

## Annexure – A1

### **BEE – MuDSM PROGRAMME**

Name of ULB : Sagar Municipality, MP.

Name of ESCO : EPIC Energy Ltd. Mumbai.

### **CONNECTED LOAD DETAILS**

<b>Sl. No</b>	<b>Location</b>	<b>GLS 60 W</b>	<b>CFL 23 W</b>	<b>TFL 40 W</b>	<b>SV 250 W</b>	<b>FAN</b>	<b>EX. FAN</b>	<b>ROOM COLLER</b>	<b>COMPUTER</b>
1	Head Office	2	14	74	2	50	4	21	3
2	Pavilion Building	–	–	8	2	6	4	1	–
3	Zone Office - 2	–	–	4	–	3	2	1	–
4	Zone Office - 3	–	–	2	–	2	2	–	–
<b>Total</b>		<b>2</b>	<b>14</b>	<b>88</b>	<b>4</b>	<b>61</b>	<b>12</b>	<b>23</b>	<b>3</b>

## Connected Load Details of Water scheme:

### 1. Rajkhat Raw Water intake PH

#### MOTOR DETAILS :

Description	Machine No			
	1	2	3	4
Make	Crompton & Greaves	Crompton & Greaves	Crompton & Greaves	Crompton & Greaves
Capacity	170 kw / 228 HP	170 kw / 228 HP	170 kw / 228 HP	170 kw / 228 HP
S.No	2002118/01	2002118/02	2002118/03	2002118/04
Weight	2500 kg	2500 kg	2500 kg	2500 kg
RPM	1486	1486	1486	1486
Frame	D315LD	D315LD	D315LD	D315LD
Insulation class	F at 45°c	F at 45°c	F at 45°c	F at 45°c
Amps	19	19	19	19
Enclosure	TEFC	TEFC	TEFC	TEFC
Ref	BBCH 031	BBCH 031	BBCH 031	BBCH 031
Duly	31	31	31	31
Frequency	50 Hz	50 Hz	50 Hz	50 Hz
Rating	MCR	MCR	MCR	MCR

## **PUMP DETAILS:**

<b>Description</b>	<b>Machine No</b>			
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
Make	Crompton & Greaves	Crompton & Greaves	Crompton & Greaves	Crompton & Greaves
S.No	1527003001	1527003001	1527003001	1527003001
Discharge	1969 m <sup>3</sup> / hr	1969 m <sup>3</sup> / hr	1969 m <sup>3</sup> / hr	1969 m <sup>3</sup> / hr
Speed	1486	1486	1486	1486
Recommended Prime mover rating	170 kw	170 kw	170 kw	170 kw
Power capacitors connected	4 x 80 KVAR – 3 Phase / 6.6 kv			

## Connected Load Details

Sl.No	Description of Feeder & Switch Point	Connected Load						Total No.	No of Burning
		HPSV 150 W	MH 250 W	TFL 40 W	Bulbs 100 W	CFL			
						24 W	36 W		
1	Jai Stambhi	99	55	81	4	0	0	239	195
2	Tenn Patti	24	7	1	25	0	0	57	40
3	Parkota	59	24	141	1	16	0	241	187
4	Vijay Talkies	38	10	90	10	0	0	148	130
5	Chatrasal Akada	61	12	93	28	0	0	194	159
6	Sindhi Bhavan	23	0	123	11	0	0	157	81
7	Nachan Das	25	30	122	20	0	0	197	182
8	Pagara Bandhan	78	0	34	3	0	0	115	87
9	Radheshyam Bhavan	26	0	11	83	0	0	120	88
10	Kabula Pul	18	4	84	30	0	0	136	127
11	Ghansho Monshi Mosque	43	8	134	30	0	0	215	173
12	Civil Line	21	41	71	0	0	0	133	101
13	Pilikotti	40	50	15	4	0	0	109	87
14	Town Hall	57	22	89	18	0	0	186	138
15	Police Line	3	0	39	0	0	0	42	26
16	New Colony	20	10	95	30	0	0	155	152
17	Gopal Ganj Station	37	15	118	12	0	0	182	144
18	Housing Board Colony	11	0	88	0	0	0	99	74
19	Tili Village	25	0	110	36	0	0	171	105
20	Tili Hospital	25	18	103	24	0	0	170	125
21	Gopal Mandir	32	1	91	9	0	0	133	88
22	Gola Guha	24	4	160	40	0	0	228	197
23	Monga Bhavan	26	0	138	40	0	0	204	0
24	Chakara Ghat	38	0	12	138	0	0	178	135
25	Kuchara Kua	40	12	138	20	0	0	210	195
26	Sheetala Mandir	9	4	67	33	0	0	113	84
27	Maha Kali Mandir	24	0	91	8	0	0	123	82
28	Ram Baage	30	0	90	25	0	0	145	138
29	Mothi Nagar	25	0	78	36	0	0	139	112
30	Bus Stand	25	61	11	54	0	0	151	110
31	Vithal Nagar	33	0	130	40	0	0	203	83
32	Vaishali Nagar	8	0	45	0	0	0	53	45
33	Dharam Shri	12	0	27	57	0	0	96	77
34	Vidya Sagar Colony	0	0	0	17	15	2	17	14
<b>Total</b>		<b>1059</b>	<b>388</b>	<b>2720</b>	<b>859</b>	<b>31</b>	<b>2</b>	<b>5059</b>	<b>3761</b>

## Annexure –A2

### **BEE – MuDSM PROGRAMME**

Name of ULB: Sagar Municipality, MP. Name of ESCO : EPIC Energy Ltd. Mumbai.

#### **SUBMERSIBLE PUMPING SYSTEM DETAILS**

Sl. No	Location	Motor details	Type of Pumping	Depth of bore ( ft )	Pump details		
					Bore Diameter	Suction pipe size	Delivery pipe size
1	Municipal Office complex	5 HP	Open Well Pump	50	--	2"	2"
2	Bakshikhanna Katra Bazar	7.5 HP	Open Well Pump	60	--	2"	2"
3	Meal Tilag Ganj	7.5HP	Submersible Pump	50	4"	3" - 2"	3"
4	New Colony	5 HP	Submersible Pump	200	6"	2"	2"
5	Main Pani Tiggda	5 HP	Submersible Pump	250	6"	2"	2"
6	Rajiv Nagar Colony	5 HP	Submersible Pump	200	6"	2"	2"
7	Bagaraj Temple	5 HP	Submersible Pump	250	4"	2"	2"
8	Sarkari tall Bagat Singh	5 HP	Submersible Pump	250	6"	2"	2"

9	Kethwari Devi Temple	5 HP	Submersible Pump	200	4"	2"	2"
10	Santkuwar ram ward	5 HP	Submersible Pump	250	4"	2"	2"
11	Jawahar Ganj Ward	5 HP	Submersible Pump	300	6"	8" - 6" - 2"	2"
12	Rambag Mandir	5 HP	Submersible Pump	250	4"	2"	2"
13	Latchu Tiggda	5 HP	Submersible Pump	130	4"	2"	2"
14	Ghula Tiggda	5 HP	Submersible Pump	200	4"	2"	2"
15	Malliya gate Tilli	5 HP	Submersible Pump	100	6"	2"	2"

### Annexure - A3

## **BEE – MuDSM PROGRAMME**

### LUX Reading Measurement

Name of ULB : SAGAR MUNICIPALITY Place : Jai Stambhi  
Name of Utility : Madhya Pradesh Electricity Board Date : 28 / 06 / 2009  
Name of ESCO : EPIC Energy Ltd, ESCO, Mumbai. Switch Point : 1

#### Details of Lux Meter Used

Accuracy : + 1 – 5 % + 2 Digit. Model : Lx – 101 Make : Lutron  
Calibration Date : 26.03.2009 Next Due : 26.03.2010

Classification of Road: A2 & B2 Total No. of Lamps : MH – 250W – 55  
GLS – 100W – 04  
HPSV – 150W – 99  
TFL – 40W – 81

S.NO	Span Length (m)	Road Length (m)	Time	A1	A2	B1	B2	C1	C2	C3	C4	D	Average Lux Reading	Remarks
1	39	6.5	8.30	32	21	12	8	29	1	11	1	1	10	-

# BEE – MuDSM PROGRAMME

## LUX Reading Measurement

Name of ULB : SAGAR MUNICIPALITY Place : Teen Patti  
Name of Utility : Madhya Pradesh Electricity Board Date : 28 / 06 / 2009  
Name of ESCO : EPIC Energy Ltd, ESCO, Mumbai. Switch Point : 2

### Details of Lux Meter Used

Accuracy : + 1 – 5 % + 2 Digit. Model : Lx – 101 Make : Lutron  
Calibration Date : 26.03.2009 Next Due : 26.03.2010

Classification of Road: A2 & B2 Total No. of Lamps : MH – 250W – 07  
GLS – 100W – 25  
HPSV – 150W – 24  
TFL – 40W – 01

