

SWAMI RAMA HIMALAYAN UNIVERSITY

PLAN FOR REDUCING OVERALL ENERGY CONSUMPTION

Year of Plan: 2022

Swami Ram Nagar, Jolly Grant, Dehradun – 248016, Uttarakhand, India

1. Preamble

Swami Rama Himalayan University (SRHU) recognises energy conservation and efficient use of energy as important components of responsible campus operations and sustainable development. Reducing avoidable energy consumption requires a coordinated approach covering buildings, electrical and cooling systems, equipment, infrastructure, transportation, procurement, maintenance and the everyday practices of University stakeholders. SRHU has established an institutional framework for energy conservation through its Policy for Energy Conservation, originally approved in 2019 and reviewed/revised by the Board of Management on 29 March 2022 and notified on 5 April 2022. The Policy establishes a framework for reducing energy consumption, integrating renewable sources, maintaining energy systems efficiently and promoting responsible energy use across University functions.

The University's Climate Action Plan 2022–2030 also identifies improvement in energy efficiency and responsible use of electricity and other energy resources as strategic areas of action. It provides for energy-efficient systems, energy monitoring, periodic energy audits and energy-conservation behaviour among students, faculty and staff. Accordingly, this Plan for Reducing Overall Energy Consumption provides a structured framework for identifying energy-use patterns, reducing avoidable consumption, improving operational efficiency and monitoring progress through institutional records and periodic assessment. The Plan is intended to complement, rather than replace, the University's existing energy-conservation policy and institutional sustainability framework.

2. Vision

To promote efficient and responsible use of energy across SRHU and progressively reduce avoidable energy consumption through conservation, efficiency measures, appropriate technology, improved monitoring and responsible energy-use practices.

3. Objectives

- Reduce avoidable energy consumption across University operations through conservation and efficiency measures.
- Improve the efficiency of electricity-consuming systems, equipment and building services.
- Strengthen monitoring of energy consumption through Building Management System and use available energy data to identify areas requiring attention.

- Use periodic energy audits to identify opportunities for energy savings and guide improvement measures.
- Promote responsible use of electricity and other energy resources among faculty, staff and students.
- Incorporate energy-efficiency considerations into procurement, maintenance, renovation and infrastructure planning.
- Promote appropriate use of renewable and clean-energy sources as part of the University's overall energy-management approach.
- Review energy performance periodically and document relevant progress and improvement measures.

4. Strategic Energy-Reduction Areas

4.1 Energy Assessment and Auditing

SRHU will use periodic energy audits and available energy-consumption records to understand energy-use patterns and identify opportunities for reducing avoidable consumption.

Assessment may consider:

- Electricity consumption and consumption patterns;
- Major energy-consuming systems and equipment;
- Lighting and cooling systems;
- Laboratory and research equipment;
- Motors, pumps and other electrical loads;
- Building and facility operations; and
- Other significant sources of energy use identified through audits or institutional records.

Energy-audit findings will be used, where appropriate, to identify and prioritise feasible energy-conservation measures.

4.2 Efficient Use of Lighting

The University will promote efficient use of lighting through:

- Use of energy-efficient lighting systems;
- Switching off unnecessary lighting in unoccupied spaces;
- Maximizing use of natural daylight where practicable;
- Use of sensors or controls where feasible; and
- Regular maintenance of lighting systems.

4.3 Efficient Operation of HVAC and Cooling Systems

Energy consumption associated with air-conditioning and cooling will be addressed through efficient operation, appropriate temperature management, preventive maintenance and consideration of energy-efficient VFD systems during replacement or upgradation.

- Avoid unnecessary operation of air-conditioning and cooling equipment;
- Maintain HVAC systems as per applicable maintenance requirements;
- Use appropriate temperature settings and controls through BMS
- Consider occupancy-based or automated controls where feasible; and
- Replace inefficient systems when replacement is required, subject to institutional and technical considerations.

4.4 Efficient Use of Electrical Equipment and Appliances

Energy consumption from electrical equipment and appliances will be reduced through responsible operation, appropriate maintenance and energy-efficient procurement.

