



**AMITY**  
UNIVERSITY  
— GURUGRAM —

## REPORT ON **SUSTAINABLE DEVELOPMENT GOAL**



**SDG 7:**  
**Year 2022-23**





# SUMMARY

The SDG 7: Clean and Affordable Energy report provides an overview of the progress made in energy access, efficiency, renewable energy technology adaptation, promotion of RE through teaching and research, promoting sustainable research programs and international collaboration to advance SDG 7 at Amity University Haryana. It includes updated statistics for each indicator, highlighting the policy measures implemented in priority areas and actions taken to achieve the SDG goals. The implementation of SDG 7 initiatives is central to the university's mission. It began with transforming the campus into a clean and green environment, earning recognition as India's first university and Asia's second to receive the LEED Platinum Certificate from the US Green Building Council. Faculty and students actively engage in initiatives to promote sustainability and foster an environmentally conscious community through teaching, events, projects, and collaborative research. The university is contributing to SDG 7 through the following initiatives:

- Conducting research and educational programs focused on clean energy practices.
- Implementing green campus initiatives that include measuring energy waste and developing mitigation plans, as well as adopting energy-efficient technologies.
- Supporting the Government of India in the implementation of renewable energy policies.
- Incorporating energy efficiency measures into the university's policy framework.
- Promoting energy conservation and efficiency through outreach programs for local and regional communities.





## ENERGY EFFICIENT BUILDINGS

Amity University Haryana (AUH) is located in the scenic 110-acre Amity Education Valley, near Gurgaon, one of India's largest corporate hubs. The university's building has achieved LEED Platinum accreditation, the highest rating for green buildings, due to its innovative design, strategic location, water efficiency, energy and atmosphere considerations, sustainable site practices, indoor environmental quality, and material resources. It is the first university building in India and the second in Asia to receive this distinction in the operation and maintenance category.

The university building features a series of sunken courts that help regulate heat in both summer and winter, thereby minimizing air conditioning energy consumption. Each building is designed with



multiple windows and glass facades to enhance daylight utilization, while the roofs are coated with reflective paint to decrease heat absorption and lower the overall heat load. The architectural design, including ramps and connectors between buildings, reduces reliance on elevators and electrical lighting.

## CREATING AWARENESS THROUGH EDUCATION: UG, PG & Ph D PROGRAMS

Education is essential for achieving Sustainable Development Goals (SDGs). When individuals are knowledgeable about technology, they can move away from inefficient energy sources and adopt clean energy solutions for their needs. To prepare young adults for the adoption of renewable and sustainable energy practices both on and off the AUH campus, Amity University Haryana offers undergraduate and postgraduate courses in this field, including M. Tech in Solar and Alternate Energy, M.Sc. in Renewable Energy, Bachelor of Architecture, Bachelor of Planning, and Master of Planning. The program also includes energy auditing and risk assessment for renewable energy projects, allowing students to conduct energy audits for buildings and industries. An elective course, Renewable Energy Track, is available to all undergraduate students across various programs to raise awareness about the technology. Furthermore, Amity University has partnered with GBCI to train and educate students in response to the growing demand for green building professionals by launching the LEED Lab educational module. LEED Lab is a unique initiative that combines policy frameworks with classroom activities to achieve desired outcomes in the realm of sustainable built environments.

Amity University Haryana hosts research scholars from India and abroad who are working in the field of sustainability like Sustainable production of biofuel, Analysing City Planning Alternatives for Inclusive Socio-Economic Sustainability in Urban India, Circular Economy (CE) and Emerging Development Trends in the Built Environment Case of Western Region, Maharashtra, India, Sustainable Ecotourism Model for Loktak Lake and Surrounding Villages in Manipur, India to name a few.



# ADAPTATION OF LOW CARBON TECHNOLOGY & SUSTAINABLE SITES

Amity University Haryana is making substantial strides in energy transition by reallocating investments from energy-intensive systems to clean energy solutions, fostering a low-carbon environment throughout its operations, including academic delivery, administration, and maintenance. To support this transition, the university follows its Sustainable Energy Policy and Building Commissioning Policy, which require a phased approach to attaining carbon neutrality.

