

SRI SIVASUBRAMANIYA NADAR COLLEGE OF ENGINEERING

(An Autonomous Institution) Kalavakkam – 603 110

PLANNING & ADMINISTRATION COORDINATION AND PLANNING

PA 2 Commitments and Planning

PA 2.2 Measurable Sustainability Objectives

Submitted to

The Sustainability Tracking, Assessment & Rating System (STARS)

2.2 Measurable sustainability objectives

• Narrative listing the institution's measurable sustainability objectives that address teaching, learning and research.

Integrating Sustainability into Curriculum:

Objective: To incorporate sustainability principles into at least 30% of the courses across all departments

Measurable Outcomes:

- > Increase in the number of courses with sustainability content.
- > Student enrollment in sustainability-related courses.
- Feedback from students and faculty on the effectiveness of sustainability integration.
- Narrative listing the institution's measurable sustainability objectives that address stakeholder engagement.

Student Engagement and Sustainability Literacy:

Objective: To achieve a 20% increase in student sustainability literacy by 2026, as measured by pre- and post-assessment surveys.

Measurable Outcomes:

- > Results of sustainability literacy assessments.
- Participation rates in sustainability-related extracurricular activities and clubs.
- > Student-led sustainability projects and initiatives.

Enhancing Faculty Development in Sustainability

Objective: To provide professional development opportunities for at least 50% of faculty members on integrating sustainability into their teaching and research by 2025.

Measurable Outcomes:

- Number of faculty participating in sustainability workshops and training sessions.
- Faculty self-reports on confidence and competency in teaching sustainability.
- > Increase in sustainability-focused academic output from trained faculty.
- Narrative listing the institution's measurable sustainability objectives that address campus operations.

Promoting Interdisciplinary Research

Objective: established Sustainability Research Center, facilitating interdisciplinary research projects focused on sustainability challenges.

Measurable Outcomes:

- > Number of interdisciplinary research projects initiated.
- > Publications and citations in sustainability-related journals.
- > External funding and grants received for sustainability research.
- Narrative listing the institution's measurable sustainability objectives that address racial equity and social justice.

Promoting social justice

Objective: Enhance Racial Equity and Social Justice through Institutional Policies and Practices

Measurable Outcomes:

- > Number of new equity-focused programs and initiatives initiated.
- > Representation in student and faculty demographics.
- > Inclusion of racial equity topics in the curriculum.
- > Reduction in reported incidents of discrimination and bias.
- > Publications and research outputs on equity and justice.
- Narrative listing the institution's measurable sustainability objectives that address administration and finance.

Narrative listing the institution's measurable sustainability objectives that address administration and finance. Institution has Materiality targets, overseen by its group, Shiv Nadar Foundation.

There are clear targets till 2030. (There has also been one assessment by external agency –The Fair Climate Fund-in 2023.[Anx2]

- Institution has Materiality targets, overseen by its group, Shiv Nadar Foundation.
- There are clear targets till 2030. [Anx1]
- There has also been one assessment by external agency –The Fair Climate Fund-in 2023. [Anx2]

Materiality Metrics and Targets chosen by SSNCE

- SNF has listed 16 items for Materiality tracking.
- We have chosen to work on the following seven items only.

SNF ref	Description	Abbreviation used
1	Student engagement and well being	SEW
2	Sustainable campus management & operations	SCM
4	Academic programs & curriculum	APC
5	Faculty & staff engagement	FSE
11	Building certifications and mgmt. systems	BCM
12	Smart campus	SMC
16	Global student network	GSN

- Each item has several metrics [defined by Deloitt]
- We have identified achievable targets for each metric.
- The identified metrics and their targets are listed below.

1.Student engagement and well being

Ref	Parameter	Method of calculation	Owner	As of 2022 Jan	Target 2025	Target 2030
SEW 1	Description of policies and practices relating to collection, usage, and retention of student information	No calculation	Dr.Narasimman CoE	Policy in place. Will be updated by March 2022.	Will be reviewed and updated every three years.	Will be reviewed and updated every three years.
SEW 2	Graduation Rate	Total number of students being graduated within	Dr.Narasimman CoE	90% and above	90% and above	90% and above

651412		the time frame specified by University / total enrolled in program	Detailting	070/	100%	4000%
SEW 3	Job Placement rate	Number placed / number eligible	Dr.Jothibasu Mgr-Placement	97%	100%	100%
SEW 4	Annual Student Enrolment / Drop Out Rate	Number not completing course on time / number enrolled in program	Dr.Narasimman CoE	Less than 9%	Less than 9%	Less than 6.5%
SEW 5	No. of Incidents pertaining to Students Grievances (All the grievances registered to be included- Hostel, academic, fees, safety, food, etc.)	Number of grievance / total number of students	Dr.Nanda Student Counselor	Less than 20%	Less than 15%	Less than 10%
SEW 6	Description of SoP and practices relating to Student Grievance redressal	No calculation	Dr.Nanda Student Counselor	Policy in place.	Will be revised every three years	Will be revised every three years
SEW 7	List of Students related Activities/ events held in an academic year	Number of major events as indicated in Academic calendar	Dr.Sunita Nair Student Affairs	Invente, MUN, Instincts, EDC, Internal Research Funding conducted every year.	Planned events will be conducted every year and Disclosed in site	Planned events will be conducted every year and Disclosed in site
SEW 8	Students Participation ratio per year	Number of students participating in the major events/ total number of students	Dr.Sunita Nair Student Affairs	50%	60%	70%

2.Sustainable campus management & operations

Ref	Parameter	Method of calculation	Owner	As of 2022 Jan	Target 2025	Target 2030
SCM 1	Description of Policies and practices relating to management of Campus Operations (Waste, Energy, Water)	No calculation	Mr.T.Shivkumar AGM Projects	Policy will be framed in coordination with Green Building consultant	Adherence to policy will be ensured. Policy Will be revised every three years	Adherence to policy will be ensured. Policy Will be revised every three years
SCM 2	Description and List of procedures in place to reduce resources (Water, Energy)	No calculation	Mr.T.Shivkumar AGM Projects	Policy will be framed in coordination with Green Building consultant	Adherence to policy will be ensured. Policy Will be revised every three years	Adherence to policy will be ensured. Policy Will be revised every three years
SCM 3	% of Campus Energy dependency on Renewables + Non Renewables [R:NR]	Renewable Energy /Non Renewable Energy consumed for the year	Mr.T.Shivkumar AGM Projects	R23:NR77	R30:NR70	R40:NR60
SCM 4	Total Volume of water Consumption in a Financial Year (to be calculated per user)	Water consumed / total number of students & residents	Mr.T.Shivkumar AGM Projects	7 lakh litres per day	30% reduction from base year, per user	40% reduction from base year, per user
SCM 5	Volume of water recycled/ reused	Water reused or recycled/ total water consumed	Mr.T.Shivkumar AGM Projects	80% of water consumption	85% of water consumption	90% of water consumption
SCM 6	Total area under Rain Water Harvesting	Area under rain water harvesting/ total land area	Mr.T.Shivkumar AGM Projects	60%	80%	90%

SCM 7	Total waste generated by Weight	Quantity of	Mr.T.Shivkumar	146 MT	40% reduction	60% reduction from
	(Food Waste, E Waste etc.)	waste under	AGM Projects		from base year	base year
		various				
		categories				
SCM 8	Campus Area under Green Cover	Area under	Mr.T.Shivkumar	30%	40%	50%
	(Annual Rate)	green cover/	AGM Projects			
		total land area				

4.Academic programs & curriculum

Ref	Parameter	Method of calculation	Owner	As of 2022 Jan	Target 2025	Target 2030
APC 1	Percentage of courses on sustainability	Number of courses on sustainability / total number of courses	Dr.S.Ramanagopal Academics In charge	10% (Ave. of all UG courses- R2021)	15%	20%
APC 2	Learning outcome	Number of students exposed to Sustainability courses / total number of students	Dr.S.Ramanagopal Academics In charge	25% of total UG students (Civil, Mechanical & Chemical Engineering branch) study the subjects related to Sustainability.	40% of students will be covered in Sustainability related courses.	40% of students will be covered in Sustainability related courses.
APC 3	Sustainability focused program	Number of programs having at least one course on Sustainability	Dr.S.Ramanagopal Academics In charge	Currently one PG program M. Tech Environmental Science & Technology focuses on Sustainability	2 courses will be included in the First year of all UG programs.	A group of subjects for Sustainability track will be planned.
APC 4	Immersive experience in Sustainability	Number of events that expose students to sustainability practice	Dr.P.Kaythry NSS Officer	A few students are covered through NSS camps in village schools	2 immersive programs per year will be planned	2 immersive programs per year will be planned

APC 5	Research and Scholarship	Number of internal funded student & faculty projects on sustainability / total number of internal funded student & faculty projects	Dr.P.Ramasamy Dean Research	 Research is an important component in the faculty promotion. Scholarship is offered to all regular Ph.D. scholars, who meet the norms. 	10% of the supported Scholars will be on Sustainability Research.	The possibility of establishing a Centre for Sustainability research will be explored.
APC 6	Support for Sustainability Research	No calculation	Dr.P.Ramasamy Dean Research	Internal funding is given for faculty and students to carry out research in the field of sustainability (Sustainable materials, Electric vehicles, Bio- fuels, Waste to energy, Environmental Engineering Etc.,).	Current practice of internal funding will be continued One conference on Sustainability will be planned.	Current practice of internal funding will be continued One conference on Sustainability will be planned.
APC 7	Open Access to Research	No calculation	Dr.P.Ramasamy Dean Research	Open access to online resources including high impact factor journals is available for the students and faculty members. Policy on adopting Open access for dissemination of research, without detriment to quality will be developed and monitored.	Policy on Open access will be reviewed once in three years.	Policy on Open access will be reviewed once in three years.

5.Faculty & staff engagement

Ref	Parameter	Method of calculation	Owner	As of 2022 Jan	Target 2025	Target 2030
FSE 1	Attrition percentage	Number of employees	Ms.T.Rebecca	5.67%	5% and lesser	5% and lesser
		resigning/ total number	Mgr-HR			
		of employees, as a				
		percentage				
		Number of employees	Ms.T.Rebecca	18%	25%	35%
		undergoing specified	Mgr-HR			
FSE 2	Training Achievement	training for the year/				
1362	percentage	total number of				
		employees, as a				
		percentage				
FSE 3	Average expenses on	Amount spent on	Ms.T.Rebecca	Rs. 2000/- [appears very	Rs. 2500/-	Rs. 3000/-
	training per employee	training / total number	Mgr-HR	less- will check with		
	p. a	of employees		Accounts and correct this-		
				VEA]		
FSE 4	Employee Engagement	Description and number	Ms.T.Rebecca	1.Teachers Day	Same as base	Same as base
	Level	of employee	Mgr-HR	2.Day outing / Excursion	year	year
		engagement programs		3.Employee cultural		
		held in an academic year		programme		
				4.Ayudha Pooja		
				Celebration		
				5.Pongal Celebration		
				6.Sports for staff		
FSE 5	Description of	No calculation	Ms. I. Rebecca	1.Annual Health check-up	Policy will be	Policy will be
	employee benefit		Nigr-HR	2.GMC/GPA/GTL	revised once in	revised once
	schemes/ programs			coverage	three years and	in three
	available for the			3.LIA	on need basis.	years and on
				4. IVIAITIAGE GITT		need basis.
	empioyees			5.ivew born baby gift		
				o.Diwali gitt	Farewell /	iviore events
					ыппаау	like Farewell

				 7.Fee concession to the wards 8.Cash award to Best Teaching Faculty 9.Maternity benefits 10.Access to sports complex facilities 11.Doctor on call 12.Medicalim / Insurance 13.Loans on salary 14.Library facility 15. Campus facilities like- On campus TMB Bank / ATM / Unisex Saloon, Laundry Service/ Wi-fi and 	celebration will be considered as appropriate.	/ Birthday celebration will be considered as appropriate.
				Laundry Service/ Wi-fi and intercom facility		
FSE 6	Employee Net Provider Score (eNPS)	percentage of employees giving positive response minus percentage of employees giving negative response.	Ms.T.Rebecca Mgr-HR	Employee Satisfaction Survey as per eNPS format, will be conducted in 2022	Improvement of 10% of score of base year	Improvement of 15% of score of base year

11.Building certifications and Management. systems

Ref	Parameter	Method of calculation	Owner	As of 2022 Jan	Target 2025	Target 2030
BCM 1	Energy Efficient Building/ Automation	Number of buildings with energy efficient aspects	Mr.T.Shivkumar AGM Projects	Automation to be taken up as per IGBC recommendation	At least 20 % of buildings will comply with IGBC	At least 30 % of buildings will comply with IGBC

