

Final Report:

Project Title: 2000-Watt Certification of Symbiosis University Campus Pune



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Please note:

- Please include photos, easy to understand graphics, etc., with this report.
- The length of the main report (Chapters 1 to 7) should not exceed 12 - 15 pages max.
- Please attach additional interesting information about the project.
- The final report is published on the REPIC website and should not contain confidential information.
- Please send the completed final report directly to: info@repic.ch (REPIC Secretariat, c/o NET Nowak Energy & Technology Ltd., Waldweg 8, CH-1717 St. Ursen)

1. Summary

Maximum of 1 page, containing the most relevant information; particularly:

Why was this project implemented (Needs in the partner country)?

What was implemented (project's content)?

How was the project carried out and what objectives have been achieved?

What do you foresee as further actions to be undertaken?

Climate change mitigation is important in the Global South as well as making Indian townships and cities climate neutral by applying the principles of the 2000-Watt Smart Cities certification label.

To start with, the project was focusing on a university campus: Symbiosis International University (SIU) in Pune has a campus of around 350 acres with over 20'000 students and 8 faculties (Law, Computer Studies, Health Sciences, Media & Communication, Humanities & Social Sciences, Management, Engineering, Architecture & Design).

The project's primary objective was to provide technical support to Symbiosis International University (SIU), Lavale Campus for its climate neutral transformation based on the 2000-Watt Smart Cities framework.

2000-Watt Smart Cities Association (2000WSCA) has worked with a strong team of experts in India and Switzerland and a dedicated group of identified SIU staff and some students to analyse the campus in terms of its energy consumption and supply, buildings in terms of their operational and embodied energy, analysis of new academic block mobility induced by the campus, and also to introduce circular economy principles for water, waste, and food provision.

SIU, Pune applied for a 2000WSCA India Rating system to optimise the entire campus in terms of energy efficiency and reduction of GHGs emissions and high quality of life. The process of analysis and certification was an excellent learning exercise to see if the 2000-Watt criteria could be applied in the Indian context. Several adaptations were made, and it was possible to apply a methodology that allowed the certification. The analysis was a participative process involving many dedicated faculty members of SIU working with the Indian and Swiss team of 2000WSCA, but the process had severe challenges through COVID and travel restrictions. As the campus was closed, the intended participation of students was only possible in a limited way. Nevertheless, in May 2022, the SIU campus was awarded with the first 2000WSCA certificate in India by the label commission of the Swiss 2000-Watt site certification agency. The final and ceremonial handing over of the certificate is still pending due to changes in the local government staff but may take place in June 2023.

The 2000-Watt label proved to be, a useful instrument and the project supported by REPIC and Shakti Foundation was a pilot that can serve as a model for other certifications. For this, the process should be further streamlined and digitalized to bring the analysis and certification costs down.

2. Starting Point

Short description of the initial situation at the project's start.

The university campus in Lavale, Pune, was already inclined to become a climate neutral campus and the founding director, the elderly Dr. Mazumdar, is not only an entrepreneurial scientist and educationist – having achieved to build up a private university with over 20'000 students – but he is also a dedicated Gandhian with a thorough philosophy of sufficiency and sustainability. The campus has therefore a suitable value base and the present directorate and faculty follow these visions. It was a good starting point to involve not only the senior management but also to get the support of Dr. Mazumdar who is a very respected leader.

As the aspect of Smart Governance is an important dimension for the implementation of the commitments for the long-term objectives of the project, it was crucial to involve a broad representation of the SIU faculty, Unfortunately, the originally planned strong involvement of students was not possible due to the COVID restrictions. During the entire period of the project, the campus was closed, and it did not make sense to involve students through online sessions.

3. Objectives

Description of the project's original objectives.

The extended objectives of the assignment were:

- To adapt the existing 2000-Watt Site framework from Switzerland to the Indian context and for Indian institutional buildings.
- To demonstrate the SIU campus as a lighthouse project for other urban settlements, other campuses, and to adopt climate neutral transformations.
- To map and document the SIU transformation process for extended dissemination

4. Project Review

4.1. Project Implementation

How was the project carried out (approach, partner and project's main steps)? Did the project's main objectives have to be modified during the course of the project? Describe any of the modifications made.

