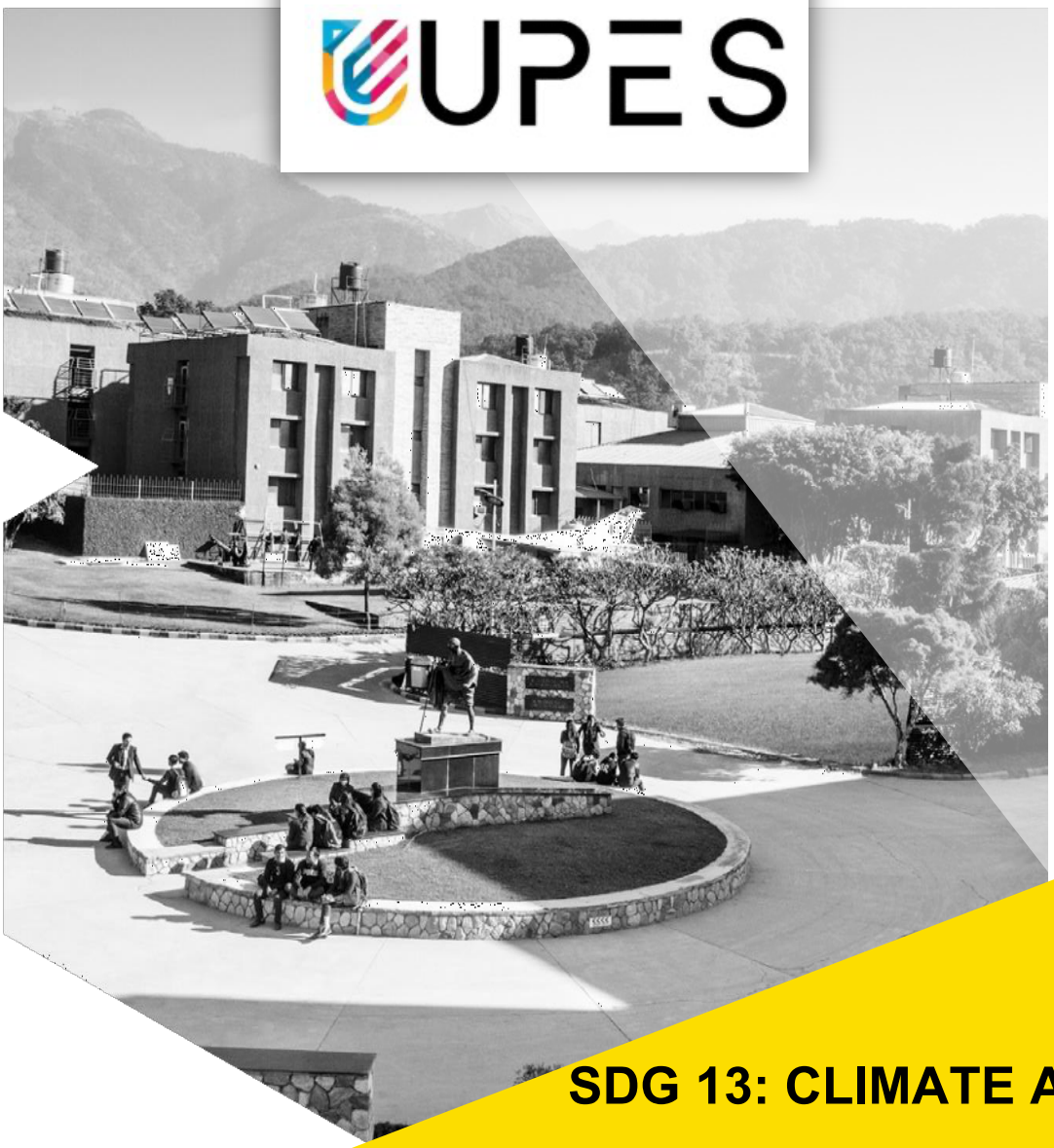
SUSTAINABLE DEVELOPMENT GOALS

UPES



SDG 13: CLIMATE ACTION

2025

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SDG 13: CLIMATE ACTION

UPES University – SDG 13 Climate Action Sustainability Report (2020–2025)

The University of Petroleum and Energy Studies (UPES) in Dehradun, India, is committed to **Sustainable Development Goal 13: Climate Action**, integrating climate change mitigation and adaptation into its operations, academics, research, and community outreach. This report highlights UPES's comprehensive initiatives from 2020 onward, substantiated by verifiable evidence, across five key areas: **(1)** carbon footprint reduction on campus, **(2)** climate change education and outreach, **(3)** climate-focused research and innovation, **(4)** disaster risk management and resilience strategies, and **(5)** partnerships for climate action. These efforts demonstrate UPES's holistic approach to combating climate change and its alignment with the Times Higher Education Impact Rankings criteria for SDG 13. Clear institutional policies, student and faculty engagement, and multi-sector collaborations underscore UPES's role as a leader in fostering sustainable and resilient futures.