BCM 2	Green Building Certification- (LEED, IGBC)	No calculation	Mr.T.Shivkumar AGM Projects	Applied for LEED certification	Sustain and improve	Sustain and improve
BCM 3	Occupied/ Leased out building infrastructure that has been certified by Internationally recognized- LEED or The Indian Green Building Council (IGBC).	No calculation	Mr.T.Shivkumar AGM Projects	No leased out building	Will follow if leased out	Will follow if leased out
BCM 4	Description of policies and practices w.r.t. the following (as per applicability): * Fire safety * Electrical safety * Security management * Emergency preparedness * Occupational Health and Safety Standard Operating Procedures	No calculation	Mr.T.Shivkumar AGM Projects	Being followed as per Govt Guidelines	Will be reviewed every year	Will be reviewed every year
BCM 5	Legal compliances pertaining to State and National Requirements- Fire Safety, Disabled Friendly, Emergency Evacuations	No calculation	Mr.T.Shivkumar AGM Projects	Being followed as per Govt Guidelines	Will comply to any new regulations	Will comply to any new regulations
BCM 6	Building Management System Framework (Offices, Offices, Infrastructures)- ISO 45001, OHSAS 18001	No calculation	Mr.T.Shivkumar AGM Projects	It will be taken up as per IGBC recommendation	It will be taken up as per IGBC recommendation	It will be taken up as per IGBC recommendation

12.Smart campus

Ref	Parameter	Method of calculation	Owner	As of 2022 Jan	Target 2025	Target 2030
SMC 1	Digital Attendance system (Bio Metric, RFID) for employees, students stakeholders)	No calculation	Mr.T.Shivkumar AGM Projects	Being followed as per HR policy- mobile app for staff	Will be extended for students and scholars	Wil aim at RFID based automatic attendance monitoring
SMC 2	Examples of Smart Campus Initiatives: * Direct visitors to open parking spaces and provide campus mapping technologies. *Detect water leaks or faulty appliances to address operational deficiencies proactively. *Refine security systems by adding gunshot sensors, facial recognition, and location intelligence. *Use data to identify opportunities for inclusive activities or shift employees into meaningful roles. *Add value to classroom instruction by offering engagement platforms and self-service technologies. *Monitor attendance and resource use at recreational facilities, stadiums, dining, housing, and classrooms. *Automate student and faculty processes to support efficiency while maintaining a human-centric approach	No calculation	Mr.T.Shivkumar AGM Projects	Smart Campus Initiative to be taken up in consultation with the experts	Two new initiatives by 2025	Two new initiatives by 2030

16.Global student network

Ref	Parameter	Method of calculation	Owner	As of 2022 Jan	Target 2025	Target 2030
GSN 1	Total number of students received international offer/ Placement	Number of students with international offers	Mgr-Placement Sujith/NLN	2	10	20
GSN 2	Total Number of students settled abroad post education from SSN	Number of Students settled abroad	Mgr-Placement Sujith/NLN	Estimated to be 10%. Will establish system to capture this information	Will monitor and assess on an annual basis	Will monitor and assess on an annual basis
GSN 3	Global Alumni network if any	Number of Alumni chapters out of India	Mr.Anand V.Raman Alumni Officer	One chapter abroad [US]	Two [US and Germany]	Two [US and Germany]
GSN 4	SoP for conducting Global student meet, if any.	No calculation	Mr.Anand V.Raman Alumni Officer	SoP will be framed	Conducting Global student meet will be explored.	Conducting Global student meet will be explored.
GSN 5	Global Students engagement programs	Number of programs to involve global Alumni in engaging with SSN.	Mr.Anand V.Raman Alumni Officer	The Annual Alumni meet Tribute is conducted in campus with global participation in online mode.	Increasing the global Alumni participation by 10%	Increasing the global Alumni participation by 20%



GHG Footprint & Biodiversity Assessment Report: for Shiv Nadar Foundation, in India.

Report Version 03.0 (Final Version)

SHIV NADAR FOUNDATION

Consulted by: Fair Climate Fund India Pvt. Ltd. March, 2023



Report:	Version 01	12 August 2022	
	Version 02 (Draft)	08 February 2023	
	Version 03 (Final)	04 March 2023	
Scope:	 (i) Carbon Footprint Estimation for four different institute of Shiv Nadar Foundation (ii) Assessment of Water, Waste & Biodiversity across the institutes 	-	
Submission:	sion: Final submission to Shiv Nadar Foundation		

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PREFACE:

The Shiv Nadar Foundation was established in 1994 by Shiv Nadar, Founder, with a philosophy of 'Creative Philanthropy'. From its inception, the Foundation has ceaselessly been the metamorphosis of an education ideology that enables impactful addition to the lives, futures, and aspirations of the young across the country. Committed towards creation of a more egalitarian society, it seeks youth empowerment through an education system which is radically inclusive and fundamentally exhaustive. Currently four different institutions are being operated under the philanthropic framework of the foundation.

Along with various social development activities the environment and sustainability remain one of the key focus areas for the foundation. In this regard, the foundation has already been involved in various activities under a dedicated ESG (Environment – Social - Governance) framework. The foundation realizes that carbon emissions from the operational activities of the institutes may have a significant impact while measuring the 'Environment' scoring for the organization. In this regard, the foundation has decided to take a voluntary initiative to measure and map the overall carbon footprints of the four institutions with an objective to reduce the carbon footprint impacts across the institutes.

In this regard, a specific scope of work has been assigned to Fair Climate Fund India (also referred to as FCFI) to act as a consultant to the foundation for assessing the Carbon Footprints of the institutes and thereby to guide the foundation towards possible carbon emission reduction measures. The scope also includes an assessment of overall scenario of the institute campuses based on three key indicators viz. Biodiversity, Water and Waste (also referred to as BWW).

This is the final version of the assessment that includes (i) the Carbon emissions and the results are presented under this report, (ii) recommendations, (iii) Way to 1.5 Degree goal, (ii) overall status and assessment of Biodiversity, Waste & Water across all the four institutes. This report version is submitted as the final version with results and outcomes which can be used for both internal & external communications.

INTRODUCTION:

The Shiv Nadar Foundation is a philanthropic organization in India that was founded by Shiv Nadar, a renowned Indian entrepreneur, and philanthropist. The foundation's mission is to create an equitable and inclusive society through transformative education. The foundation operates several educational institutions, including the Shiv Nadar University, a multidisciplinary university located in Uttar Pradesh, India. The university offers undergraduate, postgraduate, and doctoral programs in a range of fields, including engineering, management, humanities, and social sciences. The university has a strong focus on research and innovation, and its faculty members have received several prestigious awards and honors.

In addition to the university, the Shiv Nadar Foundation operates the VidyaGyan Leadership Academy, which provides free education to economically and socially disadvantaged students from rural areas. The academy aims to develop the next generation of leaders from underprivileged backgrounds and provides them with a comprehensive education that includes academic, extracurricular, and leadership development opportunities. The schools focus on developing critical thinking, creativity, and problem-solving skills, and offer a range of extracurricular activities and opportunities for personal growth and development.

Overall, the Shiv Nadar Foundation is a leading philanthropic organization in India that is dedicated to creating a more equitable and inclusive society through transformative education. Its institutions have had a significant impact on the education landscape in India and have helped to empower thousands of students from diverse backgrounds.

Therefore, with the growing capacities of the Foundation across the institutes, the management recognizes the importance of environmental sustainability and has taken several actions to address environmental concerns. Some of the existing activities are as follows:

Sustainable Campus: Shiv Nadar University, which is operated by the foundation, has implemented several sustainable practices on its campus. These include the installation of solar panels, rainwater harvesting systems, and a waste management system. The university has also implemented several energy conservation measures, including the use of energy-efficient lighting and cooling systems.

Green Initiatives: The Shiv Nadar Foundation has launched several green initiatives to promote environmental sustainability. For example, the foundation has organized tree plantation drives and has established a botanical garden on the Shiv Nadar University campus. The foundation has also implemented a paperless office policy and encourages its employees to adopt sustainable practices in their daily lives.

Environmental Education: The foundation recognizes the importance of environmental education and has integrated sustainability into its academic programs. The foundation has established a Center for Environmental Studies at Shiv Nadar University, which offers courses and research opportunities in environmental science and sustainability.

Collaboration with NGOs: The Shiv Nadar Foundation collaborates with several NGOs and environmental organizations to promote environmental sustainability. For example, the foundation has partnered with the Climate Reality Project, an international NGO focused on climate change education and advocacy, to organize workshops and events on climate change.

Overall, the Shiv Nadar Foundation is committed to promoting environmental sustainability through its various initiatives and collaborations. The foundation recognizes that environmental sustainability is critical to creating a more equitable and just society, and is dedicated to playing its part in addressing environmental concerns.

As a part of this sustainable journey, the Shiv Nadar Foundation has taken a new initiative during the year 2022 and intended to develop an effective practice to measure the impacts of climate change. Overall objective of the organization is to understand the level of Greenhouse Gas (GHG) emissions associated with the four institutes at the Shiv Nadar Foundation, thereby identifying possible recommendations to reduce the emissions within the 1.5 degree target, which is a goal set by the international community under the Paris Agreement, a landmark agreement adopted by 195 countries in 2015 to combat climate change.



About Greenhouse Gas (GHG) accounting:

Greenhouse gas (GHG) accounting and emission reductions are critical for achieving global climate goals and addressing the growing threat of climate change. Accurately accounting for GHG emissions allows organizations to identify and prioritize emission reduction opportunities, track progress towards climate targets, and report on their climate performance to stakeholders.

In addition to the ethical and social responsibility to mitigate climate change, there are also significant financial benefits to reducing emissions. By increasing energy efficiency, investing in renewable energy, and implementing sustainable practices, organizations can save money on energy costs, reduce regulatory risks, and enhance their reputation and brand value.

Governments around the world are also implementing policies and regulations that incentivize GHG reduction, such as carbon pricing and emissions trading systems. Meeting these regulations can help organizations avoid costly fines and penalties, while also enhancing their competitiveness in a rapidly evolving market.

Ultimately, reducing GHG emissions is necessary to mitigate the worst impacts of climate change and create a sustainable future for all. By prioritizing GHG accounting and emission reductions, organizations can contribute to this global effort while also benefiting their bottom line. It can directly relate to the Sustainable Development Goal (SDG) #13, which relates to Climate Actions.

13 CLIMATE ACTION





PRESIDENT's Column:

In recent years, we have seen an increased awareness of the impact that greenhouse gas (GHG) emissions have on the environment and the global climate. As a result, organizations are now under greater pressure than ever before to take action to reduce their emissions and mitigate their impact on the environment.

GHG accounting is a vital tool for organizations that are looking to take action on climate change. By accurately measuring their GHG emissions, organizations can gain a clear understanding of their carbon footprint and identify areas where they can reduce their emissions. This information can then be used to set targets and track progress towards meeting those targets.

With this understanding, we at the Shiv Nadar Foundation have taken initiatives towards Climate Change and GHG accounting practice has



been adopted as our first step towards our climate action. We realized that GHG accounting is also about demonstrating transparency and accountability to stakeholders. GHG accounting also has a number of other benefits for organizations. It can help them to identify opportunities for cost savings in energy use and improving the efficiency of their operations. It can also help them to stay ahead of regulatory requirements and avoid potential penalties for non-compliance.

In short, GHG accounting is a vital tool for organizations that are serious about taking action on climate change and demonstrating their commitment to sustainability. It provides a clear understanding of an organization's carbon footprint and helps to identify areas for improvement, while also providing transparency and accountability to stakeholders.

As a representative of the Strategic Management team at HCL Corp and Shiv Nadar Foundation, I take immense pleasure to present the organizations' first GHG accounting practice which indicates our priority in sustainability efforts across all the institutes. By doing so, we can all play our part in creating a more sustainable and resilient future for our planet.

There is limited data available on the specific contribution of institutions and educational campuses to India's carbon emissions. However, it is widely recognized that the education sector, including institutions and campuses, has a significant impact on the environment and can contribute to carbon emissions in several ways. In order to achieve that our first step is to understand the emission status and to define a base year of emissions. This study fulfils that requirement for the foundation.

In this regard, we would also like to thank the technical team of **Fair Climate Fund India (FCF India)** team for guiding us through and developing our GHG inventory and results are evaluated to meet our goals. The team has conducted a detailed study based on primary data and physical site visit to our institutes; both on GHG emissions as well as on the key elements of biodiversity within the project boundary considered under this study.

The report is an outcome of the overall assessment that includes the results, presentation of the key findings and also the key recommendations under two separate chapters viz. Chapter-1 on GHG Accounting and Chapter-2 on Biodiversity, Water & Waste related assessment.

Therefore, I would like to reiterate our vision as:

"Our commitment to sustainability is not just a business strategy, but a moral imperative. We believe that we have a responsibility to protect the planet for future generations and ensure that our operations are sustainable and environmentally responsible."

Sundar Mahalingam

President - Strategy, HCL Corp and Shiv Nadar Foundation



When sustainability practices go hand in hand with our vision of Education for all !



This chapter includes the overall findings related to the GHG emission footprints. The results of the assessment are reported under this chapter specific to the identified emission scopes both in values and based on graphical presentation.

BACKGROUND INFORMATION:

This section includes some of the key terminologies and their conceptual meaning in the context of GHG accounting.

What is a Carbon Footprint?

A carbon footprint is the total amount of greenhouse gas emissions produced by an individual, organization, or activity. Greenhouse gases, such as carbon dioxide, methane, and nitrous oxide, trap heat in the Earth's atmosphere and contribute to climate change. Individuals and organizations can measure their carbon footprint to understand their impact on the environment and identify opportunities to reduce their greenhouse gas emissions.

