IIT DELHI SUSTAINABILITY POLICY

PREAMBLE

Building a sustainable planet that meets the needs of the present while preserving it for the future generations is perhaps the greatest challenge facing humanity today. We recognize our role and responsibility in solving this pressing challenge because our value system requires us to address such matters of national and global concern. Meeting this obligation is a shared and common commitment where every member of the IIT Delhi community plays a role. ***The IIT Delhi Sustainability Policy document delineates the Institute-wide goals and priorities to build a healthy, inclusive, and sustainable campus that can be an example for the nation and the world.***

IIT Delhi is engaged in teaching and research on sustainability and employs many sustainable practices on campus. The Sustainability Policy brings these divergent efforts under one framework that enables synergistic interactions to maximize and scale up the outcomes. It also identifies gap areas where we need to do more work. We understand that the notion of sustainability encompasses environmental, social, and economic dimensions. Hence, while our policy and its implementation will be firmly grounded in our campus, we will also address the broader issues through our teaching, research, and partnerships with industry, government, and the civil society.

FOCUS AREAS

The IIT Delhi Sustainability Policy establishes goals and priorities in the following nine areas that are key to building a sustainable IIT Delhi. The objectives outlined in this section will be applied within the constraints of the vision, mission, and values of the Institute and in compliance with all applicable norms, regulations and laws.

1. Energy and emissions
2. Buildings and structures
3. Transportation
4. Water
5. Waste
6. Procurement
7. Funding and investment
8. Campus environment
9. Equity and inclusion

1. Energy and emissions

IIT Delhi will reduce its greenhouse gas emissions by increasing energy efficiency and clean energy to achieve Net Zero status by 2040 in Scope 1 and Scope 2 emissions.

i.   Energy Efficiency: Implement energy efficient technologies to reduce energy use intensity and emissions; conduct regular energy audits to monitor progress.
ii. Fuel switching: Migrate from oil and gas to electric or biofuels.
iii. Renewable electricity generation: Install on-campus renewable energy generation systems like solar panels wherever it is feasible.
iv. Renewable electricity purchasing: Ensure that all electricity purchased from the grid are from renewable sources by 2030.
v.   Emission inventory and Net Zero: Immediately conduct a thorough inventory of greenhouse gas emissions from campus and identify pathways that can enable the campus to achieve Net Zero status in Scope 1 and Scope 2 emissions by 2040.

2. Buildings and structures

IIT Delhi buildings and structures will ensure the health and well-being of the users while minimizing our environmental footprint.

i.   Health and well-being: Meet WHO indoor climate and air quality standards, have barrier-free accessibility, and all-weather connectivity between buildings.
ii. Green Certifications and Standards: Obtain the highest standards of green building certifications (e.g., LEED, GRIHA, or IGBC) for all new construction and major renovations.
iii. Reduced environmental Impacts: Incorporate energy-efficient designs, renewable energy, and certified sustainable materials in all construction.
iv. Increased resource efficiency: Optimize usage of water, energy, and building materials throughout the building lifecycle from construction to operation and decommissioning.
v.   Climate resilience: Design all new structures and modify existing structures to the extent possible to be resilient to the impacts of climate change including extreme weather events.
vi. Campus carrying capacity: Estimate the carrying capacity of all IIT Delhi campuses, update the existing campus masterplan and design masterplans of new campuses based on the carrying capacity to ensure that the needs of the community can be met.

3. Transportation

IIT Delhi will provide efficient, and accessible transportation options within and between campuses to reduce reliance on single-occupancy private vehicles running on fossil fuels.

i.   Public transport: Revamp the existing campus bus service by using vehicles running on clean fuels on an optimal schedule. Provide app-based on-demand services to users with special needs.

ii. Car-free zones: Designate high footfall areas as car-free zones with accessible infrastructure like wheelchair-friendly sidewalks and bicycle lanes.
iii. Commuter transport: Encourage clean private vehicles for off-campus residents by providing priority parking, charging stations, and other facilities.
iv. Official vehicles: Ensure all new passenger vehicles acquired are driven by clean fuels. Prioritize clean fuel vehicles when hiring for official activities.
v. Traffic safety: Provide traffic signs across the campus, enforce traffic rules and increase awareness about traffic safety.

