cx100 Days and 5-year Road Map

Net-Zero University Campuses

Prepared by

Green TERRE Foundation

Supported by

AICTE, EESL, Niti Aayog and Universities

1. Context:

On 20th February 2024, when Green TERRE Foundation jointly with AICTE (Ministry of Education) and IIT Guwahati India held the 4th regional workshop for 'Net Zero University Campus' under the national movement of U75, India made history. India then became the first country in the world to steer the movement of carbon neutrality in the campuses of educational institutes in all four regions of India: flagging off in the West (Pune University), traversing to the South (SRMIST University), then in North (Delhi University) and finally in the East (IIT Guwahati). This has unveiled the new era of 'Green Skill-Building for Net Zero', a much needed to keep the planet safer and sustainable.

Green TERRE Foundation, under its flagship project of Smart Campus Cloud Network (SCCN , visit www.sccnhub.com) has now completed the odyssey of sensitizing the localisation of the 'Net Zero' in the university campus in close cooperation with Ministry of Education (AICTE) , Ministry of Power (EESL), UNESCO (Regional Cluster of New Delhi) , UGC, NBA/NIRF and Niti Aayog, had carefully crafted the national movement of ' U75-Net Zero Campus' that aimed at making 75 university campuses Net Zero starting from a year after 75th anniversary of India's independence.

On 16th March, a day after the announcements of the dates for the General Elections in India Prime Minister Narendra Modi, at a Cabinet meeting instructed his ministers to draft two roadmaps -- one for the first 100 days of the new government and the second for the next five years of the government, to embark on the exciting journey- full of opportunity but-made complex by triple crisis of climate change, biodiversity and air pollution.

As a responsible not-for Profit organisation under Section 8 of the Ministry of Corporate affairs, Green TERRE Foundation has on its own decided to take a clue and inspiration from PM Modi's desire of not losing a time.

Under the mentorship of Erik Solheim, Former USG of United Nations and former Minister of Environment of Norway, Prakash Javadekar , Former Minister of Environment, Forest and Climate Change and Dr Vijay Bhatkar, former Chancellor of Nalanda University and Chairman of Vijnana Bharati, 100 days and 5-year plan for the national movement of Net Zero University Campus. The seminal reason for these plans is not to lose the unprecedented momentum gathered and inspiration generated by PM Modi's Mission LiFE, Panchamrit for climate goals declared by him and NEP 2020.

Universities and Higher Education Institutions (HEIs) in India are indeed notable consumers of resources in the form of energy, water, food and manufactured goods and lead to higher quantitative greenhouse gas emissions. However, as compared to the industrial, transport and other emissions university emissions are miniscule.

Under this initiative students and faculties are encouraged to make their campus carbon neutral-Net Zero mainly by following:

1. **Save electricity** through behavioural change and **generate clean energy** like solar in the campus to reduce carbon-emission.
2. **Conserve and recycle water** to avoid unnecessary emission due to pumping
3. **Waste management** in campus including canteen campus to reduce emissions like methane
4. Promote use of **sustainable mobility** like bicycles and EVs in the campus to mitigate the emissions .
5. Tree Plantation and making campus green to provide **carbon-offsets**

In the long term the initiative also leads to **building the capacity and skilling the students** to make India Net Zero by 2070 as declared by PM Modi.

The benefits from emission reduction arising out of 'Net Zero' campus, however, comes from the fact that the ***campus is a living laboratory*** to build the Net-Zero-skills of technology deployment and policy education of the students who would be future climate champions. ***Localising Net Zero in the Campus*** globalises the climate actions. The varied sources of emissions in campus like buildings, waste, transport, water and others are in fact mimic the societal emissions outside the campus. The climate friendly technology developments in these and other sectors will get inseminated in young minds and incubated in the campus.