S.NO	Span Length (m)	Road Length (m)	Time	A1	A2	B1	B2	C1	C2	C3	C4	D	Average Lux Reading	Remarks
1	31	5.5	8.30	20	15	8	12	1	24	1	14	1	9	-
2	47	7	8.30	21	12	17	10	1	15	1	13	1	8	-
1	31	5.5	11.30	23	17	10	15	1	28	1	19	1	10	-
2	47	7	11.30	25	16	18	12	1	18	1	14	1	10	-



# BEE – MuDSM PROGRAMME

## LUX Reading Measurement

Name of ULB : SAGAR MUNICIPALITY Place : Parkota  
Name of Utility : Madhya Pradesh Electricity Board Date : 29 / 06 / 2009  
Name of ESCO : EPIC Energy Ltd, ESCO, Mumbai. Switch Point : 3

### Details of Lux Meter Used

Accuracy : + 1 – 5 % + 2 Digit. Model : Lx – 101 Make : Lutron  
Calibration Date : 26.03.2009 Next Due : 26.03.2010

Classification of Road: B1 & B2 Total No. of Lamps : MH – 250W – 24  
GLS – 100W – 01  
HPSV – 150W – 59  
TFL – 40W – 141  
CFL – 24W – 16  
TFL – 40W – 141

S.NO	Span Length (m)	Road Length (m)	Time	A1	A2	B1	B2	C1	C2	C3	C4	D	Average Lux Reading	Remarks
1	15	6	8.45	6	9	5	2	4	5	3	4	3	4	-
2	27	7	9.00	20	5	10	7	1	13	1	11	1	6	-
3	46	6	9.00	18	3	32	5	1	2	1	20	1	7	-
1	15	6	11.30	8	10	5	3	4	7	4	4	4	5	-
2	27	7	11.30	23	6	12	8	1	14	1	13	1	7	-
3	46	6	11.30	19	4	34	6	1	3	1	23	1	8	-

# BEE – MuDSM PROGRAMME

## LUX Reading Measurement

Name of ULB : SAGAR MUNICIPALITY Place : Vijay Talkies  
Name of Utility : Madhya Pradesh Electricity Board Date : 29 / 06 / 2009  
Name of ESCO : EPIC Energy Ltd, ESCO, Mumbai. Switch Point : 4

### Details of Lux Meter Used

Accuracy : + 1 – 5 % + 2 Digit. Model : Lx – 101 Make : Lutron  
Calibration Date : 26.03.2009 Next Due : 26.03.2010

Classification of Road: B2 Total No. of Lamps : MH – 250W – 10  
GLS – 100W – 10  
HPSV – 150W – 38  
TFL – 40W – 90

S.NO	Span Length (m)	Road Length (m)	Time	A1	A2	B1	B2	C1	C2	C3	C4	D	Average Lux Reading	Remarks
1	46	7	20.30	15	9	6	24	5	14	6	20	1	9	-
2	26	7	11.00	6	24	9	3	3	20	3	6	4	8	-
3	28	5	11.00	7	3	7	6	1	8	1	7	1	4	-
1	46	7	23.30	21	14	6	25	3	13	2	21	1	9	-
2	26	7	23.30	6	25	3	10	1	21	1	7	1	7	-
3	28	5	23.30	9	6	6	4	2	3	1	5	1	3	-

## BEE – MuDSM PROGRAMME

### LUX Reading Measurement

Name of ULB : SAGAR MUNICIPALITY Place : Chatrasal Akada  
Name of Utility : Madhya Pradesh Electricity Board Date : 29 / 06 / 2009  
Name of ESCO : EPIC Energy Ltd, ESCO, Mumbai. Switch Point : 5

#### Details of Lux Meter Used

Accuracy : + 1 – 5 % + 2 Digit. Model : Lx – 101 Make : Lutron  
Calibration Date : 26.03.2009 Next Due : 26.03.2010

Classification of Road: B2 Total No. of Lamps : MH – 250W – 12  
GLS – 100W – 28  
HPSV – 150W – 61  
TFL – 40W – 93

S.NO	Span Length (m)	Road Length (m)	Time	A1	A2	B1	B2	C1	C2	C3	C4	D	Average Lux Reading	Remarks
1	50	4	08.30	38	12	20	16	16	1	20	1	1	10	-
2	12	4	08.30	5	3	6	5	2	4	4	5	4	4	-
3	50	4	11.30	26	15	18	13	28	1	20	1	1	11	-
1	12	4	11.30	6	2	4	4	4	3	3	4	3	4	-
2	50	4	01.30	26	18	18	19	28	1	24	1	1	12	-
3	12	4	01.30	8	4	5	4	5	4	2	5	5	5	-

## BEE – MuDSM PROGRAMME

### LUX Reading Measurement

Name of ULB : SAGAR MUNICIPALITY Place : Sindhi Bhavan  
Name of Utility : Madhya Pradesh Electricity Board Date : 30 / 06 / 2009  
Name of ESCO : EPIC Energy Ltd, ESCO, Mumbai. Switch Point : 6

#### Details of Lux Meter Used

Accuracy : + 1 – 5 % + 2 Digit. Model : Lx – 101 Make : Lutron  
Calibration Date : 26.03.2009 Next Due : 26.03.2010

Classification of Road: B2 Total No. of Lamps : MH – 250W – 00  
GLS – 100W – 11  
HPSV – 150W – 23  
TFL – 40W – 123

S.NO	Span Length (m)	Road Length (m)	Time	A1	A2	B1	B2	C1	C2	C3	C4	D	Average Lux Reading	Remarks
1	30	4	08.30	3	3	6	4	4	1	1	7	1	3	-
2	60	8	08.30	7	3	13	4	2	1	2	8	1	4	-
3	30	4	11.30	4	3	8	5	5	1	1	9	1	4	-
1	60	8	11.30	9	4	16	6	2	1	2	10	1	4	-
2	30	4	01.00	5	3	8	6	5	1	1	10	1	4	-
3	60	8	01.00	9	5	18	6	2	1	3	10	1	5	-

# BEE – MuDSM PROGRAMME

## LUX Reading Measurement

Name of ULB : SAGAR MUNICIPALITY Place : Nachan Das  
Name of Utility : Madhya Pradesh Electricity Board Date : 30 / 06 / 2009  
Name of ESCO : EPIC Energy Ltd, ESCO, Mumbai. Switch Point : 7

### Details of Lux Meter Used

Accuracy : + 1 – 5 % + 2 Digit. Model : Lx – 101 Make : Lutron  
Calibration Date : 26.03.2009 Next Due : 26.03.2010

Classification of Road: B2 Total No. of Lamps : MH – 250W – 30  
GLS – 100W – 20  
HPSV – 150W – 25  
TFL – 40W – 122

S.NO	Span Length (m)	Road Length (m)	Time	A1	A2	B1	B2	C1	C2	C3	C4	D	Average Lux Reading	Remarks
1	30	5	20.30	32	10	43	15	14	2	2	30	2	13	-
2	45	3	20.30	6	5	7	4	5	2	1	8	1	4	-
3	50	5	20.30	55	23	25	18	46	13	14	4	14	21	-
1	30	5	23.30	33	10	45	15	12	4	1	32	1	13	-
2	45	3	23.30	7	5	8	4	4	3	1	9	1	4	-
3	50	5	23.30	54	24	26	17	17	15	11	4	14	17	-
1	30	5	01.30	31	10	44	13	12	5	1	32	1	13	-
2	45	3	01.30	6	4	9	3	4	4	1	10	1	4	-
3	50	5	01.30	52	21	24	16	45	14	10	4	13	19	-

## BEE – MuDSM PROGRAMME

### LUX Reading Measurement

Name of ULB : SAGAR MUNICIPALITY Place : Pagara Bandhan  
Name of Utility : Madhya Pradesh Electricity Board Date : 30 / 06 / 2009  
Name of ESCO : EPIC Energy Ltd, ESCO, Mumbai. Switch Point : 8

#### Details of Lux Meter Used

Accuracy : + 1 – 5 % + 2 Digit. Model : Lx – 101 Make : Lutron  
Calibration Date : 26.03.2009 Next Due : 26.03.2010

Classification of Road: B2 Total No. of Lamps : MH – 250W – 00  
GLS – 100W – 03  
HPSV – 150W – 78  
TFL – 40W – 34

S.NO	Span Length (m)	Road Length (m)	Time	A1	A2	B1	B2	C1	C2	C3	C4	D	Average Lux Reading	Remarks
1	30	8	08.30	9	13	11	18	15	14	15	8	10	12	-
2	50	4.5	08.30	12	4	10	3	8	1	6	1	1	4	-
1	30	8	10.30	9	11	12	16	17	14	18	10	12	13	-
2	50	4.5	10.30	12	2	10	2	6	1	6	1	1	4	-

# BEE – MuDSM PROGRAMME

## LUX Reading Measurement

Name of ULB : SAGAR MUNICIPALITY Place : Radheshyam Bhavan  
Name of Utility : Madhya Pradesh Electricity Board Date : 01 / 07 / 2009  
Name of ESCO : EPIC Energy Ltd, ESCO, Mumbai. Switch Point : 9

