Report
on
UN SDG 13 - Climate Action

Introduction: Swami Vivekanand Subharti University, a premier institution of higher learning in India, has taken significant strides in aligning its campus and academic culture with the United Nations Sustainable Development Goal 13: Climate Action, which calls for urgent steps to combat climate change and its impacts. Climate change remains one of the most pressing global challenges of our era, caused primarily by rising greenhouse gas emissions from energy use, transport, deforestation, and waste mismanagement. Universities, as centers of learning and knowledge creation, bear the dual responsibility of not only educating future generations but also modeling sustainable practices that contribute to carbon neutrality and resilience. In this regard, has emerged as a pioneer in institutional climate action, adopting a multi-faceted approach that combines renewable energy, afforestation, sustainable transport, compulsory environmental education, and awareness campaigns. The university's initiatives are not limited to symbolic measures but reflect a deep, data-driven commitment to actual reduction in carbon emissions, ensuring that the campus becomes a living laboratory of sustainability. The integration of solar power generation, extensive plantations, the introduction of 45 electric vehicles, and widespread awareness programs, along with the compulsory teaching of Environmental Science across all courses, exemplify how an institution can localize SDG 13 into measurable, impactful outcomes that resonate globally.

University-wide Initiatives -
- Implements **solar power systems** across rooftops, laboratories, and hostels to reduce reliance on fossil fuels.
- Uses **LED lighting, energy-efficient appliances**, and **smart electrical systems** throughout the campus.
- Conducts regular **energy audits** to monitor consumption and identify efficiency improvements.
- Encourages **green transportation**, including bicycles and electric vehicles for students and staff.

- Operates a **Sewage Treatment Plant (STP)**; treated water is reused for irrigation and landscaping, reducing water stress.
- Implements **waste segregation, recycling, and composting** to minimize landfill contributions and methane emissions.
- Ensures sustainable disposal of biomedical, chemical and e-waste across university facilities.
- Regularly conducts **extensive tree plantation drives** and maintains green spaces to enhance carbon sequestration.
- Promotes **native plant species** to support biodiversity and ecosystem health.
- Maintains eco-friendly landscaping aligned with sustainable urban planning principles.
- Supports **climate change research** across Environmental Science, Engineering, and Science faculties.
- Encourages **student-led projects** on renewable energy, sustainable agriculture, and climate risk mitigation.
- Regularly conducts **climate modelling, pollution monitoring, and environmental impact studies** to inform campus and community practices.
- Organizes **climate awareness campaigns, workshops, and seminars** for students, faculty, staff, and local communities.
- Integrates **climate change modules into curricula** across faculties, especially Science, Engineering, and Management.
- Participates in global events like **Earth Day, Climate Week etc.**
- **NSS and NCC units** conduct village-level climate awareness drives, tree planting, and sustainable agriculture programs.
- Faculty and students engage in **public talks, street plays, and community workshops** on climate mitigation and adaptation.

Initiatives taken by the university: One of the most impactful measures taken by has been the installation of solar energy systems with a generation capacity of approximately 2097 kWh**.** In India, much of the grid electricity comes from coal-based thermal power plants, with an average emission factor of about 0.82 kg of CO_2 per kWh of electricity generated**.** This means that for every unit of conventional electricity consumed, significant amounts of greenhouse gases are released into the atmosphere. By generating 2097 kWh of clean solar energy, effectively offsets **around** 1715 kilograms of CO_2 emissions per month**,** which adds up to over 20.5 metric tons of CO_2 avoided annually**.** This reduction is equivalent to the amount of carbon absorbed annually by nearly 950 mature trees, highlighting the substantial climate benefit of this renewable energy initiative. Beyond direct emission savings, the solar installations serve as educational resources for students, offering practical insights into renewable technologies and encouraging a culture of energy efficiency. By reducing dependency on fossil fuels and integrating renewable energy into campus operations, not only lowers its carbon footprint but also contributes to India's broader goals under the Paris Agreement to increase renewable energy adoption and reduce emissions intensity. The financial savings from reduced electricity bills further make this project

economically sustainable, reinforcing the principle that climate action can bring both environmental and economic dividends.

