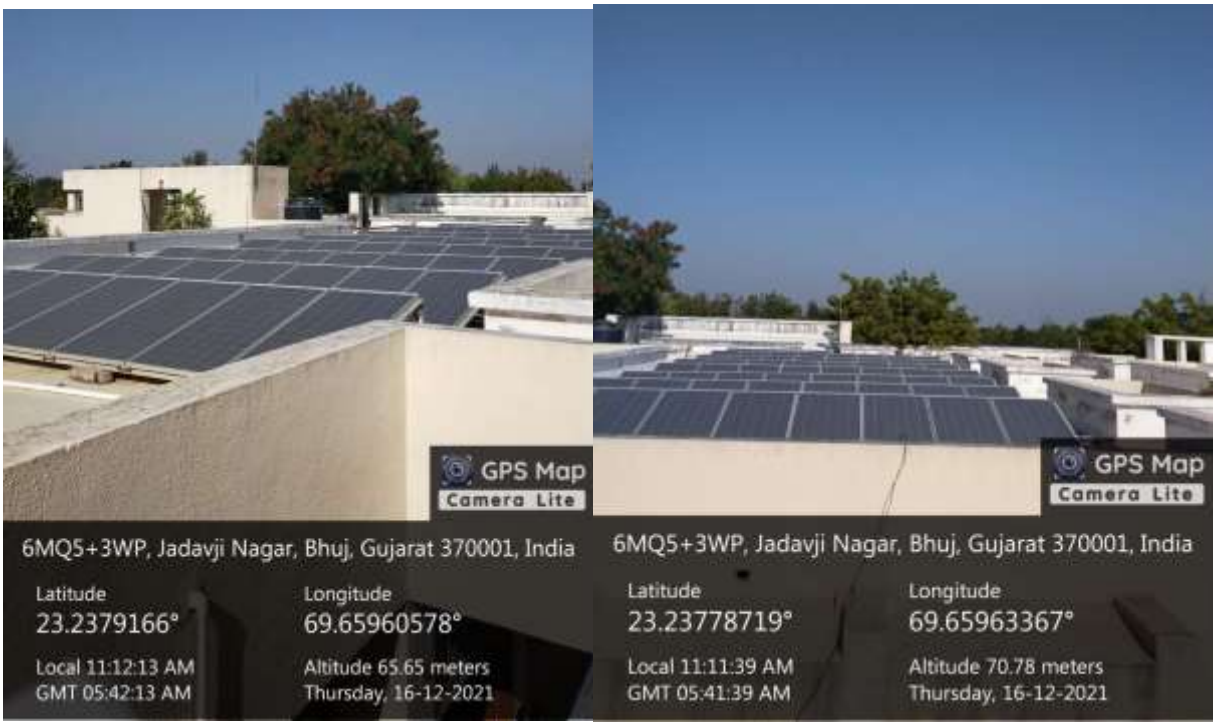
7.1.2. Alternate Source of Energy

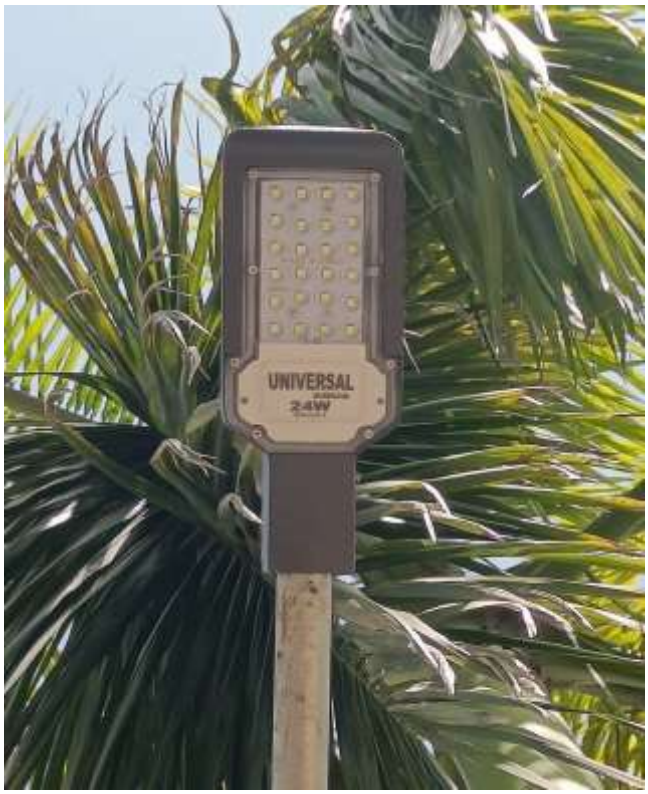
- Use of energy efficient appliances
- Solar roof top installed
- Green and energy audit done
- Natural light friendly building with proper windows
- and corridors