4. Water

IIT Delhi will sustainably manage its water resources to become Net Zero in water use by 2040.

i. Water use efficiency: Implement water-saving technologies including water-efficient faucets and fittings, replace all once-through cooling with recirculated cooling systems, install low-waste water purification systems.
ii. Stormwater management: Harvest rainwater for non-potable applications, mandate porous concrete in all new constructions for groundwater recharge.
iii. Wastewater treatment and reuse: Upgrade water treatment facilities, mandate the usage of only grey water for construction, irrigation, external cleaning, and flushing.
iv. Monitoring and management: Immediately conduct a water audit and establish a water use monitoring program.

5. Waste management

IIT Delhi will follow the principles of reduce, reuse, and recycle to achieve zero waste status by 2040.

i. Digital campus: Eliminate usage of paper in all official business and switch to digital modes of communication and documentation
ii. Packaging foam: Eliminate the use of packaging foam except for sensitive laboratory and medical equipment.
iii. Single-use items: Prohibit single-use plastic bags, disposable foodware, and plastic beverage bottles. Replace these with reuseable or locally compostable alternatives.
iv. Waste recycling: Enable waste segregation at source throughout the campus
v. Solid waste: Enhance the biogas generation and composting program to reduce the amount of solid waste reaching the landfill to zero from the current 50%.
vi. Construction waste: Recycle all construction waste within the campus in new constructions and major renovations.

6. Procurement

IIT Delhi will purchase product and services that serve the sustainability goals of the campus and also help create a sustainable value chain

i.   Environmental footprint: Develop benchmarks and assess the environmental footprints of commonly purchased products and services using Life Cycle Analysis or other standardized approaches.
ii. Purchasing norms: Explore possible ways of sustainable purchasing within existing norms and work with relevant agencies to amend the norms to facilitate sustainable purchasing.
iii. Purchasing procedures: Simplify purchasing procedures and increase digitization to enhance transparency and make it easy for adopting new sustainable purchasing rules.
iv. Vendor support: Educate vendors on sustainability and help them increase their offerings of sustainable products and services.

7. Funding and investment

IIT Delhi will seek external funding and investment opportunities that leverages our strengths in teaching and research and align with our vision, mission, and values

i.   Revenue from clean tech: Strengthen the ecosystem for generating financial returns from clean technologies developed at IIT Delhi
ii. Climate Fund: Create a Climate Fund to which direct philanthropic donations can be made to support climate and sustainability initiatives.
iii. Responsible investing: Ensure that the IIT Delhi Endowment Fund does not invest in enterprises whose work are in direct and serious contradiction of our values on sustainability.

8. Campus environment

IIT Delhi will ensure a high quality of life for the campus residents and wellbeing and resilience of the natural environment.

i.   Safe campus: Make the campus a safe space that is free of crime and health hazards and develop infrastructure to protect residents from natural and anthropogenic hazards.
ii. Livable campus: Make the campus accessible to all and provide basic amenities including clean air and water and recreational facilities to all residents.
iii. Natural habitats: Preserve and enhance green spaces on campus, rejuvenate the water bodies including the two endangered nullahs to sustain local wildlife. Take steps to eliminate human-animal conflicts that are common in dense urban landscapes.

9. Equity and inclusion

IT Delhi will use collaborative and inclusive processes to drive its sustainability initiatives and ensures that the outcomes benefit every member of the campus community.

i.   Inclusive governance: Include representatives from all strata of the campus in designing and monitoring sustainability projects.
ii. Equitable outcomes: Prioritize projects that impact a broad spectrum of the community instead of going for low hanging fruits that benefit only a small subsection of the campus.
iii. Needs of outsourced staff: Ensure that the needs of the outsourced staff are met as they are the most vulnerable members of the campus and perform the most hazardous tasks.

CROSSCUTTING CHALLENGES AND OPPORTUNITIES

1. Financial constraints: Sustainability initiatives can be expensive. A Life Cycle Cost Analysis for projects to show long-term savings across different sectors can justify higher upfront costs. This will help demonstrate positive return on investment over the operational life of the project. Funding sources such as government incentives, green bonds, and grants for sustainable construction should be actively pursued to offset initial capital costs.

