

Changing Urban City Night View while reducing power consumption to less than half

- A presentation on Smart City Lighting & Off Grid Lighting solutions by
EON Electric Ltd...



- Transforming the night view



- Melting pot of the modern & traditional



- Even a speck of dirt can't escape from brilliant EON LEDs

India has 35 million street lights which generate a total demand of 3,400 MW. With LED, this can be brought down to 1,400 MW, saving 9000 million kWh of electricity annually, worth over 5700 Crores in the process.

Eon Electric's journey so far...

Eon Electric Limited forayed into LED Street Lighting business in FY 2014-15 & in just two years has achieved 300000 installation in India making it one of the largest LED Street lighting company in the world. Eon has also forayed into Solar Street Lighting business in 2016-17 which combines two of our flagship product lines – LED Lighting & Lithium batteries.

Street Lighting National Program

Scope of work

- Survey of Complete City for identifying numbers/type/wattage/condition of conventional Street Light Installed & Street Lighting infrastructure like Switch points/phase wire/power conditions.
- Design, manufacture, testing, supply of LED street Lights to stringent specifications which can withstand power fluctuations prevalent in fast developing cities in India.
- Retrofitting of convention lights with Eon LED lights as per Road pole configuration thereby reducing power consumption to less than 50%. (A 250W HPSV is replaced with 120W LED street light)
- Installing GSM based Central Controlling & Monitoring System (CCMS) on switch points to monitor the LED street light through online portal on real time basis
- Maintaining the Installed street lights & CCMS for 7 years.



CCMS



Installation in progress

Street Light Projects Executed

Sl. No.	City	State	Status	Quantity
1	Aligarh	Uttar Pradesh	Installed	15197
2	Jodhpur	Rajasthan	Installed	49290
3	Varanasi	Uttar Pradesh	Installed	3040
4	Amravati	Maharashtra	Installed	2000
5	Palanpur	Gujarat	Installed	4690
6	Beawar	Rajasthan	Installed	9492
7	Gangapur City	Rajasthan	Installed	8309
8	Kishangarh	Rajasthan	Installed	9442
9	Sumerpur	Rajasthan	Installed	4304
10	Tonk	Rajasthan	Installed	8881
11	Sojat	Rajasthan	Installed	4116
12	Kekri	Rajasthan	Installed	3537
13	Niwai	Rajasthan	Installed	3834
14	Todaraisingh	Rajasthan	Installed	1575
15	Malpura	Rajasthan	Installed	1886

Street Light Projects Executed

Sl. No.	City	State	Status	Quantity
16	Vijay Nagar	Rajasthan	Installed	2402
17	Sarwad	Rajasthan	Installed	1731
18	Deoli	Rajasthan	Installed	1804
19	Uniara	Rajasthan	Installed	983
20	Pipar City	Rajasthan	Installed	3379
21	Jaitaran	Rajasthan	Installed	2796
22	Bilara	Rajasthan	Installed	2920
23	Badisadari	Rajasthan	Installed	2173.00
24	Kapasan	Rajasthan	Installed	1580.00
25	Bhinder	Rajasthan	Installed	1591.00
26	Salumbhar	Rajasthan	Installed	1421.00
27	Kuchera	Rajasthan	Installed	2269.00
28	Mundwa	Rajasthan	Installed	1476.00
29	Degana	Rajasthan	Installed	1902.00
30	Balotra	Rajasthan	Installed	7718

Street Light Projects Executed

Sl. No.	City	State	Status	Quantity
31	Shardarshahar	Rajasthan	Installed	4758
32	Hanumangarh	Rajasthan	Installed	6297
33	Phalodi	Rajasthan	Installed	5962
34	SriGanganagar	Rajasthan	Installed	15229
35	Sangaria	Rajasthan	Installed	1624
36	Suratgarh	Rajasthan	Installed	4697
37	Rajgarh	Rajasthan	Installed	4018
38	Jaisalmer	Rajasthan	Installed	9480
39	Kangra	Himanchal Pradesh	Under Progress	800
40	Noorpur	Himanchal Pradesh	Under Progress	1320
41	Jwalamukhi	Himanchal Pradesh	Under Progress	669
42	Dehra	Himanchal Pradesh	Under Progress	663
43	Palampur	Himanchal Pradesh	Under Progress	535
44	Nagrota Bhavan	Himanchal Pradesh	Under Progress	853
45	Hamirpur	Himanchal Pradesh	Under Progress	2929