- Switch off equipment when not required;
- Avoid unnecessary use of high-energy-consuming devices;
- Give due consideration to energy efficiency during equipment replacement;
- Prefer appropriately certified energy-efficient equipment where applicable; and
- Maintain equipment to support efficient operation.

4.5 Energy-Efficient Infrastructure and Renovation

Energy-efficiency considerations will be incorporated into relevant renovation, refurbishment and infrastructure activities.

- Consider passive measures such as daylight and natural ventilation where feasible;
- Consider insulation and other appropriate measures during renovation;
- Provide suitable utility metering for new and renovated buildings where applicable;
- Use energy-efficient systems and equipment; and
- Use energy-audit findings to inform major renovation and upgradation decisions.

4.6 Energy Monitoring and Metering

The University will strengthen monitoring of energy consumption to support evidence-based energy management.

- Maintain relevant electricity-consumption records;
- Monitor major energy loads where metering is available and feasible;
- Review consumption patterns periodically;
- Identify unusual or avoidable consumption where records permit; and
- Use monitoring information to guide energy-conservation measures.

4.7 Preventive Maintenance

Regular maintenance of electrical, HVAC, lighting, motors, pumps and other energy-using systems will be promoted to support efficient operation and minimise avoidable energy losses.

- Routine inspection;
- Preventive maintenance;
- Cleaning and servicing;
- Performance checks and calibration where applicable;
- Timely corrective maintenance; and
- Maintenance documentation.

4.8 Responsible Procurement

Energy efficiency will be considered, wherever applicable, in procurement and replacement of energy-consuming equipment and systems.

- Consider energy efficiency alongside functional requirements;
- Prefer BEE-certified or appropriately rated equipment where applicable;
- Consider life-cycle energy efficiency for energy-intensive systems where feasible; and
- Ensure that relevant contractors and suppliers comply with applicable institutional requirements.

4.9 Renewable and Clean Energy

The reduction of overall conventional energy consumption will be supported, where appropriate, through the use of renewable and clean-energy sources identified within the University's energy framework.

- Maintain existing renewable-energy systems appropriately;
- Consider suitable renewable-energy options for campus facilities;
- Promote solar-energy applications where technically and institutionally appropriate; and
- Explore appropriate clean-energy technologies in accordance with institutional requirements.

4.10 Transportation and Mobility

Energy consumption associated with transportation will be addressed through sustainable mobility practices identified in the University's energy-conservation framework.

- Encourage walking and cycling for appropriate short-distance travel;
- Encourage shared or public transportation where feasible;
- Reduce unnecessary vehicle movement within the campus; and
- Consider lower-emission mobility options, Electrical Vehicle, where feasible and appropriate.

4.11 Awareness and Behavioural Change

Responsible energy use by students, faculty and staff is an important component of reducing overall energy consumption.

- Conduct energy-conservation awareness activities;
- Display appropriate energy-saving bills/slip where useful;
- Promote switching off unused electrical appliances, fans and lights;

- Encourage responsible use of air-conditioning and other energy-intensive equipment; and
- Encourage participation in energy-conservation initiatives.

5. Implementation Framework

The Plan will be implemented progressively in accordance with institutional requirements, technical feasibility, available resources and the findings of energy assessments and audits.

5.1 Identification – Significant areas of energy consumption will be identified through available energy records, operational information and energy audits.

5.2 Assessment – Energy-use patterns and opportunities for reducing avoidable consumption will be assessed using available institutional records and technical assessments.

5.3 Prioritisation – Measures will be prioritised according to energy-saving potential, technical feasibility, operational requirements, maintenance needs and institutional resource considerations.

5.4 Implementation – Feasible measures will be incorporated through operational improvements, maintenance, equipment replacement, renovation, procurement or other appropriate institutional processes.

5.5 Monitoring – Energy consumption and relevant energy-conservation measures will be reviewed periodically to assess progress and identify further opportunities for improvement.