Equally impressive is University's commitment to afforestation through the plantation of more than 19,900 trees and plants across the campus, transforming the university into a vibrant green hub within Meerut city. Trees are often referred to as the "lungs of the planet" because of their ability to absorb carbon dioxide during photosynthesis and release oxygen. On average, a mature tree can absorb approximately 21 kilograms of CO_2 per year. Considering this estimate, the 19,900 plantations within the university collectively absorb over 417 metric tons of CO_2 annually, providing a massive natural carbon sink that offsets emissions not only from campus activities but also from the surrounding region. The trees also offer multiple co-benefits: they reduce local air pollution, moderate urban heat island effects by lowering ambient temperatures, recharge groundwater through improved soil structure, and provide habitats for birds, insects, and small animals, thereby enhancing biodiversity. The plantation drives at the university are often carried out with active participation from students and faculty, which fosters environmental stewardship and ensures that the act of planting is coupled with the responsibility of nurturing. Over the long term, as these trees grow, their carbon sequestration potential will increase even further, amplifying the climate benefits. Thus, the plantation program represents one of the university's most significant contributions to SDG 13, combining mitigation, adaptation, and ecosystem restoration in a single initiative.

Another notable step taken by to reduce its environmental impact is the adoption of 45 electric vehicles (E-vehicles) within the campus for internal transport. The transportation sector is a major contributor to greenhouse gas emissions, particularly through the use of petrol and diesel vehicles. On average, a small petrol car emits around 120 grams of CO_2 per kilometer. Assuming that a conventional campus shuttle or vehicle travels approximately 10,000 kilometers per year, each such vehicle would emit about 1.2 metric tons of CO_2 annually. By replacing 45 conventional vehicles with electric ones, the university has potentially avoided over 54 metric tons of CO_2 emissions each year. This figure becomes even more significant when considering that the university's solar infrastructure can be used to charge these vehicles, making the transportation system not only emission-free but also powered by renewable energy. Beyond emissions reduction, electric vehicles reduce noise and air pollution, making the campus cleaner and healthier for students and staff. They also serve as live demonstrations of sustainable mobility solutions, raising awareness and normalizing the use of green transportation among young learners. This initiative reflects a progressive vision that goes beyond immediate carbon savings, as it prepares students to embrace the transition to electric mobility in their personal and professional lives.

In addition to infrastructure and technology-based measures, the university recognizes that awareness generation and education are vital for sustained climate action. The university actively organizes and celebrates international and national environmental observances such as World Environment Day, World Ozone Day, International Biodiversity Day, and other global initiatives related to sustainability. These events are marked by a wide range of activities, including seminars,

expert lectures, workshops, poster competitions, rallies, and student-led campaigns. The primary aim of these programs is to cultivate climate literacy and encourage students to see themselves as active participants in the fight against climate change. For example, celebrating World Ozone Day provides an opportunity to discuss the importance of protecting the ozone layer and reducing the use of ozone-depleting substances, while World Environment Day brings attention to specific global themes such as air pollution, biodiversity conservation, or ecosystem restoration. By participating in these events, students gain knowledge, develop creative solutions, and adopt sustainable practices in their daily lives. Awareness activities also extend to the surrounding communities through outreach programs, ensuring that the university's impact on climate action is not confined to the campus but also benefits the larger society. Through consistent engagement, the university ensures that climate awareness becomes a cultural value and not just a one-time activity, thereby ensuring long-term behavioral change.

Perhaps the most far-reaching initiative of the university in terms of long-term impact is its decision to make Environmental Science a compulsory subject across all disciplines. This academic requirement ensures that every student, whether they are pursuing medicine, engineering, management, law, humanities, or any other course, gains foundational knowledge about climate change, biodiversity, pollution control, sustainable development, and environmental management. Education is the cornerstone of sustainable development, as it equips individuals with the knowledge and values necessary to make informed decisions and adopt environmentally responsible lifestyles. By mandating environmental education, the university ensures that thousands of graduates each year leave the university not only with professional skills but also with climate literacy. Over time, these graduates will carry their awareness into their careers, families, and communities, multiplying the impact manifold. This initiative is directly aligned with SDG 13's target of improving education, awareness, and institutional capacity on climate change mitigation, adaptation, and early warning. In this way, the university is not just addressing climate action at the level of infrastructure but also embedding it in the intellectual and moral development of its students, ensuring that the values of sustainability become part of their identity as responsible global citizens.

The cumulative carbon benefits of the university's initiatives are profound. The solar installations save over 20.5 tons of CO_2 annually, the plantations absorb more than 417 tons of CO_2 every year, and the electric vehicles reduce emissions by at least 54 tons annually, adding up to nearly 492 metric tons of CO_2 reduction or offset each year.