What are Greenhouse Gases?

Greenhouse gases are gases that trap heat in the Earth's atmosphere, contributing to global warming and climate change. The most common greenhouse gases include carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O). Carbon dioxide is the most prevalent greenhouse gas and is produced mainly due to burning of fossil fuels such as coal, oil, and natural gas. Methane is emitted mainly during agricultural activities, such as livestock farming, and from the decomposition of organic waste in landfills. Nitrous oxide is released from fertilizers and other chemical processes.

Why is Carbon Offsetting Important?

Carbon offsetting allows individuals and organizations to offset their carbon emissions by supporting projects that reduce greenhouse gas emissions, such as renewable energy or reforestation projects. Carbon offsetting can be used to achieve carbon neutrality, which is when an individual or organization's net greenhouse gas emissions are zero.

What does it mean to be Carbon Neutral?

Carbon neutrality is achieved when an individual or organization's net greenhouse gas emissions are zero. This can be accomplished by reducing emissions through energy efficiency and other sustainable practices, as well as by offsetting remaining emissions through carbon offsetting.

Life Cycle Assessment (LCA)

Life cycle assessment is a process used to evaluate the environmental impact of a product or service throughout its entire life cycle, from raw material extraction to disposal. LCAs can help identify opportunities to reduce greenhouse gas emissions and improve environmental sustainability.

What are the scopes of emissions in Carbon Footprint?

The scope of emissions in a carbon footprint refers to the different types of greenhouse gas emissions that are included in the calculation. There are three scopes of emissions commonly used in carbon footprint assessments:

Scope 1 Emissions: These are direct emissions from sources that are owned or controlled by the individual or organization, such as emissions from on-site combustion of fossil fuels, transportation vehicles owned or leased by the organization, or emissions from chemical reactions occurring in manufacturing processes.

Scope 2 Emissions: These are indirect emissions associated with the consumption of purchased electricity, heat or steam. Scope 2 emissions are generated by an energy supplier, but they are indirectly related to the individual or organization's activities.

Scope 3 Emissions: These are all other indirect emissions that occur in the value chain of the individual or organization, including emissions from the production of purchased goods and services, business travel, employee commuting, and waste disposal.

In order to provide a comprehensive picture of an individual or organization's carbon footprint, all three scopes of emissions should be considered. This allows for a more accurate assessment of the greenhouse gas emissions associated with the activities of the individual or organization, and identifies opportunities for reducing those emissions.

Defining Project Boundary for GHG assessment is important:

Defining a project boundary is an important step in greenhouse gas (GHG) accounting, as it establishes the scope of emissions that will be included in the project's carbon footprint. The project boundary should be defined based on the goals of the project and the emissions sources that are under the control of the project team. Here are some steps to follow when defining a project boundary under GHG accounting:

Identify the goals of the project: The project goals should be clearly defined and communicated to all stakeholders. This will help determine the scope of the project and the emissions sources that need to be considered.

Determine the organizational boundary: The organizational boundary defines the extent of the project team's control and influence over the emissions sources. This includes the physical location of the project and the ownership or control of the emissions sources.

Identify the operational boundary: The operational boundary defines the activities and processes that will be included in the project's carbon footprint. This includes the emissions sources associated with the production of goods or services, as well as those associated with the operation of the project.

Define the temporal boundary: The temporal boundary defines the time period over which emissions will be tracked and reported. This may include the life cycle of a product or service, or a specific time period such as a year or a quarter.

Consider the boundaries of the emissions sources: The emissions sources included in the project boundary should be clearly defined and consistent with international GHG accounting standards. This may include emissions from direct sources, such as on-site combustion or transportation, as well as indirect sources, such as purchased electricity or emissions from the production of purchased goods or services.

Document the project boundary: Once the project boundary has been defined, it should be clearly documented in the project's GHG accounting protocol or other reporting mechanism. This will ensure that all stakeholders understand the scope of the project and the emissions sources that are being considered.

Defining a clear and accurate project boundary is critical to ensuring that the project's carbon footprint is accurately measured and reported. By following these steps, project teams can establish a project boundary that is consistent with international GHG accounting standards and supports the goals of the project.

SN	Key Parameters	Consideration:
1	GHG Gases	All 6 gases
2	Project Boundary	Four Campuses of SNF viz. SSN, SNU, VGS, VGB
3	Approach	Operational boundary approach
4	Base year reference	FY 2021-2022 (i.e. 01 April 2021 to 31 March 2022)
5	GHG Standard	ISO-14064 Part-1 and also GHG Protocol is followed

Parameters & approach followed for SNF's GHG assessment:

RESULTS:

A carbon footprint measures the total greenhouse gas emissions caused directly and indirectly by a person, organisation, event or product. A carbon footprint considers all six of the Kyoto Protocol greenhouse gases: Carbon dioxide (CO2), Methane (CH4), Nitrous oxide (N2O), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs) and Sulphur hexafluoride (SF6).

The 'Carbon Footprint' encompasses all possible causes that contributes to GHG emissions, namely: direct (on-site, internal) and indirect emissions (off-site, external, embodied, upstream, and downstream). A Carbon Footprint is expressed in terms of Carbon Dioxide equivalent, generally 1 Carbon footprint = 1 tCO2e.

The ISO 14064 – part 1 specifies the quantification of GHG emissions across three scopes of emission which are categorized based on different sources of emissions that directly and indirectly contribute to the net GHG emissions and removals. The GHG Protocol specifies all sources of emissions under three scopes, viz. Scope-1 (Direct emission sources), Scope-2 (Indirect sources) and Scope-3 (all under indirect sources).



In line with the GHG Protocol and ISO 14064, the Scope-1 and Scope-2 are mandatory reporting under any Carbon Footprint Assessment whereas the Scope-3 emissions are voluntary and can be reported based on company's requirement, objective and availability of data. However, as defined in the scope of work and boundary of this assessment (i.e. the overall campus operation of all four institutes viz. SSN, SNU, VGS and VGB) all three scopes 1, 2 & 3 are included. The organization has intended to map the overall carbon emissions across all the scopes so that emission hot spots can be identified and required mitigation measures can be considered.

Total Carbon Footprints accounted for the Shiv Nadar Foundation across the four institutes, for the current assessment period (i.e. FY 2021-22 that includes April 2021 to March 2022) is 10,651 tonnes of CO2 equivalent.

This is the cumulative result across all the emission sources under Scope 1, Scope 2 & Scope 3 within the defined project boundary for each campus. The assessment has been done at each sub-level of emissions under each emission Scope and end results were estimated. Each sub-level result is allocated under the respective scope of emissions and also presented separately for each institute for better understanding and detailed mapping.

GHG Emission (in tCO ₂ e)	Scope-1	Scope-2	Scope-3	Total
Absolute Emission (actual calculated values)	212	3,148	6,929	10,289
Adjusted Emissions (rounded up values)	213	3,152	6,929	10,295
Final Emissions (with add. of 5% uncertainty factor into the scope-1 & scope-3)	223	3,152	7,275	10,651
Share of Emission	2.09%	29.60%	68.31%	

Here, the final emissions considered for reporting is 10,651 whereas raw calculated emissions were 10,289. These final emissions are based on 5% addition to the calculated values of emissions under Scope-1 and Scope-3. This is because some of the given data under scope-1 and scope-3 are based on approximate values instead of actual measured values, for example: distance travelled in km, stationary materials are converted from purchased values in INR to equivalent quantity, no records related to upstream transportation etc.; whereas, uncertainty factor is not added to the Scope-2 emissions as electricity units are considered to be reported from the billed units. This approach is conservative as 5% uncertainty factor shall cover all possible leakage emissions associated with given data, conversion factors, assumption-based parameters etc.

CARBON MAPPING:

The calculated results are now distributed across the sources of different emission scopes and also presented for all the four different institutes of SNF. A first level mapping of carbon emissions across the assessment boundary is presented below:



Scope-1 emission distribution:

Consumables	UoM	Emission	% Contribution
Diesel	tCO2e	183	82.11%
Petrol	tCO2e	14	6.41%
CNG	tCO2e	1	0.26%
LPG	tCO2e	4	1.78%
Fire Extinguishers	tCO2e	1	0.64%
Owned Vehicles	tCO2e	20	8.79%
Total	tCO2e	223	100%



Scope-2 emission distribution:

Total Scope-2 Emissions	SNF Institutes	Source	Scope-2 (tCO2e)
	SNU	Grid Electricity	344
3.152	SSN	Grid Electricity	1378
0,102	VGS	Grid Electricity	705
	VGB	Grid Electricity	725



Scope-3 emission distribution:

Emission Sources	UoM	Emission	% Contribution
Leased / Rented Vehicles	tCO2e	2805	38.55%
Purchased Good & Services	tCO2e	4389	60.33%
Waste Generated	tCO2e	35	0.48%
Fuel & Energy related activities	tCO2e	47	0.64%
Upstream transportation	tCO2e	0	0.00%
Total	tCO2e	7275	100%



Ranking	of	Emission	Impacts –	across	all	the so	opes:
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Emission Sources	% Contribution	Ranking
Diesel	2.13%	4
Petrol	0.18%	9
CNG	0.02%	12
LPG	0.05%	10
Fire Extinguishers	0.02%	12
Owned Vehicles	0.19%	8
Grid Electricity	29.60%	2
Leased / Rented Vehicles	26.34%	3
Stationery	0.25%	7
Cleaning Agent	39.89%	1
Fertilizer	1.00%	5
Pesticides	0.03%	11
Waste Generated	0.31%	6

As can be identified from the ranking table assessment that scope-3 emissions from Purchase Goods is the key emission hot-spot where "Cleaning Agent" contributes to the maximum footprints. The scope-2 emissions caused by grid electricity is the second largest contributor, followed by leased & rented vehicles under scope-3 emissions. Additionally, within the scope-1 emissions Diesel is the main contributor which ranks the fourth in the overall ranking table.

Ranking of Emission Impacts – distribution institution-wise:

Emission Sources	SSN		SNU		VGS		VGB	
	CO2e Footprint	Ranking						
Diesel	10	8	8	3	51	3	146	3
Petrol	0	12	0	9	12	4	5	5
CNG	0	12	0	9	0	8	1	8
LPG	4	9	0	9	0	8	0	9
Fire Extinguishers	1	11	0	9	0	8	0	9
Owned Vehicles	18	7	1	7	0	8	0	9
Grid Electricity	1374	2	344	1	705	2	725	2
Leased / Rented Vehicles	2652	1	5	4	4	5	10	4
Stationery	20	6	2	6	2	6	1	7
Cleaning Agent	24	5	3	5	1887	1	2133	1
Fertilizer	56	3	49	2	0	8	0	9
Pesticides	2	10	1	8	0	8	0	9
Waste Generated	31	4	0	9	0	7	2	6

The above table represents the ranking chart across all the institutes (however values are only the calculated values, adjusted values with uncertainty factor shall be included under the final report. But in both the cases, the ranking remains the same).

- As can be witnessed from the chart, each Institute has different emission impact sources. However, in all the cases the main emission impacts are coming from Scope-3 emission category.
- For GB & VGS 'Cleaning agent' is the key hot spot, whereas SSN receives main impacts from leased & rental vehicles.
- While SNU has key emission impact from Grid Electricity, all other three institutes received impacts from grid electricity as the second largest contributor.
- The Scope-3 emission impact from Fertilizers is also a visible emission source for SSN & SSU; while same is nil for the other two institutes.
- Also, except for SSN, all other three institutes received emissions from Diesel as one of the top 3 emission contributors.

Overall emission distribution graph across all the sources:


RECOMMENDATIONS:

Based on the overall results and identified emission hot spots we have tried to find out some (i) specific recommendations as well as (ii) generic recommendations. This section includes such recommendations which can be pursued by the Shiv Nadar Foundation to develop a low carbon pathway for the campus operations. In this regard, we have also tried to introduce the objectives and requirements of 1.5 degree climate goal in the pursuit of Paris Agreement. And we strongly believe that with the adoption of certain measures (as listed under the recommendations below) the campuses may achieve a sustainable way of addressing the climate change goal of 1.5 degree in long run.

A. **Specific Recommendations:** SN Recommendations Rational 1 The cleaning agents rank the first **CLEANING AGENTS** (in overall assessment across the Alternate to cleaning agents: project boundary) in the list of emission footprints. Look for eco-friendly products having lower 1. footprint or impacts. ii. There are certified products as environmentally friendly, such as those that carry the "Green Seal" or "EcoLogo" labels.

- iii. Look for products with brand that has EPD (environment product disclosure) so that better decisions can be taken
- iv. Look for brands that practice carbon neutrality or Carbon Offsetting for their products

Efficient use of cleaning agents:

- It's extremely important to use such products i. efficiently (optimum use as per requirement) so that both costs and associated emissions can be lowered.
- ii. To have practice of less wastage of products
- iii. Some products need mixing with other solutions (such as water), hence a proper mixing ration will lead to an effective solution which can reduce multiple usage of such cleaning products.
- iv. Use concentrated products: Concentrated cleaning products can be diluted with water before use, which reduces the amount of

However, in case of individual campuses, for VGS & VGB the cleaning agent ranks the 1st, whereas for other two campuses it ranks 5th.