Street Light Projects Executed

Sl. No.	City	State	Status	Quantity
46	Sujanpur	Himanchal Pradesh	Installed	1200
47	Bhota	Himanchal Pradesh	Installed	473
48	Nadaun	Himanchal Pradesh	Installed	928
49	Chamba	Himanchal Pradesh	Installed	2501
50	Chowari	Himanchal Pradesh	Installed	414
51	Dalhausie	Himanchal Pradesh	Installed	937
52	Kullu	Himanchal Pradesh	Installed	1982
53	Bhuntar	Himanchal Pradesh	Installed	338
54	Rewalsar	Himanchal Pradesh	Installed	338
55	Sarkaghat	Himanchal Pradesh	Installed	1465
56	Jaipur	Rajasthan	In Process	16750
57	Raipur	Chattisgarh	In Process	9000
58	Ranchi	Jharkhand	In Process	2000
			Total	263898

Key Specifications of EON Street Lighting

- **LED Package** - Eon Street Lights use High Bin Osram Oslon square LED
- **Driver** - Best in class Philips Xitanium Series drivers used
- **Light distribution** - Offers Asymmetrical Light distribution using high quality optical lenses thereby providing high lux levels & excellent uniformity.
- **Efficacy** - Efficacy of more than 100 Lumen/watt across all wattages
- **Harmonics** - Offers THD less than 15 across all wattages
- **Operation voltage** - Provides wide operating voltage band 130V-270V to ensure excellent performance even under challenging power conditions
- **Surge Protection** - Offers 4kV internal & 20kV external surge protection which protects the light from both line surges as well as thunder lightning.
- **Auto Cut-off** - Auto cut-off feature available on request, which improves the life of the product by restricting electrical stresses.
- **Warranty** – Eon street Lights are available with 5 years warranty against manufacturing defect.

Smart Street Light Control and Management System

LCMS™

Brighten the City with the Right Light
The Next Generation of Intelligent Lighting Control

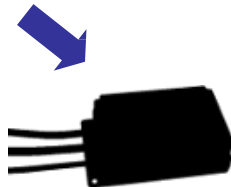
Overview.

- Emphasize control intelligence, energy saving, and automatic dimming based on regional sunrise and sunset schedule.
- Monitor & analyze the current, voltage, and power consumption information of different segments of street lights.
- Effortless installation compared to wireless solution through direct controller deployment in the lighting poles.