### Details of Lux Meter Used

Accuracy : + 1 – 5 % + 2 Digit. Model : Lx – 101 Make : Lutron  
Calibration Date : 26.03.2009 Next Due : 26.03.2010

Classification of Road: B2 Total No. of Lamps : MH – 250W – 00  
GLS – 100W – 83  
HPSV – 150W – 26  
TFL – 40W – 11

S.NO	Span Length (m)	Road Length (m)	Time	A1	A2	B1	B2	C1	C2	C3	C4	D	Average Lux Reading	Remarks
1	25	7	07.30	6	2	8	3	4	5	1	8	3	4	-
2	35	7	07.30	7	12	7	4	2	11	1	5	1	5	-
1	25	7	10.30	8	3	10	4	6	5	1	10	4	5	-
2	35	7	10.30	10	14	8	6	4	13	1	6	1	6	-

## BEE – MuDSM PROGRAMME

### LUX Reading Measurement

Name of ULB : SAGAR MUNICIPALITY Place : Kabula Pul  
Name of Utility : Madhya Pradesh Electricity Board Date : 01 / 07 / 2009  
Name of ESCO : EPIC Energy Ltd, ESCO, Mumbai. Switch Point : 10

#### Details of Lux Meter Used

Accuracy : + 1 – 5 % + 2 Digit. Model : Lx – 101 Make : Lutron  
Calibration Date : 26.03.2009 Next Due : 26.03.2010

Classification of Road: B2 Total No. of Lamps : MH – 250W – 04  
GLS – 100W – 30  
HPSV – 150W – 18  
TFL – 40W – 84

S.NO	Span Length (m)	Road Length (m)	Time	A1	A2	B1	B2	C1	C2	C3	C4	D	Average Lux Reading	Remarks
1	23	7	20.30	32	19	22	8	2	32	3	20	4	13	-
2	31	7	20.30	40	7	28	22	4	10	4	15	4	11	-
1	23	7	23.30	33	20	26	6	1	35	2	22	2	13	-
2	31	7	23.30	42	9	25	20	3	13	5	16	3	11	-



# BEE – MuDSM PROGRAMME

## LUX Reading Measurement

Name of ULB : SAGAR MUNICIPALITY Place : Ghansho Monshi  
Masque

Name of Utility : Madhya Pradesh Electricity Board Date : 01 / 07 / 2009

Name of ESCO : EPIC Energy Ltd, ESCO, Mumbai. Switch Point : 11

### Details of Lux Meter Used

Accuracy : + 1 – 5 % + 2 Digit. Model : Lx – 101 Make : Lutron

Calibration Date : 26.03.2009 Next Due : 26.03.2010

Classification of Road: B2 Total No. of Lamps : MH – 250W – 08

GLS – 100W – 30

HPSV – 150W – 43

TFL – 40W – 134

S.NO	Span Length (m)	Road Length (m)	Time	A1	A2	B1	B2	C1	C2	C3	C4	D	Average Lux Reading	Remarks
1	30	6	08.30	22	9	18	8	20	1	3	20	1	9	-
2	25	4	08.30	19	13	2	4	16	1	3	1	1	5	-
3	15	6	08.30	12	3	2	8	5	2	4	28	3	7	-
1	30	6	10.30	22	7	21	8	22	1	2	18	1	9	-
2	25	4	10.30	21	13	2	3	18	1	4	1	1	6	-
3	15	6	10.30	12	3	3	10	7	2	4	25	3	7	-

## BEE – MuDSM PROGRAMME

### LUX Reading Measurement

Name of ULB : SAGAR MUNICIPALITY Place : Civil Line  
Name of Utility : Madhya Pradesh Electricity Board Date : 02 / 07 / 2009  
Name of ESCO : EPIC Energy Ltd, ESCO, Mumbai. Switch Point : 12

#### Details of Lux Meter Used

Accuracy : + 1 – 5 % + 2 Digit. Model : Lx – 101 Make : Lutron  
Calibration Date : 26.03.2009 Next Due : 26.03.2010

Classification of Road: B2 Total No. of Lamps : MH – 250W – 41  
GLS – 100W – 00  
HPSV – 150W – 21  
TFL – 40W – 71

S.NO	Span Length (m)	Road Length (m)	Time	A1	A2	B1	B2	C1	C2	C3	C4	D	Average Lux Reading	Remarks
1	45	7	07.45	89	2	105	5	1	22	1	15	1	18	-
2	45	7	10.30	93	3	108	7	1	25	1	17	1	20	-

## BEE – MuDSM PROGRAMME

### LUX Reading Measurement

Name of ULB : SAGAR MUNICIPALITY Place : Pilikot  
Name of Utility : Madhya Pradesh Electricity Board Date : 02 / 07 / 2009  
Name of ESCO : EPIC Energy Ltd, ESCO, Mumbai. Switch Point : 13

#### Details of Lux Meter Used

Accuracy : + 1 – 5 % + 2 Digit. Model : Lx – 101 Make : Lutron  
Calibration Date : 26.03.2009 Next Due : 26.03.2010

Classification of Road: B2 Total No. of Lamps : MH – 250W – 50  
GLS – 100W – 04  
HPSV – 150W – 40  
TFL – 40W – 15

S.NO	Span Length (m)	Road Length (m)	Time	A1	A2	B1	B2	C1	C2	C3	C4	D	Average Lux Reading	Remarks
1	47	7	20.30	16	9	5	24	6	12	5	20	1	9	-
2	50	7	20.30	17	10	5	23	5	12	4	19	1	9	-
3	25	4	20.30	12	6	7	8	2	9	1	7	1	5	-
1	47	7	22.30	15	12	8	22	4	18	4	26	1	10	-
2	50	7	22.30	16	10	6	22	6	12	4	19	1	9	-
3	25	4	22.30	12	6	7	8	1	8	2	9	1	5	-

## BEE – MuDSM PROGRAMME

### LUX Reading Measurement

Name of ULB : SAGAR MUNICIPALITY Place : Town Hall  
Name of Utility : Madhya Pradesh Electricity Board Date : 02 / 07 / 2009  
Name of ESCO : EPIC Energy Ltd, ESCO, Mumbai. Switch Point : 14

#### Details of Lux Meter Used

Accuracy : + 1 – 5 % + 2 Digit. Model : Lx – 101 Make : Lutron  
Calibration Date : 26.03.2009 Next Due : 26.03.2010

Classification of Road: B2 Total No. of Lamps : MH – 250W – 22  
GLS – 100W – 18  
HPSV – 150W – 57  
TFL – 40W – 89

S.NO	Span Length (m)	Road Length (m)	Time	A1	A2	B1	B2	C1	C2	C3	C4	D	Average Lux Reading	Remarks
1	30	5	08.30	11	1	5	4	3	2	4	1	1	3	-
2	17	5	08.30	3	2	8	29	1	2	10	2	3	5	-
3	40	5	08.30	6	5	16	7	7	1	13	1	1	5	-
1	30	5	10.30	13	1	5	4	4	2	3	1	1	3	-
2	17	5	10.30	5	3	8	33	1	2	13	2	3	6	-
3	40	5	10.30	6	5	18	5	7	1	15	1	1	5	-

## BEE – MuDSM PROGRAMME

### LUX Reading Measurement

Name of ULB : SAGAR MUNICIPALITY Place : Police Line  
Name of Utility : Madhya Pradesh Electricity Board Date : 03 / 07 / 2009  
Name of ESCO : EPIC Energy Ltd, ESCO, Mumbai. Switch Point : 15

#### Details of Lux Meter Used

Accuracy : + 1 – 5 % + 2 Digit. Model : Lx – 101 Make : Lutron  
Calibration Date : 26.03.2009 Next Due : 26.03.2010

Classification of Road: B2 Total No. of Lamps : MH – 250W – 00  
GLS – 100W – 00  
HPSV – 150W – 03  
TFL – 40W – 39

S.NO	Span Length (m)	Road Length (m)	Time	A1	A2	B1	B2	C1	C2	C3	C4	D	Average Lux Reading	Remarks
1	40	5	08.30	7	1	8	2	1	1	1	3	1	2	Needs Improve ments
2	40	5	10.30	8	2	9	2	1	1	2	4	1	3	

## BEE – MuDSM PROGRAMME

### LUX Reading Measurement

Name of ULB : SAGAR MUNICIPALITY Place : New Colony  
Name of Utility : Madhya Pradesh Electricity Board Date : 03 / 07 / 2009  
Name of ESCO : EPIC Energy Ltd, ESCO, Mumbai. Switch Point : 16

#### Details of Lux Meter Used

Accuracy : + 1 – 5 % + 2 Digit. Model : Lx – 101 Make : Lutron  
Calibration Date : 26.03.2009 Next Due : 26.03.2010

Classification of Road: B2 Total No. of Lamps : MH – 250W – 10  
GLS – 100W – 30  
HPSV – 150W – 20  
TFL – 40W – 95