Basis for 100 days and 5-year plan: There are three successful and striking outcomes at the end of four nation-wide workshops for U75-Net Zero that benefited students in universities and now form the basis of paid out here:

- Established Net Zero as National Movement of Universities/Higher Education Institutes-HEIs
- Created strong linkage between NEP 2020 and green skill building of students for Net Zero
- Recognised the importance of LiFE Mission, Green Credit scheme, 'Panchamrit' for Net Zero and Vikasit Bharat by 2047 by PM Modi

2. Proposed activities for the 100 Days Agenda

The 100 Days' Agenda under the U75 Initiative will focus on beginning of implementation of tangible on-ground initiatives, including pilot programmes of Net Zero in the universities and HEIs, completing the the baseline surveys, the development and piloting of the of digital platform, **UDaN-Zero,** and the development of illustrative story book and guidelines for carbon neutrality. Through these outputs and showcasing them in social media, catalysing them through virtual competitions, debates and dialogues it is expected that the harvest of enthusiasm in campus in the 100-days is expected to impact national interest and participation going beyond the U75 initiative to all other institutes where youth of age 18-24 are incubating their talents for sustainability and Net Zero.

The proposed plan entails aggressive agenda compatible with the enthusiasm and commitment of the students who attended the four regional workshops. The first 100 days would weave and streamline the energetic approaches in 10 pilot universities in 4 regions and additional 2 consisting of women's universities and another in tribal and remote areas. It reflects PM Modi's uncompromised commitment to G20, COP26, 27 and 28.

- *Step 1: Selecting universities for Piloting*

Ten pilot colleges/universities + two with special category (remote and tribal area) will be carefully selected based on their consent and commitment to flag-off and spearhead the implementation of sustainability and decarbonisation measures. Under the guidance of experts from UNDP, Ministry of Education (AICTE and NIRF/NBA) , Ministry of Power (EESL) and MoEFCC (Climate Change) and ASSOCHAM (GEM) baseline mapping exercises will be conducted to assess the current/baseline carbon footprint of each institution. Sunsequent to such assessment, tailored decarbonisation roadmaps will be developed, focusing on strategies to enhance energy efficiency, integrate renewable energy sources, and improve waste

management practices. These roadmaps will provide a clear pathway for achieving carbon neutrality, aligning with national and international sustainability targets.

Expected outcome of pilot phase will be to cull out lessons learnt to move forward with the next phase and initiate the implementation in remaining 63 universities. !00 days would also provide adequate space to develop the workable SOPs, sourcing the finances for GTF, determination of roles of various government and non-governmental partners, getting sense of cost saving due to enhanced energy efficiency, Creating actionable awareness on LiFEstyle change,

The pilot programme will serve as a tangible demonstration of the potential for sustainable practices to drive meaningful change, while the development of the digital platform enhances transparency and facilitates data-driven decision-making for net zero. It would also inspire other 63 universities/ HEI to join even without waiting for pilot universities to become Net-Zero.

Step 2: Development of 'UDaN-Zero'

A Net Zero digital tracker for Universities & HEIs: A comprehensive and user-friendly digital platform titled 'UDaN-Zero' (short for University Dashboard for Net-Zero) will be developed to monitor and report emissions as well as sustainability parameters and carbon neutrality data. This digital platform will serve as a centralised monitoring hub for collating, verifying and analysing key performance indicators related to carbon emissions, energy consumption, waste generation, and other sustainability metrics. Specific objectives of 'UDaN-Zero' are:

- It would be handy as state-of-the-art data analytics tools, the platform will generate easy-to-understand graphical trends and reports, enabling stakeholders to track and monitor progress and make informed decisions.
- Initially, the platform will incorporate data from the 10+2 pilot institutions. This initial integration underscores its practical application in real-world settings. This integration not only demonstrates the platform's functionality but also sets a precedent for broader adoption across higher education institutions, including for NBA/NIRF
- At the national level, the platform will provide aggregated data on the number and collective impact of participating institutions, while at the campus level, detailed insights will be available to facilitate targeted interventions and improvements. The platform will also enable sharing of success stories, promoting transparency and collaboration.

Step 3: Develop guidelines on decarbonizing Educational Campuses

The guidelines will be prepared along with showcasing of the case studies and best practices adopted by educational institutions across the country for effective decarbonisation of operations and sensitization of students and community. These guidelines will be launched during the Culminating event for the launch of UDaN-Zero (University Dashboard for Net-Zero)

Step 4: Culminating Event

Towards the end of the 100 days, a high-profile event (or events) will be convened to celebrate the achievements and lessons from the pilot programme and launch of the professional UDaN-Zero. This event will also mark the unveiling of soft copy of handbook of exemplary sustainability initiatives and best practices launched in 12 Universities/HEIs as well as from institutions across India, demonstrating the broader impact of sustainability efforts nationwide. Through engaging presentations and interactive sessions, attendees will have the opportunity to learn from the experiences of the pilot colleges/universities and gain insights into best practices for advancing Net Zero and environmental sustainability. Additionally, recognition and felicitation will be extended to institutes and individuals who have demonstrated exceptional leadership and commitment to sustainability and Net Zero as judged by AICTE, Experts and NBA/NIRF.