Hence, it's interpreted that the emission impacts associated with Cleaning Agents could be based on utilization factor and practices. Hence recommendations are accordingly considered. Also, cleaning agent is one of the essential products being used regularly in the campuses.

Therefore, it cannot be avoided instantly; there effective utilization and best practice uses could be a solution.

packaging required and the emissions associated with transportation. Concentrated products can also be more cost-effective in the long run.

- V. <u>Use refillable containers:</u> Instead of buying new bottles of cleaning products, choose refillable containers that can be reused multiple times. This reduces the amount of packaging required and the emissions associated with transportation.
- Vi. <u>Use reusable cleaning tools:</u> Instead of using disposable wipes and sponges, choose reusable cleaning tools such as microfiber cloths and washable mop heads. This reduces the amount of waste generated and the emissions associated with the production and disposal of disposable cleaning tools.
- vii. <u>Reduce energy use during cleaning:</u> Use cold water when possible, as heating water requires energy and generates emissions. Use energy-efficient appliances such as vacuums and washing machines, and turn off appliances when not in use.
- viii. <u>Dispose of cleaning products properly:</u> Follow local guidelines for the disposal of cleaning products, as improper disposal can lead to emissions of greenhouse gases and other pollutants. Look for recycling programs or hazardous waste disposal facilities in the campus area.

2 GRID ELECTRICITY

Reduce Consumption & Switch to alternative:

Reducing electricity consumption in campus buildings is a key step towards sustainability and can also result in significant cost savings. Some of the possible measures are:

- i. <u>Conduct an energy audit:</u> an energy audit can identify areas of high energy consumption and opportunities for energy savings. This can help prioritize energy efficiency measures and provide a baseline for tracking energy savings over time.
- ii. <u>Upgrade lighting:</u> replace incandescent bulbs with energy-efficient LED lighting, which

The purchased electricity ranked 2nd across all the institutes whereas for SNU it ranked the 1st.

A. Therefore, electricity is one of the key hotspots and being an essential requirement in the campuses it will definitely have impacts in long run. Therefore, recommendations need to be reviewed and which are practically feasible can be adopted. For example, an energy audit is always the first and most essential building requirement as energy consumptions are associated with losses and unimproved practices as well.

uses significantly less energy and lasts longer. Install occupancy sensors or timers to turn off lights when not in use.

- <u>Manage temperature:</u> Set heating and cooling systems to appropriate levels, and use programmable thermostats to reduce energy consumption when buildings are unoccupied. Insulate buildings and windows to reduce heat loss in the winter and heat gain in the summer.
- iv. <u>Upgrade equipment:</u> Replace older, inefficient equipment with newer, energyefficient models. This may include AC or HVAC systems, refrigerators, computers, and other electronics. Look for products with the ENERGY STAR label, which indicates high energy efficiency.
- V. <u>Implement behaviour change campaigns:</u> Educate students, faculty, and staff about the importance of energy conservation and encourage behaviour changes such as turning off lights and electronics when not in use, unplugging chargers, and using natural light when possible.
- vi. <u>Utilize renewable energy sources:</u> Consider installing solar panels or other renewable energy systems to generate electricity on-site. This can help reduce reliance on grid electricity and can also provide cost savings over time.

Once an energy audit is conducted it may also reveal the techno-commercial feasibility of other related measures such as lighting system, cooling heating requirements etc.

Note: during the internal audit process by FCF team, it was observed that couple of campuses already adopted technical audits as a practice; but it is not across all campuses. Hence we recommend a detailed energy audit to be a practice for all the campuses and also the outcomes of such audit should be reviewed and implemented as a part of climate action policy.

B. Also, the renewable energy adoption is one of the best measures for any organization as it will not only nullify the emissions but also provide a sustainable energy source for a longer period of time.

Note: During the assessment it was been noted that VGS & SSN campuses are already equipped with rooftop solar; however the review team has observed that capacity may not be adequate and utilization factor is also not Hence, optimal. technoa commercial study is recommended to find the possibility of capacity enhancement or new installation, as well as the scope of better efficiency and utilization of the existing panels.

However, it is generally also a concern that many campuses do not have proper provision or amenities to adopt such practices, nevertheless, in case of SNF Solar rooftop could is a tried and tested activity and is already a feasible option for the SNF campuses. Additionally, we foresee the scope of waste to energy related activities that can also help designing the

		 climate action plan. Thus, we strongly recommend a detailed study specific to Renewable Energy adoption such that technical feasibility as well as the commercial requirements can be evaluated before taking any decision. C. On the other hand, the indicated measure related to the behavioural changes must be adopted on urgent basis. In this regard, a proper in-house team at the campuses is recommended who can be trained towards such behavioural importance and then can be cascaded to the entire resources of the campuses.
3	Vehicular Emissions Reducing emissions related to personal vehicle and transportation can have a significant impact on carbon emissions and help mitigate climate change.	The vehicular emissions (both due to employee travel & hired vehicles) have significant contribution across the SNF compuses. The overall rank is 3 rd in
	personal vehicle and transportation:	the list. Whereas for SSN, the emission due to transportation tops
	i. <u>Use alternative fuels</u> : Consider using alternative fuels, such as CNG, biodiesel or EV based vehicles for all company/business related transportations. Accordingly to choose vehicle service providers with such fuels or EV based vehicles. These fuels can significantly reduce emissions compared to traditional petrol or diesel.	the list. However, though the recommendations are submitted here considering an overall practice in general; but reduction in transportation related emissions are not easy. This is because it will
	ii. <u>Use fuel-efficient vehicles:</u> Consider replacing older vehicles with more fuel- efficient models, such as hybrid or electric vehicles. This can significantly reduce emissions and provide cost savings over time.	required a significant micro- management both at employee level and at organization level. Also, choosing an eco-friendly or fuel efficient mode of commuting is always not feasible due to various
	iii. <u>Optimize routes and schedules:</u> Optimize routes and schedules to minimize driving time and distance. Consider using GPS tracking and routing software to plan the most efficient routes.	situation and time issues. Therefore, such recommendations will be practical only when behavioural changes, awareness, willingness etc. of the people will ioin with the vision of the
	iv. <u>Encourage alternative transportation:</u> Encourage employees to use alternative transportation, such as public transportation.	organization, which may take time.

e-biking, or walking. Provide incentives for employees who use alternative transportation, such as transit passes or bike share programs.

- v. <u>Implement telecommuting</u>: Implement telecommuting or flexible work arrangements that allow employees to work from home or other remote locations. This can reduce the number of vehicles on the road and lower emissions.
- vi. <u>Maintain and tune-up vehicles:</u> Regular vehicle maintenance, such as oil changes and tire rotations, can help improve fuel efficiency and reduce emissions. Keeping tires properly inflated can also help improve fuel efficiency.
- vii. <u>Install idle-reduction technologies:</u> Install idle-reduction technologies, such as automatic engine shut-off systems or auxiliary power units, to reduce idling time and emissions.

Additionally, some options to reduce emissions from business trips could be considered as follows:

- i. <u>Use virtual meeting technology</u>: Consider using virtual meeting technology, such as video conferencing or webinars, instead of traveling for business meetings. This can significantly reduce emissions and save money on travel expenses.
- ii. <u>Choose alternative modes of transportation:</u> When travel is necessary, consider choosing alternative modes of transportation, such as trains or buses, instead of air travel. These modes of transportation generally have lower emissions than air travel.
- iii. <u>Encourage eco-friendly travel:</u> Encourage employees to choose eco-friendly travel options, such as using public transportation, biking, or walking when possible. Provide incentives for employees who choose ecofriendly travel options, such as transit passes or bike share programs.
- iv. <u>Optimize travel itineraries:</u> Optimize travel itineraries to minimize travel time and distance. Consider using travel management software or services to find the most efficient travel options.

It is, therefore recommended that the SNF can adopt such behavioural changes in SSN campus as a pilot run, which can be supported by a proper committee who can develop such policy and monitoring practices for vehicular emissions. Gradually such practices can be implemented in other campuses.

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By implementing these options, organizations can significantly reduce their emissions from business travel and contribute to a cleaner and more sustainable future. It's important to engage employees in these efforts, as they play a critical role in creating a culture of sustainability and reducing emissions associated with business travel.

DIESEL CONSUMPTION

Diesel being a prominent fossil fuel has significant & unavoidable emissions and it is seen evident in case of SNF assessment also.

We believe that complete discarding of diesel and switch to alternate fuel or alternate power backup options are the most practical way of reducing emissions. Therefore, primary recommendation is <u>Use Alternative Energy Sources</u>: for example to install renewable energy sources, such as solar panels or wind turbines, can help reduce the need for diesel generators altogether. Similarly, switch to CNG, Biodiesel or to EV is recommended for fuel emission associated with scope 1 vehicular emissions. This can significantly reduce emissions and save on fuel costs in the long run.

Nevertheless, there are several ways to reduce emissions from diesel consumption in diesel generators on campuses. Here are a few suggestions:

- i. <u>Use cleaner diesel fuel</u>: Diesel fuel with lower sulphur content can significantly reduce emissions. Using biodiesel or renewable diesel can also help reduce emissions.
- ii. <u>Regular maintenance:</u> Regular maintenance of diesel generators can help ensure they are running efficiently, which can reduce emissions. This includes changing air filters, oil filters, and fuel filters, and ensuring that fuel injectors are clean.
- iii. <u>Upgrade to newer and cleaner engines:</u> Consider upgrading to newer diesel engines that meet higher emission standards. Newer engines are designed to emit fewer pollutants and are more fuel-efficient.
- iv. <u>Optimize generator use:</u> Use the generator only when it is necessary, and turn it off when it is not in use. This can significantly

Diesel as a fuel is recognized to be the significant emission contributor for SNF, especially the main contributor under Scope-1 emissions. Hence, it is important to reduce this source as it can lower a significant emission across all the campuses.

reduce the amount of fuel used and emissions produced.

- v. <u>Proper ventilation:</u> Proper ventilation can help reduce the concentration of pollutants in the air. Ensuring that the generator is installed in a well-ventilated area can help reduce emissions.
- vi. <u>Use emission control technologies:</u> Installing exhaust after-treatment devices, such as diesel particulate filters, can help reduce emissions. These technologies can capture and remove pollutants from the exhaust before it is released into the atmosphere.

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FERTILIZER USE

There are several ways to reduce emissions related to fertilizer applications in gardens. Here are some generic suggestions:

- i. <u>Use fertilizers in moderation</u>: Only use fertilizers when necessary and avoid excessive applications, which can lead to nutrient runoff and pollution.
- ii. <u>Compost yard and garden waste:</u> Composting yard and garden waste such as grass clippings, leaves, and food scraps can create a nutrient-rich soil amendment that reduces the need for synthetic fertilizers.
- iii. <u>Use nitrogen-fixing plants:</u> Certain plants, such as legumes, have the ability to fix nitrogen from the air and improve soil fertility without the need for additional fertilizer applications.
- iv. <u>Apply fertilizers correctly:</u> Follow instructions on the fertilizer package for the right amount and timing of application. Over-fertilization can result in excess nutrient leaching and emissions.

Fertilizer consumption is not significant in the SNF campuses; however usage is mainly found in SSN & SNU campuses and ranked 5th in the overall emission ranking list. Therefore, fertilizer is one of the emission hotspots hence reduction measures are important. Additionally, it also contributes to biodiversity related impacts as one of the key parameters.

B. Generic Recommendations:

There are some potential actions that can be taken up by any individuals and by the organization to avoid, reduce or eliminate emissions; especially the scope 3 emissions. Few recommendations are highlighted below.

SUSTAINABLE MOBILITY INITIATIVES FOR EMPLOYEES

For example – a plan can be developed for sustainable mobility for employees, which may include a series of actions intended to reduce emissions due to travel between home and work, such as:

- promotion of company car-pooling;
- setting up of a company shuttle service with daily trips that can be managed with alternate fuels such as EV, Bio-diesel, Bio-CNG, etc.
- deploy incentive schemes for using green fuel or green mode of transport

TO AVOID BUSINESS TRAVLES WHENEVER POSSIBLE

It's not a practical solution or option to avoid business travels as business trips are the key integral part of every business. However, there could be a practice of limiting travels or travels routes whenever possible. In such cases, few other practices can be promoted:

- encourage and adopt new forms of work, like smart working or teleworking and use of videoconferencing facilities to reduce the need for travel;
- remain aware of available green fleets while traveling domestically and internationally, use them whenever possible;

To develop a Climate & Sustainability Team/Committee within SNF to regularly review, analyse, record and evaluate climate change mitigation based activities as a part of Carbon Neutral Road-map for the organization. Also, the team/committee can create awareness amongst the internal & external stakeholders (including employee and management) to adopt climate friendly practices and go-green.

To develop a policy framework for "Carbon Neutrality" and amalgamate with an ISO 14001 Standard & Policy to bring qualitative development in the climate action plan.

