Sri Ramachandra Institute of Higher Education and Research (DU)

Climate action Plan

2021

Contents

Introduction

Sri Ramachandra Institute of Higher Education and Research [SRIHER] (DU) has framed climate action policy aimed at investing in national and global initiatives through mobilizing resources directed in reducing greenhouse gas emissions.Contribution to the climate actions is not new to SRIHER, as it has committed by developing a dense green plantation since the establishment in 1985. Over years the institution has constituted several committees to deliver their duties for maintaining, Environment, Health and Safety standards within the campus. Through the existing health and safety policy SRIHER has been implementing good practices for over a decade on energy conservation, green belt and biodiversity management, waste management, water management and sanitation & hygiene within the campus. This policy will strengthen the on-going initiatives in a more focused and targeted manner. SRIHER will through the existing academic and research collaboration with national and international universities reinforce and expand the climate action initiatives aligned to the local governance

The mitigation strategies

The main objectives are to adopt and implement policy in two phases,first phase reducing emissions (2021-2026) and second phase (2026-2031) thus driving SRIHER towards achieving carbon neutral campus.

The mitigation strategies will include

1. Inventory of carbon footprint and management
2. Building, energy systems and infrastructure
3. Equipment purchasing
4. Transport and commuting
5. Waste management
6. Water management
7. Greenbelt management
8. Air pollution control
9. Education, Research and Community outreach

1. Inventory of Carbon footprint and Management

The plan in the first phase of emission reduction isto make a complete inventory and footprint of greenhouse gases emissions from direct and indirect sources within the

campus. This will further identify the gaps and allow developing policy and plan towards climate actions. The institution growth trajectory will be assessed and plan of expansion activities will consider renovation, efficient use of space and other resources. Emission reduction plan will target controlling the emissions in parallel from both the direct and indirect sources.

2. ***Building, Energy systems and Infrastructure***

As outlined in the phase I plan, immediate focus will be on the building and energy system. Use of energy efficient cooling systems such as VRV/VRF will be installed in upcoming new buildings and phasing out of the obsolete and inefficient systems. Installation of VRV systems are intended to reduce energy consumption between 10 and 40 percent depending upon the application. The new building design would be planned to allow natural light thus reducing the need for purchased energy. The on-going efforts on focussing lighting retrofits will continue and in phased manner, energy efficient lighting system such as LED will be used to replace the worn out ones to decrease the consumption of electricity through lighting systems. The blacktop road inside the campus will be maintained in good condition to reduce the fugitive emissions that contribute to the air pollution.

3. ***Equipment Purchasing***

Energy star policy will be developed for procuring equipment with energy star rating for ensuring low electricity consumption. The on-going use of energy efficiency pumps in the waste water treatment plant will be scaled up when the existing motors elsewhere in the campus are worn out. Improper maintenance of equipment will consume high electricity. The on-going efforts of the institution in conducting planned preventive maintenance of equipment will continue for all types of equipment that use energy and will be rectified early to prevent high energy consumption.

4. ***Transport and Commuting***

The inventory of greenhouse gas emission includes the emission through commuting by staffs and students. SRIHER has transportation system in place for facilitating pooled travel, thus reducing the individual level carbon footprint. Whenever possible, online programs will be conducted to minimize the travel, and training associated footprints. As the public transportation will cover bus and train services, it is anticipated that there will be a minimal scope of increasing the institute

transportation. SRIHER will encourage carpooling among the students and faculties in addition to the existing system.

5. *Waste management*

Biomedical Wastes, Electrical and Electronic Wastes, Solid Wastes, Waste Water and Hazardous Wastes are disposed and discharged adhering to local regulations.

The treated waste water from the combined effluent treatment system meets the waste water quality standards.

Biogas plant is installed to generate the gas from food wastes distributes energy to Canteens for boiling water. A feasibility assessment for expanding the capacity will be initiated for scaling up in future.

The institute has a policy on segregating waste at the source and handled at the dedicated solid waste management facility. The recyclable wastes are handed over to the Tamil Nadu Pollution Control Board authorized recyclers.

6. *Water Management*

SRIHER has a conventional waste water treatment plant with a capacity to treat 2500KL per day, which aims to conserve the quality of the treated water as per the TNPCB guidelines on a consistent manner. The conventionally treated waste water is filtered using the sand and carbon filters which is then chlorinated and treated using UV radiation before reuse. Around 1100KL per dayof the treated water is used for the cooling towers of the AC chiller plant and toilet flushing operations in the hostel buildings. Balance treated water is stored in the artificial pond, with a total area of approximately 12.5acres from where the pumping is done for the irrigation requirements. The pond also serves as ground water recharge system. The established rain water harvesting system, storm water collection, bore well recharge areas, tank, bunds and water distribution systems are maintained at periodical intervals throughout the year for effective water management. The water quality will be monitored at periodical intervals to provide safe water for drinking and utility purposes also for trees and plantations.

7. *Greenbelt Management*

SRIHER is renowned for having 53.7% of green belt area in the campus. The institution is also actively taking efforts to set up a Miyawaki forest in the campus; one of its kind growing forests is short period. The green belt will substantially

sequester the carbon dioxide with increasing levels every year. The green belt area will be increased every year through the tree plantation done on the Campus Environment day celebrated by Sri Ramachandra Centre for Women's Advancement every year the on 8th March to mark the Birth Anniversary of Smt. Kamalam Ramaswamy Udayar, wife of founder Chancellor and on 5th June during the World Environment day celebration. SRIHER is known for its beautiful biodiversity park which is bustling with fauna and flora including habitation of native plants. Biodiversity within the campus will be strengthened to conserve habitation for local and migratory birds that aids more pollination and seed dispersal, scavenging and nutrient cycling, soil formation.