S.NO	Span Length (m)	Road Length (m)	Time	A1	A2	B1	B2	C1	C2	C3	C4	D	Average Lux Reading	Remarks
1	45	7	20.30	29	5	28	4	2	14	1	30	2	11	-
2	45	3	20.30	5	1	26	3	1	2	1	31	1	12	-
1	45	7	22.30	31	4	24	3	2	16	1	31	1	12	-
2	45	3	22.30	5	1	24	2	1	1	1	28	1	6	-

## BEE – MuDSM PROGRAMME

### LUX Reading Measurement

Name of ULB : SAGAR MUNICIPALITY Place : Gopal Ganj Station  
Name of Utility : Madhya Pradesh Electricity Board Date : 03 / 07 / 2009  
Name of ESCO : EPIC Energy Ltd, ESCO, Mumbai. Switch Point : 17

#### Details of Lux Meter Used

Accuracy : + 1 – 5 % + 2 Digit. Model : Lx – 101 Make : Lutron  
Calibration Date : 26.03.2009 Next Due : 26.03.2010

Classification of Road: B2 Total No. of Lamps : MH – 250W – 15  
GLS – 100W – 12  
HPSV – 150W – 37  
TFL – 40W – 118

S.NO	Span Length (m)	Road Length (m)	Time	A1	A2	B1	B2	C1	C2	C3	C4	D	Average Lux Reading	Remarks
1	70	6	08.30	11	4	13	9	1	9	1	8	1	5	-
2	35	6	08.30	9	8	10	5	4	1	6	1	1	4	-
1	70	6	10.30	15	5	14	11	1	13	1	8	1	5	-
2	35	6	10.30	9	6	14	3	6	1	9	1	1	4	-

## BEE – MuDSM PROGRAMME

### LUX Reading Measurement

Name of ULB : SAGAR MUNICIPALITY Place : Housing Board Colony  
Name of Utility : Madhya Pradesh Electricity Board Date : 04 / 07 / 2009  
Name of ESCO : EPIC Energy Ltd, ESCO, Mumbai. Switch Point : 18

#### Details of Lux Meter Used

Accuracy : + 1 – 5 % + 2 Digit. Model : Lx – 101 Make : Lutron  
Calibration Date : 26.03.2009 Next Due : 26.03.2010

Classification of Road: B2 Total No. of Lamps : MH – 250W – 00  
GLS – 100W – 00  
HPSV – 150W – 11  
TFL – 40W – 88

S.NO	Span Length (m)	Road Length (m)	Time	A1	A2	B1	B2	C1	C2	C3	C4	D	Average Lux Reading	Remarks
1	45	6.5	08.00	18	8	13	6	2	23	1	8	1	7	-
2	45	6.5	10.00	20	9	16	7	2	15	1	9	1	7	-



## BEE – MuDSM PROGRAMME

### LUX Reading Measurement

Name of ULB : SAGAR MUNICIPALITY Place : Tili Village  
Name of Utility : Madhya Pradesh Electricity Board Date : 04 / 07 / 2009  
Name of ESCO : EPIC Energy Ltd, ESCO, Mumbai. Switch Point : 19

#### Details of Lux Meter Used

Accuracy : + 1 – 5 % + 2 Digit. Model : Lx – 101 Make : Lutron  
Calibration Date : 26.03.2009 Next Due : 26.03.2010

Classification of Road: B2 Total No. of Lamps : MH – 250W – 00  
GLS – 100W – 36  
HPSV – 150W – 25  
TFL – 40W – 110

S.NO	Span Length (m)	Road Length (m)	Time	A1	A2	B1	B2	C1	C2	C3	C4	D	Average Lux Reading	Remarks
1	62	3	20.30	8	3	7	4	1	5	2	8	2	4	-
2	75	3	20.30	8	2	9	1	2	4	1	11	1	4	-
1	62	3	22.30	8	2	6	3	1	5	2	8	3	4	-
2	75	3	22.30	12	4	8	2	1	5	1	10	1	4	-

## BEE – MuDSM PROGRAMME

### LUX Reading Measurement

Name of ULB : SAGAR MUNICIPALITY Place : Tili Hospital  
Name of Utility : Madhya Pradesh Electricity Board Date : 04 / 07 / 2009  
Name of ESCO : EPIC Energy Ltd, ESCO, Mumbai. Switch Point : 20

#### Details of Lux Meter Used

Accuracy : + 1 – 5 % + 2 Digit. Model : Lx – 101 Make : Lutron  
Calibration Date : 26.03.2009 Next Due : 26.03.2010

Classification of Road: B2 Total No. of Lamps : MH – 250W – 18  
GLS – 100W – 24  
HPSV – 150W – 25  
TFL – 40W – 103

S.NO	Span Length (m)	Road Length (m)	Time	A1	A2	B1	B2	C1	C2	C3	C4	D	Average Lux Reading	Remarks
1	50	5	08.30	38	8	11	5	10	1	8	2	1	7	-
2	50	5	10.30	35	3	13	3	10	1	6	2	1	6	-

## BEE – MuDSM PROGRAMME

### LUX Reading Measurement

Name of ULB : SAGAR MUNICIPALITY Place : Gopal Mandir  
Name of Utility : Madhya Pradesh Electricity Board Date : 05 / 07 / 2009  
Name of ESCO : EPIC Energy Ltd, ESCO, Mumbai. Switch Point : 21

#### Details of Lux Meter Used

Accuracy : + 1 – 5 % + 2 Digit. Model : Lx – 101 Make : Lutron  
Calibration Date : 26.03.2009 Next Due : 26.03.2010

Classification of Road: B2 Total No. of Lamps : MH – 250W – 01  
GLS – 100W – 09  
HPSV – 150W – 32  
TFL – 40W – 91

S.NO	Span Length (m)	Road Length (m)	Time	A1	A2	B1	B2	C1	C2	C3	C4	D	Average Lux Reading	Remarks
1	40	7	08.00	22	3	7	2	1	9	1	1	1	4	-
2	40	7	10.30	25	4	9	3	1	11	1	2	1	5	-

## BEE – MuDSM PROGRAMME

### LUX Reading Measurement

Name of ULB : SAGAR MUNICIPALITY Place : Gola Guha  
Name of Utility : Madhya Pradesh Electricity Board Date : 05 / 07 / 2009  
Name of ESCO : EPIC Energy Ltd, ESCO, Mumbai. Switch Point : 22

#### Details of Lux Meter Used

Accuracy : + 1 – 5 % + 2 Digit. Model : Lx – 101 Make : Lutron  
Calibration Date : 26.03.2009 Next Due : 26.03.2010

Classification of Road: B2 Total No. of Lamps : MH – 250W – 04  
GLS – 100W – 40  
HPSV – 150W – 24  
TFL – 40W – 160

S.NO	Span Length (m)	Road Length (m)	Time	A1	A2	B1	B2	C1	C2	C3	C4	D	Average Lux Reading	Remarks
1	40	3	20.30	43	8	30	24	6	42	6	17	5	17	-
2	42	2	20.30	10	4	6	6	1	8	1	5	1	4	-
3	38	2	20.30	41	9	29	22	5	11	5	16	4	12	-
1	40	3	22.30	42	9	25	25	6	25	7	18	7	15	-
2	42	2	22.30	12	6	7	8	1	7	2	9	1	5	-
3	38	2	22.30	42	10	28	21	3	13	3	14	2	11	-

## BEE – MuDSM PROGRAMME

### LUX Reading Measurement

Name of ULB : SAGAR MUNICIPALITY Place : Monga Bhavaa  
Name of Utility : Madhya Pradesh Electricity Board Date : 05 / 07 / 2009  
Name of ESCO : EPIC Energy Ltd, ESCO, Mumbai. Switch Point : 23

#### Details of Lux Meter Used

Accuracy : + 1 – 5 % + 2 Digit. Model : Lx – 101 Make : Lutron  
Calibration Date : 26.03.2009 Next Due : 26.03.2010

Classification of Road: B2 Total No. of Lamps : MH – 250W – 00  
GLS – 100W – 40  
HPSV – 150W – 26  
TFL – 40W – 138

S.NO	Span Length (m)	Road Length (m)	Time	A1	A2	B1	B2	C1	C2	C3	C4	D	Average Lux Reading	Remarks
-	-	-	-	-	-	-	-	-	-	-	-	-	-	All Lamps not Burning

## BEE – MuDSM PROGRAMME

### LUX Reading Measurement

Name of ULB : SAGAR MUNICIPALITY Place : Chakaraghat  
Name of Utility : Madhya Pradesh Electricity Board Date : 06 / 07 / 2009  
Name of ESCO : EPIC Energy Ltd, ESCO, Mumbai. Switch Point : 24

#### Details of Lux Meter Used

Accuracy : + 1 – 5 % + 2 Digit. Model : Lx – 101 Make : Lutron  
Calibration Date : 26.03.2009 Next Due : 26.03.2010

