in progress/ complete	Entire country	84/16 = 100
Estimated annual energy savings	9 b KWh	112 m KWh
Estimated reduction of peak load	1500 MW	18.6 MW
Estimated cost reduction of bills of municipalities	\$ 800 m	\$ 11.2
Estimated annual estimated GHG emission reductions	6.2 m t CO2	100,000 t CO2

# National LED Programmes – Aggregation, Monitoring and Outreach



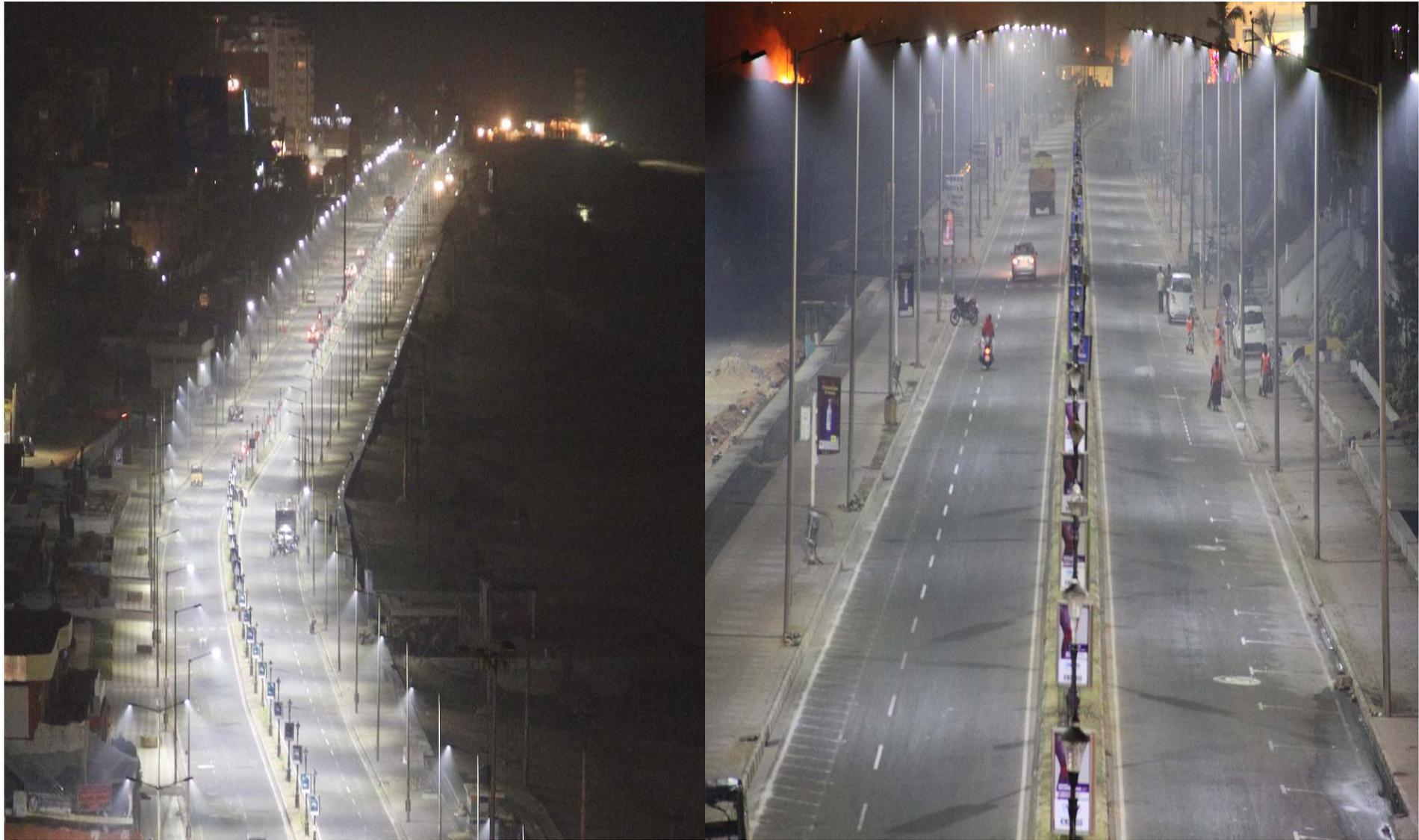
Reduction in price by 75% due to aggregation