The campus features various Sustainable Sites, including rainwater harvesting pits, a rain garden, and no-mow zones. The university has installed a 500kWp rooftop solar PV system that mitigates 14,145 tons of CO<sub>2</sub> emissions, which is equivalent to planting 22,632 teak trees over its lifetime. This solar plant operates without breakdowns and generates energy year-round, providing shade for the roofs and reducing the thermal load of the buildings. Additionally, a 185kWp ground-mounted system creates a habitat for wildlife, including peacocks, small native birds, butterflies, bees, porcupines, snakes, and blue bucks. This system is also utilized to grow plants under the panels, training community farmers and research scholars from India and abroad on the dual use of land for agricultural purposes and solar power generation (agrivoltaics).



**Adaptation of Low Carbon Lighting:** The university operates a dedicated 33 kV independent feeder that is highly stable and experiences minimal breakdowns, reducing reliance on diesel generators and helping control carbon emissions. Regular emission analyses and monitoring of the diesel generators are conducted to maintain low pollution levels. There is also a plan to replace 240 conventional 400-watt halogen lamps with 200-watt LED floodlights that provide the same level of illumination. This replacement will occur in four phases, with 60 lights replaced in each phase. After the first phase, which includes the installation of 50 LED floodlights, an estimated savings of 195,750 has been projected. Additionally, a biogas plant on the AUH farm meets the energy needs of the dairy.





Achieving **Carbon Free Transportation facility** is one of the main targets of AUH. The university promotes the use of public transport for daily commuting among day scholars, faculty, and staff. A fleet of buses running on CNG is maintained to help minimize the carbon footprint. The university ensures that all vehicles entering the university must have a "Pollution Under Control" certificate. Additionally, the campus strictly adheres to a "No Smoking Zone" policy.



### **Advocating Environment Consciousness:**

The plantation drive is an essential aspect of the AUH system, integrated into events from orientation to convocation. Students, faculty, parents, and staff are encouraged to plant a sapling and care for it during their time at AUH, fostering a sense of love and respect for the Earth. Currently, AUH boasts over a hundred varieties of native plants on campus, along with a herbal garden supported by the Ministry of AYUSH, which cultivates various medicinal plants and conducts programs to educate college and school children about their benefits.



<https://tennews.in/amity-university-haryanas-plantation-drive-advances-sustainable-development-environmental-awareness/>





## CLEAN ENERGY RESEARCH

Air quality is monitored for all major air pollutants under the SAFAR program at AUH jointly with IITM, Pune. It provides awareness about air quality among stakeholders of university. Apart from SAFAR, several other air quality parameters are also monitored jointly with NASA, USA.



Parameters
Particulate Matter (PM)
(i) PM <sub>10</sub> (Super-fine)
(ii) PM <sub>2.5</sub> (Fine)
(iii) PM <sub>10</sub> (Coarse)
(iv) SO <sub>2</sub>
(v) O <sub>3</sub>
(vi) NO <sub>x</sub>
(vii) NO
(viii) NO <sub>2</sub>
(ix) NH <sub>3</sub>
Volatile Organic Compounds (VOC)
(x) Benzene
(xi) Ethyl Benzene
(xii) Toluene
(xiii) Xylene
(xiv) m&p Xylene
(xv) CO
(xvi) CO <sub>2</sub>
Surface Meteorology
(xvii) Wind Speed
(xviii) Wind Direction
(xix) Temperature
(xx) Humidity
(xxi) Pressure and
(xxii) Rainfall

### Link for NASA\_Amity University Haryana Aeronet Agreement:

<chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.nasa.gov/wp-content/uploads/2024/01/house-approps-international-12.31.23.pdf?emrc=06ef9c>

The faculty members and students are involved in clean energy research which is funded by different Government & Non- Government Agencies viz. Development of Nanomaterials for High Density Application, Sustainable use of unconventional fibers of Indian Himalayas for Agro Textiles, Development of Novel metamaterials using nanoferrite composites for microwave absorber application, Metal Complexes of cyclic N-donor ligands for electro-/Photo-catalytic reduction of Carbon dioxide, Green-synthesized nanoparticles dispersed liquid crystals for display applications, Development of High-resolution future climate scenarios for the NCR region under climate change and urbanization and Integrated approach in science technology and skilling for sustainable future amounting to a funding of Rs 2,02,53,948. More than 35 patents are filed by faculty members during the period in the field of sustainability.