This event will serve as a platform for knowledge sharing, recognition, and celebration, showcasing the achievements of the pilot institutions and inspiring further action towards carbon neutrality.

By adhering to this structured implementation plan, the initiatives outlined in the 100 days' agenda will be effectively executed, driving tangible progress towards achieving carbon neutrality across university campuses and advancing India's environmental sustainability goals.

- *Step 5: Call for Expression of Interest (EOI) at the end of 100 days*

There will be a nationwide call for colleges, universities, and higher education institutions (HEIs) in India to align themselves with the U75 initiative. As part of this EOI, institutions will also be invited to share details of their sustainability initiatives and best practices, both at the institute level and individual level (including students, academic staff, and non-academic staff).

3. Expected Impact

The expected collective impacts are:

- Beginning of action towards Mission LiFE in educational campus, mainly for decarbonisation
- Setting the students in the pilot campuses in mission mode and in net-zero orbit
- Making the transformative behaviour change that would advance environmental sustainability and fostering a culture of carbon neutrality in the educational campus.
- Engaging in dialogue with funding agencies, foundations, donors to build Viksit Bharat, philanthropists for essential financial resources to move forward.

Setting the stage for the next **5 years** of accelerated progress towards achieving carbon neutrality across university campuses and driving India towards the goal of **VI**kasit **BHA**rat for Sustainability (VIBHAS).

4. Proposed p 5-Year Plans for Net Zero University campus

Piloting the Net zero in university campus for 100 days is like being in orbit. Next stage is to fire the rockets of all 75 universities to gather momentum to achieve escape velocity to exit the orbit and set 'UDaN-Zero' towards the final target. Pre-requisite of the 5-year plans would be:

Key supporting policy requirements:

1. Adding strong criteria for sustainability in ranking, 2. providing incentives to undertake sustainability, clean energy and net zero for students, 3 Making Green Credit system mandatory, embedding Mission LiFE practices in the campus, 4. inclusion of sustainability and net zero in all competitive exams for government/IITs/ UPSC etc, 5. ISO standards for Net Zero 6. Annual awards for best data collection, best road maps , best implementation 7. Setting Carbon Trading among Universities/HEIs 8. Mandatory reporting by universities on emission reduction, annual net zero reports and implementation of SDGs goals and targets 9. Provision of budget/incentives to universities for adding super efficiency appliances 10. Setting up the centres of excellence for Net Zero and related subjects for clean energy, policy research that would work with business and industry as well as CSIR. 11. Providing special incentives to business and industry to support the net zero work of implementation and R&D with Universities

■ 1st Year

- 1100 universities join the national movements and start their journey for Net Zero.
- 1100 universities list their colleges and campuses across India for Net Zero
- All campuses initiate data collections complete baseline survey for carbon emissions.

- Students take pledge for LiFE Mission and show case their best practices by creatig actionable awareness.
- Identifying the R&D collaborations with government and business.

2nd Year

- Developing road maps for net zero, including energy efficiency, renewable energy, carbon offsets, green credit for universities
- Setting the targets, implantation and Measuring emission reductions through behaviour changes, energy efficiency, energy intensity
- Identify carbon offset opportunities within and outside campus.
- Develop financial models with help of the Ministry of Power and EESL to shift towards super-efficient appliances.
- Declare the emission reduction through behavioural changes.
- Award the rankings based on sustainability and net zero.
- Finalise the R&D collaborative programmes with government and business.