Classification of Road: B2 Total No. of Lamps : MH – 250W – 00  
GLS – 100W – 128  
HPSV – 150W – 38  
TFL – 40W – 12

S.NO	Span Length (m)	Road Length (m)	Time	A1	A2	B1	B2	C1	C2	C3	C4	D	Average Lux Reading	Remarks
1	45	7	07.30	21	8	58	59	2	13	1	2	1	11	-
2	30	6	07.30	13	5	11	8	1	7	1	9	1	5	-
1	45	7	10.30	24	9	61	63	2	15	1	3	1	13	-
2	38	6	10.30	15	7	14	10	1	8	1	12	1	6	-

## BEE – MuDSM PROGRAMME

### LUX Reading Measurement

Name of ULB : SAGAR MUNICIPALITY Place : Kucharan Kua  
Name of Utility : Madhya Pradesh Electricity Board Date : 06 / 07 / 2009  
Name of ESCO : EPIC Energy Ltd, ESCO, Mumbai. Switch Point : 25

#### Details of Lux Meter Used

Accuracy : + 1 – 5 % + 2 Digit. Model : Lx – 101 Make : Lutron  
Calibration Date : 26.03.2009 Next Due : 26.03.2010

Classification of Road: B2 Total No. of Lamps : MH – 250W – 12  
GLS – 100W – 20  
HPSV – 150W – 40  
TFL – 40W – 138

S.NO	Span Length (m)	Road Length (m)	Time	A1	A2	B1	B2	C1	C2	C3	C4	D	Average Lux Reading	Remarks
1	42	3	20.30	42	7	29	22	4	45	5	33	1	19	-
2	15	2	20.30	20	8	15	14	4	25	4	18	5	11	-
3	25	2	20.30	17	6	13	12	3	23	2	16	3	9	-
1	42	3	22.30	44	6	30	21	3	44	4	32	1	17	-
2	15	2	22.30	20	9	14	16	3	27	5	19	6	12	-
3	25	2	22.30	19	7	15	14	4	22	3	17	4	10	-

## BEE – MuDSM PROGRAMME

### LUX Reading Measurement

Name of ULB : SAGAR MUNICIPALITY Place : Sheetala Mandir  
Name of Utility : Madhya Pradesh Electricity Board Date : 06 / 07 / 2009  
Name of ESCO : EPIC Energy Ltd, ESCO, Mumbai. Switch Point : 26

#### Details of Lux Meter Used

Accuracy : + 1 – 5 % + 2 Digit. Model : Lx – 101 Make : Lutron  
Calibration Date : 26.03.2009 Next Due : 26.03.2010

Classification of Road: B2 Total No. of Lamps : MH – 250W – 04  
GLS – 100W – 33  
HPSV – 150W – 09  
TFL – 40W – 67

S.NO	Span Length (m)	Road Length (m)	Time	A1	A2	B1	B2	C1	C2	C3	C4	D	Average Lux Reading	Remarks
1	40	5	08.30	33	8	50	7	25	2	18	2	2	13	-
2	40	5	10.30	37	8	53	7	28	1	23	1	1	13	-



## BEE – MuDSM PROGRAMME

### LUX Reading Measurement

Name of ULB : SAGAR MUNICIPALITY Place : Maha kali Mandhir  
Name of Utility : Madhya Pradesh Electricity Board Date : 07 / 07 / 2009  
Name of ESCO : EPIC Energy Ltd, ESCO, Mumbai. Switch Point : 27

#### Details of Lux Meter Used

Accuracy : + 1 – 5 % + 2 Digit. Model : Lx – 101 Make : Lutron  
Calibration Date : 26.03.2009 Next Due : 26.03.2010

Classification of Road: B2 Total No. of Lamps : MH – 250W – 00  
GLS – 100W – 08  
HPSV – 150W – 24  
TFL – 40W – 91

S.NO	Span Length (m)	Road Length (m)	Time	A1	A2	B1	B2	C1	C2	C3	C4	D	Average Lux Reading	Remarks
1	42	7	07.30	83	18	8	13	1	67	1	20	1	19	-
2	42	7	10.30	93	21	9	15	1	75	1	23	1	21	-

## BEE – MuDSM PROGRAMME

### LUX Reading Measurement

Name of ULB : SAGAR MUNICIPALITY Place : Ram Baage  
Name of Utility : Madhya Pradesh Electricity Board Date : 07 / 07 / 2009  
Name of ESCO : EPIC Energy Ltd, ESCO, Mumbai. Switch Point : 28

#### Details of Lux Meter Used

Accuracy : + 1 – 5 % + 2 Digit. Model : Lx – 101 Make : Lutron  
Calibration Date : 26.03.2009 Next Due : 26.03.2010

Classification of Road: B2 Total No. of Lamps : MH – 250W – 00  
GLS – 100W – 25  
HPSV – 150W – 30  
TFL – 40W – 90

S.NO	Span Length (m)	Road Length (m)	Time	A1	A2	B1	B2	C1	C2	C3	C4	D	Average Lux Reading	Remarks
1	38	3	20.30	44	8	31	25	7	42	7	18	6	18	-
2	31	3	20.30	14	6	9	8	4	10	3	6	3	6	-
1	38	3	22.30	43	9	30	26	8	41	6	16	9	18	-
2	31	3	22.30	13	7	8	7	6	12	2	7	6	7	-

## BEE – MuDSM PROGRAMME

### LUX Reading Measurement

Name of ULB : SAGAR MUNICIPALITY Place : Moti Nagar  
Name of Utility : Madhya Pradesh Electricity Board Date : 07 / 07 / 2009  
Name of ESCO : EPIC Energy Ltd, ESCO, Mumbai. Switch Point : 29

#### Details of Lux Meter Used

Accuracy : + 1 – 5 % + 2 Digit. Model : Lx – 101 Make : Lutron  
Calibration Date : 26.03.2009 Next Due : 26.03.2010

Classification of Road: B2 Total No. of Lamps : MH – 250W – 00  
GLS – 100W – 36  
HPSV – 150W – 25  
TFL – 40W – 78

S.NO	Span Length (m)	Road Length (m)	Time	A1	A2	B1	B2	C1	C2	C3	C4	D	Average Lux Reading	Remarks
1	50	8	08.30	19	6	19	4	13	3	7	2	2	7	-
2	40	8	08.30	30	9	8	60	18	3	20	1	1	12	-
1	50	8	10.30	21	6	19	5	15	1	12	2	1	7	-
2	40	8	10.30	30	9	13	63	16	1	24	1	1	13	-

## BEE – MuDSM PROGRAMME

### LUX Reading Measurement

Name of ULB : SAGAR MUNICIPALITY Place : Bus Stand  
Name of Utility : Madhya Pradesh Electricity Board Date : 08 / 07 / 2009  
Name of ESCO : EPIC Energy Ltd, ESCO, Mumbai. Switch Point : 30

#### Details of Lux Meter Used

Accuracy : + 1 – 5 % + 2 Digit. Model : Lx – 101 Make : Lutron  
Calibration Date : 26.03.2009 Next Due : 26.03.2010

Classification of Road: B2 Total No. of Lamps : MH – 250W – 61  
GLS – 100W – 11  
HPSV – 150W – 25  
TFL – 40W – 54

S.NO	Span Length (m)	Road Length (m)	Time	A1	A2	B1	B2	C1	C2	C3	C4	D	Average Lux Reading	Remarks
1	35	7	07.30	55	5	64	21	1	27	1	50	1	19	-
2	35	7	10.30	58	6	65	23	1	28	1	52	1	20	-

## BEE – MuDSM PROGRAMME

### LUX Reading Measurement

Name of ULB : SAGAR MUNICIPALITY Place : Vithal Nagar  
 Name of Utility : Madhya Pradesh Electricity Board Date : 08 / 07 / 2009  
 Name of ESCO : EPIC Energy Ltd, ESCO, Mumbai. Switch Point : 31

#### Details of Lux Meter Used

Accuracy : + 1 – 5 % + 2 Digit. Model : Lx – 101 Make : Lutron  
 Calibration Date : 26.03.2009 Next Due : 26.03.2010

Classification of Road: B2 Total No. of Lamps : MH – 250W – 00  
 GLS – 100W – 40  
 HPSV – 150W – 33  
 TFL – 40W – 130

S.NO	Span Length (m)	Road Length (m)	Time	A1	A2	B1	B2	C1	C2	C3	C4	D	Average Lux Reading	Remarks
1	33	3	20.30	4	16	6	3	1	5	1	4	1	3	Needs Improvements
2	30	3	20.30	4	15	7	4	2	6	1	8	1	3	
3	28	3	20.30	30	5	28	4	2	12	1	32	1	10	-
1	33	3	22.30	4	4	6	7	1	5	1	8	1	3	Needs Improvements
2	30	3	22.30	5	6	7	6	1	7	1	8	1	3	
3	28	3	22.30	28	30	32	30	2	33	1	33	1	16	-
1	33	3	00.30	4	5	7	7	1	6	1	8	1	4	-
2	30	3	00.30	7	9	8	8	2	9	1	9	1	5	-
3	28	3	00.30	28	30	32	30	2	30	1	31	1	16	-