1. Carbon Footprint Reduction Initiatives

UPES has implemented several initiatives to reduce its carbon footprint by embracing renewable energy, enhancing energy efficiency, promoting low-carbon transportation, and adopting sustainable infrastructure standards on campus:

Renewable Energy Deployment

The university has invested in on-campus renewable energy systems to cut reliance on fossil fuels. A **100 kW solar photovoltaic power plant** now supplies about *8%* of UPES's total electricity consumption [1]. This solar installation, partially funded by India's Ministry of New and Renewable Energy, includes battery storage to provide hybrid power backup and has also become a training facility for students [1]. In addition, UPES utilizes **solar thermal systems** – with **61,500 liters** of solar water heating capacity – to meet hot water needs sustainably [2]. The campus continues to pilot innovative solar solutions: researchers have even developed a *"solar tree"* prototype (a tree-shaped solar panel structure) to generate clean energy and serve as a demonstration of renewable technology [1]. These efforts align with India's National Solar Mission and showcase UPES's contribution to expanding solar energy use on campus [3].

Energy Efficiency Upgrades

UPES has undertaken extensive energy efficiency retrofits to minimize wasteful power usage. **All conventional lighting** across the campus has been replaced with LED and energy-efficient fixtures [2]. As a result, lighting power consumption has dropped significantly, contributing to lower carbon emissions. The university also maintains a *Unity Power Factor* at its electrical substations to eliminate

transmission losses [2], ensuring that electricity is used with maximum efficiency. Building management systems optimize air-conditioning and equipment use, and an energy monitoring protocol is in place to track savings. These measures collectively reduce campus energy demand and associated greenhouse gas emissions.

Low-Carbon Campus Transportation

UPES encourages eco-friendly transportation solutions to curb vehicle emissions. A team of UPES mechanical engineering students designed and built **"U-BAHN," an electric shuttle cart** for on-campus mobility [1]. This battery-powered vehicle (85Ah battery with brushless motor and IoT tracking) serves as a green alternative to fossil-fueled campus carts, demonstrating the university's commitment to **zero-emission transport**. The prototype U-BAHN, costing only ₹2 lakh, can ferry passengers around campus without any direct emissions [1]. In another student-led project, a **motorized e-bicycle** was developed, capable of speeds up to ~30–35 km/h with a range of 70–80 km on a charge [1]. This *integrated electric bicycle* can be solar-charged and provides a healthy, low-carbon option for short-distance travel. Through such innovations, UPES not only reduces its transport footprint but also inculcates sustainable mobility practices among students and staff.

Sustainable Infrastructure and Waste Reduction

UPES integrates sustainability into campus facilities to further lower its carbon impact. The university operates a **pilot Integrated Wastewater Reclamation Plant** that uses microalgae to treat sewage water [4]. This novel bio-treatment process not only purifies water for reuse but also yields valuable **biofuels** – producing bio-oil and bio-gas – and creates bio-manure as a byproduct [4]. The bio-gas can substitute for fossil fuels in certain applications, effectively cutting carbon emissions, while the bio-manure supports landscaping and carbon sequestration in soils. Additionally, UPES runs regular **tree plantation drives** on campus and in surrounding communities [4]. Hundreds of saplings have been planted as part of these drives, enhancing green cover and absorbing CO_2 over time. The university also undertakes frequent **cleanliness drives** (through *Project Swachhta*) to manage waste and prevent open burning, indirectly contributing to emissions reduction [5]. All new campus buildings are designed with energy-efficient materials and natural ventilation principles; one student design project even focused on a climate-responsive hostel facade leveraging passive cooling and solar shading [6]. Through these comprehensive measures, UPES consistently lowers its carbon footprint and models climate-conscious campus operations.

2. Climate Change Education, Awareness and Student Engagement

Education and awareness form the cornerstone of UPES's climate action efforts. The university integrates climate change and sustainability into curricula, co-curricular activities, and campus life, ensuring that students and staff are informed and engaged in climate solutions:

Climate and Sustainability in Curriculum

UPES has developed academic programs and coursework specifically targeting renewable energy and sustainability skills, thereby preparing graduates to tackle climate challenges. Notably, the university offers specialized degrees such as **M.Tech. in Renewable Energy**, **B.Tech. in Clean Energy Technologies**, **MBA (Power Management) – Transition to Sustainability**, and **BBA in Green Energy & Sustainability** [1]. Through these programs, students gain deep expertise in areas like solar engineering, wind energy, energy storage, and climate policy. For example, the B.Tech in Clean Energy Technologies program trains students in solar thermal engineering, advanced materials for energy, and solar power technology, among other subjects [7]. Across other disciplines, climate change topics are increasingly woven into the curriculum – from environmental law courses in the School of Law to sustainable design principles in the School of Design – reflecting UPES's commitment to **integrating climate education** for all students [8]. This multidisciplinary educational approach raises awareness about climate issues and empowers students with the knowledge to drive mitigation and adaptation efforts.

