7.1.2 Solar Energy Plant Wheeling to the Grid Sensor-Based Energy Conservation Use of LED Bulbs/Power-Efficient Equipment

SOLAR PLANT:

The total power requirement in the campus is 504000kwhr and it is met by renewable energy sources is 136756kwhr. The total installed capacity of solar plant in the campus is 300KWp.Initially 100KWp capacity of solar plant commenced in the year of 2017.Remaining 200KWp installed on B-Block and KU Pharmacy Block in the year 2019.It successfully generating as an average of 4units/KW per day. The campus has Led Lighting.

2.Biogas Plant: Biogas plants can have multiple purposes and fulfil a double role in the ecosystem and the economy. On the one hand, biogas plants can supply us with carbon-neutral energy and heating.

If the biogas plant compresses the biogas to obtain biomethane, this can substitute natural gas for industrial, commercial, and domestic uses. The fuel can be easily transported to supply gas filling stations.

Biogas is 100% renewable and carbon-neutral, as its combustion doesn't produce new carbon dioxide. Moreover, the production process prevents the release of methane into the atmosphere, with a positive impact on the environment.

The biogas can be combusted in domestic stoves for cooking after minor treatment. Otherwise, it can be used to generate heat, produce electricity, or, in heat and power (CHP) plants, produces both heat and electricity.

The energy produced by biogas plants can be directly fed into the power grid and serve one or more communities, depending on the size of the biogas plant. Furthermore, the heat generated throughout the process can be used to heat pools or buildings.

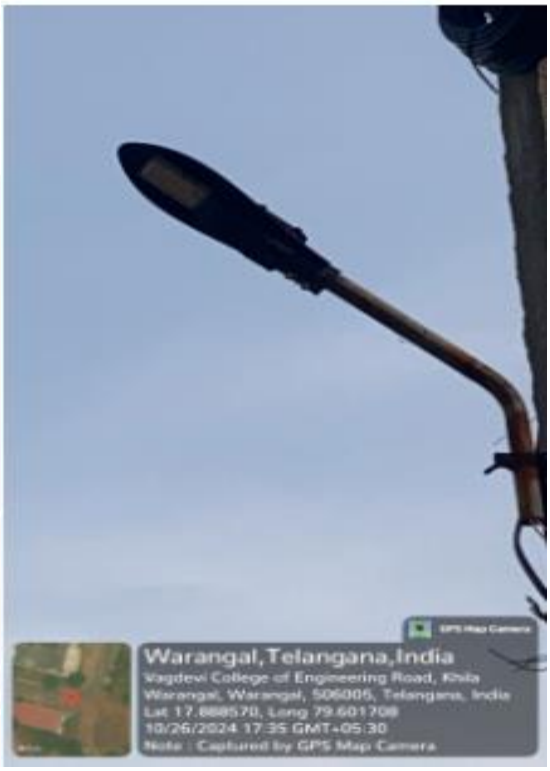
On the other hand, producing biogas makes these facilities part of waste management programs that keep garbage from landfills. Biomass that would otherwise be released in the environment is stored and processed in ways that have minimal impact on nature. Furthermore, biogas plants can also help solve the food waste issue—globally

3.Use of LED Bulbs/ Power-Efficient Equipment :

Using LED bulbs and power-efficient equipment has numerous benefits, both for the environment and for cost savings. Here are some key points:

Benefits of LED Bulbs

1. **Energy Efficiency**: LED bulbs use up to 80% less energy than traditional incandescent bulbs, significantly reducing electricity bills.
2. **Long Lifespan**: LEDs can last 15,000 to 50,000 hours, much longer than incandescent (1,000 hours) or compact fluorescent (10,000 hours) bulbs, leading to less frequent replacements.
3. **Lower Heat Emission**: LEDs emit very little heat compared to incandescent bulbs, reducing the need for air conditioning and improving safety.
4. **Environmental Impact**: Using less energy reduces greenhouse gas emissions from power plants. LEDs are also often free of toxic materials like mercury, making disposal easier.
5. **Variety and Versatility**: LEDs come in various colours and can be used in multiple applications, from residential to commercial and outdoor settings.



4.Wheeling to the Grid:

1. **Energy Sector (Wheeling to the Grid)**: In the context of energy, "wheeling" refers to the process of transmitting electricity over a grid to a location other than where it was generated. It's often used in electricity markets, especially when energy produced by one entity is sent through a grid to another. This typically involves an agreement between the power producer and the grid operator, and sometimes a third-party entity that "wheels" the power.

2. **Cycling (Wheeling)**: In a more literal sense, "wheeling" is a term that can refer to performing a trick on a bicycle where the rider lifts the front wheel off the ground and balances on the rear wheel. This is often seen in BMX or stunt cycling.

3. **Metaphorical/Informal Meaning**: The phrase could also be used in a figurative or informal sense, implying a process of connecting or transitioning into a larger system, or "getting onto the grid" in some way.

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