Beyond these measurable outcomes, the intangible impacts of awareness programs and compulsory environmental education further amplify the university's contribution to climate action by fostering a culture of sustainability that will influence future generations. These figures demonstrate that the university's initiatives are not symbolic but quantitatively significant, reflecting a serious institutional commitment to combating climate change.

The Swami Vivekanand Subharti University has firmly established itself as a model of institutional climate responsibility through its multi-pronged approach to SDG 13: Climate Action. By

investing in renewable energy, expanding green cover, promoting sustainable transport, organizing awareness campaigns, and mandating environmental education, the university has created a holistic framework that addresses both mitigation and adaptation. The quantifiable reduction of nearly 492 tons of CO_2 annually demonstrates the tangible impact of these measures, while the intangible benefits of education and awareness ensure long-term continuity and expansion of climate action beyond the campus. university's initiatives show that climate action is not limited to large-scale government policies or international treaties but can and must be localized in educational institutions, where young minds are shaped, habits are formed, and values are nurtured. The university has proven that it is possible to combine academic excellence with environmental responsibility, creating a campus that is not only a place of learning but also a living demonstration of sustainability. In doing so, university not only contributes to the fight against climate change but also prepares a generation of climate-conscious leaders who will continue this mission in society at large. Through its commitment to SDG 13, the university embodies the principle that local actions can create global impact, and that the journey toward a sustainable future begins with conscious choices in our own surroundings.

The objectives of Swami Vivekanand Subharti University, in alignment with the United Nations Sustainable Development Goals (UNSDGs), along with the University's contributions towards achieving these objectives, are outlined below:

UNSDGs and University's Objective	University's Contribution Towards Achieving its Objectives
SDG 13: Climate Action **University Objective:** **To reduce the university's carbon footprint through energy efficiency and the use of clean energy, and to educate the campus community on the impacts of climate change and necessary adaptation/mitigation strategies.**	**Faculty of Medicine -** • Raises awareness of **climate-related health risks**, such as heat stress, vector-borne diseases, and pollution-related illnesses. • Organizes **community health camps** integrating climate-sensitive health practices. **Faculty of Dental Sciences -** • Implements **eco-friendly dental practices** to reduce chemical use and energy consumption. **Faculty of Nursing -** • Trains students in **climate-resilient healthcare practices** and **disaster preparedness**. **Faculty of Allied Health Sciences & AYUSH -** • Promotes **environmental wellness**, sustainable lifestyles, and eco-conscious therapeutic practices. **Faculty of Engineering & Technology -** • Leads research on **renewable energy, energy-efficient systems, and smart infrastructure**. • Projects include **solar optimization, IoT-based energy monitoring, and waste-to-energy systems**. **Faculty of Science -** • Conducts **climate modelling, environmental monitoring, and carbon sequestration studies**. • Engages students in **air quality assessments, water quality monitoring, and climate resilience projects**. **Faculty of Fine Arts -** • Organizes **eco-awareness art projects, exhibitions, and creative campaigns** to communicate climate action messages. **Faculty of Management and Commerce -**

	• **Educates students on** sustainable business models, green entrepreneurship, and climate risk management**.** **College of Hotel Management -** • Implements **sustainable hospitality practices**, including energy and water efficiency, and waste minimization. **Faculty of Arts and Social Sciences -** • Produces **campaigns, documentaries, and media content** to raise climate awareness. • Conducts research and seminars on **climate policy, environmental governance, and community resilience**. • Trains students and communities on **sustainable household practices, resource efficiency, and eco-friendly living**. • Provides **resources on climate change, sustainable development, and environmental management**. • Promotes **ethical responsibility, mindfulness, and eco-conscious values** for environmental conservation**.** **University-wide Initiatives -** • Implements solar power systems across rooftops, laboratories, and hostels to reduce reliance on fossil fuels. • Uses LED lighting, energy-efficient appliances, and smart electrical systems throughout the campus. • Conducts regular energy audits to monitor consumption and identify efficiency improvements. • Encourages green transportation, including bicycles and electric vehicles for students and staff. • Operates a Sewage Treatment Plant (STP); treated water is reused for irrigation and landscaping, reducing water stress. • Implements waste segregation, recycling, and composting to minimize landfill contributions and methane emissions. • Ensures sustainable disposal of biomedical, chemical and e-waste across university facilities. • Regularly conducts extensive tree plantation drives and maintains green spaces to enhance carbon sequestration. • Promotes native plant species to support biodiversity and ecosystem health. • Maintains eco-friendly landscaping aligned with sustainable urban planning principles.

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