

1. Title of the Practice: GREEN CAMPUS INITIATIVE

2. Objectives of the Practice

SNDT Women's University has taken an initiative to create 'Green Campuses'. Green environment in SNDTWU includes supporting practices such as investment in renewable energy by use of solar power and solar energy, conservation practices such as rain water harvesting and solid waste management.

Objectives:

1. To maintain continuous supply of energy by use of solar panels
2. To use solar energy as an alternative to conventional energy
3. To recharge ground water by means of rain water harvesting
4. To manage the solid waste by the use of vermicompost

3. The Context that required the initiation of the practice:

The National Solar Mission is an initiative of the Indian and State Governments to promote solar power. The mission is one of the several policies of the National Action Plan on Climate Change. SNDTWU was the first university in Maharashtra to be selected under the scheme.

Water in the ground is stored in the interstices (inter-particulate spaces) of the soil or rock that forms the earth. In rain water harvesting, water is collected from roof tops and taken to the aquifers after necessary treatment. If it is not possible to charge the aquifers, the water can remain in the soil along with surface storm water to improve the groundwater.

Vermicomposting provides nutrients to the soil, increasing the soil's ability to hold nutrients which are easily absorbable for the growth of plants. It improves the soil structure, aeration, internal drainage of heavy clay soils, and also provides numerous beneficial bacteria.

4. The Practice

SNDTWU has set up a 500 kilowatt power solar plant on its 20 acres Juhu Campus. Besides reducing electricity expenditure, the solar power laid on the rooftop of the main building, 15,375 tons of carbon dioxide emissions is mitigated. Aditya Green Energy invested 2.5 Crores in the project which was inaugurated on January 30, 2019 by the University. The project was part of Centre's Solar Energy Corporation of India (SECI), New Delhi which has allocated 3 megawatt (MW) rooftop solar amenities for every state in 2017. Initiatives have been taken in the Pune campus of SNDTWU to create 'Zero-Net' campus.

The University also has following energy efficient practices as per the audit reports which were supported by Maharashtra Energy Development Agency:

- Usage of energy efficient LED fittings
- Installation of 16000 LPD solar thermal water heating system at hostel blocks
- Usage of BEE STAR rated equipment

Sensor-based energy conservation: Sensor based lights are used in Churchgate campus to add to already existing energy conservation methods. Sensor based LED lights are available at toilets of Maharshi Karve seminar complex in Churchgate campus. Sensor based lights save energy by automatically putting off the lights when not in use.

Biomedical waste management: Pharmacy College and DMLT, PVP at the Juhu campus are involved in paramedical programmes in which teaching and research generates bio-medical waste. Pharmacy college has an established animal house facility, registered with the CPCSEA, which is a statutory body of Govt. of India. Bio-waste is created as a result of animal experimentation and is being disposed of as per BMC guidelines.

Rain water harvesting: There are two approaches to rain water harvesting; storing of water for direct use and recharging of groundwater. Cities like Mumbai, need more attention to ground water recharging. Therefore, at SNDTWU, Churchgate campus, a plot with area of 6000 Sqm is paved and the slope is provided towards storm water drainage. All the rooftop water and surface water is also directed in the same way.

Biodegradable solid, generated at SNDTWU Juhu campus consists of dry leaves from plants, food wastage etc. SNDTWU uses vermicomposting for management of biodegradable solid waste which is recycled into manures. SNDTWU, in collaboration with ECGC Ltd., has constructed a vermicompost facility at Juhu campus. This facility has helped in waste recycling as well as solid waste management.

5. Evidence of Success

With 1540 solar panels set up generates an average of 1,917 kilowatt-hour (kWh) units per day and 7,00,000 kWh units in a year. The plant has a 500 kilowatt-power (kWp) solar project and is considered as one of the largest rooftop renewable energy projects in the city. After the installation of the solar panel an energy consumption audit was conducted. It was found that there was about a 60 percent reduction in the Juhu campus' electricity bills after the installation of the solar panels.

Solid wastes are separated into organic waste and inorganic waste. Organic waste is used to make vermicompost and inorganic waste is disposed off at specified location in University campus in an appropriate manner. Composting pits have been created for food waste from the hostel mess and the canteen.

The vermicomposting system has resulted in cleaner campus, due to effective management of solid waste. The manure produced is used for growing plants in the campus.

The Institutional Animal Ethics Committee (IAEC) has been appointed by CPCSEA to approve and supervise the sanction of animal experiment protocols and regulates all pre-clinical experiments. As per the BMC guidelines, the Pharmacy College has an Annual Contract with SMS Envoclean for disposal of bio-waste.

6. Problems Encountered and Resources Required

SNDTWU had grown a Miyawaki forest within Juhu premises. It could absorb pollution generated by vehicles both air as well as noise on the busy Juhu Tara road. It had potential to play a crucial role in making the campus greener besides the entire community and ecosystem within 2km radius. It would have helped sensitise the student community and general community at large about the environment and need to go green. Unfortunately, due to the pandemic the established forest was left unattended. It requires manpower to maintain such initiatives. Due to paucity of manpower Miyawaki forest could not be maintained. Also due to financial constraints, this forest could not be revived.

For sustaining our green initiative of SNDTWU, more financial resources and manpower would be required.