Note : Energy report prepared by Physics dept. attached

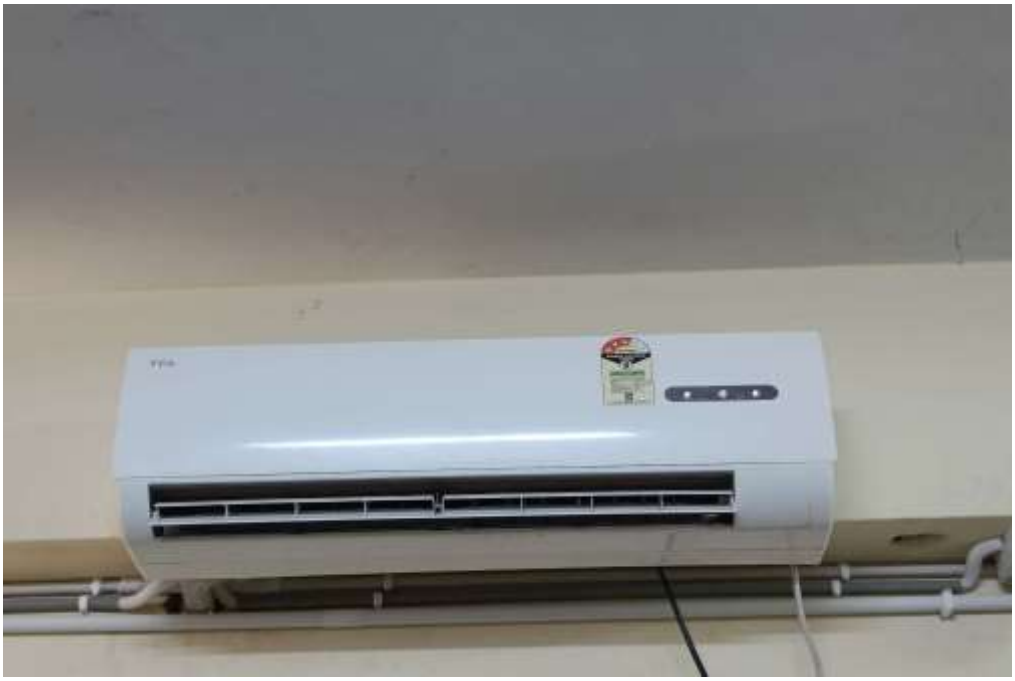
SOLAR ROOF TOP PANELS

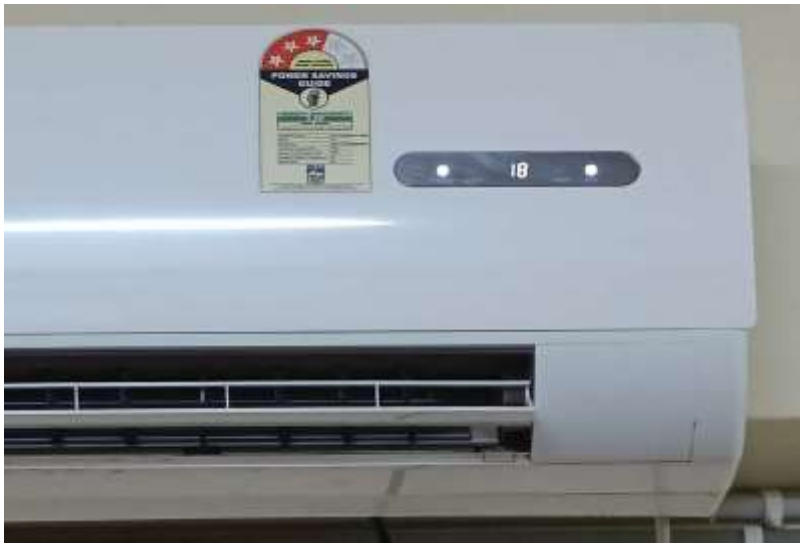


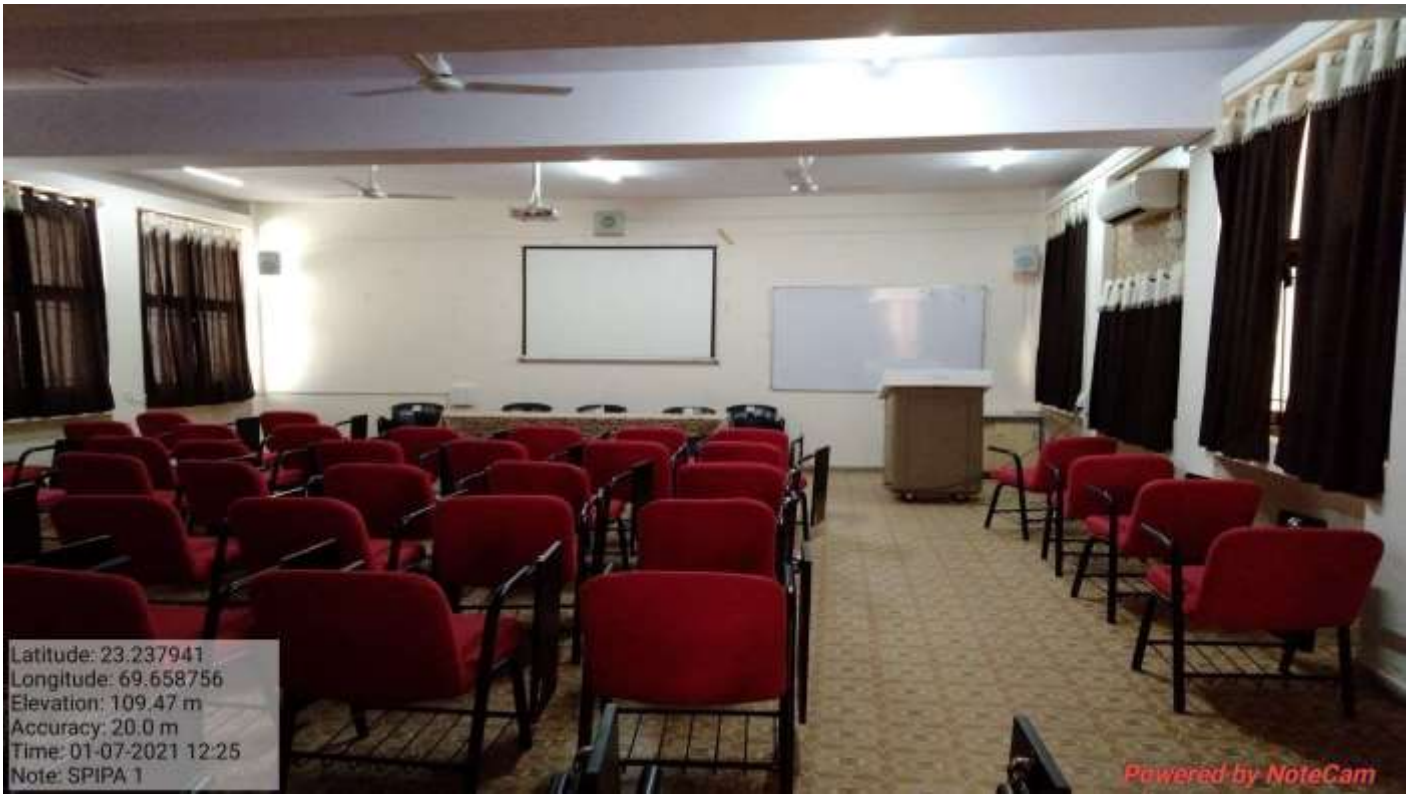
Street light in campus



Energy efficient appliances



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Accuracy: 20.0 m
Time: 01-07-2021 12:25
Note: SPIPA 1
Powered by NoteCam

सत्यमेव जयते
Government of Gujarat

SHRI RAMJI RAVJI LALAN COLLEGE

GOVERNMENT COLLEGE - BHUJ
(AFFILIATED TO K.S.K.V KACHCHH UNIVERSITY)
NAAC Reaccredited : B++ (2.80 CGPA, 2nd Cycle)

Estd:1953

A Report on

Energy Efficiency
at
Shree R. R. Lalan College, Bhuj-Kutch

By

Physics Department
Shree R. R. Lalan College, Bhuj.