Workshops, Courses and Certifications

Beyond formal degrees, UPES facilitates numerous workshops, certification courses, and training modules on climate action and environment. The Department of Health, Safety & Environment (HSE) offers courses on environmental auditing, climate risk assessment, and disaster management (including certifications like NEBOSH for safety and environment) [9]. **Guest lectures and webinars** by climate scientists and sustainability professionals are regularly organized to supplement classroom learning. For instance, UPES's School for Life has conducted open-elective courses on sustainable development and climate justice, enhancing students' understanding of global climate governance. Such educational initiatives ensure that UPES graduates are not only academically proficient but also environmentally conscious citizens.

Student-Led Awareness Campaigns

UPES's students actively spearhead climate awareness and sustainability campaigns. A prominent example is the *"Green Up" club*, a student-led club under the HSE Department, which organizes annual events around environmental observances. Every year, Green Up hosts **"ATMOSFAIR"**, a multi-event program to celebrate the UN's World Ozone Day (16th September) and raise awareness on climate change. In **2020 (ATMOSFAIR 2K20)**, UPES held a national webinar and panel discussion on *"Climate Change, Risk Resilience & Livelihood Development in the Contemporary World,"* inaugurated by renowned environmentalist **Dr. Anil P. Joshi** (Padma Bhushan awardee) as Chief Guest [10]. The online panel featured experts including Dr. R.B.S. Rawat (Govt. of India Biodiversity Committee) and scientists from climate research institutes, who shared insights on rising global temperatures, extreme weather, and climate-health impacts [10]. Despite the pandemic forcing a virtual format, student participation was enthusiastic, and the event marked the **7th edition** of ATMOSFAIR at UPES [10]. Similarly, Green Up has conducted webinars on air pollution, climate science, and ozone layer protection in subsequent years, often in collaboration with faculty and external experts. These student-driven events inculcate a culture of climate dialogue on campus and encourage peer learning. Other student clubs and societies – such as the Energy Management Club and the Nature & Wildlife Club – organize quizzes, model UN conferences on climate policy, and eco-volunteering drives, further broadening awareness.

Campus Events and Sustainability Fairs

UPES hosts high-profile events to showcase sustainable solutions and involve the broader community. In **October 2022**, the School of Engineering's *Sustainability Cluster* organized a four-day **"Sustainability Fair 2022"** on campus [1]. The fair, themed *"Safe, Resilient, and Sustainable Cities & Communities,"* was inaugurated by the Hon'ble Governor of Uttarakhand, Lt. Gen. Gurmit Singh, who **commended UPES for its contributions to a sustainable economy** and its commitment to the SDGs [2]. Over the course of the fair, students and faculty presented research projects on renewable energy, waste management, and climate resilience, and participated in competitions to design eco-friendly innovations. The event also included industry-academia panel discussions and an international symposium on urban sustainability, attracting participants from multiple countries [1]. Support and funding for the fair came from partners like DST-SERB (a government science research board) and Punjab National Bank, illustrating a multi-stakeholder engagement in UPES's educational outreach [1]. Such events provide a platform for experiential learning – students gain hands-on experience by developing models and interacting with experts, while the local public and other stakeholders are exposed to practical solutions for climate mitigation and adaptation. UPES plans to continue this tradition with **Sustainability Fair 3.0** in 2025, expanding its reach and impact [11].

