



Energy consumption report (2018 – 2019)

S. No	Month & Year	Particulars (Units)/kWh		
		TNEB	Fuel to Generator	Total consumption
1	May-18	39424	2496	41920
2	Jun-18	40988	2712	43700
3	Jul-18	49024	3264	52288
4	Aug-18	52488	1032	53520
5	Sep-18	49576	2120	51696
6	Oct-18	40836	3000	43836
7	Nov-18	27185	5368	32553
8	Dec-18	31344	4872	36216
9	Jan-19	31351	3640	34991
10	Feb-19	45079	2728	47807
11	Mar-19	50020	1168	51188
12	Apr-19	42240	2448	44688

TOTAL	534403
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O.P.M.
26.06.2019
Placement Officer
Placement Cell
Mount Zion College of Engg. & Tech
Pudukkottai - 622 507

ANNUAL LIGHTING REQUIREMENTS

Total Lighting requirements In KW	Percentage Lighting through LED bulbs	Percentage Lighting through other sources
32.6 KW	11 %	89%

TOTAL LIGHTING REQUIREMENTS

No of tube lights: 1000 (40KW)

No of LED lights: 246 (4.96KW)

No of White halogen lamp: 30(12KW)

No of Fluorescent tube lights operated during night time: 279

S.No	Details	Count	Watts	Duration	Consumption per day (Units)	Consumption per month (Units)	Consumption per Year (Units)
1	Corridor	75	40	12	36	1116	13392
2	Street light	30	40	12	14.4	446	5356
3	Bath room	170	40	12	81.6	2530	78417
4	Basket ball court	24	400	2	19.2	595	7142

No of tube lights operated during day time: 300

S.No	Details	Count	Watts	Duration	Consumption per day (Units)	Consumption per month (Units)	Consumption per Year (Units)
1	Office	60	40	8	19.2	595	7142
2	Laboratory	40	40	8	13	260	3120
3	Class room	200	40	8	64	1600	19200

Total energy for lighting requirements in units(KWh): 1,33,769

Lighting through LED bulbs

S. No	Details	Watts	Count	Duration	Consumption per month (Units)	Consumption per Year (Units)
1	Admission Hall	36	4	12	51.84	622.08
		18	8	12	51.84	622.08
2	Ground Floor	18	15	12	97.2	1166.4
3	1st floor	18	6	12	38.88	466.56
4	Portico	18	5	12	32.4	388.8
		3	48	12	51.84	622.08
		300	2	12	72	864
5	Director office	12	16	12	69.12	829.44
		18	16	12	103.68	1244.16
6	Accounts section	18	6	12	38.88	466.56
7	Server room	36	1	12	12.96	155.52
8	Principal office	18	4	12	25.92	311.04
		28	4	12	40.32	483.84
9	Exam cell	12	9	12	38.88	466.56
10	Computer lab	9	8	12	25.92	311.04
		9	4	12	12.96	155.52
		9	2	12	6.48	77.76
11	Toilet	12	14	12	60.48	725.76
12	Ladies hostel	12	20	12	86.4	1036.8
13	Boys hostel	200	2	12	144	1728
		14	6	12	30.24	362.88
14	PG block	200	2	12	144	1728
		14	10	12	50.4	604.8
15	Security	25	10	12	90	1080

Overall energy consumption in Units (KWH): 16,519.68

Energy Saving Calculation
Cost Analysis of LED light with Conventional tube light.

For Night Time :

- Total No. of conventional Tube Lights in Campus = 275
- Conventional Tube Light average power = 40 W.
- LED Tube Light average power = 20 W.
- Difference in power saved per Tube Light = $(40-20) \text{ W} = 20 \text{ W}$.
- Total Power saving = $275 \times 20 \text{ W} = 5500 \text{ W} = 5.5 \text{ kW}$.
- Average Use of Tube Light per year = $275 \times 8 \text{ h} = 2200 \text{ h}$.
- Energy saved per day = $5.5 \times 2200 \text{ kWh} = 12100 \text{ kWh}$.
- Per year saving = $12100 \times 8.5 = \text{Rs. } 102850$
- LED tube light average cost = Rs. 450.
- Total Cost of Replacing all Conventional tube lights = $275 \times 450 = \text{Rs. } 123750$
- Payback time = $(123750/102850) = 1.2 \text{ yrs.}$

For Day Time :

- Total No. of conventional Tube Lights in Campus = 100
- Conventional Tube Light average power = 40 W.
- LED Tube Light average power = 20 W.
- Difference in power saved per Tube Light = $(40-20) \text{ W} = 20 \text{ W}$.
- Total Power saving = $100 \times 20 \text{ W} = 2000 \text{ W} = 2 \text{ kW}$.
- Average Use of Tube Light per year = $100 \times 8 \text{ h} = 800 \text{ h}$.
- Energy saved per year = $2 \times 800 \text{ kWh} = 1600 \text{ kWh}$.
- Per year saving = $1600 \times 8.5 = \text{Rs. } 13600$
- LED tube light average cost = Rs. 450.
- Total Cost of Replacing all Conventional tube lights = $275 \times 450 = \text{Rs. } 123750$
- Payback time = $(123750/13600) = 1.46 \text{ yrs.}$