■ 3rd Year

- Setting up national/international collaboration for R & D activities for Hydrogen , Bio and other clean energy systems like Mini Hydro, photons.
- Making emission mitigation schemes related to use of water, waste, transport and afforestation, carbon capture and utilisation.
- Tracking and monitoring the emission reduction
- Establishing **Global Net Zero Alliance** with international universities
- Initiate annual national and international conferences, **hackathons.**
- Develop start-up entrepreneurship for clean energy and net zero

■ 4th Year

- Completing transition to non-fossil fuel use in campus
- Setting targets for doubling the energy efficiency and tripling the renewable energy to match COP28 targets under UNFCCC
- Dovetail the emission reduction as per Panchamrit of PM Modi
- Achieve 50 percent emission reductions
- Forming exclusive networks of universities like: Agricultural Universities Network, Clean Energy University Network, Western Ghats University Network, Digital Technological Network of Universities to share the success stories and knowledge in the individual sectors and propose actionable enhancements.
- Make plans for integrating Climate Adaptation into the Universities such as - Disaster Risk Reduction and Management.

■ 5th Year

- Completing the Net Zero campus.
- (Develop a logo to be awarded to universities for net zero) not clear.
- Make plans for sustaining the net zero.
- PM Modi to facilitate the Universities for Net Zero

END

Attached:

- **Annex I Detail Plan of Implementation**
- **Annex II, Timeline**

Annex I: Implementation Plan of Development of 'UDaN-Zero'

The successful execution of proposed initiatives relies on a carefully coordinated implementation plan, encompassing various stages and stakeholders and assumes availability of financial support.

The following outlines the key steps involved in bringing the 100 days' agenda to fruition:

1. Methodology of the Piloting

- Formation of Core group: The 10 universities will be requested to form a group of students and faculties for carrying out the baseline survey in the campus.
- Preliminary Data Collection: A data form will be given to the core group for collecting the primary data. It will help to understand the profile of the campus and will also create awareness among the students about Net-Zero
- Expert Visit: The preliminary data will facilitate the expert's visit to the universities for reevaluating the data and performing a baseline survey.
- CO2 calculation and interpretation: The baseline survey will draw the CO2 emission calculation collective coming from various sources. This data will be displayed on the tracker.

Figure 1: Workflow of pilots for NZCECE

- ***UDaN-Zero Tracker***

A dedicated team will be tasked with the development of a comprehensive and user-friendly digital platform. This platform will serve as a centralised repository for sustainability and

carbon neutrality data, incorporating insights from the pilot institutions to provide valuable benchmarking and analysis capabilities. The tracker will provide insights on the total carbon emissions from individual educational institutions and the combined emissions at the national level. The figure below shows the details to be displayed in UDaN-Zero :

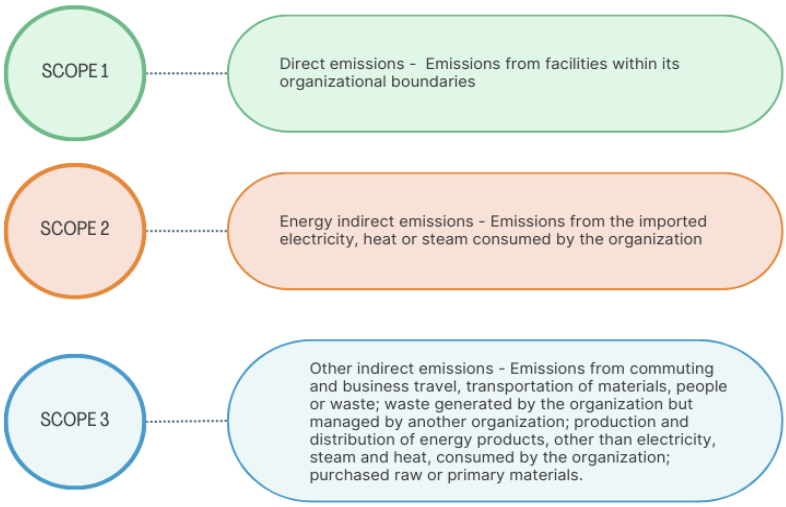

Figure 2: Emissions scope to be covered in UDaN-Zero Tracker

The Scope 1, 2 & 3 emissions of the educational campuses will be estimated through the data collection campaign in the universities with the support of faculty and student committees. The data to be collected include:

Energy Performance, Water Efficiency & Management, Waste Minimisation and Circularity, Clean Transportation, Health & Well-being, Biodiversity, Supply Chain of the University Operations

Significant Features of the UDaN-Zero

The UDaN-Zero Tracker will include the following features:

Data Input and Tracking: The Net-Zero Tracker will allow the users to manually input the data or automatically retrieve it from smart metres, transportation data, afforestation data within the campus, etc. The data tracking will display the carbon emissions of the university across different scopes.

