



VIT[®]

Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

SDG-13 Annual Report 2019-20

13 CLIMATE ACTION



Take urgent action to combat climate change and its impacts



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Report of VIT-Vellore Campus

A. Preamble

Climate change is affecting national economies, People are experiencing changing weather patterns, rising sea levels, and extreme weather events. These include all the elements that we usually associate with the weather, such as temperature, wind and precipitation. The speed and scope of climate-related changes can have various consequences on ecosystems and human activities.

At Vellore Institute of Technology, efforts are made to save mother earth for future generations through sustainability initiatives for conservation and scrupulous use of water, soil, air and other natural resources

B. Rainwater harvesting:

VIT maintains a huge lake that is used for storing water during the rainy seasons.



There are more than 100 rainwater harvesting units throughout the academic as well as hostel premises. Rainwater from the terrace of buildings is collected and connected through pipelines to the water recharging pits near borewells.



C. Transportation Facilities and Carbon Footprint Reduction

Air pollution is a matter of serious concern on the campus owing to its urban location. VIT, Vellore as a responsible institution understands the importance of its carbon footprint and has developed a plan to reduce greenhouse gas emissions. The endeavour is to take a leadership role in environmental stewardship and become one of the nation's first institutions of higher education to accept the goal of climate neutrality by undertaking a Carbon Neutrality commitment.

The following are the initiatives or practices implemented :



Sheltered walkways are installed to connect all the hostel blocks and academic buildings. The majority of the students on the campus rely on public transport, indicating a lesser carbon footprint of the student community. Also, shuttle cabs services are provided within the campus to minimize the carbon footprint.



To promote advancement in building thermal comfort, district energy system by following India cooling action plan (ICAP). Innovative Centralised chiller plant for cooling in Mahathma Gandhi block which reduces power consumption for conventional ACs by 60%. This will be extended to all academic buildings in near future.



Installed around 70% LED lamps for lighting in all new buildings and renovated buildings, corridors, restrooms of old buildings, street lights and focussed lights. This has provided energy saving of around 910 kWh during the year 2020.



The majority of the terrace in VIT Vellore buildings are covered with solar PV panels. The total installed peak capacity of these panels are around 2 MWp.

Also, all the new hostels are installed with solar water heaters and heat pumps. This provides the highest energy efficiency in the water heating needs of the inmates. Therefore, VIT Vellore can reduce the Social cost of corban to around 89 Lakhs per year.

To improve energy efficiency, all the pumps installed on the campus are 5-star rated and all our lifts are employed with improved VFD technology-based drives. New buildings are with star rated Fans, LED Desktop monitors and LED TVs.

VIT Vellore is buying electrical energy of 90 Lakh units per year through wind power-wheeling.

D. Green Belt Development and Landscape

A well-designed green belt helps in intercepting particulate matter and gaseous pollutants and helps in purifying the air. Trees act as effective barriers and absorbers of noise. There are different types of 105 trees, 91 herbal plants and 127 ornamental plants are planted and maintained all along with the campus, along roadways and available open spaces.



The green belt around the campus acts as an indicator in the event of release of gaseous emission by visible morphological changes in the leaves, stem etc. To accrue the benefits of greenbelt and to maximize its potential in environmental management around the campus, choice of the green belt tree and shrub species plays a vital role.

The major aim of greenbelt development plan is to attenuate air pollutants released into the environment but it can also help in overall improvement in the environmental conditions of the campus. The plan will address the following issues such as attenuation of air pollution, noise reduction, improving the biodiversity of the region, adding aesthetics and combating soil erosion and prevention of land degradation.



E. Promoting awareness among the inmates of the campus:

The E2PC (Energy and Environment Protection Club) strives to create awareness among the student community about the importance of a green and clean campus. The club celebrates every year, Earth Day, by switching off lights for two minutes. The institute promotes sound environmental management policies and practices by following the guidelines legislated by State and Central Government bodies.

Workshops conducted on topics: Water resource management, Significance of Hydrological intervention in Groundwater Studies, Coconut based integrated farming system and Soil Health Water Quality and Remediation.

Observing Water week to promote awareness among the inmates and general public about saving water for the future.

The Faculty members and students have contributed around 81 research papers during academic year 2019-2020.



PEDESTRAIN FRIENDLY

PLASTIC FREE

BATTERY POWERED VEHICLES

USE OF BICYCLES

RESTRICTED ENTRY OF AUTOMOBILES

LANDSCAPING WITH TREES AND PLANTS



Report of VIT-Chennai Campus

PREAMBLE

With increasing global surface temperatures, the possibility of more catastrophes are likely to occur. Indian monsoon is the most prominent monsoon system in the world; hence our country faces numerous climate change calamities like flood, cyclones, droughts, cloudburst, etc. The Intergovernmental Panel on Climate Change (IPCC) report projects that in the coming decade's climate changes will increase globally. Now, we have a much clearer of the past, present and future climate changes, which are essential for understanding where we are headed, and how we can prepare for present scenario.

CLIMATE CHANGE ADAPTION

Research on Paleoclimatology, Paleoceanography, and climate change has been carried out at VIT. Research and studies have been carried out on high-resolution multi-proxy record of Neogene and paleoceanographic evolution of Southern Ocean link to Global Climate Change to target expanded sections of Neogene sediments, which can be used to resolve the timing of Southern Hemisphere climatic events on orbital and suborbital time scales. Also various research project ongoing related to climate like “Impact of Climatic Factors on the Transmission Dynamics of Vector-borne Diseases: a Mathematical Study” and “Design a Model for Rainfall Prediction in Real Time using Machine learning for the Optical DisdroMeter in a Distributed Environment”. A various workshops and conferences have been attended by the faculties. As a part of this, Atmospheric Process and climate change, Energy environment and climate change, and Engineering Geology have been included in the curriculum. Industrial visits were organised for students to IMD Chennai.

VIT School of Law (VITSOL) offers various field of research including Law of Treaties – Settlement of Disputes, Law of the sea, International Environmental Law including Global warming – Air and Space Law, International Liability law: oil pollution, Nuclear and contamination of every kind- Trans boundary water disputes, legal and regulatory framework for renewable energy, negotiations and diplomacy.

PLANTATION AND ENERGY CONSUMPTION

Energy And Environmental Protection Club and National Service Scheme of VIT engaged in the activities like plantation of trees on the campus and nearby villages. Several awareness programmes have been organised for the environmental preservation and climate change and



also for adopting the green policy. The green initiatives promote sustainability in the institute. The energy conservation facilities, water conservation and water recycling facility contribute to the development and maintenance of the campus as a green campus.

ENERGY CONSERVATION- SOLAR POWER PLANT

A solar water heater system of each 15,000 L capacity was installed, thereby saving a lot of power. Single panel solar street lights (41 numbers), each having 95 W capacities are placed on the main streets. Hybrid type solar and wind based street lights (21 numbers), each having 2x45 w capacities is placed on the campus.



Solar water heater in Academic and Hostels building



Hybrid type (solar & wind) street lighting

GREEN BELT DEVELOPMENT

The lead role to green the campus is succeeded through a dedicated horticulture section of the campus and nearby areas. The NCC and NSS volunteers also participated in planting more trees. Water filling from the rainwater harvesting pond to a tanker to irrigate plants in the road median of the Vandalur-Kelambakkam road of 18 km length (Maintained by VIT Chennai)



NCC and NSS volunteers also participated in planting more trees near by area



Planting more trees at VIT Chennai campus