## BEE – MuDSM PROGRAMME

### LUX Reading Measurement

Name of ULB : SAGAR MUNICIPALITY Place : Vaishali Nagar  
Name of Utility : Madhya Pradesh Electricity Board Date : 08 / 07 / 2009  
Name of ESCO : EPIC Energy Ltd, ESCO, Mumbai. Switch Point : 32

#### Details of Lux Meter Used

Accuracy : + 1 – 5 % + 2 Digit. Model : Lx – 101 Make : Lutron  
Calibration Date : 26.03.2009 Next Due : 26.03.2010

Classification of Road: B2 Total No. of Lamps : MH – 250W – 00  
GLS – 100W – 00  
HPSV – 150W – 08  
TFL – 40W – 45

S.NO	Span Length (m)	Road Length (m)	Time	A1	A2	B1	B2	C1	C2	C3	C4	D	Average Lux Reading	Remarks
1	40	4	08.30	8	5	13	5	8	2	10	5	2	6	-
2	40	4	10.30	10	5	13	7	8	1	11	1	1	5	-

## BEE – MuDSM PROGRAMME

### LUX Reading Measurement

Name of ULB : SAGAR MUNICIPALITY Place : Dharam Shri  
Name of Utility : Madhya Pradesh Electricity Board Date : 09 / 07 / 2009  
Name of ESCO : EPIC Energy Ltd, ESCO, Mumbai. Switch Point : 33

#### Details of Lux Meter Used

Accuracy : + 1 – 5 % + 2 Digit. Model : Lx – 101 Make : Lutron  
Calibration Date : 26.03.2009 Next Due : 26.03.2010

Classification of Road: B2 Total No. of Lamps : MH – 250W – 00  
GLS – 100W – 57  
HPSV – 150W – 12  
TFL – 40W – 27

S.NO	Span Length (m)	Road Length (m)	Time	A1	A2	B1	B2	C1	C2	C3	C4	D	Average Lux Reading	Remarks
1	45	6	08.30	27	19	21	15	33	2	26	2	1	13	-
2	45	6	10.30	27	15	22	10	29	1	21	1	1	11	-
1	30	6	08.30	11	6	14	7	8	1	10	1	1	5	-
2	30	6	10.30	13	4	14	5	9	1	8	1	1	5	-

## BEE – MuDSM PROGRAMME

### LUX Reading Measurement

Name of ULB : SAGAR MUNICIPALITY Place : Vidya Sagar Colony  
 Name of Utility : Madhya Pradesh Electricity Board Date : 09 / 07 / 2009  
 Name of ESCO : EPIC Energy Ltd, ESCO, Mumbai. Switch Point : 34

#### Details of Lux Meter Used

Accuracy : + 1 – 5 % + 2 Digit. Model : Lx – 101 Make : Lutron  
 Calibration Date : 26.03.2009 Next Due : 26.03.2010

Classification of Road: B2 Total No. of Lamps : MH – 250W – 00  
 GLS – 100W – 00  
 HPSV – 150W – 00  
 TFL – 40W – 00  
 CFL – 24W – 15  
 CFL – 36W – 02

S.NO	Span Length (m)	Road Length (m)	Time	A1	A2	B1	B2	C1	C2	C3	C4	D	Average Lux Reading	Remarks
1	45	3	20.30	10	8	4	1	1	11	1	2	1	4	-
2	45	3	20.30	4	1	4	2	1	2	1	3	1	2	Needs Improvements
1	45	3	22.30	10	8	4	1	1	10	1	1	1	3	
2	45	3	22.30	3	1	4	2	1	1	1	2	1	2	



## Annexure – A7

### BEE – MuDSM PROGRAMME

Name of ULB : Sagar Municipality, MP.

Name of ESCO : EPIC Energy Ltd, Mumbai.

Period of Audit: 26.06.09 to 10.07.09.

#### List of Instruments and Tool Used for IGEA

S.No	Name of Instrument / Tools	Quantity in No.	Make Serial. No	Calibrated		Accuracy Class/ Range
				On	Due	
1	Power Analyser with Data logger	4	Digitech	10.06.09	10.06.10	0.5s
2	Power Clamp Meter	2	Mastech	26.03.09	26.03.10	
3	Digital Lux Meter	4	Lutron	26.03.09	26.06.10	5% + 2 Dig
4	Power Harmonics & Leakage Tester	2	Meco	26.03.09	26.06.10	
5	Power Meter	1	Krykard	26.06.09	26.06.10	1.0
6	Digital Tachometer	2	Mastech	25.06.09	25.06.10	1.0
7	Digital Thermometer	2	Metravi / AZInstrument	25.06.09	25.06.10	1.0
8	Hygrometer	2	Microzelle	--	--	--
9	Anemometer	2	Lutron	--	--	--
10	Psychrometer	2	Dimple Research	--	--	--
11	Multimeter	2	Extech	--	--	--
12	Distance meter / Ultrasonic Distance meter	2	Eurolab Accutape S™	--	--	--
13	Measuring Tape	3	--	--	--	--
14	Magnetic Compass	3	--	--	--	--
15	Screw Driver Tools Set	3	--	--	--	--
16	Cutting & Nose Plair	6	--	--	--	--
17	Knife	6	--	--	--	--
18	Battery Cell	10	--	--	--	--
19	Box Spanner/ Spanner	4	--	--	--	--
20	GI Wires	1	--	--	--	--
21	Connector	5	--	--	--	--
22	Cable of Sizes 10Sqmm Copper	15mts	--	--	--	--
23	Cable of Sizes 4Sqmm Copper	20mts	--	--	--	--

**Annexure – A8**

**BEE – MuDSM PROGRAMME**

Name of ULB: Sagar Municipality, MP.

Name of ESCO: EPIC Energy Ltd, Mumbai.

**O & M BUDGET**

**Water Supply Scheme**

Rajghat Raw Water, WTP & Clear Water Pump House

No. of Employees	19	}	= Rs. 20, 00, 000 /-
Open Well & Submersible Pumps	15		

**Street Lighting System**

Material	Rs. 7.3 Lakhs per Month	
Annual	Rs. 7.3 x 12	= Rs. 88, 00, 000 /-

**Total Annual O & M Budget** .....  
**Rs. 1, 08, 00, 000 /-**  
.....

Actual Budget	Rs. 1, 08, 00, 000 /-
Savings by Energy Conversation Measures	Rs. 88, 00, 000 /-

**O & M Budget after Savings** .....  
**Rs. 20, 00, 000 /-**  
.....

( Savings Rs. 88, 00, 000 /- )

## Annexure – A10

### **BEE – MuDSM PROGRAMME**

Name of ULB : Sagar Municipality, MP. Name of ESCO : EPIC Energy Ltd, Mumbai.

Comparison Table

#### **Conventional 40W TFL with magnetic choke and T5 28W Lamps.**

<b>S.No.</b>	<b>Description</b>	<b>Conventional 40W TFL with magnetic choke</b>	<b>T5 TFL 28W</b>	<b>Savings</b>
<b>1.</b>	Rated Wattage	40	28	
<b>2.</b>	Circuit Wattage	53	28	25
<b>3.</b>	Rated Life of Bulb	3000 Hrs	10,000 Hrs	
<b>4.</b>	Lumen Output	1900-2250	2900-3250	
<b>5.</b>	Depreciation of Lux levels after 1000 Burning Hours	25% and above	Only 3% after 2500 Hrs	
<b>6.</b>	Cost of each unit	Rs. 200 /-	Rs 500 /-	
<b>7.</b>	Start Up Time	Few Seconds	Instantaneous	
<b>8.</b>	Operating Voltage	165-275 Volts	100-300V	
<b>9.</b>	Power Factor	> 0.6	> 0.94	
<b>10.</b>	Lumens per Watt	45-54 lmn	105 lmn	
<b>11.</b>	Lumen CF	0.7	1.83	

## Annexure - A11

### **BEE – MuDSM PROGRAMME**

Name of ULB : Sagar Municipality, MP.

Name of ESCO : EPIC Energy Ltd, Mumbai.

#### Conventional HPSV Lamps & T5 Based Street Light Lamps

S.No.	Description	HPSV-Son		T5 Based Street Lights	Saving
		150W	250W		
1.	Rated Wattage	150W	250W	120W	
2.	Circuit Wattage	180W	300W	120W	60W, 180W
3.	Rated Life - burning Hours	5000	5000	18000	
4.	Maintenance/Description of Lux levels after 2500 Burning Hours	25%	25%	3%	
5.	Start Up Time	5.7min	5.7min	Instant	
6.	Operating Voltage	165.275V	165.275	130-300	
7.	Power Factor	<0.7	<0.7	>0.94	
8.	Lumen CF	0.70	0.70	1.83	
9.	Lumen per Watt	90	90	105	
10.	Color Reading Index	Fair	Fair	Excellent	

## Annexure – A15

### **BEE – MuDSM PROGRAMME**

Name of ULB: Sagar Municipality, MP.      Name of ESCO : EPIC Energy Ldt, Mumbai.