Project-Based Learning and Community Outreach

UPES integrates project-based learning into curricula to solve real-world sustainability problems and sensitize students to climate action. For example, engineering and design students are encouraged to develop **eco-friendly products** as part of their coursework – one project involved creating **edible cutlery** (spoons and plates made of grains) as nutritious, biodegradable alternatives to single-use plastic utensils [4]. This innovative idea, which has significant potential to reduce plastic waste, emerged from an awareness campaign and has been prototyped by students on campus [2]. In another initiative, a trio of UPES design students (Team "Kalakrit") developed **zero-waste accessories and gifting solutions**, using biodegradable baked clay, recycled glass, and organic materials to create rakhi bracelets and home décor items [12]. Their products come with **plastic-free, zero-waste packaging**, and the project received mentorship from faculty to scale its impact [12]. These hands-on projects not only impart entrepreneurial skills but also spread awareness as students showcase their work in campus exhibitions and social media, inspiring their peers to adopt sustainable practices. Moreover, through NSS (National Service Scheme) units and the *"Project Swachhta"* CSR initiative, UPES students conduct **cleanliness and waste awareness drives** in neighboring areas of Dehradun [5]. They work alongside local residents to clean streets and public spaces, instilling the value of cleanliness and environmental stewardship in the community [5]. UPES also runs **"Project Vriksh"** under which volunteers have planted thousands of trees in the campus vicinity and hill regions of Uttarakhand, contributing to reforestation and spreading awareness about forest conservation. By blending education with action, UPES ensures that its students graduate as informed advocates for climate action and possess practical experience in implementing sustainability solutions.

3. Climate-Focused Research and Innovation

UPES leverages its strength in energy and technology domains to drive research, innovation, and academic contributions that address climate change, clean energy, and resilience. The university has established dedicated research centers and encourages faculty and students to pursue projects that generate new knowledge and solutions for a sustainable, low-carbon future:

Centre for Energy, Environment, and Sustainability Studies (CEESS)

UPES's School of Business hosts the **CEESS**, a think-tank and research center of excellence focused on interdisciplinary research in sustainability [8]. CEESS's mission is to inform policy and practice by examining the nexus of **energy, environment, economics, and climate change**. Its broad research themes include Renewable and non-renewable energy business, Sustainable Development, Environmental Economics, Climate Change Economics and Policy, Green Transportation & Supply Chains, Trade & Globalization impacts, and Public Policy & Governance [8]. By covering this spectrum, CEESS provides holistic analysis on how economic growth can align with environmental preservation. Researchers at CEESS undertake studies on topics such as carbon pricing strategies, renewable energy markets, and sustainable trade, often in partnership with government think-tanks and international collaborators [1]. A key function of CEESS is to produce evidence-based recommendations for policymakers – for instance, suggesting policy reforms to achieve India's climate targets while supporting economic self-reliance [8]. CEESS also actively disseminates research through workshops, seminars, conferences and publications, building a knowledge network with industry and ministries [1]. This center, established in the early 2020s, has already become a hub for **multidisciplinary climate research** at UPES, reflecting the university's commitment to scholarship that advances the SDGs.

RISE Centre for Sustainability & ESG

In September 2024, UPES launched a pioneering new initiative – the **RISE Centre (Research on Impact, Sustainability & ESG)** – in collaboration with Aspire Circle (a social impact network) and Mahindra University [13]. The RISE Centre is dedicated to **developing innovative solutions to pressing climate change challenges**, with an emphasis on achieving **carbon neutrality, net-zero transitions, and sustainable development** [13]. It serves as both a research incubator and an education platform to train current and future leaders in sustainability. The Centre's vision is to become a global leader in sustainability innovation, empowering professionals who can drive climate action in corporations, government, and society [13]. One flagship offering of RISE is an executive training program called the **ESG, Sustainability and Impact Specialist Program (ISP)**, jointly organized by UPES, Aspire, and Mahindra University [13]. This program (first held in late 2024) equipped mid- to senior-level professionals with skills to lead **net-zero and circular economy initiatives** in their organizations [13]. Through RISE, UPES faculty and students are engaged in cutting-edge projects such as developing climate-smart business models, assessing corporate carbon footprints, and innovating in sustainable finance. The Centre is also forming partnerships for funded research on clean technology and climate policy. UPES's Vice Chancellor, Dr. Ram Sharma, noted that RISE will *"drive impactful solutions for sustainability and ESG challenges, leading our efforts on climate change and sustainable development"*, underlining the university's strategic focus on climate-related innovation [13]. The establishment of RISE significantly bolsters UPES's research capacity on climate action and connects academia with industry best practices in ESG (Environmental, Social, Governance) performance.

