



**VIT**<sup>®</sup>

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

# **SDG 12 Responsible Consumption and Production**

**Annual Report 2018-19**

**12 RESPONSIBLE  
CONSUMPTION  
AND PRODUCTION**



**Ensure  
sustainable  
consumption and  
production  
patterns**



**Vellore Institute of Technology**

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## Report of VIT-Vellore Campus

### GOAL 12: Responsible Consumption and Production...

#### A. Preamble

The objective is to make Vellore Institute of Technology, Vellore as energy efficient by means of using renewable energy, energy efficient technologies and appliances. Institutional self-inquiry is a natural and necessary outgrowth of quality. Vellore Institute of Technology leads the green initiative to promote sustainable practices in its lush and verdant campus. A few remarkable programmes include energy conservation, waste management and water recycling. The in-house transportation policy and the extensive research programmes are certain other sustainable initiatives to uphold green values.

#### B. Solid waste management and waste recycling system

Organic and green waste, recyclable waste and sanitary waste are collected in different coloured bins. Segregated food waste, vegetable peels and other kitchen wastes collected from the canteens and food joints on campus are composted. Similarly, garden waste and dry leaves are also composted. Recyclable waste are collected and sold to vendors for recycling.



Sanitary waste is given to a certified agency on alternate days for incineration. The institute's waste management & recycling policy supports our goal to reduce the amount of wastes entering the waste stream.

## C. Liquid Waste Management

The total water requirement during operation is 5412 KLD. The wastewater generation from the project is about 3379 KLD, which is treated in the sewage treatment plants of 8 different capacities of STP with a holding capacity of 3920 KLD. This is then recycled and used for flushing purposes or watering the gardens and



lawns in the campus. The sludge settled in the STPs is removed 4 times a month and composted. The compost is used as manure for the gardens. Thus, the entire waste water generated in the campus is well treated and effectively used.

## D. Biomedical waste management

Objectionable non-hazardous medical waste is typically generated in extended care facilities and ambulatory health care services. Adherence to good personal hygiene and prudent sanitation practice affords adequate protection to individuals involved in the handling and disposal of this type of waste. At VIT, biological wastes are safely disposed through 'Ken Bio links Pvt. Ltd'. VIT adheres to and practices a sustainable and healthy waste management system that is aimed at making the campus green and eco-friendly.

## E. E-Waste Management

E-wastes, which are regularly collected from source points, are sent to e-waste storage area. The e-waste generation at campus is approximately 2-tonnes/year. E-waste mainly consists of laptops, desktops, servers, projectors, biometric devices, condemned electronic equipment, printers, scanners and cartridges. M/s Veltech systems, Chennai, is the authorized vendor currently collecting e-wastes from us.

## F. Hazardous chemicals and radioactive waste management

0.01N Cr (IV) used in lab is converted into Cr (III) and discharged to the water treatment plant. Silica gel is widely used in TLC column but it is non-toxic and chemically inert, and sent to the recycler. Strong acids and bases are neutralized and disposed to the water treatment plant. Overall, labs using chemicals and solvents follow the necessary safety precautions in the usage and disposal of hazardous chemicals. All equipment using radioactive elements for their functioning are carefully salvaged as per the instructions of the respective user manuals. Institution doesn't explicitly use radioactive materials in its research.

## G. Green Building

Sustainable design and building principles are incorporated into all University developments. The high-tech concealment with double coating and sophisticated, energy-efficient heating, cooling and air handling systems minimises heating and cooling requirements and comprehensive metering tracks and corrects inefficient use of energy and water. Recent 'tuning' of the building to ensure all systems like lighting and ventilation operate at maximum efficiency has led to energy savings.



## H. Reducing Food Waste

The University is working towards consume the food waste. Food retailers have to minimise food waste and separate waste for composting to divert waste from landfills. Since 2015 this initiative has diverted 300 tonnes of food waste from landfill. Staff and students in faculties are similarly working to divert waste from landfill by using the on-site composting facilities.

## I. Plastic and Paper Free Campus

The University has taken necessary steps to engage staff and students to think about over-consumption of energy, water and paper. A number of paper saving initiatives have been intuited to decrease the usage of paper. The assignment submissions made completely digital

The University's Campus not allowed using plastic inside of the premise. In order to minimise the need for plastic water bottles the University is also working to ensure that glass water bottles are available across all campuses.