Energy Efficiency

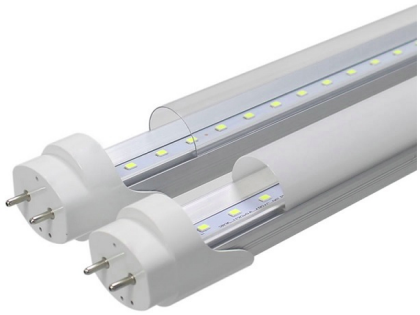
The primary energy demand in India has grown from about 450 million tons of oil equivalent (toe) in 2000 to about 770 million toe in 2012. This is expected to increase to about 1250 (estimated by International Energy Agency) to 1500 (estimated in the Integrated Energy Policy Report) million toe in 2030. This increase is driven by a number of factors, the most important of which are increasing incomes and economic growth which lead to greater demand for energy services such as lighting, cooking, space cooling, mobility, industrial production, office automation, etc. This growth is also reflective of the current very low level of energy supply in India: the average annual energy supply in India in 2011 was only 0.6 toe per capita; whereas the global average was 1.88 toe per capita.

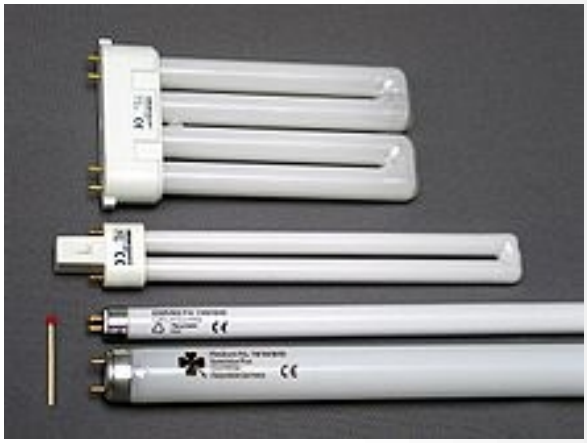
It may also be noted that no country in the world has been able to achieve a Human Development Index of 0.9 or more without an annual energy supply of at least 4 toe per capita. Consequently, there is a large latent demand for energy services that needs to be fulfilled in order for people to have reasonable incomes and a decent quality of life.

The Energy Conservation Act (EC Act) was enacted in 2001 with the goal of reducing energy intensity of Indian economy. Bureau of Energy Efficiency (BEE) was set up as the statutory body on 1st March 2002 at the central level to facilitate the implementation of the EC Act. The Act provides regulatory mandate for: standards & labeling of equipment and appliances; energy conservation building codes for commercial buildings; and energy consumption norms for energy intensive industries. In addition, the Act enjoins the Central Govt. and the Bureau to take steps to facilitate and promote energy efficiency in all sectors of the economy.

To make our college energy efficient in last 4 years we are replacing old fluorescent tube light with new generation energy efficient LED tubes and LED bulbs which are having low power consumption as well as high luminosity compare to fluorescent tube lights.

There has been total 40 LED tube lights in classrooms working for lighting as well as total 30 LED bulbs corridors working for lighting.





Typical fluorescent tub lights available in markets having power of **43 Watt** while we are having 40 LEDs each having power of **18 Watt.** Here we compare power consumption between them by assuming daily **10 hours** for a complete 365 days or a year.

➔ The power consumption of an **LED tube light** of **18 Watt** for daily **8 hours** will be,

18 Watt × 8 hours = 144 Wh / day

➔ For a year it will be,

144 × 365 days = 52560 Wh or **52.5 kWh**

52.5 kWh × 40 LED tube lights = 2,100 kWh

➔ The power consumption of a **Fluorescent tube light** of **43 Watt** for daily **8 Hours** will be,

43 Watt × 8 hours = 344 Wh / day

➔ For a year it will be,

344 × 365 days = 1,25,560 Wh or **125.56 kWh**

125.56 kWh × 40 tube lights = 5,022 kWh

The difference of power consumption 5022 – 2100 = **2922 kWh**

➔ **Comparison of Price:**

Price of **1 unit** which is equivalent to 1000 Wh or 1 kWh is around **Rs. 4.65 / unit.**

Total saving cost 2922 kWh × 4.65 = **Rs. 13587 / year**

So by using 40 LED tube lights we are saving upto Rs. 13587 per year in our electricity bills and over the time we are continuously replacing old tube lights with new generation enerfy efficient LED tube lights.