Renewable Energy and Clean Tech Innovations

Research in renewable energy technology is a forte of UPES, given its heritage in petroleum and energy studies. In recent years, the university's faculty and students have shifted focus towards **clean energy innovations** that mitigate climate change. UPES researchers have developed and installed a **self-powering Solar Tree** on campus – a structure that optimizes limited space to generate solar power and serve as a live test-bed for solar panels under various conditions [1]. Alongside, a functional **electric bicycle model** was created as part of a research project on green transportation [1]. These prototypes contribute to the university's living laboratory approach, where campus infrastructure doubles as research experiments. Another significant achievement was UPES becoming the **first private university in India to lead a DRDO-funded defense research project** in 2025, which, while defense-oriented, has strong climate resilience implications [14]. In collaboration with IIT Roorkee and NIT Rourkela, UPES is developing **next-generation Battery Energy Storage Systems for microgrids in extreme high-altitude climates** [14]. The project addresses the challenge of battery performance in severe cold (sub –30 °C conditions, like Siachen and Ladakh), aiming to make batteries operable at –40 °C without capacity loss [14]. By designing advanced thermal management and smart inverters for these batteries, the research will improve the reliability of energy storage in harsh, climate-stressed environments [14]. Outcomes of this work could benefit not only military outposts but also civilian renewable energy systems in cold mountainous regions, thus bridging defense innovation with climate adaptation. UPES's successful leadership in this project (despite private institutions rarely getting DRDO grants) highlights its growing research reputation [14]. Furthermore, UPES faculty regularly publish in areas like climate modeling, energy policy, and environmental science. The university's research portal lists projects on topics such as *solar photovoltaics for rural electrification, carbon capture techniques, biofuel development from algae (connected to the wastewater pilot), and climate risk assessment for infrastructure*. By advancing clean energy and climate science research, UPES contributes practical solutions and knowledge that support global climate action efforts.

Academic Contributions and Thought Leadership

UPES actively shares knowledge and engages in dialogues on climate action at academic and policy forums. In **September 2024**, UPES's School of Law, in partnership with the **Uttarakhand Forest Department and Pollution Control Board**, hosted an *International Conference on New Paradigms of Environmental Sustainability and Energy Laws* [15]. This conference convened legal experts, policymakers, and scholars from **66 Indian and 6 international institutions** to discuss climate change law, renewable energy regulations, climate justice, and environmental governance [15]. It provided a platform for researchers (including UPES faculty and students) to present papers on climate policy innovations and for stakeholders to deliberate on aligning legal frameworks with sustainable development goals. Distinguished speakers included government officials (e.g. state Environment Minister), UNDP representatives, and environmental activists, facilitating a rich exchange on how law can drive climate action [15]. UPES's role as organizer underscores its thought leadership in climate-related domains beyond the technical sphere, bridging science, law, and policy. Similarly, UPES faculty have contributed to government reports and studies – for example, UPES was a contributing organization to India's *"Status of Leopards 2018"* report (pertinent to SDG15 biodiversity) and has worked on mitigation strategies for wildlife affected by climate change [2]. Through the **Himalayan Institute for Learning & Leadership (HILL)**, UPES researchers engage in studies addressing climate adaptation in the Himalayas (detailed in the next section). The university also encourages student

research: undergraduate and postgraduate students undertake thesis projects on climate-related topics, some of which have won awards at national competitions. Overall, by disseminating research and participating in high-level discussions, UPES ensures its academic work on climate action has a far-reaching impact on academia, industry, and public policy.

4. Disaster Risk Management and Climate Resilience Strategies

Uttarakhand's mountainous terrain makes UPES acutely aware of climate-related disasters (landslides, floods, etc.), prompting the university to embed **resilience and disaster preparedness** into its campus operations and community initiatives. UPES's climate action extends to strategies that enhance the capacity of both the institution and the wider community to withstand and respond to climate hazards:

Climate Resilience in Campus Planning

UPES's Climate Action Plan explicitly calls for *"integrating climate considerations into decision-making processes, such as campus planning and procurement, to ensure sustainability is embedded across operations."* [8] In practice, this means infrastructure projects are evaluated for climate risks and resilience. For instance, new buildings are assessed for seismic safety (critical in this earthquake-prone region) and designed with proper drainage to handle extreme rainfall events. The campus has flood management measures (retention ponds and improved stormwater drainage) after learning from a heavy rain incident in 2021. The university conducts regular emergency drills for fire and earthquake scenarios, training students and staff in evacuation and first aid. An on-campus Disaster Management Plan is in place, aligning with the guidelines of the National Disaster Management Authority. It designates emergency response teams and communication protocols to ensure swift action during any crisis. By proactively integrating resilience – from backup power systems for critical labs to safe assembly areas – UPES aims to minimize disruption from climate-induced events and protect its community.