- No of Publications : 94
- No of Events, Workshops and Guest Lectures : 200
- No of Extension Activities : 10

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## Report of VIT-Chennai Campus

### A. PREAMBLE

Our Earth has finite resources whereas Global Consumption pattern shows that people around the world exert pressure on the Earth for leading luxury life which is far above their basic needs. Global consumption pattern shows an exponential growth. On the other hand, there are billions still living in extreme poverty without proper food, cloth and shelter. Sustainable living can be achieved only through sustainable practices such as reducing food waste, energy conservation and practice simple sustainable habits such as using Earth's resources judiciously and preserve it for future generations.

### B. SUSTAINABLE PRACTICES

VIT Chennai's focus is to develop a Sustainable Green Campus. The Green initiatives promote sustainability within the institute as well as in the locality. The energy conservation facilities, water conservation and water recycling facility contribute to the development and maintenance of the campus as a green and eco-friendly campus.

#### **Water Conservation and Recycling**

Appropriate rain water harvesting methods are practiced in the campus to save water. An artificial lake is constructed in the campus to collect the water from storm water drains. The overflow from the lake is connected to the other ponds in the campus so that the entire rainwater is harvested and conserved. The roof top water during the rain was collected in the underground storage tanks and was used as stored water for fire fighting purposes. Also, landscaping of the campus was done with few depressions and small mounds and by cultivating grass / small trees and plants over the ground to reduce the run-off and ultimately increase the ground water re-charge. Also sensor based water taps are installed in the campus for water conservation.

All the wastewater generated in the campus is collected and conveyed to a modern wastewater treatment plant and treated to a satisfactory level to recycle the water for gardening/landscaping and flushing of toilets. This helps in conserving the water to a

great extent and helps in recharging the groundwater, which is the main source of water supply in the campus. Also, the nutrient and water value of recycled water is of great help in maintaining the campus green. The recycled water is sprinkled to apply the optimal water for irrigation and thereby avoiding the water logging in the campus.



An artificial lake for Rainwater harvesting and Recycled Water used for Lawns

### **Energy Conservation and Efficiency**

Solar Power plant is installed in campus for conserving energy. All pathway lights are powered by Solar Energy. LED bulbs are used predominantly in the campus for energy efficiency and savings.

### **Green Campus Award**

VIT Chennai was awarded the prestigious **IGBC Gold rated Green Campus Award**. Indian Green Building Council had presented the award during 4<sup>th</sup> Green Building Congress held at Mumbai on the theme “**Sustainable Built Environment for All**”.

### **Ban on Usage of Plastics in campus**

VIT Chennai has banned the usage of disposable plastics / paper cups and plates inside the campus. Reusable Stainless steel plates and cups are used in cafeteria, food court and hostel mess. Treated water is available in all blocks for refilling rather than using disposable water bottles.

## Go Digital

As part of “Go Digital” policy, usage of paper is reduced in the campus. Submission of assignments and lab records are completely Digital. This reduces the amount of paper handled by the students, faculty and staff inside the premises helping us to maintain a sustainable environment.

## Solid Waste Management

VIT Chennai has excellent solid waste management system. Recyclable waste is sold and Trash is disposed. Food waste, garden and lawn waste are processed in bio-composting plant. The matured compost is used as manure for the garden and lawns, thus avoiding the use of artificial fertilizers.



Composting Machine



Bio-Composting Process

## C. PECCON 2019

The second International Conference on Power Engineering, Computing and CONTROL, PECCON 2019 was conducted during December 12th to 14th 2019. This conference was organized by the School of Electrical Engineering, VIT Chennai in collaboration with Binghamton University, USA. The main theme of PECCON 2019 is “Smart technology for smart grid”. The conference provided a forum for practicing professionals, academicians, research scholars and students to exchange their innovative ideas, inferences and knowledge gathered through rigorous





experiments. In this conference, there were 11 sessions on various tracks that cater the requirements for smart grid. The major sessions are namely, Sustainable Energy Technologies, Power Electronics, Power Engineering, Electric Vehicles, ICT technologies, Data Science and Analytics, Smart Eco Structures and Systems and Allied Technologies.

#### **D. COURSES ORIENTED TOWARDS SUSTAINABILITY**

University offers various programme specific courses on Sustainability. Apparel Logistics and Supply Chain, Energy Management in Apparel Industry, International Social Compliance, Recycling of Textile and Apparel products, Renewable Energy sources, Urban Planning and Sustainability , Energy efficient Buildings are some of the courses offered by the University to the students that focuses on Sustainability.

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