



SDG 13: Climate Action

TAKE URGENT ACTION TO COMBAT CLIMATE CHANGE AND ITS IMPACTS

The Indian Institute of Technology, Gandhinagar (IITGN) is designed as a living laboratory on sustainability, which is integrated into its masterplan. The conceptual process emphasised consideration of sustainability factors, which in turn informed the development of the master plan and campus development. The institute operates and maintains buildings in accordance with a sustainable management policy/programme and/or a green building rating system. IITGN is the first campus in India to be awarded a five-star rating by Green Rating for Integrated Habitat Assessment for Large Developments (GRIHA LD) in 2016.

IITGN campus has been designed with key sustainability features, such as solar energy generation, comprehensive waste management, water conservation, purification and recycling, and compost production. Moreover, the campus infrastructure supports passive cooling and energy conservation in all the aspects of construction, operations and management.

The IITGN community is actively engaged in promoting sustainability in all its operations. For instance, we are developing a system for real-time monitoring (day-to-day basis) of carbon and water footprints of the campus. This initiative will have considerable impact on reducing energy usage and making the entire campus more energy efficient by addressing the challenges of climate change.

The Master Plan laid an emphasis on climate change adaptation and mitigation and several features that make the campus climate resilient were incorporated. Different initiatives and activities have been taken at the institute to promote climate action, raise awareness of the community on the campus and in the neighbourhood, thus contributing to achieving Sustainable Development Goal 13.

RESEARCH

Extensive research activity is underway at the institute on a wide range of areas related to energy and the institute as a body cooperates and coordinates with the local, regional and national governments on energy conservation and management. The institute facilitates access to research through its library, state of the art laboratories and a conducive learning environment. The institute advocates for public policies through several research activities, thus contributing to the achievement of SDG 13. More than 25

researchers at the institute research in areas related to climate change such as hydrological models, climate change projections, extreme weather, crop growth, groundwater storage availability, impact of climate change on forest and agrobiodiversity, etc. The institute informs and supports local, regional and national governments in climate change related projects.

EDUCATION

The institute offers the following courses relating to climate change:

CE 202: Sustainability and Environment

CE 611: Advanced Engineering Hydrology

CE 613: Analysis and Design of Masonry Buildings

EH 606: Critical Zone System Science

CE 201: Earth Materials and Processes

CE 308 A: Water Resource Engineering

CE 611: Advanced Engineering Hydrology

CE 633: Water Resource Systems: Planning and Management

EH 602: River Morphology and Ecology

EH 605: Modelling of Earth System and Sustainability

EH 608: Biodiversity Conservation and Sustainable Development

OPERATIONS

IITGN signed an MoU for a strategic partnership for the Development of Climate Change Policy and Roadmap for Net Zero by 2070 for Gujarat with the Climate Change Department (Government of Gujarat) in February, 2022.

The institute operates and maintains buildings in accordance with sustainable management programmes and a green building rating system. The Master Plan laid an emphasis on climate change adaptation and mitigation and incorporated several features that make the campus climate resilient. We are developing a system for real-time monitoring (day-to-day basis) of carbon and water footprints of the campus, which will have a significant impact on reducing energy usage and enhancing energy efficiency, thus addressing the challenges of climate change.

The institute has a system in place to measure the amount of low carbon (solar) energy used across the whole university. The solar PV generation data can be accessed on the institute's portal <http://solarpv.iitgn.ac.in/>, which is based on energy monitoring, data analysis, optimization and machine learning approaches for energy management.

COMMUNITY OUTREACH

IITGN hosts seminar on campus development

IIT Gandhinagar, known for its commitment to sustainability, organised a 'Seminar on Campus Development: Reflection and Future Direction.' This event celebrated the successful completion and operationalization of phase 1 projects, bringing together stakeholders to reflect on the institute's future development.

Dr Kiran C Patel Centre for Sustainable Development (KPCSD) at IITGN, in collaboration with PricewaterhouseCoopers (PwC) and with support from Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, New Delhi, organised a webinar on 'Advancing Frontiers of Knowledge on Climate Action: Cross-sectional Approaches for Mitigation and Resilience' on October 20, 2021. The e-webinar was attended by nearly 100 scientific audiences and practitioners from different parts of the globe. Prof Vimal Mishra, Co-coordinator of KPCSD, hosted the event.

IITGN bagged the second position in the category of 'Best Institution / Resident Welfare Association / Religious Organisation for Campus Usage' during the 3rd National Water Awards ceremony organised by the Ministry of Jal Shakti at Vigyan Bhawan, New Delhi, on March 29, 2022. Shri Gajendra Singh Shekhawat, Union Cabinet Minister of Jal Shakti; Shri Prahlad Singh Patel, Minister of State for Food Processing Industries; and Shri Bishweswar Tudu, Minister of State for Tribal Affairs and Jal Shakti were present on the occasion and bestowed the award to IITGN in recognition of the Institute's efforts to promote water conservation and water management.

Faculty members of IITGN and IIT Kanpur came together for a Joint Symposium on Energy Technologies on April 15 and 16, 2022, to discuss research areas of mutual interest in the domain of energy technologies. The event provided a platform to identify potential joint research proposals and projects. Prof Atul Bhargav coordinated the event.

IITGN, in collaboration with Gujarat Urja Vikas Nigam Limited (GUVNL) and Gujarat Energy Training & Research Institute (GETRI), conducted a two-week advanced training programme on "System Operation and Commercial Aspects of Power Purchase, Open Access, & Energy Accounting" for senior officers/engineers of the state electricity companies from June 27 to July 8, 2022. The valedictory session of this residential workshop was held in the presence of Shri Jai Prakash Shivhare (IAS), Managing Director, GUVNL. The workshop was coordinated by Profs Anand Kumar and Naran Pindoriya.