Under a dedicated policy framework such as 'Corporate Social Responsibility', SNF may engage in various social activities with more emphasis on environment-sustainable activities that can help generating enough carbon pool to offset WellDone's footprint by own self. Such projects can be – plantation program, Afforestation & Reforestation program, Solar Lanterns for rural communities, Community scale biogas projects, Energy Efficient Cooking practices for rural communities, Sustainable Agriculture program, etc.



C. Importance of climate actions – way to 1.5 degree goal:

About 1.5 Degree Target:

The 1.5 degree goal refers to the goal of limiting global warming to no more than 1.5 degrees Celsius above pre-industrial levels. This goal was set by the international community under the Paris Agreement, a landmark agreement adopted by 195 countries in 2015 to combat climate change.

Limiting global warming to 1.5 degrees Celsius is considered critical for avoiding some of the most catastrophic impacts of climate change, such as extreme heatwaves, droughts, floods, and sea level rise. The Paris Agreement recognizes that even a 2-degree Celsius increase in global temperatures would have significant and dangerous impacts on human societies and the natural world, and that limiting warming to 1.5 degrees Celsius would significantly reduce these impacts.

Achieving the 1.5 degree goal will require rapid and far-reaching transitions in energy, land, urban, and industrial systems. This will require ambitious actions from all countries, including reducing greenhouse gas emissions, increasing the use of renewable energy, improving energy efficiency, and adapting to the impacts of climate change.

What is the current status of 1.5 Degree goals?

The current status of the 1.5 Degree goal and the Paris Agreement is interrelated. On one hand, the Paris Agreement has been successful in bringing together almost all of the world's countries to acknowledge the need for urgent action on climate change. As of February 2023, 197 countries have ratified the agreement, committing to limit global warming to well below 2 degrees Celsius and to pursue efforts to limit it to 1.5 degrees Celsius.

However, the current commitments made by countries to reduce greenhouse gas emissions are not sufficient to achieve the 1.5-degree goal. According to the latest report by the Intergovernmental Panel on Climate Change (IPCC), global greenhouse gas emissions need to be reduced by about 45% from 2010 levels by 2030 and reach net-zero by 2050 to limit warming to 1.5 degrees Celsius.

Many countries have yet to take sufficient action to achieve these goals, and even those that have made commitments to reduce emissions have not yet implemented the policies and measures necessary to achieve them. As a result, global greenhouse gas emissions continue to rise, with 2021 being one of the hottest years on record. Therefore, urgent and ambitious action is needed from all countries to increase their commitments and implement measures to achieve the 1.5-degree goal and the objectives of the Paris Agreement.

Importance of SBTi in managing 1.5 degree target:

Science Based Target Initiatives (SBTi): The Science-based targets can play a crucial role in helping to achieve the 1.5-degree target under climate change. Science-based targets are greenhouse gas reduction targets that are aligned with the level of de-carbonization required to keep global warming below 1.5 degrees Celsius, as recommended by the latest climate science. By setting science-based targets, companies, cities, and other organizations can ensure that their greenhouse gas emissions reductions are consistent with the ambition of the Paris Agreement and the 1.5-degree goal.

- **1.** Science-based targets provide a clear framework for organizations to take ambitious and credible action on climate change. They can help organizations to:
- **2.** Set ambitious goals: Science-based targets provide a clear and credible benchmark for organizations to set ambitious greenhouse gas reduction goals that are consistent with the 1.5-degree target.
- **3.** Measure progress: Science-based targets enable organizations to track their progress towards the 1.5-degree target and to report on their emissions reductions in a transparent and consistent manner.
- **4.** Engage stakeholders: Science-based targets can help organizations to engage with stakeholders, including customers, investors, and employees, by demonstrating their commitment to tackling climate change.
- **5.** Drive innovation: Setting science-based targets can drive innovation by encouraging organizations to explore new technologies and approaches to reduce their greenhouse gas emissions.

By adopting science-based targets, organizations can contribute to the global effort to limit global warming to 1.5 degrees Celsius and help to create a sustainable future for all. Moreover, science-based targets also demonstrate leadership in climate action, which can provide competitive advantage and improve reputation.

SBTi and BRSR relation in India for climate actions:

The Science-Based Targets initiative (SBTi) and the Business Responsibility and Sustainability Reporting (BRSR) are both related to climate actions in India, but in different ways.

The SBTi is a global initiative that helps companies set science-based targets (SBTs) for reducing greenhouse gas emissions. SBTs are targets that are aligned with the goals of the Paris Agreement to limit global warming to below 1.5° C pre-industrial levels. In India, several companies have joined the SBTi and committed to setting and achieving SBTs.

On the other hand, the BRSR is a reporting framework that was introduced by the Securities and Exchange Board of India (SEBI) in 2012. It requires the top 500 listed companies in India to report on their environmental, social, and governance (ESG) performance. The BRSR includes reporting on climate change-related risks and opportunities, greenhouse gas emissions, and energy consumption. It

is aimed at encouraging companies to integrate sustainability into their business strategies and operations.

While the SBTi and BRSR are separate initiatives, they are complementary in nature. By setting science-based targets through the SBTi, companies can demonstrate their commitment to reducing greenhouse gas emissions, while reporting their progress through the BRSR. This can help investors and stakeholders assess the company's sustainability performance and make informed decisions. In this way, both SBTi and BRSR can contribute to driving climate actions in India.

Note:

SBTi (Science-Based Targets initiative) and BRSR (Business Reporting on Sustainable Development Goals) are initiatives aimed at encouraging businesses to commit to and report on their sustainability goals and progress.

While there is no comprehensive list of educational institutes considered for SBTi and BRSR, any educational institute can participate in these initiatives provided they meet the eligibility criteria.

To participate in the SBTi initiative, organizations must be for-profit and have operations in one or more countries. They must also commit to setting sciencebased targets to reduce greenhouse gas emissions and report on their progress towards achieving these targets.

Similarly, for the BRSR initiative, any organization can participate regardless of their size or sector. To participate, organizations must commit to reporting on their progress towards achieving the UN Sustainable Development Goals (SDGs).

Therefore, any educational institute that meets these eligibility criteria can participate in these initiatives and contribute to sustainable development.

In this regard, we strongly recommend SNF to consider measures to reduce GHG emissions, especially for the hot-spots identified, by following a Science-based route; however evaluation & reporting parameters can be in line with the Indian BRSR standard. This will also help SNF aligning their sustainability reporting with ESG based approach.

D. A proposed action plan towards Neutrality (in the context of 1.5 degree target):

The recommendations (both specific and generic) for the emission hotspots are presented below with a timeline oriented action plan towards neutrality.



Note:

- 1. As can be identified below, a medium term timeline of 2026-27 has been considered for achieving zero emission against electricity consumption, vehicle use and diesel fuel use; whereas for fertilizers and Cleaning Agent (which is the main hot spot) the zero emission is not proposed however a minimized emission level is expected by 2027-28 which will be influenced by the "Behavioural Changes" that is expected to go alongside the emission reductions activities.
- 2. In case SNF decides to go for Neutrality on an immediate basis or under a short term commitment (say by FY 2024-25); then we recommend for "Carbon Offsetting" with the help of Carbon Credits. Additionally, at present the cost economics are not known to us with respect to the measures being recommended for SNF. Hence Carbon Offsetting can be an immediate practice for SNF.
- 3. However, for a long-term sustainability and for a permanent measure, Carbon In-setting (i.e. reduction of emissions via real actions, as prescribed under the recommendation chapter) is highly recommended; whereas Offsetting is always the most easily achievable practice of carbon neutrality which can be considered at any point of time.





Conclusion 1: For an immediate action towards achieving a status of "Carbon Neutral", we recommend "Carbon Offsetting" for SNF.

Conclusion 2: For a long term goal towards achieving Net-zero status, we recommend "Carbon In-setting" for SNF which can be based on the recommendations submitted in this report. However, a detailed study (techno-commercial assessment) on some practical measures is required to enable SNF taking decisions on the implementation timeline.



CHAPTER 2:

Biodiversity, Water & Waste Assessment

Under this chapter second part of the assessment included, which is specific to Biodiversity. This assessment was based on three main parameters within the SNF campuses viz. existing biodiversity status of the campuses, water, and waste. These three parameters were separately assessed and reported under this chapter.

Scenario Assessment for Biodiversity Parameters

An assessment of four institutes under Shiv Nadar Foundation, in India.

Preface:

This is Type-II of the overall assessment conducted for the SNF Institutes with a dedicated focus to present the overall scenario of the biodiversity of the campuses, especially based on few critical parameters viz. Water, Waste and Biodiversity elements associated with the respective campuses. During the initial assessment this scope was separately reported; however this scope is an integral part of this overall assessment and hence final version of the report is inclusive of the assessment conducted for Biodiversity.

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Institutional investors rated climate change and carbon emissions as the two most important themes to their organization under the pillars of ESG

Asset managers have increasingly turned to offsetting to achieve **net-zero goals** within portfolios, with a surge in demand for products linked to biodiversity, green energy and forestry



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THE FRAMEWORK:

The Biodiversity Framework interpreted for SNF is mainly a three pillar matrix that essentially includes viz. Biodiversity element as Flora & Fauna, Water, and Waste (also termed as BWW in this report for referencing purposes). Thus, the overall framework of biodiversity at SNF is depicted as follows:



IMPORTANCE:

Biodiversity is essential for the processes that support all life on Earth, including humans. The term biodiversity (from "biological diversity") refers to the variety of life on Earth at all its levels, from genes to ecosystems, and can encompass the evolutionary, ecological, and cultural processes that sustain life.

Biodiversity is important to most aspects of our lives. We value biodiversity for many reasons, some utilitarian, some intrinsic. This means we value biodiversity both for what it provides to humans, and for the value it has in its own right. Utilitarian values include the many basic needs humans obtain from biodiversity such as food, fuel, shelter, and medicine. Further, ecosystems provide crucial services such as pollination, seed dispersal, climate regulation, water purification, nutrient cycling, and control of agricultural pests. Biodiversity also holds value for potential benefits not yet recognized, such as new medicines and other possible unknown services. Biodiversity has cultural value to humans as well, for spiritual or religious reasons for instance. The intrinsic value of biodiversity refers to its inherent worth, which is independent of its value to anyone or anything else. This is more of a philosophical concept, which can be thought of as the inalienable right to exist. Finally, the value of biodiversity can also be understood through the lens of the relationships we form and strive for with each other and the rest of nature. We may value biodiversity because of how it shapes who we are, our relationships to each other, and social norms. These relational values are part of peoples' individual or collective sense of wellbeing, responsibility for, and connection with the environment. The different values placed on biodiversity are important because they can influence the conservation decisions people make every day.

For SNF, the biodiversity assessment was conducted based on two main parameters viz. Water & Waste. Also the key elements of Biodiversity such as flora and Fauna, green cover, etc. have been considered under the assessment and reporting.



WATER: Biodiversity and water resources are intrinsically linked. Biodiversity supports water resources including nutrient cycling in soil and plants. This process controls water quality. Similarly, water resources supports biodiversity: without sufficient water there is stress on species thereby causing biodiversity loss. Thus, Water is an ecosystem service. Well-functioning ecosystems – forests, grasslands, soils, rivers, lakes, streams, wetlands, aquifers, estuaries and coastal waters – provide services that influence the availability of water and its quality.

Also, small waterbodies, including ponds and small lakes, low-order streams, ditches and springs, are the most numerous freshwater environments globally, are critical for freshwater biodiversity and are increasingly recognised for their role in ecosystem service delivery.

WASTE: Waste is a critical component of our ecosystem, while we can't avoid them but there are ways to manage. Waste comes in many forms, all of which affect people and nature. Non-degradable waste enters the food chain, potentially causing illness, disease or death. Organic waste, meanwhile, is implicated in disease, pest outbreaks and contamination of water and soils. Toxic waste is as harmful as its name suggests. Poor waste management can harm biodiversity both directly (e.g. the consumption of plastic microbeads by marine wildlife) and indirectly (e.g. landfill sites, which provide ideal conditions for bacteria that produce methane – a potent greenhouse gas that contributes to climate change).

Unmanaged waste in our environment can also affect human health, particularly in developing countries where people rely directly on healthy, functioning environments for survival (and where waste is not well managed, due to resource and technology limitations). Understanding the connections between waste, livelihoods and the environment, and integrating local and regional needs can make a big difference in tackling this pressing challenge.

Flora & Fauna: Over the years, native flora has evolved in connection with the other plants and animals in its region. Flora and fauna are the most important elements of biodiversity causing human survival because they regulate the amount of oxygen and carbon dioxide in the air. Biodiversity is the variety of natural life and developed species in a given environment. Plants and animals form a larger part of the ecosystem and are often put into consideration when it comes to urban, rural and regional planning. Innovations, technology, and other scientific discoveries mean that nature is under a serious threat. As a result, there's barely enough habitat for quite a number of animals and plants to thrive or at least survive.

Though Fauna is not much relevant at the context of SNF campuses, Flora plays an important role in demonstrating the biodiversity in and around the campuses. Therefore, during the assessment scenario of different flora present within the campuses has been evaluated.