Real time monitoring of progress and impact at [www.delp.in](http://www.delp.in)

Outreach to enhance awareness at [www.iLEDtheway.in](http://www.iLEDtheway.in) – more than 6.5 million Indians pledged to use LED lights

# Snapshots from Vizag Street Light Project



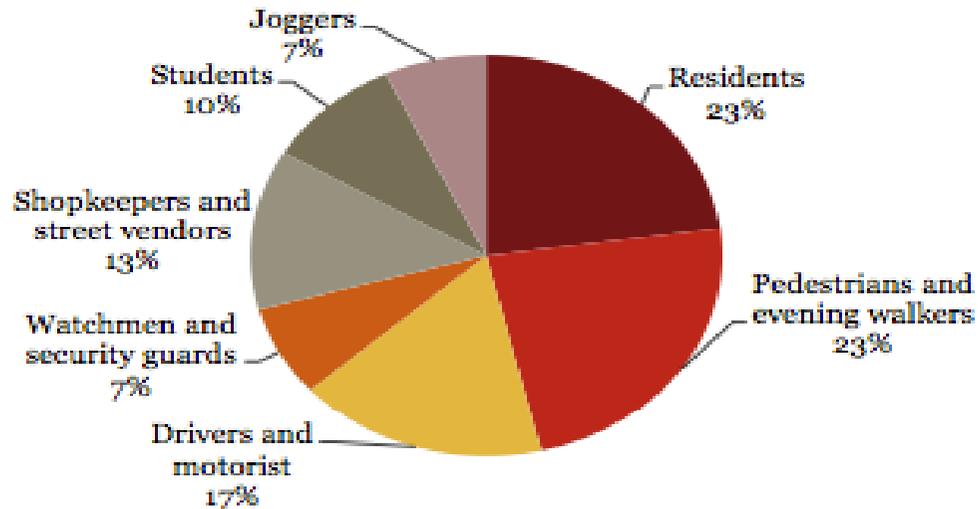
- Energy savings of about 55% - automatic controls being installed and savings to increase further
- Light level improvement by 70-100%
- High levels of public satisfaction

# Social Audit Survey Results

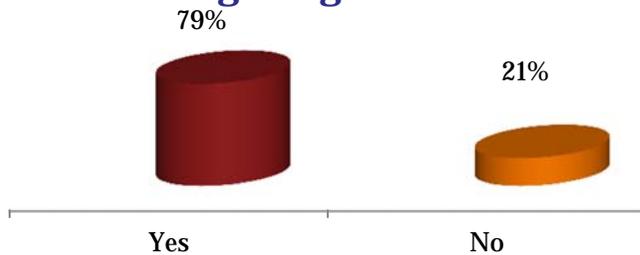


Marine Drive, Mumbai

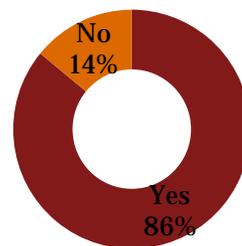
## Profile of Respondents



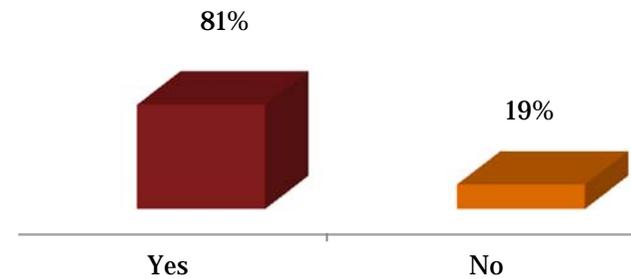
## Satisfaction with Lighting Levels



## Effect on Safety



## Reduction of Dark Spots



# DELP – Snapshots from project site



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**Thank You**

**For more information contact**

**[njain@eesl.co.in](mailto:njain@eesl.co.in)**

**[www.eesl.co.in](http://www.eesl.co.in)**