

## **Shoolini University Towards Carbon Neutral and Sustainable Green Energy Campus**

### **Carbon reduction and emission reduction and the Net Zero Energy building process**

Shoolini University aims at developing into a Carbon Neutral and Sustainable Energy campus by 2030. The university has a proven process for carbon management and reducing carbon dioxide emissions in the campus through the use of renewable energy sources and following energy efficient measures,

### **Existence of process**

#### **Solar Power generation:**

Shoolini University has already implemented and installed a 400kWp grid-connected Solar Photovoltaic Power Plant in the campus which is generating electricity in the range of 1400-1600 kWh (Units) per day which reduces the CO<sub>2</sub> emission of about 352 tons/year. Additionally, solar water heating systems of capacity of 38000 litres per day have been installed in the University campus which is also contributing to CO<sub>2</sub> emission reduction.

#### **Hygienic Solar Steam Cooking:**

A concentrated solar powered community cooking system with a capacity of 500 persons is running successfully in the campus. This system has the capacity to replace about 3 numbers of conventional LPG cylinders per day which contributes to *CO<sub>2</sub> emission reduction of about 38 tons/year*. The system was installed with the support of Ministry of New and Renewable Energy, Govt of India.

#### **Green Transportation:**

Additionally, the university has introduced three Electric carts (Battery operated) in the campus for local transportation inside the campus. The university has restricted all other conventional petrol/diesel-based mode of transportation inside the campus. To walk on foot inside the University campuses is being encouraged. During daytime heavy diesel vehicles are not allowed. University uses energy efficient cars and Vehicles so as to conserve petrol/diesel. This initiative has resulted in the reductions in CO<sub>2</sub> emissions in the university campus to make it green campus. It is expected to have 50% less CO<sub>2</sub> emissions as compared to conventional oil-based vehicles.

#### **Energy efficient Lighting & Solar Street Lighting Systems**

The university also has taken initiative and actions *with 90% of the conventional lights replaced with LED based lights* including use of solar street lights, reducing conventional

electricity usage, hence lowering carbon footprint. Actions have been taken in construction of new buildings in Yogananda Ville using low carbon/sustainable materials.

### **Evidence**

- 1) Installation of 400kWp grid-connected Solar Photovoltaic Power Plant on the rooftops of different Blocks and parking shed in the university campus Under National Solar Mission of MNRE, Govt of India.**



- 2) Installation of Hygienic and Energy efficient concentrated solar powered community steam cooking system for 500 persons at Girls Hostel**



**3) Installation of 38000 litre per day (lpd) solar water heating systems on the roof top of Hostels in the university campus to meet the hot water requirements of students.**



**4) Three electric carts for local transportation in the university campus**



**5) Bio Energy Use : Biogas for cooking: A 1.5 m<sup>3</sup> biogas system which uses Cow dung from University Dairy has been installed for technology demonstration and is being actively used in agricultural farm in the university for cooking food .**



**6) New Solar sensor-based lights installed in the University campus reducing dependence on conventional electricity and lowering carbon footprint.**



**7) Additional New Solar Street Lights introduced**



**8) 90% of lights in the university are LED based 20-Watt tube light which saves up to 50% energy and lowers use of conventional electricity hence reducing carbon footprint.**



**9) Use of new, low carbon, sustainable earth wooden construction materials buildings in Yogananda Ville**