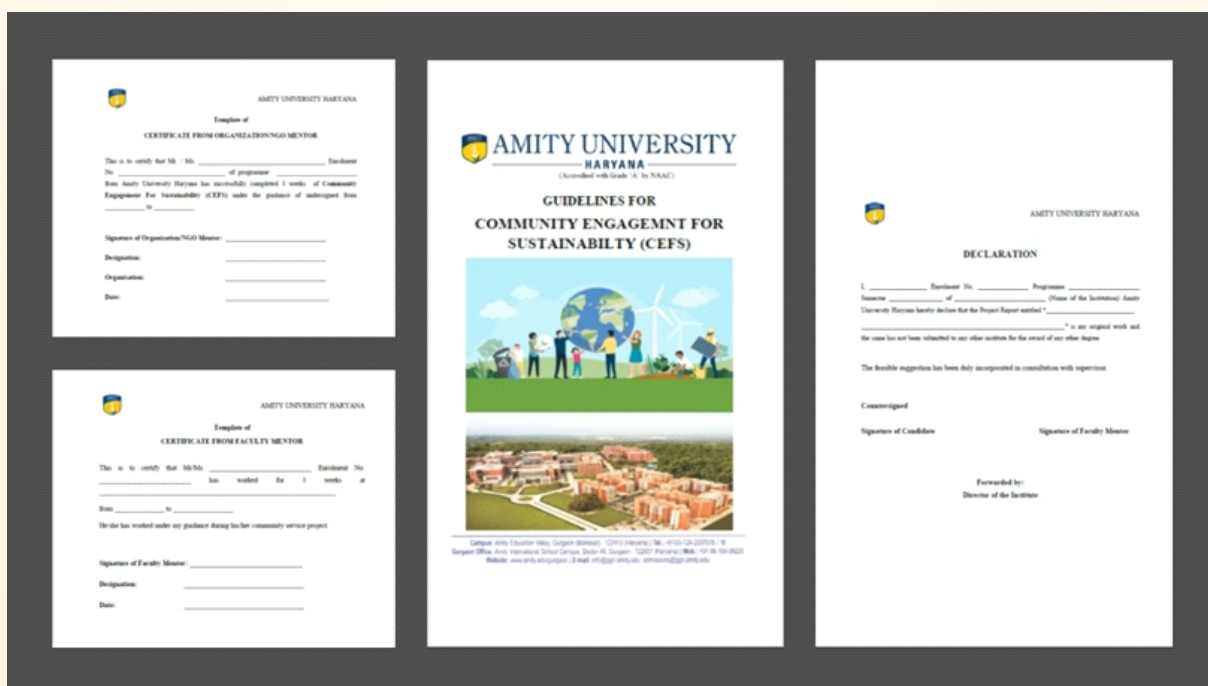
# POLICY SUPPORT & COMMUNITY OUTREACH

Amity University Haryana has been recognized as a Partnering Institution for Unnat Bharat Abhiyan, a flagship program of the Ministry of Education. As part of the UBA initiative, faculty, students, and staff conducted surveys in five selected villages, including a household survey using a structured questionnaire provided by IIT Delhi. Meetings with village heads (Sarpanch) have been held to foster relationships based on mutual respect and learning. The UBA team organized various awareness and training programs focused on the use and adaptation of renewable energy in the villages. A three-day solar training program was held at AUH, allowing community youth to join AUH students in the training. This initiative fostered a sense of belonging and camaraderie between the students and the community, encouraging mutual learning. The faculty and students of Department of Chemistry, Biochemistry and Forensic Science, ASAS, AUH conducted a week long Waste Management awareness program wherein students and faculty members conducted awareness program at Gwalior village to create awareness about managing waste especially plastic waste.



Community Outreach Programs

AUH recognizes its responsibility to the community in creating a sustainable learning environment that promotes mutual respect. In line with the National Education Policy 2020, AUH has launched a 2-credit Community Engagement for Sustainability course for undergraduate programs. As part of this initiative, students are required to join or volunteer with a registered NGO or community-based local administration, such as a Gram Panchayat, Anganwadi, or a Welfare Association/Corporate Social Responsibility program of any company, and complete three weeks of assigned work to earn the credit.







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