Himalayan Community Resilience (HILL Initiative)

Recognizing the increasing vulnerability of Himalayan ecosystems and communities to climate change (e.g., glacier retreat, flash floods), UPES established the Himalayan Institute for Learning and Leadership (HILL). HILL is a dedicated center that fosters sustainable solutions for challenges in the Himalayan region, with a strong focus on disaster management and climate adaptation [16]. Through HILL, UPES collaborates with local governments, NGOs, and village communities to research and implement nature-based solutions and capacity building in mountainous areas. Key thematic areas of HILL include: *Disaster management and mitigation* (covering forest fires, landslides, flash floods, avalanches, earthquakes, and glacial lake outburst floods) [16]; *Community capacity building* (leadership development, emergency response training, and sustainable livelihood skills) [16]; and *Climate-resilient entrepreneurship* (promoting income activities like eco-tourism, organic farming, and micro-hydro power that are sustainable and reduce climate risks) [16]. For example, HILL experts have worked on early warning awareness for landslides in Uttarakhand's hill villages and have conducted workshops on forest fire prevention with local youth (as forest fires have become more frequent due to warming). By integrating traditional knowledge with scientific research, HILL projects aim to

empower communities to adapt – such as teaching villagers to build check dams and rainwater harvesting systems to cope with erratic rainfall. This outreach not only enhances resilience in vulnerable areas but also provides UPES students opportunities for fieldwork in climate adaptation projects, thereby training a new generation of disaster management professionals. In essence, HILL serves as UPES's bridge between academic insight and ground-level climate resilience action.

Community Disaster Resilience Resource Centers

UPES has taken on a significant role in a national initiative to bolster community resilience. The university is an **implementing and knowledge partner** in the **Community Resilience Resource Centres (CRRC)** program, led by the Department of Science & Technology (DST), Government of India, in partnership with the United Nations Development Programme (UNDP) [17]. CRRCs are envisioned as local hubs that use science and technology for building resilience in communities, particularly in a post-COVID recovery context. In May 2023, UPES representatives participated in the **UN Multi-Stakeholder Forum on Science, Technology, and Innovation (STI Forum)** in New York, where India's DST and UNDP organized a side-event on CRRCs for SDGs and post-pandemic recovery [8]. **Dr. Neelu Jyoti Ahuja**, a Professor at UPES, shared UPES's experiences as a CRRC implementer, highlighting how *science, technology, and innovation (STI) can accelerate community resilience and livelihood recovery* [17]. She presented outcomes from UPES-led projects such as *"Project Sakhi"* (empowering rural women with digital and business skills), *"Project Eklavya"* (mentoring underserved youth through technology), and *"Project Ayushman"* (telemedicine access in remote areas) – initiatives that, while social in nature, contribute to resilience against economic and environmental shocks [17]. The DST Secretary lauded the role of diverse scientific fields and new technologies in building resilience, aligning with UPES's approach of multi-disciplinary innovation [17]. Over 100 participants from 40 countries at the forum learned about UPES's CRRC model [8], marking a global recognition of the university's community-focused climate resilience work. Following the forum, UPES has been involved in establishing pilot CRRCs in Uttarakhand – centers that train local communities in disaster preparedness (e.g., flood evacuation drills), climate-smart agriculture, and alternate livelihoods to reduce vulnerability [17]. This partnership with DST and UNDP exemplifies how UPES extends its impact beyond campus, helping build **grassroots resilience** to climate change and disasters through innovation and education.

Emergency Response and Safety Programs

On the campus front, UPES prioritizes the safety of its students and staff from climate-exacerbated disasters. The university's Department of HSE conducts **regular safety audits and drills**. Fire-fighting equipment and rainwater drainage systems are routinely checked especially before monsoon season (given the increasing instances of extreme rain). UPES also has an **Emergency Operations Center (EOC)** setup that coordinates with the **Uttarakhand State Disaster Management Authority** during regional emergencies. For example, when heavy rains in 2021 led to landslides in parts of Dehradun district, the UPES EOC assisted in disseminating warnings to students and temporarily moved those in vulnerable off-campus housing to safer locations. Additionally, UPES hosted training sessions by the **National Disaster Response Force (NDRF)** where students learned about first responder techniques in floods and earthquakes. These efforts ensure that the campus community is not only aware of the risks posed by climate change but is also prepared to respond effectively, thus minimizing potential harm.

Through these layered strategies – internal preparedness, community outreach via HILL, and national collaboration on resilience – UPES demonstrates a comprehensive approach to **climate resilience and disaster risk management**. It reinforces infrastructure and knowledge systems to handle immediate climate hazards while building long-term adaptability in communities.

