



ACS College of Engineering

Approved by AICTE New Delhi, Affiliated to VTU, Belagavi
(A Unit of RajaRajeswari Group of Institutions)
CET Code : E186 COMED-K : E003 PGCET : T918



7.1.2 The following are the measures for the alternate sources of energy and energy conservation:



7.1.2 The following are the measures for the alternate sources of energy and energy conservation:

Option B: Any 3

1. Solar Energy:

a. Solar Thermal Energy Harnessing:

In order to conserve the electrical energy in the boys and Girls Hostels, a total of 96 Solar Water Heating Panels and 12 tanks have been installed and operated on day today basis. This has eliminated the use of electrical geysers in the hostels as the hot water is required round the year in Bangalore climate



Photo: Solar Panels for water heating

b. Solar Street Light:

The Solar street lights are also installed in various part of the campus in order to reduce the conventional electricity usage



Photo: Solar Street Light

2. Biogas Plant:

The institution has successfully completed and recently commissioned a BIO gas plant to handle 80 kg/day of solid waste. This is an in-house design developed involving engineering students (from ACSCE) in the surveys for the estimation of solid waste generated on day today basis. The construction was also taken up by in-house civil team. The salient features of the Bio-gas systems are listed as below:

- [A] The biogas plant receives the solid wastes from canteen (leftover cooked and uncooked foods), student mess, hostels, staff quarters and college buildings.
- [B] The biogas plant comprises of a floating dome bio-digester, flame arresters, gas compressors, gas metering and gas stoves provided in the kitchen. The feeding line is also designed at two locations so as to simultaneously feed other waste for Research and enhancement of Bio-gas production
- [C] A settling cum filtration unit has also been commissioned to separate digested solids from the liquid. The dried solids are to be further used as compost/soil conditioner. It is estimated that almost 70 kg of dry solids may be recovered per day.

- [D] The filtrate is recycled back to the feeding tray of the crushing unit to dilute the solidfood waste prior to its entry into the Bio Digester.
- [E] The biogas recovered is directly used in the kitchen nearby, through the underground GI pipe line fitted with the flame arresters as fire safety.
- [F] The segregation of wet waste and dry waste is under implementation within the campusso as to divert all the wet wastes to the bio-digester.
- [G] The area around the biogas plant is paved with the concrete paver blocks to maintaincleanliness and hygienic.
- [H] The plant design is in such manner as to expand conveniently in future and/or convertthe existing system into a two reactor system for better efficiencies.



Photo: View of the new Biogas Plant at ACSCE

3. Use of LED bulbs:

The institution is regularly replacing tube lights (36 Watt) with 18 W LED Lights. The tube light which is not working is replaced with the LED bulbs.



Photo: Replacement of Conventional Tube lights with LED Tube

4. Sensor Based Energy Conservation

The institution have motion sensor based energy conservation solar street lights which automatically turns lights on when they detect motion and turns them off a short while later. Hence the solar street lights reduces the energy cost by reducing the amount of energy required to power the lightning all night.

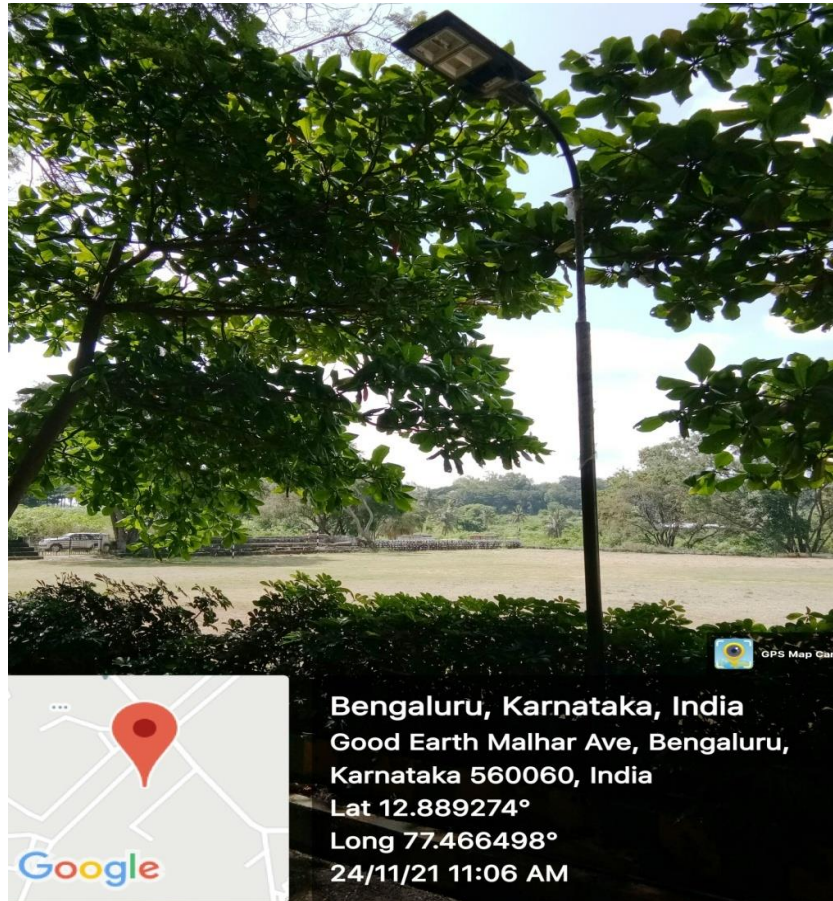


Photo: Sensor Based Solar Street Light



Mural
Principal
A.C.S. College of Engineering
Kambipura, Mysore Road, Kengeri Hobli,
Bangalore - 560 074