Data Presentation: Easy-to-understand charts and graphs will showcase the emission from direct sources such as operations and indirect sources such as the Campus Energy stream.

Actionable Reduction: The tracker will allow users to set the target and suggest strategic reduction strategies based on the most suitable practices.

National Level **-** The tracker will be implemented and will display the data such as details of participating universities: Total emissions, Scope Emissions, and Emissions reduced annually. Such a master tracker needs to be placed at a Ministry of Education (Monitoring agency) office in New Delhi. This dashboard will be for monitoring the real-time contribution the HEIs are making to achieve India's 2070 Net Zero target.

University Level **-** The individual tracker will monitor the real-time CO2 emissions from different sources bifurcating scope-wise. It will also display the target the university has set, the reduction in emissions annually and progress made towards achieving the set target.

Data Integration and Analysis of UDaN-Zero

The digital platform will be populated with data from the pilot institutions, enabling stakeholders to access real-time insights into carbon emissions, energy consumption, and waste generation. Advanced analytics tools will facilitate data-driven decision-making, empowering institutions to track progress and identify areas for improvement.

Stakeholder Engagement

A concerted effort will be made to engage stakeholders at various levels, including government bodies, academic institutions, industry partners, and civil society organisations. Collaborative partnerships will be fostered to mobilise support and resources towards the success of the U75 initiative.

