Central University of Himachal Pradesh
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Strategic Plan for Carbon Reduction (Scope 1 & 2) to Net Zero by 2050

1. Vision

To establish Central University of Himachal Pradesh (CUHP) as a model green campus in the Himalayan region, achieving net zero carbon emissions (Scope 1 & Scope 2) by 2050, while preserving ecological balance in fragile mountain ecosystems.

2. Mission

To minimise greenhouse gas emissions through energy transition, sustainable infrastructure, and community engagement, integrating environmental responsibility into all academic and operational functions.

3. Scope Definition (as per GHG Protocol)

Scope 1: Direct Emissions

- Diesel generators (backup power systems)
- University-owned vehicles
- LPG usage in hostels/labs
- Fuel consumption in campus operations

Scope 2: Indirect Emissions

- Purchased electricity (Himachal Pradesh State Electricity Board)
- Grid-based energy consumption in academic and residential facilities

4. Guiding Principles

- Transparency: Annual disclosure of carbon footprint
- Ecological Sensitivity: Protection of Himalayan biodiversity
- Participation: Inclusion of students, faculty, and local communities
- Innovation: Adoption of region-specific green technologies
- Continuous Improvement: Benchmarking with national and global standards

5. Strategic Objectives & Action Plan

5.1 Baseline Assessment (2025–2026)

Actions:

- Conduct a comprehensive GHG inventory (Scope 1 & 2)
- Establish baseline year (2025)
- Develop a carbon accounting system

KPIs:

- Verified emissions inventory (tCO_2e)
- Annual sustainability report published

5.2 Energy Efficiency (2025–2030 | Ongoing)

CUHP Context: Cold climate → higher heating demand

Actions:

- Transition to LED lighting across campuses
- Install energy-efficient HVAC & heating systems
- Improve insulation in buildings (important for the Himachal climate)
- Smart meters and energy monitoring systems

Targets:

- 25–30% reduction in energy consumption by 2030

KPIs:

- Energy uses per capita
- % buildings retrofitted

5.3 Renewable Energy Transition (2025–2040)

CUHP Advantage: High solar potential in Himachal Pradesh

Actions:

- Rooftop solar installations (academic + hostels)
- Solar street lighting and solar water heaters
- Explore small-scale wind/solar hybrid systems
- Green power procurement (if available)

Targets:

- 50% renewable energy by 2030
- 100% renewable electricity by 2040

KPIs:

- Installed solar capacity (kW/MW)
- % renewable energy share

5.4 Sustainable Procurement (2025–On-going)

Actions:

- Adopt Green Procurement Policy
- Prefer eco-labelled and energy-efficient products
- Encourage local sourcing (reduces transport emissions)

KPIs:

- % green-certified purchases
- Vendor sustainability compliance

5.5 Sustainable Transportation (2025–2040)

CUHP Context: Hilly terrain and dispersed campuses

Actions:

- Promote walking and cycling within the campus
- Introduce electric shuttle buses
- EV charging infrastructure
- Carpooling systems for staff and students

Targets:

- 50% electric fleet by 2035
- 100% electric fleet by 2045

KPIs:

- Fuel consumption reduction
- EV adoption rate

5.6 Waste Management (2025–Ongoing)

Actions:

- Zero-waste campus initiative
- Segregation at source
- Composting of organic waste
- Ban on single-use plastics
- Digitalisation to reduce paper use

Targets:

- 90% waste diversion by 2035

KPIs:

- Recycling rate (%)
- Waste generated per capita

5.7 Water-Energy Nexus (Special Focus for CUHP)

Actions:

- Rainwater harvesting systems
- Solar-powered water pumping
- Wastewater recycling

KPIs:

- Water reuse rate
- Energy used in water systems

5.8 Education, Research & Community Engagement (2025–Ongoing)

Actions:

- Introduce interdisciplinary courses on sustainability
- Promote research on Himalayan ecology & climate change
- Conduct outreach programs in nearby communities

KPIs:

- Number of sustainability-related courses
- Research publications & funded projects

5.9 Carbon Offsetting (Post-2040)

CUHP Strength: Natural landscape

Actions:

- Afforestation and biodiversity conservation
- Carbon sink development within the campus
- Participation in certified carbon offset programs

KPIs:

- Residual emissions offset (%)

6. Implementation Framework

Governance

- Establish Green Campus & Sustainability Committee
- Appoint Sustainability Coordinator / Director

Funding Sources

- UGC & HIFA grants
- Ministry of New and Renewable Energy (MNRE)
- State government schemes
- CSR partnerships

Technology Integration

- Smart campus energy dashboards
- IoT-based monitoring systems

7. Timeline Roadmap

Phase	Period	Focus Area
Phase I	2025–2026	Baseline, audits, quick efficiency gains
Phase II	2025–2035	Solar expansion, EV transition
Phase III	2035–2045	Deep decarbonization
Phase IV	2045–2050	Net zero & carbon offsetting

8. Communication Strategy

- Annual Green Campus Report
- CUHP website sustainability dashboard
- Student engagement campaigns
- Workshops, seminars, and green events
- Research Publications and Project Reports

9. Monitoring & Evaluation

Tools:

- Annual GHG inventory
- Third-party audits
- Internal sustainability reviews

Key Metrics:

- Total emissions (tCO_2e)
- Emissions per student

- Renewable energy share (%)

10. Alignment with Frameworks

Sustainable Development Goals (SDGs)

- SDG 7: Clean Energy
- SDG 12: Responsible Consumption
- SDG 13: Climate Action
- SDG 15: Life on Land (important for Himachal region)

Accreditation Alignment

- NAAC: Green Campus Initiatives, Energy Management
- NIRF: Outreach & Sustainability Indicators
- AISHE/UGC: Environmental responsibility and institutional development

By leveraging its unique ecological setting in Himachal Pradesh, CUHP can become a benchmark green university in India's Himalayan region. Through a phased, measurable, and participatory approach, the university will significantly reduce its carbon footprint and achieve net zero emissions by 2050, contributing to both national climate goals and global sustainability commitments.