8. Air pollution control

The developed green belts not only sequester carbon dioxide, but also reduce air pollution inside the campus. Nearly 20-30 percentage of air pollution (from the nearby state and national highways) reduction could be achieved within the campus. Green belt development along the periphery of campus will be strengthened. The existing Ambient Air Quality Monitoring Station operated in collaboration In Indian Institute of Tropical Meteorology, Pune, Ministry of Earth Sciences within the campus will be continued for monitoring the air quality together with use of these data for undertaking research activities among the faculties and students.

9. Education, Research and Community outreach

SRIEHR had made the Environmental Science as a mandatory course for all paramedical programs. Through local, national and international collaborative efforts, new short term training programs on climate change and actions with experiential learning will be introduced to build the capacity of students in this discipline therefore allowing them to integrate in their core competency and actively participate in climate relatedmatters and socially be responsible. It will also explore the opportunities for the students to engage them in learning process related to climate change, research and leadership in the institution and rural development initiatives.

Through the national and international collaborations established over two decades, the Institute will continuously engage in climate and health research in tune with the need of the nation and international agencies. The World Health Organization Collaborating Centre (for Research and Training in Occupational and Environmental

Health) and Indian Council of Medical Research Centre for Advance Research (In Air Quality, Climate and Health) of the institution will not only continue the research and training efforts in the country, but also extending the services in South East Asian Countries in capacity building in Occupational and Environment Health.

The on-going effort of the Institute in Swachhta initiatives which indirectly targets at climate action has fetched the laurel of "Green Champion Award" from the Ministry of Education. The institution has been a mentor for Higher Education Institution to share the good practices in Swachhta action plan. Involving the NSS students to conduct awareness programs and competitions on energy saving, water conservation, infection control, sanitation and hygiene will be continued both within the campus and institute adopted villages and will be extended to other community locations. The field visits of Environmental Science Students will educate them on organic farming, afforestation and rooftop gardening, thus preparing the young force for future climate actions.

Barriers and Gaps

Being a healthcare University, there are special needs and gaps that are diverse from a non-healthcare institution. Rapid student enrolment, patients inflow, offsetting other emissions in lieu of price of carbon offset, rising fuel costs, non-availability appropriated technology at local scale for waste management and energy efficiency equipment, high capital cost and inefficient use of resources will push towards increased emissions.SRIHER will assess the barriers and risks while implementing the climate action plans.

Finance

There is an on-going mechanism available in the institution for raising purchases and managing the institution budget. The capital needs and operation investment towards the climate action and the resulting savings will be reviewed by the finance department and the management for prioritizing the investment where the payback period is quite quick and strategies will be developed for climate actions where the payback period is very long.The barriers and the gaps will be considered during the investment for mitigation initiatives.

Monitoring, Implementation and Reporting

SRIHER has instituted various committees to maintain the quality of education, research, services, and environment, health and safety standards. The objectives of these committees will be to monitor, implement and report to the institution and related stakeholders.

SRIEHR will continue in reducing net emissions of greenhouse gases with more focus on energy system and energy efficiency as this would largely attribute to emission profile. The institute will review the energy options. As and when the renewable energy technologies are available they will be assessed and the institute will commit switch over in by various stages depending on the payback period.

SRIHER climate action plan for the period from 2020 to 2029:

SRIHER Climate action Plan

Phase I – Target period (2020 – 2024)

Efficient lighting system &Energy saving

- Implementation of energy efficient lighting system
- Procuring equipment with energy star rating for low electricity consumption
- Periodic maintenance of equipment to prevent high energy consumption
- Increased Energy Efficiency and Use of Renewable Energy
- Generation of energy from biogas plant using food wastes for canteens

Ecoefficient transport

- Increased Use of Alternative-Fuel and Fuel-Efficient Vehicles
- Reduce emission from vehicle idling and other equipment
- Reduced motor vehicle use

Strengthening of Biodiversity Park

- Maintenance of Existing Trees
- Increased Tree Planting
- Tree canopy
- Open Space for Conservation
- Biodiversity management plan

Water Conservation & waste management

- Groundwater Management
- Increased Water Conservation
- Watershed Protection
- Solid Waste Reduction and Waste Processing Improvements

Build Community Engagement

- Installation of air quality monitoring station to assess the air pollution inside the campus
- Introduction of short term training programs
- Assess periodically the barriers and risks while implementing the climate action plans
- To review the capital needs and operation investment towards climate action

SRIHER Climate action Plan

Phase II – Target period (2025 – 2029)

- Construction of building with energy efficient cooling system such as VRV/VRF

- Creation of Miyawaki forest inside the campus

- Conduct of online distance education programs to minimize foot prints
- Educational efforts to induce permanent energy use reduction through conservation

Prepared by	Reviewed by	Approved by
Dr. S. Sankar Professor and Head, Faculty of Public Health	Mr.S. Veriah (General Manager, Infrastructure)	Dr.P.V. Vijayaraghavan Vice Chancellor