6. Phased Implementation Timeline (10 Years)

Phase	Duration	Key Activities
Phase I	2022 & 2023	Energy-use assessment and audits; review of electricity-consumption patterns; identification of major energy-consuming systems; energy-conservation awareness; efficient use of lighting, HVAC and electrical equipment; strengthening of energy records and monitoring.
Phase II	2024 & 2025	Progressive replacement/upgradation of inefficient lighting, HVAC and electrical equipment; preventive maintenance of energy-using systems; strengthening of controls and metering; incorporation of energy-efficiency considerations into procurement.
Phase III	2026 & 2027	Energy-efficiency measures in renovation and infrastructure works; improved daylight and natural ventilation; feasible insulation and passive measures; expansion of monitoring of major energy loads; continued equipment and system upgrades.
Phase IV	2028 & 2029	Maintenance and optimisation of energy-consuming systems; further adoption of energy-efficient equipment through replacement; assessment and integration of appropriate renewable/clean-energy options; promotion of sustainable mobility practices where feasible.
Phase V	2030 & 2031	Comprehensive review of energy-consumption trends and audit findings; further implementation of feasible energy-conservation measures; optimisation of energy monitoring, maintenance and procurement practices; consolidation of renewable/clean-energy measures and continued stakeholder awareness.

7. Roles and Responsibilities

7.1 Electrical and Maintenance Function – Support energy monitoring, preventive maintenance, implementation of feasible energy-conservation measures, corrective action and maintenance records for electrical, lighting, HVAC and related systems.

7.2 Civil Engineering Function – Incorporate energy-efficiency considerations into relevant renovation and infrastructure works and support energy assessments associated with major renovation projects.

7.3 University Departments and Units – Promote responsible energy use, cooperate with energy audits and monitoring activities, and maintain relevant operational records.

7.4 Procurement Function – Consider energy efficiency and applicable certification requirements during procurement and replacement of energy-consuming equipment, in accordance with University procurement procedures.

7.5 Faculty, Staff and Students – Adopt responsible energy-use practices and participate in energy-conservation awareness and related institutional activities.

8. Implementation and Monitoring Framework

Action Area	Key Indicator	Monitoring
Energy Assessment	Energy audits/assessments and identified opportunities	Periodic/Annual
Electricity Consumption	Energy consumption records and trends	Periodic/Annual
Lighting	Energy-efficient lighting and conservation measures	Periodic
HVAC and Cooling	Operational efficiency and maintenance measures	Periodic
Equipment	Energy-efficient operation/replacement of equipment	Periodic
Infrastructure	Energy-efficiency measures in relevant renovation/upgradation	As applicable
Maintenance	Preventive and corrective maintenance records	Periodic
Procurement	Energy-efficiency considerations in relevant procurement	As applicable
Renewable/Clean Energy	Renewable-energy systems and relevant clean-energy measures	Annual
Awareness	Energy-conservation awareness activities	Annual/As applicable

9. Documentation and Evidence

Progress under this Plan will be documented, where applicable, through:

- Energy audit reports;
- Electricity-consumption and energy-use records;
- Records of energy-conservation measures;
- Maintenance and equipment records;
- Relevant procurement records;
- Renovation and infrastructure records;

- Awareness and activity reports;
- Meeting and review records; and
- Annual sustainability/SDG reporting and other relevant institutional disclosures.

9. Public Disclosure

Relevant information relating to the University's energy-conservation policy, energy audits, energy-efficiency initiatives and documented progress may be made publicly accessible through the University's official website and institutional sustainability reporting mechanisms, subject to availability and institutional approval.

10. Review and Continuous Improvement

The Plan will be reviewed periodically in conjunction with the University's energy-conservation framework, energy audits, infrastructure requirements and institutional sustainability mechanisms.

The review may consider:

- Energy-consumption trends;
- Energy-audit findings;
- Effectiveness of conservation measures;
- Technological developments;
- Operational requirements;
- Applicable regulatory requirements; and
- Opportunities for further energy reduction.

Any future targets or measures will be introduced subject to institutional review, technical feasibility and available resources.

11. Institutional Commitment

Swami Rama Himalayan University is committed to responsible and efficient use of energy across its campus operations. The University will progressively identify opportunities to reduce avoidable energy consumption through conservation, efficient systems and equipment, appropriate maintenance, monitoring, responsible procurement, renewable and clean-energy options, and stakeholder awareness.

The University will use available institutional records, energy audits and documented evidence to monitor energy performance and support continuous improvement in energy management.