

## **ELECTRICAL DEPARTMENT NORTH EASTERN RAILWAY Lucknow (Uttar Pradesh)**

### *Unit Profile*

Lucknow is the Divisional Head Quarter of Lucknow Division of North Eastern Railway. Lucknow Jn. station has 06 platforms and 01 FOB. Platform number 6 is accessible to the two wheelers, auto rickshwas and cars through and underpass cabway. About 100 trains start from, terminate at or pass through LJN station.

Station building and platforms are provided with Energy efficient light fittings, Ceiling fans with energy saving devices. For energy conservation purpose in cover platform 30/70 % switching circuit have been provided. At open platform & station building LED Street light fittings have been provided. In addition to this solar water heating system, Star rated Air-conditioners, APFC panel & Energy savers are also being used.



### Specific Energy Consumption

Elect. Consumption (Lac kWh) in 2013-14	Elect. Consumption (Lac kWh) in 2014-15	Elect. Saving (Lac kWh) in 2014-15	% Elect. Saving (savings achieved/ electricity consumption of previous year)
(i)	(ii)	(iii)	(iii)/(i) x100
13.23	9.91	3.32	25.09

Year	Total electricity consumption/ Total built-up area (kWh/m <sup>2</sup> )	% Reduction over 2013 - 2014
2013-14	30.01	-
2014-15	22.48	25.09

### Energy and Money saving during the period 2014-15

Saving	Year 2014-15
Annual Electricity Savings (Lac kWh)	3.32
Annual Energy Savings in Rs. Lacs	23.61

### Energy conservation measures adopted

#### 1 Replacement of 40 W FTL fittings with 28 W T-5 fittings

	Description	Unit	Quantity
A	No. of existing FTL fittings 40 W replaced by 28 W T-5 fittings	No.	410
B	Wattage consumption of T-12 FTL fitting	Watt per No.	53
C	Wattage consumption of T-5 fitting	Watt per No.	28
D	Saving per fitting (B-C)	Watt per No.	25
E	Average working per day	Hour per day	12
F	Working days per year	Days	365
G	Energy saving per year ((A X D X E X F)/1000)	kWh per year	44895

#### 2 Replacement of high wattage ceiling fan with Energy efficient fan

	Description	Unit	Quantity
A	No. of Existing high wattage fan replaced with low wattage energy efficient fan	No.	325
B	Consumption of high wattage fan	Watt per No.	80
C	Consumption Wattage of energy efficient fan	Watt per No.	60
D	Saving wattage per fan (B-C)	Watt per No.	20
E	Average working per day	Hour per day	22
F	Working days per year	Days	240
G	Energy saving per year ((A X D X E X F)/1000)	kWh per year	34320

### 3 Replacement of High wattage MH street light fittings by 4X24W T-5 street light fittings

	Description	Unit	Quantity
A	No. of existing high wattage street light	No.	40
B	Average consumption Wattage of street light fitting	Watt per No.	280
C	No. of 4 X 24 W T-5 fittings provided	No.	40
D	Consumption Wattage of 4X24 W T-5 fitting	Watt per No.	100
E	Saving per fitting (B-D)	Watt per No.	180
F	Average working per day	Hour per day	11
G	Working days per year	Days	365
H	<b>Energy saving per year (C X E X F X G)/1000</b>	kWh per year	<b>28908</b>



### 4 Provision of solar water heater system to replace geysers

	Description	Unit	Quantity
A	No. of existing geysers	No.	15
B	Consumption Wattage of per geyser	Watt per No.	2000
C	No. of geyser removed due to installation of Solar water heater	No.	15
D	Average working per day during winter	Hrs per day	3
E	Working days during winter per year	Days	180
F	<b>Energy saving per year (B*C*D*E)/1000</b>	kWh per year	<b>16200</b>

#### 5 Replacement of 2 X 40 W FTL fittings rolling light with 24W LED rolling light

	Description	Unit	Quantity
A	No. of 2X40 W FTL fitting	No.	45
B	Consumption Wattage of FTL fitting	Watt per No.	106
C	No. of LED rolling light provided	No.	45
D	Consumption Wattage of LED rolling light	Watt per No.	24
E	Saving per fitting (B-D)	Watt per No.	82
F	Average working per day	Hour per day	12
G	Working days per year	Days	365
H	<b>Energy saving per year ((A X E X F X G)/1000)</b>	kWh per year	<b>16162</b>

#### 6 Provision of LED street light fitting

	Description	Unit	Quantity
A	No. of existing MH fittings 250 W & 150 W replaced by LED street light fittings 90 W & 45 W respectively (45W)	No.	60 (90W)40
B	Wattage consumption of LED fitting	Watt per No.	90 & 40 W
C	Wattage consumption of MH fitting	Watt per No.	280 & 170 W
D	Saving per fitting (B-C)	Watt per No.	190 & 125 W
E	Average working per day	Hour per day	11
F	Working days per year	Days	365
G	<b>Energy saving per year ((A X D X E X F)/1000)</b>	kWh per year	<b>65846</b>

#### 7 Provision of LED fitting 39 W ( size 2'X2')

	Description	Unit	Quantity
A	No. of existing 3X36 W FTL fittings replaced by 39 W LED fittings	No.	45
B	Wattage consumption of 3X36 W FTL fitting	Watt per No.	108
C	Wattage consumption of LED fitting	Watt per No.	39
D	Saving per fitting (B-C)	Watt per No.	69
E	Average working per day	Hour per day	18
F	Working days per year	Days	365
G	<b>Energy saving per year ((A X D X E X F)/1000)</b>	kWh per year	<b>20400</b>