



Energy Planning Policy

Originally created: 2014

Last modified: 2021

The master plan incorporated “environment and energy response” as one of its major components. The master plan complied with the National Building Code 2009 of India, including the ‘Approach to Sustainability’. The buildings have been built to Green Rating for Integrated Habitat Assessment (GRIHA) for green buildings and large area developments and Energy Conservation Building Code (ECBC) standards. The guiding principles of the master plan included the following: a) complete and absolute respect for the environment at both micro and macro levels and b) respect, conserve and where possible, recycle resources. The institute makes an effort to minimise its reliance on carbon-intensive energy industries, such as coal and oil, and invest in solar and biomass for its energy requirements.

IITGN energy planning is designed with and must conform to the following guidelines:

- On-site renewable energy system installation to offset a part of the annual energy consumption of internal artificial lighting and Heating, Ventilation and Air Conditioning (HVAC) systems.
- Solar photovoltaic panels have been installed on the rooftops and a solar carport has been built near the Academic Complex.
- A solar walkway (covered with solar PV panels) connecting the academic and hostel blocks harvests solar energy and contributes to improving the microclimate.
- All the residential and hostel buildings have solar water heaters/ units installed on their rooftops.
- Solar panel installation, use of louvres and skylights for maximum daylight utilisation is being considered for various buildings in the campus.
- Currently, the installed solar PV capacity is 500 kWp which provides for about 10% of the total energy demand of the campus.
- Incorporation of site design strategies that assist in reduction of Urban Heat Island Effect (UHIE): High Solar Reflectance Index (SRI) tiles are used in the building roofs and balconies; plantation is done on the periphery of the roads to provide natural shading.
- Install all the insulation, fire-fighting systems, HVAC systems and refrigerant systems that are free from hydrochlorofluorocarbons (HCFC), CFC and halon gases, thus, having zero Ozone Depleting Potential (ODP) value.
- All street lighting has been designed to adhere to minimum energy efficiency norms as described in Guidelines and Benchmarks for Large Area Developments, Ministry of New and Renewable Energy (MNRE) and The Energy and Resources Institute (TERI), as well as to meet the minimum illumination levels and uniformity coefficient for different street categories. They have also been

installed with astronomical switches that automatically switch the lights on and off based on pre-set times.

- As part of IITGN's waste management initiatives and to minimise waste going to the landfill, the campus built a biogas plant to process wet food waste (coming primarily from the hostel mess). This biogas plant, based on technology developed by the Mumbai-based Bhabha Atomic Research Centre (BARC), generates electricity from organic waste and slurry, with no other by-products.
- Use of composting pits for biowaste.
- Student vehicles - cars or motorcycles are discouraged on the campus.
- The master plan envisioned a campus on the Sabarmati river, that is planned as a green campus with pedestrianized movement, largely free of vehicular traffic.
- Modal shift from motorized vehicles to non-motorized vehicles like bicycles or walking is encouraged.
- Segregated cycle tracks are provided along pedestrian paths and vehicular roads. Ample-shaded cycle parking facilities are provided throughout the campus to encourage cycling.
- The institute has been designed to be pedestrian-friendly and offers public transportation for IITGN community members both on the campus and outside (covering areas up to a distance of approximately 20 km toward the nearest towns of Ahmedabad and Gandhinagar).
- CNG EECO cars operate on campus from 8.30 AM to 7.30 PM for internal transport and their use is free for everyone. The Institute bus service which runs regularly between the Campus and Gandhinagar - Ahmedabad is available for the IITGN community. These services strive to reduce carbon dioxide emissions.

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