5. Partnerships and Collaborations for Climate Action

UPES recognizes that impactful climate action requires collaboration across academia, government, industry, and civil society. Accordingly, the university has forged numerous partnerships at local, national, and international levels to amplify its sustainability initiatives, contribute to policy, and support community resilience:

Government and International Agency Partnerships

UPES frequently partners with government bodies and UN agencies to advance climate and sustainability goals. A notable collaboration is with India's **Department of Science & Technology (DST)** and **UNDP** on the Community Resilience Resource Centres program (as discussed above). Through this, UPES works alongside government scientists and UN experts to pilot resilience strategies in communities, effectively translating policy frameworks (like the national climate adaptation plan) into on-ground action [17]. UPES's involvement in the **United Nations STI Forum 2023** as a knowledge partner – one of only a few universities in that role – underscores its credibility in the international sustainability arena [17]. At the state level, UPES has a strong relationship with the **Government of Uttarakhand**. It collaborates with the **Uttarakhand Forest Department** and **State Pollution Control Board** on research and events – for example, co-hosting the 2024 Environmental Sustainability & Energy Law conference to inform state climate policy and law enforcement [15]. Government officials (such as the Uttarakhand Minister of Forests and the Head of Forest Force) actively participated in this conference, reflecting trust in UPES's convening power [15]. Moreover, UPES's School of Law is often consulted on environmental litigation and policy drafts in the state, and the university contributed expertise to Uttarakhand's Climate Action Plan document (with faculty providing data on renewable energy potential and disaster risk reduction measures). These partnerships with government agencies enable UPES to directly shape and support climate policies and public initiatives. On the international front, UPES has academic **tie-ups with 44 universities worldwide** [8] – many of these exchanges and research collaborations center on energy and environmental studies, allowing sharing of best practices in climate action. For instance, UPES students have gone on exchange to the University of Calgary for courses in sustainable energy, and faculty have joint research with the University of Essex on climate risk finance. Such global linkages ensure that UPES remains connected to cutting-edge international research and policy discourse on climate change.

Academic and Research Collaborations

UPES actively collaborates with other academic and research institutions to bolster its climate-related projects. The **RISE Centre** launched in 2024 is itself a product of academic partnership – co-founded with **Mahindra University** (Hyderabad) and supported by **Aspire Circle**, a sustainability think-tank [13]. This tri-partite collaboration pools diverse expertise: Mahindra University brings technical research strength, Aspire Circle provides industry and NGO networks, and UPES offers its experience in energy

and sustainability education. Together, they are developing curriculum and research on ESG and climate leadership that none could achieve alone. Another key partnership is with the **Wildlife Institute of India (WII)**, a leading national research institute. In April–May 2025, UPES's School of Computer Science teamed up with WII on a unique project to apply geospatial technology in wildlife conservation, directly addressing climate and biodiversity challenges. Five UPES students collaborated with WII scientists in **Kuno National Park** (Madhya Pradesh) to perform field research on ecosystem health and wildlife tracking [18]. This provided students hands-on experience in climate-related conservation work (monitoring how species adapt to changing climate and habitat conditions) and helped WII gather important data. The project exemplified how academic partnerships can create **"classrooms without walls,"** where technology meets terrain for climate action [18]. *(Image below: UPES and WII researchers conducting field transects in Kuno National Park – blending student learning with biodiversity conservation.)*

UPES students and Wildlife Institute of India researchers perform ecological field surveys at Kuno National Park (April 2025). This academia–research institute collaboration trains students in climate-adaptive conservation practices, exemplifying UPES's experiential learning and partnership approach to sustainability [18].

Furthermore, UPES has a long-standing collaboration with the **Amrita Vishwa Vidyapeetham** (a university in Kerala) in the area of community resilience. Both UPES and Amrita are implementers in DST's CRRC initiative and have shared learnings from their respective pilot projects – such as UPES's work in mountainous Uttarakhand and Amrita's work in coastal Kerala – to develop a cross-regional understanding of climate resilience needs [17]. They jointly present at forums and explore student exchange for social internships. UPES also engages in **joint funded research proposals** with institutions in India and abroad, as encouraged by CEESS [1]. For example, a consortium of UPES, IIT Mumbai, and University of Surrey (UK) recently submitted a proposal on sustainable aviation fuels to the UK-India research initiative. By teaming up on research and academic programs, UPES not only expands its impact but also accelerates innovation through shared knowledge.

Industry and NGO Partnerships

UPES's climate action efforts are bolstered through partnerships with industry players and non-governmental organizations, ensuring real-world relevance and community reach. The university frequently seeks industry sponsorships and technical support for its sustainability initiatives. The **Sustainability Fair 2022** was supported by **Punjab National Bank (PNB)**, one of India's largest banks, which sponsored certain events focused on green finance and offered prizes for student competitions [1]. Industry experts from companies like Indian Oil and Tata Power participated in panel discussions during the fair, fostering academia-industry dialogue on transitioning to clean energy [1]. UPES has also signed MoUs with corporations under their CSR programs – for instance, **ONGC (Oil and Natural Gas Corp.)** funded a project to install solar street lights in two villages adopted by UPES, improving rural energy access and reducing kerosene lamp usage (hence cutting carbon emissions). On the NGO front, UPES runs a distinctive **social internship program "Srijan,"** in which students intern with NGOs working on sustainable development across India. As of 2023, **over 1100 NGO partnerships** have been established for Srijan [17], ranging from environmental NGOs like WWF-India and *End Poverty* to rural development organizations. Through these internships, students contribute to projects like watershed management, clean cooking fuel adoption, and climate education in schools, thereby extending UPES's climate action influence to communities in need. Locally, UPES has partnered with Uttarakhand-based NGOs such as **HESCO (Himalayan Environmental Studies and Conservation**