- E: can take Carbon Reduction measures based on GHG footorints

Biodiversity Reporting:

For the purpose of reporting of the biodiversity related scenarios for SNF institutes, "GRI 304: Biodiversity 2016" has been referred. GRI 304: Biodiversity sets out reporting requirements on the topic of biodiversity. This Standard can be used by an organization of any size, type, sector or geographic location that wants to report on its impacts related to this topic. This Standard is part of the set of GRI Sustainability Reporting Standards (GRI Standards). These Standards are designed to be used by organizations to report about their impacts on the economy, the environment, and society.

At SNF Institutes, the central ESG team is responsible for recording data, doing internal evaluations of various impacts related to environment and social etc. which can directly be attributed under the broader scope of Biodiversity. And via good governance practices, the activities are correlated with people (stakeholders) and society across all material topics. Thus, reference of GRI 304 is relevant under this assessment.

Biodiversity Reporting (in reference with 'GRI Standard' - "GRI 304: Biodiversity 2016")						
Sr.	Requirements	St	atus as per data availabil	ity		
511	Requirements	SSN & SNU	VG Sitapur	VG Bulandshahr		
A	Operational site owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas:					
1	Geographic location	Chennai	Sitapur	Bulandshahr		
2	Subsurface and underground land that may be owned, leased, or managed by the organization	No such land owned or leased or managed by SNF				
3	Position in relation to the protected area (in the area, adjacent to, or containing portions of the protected area) or the high biodiversity value area outside protected areas	There is NO protected or high biodiversity value area inside or nearby campus	There is NO protected or high biodiversity value area inside or nearby campus	There is NO protected or high biodiversity value area inside or nearby campus		
4	Type of operation (office, manufacturing or production, or extractive)	Educational institution	Educational institution	Educational institution		
5	Size of operational site in km2 (or another unit, if appropriate)	227 Acres	36.069 Acres	30.5 Acres		
a	Total Green cover as percentage of total campus area	39.47%	40.00%	60.00%		
b	Green cover (grass, hedge, herds, climbers) as percentage of total green cover	30% of total green cover	13% of total green cover	40% of total green cover		

c	Green cover (Shrubs) as percentage of total green cover 30%		5%	12%
d	Green cover (Trees) as percentage of total green cover	een cover (Trees) as percentage of total 40%		8%
6	Biodiversity value characterized by the attribute of the protected area or area of high biodiversity value outside the protected area (terrestrial, freshwater, or maritime ecosystem)	There is NO protected or high biodiversity value area inside or nearby campus	There is NO protected or high biodiversity value area inside or nearby campus	There is NO protected or high biodiversity value area inside or nearby campus
7	Biodiversity value characterized by listing of protected status (such as IUCN Protected Area Management Categories, Ramsar Convention, national legislation)	There is NO protected or high biodiversity value area inside or nearby campus	There is NO protected or high biodiversity value area inside or nearby campus	There is NO protected or high biodiversity value area inside or nearby campus
B	Significant impacts of activities, product	s, and services on bio	diversity	
1	Impact due to - Construction or use of manufacturing plants, mines, and transport infrastructure	Low. Within the project boundary there is no such impact	Low. Within the project boundary there is no such impact	Low. Within the project boundary there is no such impact
2	Impact due to - Pollution (introduction of substances that do not naturally occur in the habitat from point and non-point sources)	Low. Within the project boundary there is no such impact	Low. Within the project boundary there is no such impact	Low. Within the project boundary there is no such impact
3	Impact due to - Introduction of invasive species, pests, and pathogens	Observed as low, however, detailed information not available for further analysis.	Observed as low, however, detailed information not available for further analysis.	Observed as low, however, detailed information not available for further analysis.
4	Impact due to - Reduction of species	Observed as low. No such incidence reported under the given information.	Observed as low. No such incidence reported under the given information.	Observed as low. No such incidence reported under the given information.
5	Impact due to - Habitat conversion	Observed as Nil, however no historic data/case study has been reported under the given information	Observed as Nil, however no historic data/case study has been reported under the given information	Observed as Nil, however no historic data/case study has been reported under the given information
6	Impact due to - Changes in ecological processes outside the natural range of variation (such as salinity or changes in groundwater level)	Observed as low; however, lab based data or information not available for further analysis.	Observed as low; however, lab based data or information not available for further analysis.	Observed as low; however, lab based data or information not available for further analysis.
7	Significant direct and indirect positive and negative impacts with reference to the following: i. Species affected; ii. Extent of areas impacted; iii. Duration of impacts; iv. Reversibility or irreversibility of the impacts.	Low. Within the project boundary there is no such impact or activities that can cause negative impacts observed.	Low. Within the project boundary there is no such impact or activities that can cause negative impacts observed.	Low. Within the project boundary there is no such impact or activities that can cause negative impacts observed.

С	C Habitats protected or restored						
1	Size and location of all habitat areas protected or restored, and whether the success of the restoration measure was or is approved by independent external professionals	Observed as Nil, as there is no historic data/case study reported for the given period.	Observed as Nil, as there is no historic data/case study reported for the given period.	Observed as Nil, as there is no historic data/case study reported for the given period.			
2	Whether partnerships exist with third parties to protect or restore habitat areas distinct from where the organization has overseen and implemented restoration or protection measures	Current not observed. It has been realized that most of the activities are internally managed within the campus and centrally observed by ESG team.	Current not observed. It has been realized that most of the activities are internally managed within the campus and centrally observed by ESG team.	Current not observed. It has been realized that most of the activities are internally managed within the campus and centrally observed by ESG team.			
3	Status of each area based on its condition at the close of the reporting period	Not applicable during the current reporting period.	Not applicable during the current reporting period.	Not applicable during the current reporting period.			
4	Standards, methodologies, and assumptions used	Not applicable during the current reporting period. This is first ever assessment conducted via third party. Hence required MRV system and communication methodologies shall be proposed as part of the consolidated report.	Not applicable during the current reporting period. This is first ever assessment conducted via third party. Hence required MRV system and communication methodologies shall be proposed as part of the consolidated report.	Not applicable during the current reporting period. This is first ever assessment conducted via third party. Hence required MRV system and communication methodologies shall be proposed as part of the consolidated report.			
D	IUCN Red List species and national cons operations	servation list species v	vith habitats in areas a	ffected by			
1	Total number of IUCN Red List species and national conservation list species with habitats in areas affected by the operations of the organization, by level of extinction risk: i. Critically endangered ii. Endangered iii. Vulnerable iv. Near threatened v. Least concern	Information not available. Hence, detailed review and reporting is excluded.	Information not available. Hence, detailed review and reporting is excluded.	Information not available. Hence, detailed review and reporting is excluded.			
L							
GRI Empowering Sustainable Decisions 304							

O RECOMMENDATIONS (Biodiversity):

1. A detailed biodiversity assessment from IUCN must be conducted. This should include:

- enlisting the species for flora and fauna with number counting
- enlisting the species and population for birds and animals
- list down ways to maintain them and improve condition for better biodiversity
- enlisting of 'at risk' species and measures to protect them and highlight or evaluate information for all key requirements as per GRI standard (GRI 304)

2. Some more generic ways to protect and conserve biodiversity:

- Review Government legislations and implement actions.
- Reducing invasive species from the boundary.
- Focus on practices towards Habitat restoration. Reduce use of pesticides and fertilizers in lawn care. These often run off of lawns into adjacent lakes and streams with adverse effects for the plants and animals living there.
- Create facility for captive breeding and seed banks.
- Engage continuous Research on new technology and practices.
- Reduce impacts of climate change with any possible actions, such as: to purchase and use sustainable products, look for minimizing wastes, look for options to recycle and reuse, etc,
- Give importance on minimizing biodiversity losses:
 - For example, leave critical wildlife habitat undisturbed, especially nesting and denning sites. To promote wildlife use by setting up bird and bat houses if applicable within the campus. To eradicate and control introduced weeds on your property. Also, to adopt some moral driven practices such as to park vehicles outside the habitat zone to reduce the spread of weeds and disturbance to wildlife, use noise cutters/silencers in the machines, gen-sets etc.

3. Student's involvement in the biodiversity protection activities:

• While large scale changes in behaviour, policies and measures that protect biodiversity will be essential, individuals have a vital part to play. Reducing consumption patterns can start at an individual level through conscious choices about the food we eat, products we buy and services we use.

• Within the campuses, SNF can create a student committee to continuously engage in monitoring of local area. A provision can be created to spend more time in nature, understand the nature, engage in activities like gardening, watering, cleaning, etc. such actions can help improve their relationship with the local ecosystem and attach greater value to the habitats around the campuses. Educating children about wildlife and local ecosystems can help to make our connection to the natural world clearer and bring about long-term behavioural changes in future generations.

O Status of Flora:

Flora and fauna are the key indicative tools in any biodiversity. In case of SNF, the given data are mainly specific to flora. Overall status of the flora in SNF assessment boundary is presented below:

Tree availability details at SSNCE campus - Area and category wise - As on 01.10.2022								
					Quantity in 1	no's		
S No	Location	Shaded trees	Bush trees	Flowering trees	Climbing trees	Palm trees	Others (Fruit trees, teak etc.)	Total Available trees
1	Temple, Grand Entry & SASE	97	0	30	0	0	12	139
2	Along Main Road	248	0	31	1492	162	3	1936
3	Guest House	178	30	0	0	108	47	363
4	Auditorium	88	10	6	6	65	0	175
5	SoM	203	5	2	0	36	6	252
6	Alumini Avenue	14	0	38	80	8	0	140
7	Gents Hostel I to IV	246	5	1	0	4	8	264
8	Gents Hostel V	252	0	30	0	0	1	283
9	Gents Hostel VI & Mess area	151	2	73	95	1	10	332
10	Gents Hostel VII & International hostel	169	0	61	350	48	0	628
11	Along road from MBA to Ladies Hostel	162	0	30	20	20	2	234
12	Along road from new staff quarters security gated to building site	100	0	0	0	0	0	100
13	SNU	49	3	87	0	121	0	260
14	Main Entrance & Nursery	0	50	200	0	30		280
15	Admin area	64	0	208	220	274	2	768
16	CSE & IT area	38	0	85	40	28	3	194
17	ECE area	295	20	125	0	66	1	507
18	Work shop area	94	0	10	0	201	0	305
19	Innovation center	41	30	40	30	105	8	254
20	EEE - Substation (Fencing area)	245	40	0	0	0	130	415
21	Canteen area	58	0	0	0	13	0	71
22	Along main road (Southern side)	310	0	0	0	0	0	310
23	Staff quarters area	1031	400	3	40	25	530	2029
24	Ladies Hostel area	394	192	48	348	210	6	1198

25	Sports complex	180	0	17	0	0	0	197
26	Mechanical block	299	0	90	0	28	0	417
27	Humanities block, Cricket road, Football pavilion	720	55	2	400	91	2	1270
28	EEE area	320	10	40	330	110	0	810
29	BME area	298	10	40	290	110	0	748
30	Open Air Theatre area	200	0	35	0	85	0	320
31	Guest House area	30	0	0	0	40	0	70
32	CSE Annex area	33	0	0	0	55	0	88
33	EEE to substation road	97	0	0	0	25	0	122
34	New Sports complex	5	0	16	0	47	0	68
35	New Staff quarters	56	10	0	0	0	0	66
36	Sports - Humanities pathway	0	0	0	0	120	0	120
37	New Staff quarters A & C blocks	50	15	5	0	20	0	90
38	Cricket ground area	180	88	0	0	0	24	292
39	Football ground area	165	35	1	0	0	95	296
40	Cricket ground to Rear Gate	404	269	0	0	4	1	678
41	Vama Sundari Park	285	160	476	0	126	0	1047
	Grand Total	7849	1439	1830	3741	2386	891	18136
	Individual big shrubs planted all over th		6000					
	(Big Arali, Tecoma red, Nanthiavattam,							
	Natural occuring well grown trees all ov		3000					
	(Nuna, othiyan, Kontai etc.)							
	Grand Total							27136

LANDSCAPING AREA - OVER ALL DETAILS

- 1 TOTAL AREA OF THE CAMPUS: 227 ACRES
- 2 LANDSCAPE OCCUPYING AREA: 50 ACRES (LAWN, HEDGES & TREES)
- 3 PERCENTAGE: 22%

DETAILS OF PLANTS/TREES AT VIDYAGYAN SCHOOL SITAPUR						
S.NO.	NAME OF PLANT/TREE	QTY	REMARKS			
1	Kadam (Clan)	5				
2	Washingtonian	24				
3	Champa	62	Not included in GHG calculation			
4	Ficus Benjamina	19	Not included in GHG calculation			
5	Ficus	121	Not included in GHG calculation			
6	Phoenix Plant	12	Not included in GHG calculation			
7	Arjun (Terminalia)	13				