System Components



IP65/67 Dimmable
LED Drivers



Intelligent
Lighting
Control Box



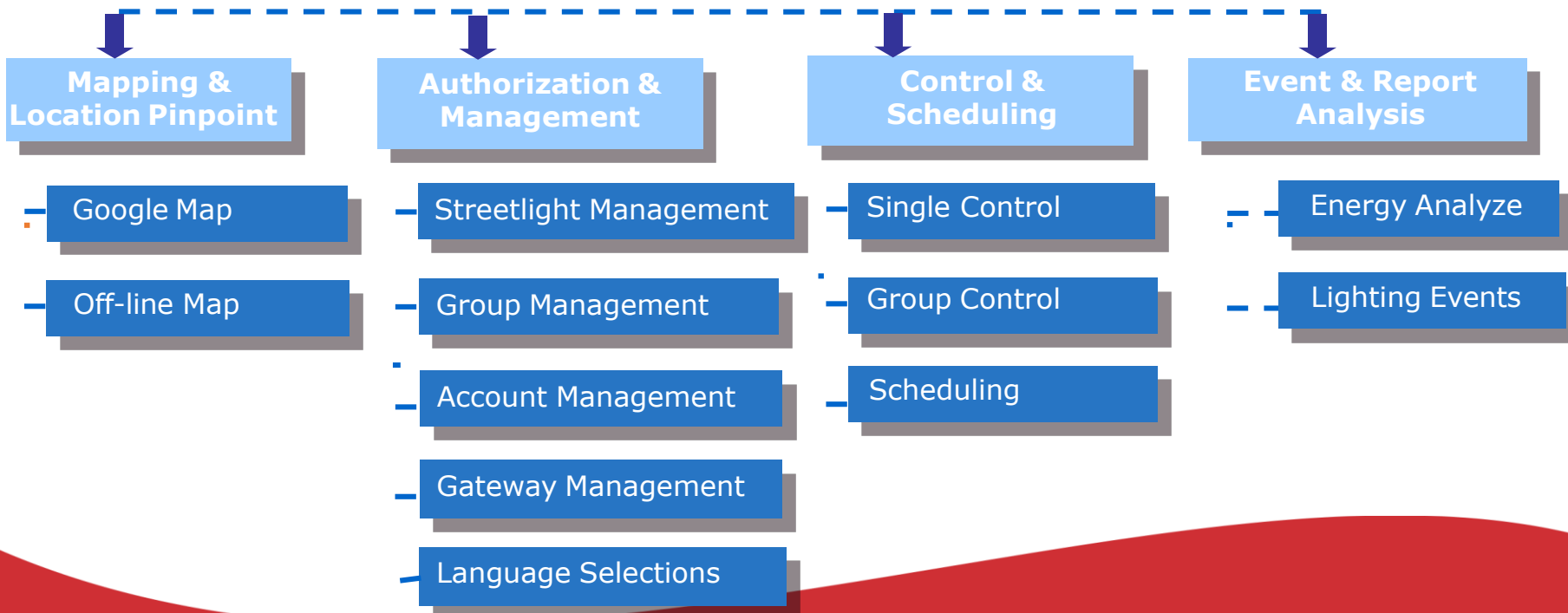
BPL Smart Lighting
Segment Controller



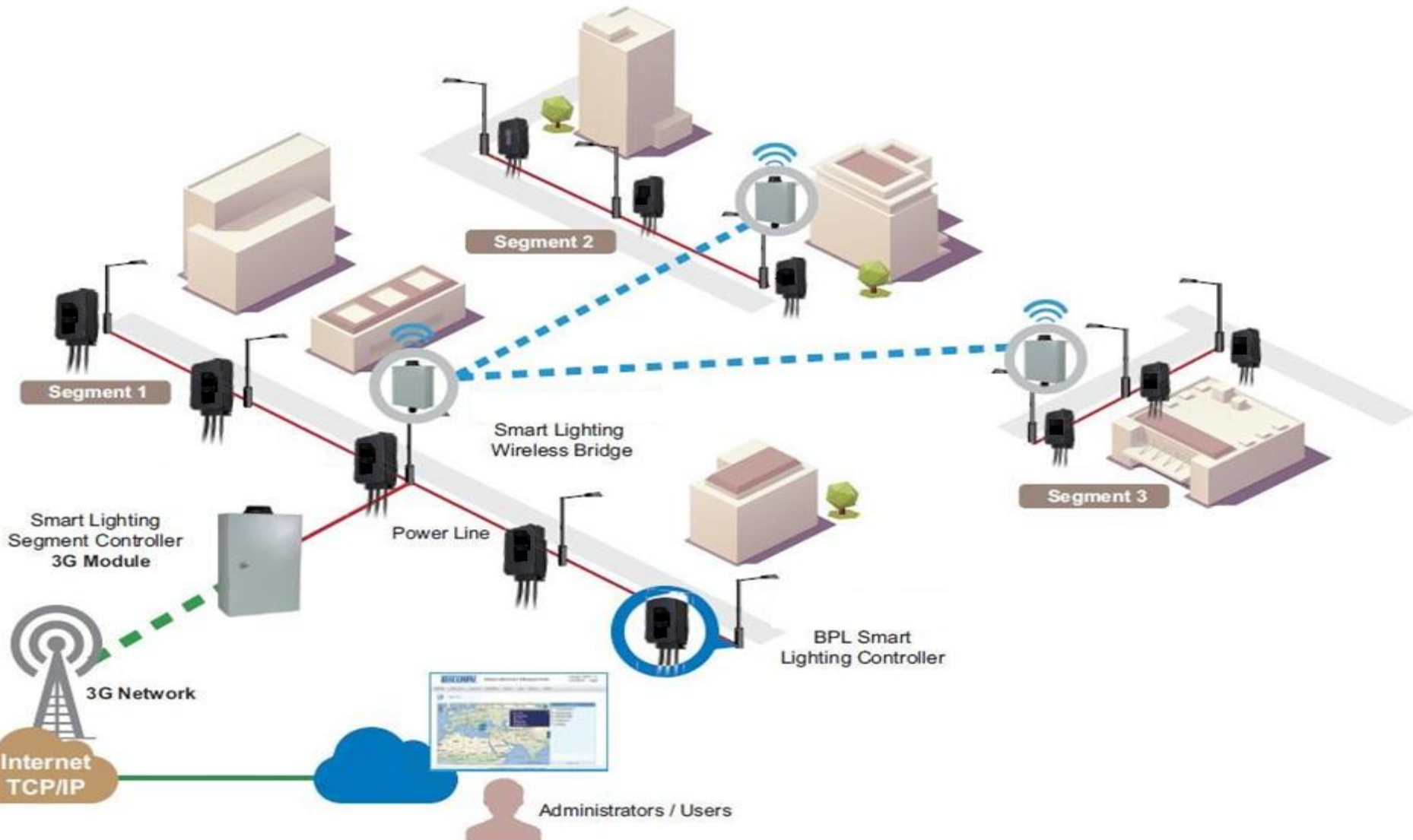
BPL Smart Wireless
Bridge



LCMS System



EON Emerging Smiles PLC Architecture

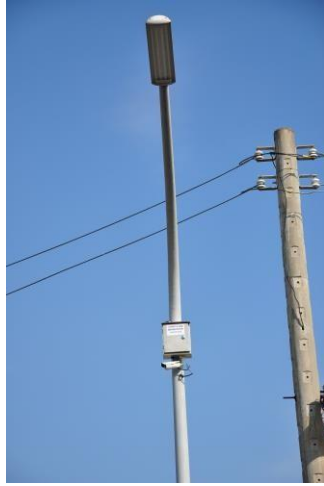


Multiple Power Circuits Scenarios



Only 1 power line

IP Cam video stream only pass through PLC



Cross power line

IP Cam video steam pass through both Wi-Fi and PLC



LoRa Smart LED Streetlight Management System.

Present Scenario of Street Lighting

- **Inadequate/Poor Fault reporting mechanism** in the system and hence delayed repair of the faulty lights and hence human discomfort.
- Non Uniform light intensity levels due to several reasons mentioned above and **higher intensity levels during off peak traffic hours**, leading to energy wastage.
- **No control and/or mechanism to check the power theft** from the lines meant for street lighting supply, causing revenue loss to both municipalities & utility.

LoRa Facilitates :-

- System will calculate sunrise and sunset time based on (longitude and latitude) with reference to RTC and generate precise on/off function time.
- Display Mode: You can see current time, sunrise, sunset times of today, on/off time set. Mains voltage of each phase Load amps of each phase etc.
- Write Mode: You can input time difference with world standard time, summer time, offsetting of on/off time and select the needed sunrise, sunset time and make on/off operated on time.

LoRa Facilitates(Contd) :-

- **Test & Override:** You can test the functionality of the equipment in this mode. One can diagnose the unit from remote location.
- **Control Mode:** Normal operating mode in which equipment will work according to the set parameters with powerful protective features.
- **Energy Saving Mode:** As per set parameters equipment will work in to this mode with intelligent protective algorithms.

Basic Configuration

4 main aspects of LoRa Smart LED Streetlight Management System.