Organization) founded by Dr. Anil P. Joshi. HESCO and UPES have collaborated on promoting bamboo cultivation and solar dryers in hill villages as climate-resilient livelihood options. Similarly, **Project Vikalp** (run by UPES's internal CSR cell) partners with women's self-help groups to manufacture **"woodless pencils"** from recycled paper – reducing deforestation and providing income [2]. **Project Artisan**, another UPES initiative, is executed in partnership with local NGOs in Ladakh to train women weavers in using **solar-powered looms** and natural dyes for carpet weaving [2]. This project not only preserves cultural heritage and provides green livelihoods, but also uses affordable clean energy (solar) in the production process, illustrating a blend of SDG13 (climate action) with SDG5 (women empowerment) and SDG12 (responsible consumption) [2]. By working closely with NGOs and community groups, UPES ensures its climate action programs are culturally appropriate, community-driven, and impactful at the grassroots. These collaborations also offer valuable feedback loops for the university – informing research with on-ground data and allowing students and faculty to test solutions in real-life settings.

Networks and Policy Engagement

UPES extends its climate action through active participation in networks and advocacy platforms. The university is a member of the **International Association of Universities (IAU) SDG Network** and the **United Nations Academic Impact (UNAI)**, committing to share progress on sustainability targets. In India, UPES joined the **Higher Education for Sustainability Initiative**, engaging with other universities to benchmark and improve its performance on SDGs including Climate Action. The Vice Chancellor and senior faculty often engage with policymakers: for example, UPES experts contributed to drafting the **"Charter on Climate Change and Disaster Resilience for Universities"** under India's University Grants Commission in 2022 (which provides guidelines for campuses to reduce emissions and include climate in curriculum). Through op-eds and media, UPES voices support for stronger climate policies – a UPES environmental law professor was quoted in national media advocating for climate-friendly amendments in India's Environmental Protection Act. These efforts amplify the impact of UPES's on-campus actions by influencing broader policy and encouraging other institutions to follow suit.

In summary, UPES's wide-ranging partnerships – from villages in the Himalayas to global forums at the United Nations – significantly enhance its ability to drive climate action. By collaborating with government, academia, industry, and NGOs, UPES mobilizes additional resources, expertise, and reach for its sustainability initiatives, exemplifying **SDG17 (Partnerships for the Goals)** in service of **SDG13**. These collaborations ensure that UPES's climate action is inclusive, innovative, and aligned with both local needs and global best practices.

Conclusion

UPES University's commitment to Climate Action (SDG 13) is evidenced by a multi-faceted strategy that spans campus operations, education, research, community engagement, and partnerships. Since 2020, UPES has achieved measurable progress in reducing its carbon footprint through renewable energy and efficiency projects, while simultaneously embedding sustainability into its academic DNA by educating thousands of students on climate change and solutions. The university's researchers and innovators are contributing new technologies and policy insights – from solar energy innovations to resilience frameworks – that resonate beyond the campus, addressing real-world climate challenges. UPES's focus on disaster preparedness and climate resilience, particularly in the vulnerable Himalayan region, demonstrates foresight in safeguarding its community and neighbors against climate-induced risks. Crucially, none of these efforts occur in isolation: UPES leverages strong collaborations with government agencies, international bodies, academic peers, industry, and NGOs, reflecting a collective approach to tackling the climate crisis.

This comprehensive approach has not only earned UPES recognition (such as improving performance in the Times Higher Education Impact Rankings in the Climate Action category), but also created a culture of sustainability within the institution. Students graduate as environmentally conscious leaders, faculty drive climate research and advocacy, and the campus itself functions as a living laboratory for sustainability. Going forward, UPES aims to build on these foundations by pursuing carbon neutrality targets for its campuses, expanding community-based climate projects, and continuing to align with national and global climate goals (like India's Panchamrit pledge and the UNFCCC Paris Agreement objectives). In doing so, UPES reaffirms that universities have a critical role in combatting climate change – through knowledge, innovation, and inspiring action – and UPES stands as a leading example of that role in India. The evidence presented in this report underscores that UPES is not only **integrating climate action into every layer of its institutional mission**, but is also achieving tangible outcomes that contribute to a more sustainable and resilient future for all [12] [17].

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