

Sustainability initiatives of IIT Gandhinagar

“Sustainable development is a fundamental break that will reshuffle the entire deck. There are companies today that are going to dominate in the future simply because they understand that” as genuinely said by Francois-Henri Pinault, a French businessman. **IIT Gandhinagar** has set the bar high in this race to create a zero-impact, sustainable campus. Sustainability is the crucial factor. In today's world, sustainability is not just a trend but a necessity. Educational institutions play a vital role in developing more green practices. Indian Institute of Technology Gandhinagar, nestled along the Sabarmati River, has incorporated multiple initiatives to reduce its environmental footprint.

Let's dive into the most impressive initiatives running on the campus: Zero Energy Import, Biogas Plant, and Rainwater Harvesting.

1. Zero Energy Import: Heading towards the Energy Independence

The concept of Zero Energy Import refers to the goal of meeting all energy demands on campus through renewable sources. At IITGN, solar energy plays a critical role in achieving this objective. The campus has installed solar panels on academic and residential buildings, allowing clean, renewable energy generation. The idea is to reduce reliance on external power grids, contributing to energy independence.



a) Academic building PV panels



b) Housing solar water heaters

The solar water heaters installed in residences further support this initiative. By leveraging Gujarat's heat, the campus is inching closer to achieving net-zero energy status. This also includes the famous solar pathway of the campus which combined contributes almost 10% to the institute's energy consumption.

2. Biogas Plant: Converting Waste to Energy

IITGN's biogas plant is a shining example of how waste can be turned into a useful resource. The plant utilizes organic waste primarily kitchen scraps and agricultural byproducts—collected from across the campus. Through the process of anaerobic digestion, this waste is broken down to produce biogas, a clean source of energy used to power certain campus operations.

The byproduct of this process, nutrient-rich slurry, is also put to good use as organic fertilizer for the campus's organic farm, promoting the close loop system for the better use of waste. This initiative reduces waste and contributes to the campus's goal of zero energy import by generating renewable energy from waste.



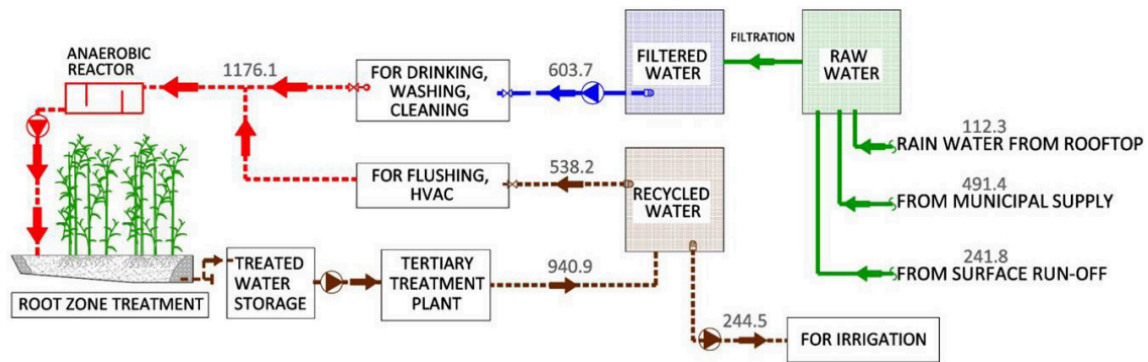
3. Rainwater Harvesting: Harnessing Nature's Gift

Water conservation is another key pillar of IITGN's sustainability drive. The campus has implemented an extensive rainwater harvesting system that collects and stores rainwater from rooftops and open spaces. This harvested water undergoes filtration and disinfection processes before being used for irrigation and non-drinking purposes, such as toilet flushing.

Given that Gujarat is a relatively dry state, this initiative is crucial in ensuring a sustainable water supply for the campus. By capturing and storing rainwater, IITGN reduces its dependence on external water sources like rivers and lakes, contributing to the goal of zero water import.

Additionally, IIT Gandhinagar has implemented a water management system that efficiently distributes three types of water on campus. Freshwater, collected from the

Narmada River, lakes, tube wells, and rainwater harvesting systems, is treated to ensure it is free from pollutants and is used for essential purposes like drinking, cooking, and bathing. Recycled water is treated from previously used water, such as that from washing and bathing, and is reused for toilet flushing reducing the availability of fresh water.



National Success: A Model for Green Campuses

These sustainability initiatives have not only set IIT Gandhinagar apart as an eco-friendly campus but have also gained national recognition. The campus was awarded a 5-star GRIHA rating (Green Rating for Integrated Habitat Assessment), making it the first large-scale development in India to achieve this honor. IITGN's efforts are now serving as a model for other institutions across the country. Implementing this even on a bigger scale like in cities can be challenging but surely this will change the perspective and can definitely help in building a more sustainable country.

Other IITs and universities are beginning to adopt similar practices, inspired by IITGN's success. National policies on sustainable campus development can refer to this as the benchmark.