Hierarchy of Implementation of UDaN-Zero

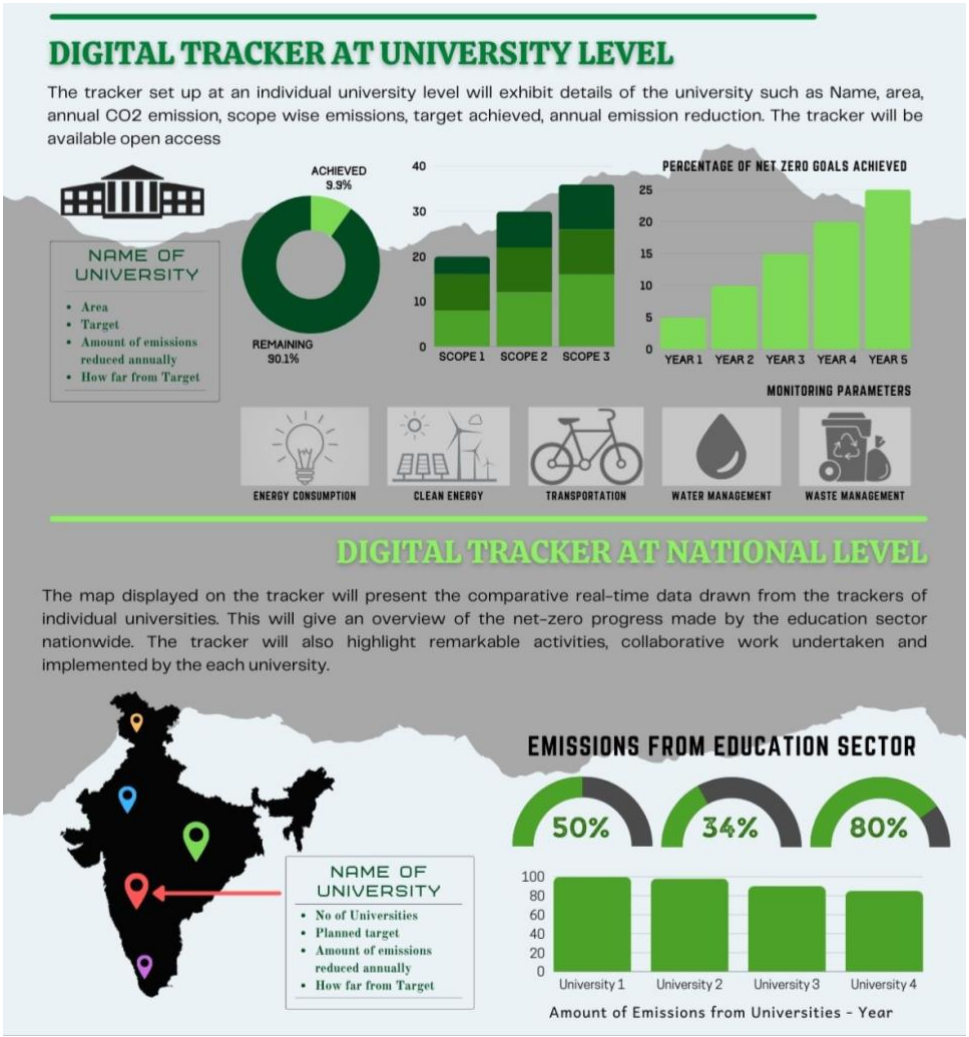

Figure 3: UDaN-Zero TRACKER wireframe

Annex II Implementation Plan : (Next Page)

Please visit:

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Twitter: https://twitter.com/sccnhub
Instagram: https://www.instagram.com/sccnhub/
SimplySmart: https://sccnhub.com/media-page/weekly-newsletter

Annex - II:

Implementation Plan for 100 Days

PROJECT TITLE	100 Days and 5-year Road Map: Net-Zero University Campuses	COMPANY NAME	Green TERRE Foundation
PROJECT MANAGER	Dr Rajendra Shende	DATE	10/06/2024

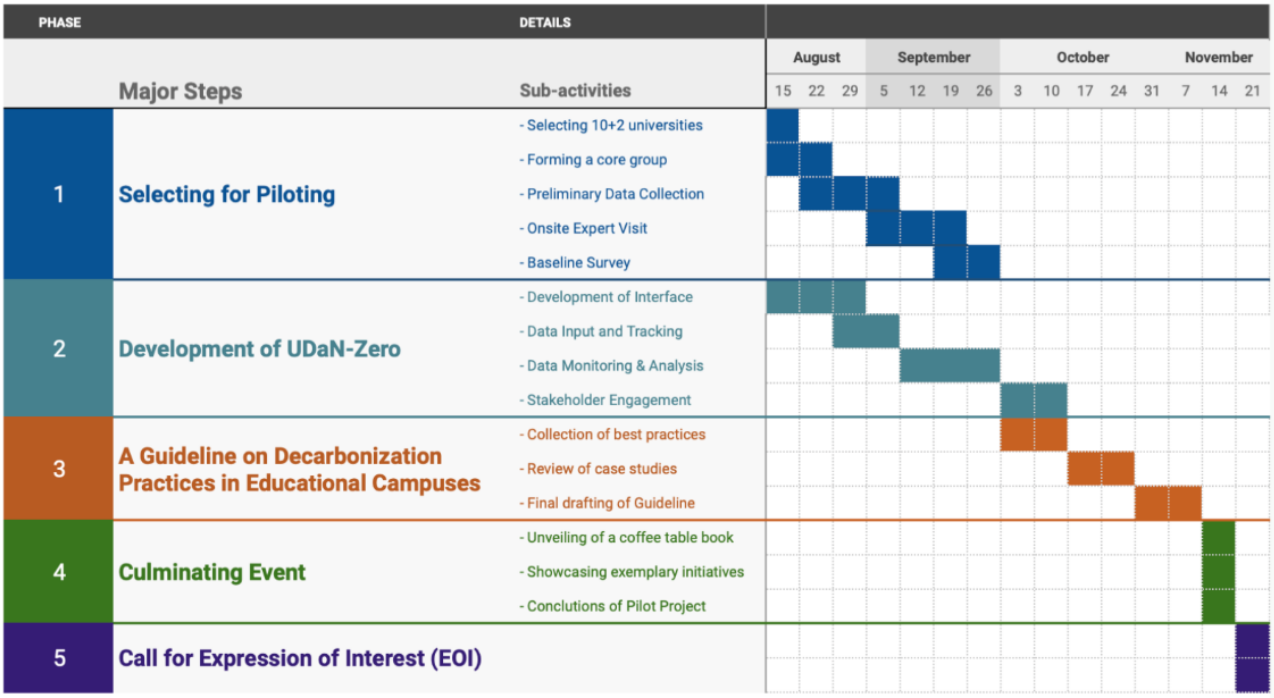

Figure 4: Timeline for Implementation of 100 Days Plan

END of Annexes