2. Space constraints: IIT Delhi is facing a severe space crunch where space for essential activities is hard to find let alone new sustainability initiatives. Hence, innovative solutions are needed. For example, dedicated bicycle lanes to reduce emissions and promote a healthy lifestyle will require a complete rethink of our transportation system. We must develop an action plan for sustainable space usage that includes all IIT Delhi campuses so that we can continue to grow to serve our mission.

3. Scale constraints: Operations at IIT Delhi are highly fragmented that often lead to unsustainable practices and pose considerable challenges in implementing a sustainability policy. For example, purchasing common items like desktop computers separately for different academic units increases costs, paperwork, packaging waste, and SCOPE 3 emissions. We must find ways to consolidate and harmonize operations across the institute to solve this problem.

4. Data gap: Data required for designing sustainability initiatives often do not exist. Even if they do, most are fragmented and archived in archaic forms like scanned pdfs in filing cabinets of different offices. An Institute-wide concerted effort must be taken to collect, compile, archive and disseminate the data to whoever needs it.

5. Technology and expertise gap: New technologies and expertise will be required to make our campus sustainable. IIT Delhi perfectly pointed to address this challenge as research and

education is our core mission. The Institute should consider measures to further accelerate innovation in the field of sustainability.

6. Knowledge and skill gap: Limited expertise and awareness in sustainable practices within the planning, construction, and maintenance teams can hinder effective implementation. Hence, the staff must be given training on principles of sustainability through workshops and their learning must be assessed through standardized tests.

7. Resistance to Change: There may be resistance from stakeholders accustomed to existing methods and skeptical of the benefits of sustainable practices.

8. External factors: IIT Delhi campus does not and cannot exist as an island. We are affected by external factors that are beyond our proximate control. Hence, it is imperative to work with stakeholders outside the campus to generate outcomes that helps us achieve our sustainability goals as well as share knowledge and experience to help others.

9. Regulatory and Policy Barriers: Inconsistent or unclear regulations related to sustainable construction practices, building codes, and certifications can create challenges in aligning with green standards. We must work collaboratively with relevant agencies to improve the regulatory framework.

EDUCATION AND COMMUNITY

1. Academic programs: Sustainability should be a mandatory component of all academic programs. The campus can serve as a living laboratory where academic and operational activities are combined to help hands-on learning on sustainability issues.

2. Student organizations: Encourage students clubs and other student-led initiatives on sustainability.

3. Information Portal: An online portal should be set up for documents and data regarding sustainability that is accessible to all stakeholders.

4. Outreach: Showcase sustainability success stories through social media and science-based art installations across campus.

5. Community interactions: Bring the students, faculty members, staff, start-ups, campus residents and people of the neighboring localities for annual sustainability festivals.

IMPLEMENTATION, MONITORING, AND COMPLIANCE

Implementation

1. A sustainable campus will require an all hands on deck approach where every IIT Delhi unit must play a role. An Office of Sustainability will be created with dedicated staff under the aegis of the Dean (Planning) to coordinate campus-wide efforts to implement this policy. \

2. A sustainable campus is an urgent need. The Office of Sustainability will set up a task force with members drawn from the campus community to design a Sustainable Campus Action Plan within three months of its inception. This plan will prioritise sustainability actions, set quantifiable goals and timelines to implement the policies outlined in the IIT Delhi Sustainability Policy.

3. The sustainability actions will be executed by different units of IIT Delhi as per their mandates.

Monitoring

1. A system for continuous monitoring and reporting on the performance of sustainability initiatives will be established by the Office of Sustainability ensuring that they meet targets and adapt to changing needs.

2. The performance reports will be made available to the campus community on the dedicated sustainability information portal. Periodic open houses will be conducted where community members can share their views on the progress of sustainability actions.

Compliance

A system of incentives and penalties will be developed by the Office of Sustainability to encourage sustainable behaviours and compliance of sustainability regulations.

About the authors

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