8	Chitwan (Holoptelea)	10	
9	Bottle Palm	8	Not included in GHG calculation
10	Fishtail Palm	5	Not included in GHG calculation
11	Ficus Iceland	10	Not included in GHG calculation
12	Foxtail Palm	5	Not included in GHG calculation
13	Guava Plant	9	
14	Pomegranate	1	
15	Banana	11	
16	Рарауа	5	Not included in GHG calculation
17	Ficus Blackiana	36	Not included in GHG calculation
18	Molshree	1	
19	Jacaranda	28	
20	Kusum (Schleichera)	6	
21	Launaea Nudicaulis	11	Not included in GHG calculation
22	Cycas Revoluta (Sago Palm)	15	Not included in GHG calculation
23	Bismarckia	7	Not included in GHG calculation
24	Madhumalti (Combretum Indicum)	28	Not included in GHG calculation
25	Tabular Palm	7	Not included in GHG calculation
26	Pakad (Ficus Virens)	9	
27	Gulmohar (Delonix Regia)	5	
28	Amaltas (Cassia Fistula)	2	
29	Tabebuia Rosea	8	
30	Semal (Bombax Ceiba)	2	
31	Calliandra	13	Not included in GHG calculation
32	Katchnare (Bauhinia Variegata)	19	
33	Ashok (Saraca Asoca)	15	
34	Araucaria	2	
35	Mango	119	
36	Harsingar (Nyctanthes Arbor-Tristis)	2	
37	Jamun (Syzygium Cumini)	3	
38	Guar (Ficus Racemosa)	4	
39	Neem (Azadirachta Indica)	5	
40	Peepal (Ficus Religiosa)	4	
41	Buddha Belly Bamboo	43	Not included in GHG calculation
42	Shatavari	4	Not included in GHG calculation
43	Hedge (Lantana Tecoma, Ficus Panda, Anmri, Chadani, Golden Duranta, Laalsa, Bedelia, Gudhal, Manokamini, Kesiya Byflora	11	Not included in GHG calculation

• GHG Abatement – by sequestration of CO2 in Trees:

Out of the given data on tree and vegetation, there are nearly about 50% of the trees which contribute directly to the environment by means of CO2 sequestration. Therefore, an estimation of GHG abatement has been conducted, status as follows:

Site	Nos. of trees	Reduce uncertainty	CO2 Seq. factor	kgCO2 seq. per year	tCO2e/year
VG Sitapur	307	50%	21.77	3342	3.34
SSN	10570	50%	21.77	115054	115.05
Overall					118.40

Key notes:

- 1) 33% green cover is mandatory to have for organizations.
- 2) only 50% of trees count is considered for abatement calculation to avoid data uncertainty related to age or trees, measurement of trees, survival rate, growth rate, spices wise CO2 absorption capacity, environmental conditions and others.
- 3) green cover pertaining to herbs, hedge, climber and creeper plants/trees are not considered.
- 4) as per publicly available references from US forestry department and European Environment Agency CO2 sequestration factor for trees in a year is considered i.e., 21.77 kgCO2e/tree/year.



Water Scenario Reporting:

<u>1.</u> <u>Quantitative approach:</u>

As mentioned earlier, water is one of the key elements of biodiversity assessment. The "Water Footprint Network" was established in October 2008 by a number of major global players from business, civil society, multilateral organizations and academia. The Water Footprint Network and its partners strive to develop and apply the Water Footprint to support the transition to sustainable and equitable water use and management globally. Therefore, it has been realized that for SNF institutes 'Water Footprint' will be a relevant indicator while evaluating biodiversity related assessment.

The water footprint of a product is an empirical indicator of how much water is consumed, when and where, measured over the whole supply chain of the product. The water footprint is a multidimensional indicator, showing volumes but also making explicit the type of water use (evaporation of rainwater, surface water or groundwater, or pollution of water) and the location and timing of water use. Broadly, there are three categories of water footprints viz. Blue, Green and Grey water footprints.

The water footprint helps us understand for what purposes our limited freshwater resources are being consumed and polluted. The impact it has depends on where the water is taken from and when. If it comes from a place where water is already scarce, the consequences can be significant and require action. The water footprint helps to show the link that exists between our daily consumption of goods and the problems of water depletion and pollution that exist elsewhere, in the regions where our goods are produced. Measuring water footprint and taking all the necessary steps to keep that level as low as possible is extremely important for mankind. This balance is urgently required because freshwater is vital to our daily life while the supply of freshwater is limited.



Why distinguish between a green, blue and grey water footprint?

Freshwater availability on earth is determined by annual precipitation above land. One part of the precipitation evaporates and the other part runs off to the ocean through aquifers and rivers. Both the evaporative flow and the runoff flow can be made productive for human purposes. The evaporative flow can be used for crop growth or left for maintaining natural ecosystems; the green water footprint measures which part of the total evaporative flow is actually appropriated for human purposes. The runoff flow – the water flowing in aquifers and rivers – can be used for all sorts of purposes, including irrigation, washing, processing and cooling. The blue water footprint measures the volume of groundwater and surface water consumed, i.e. withdrawn and then evaporated. The grey water footprint measures the volume of water flow in aquifers and rivers polluted by humans. In this way, the green, blue and grey water footprint, it can be considered relevant to distinguish between ground and surface water use. In case of the grey water footprint, it can be considered valuable to distinguish between different sorts of pollution.

There are different water footprints: **Blue Water Footprint**: the amount of surface water and groundwater required to prooduce an item **Green Water Footprint**: the amount of rainwater required to make an item **Grey Water Footprint**: the amount of freshwater required to dillute the wastewater generated in manufacturein in order to maintain water quality



Wa	ater Scenario -	r Footprints			
Sr	Doquiromonts		Remarks /		
51.	Requirements	SSN & SNU	VG Sitapur	VG Bulandshahr	assumption
1	Source of water or catchment	Ground water - Open well	Ground water – Borewell	Ground water – Borewell	NA
2	Blue Water Footprint	Total blue water is 7 lacs liter per day i.e., 700 m3/day	Total blue water is 180 kilo liters per day i.e., 180 m3/day	Total blue water is 100 kilo liters per day i.e., 100 m3/day	NA
3	Green Water Footprint	There is NO green water usage at the site. However, site has water harvesting practices which is used to recharge ground water through 400 perforation pits. There is not quantification of harvested water.	There is NO green water usage at the site. However, site has water harvesting practices which allows ~50 m3 of water getting harvested and recharged as ground water through perforation pits. There is not any exact quantification of harvested water.	There is NO green water usage at the site. However, site has water harvesting practices which allows ~360 m3/day of water getting harvested and recharged as ground water through perforation pits.	As per standard definition, Green Water Footprint is the amount of rainwater or harvested water consumed or utilized by an organization. As there is NO consumption of harvested water hence the Green Water Footprint is NIL
4	Grey Water Footprint	259 m3/day or 64815 m3 per year	67 m3/day or 16667 m3 per year	67 m3/day or 16667 m3 per year	Working days for STP is considered as 250. Natural background concentration for respective pollutant in water sources is considered as 10% of pollutant permissible limits. STP outlet wastewater quality for VGS is considered same as that for VGB

As a consumer, water footprints for SNF Institutes are sustainable when (a) the total remains below SNF's equal share of the available freshwater resources in the world, and (b) no component of the total water footprint presses at places where or times when local environmental flow requirements are violated. Since, water management practices including water based data are currently being adopted at internal level and no external audits were considered so far, hence sustainability of water footprints or water related impacts are proposed under a detailed study for future.

2. Qualitative approach:

The impacts from water in any biodiversity system are dependent on various management practices that also include usage behaviour, efficiency of water systems, ability to harvest or recycle and reuse, etc. In many aspects, such positive practices are evaluated based on qualitative gain rather than quantitative measurements. Therefore,

all these practices have been considered under qualitative approach during the assessment, which can be summarized as follows:

Water Impacts – qualitative approach based on existing practices:						
G						
Sr.	Practice	SSN & SNU	VG Sitapur	VG Bulandshahr	Kemarks	
1	Water Harvesting	Yes	Yes	Yes	Positive impacts on biodiversity	
2	Waste Water Treatment	Yes	Yes	Yes	Positive impacts on biodiversity	
3	Recycling and/reuse of treated water	Yes	Yes	Yes	Positive impacts on biodiversity	
4	Conservation practices	Status is not known	Status is not known	Status is not known	Neutral at present, however with conservation practices positive impacts on biodiversity can be achieved.	
5	Water Committee	Status is not known	Status is not known	Status is not known	Neutral at present, however a water committee will help effective review, monitoring of water related activities and then to implement measures more effectively.	
6	Water Audit	Status is not known	Status is not known	Status is not known	Neutral at present, however a water audit via third party is highly recommended. It will help in water balancing, identifying water stress factors, areas of water scarcity and also adopting any water management plan and go for assurance & certification as well.	

RECOMMENDATIONS (water):

1. Some recommendations based on direct observations:

- Treating wastewater within permissible limits and re-utilizing it inside campus is a good approach and must continue.
- Approach must be taken store and utilize harvested rainwater. This practise will increase Green Water Footprint and reduce Blue Water Footprint
- Water audits must be conducted on periodic basis, at least an internal water audit practice to be adopted. This will help in reducing water losses and increase opportunity to conserve.
- Management must also consider purification of wastewater to an extend so that Blue Water Footprint could further be reduced. This will also help in reducing Grey Water Footprint for the organization.
- Regular water and wastewater quality checks/testing must be carried out to keep track of polluting parameters and system (RO, STP, etc.) performing efficiency.
- Overall the campuses must focus on reducing Blue Water and Grey Water Footprint and increasing Green Water Footprint.

2. Some generic recommendations based on sectoral best-practices:

- Habitual changes to focus on minimising water usage and water wastages by adopting best practices in daily operations within the campuses. For example, avoid the practice using running tap during cleaning, washing etc.
- Develop a water committee in the campus to monitor water related activities within the campuses. For example, spot and repair water leaks and leaky toilets, to install water aerators and automatic shut-off devices on faucets.
- Structural changes can look for using low-flow shower heads and timer shut-off devices to reduce water uses.
 - Eco taps reduce water consumption by over 50% with no negative effect on quality and if current taps need to stay in place then low-cost tap aerators that achieve a similar effect can be considered. Also, sensor based taps are effective.
 - An eco-shower is one of the most effective ways of reducing water consumption, saving 50% on water usage with no loss of quality. There are added benefits of going low flow because using

less water should cut the amount of energy needed to heat the water and cut carbon emissions.

- Use mulch around plants and trees to reduce evaporation and weeds and preserve existing plants for shade. It also improves moisture retention to reduce the need for water. Also, in the campus landscape. The water committee can plan to plant trees, drought-resistant plants and shrubs.
- Water-smart landscaping, gardening, efficient irrigation, and lawn care practices. As per research and practices, up to 50 % of water used for landscape irrigation can be lost due to over-watering, evaporation, or bad irrigation system design or maintenance.
Waste related impacts:

Waste is an integral part of human life, both in solid and liquid form. We are generating waste every day and avoiding waste is nearly impossible. But waste has a significant impact on our ecosystem and poor waste management can harm biodiversity both directly (e.g. the consumption of plastic microbeads by marine wildlife) and indirectly (e.g. landfill sites, which provide ideal conditions for bacteria that produce methane – a potent greenhouse gas that contributes to climate change).

Therefore, waste is considered to be an integral part of SNF's assessment boundary while conducting biodiversity related review and assessment.



Proper management of solid waste also prevents water and air pollution, while recycling reduces extraction of natural resources. Composting organic waste decreases release of methane, a greenhouse gas, while the final product enriches soils and enhances their ability to retain moisture.

At SNF, waste management practices are not found to be innovative. Also, different types of wastes, their quantification and end-of-life tracking etc. are currently not established. Also, all the institutes are human resource intensive, hence man made wastes are unavoidable, especially solid waste including plastic waste. In terms of liquid wastes, the institutes are already equipped with sewage treatment facilities and their impacts are anyhow considered under the water assessment. Whereas, impacts of

solid wastes are also considered during the GHG assessment; however qualitative impacts of wastes in biodiversity could not be properly evaluated due to lack of proper waste management practice/framework within SNF.

Therefore, within the biodiversity framework wastes plays a critical role for SNF and overall impact from waste on current biodiversity framework for SNF can be regarded as low but unavoidable. A summary of the waste related scenario has been demonstrated below:

Waste based impacts – qualitative approach based on existing practices:

S	Assessment status		us	Domonka	
sr.	Fractice	SSN & SNU	VG Sitapur	VG Bulandshahr	Kemarks
1	Waste Segregation?	No	No	No	Low impact on biodiversity, but segregation practice can significantly create positive impact
2	Waste Management?	No	No	NO	Current impact is on lower side, however a proper waste management practice is helpful towards adopting a sustainable biodiversity framework
3	Recycling and/reuse of treated waste	Status is not known	Status is not known	Status is not known	Current impact is on lower side. However, positive impacts on biodiversity can be achieved if waste recycling and reuse practices are adopted.
4	Plastic waste	Status is not known	Status is not known	Status is not known	Impact is neutral at present, however with the help of plastic waste quantification and further treatment a significant positive impact can be created on biodiversity. Also, there is an existing plastic credit mechanism framework, successful generation of plastic credit can be attributed to EPR for companies. This will not only bring positive biodiversity impacts but will essentially create ways to secure financial gain for reinvesting into biodiversity measures.