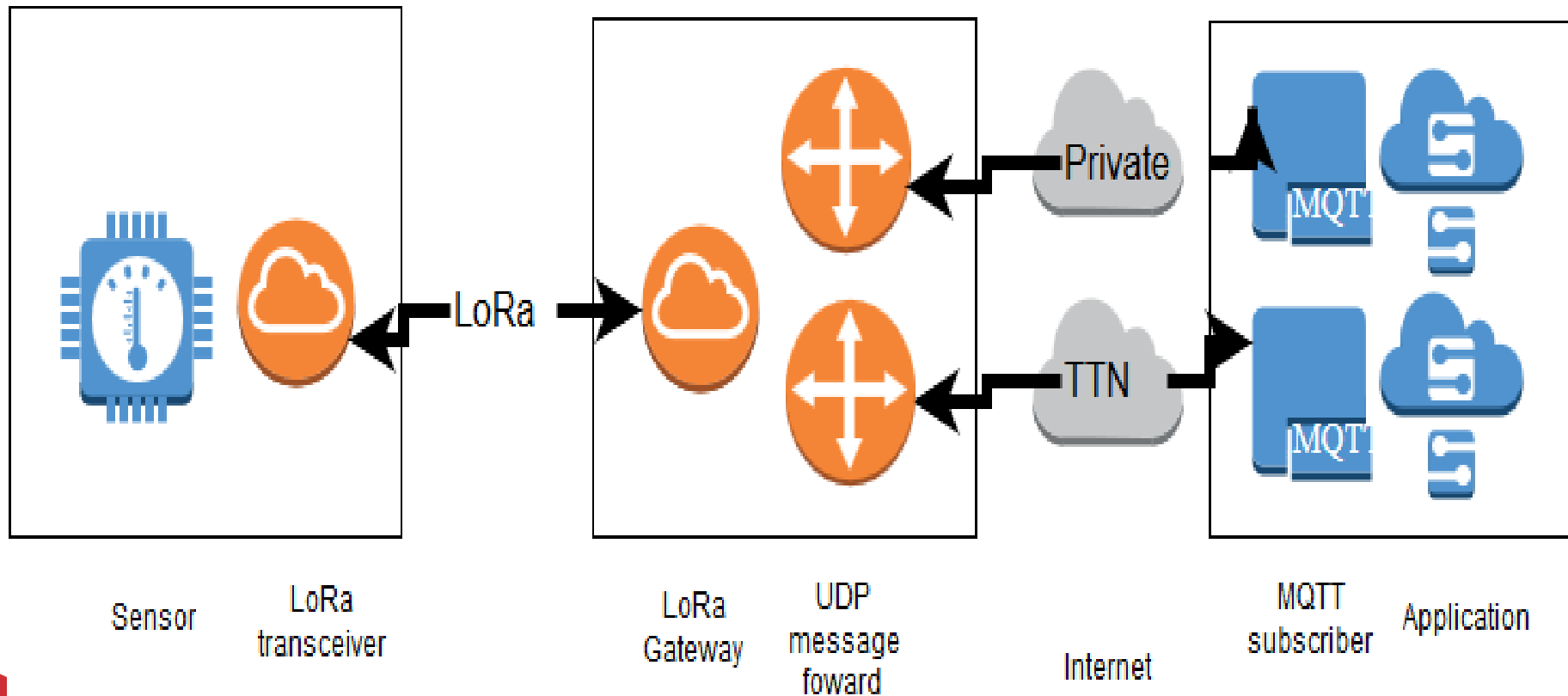
- 1.LoRa Controller.
- 2.LoRa Gateway.
- 3.Service Application servers.
- 4.Smartphone APP.

Basic Architecture

Device

Gateway

Application



Benefits to Municipal Corp.

- Huge Energy savings annually
- Excellent Central Operation and maintenance of Street Lights
- Centralized monitoring of all street lights.
- Less Labor costs
- Less Capital Expenditure on lamps and fittings.
- Less Contract Charges and better Contractors' monitoring.
- Improved public image as a cost conscious and efficient public service provider

Solar Street Lighting

Lighting up India's Off Grid Villages...

Foraying into Solar Street Lighting was a natural choice for EON as it combines two technologies – LED Lighting & Lithium Batteries, which are not only strategically in line with EON's growth plans but also very close to our heart as both these products are making revolutionary impact on Nation Building as they provide sustainable means to energy conservation & self sustenance for Electrical power.

Eon was invited to participate in the biggest ever tender for Supply, Installation & Maintenance of Solar Street Lighting System, under Govt. of India's "Atal Jyoti Yojna (AJAY Scheme) & emerged as a leading project implementer of the Scheme in 13 M.P. Constituencies in the States of Uttar Pradesh & Jharkhand.



Transforming Life in Off-Grid Villages of India

Solar Street Light Projects Executed

Sl. No.	Constituency	State	Status	Qty
1	Meerut	Uttar Pradesh	Installed	302
2	Muzzafarnagar	Uttar Pradesh	Installed	775
3	MATHURA	Uttar Pradesh	Installed	1553
4	Sambal	Uttar Pradesh	Installed	397
5	Rampur	Uttar Pradesh	Installed	190
6	Ballia	Uttar Pradesh	Installed	1339
7	GORAKHPUR	Uttar Pradesh	Installed	1550
8	RANCHI	Jharkhand	Installed	108
9	PALAMU	Jharkhand	Installed	233
10	CHATRA	Jharkhand	Installed	57
11	BIJNOR	Uttar Pradesh	Installed	1401
12	SALEMPUR	Uttar Pradesh	Installed	750
13	Shaharanpur	Uttar Pradesh	Installed	500
14	HAZARIBAGH	Jharkhand	Installed	411
15	Sultanpur	Uttar Pradesh	Installed	1376
16	Godda	Jharkhand	Installed	1308

Thank You