### Lux Level Standards – IS 1944 Part II of BIS

### Code of Practice for Lighting of Public thoroughfares of BIS

S.No	Road Description	Road Classification	Average Lux Level Standard
1	Main Road – Heavy Traffic	A1	30
2	Main Road – City Road throughfares	A2	15
3	Secondary Road – Heavy Traffic	B1	8
4	Secondary Road – Light Traffic	B2	4

## Annexure – A16

### **BEE – MuDSM PROGRAMME**

Name of ULB : Sagar Municipality, MP.

Name of ESCO : EPIC Energy Ltd, Mumbai.

### CASH FLOW STATEMENT

Project Cost - Rs. 29, 66, 000 /-

Project Period - 36 Months – (3 years)

<b>Details</b>	<b>I year Rs.</b>	<b>II year Rs.</b>	<b>III year Rs.</b>
<b>INFLOW</b>			
( a ) Opening Balance	0	1,84,12,000	3,68,24,000
( b ) Expected annual saving due to implementation of the energy saving scheme	96,12,000	96,12,000	96,12,000
( c ) Expected annual saving achieved in operating cost	88,00,000	88,00,000	88,00,000
<b>( d ) Total expected annual savings (a+b+c)</b>	<b>1,84,12,000</b>	<b>3,68,24,000</b>	<b>5,52,36,000</b>
<b>OUTFLOW</b>			
( e ) Interest to bank at 10%	2,96,600	2,96,600	2,96,600
( f ) Payment of installment against principle	82,400	82,400	82,400
<b>( g ) Total Outflow (e+f)</b>	<b>3,79,000</b>	<b>3,79,000</b>	<b>3,79,000</b>
<b>( h ) Balance available c/f (d-g)</b>	<b>1,80,33,000</b>	<b>3,64,45,000</b>	<b>5,48,57,000</b>
<b>STATEMENT FOR ANNUAL RATE OF RETURN</b>			
( a ) Annual savings	1,80,33,000	1,80,33,000	1,80,33,000
( b ) Depreciation on investment at 15%	4,45,000	4,45,000	4,45,000
( c ) Net annual savings (a-b)	1,75,88,000	1,75,88,000	1,75,88,000
<b>( d ) ARR (%)</b>	<b>98</b>	<b>98</b>	<b>98</b>

## Annexure - 17

### **BEE – MuDSM PROGRAMME**

Name of ULB: Sagar Municipality, MP.

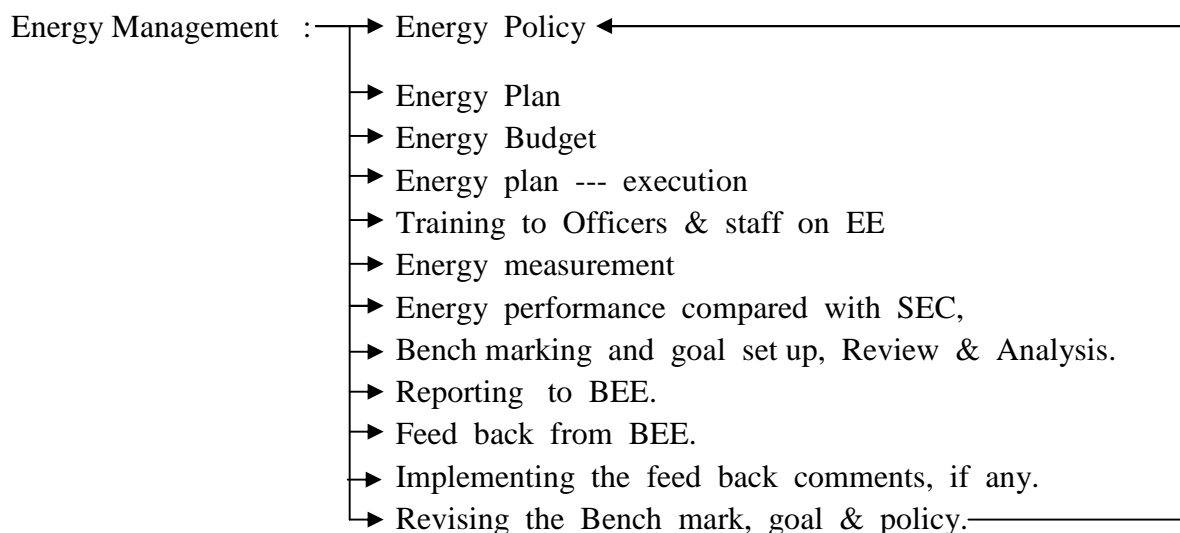
Name of ESCO: EPIC Energy Ltd, Mumbai.

### ENERGY MANAGEMENT

Investment Grade Energy Audit was carried out in Faridkot Municipality on three facilities.

1. Municipality Buildings – 1 No.
2. STP – PH – 2 Nos. Pump study & 1 No. Parallel operation and,
3. Street Lighting System – 32 No. Switch points & other lights.

On detailed technical study and analysis, it is concluded that Energy Savings with reduction in O & M costs can be achieved, if the Municipality implements the recommendations of the IGE Auditors. The real benefit is possible if the project is scientifically and effectively carried out on proper principles of Energy Management.



Energy Policy : The Municipality shall formulate the Energy policy in Punjabi, Hindi and English and exhibited in all premises and public places. The Officers, staff and general Public on seeing the Energy policy again & again, this will be registered in their mind and will result in Energy efficient actions by them.

Energy Plan : Municipality can design a Energy Plan.

It should device - Plan Period.

- Plan action.

- Plan amount.

- Plan method by which the project can be implemented

& completed.

Energy Budget : Three option available and funding is explained. Municipality can device on best option with Budget – Material & labour etc.

Energy action Plan : Responsibility fixing with Engineers, Operators & staff. Reporting, Reviewing daily, weekly and monthly basis.

Energy Efficiency Training : Energy Efficiency & Energy conservation is possible if this is be accepted by the execution staff and the public. This is possible by Training.

Energy Measurements : Daily consumption of Electricity & Diesel in Buildings, STP PH & Street Lighting system shall be arranged.

Energy performance compared with SEC, Bench marking goal set up. : The daily consumption of Electricity & Diesel shall be compared with SEC.

Reviewing Analyzing : Bench marking & goal – set up by the Municipality and raise or reduction shall be analyzed, reasons found out & rectification shall be carried out.

Reporting : Reporting to BEE with review, remarks reasons explaining for change from goal.

Feed Back : Feed back may be obtained from BEE.

Implementing Feed Back : The remarks & review shall be implemented and short fall, if any, may be corrected then & there and the result shall be obtained.

Revising goal and Policy : According to site conditions changes beyond control, goal / policy may be revised.

This is a continuous process measured, reviewed & monitored by the Energy Management Cell & Steering Committee to be formed in the Municipality.



## Annexure –A18

### **BEE - MuDSM PROGRAMME**

Name of ULB: Sagar Municipality, MP.

Name of ESCO: EPIC Energy Ltd, Mumbai.

#### **RISK MATRIX & RISK SHARING MECHANISM**

<b>Sl.No</b>	<b>Classification Type of risk</b>	<b>Reason for risk</b>	<b>Risk Mitigation measures adopted</b>	<b>Consequence for the receiver</b>	<b>Consequence for the investor</b>
1	Design & construction	Failure during service	Type tested in service in MuDSM Programme in ULB's all over India	Low	Low
2	Performance	Failure	Type tested in service in MuDSM Programme in ULB's all over India	Low	Low
3	Financial & Economic	Indian & global economy	Stable Indian economy even in global recession	Low	Low
4	Environment	Faridkot is safe from flooding , Tsunami, draught etc	Well under control by State Govt of Punjab	Medium	Medium
5	Force Majeure	Faridkot is safe from flooding , Tsunami, draught etc	Well under control by State Govt of Punjab	Medium	Medium
6	Regulators' Market	No chance for reduction in India	-	Low	Medium
7	Credit	Stable Indian economy even in global recession	-	Low	Medium

Risk	Impacts on Lender			Impacts on Receiver		
	Low	Medium	High			
1	✓			✓		
2	✓			✓		
3	✓			✓		
4		✓			✓	
5		✓			✓	
6	✓				✓	
7	✓				✓	



## Annexure - A19

### **BEE - MuDSM PROGRAMME**

Name of ULB: Sagar Municipality, MP.

Name of ESCO: EPIC Energy Ltd, Mumbai.

#### **Risk Sharing Mechanism between Municipality & ESCO – On ESCO Model**

The Project is possible with very Low risk. Risk sharing mechanism is proposed between Municipality and ESCO if Municipality is opting for the ESCO model.