RECOMMENDATIONS (waste):

1. Some recommendations based on direct observations:

- If all garden wastes are collected and composted then its quantification must be available.
- If waste is incinerated within campus, then information & data must be recorded and maintained for key aspects like (1) type of fuel or energy used for incineration (2) quantity of fuel or energy used (3) type & quantity of each waste incinerated (4) what happens to waste generated from incineration, its type & quantity.
- Proper waste management committee could be formed to manage (1) proper collection (2) segregation at source (3) quantification (4) encourage waste recycling and re-use (5) right method of incineration in case for disposal (6) selection of right authorized vendor for waste disposal or recycling like for e-waste, etc.
- Approach must be created to reuse the waste within campus paper, garden waste, kitchen waste, etc.
- Roadmap must be formulated for 'Waste-to-Energy- (WtE) pathway. For instance, utilizing kitchen waste and sewage water for biogas generation which could be utilized for heating or power generation or sold.
- Develop and implement policies for procurement of items made from recycled material like furniture, cupboard, paper, etc.

2. Some Campus specific recommendations:

- Supplying more bins for your school in order to cope with the constant increase in waste, placing more bins around your grounds helps to eliminate litter and deal with the waste more effectively. These bins can then be collected and disposed of easily.
- Preventing waste build ups with more waste on your site, it can be harder to remove it consistently and efficiently.
- An internal waste management team can be created and they can inspect the campus on regular basis and schedule regular pickups to keep the campus clear of rubbish, send to the recycler etc.

- Better waste separation schools produce a wide range of waste types from food waste, general waste, packaging, metals, plastics, sanitary waste, covid testing waste, and more. Separating waste correctly is key to improving recycling and waste management can provide an optimised system to do these.
- Improved waste reduction professional waste management operators are able to share their expertise with school to teach you best practices on waste avoidance and streamline your supply chain to reduce the amount of waste passing through your school. So regular such sessions can be conducted, especially to the Waste Management team so that maximum benefits can be achieved.

Conclusion:

This report has presented the emission footprints across all the sources identified within the identified project boundary of SNF that consists of four institutes viz. SSN, SNU, VGS and VGB. Similarly, an overall assessment has been presented across biodiversity elements of the campuses along with water & waste.

The overall findings of the study shows that campuses are not significantly under high vulnerability in terms of GHG impact and biodiversity losses. However, there are ample amount of scope of improvement in both the areas to reduce GHG emissions as well as to adopt better sustainable practices to keep a lower footprint both under emissions and biodiversity losses.

The generic & specific recommendations are already included based on direct observations and sectoral experiences of the consulting team. However, it has been realized that a proper management plan can be adopted by SNF for all the campuses both for Emission Management and for sustainability of the overall Biodiversity influenced by the campuses. The journey of sustainability at SNF will be certainly advanced in coming years.

Next Steps suggested for SNF:

- To review and understand all the parameters and recommendations submitted by FCF.
- To develop a committee to work in the field of Carbon & Sustainability, to develop a policy based framework to define goals and adopt measures (as recommended).
- To define timeline for execution of various initiatives, develop capacities, conduct trainings etc.
- To develop an internal practice of MRV (Monitoring, Review & Verification) for the actions taken or to be taken under climate & biodiversity areas within the campuses.
- To create an action plan for periodic (recommended for annual) GHG assessment and a comparative analysis against the base year (i.e. the current assessment) and publish annual Sustainability Report on GHG & Biodiversity Assessments.



INTERNAL AUDIT

- As a part of the overall assessment, FCF India team has conducted site visits. The objective of the on-site visit was to conduct an internal audit to check/review:
 - (i) the project boundary, emission sources,
 - (ii) interaction with the data team,
 - (iii) internal stakeholders and
 - (iv) also to understand the overall biodiversity elements & their status within the campuses.

Appendix 1: Internal audit by FCF India team

During the internal walk-though audit the FCF team has observed that there are many practices and amenities which are available within the campuses that can be better utilized for adopting an effective action plan. Some of these possibilities are already discussed under the recommendation sections. Additionally, the internal audit team would like to enlist some more pointers as highlights:

A. Need of an MRV system

In order to establish a robust framework towards climate action and sustainability it is important for SNF to deploy a MRV (Monitoring, Review and Verification) team in house in all the campuses. The main functions of the MRV team could be: (i) to monitor the existing functioning of all the utilities, all the practices, all the resources being used in the campuses, (ii) to review these practices on a periodic manner with the help of an external professional agencies, (ii) look for scope of improvements and then verify the data points with a proper record keeping system.

B. Adoption of ISO 14001, ISO 50001, ISO 26000 etc.

These ISO standards will be more relevant and specific to the organization's goal towards climate action & sustainability. Hence, by adopting such ISO standards within the campus operations the current gaps (in data management, review, monitoring etc.) can be managed effectively. It will also add more credibility in the reporting process.

C. Training Sessions & Capacity building.

The SNF is found to have a strong vision towards sustainability and climate actions are considered to be an integral part of the overall initiatives of the foundation. However, during the internal site visit it was realized that various aspects of GHG accounting and climate actions are new for the internal team and stakeholders of SNF. Therefore, some awareness sessions and technical training sessions are essential for SNF core team so that new terminologies, conceptual know-how, required best practices etc. can be developed in-house. Initially, such training and workshops can be developed with the help of external teams

Some photographs of the internal audit:























IT WAR



Thanking you....

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Submitted by: Fair Climate Fund India Pvt. Ltd.

B1/H3, Mohan Cooperative Industrial Estate New Delhi, Delhi 110044, India. Sustainability:

PA 1:

Apex Committee for Sustainability

- 1. Dr. V.E. Annamalai, Head Sustainability
- 2. Mr. Samson, Member, Sustainability Planning and Administration
- 3. Dr. P. Kaythry, Member, Sustainability Campus Engagement
- 4. Dr. P. Sangeetha, Member, Sustainability Academics
- 5. Mr. Shenbagaraman, Member, Sustainability Operations
- 6. Mr. Arunkumar, Executive Sustainability
- 7. Mr. B. Vignesh, Alumni of 2022 batch (CSE Branch)
- 8. Mr. Keshav Pillai, IV Year Mechanical, Senior Student
- 9. Mr. R. Gopalakrishnan, Member Secretary Sustainability

Sustainability Action Committee (SAC):

- 1. Dr. V. Rajini, Professor & Head, EEE
- 2. Dr. P. Vijayalakshmi, Professor & Head, ECE
- 3. Dr. T.T. Mirnalinee, Professor & Head, CSE
- 4. Dr. A. Shahina, Professor & Head, IT
- 5. Dr. K. Sathish Kumar, Professor & Head, Chemical
- 6. Dr. A. Kavitha, Professor & Head, Biomedical
- 7. Dr. K.S. Vijay Sekar, Professor & Head, Mechanical
- 8. Dr. N. Sivakumar, Professor & Head, Civil
- 9. Dr. Siluvai Michael, Professor & Head, Chemistry

Policy Objectives:

SSN environmental policy has the following objectives:

- 1. To educate and engage students and employees on environmental concerns and sustainability
- 2. To recognize and appreciate the efforts of students and employees towards environment conservation and sustainable development
- 3. To promote innovation and start-up for business development towards achieving circular economy.
- 4. To develop R&D programs that could turn SSN into carbon negative institution
- 5. To include environmental policy in all related and applicable activities
- 6. To take into account the environment, occupational health and safety aspects in planning and decision-making.
- 7. To encourage rural development and to provide rural population with professional resource support from SSN.
- 8. To encourage projects and initiatives on afforestation, landscape and ecosystem restoration, soil and water conservation, water quality maintenance, waste management, clean energy resources and climate change mitigation.
- To develop collaborations of academic institutions with key government flagship programs and foster collaborations between governance, knowledge institutions and local communities.

10. To develop metrics for sustainability parameters that can be assessed, improved and measured

PA 2:

Part 1: File "Materiality Targets Oct 2022"

Part 2: Sustainability in highest document

VISION

"To be a world class institution for technical education and scientific research for public good."

MISSION

SSN will strive continuously to:

- Make a positive difference to society through education.
- Empower students from across socio economic strata.
- Be a centre of excellence in education in emerging technologies in accordance with industry and industrial trends.
- Build world class research capabilities on par with the finest in the world and broaden students' horizons **beyond classroom education**.
- Nurture talent and entrepreneurship and enable **all-round personality development in students**.

1 Sustainability plan	Annexure 1
2 Campus master plan or physical campus plan	Annexure 2
3 Climate action plan	Annexure 3
4 Diversity and inclusion plan	Annexure 4
5 Human resources strategic plan	Annexure 5
6 Strategic plan or equivalent guiding document	Annexure 6

Annexure 1

Annexure 2

Annexure 3

Climate Action Plan

Climate Change	We are measuring GHG emissions (scope 1, scope 2 and scope 3)					
	Direct Greenhouse Gas Emissions (Scope 1)	metric tonnes CO2 equivalents	2080.26	1931.1	1837.68	The parameters used to arrive at the values are listed below:
	Indirect Greenhouse Gas emissions (Scope 2)	metric tonnes CO2 equivalents	3540.21	1238.65	491.56	No. of cooking gas cylinders used in Canteen, UG Mess, PG
	Other indirect greenhouse gas	metric tonnes CO2 equivalents	1490.64	1632.34	1825.54	Mess, Cafeteria. Electricity

emissions (Scope 3)					consumed Diesel and petrol used for transportation in the campus and Diesel Gensets Vehicles such as car and bike used by faculty and staff are also considered
Total non- renewable energy consumption	MWh	3359	1747	1909	
Total renewable energy (biomass, solar, wind energy etc.) purchased	MWh	725	341	533	Solar Energy system
Renewable energy generated on site	MWh	0.6	0.6	0.85	Measured using the meter fitted with the solar energy panels

2.Sustainable campus management & operations

Ref	Parameter	Method of	Owner	As of 2022	Target 2025	Target 2030
		calculation		Jan		
SC	Description	No	Mr.T.Shivkuma	Policy will	Adherence	Adherence
M 1	of Policies	calculation	r	be framed	to policy will	to policy will
	and		AGM Projects	in	be ensured.	be ensured.
	practices			coordination	Policy Will	Policy Will
	relating to			with Green	be revised	be revised
	managemen			Building	every three	every three
	t of Campus			consultant	years	years
	Operations					
	(Waste,					
	Energy,					
	Water)					
SC	Description	No	Mr.T.Shivkuma	Policy will	Adherence	Adherence
M 2	and List of	calculation	r	be framed	to policy will	to policy will
	procedures		AGM Projects	in	be ensured.	be ensured.
	in place to			coordination	Policy Will	Policy Will
	reduce			with Green	be revised	be revised
	resources			Building	every three	every three
	(Water,			consultant	years	years
	Energy)					
SC	% of Campus	Renewable	Mr.T.Shivkuma	R23:NR77	R30:NR70	R40:NR60
M 3	Energy	Energy	r			

	dependency	/Non	AGM Projects			
	on	Renewable	-			
	Renewables	Energy				
	+ Non	consumed				
	Renewables	for the				
	[R:NR]	year				
SC	Total	Water	Mr.T.Shivkuma	7 lakh litres	30%	40%
M 4	Volume of	consumed	r	per day	reduction	reduction
	water	/ total	AGM Projects		from base	from base
	Consumptio	number of			year, per	year, per
	n in a	students &			user	user
	Financial	residents				
	Year (to be					
	calculated					
	per user)					
SC	Volume of	Water	Mr.T.Shivkuma	80% of	85% of	90% of
M 5	water	reused or	r	water	water	water
	recycled/	recycled/	AGM Projects	consumptio	consumptio	consumptio
	reused	total water		n	n	n
		consumed				
SC	Total area	Area under	Mr.T.Shivkuma	60%	80%	90%
M 6	under Rain	rain water	r			
	Water	harvesting	AGM Projects			
	Harvesting	/ total land				
		area				
SC	Total waste	Quantity	Mr.T.Shivkuma	146 MT	40%	60%
M 7	generated by	of waste	r		reduction	reduction
	Weight	under	AGM Projects		from base	from base
	(Food	various			year	year
	Waste, E	categories				
	Waste etc.)					
SC	Campus Area	Area under	Mr.T.Shivkuma	30%	40%	50%
M 8	under Green	green	r			
	Cover	cover/	AGM Projects			
	(Annual	total land				

Annexure 4 – To come from HR Team

Annexure 5 – To come from HR Team

Annexure 6

Please refer to Vision and Mission document

PA 3

Part 3. Gender equity in governance	Committee List for the following: Planning & Monitoring.
Part 4. Community engagement bodies	Ethical, Anti Ragging, PoSH

PA 4

(i) First Assessment: Internal assessment done by APEX committee on

Score found to be

- (ii) Materiality audit by external consultant Deloitte and Fair Climate Fund India Pvt. Ltd.
- (iii) Internal Annual Audit by HCL Team
- (iv) Energy audit by External agency

PA 5, PA 6 & PA 7

Available

PA 8

Available

PA 9

No committee on Investor Responsibility. Can we substitute with our accounts and finance team who handle our budgeting process?

PA 10

Does not arise, since no data in PA 9. Can we indicate amounts spent on Sustainability initiatives on campus? Ex: Solar Energy, Rain Water, sensor for taps, LED lamps etc.

PA 11

Does not arise, since no data in PA 9. Can we show our audited statement of Accounts which is uploaded on our college web portal?

PA 12, PA 13 and PA 14

Available

PA 15

Available