Sl. No	Description	Sagar Municipality	ESCO
1	Design & construction	0 %	100 %
2	Performance Risk	20 %	80 %
3	Financial Economic	50 %	50 %
4	Environment	80 %	20 %
5	Force Majeure	50 %	50 %
6	Market	50 %	50 %
7	Credit	0 %	20 %

## Annexure – A20

### **BEE – MuDSM PROGRAMME**

Name of ULB: Sagar Municipality, MP. Name of ESCO: EPIC Energy Ltd, Mumbai.

#### Technical Specification of Sample Lights used in Sagar Municipality

##### MH Metal Halide Lamp :

Make	-	Crompton Greaves Ltd. Mumbai – 400030.
Lamp Power	-	250 W
Nom .Voltage	-	230 V
Base	-	E 40.
Burning Position	-	Horizontal + 5 "
<b>MRP</b>	-	<b>Rs. 1,080 /-</b>

##### HPSV Lamp ( Son – E) :

Make	-	Arya Filaments Pvt. Ltd. Dhar ( MP ) .
Lamp Power	-	150 W
Lamp Current	-	1.8 A
Voltage	-	100 ± 15 V
Color Temp	-	2000 ° K
Lumen	-	12150
<b>MRP</b>	-	<b>Rs. 375 /-</b>

##### Tube Light :

Make	-	Arya Filaments Pvt. Ltd. Dhar ( MP )
Light Power	-	40 W
Lumen	-	2450
Temperature	-	6500 ° K
<b>MRP</b>	-	<b>Rs. 42 /-</b>

##### Filament Lamp :

Make	-	Arya Filaments Pvt. Ltd. Dhar ( MP )
Voltage	-	250 V
Lumen	-	1320
<b>MRP</b>	-	<b>Rs. 11 /-</b>

**FTL – 36 / 40 W :**

Make	-	Arya Filaments Pvt. Ltd. Dhar ( MP )
Voltage	-	240 V AC
Amps	-	0.38 A
Power factor	-	0.50
Type	-	AVGB 100240
<b>MRP</b>	-	<b>Rs. 170 /-</b>

**250 W SV / MH BALLAST :**

Make	-	Arya Filaments Pvt. Ltd. Dhar ( MP )
Cat . Ref	-	APPCB 30725
Type	-	PP Ballast
Voltage	-	220 – 240 V , 50 Hz
Amps	-	3.0 A
Power factor	-	0.42
Power	-	36 Watts.

**150 W SV / MH BALLAST :**

Make	-	Arya Filaments Pvt. Ltd. Dhar ( MP )
Cat . Ref	-	APPCB 30715
Type	-	PP Ballast
Temperature	-	120 ° C, Temp - 70° C
Voltage	-	220 – 240 V , 50 Hz
Amps	-	1.8 A
Power factor	-	0.42
Power	-	20 Watts.

## Annexure – A23

### **BEE - MuDSM PROGRAMME**

Name of ULB: Sagar Municipality, MP.

Name of ESCO: EPIC Energy Ltd. Mumbai.

#### Format for Complaint Register

Sl. No	Date & Time of Receipt known	Date & Time of removal of defective fitting	Date & Time of Refixing healthy fitting	Down time	Material used	Labour cost	Steps taken suggested to reduce Downtime	Signature of ME / EO

#### Abstract For the month

Total No. of Complaints received	=	Nos
Total No. of Complaints redressed	=	Nos
Balance No. of Complaints Pending	=	Nos Reason.
Down time for No. of complaints	-	
Down time per complaints	-	
No. of complaints with Downtime	-	Nil
Down time	-	12 hours.
	-	24 hours.
	-	36 hours.

Improvement / suggestion to reduce Downtime of complaints.

## Annexure – A24

### **BEE – MuDSM PROGRAMME**

Name of ULB: Sagar Municipality, MP.

Name of ESCO: EPIC Energy Ltd, Mumbai.

### List of Qualified Energy Saving Companies

#### Leading Companies

1. DSCL Energy Services, Ahmedabad, Gujarat.
2. ELPRO Energy Dimensions P.Ltd, Ahmedabad, Gujarat.
3. Salzar Electronics Ltd, Coimbatore, Tamilnadu.
4. EPIC Energy Ltd, Mumbai, Maharashtra.
5. Asian Electronics Ltd, Ahmedabad, Gujarat.
6. Dynaspede Integrated Systems P.Ltd, Chennai, Tamilnadu.
7. Servomax India Ltd, Hyderabad, AP.
8. S.n.Bhobe & Associates / TPH Utilities, Bangalore, Karnataka.
9. Kisloskar Brothers, Pune, Maharashtra.
10. Subhash Projects & Marketing, Bangalore, Karnataka.
11. SAI Infosystem (India) (P) Ltd, Ahmadabad, Gujarat.
12. Tata Honey Well, Pune, Maharashtra.
13. Shri Shakthi Alternative Energy Ltd, Hyderabad, AP.
14. Energy Economy and Environmental consultant, Bangalore 560038.

## Annexure – A25

### **BEE – MUDSM PROGRAMME**

Name of ULB: Sagar Municipality, MP. Name of ESCO: EPIC Energy Ltd, Mumbai.

#### **LIST OF ENERGY SAVING EQUIPMENT SUPPLIERS**

##### For Air Conditioner

S.No	Supplier Address
1.	Bharat Electronics Ltd. Shankaranarayanan building, 2 <sup>nd</sup> Floor, 25, M.G Road, Bangalore-560001. <a href="tel:080-25595729">Tel:080-25595729</a> Fax:080-25584911 Email: <a href="mailto:imd@bel_india.com">imd@bel_india.com</a>
2.	Santronix India Pvt Ltd. Unit no 12, Electronic Sandan-III, MICD, Bhosari, Pune-411026. Tel:020-27122758 Fax:020-27129518 Email: <a href="mailto:santronix@bom3.vsnl.net.in">santronix@bom3.vsnl.net.in</a>

##### For Lighting

S.No	Supplier Address
1.	ES Electronics (India) Pvt Ltd. 438, 4 <sup>th</sup> main road, Nagendra Block, B.S.K.I Stage, Bangalore-560050. <a href="tel:080-26727836/8761">Tel:080-26727836/8761.</a>
2.	Clipsal Lighting India (P) Ltd. Bajaj Niwas, Op P.C.K.P.Clip, 712, Linking road, Khar (w) Mumbai. <a href="tel:022-26046483">Tel:022-26046483</a>
3.	EPIC Energy Ltd. 119, Patil Wadi at Rebale, Post Ghansoli, Opp to Hotel Mallika, Navi Mumbai-400701 Fax:+912227693706 Email: <a href="mailto:epicenergy_ltd@gmail.com">epicenergy_ltd@gmail.com</a> Web: <a href="http://www.epicenergy.biz">www.epicenergy.biz</a> .



## T5 Lamps & T5 Based Street Light Lamps

All leading Lamp manufactures, Philips, Crompton, Surya etc

S.No	Supplier Address
1.	Asian Electronics Ltd. Surya Plaza, I Floor, K-185/1, Saraijulena, New Friends Colony, New Delhi-110025. <a href="tel:011-26317232,26929075">Tel:011-26317232,26929075</a> Email: <a href="mailto:pankaj.addel@spectranet.com">pankaj.addel@spectranet.com</a>
2.	EPIC Energy Ltd. 119,Patil Wadi at Rebale, Post Ghansoli, Opp to Hotel Mallika, Navi Mumbai – 400 701 Fax: +912227693706 Email: <a href="mailto:epicenergy_ltd@gmail.com">epicenergy ltd@gmail.com</a> Web: <a href="http://www.epicenergy.biz">www.epicenergy.biz</a> .

## Annexure - A26

### **BEE- MuDSM Programme**

Name of ULB: Sagar Municipality, MP.

Name of ESCO: EPIC Energy Ltd, Mumbai.

“Energy Saved is Environment Saved “

### **Reduction of GHG Emission due to Energy Saved**

One Thousand Units of Energy Saved per year results in Reduction in Emission per year.

1. Sulphur Di-Oxide – 2.34 kg / year.
2. Nitric Oxide - 0.864 kg / year.
3. Carbon Di-Oxide – 350 kg / year

Or

Re afforestation – 0.873 acres.

Faridkot can have a bonus monetary benefit by going in for – “CARBON CREDIT TRADING”.

## Annexure – A27

### **BEE – MuDSM PROGRAMME**

Name of U L B: Sagar Municipality, MP . Name of ESCO & IGEA: M/s. EPIC Energy Ltd,  
Mumbai.

### **Reference, Quality of Calculation Procedures, Creditability of Assumption used in IGEA**

The Procedure and norms prescribed by

- (1) M/s Bureau of Energy Efficiency
  - (2) M/s Petroleum conservation Research organisation.
  - (3) Product specification by M/s Philips, Crompton, Bajaj – Leading Bulb Manufactures.
  - (4) Standards of Bureau of Indian standards.
  - (5) Product specification of Energy saver by supplies – Digitech systems & Engg (p) Ltd, Chennai., Epic Energy Ltd, Mumbai.
- and
- (6) Own experience over 15 years and research studies in sister concern M/s Chennai Institute of Advanced studies and Research Chennai is adopted.