The overall technical assistance was provided through the following five steps:

Step 1: Assessment

- Data was collected for the operational energy
- Existing building stock was evaluated for optimizing the energy efficiency
- Data was collected for mapping the mobility pattern of students, staff and guests
- Data was collected for water consumption, food flows, its linkage and waste disposal
- The organisational setup of campus and coordination structures was mapped

Step 2: Analysis and Master Plan

- The team – consisting of technical experts and selected faculty members - conducted action workshops and working sessions for the analysis of smart campus solutions and the action plan for the transformation phase
- The team organised Integrated design charrettes for making the new construction to meet Super ECBC and evaluated their embodied energy. The new buildings analysed included hostel block, common block, and academic block of Symbiosis school of sports science.

Step 3: Transformation

- The team developed a plan for optimisation of operation energy
- The team proposed optimization measures for the existing and new building stock
- The team designed and implemented appropriate solutions for the mobility provisions
- The team supported the establishment of a special SIU management committee for the implementation of the transformation and monitoring

Step 4: Certification

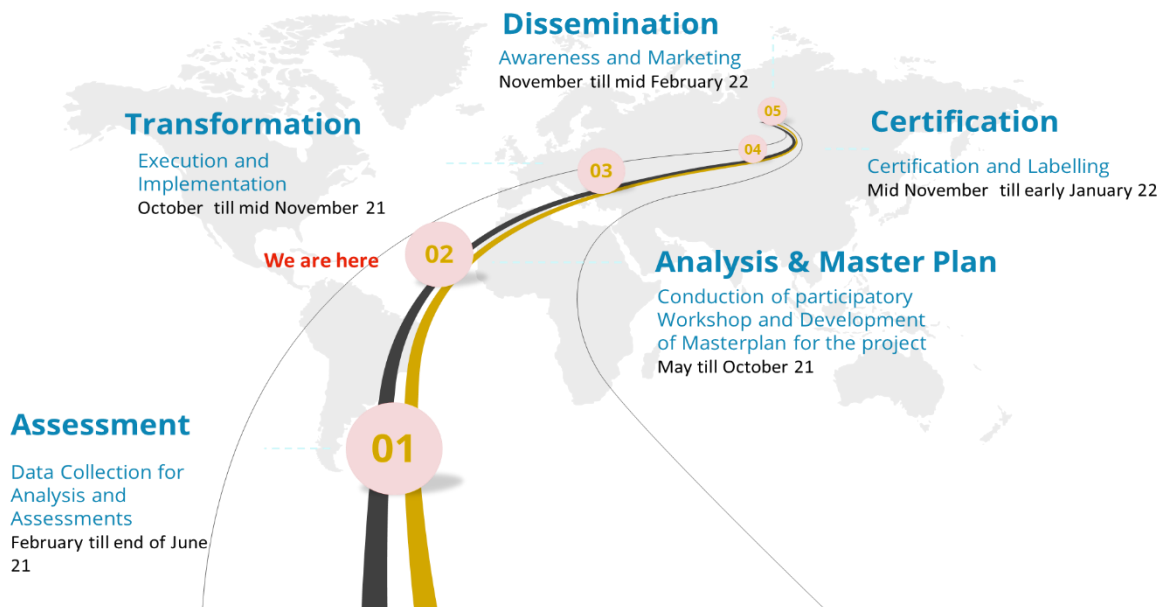
- The team compiled all the required documents for qualitative and quantitative assessments of the campus (submission is attached at Annexure 2)
- The team developed the roadmap for the next 20 years for implementation of climate smart solutions to comply with 2000 WSC requirements.
- The team submitted the document to 2000 WSC auditor from Switzerland for evaluation
- The team organised four meetings with the 2000 WSC auditor explaining the project and documentation.
- 2000 WSC certification was awarded by the label commission of Swiss 2000-Watt site certification agency in May 2022 (Annexure 1)

Step 5: Dissemination

- The team developed an Indian criteria catalogue and management tool (V2.0) that was adapted to the local culture and attitudes.

- The team organized the dissemination of the project achievements through development of “dissemination videos” and through outreach activities (described in section 3)

Roadmap for 2000-Watt certification



The objectives had to be modified to cope with the severe COVID restrictions during the project period. A planned visit to Switzerland was not possible due to travel restrictions and the planned involvement of students had to be modified and was unfortunately only possible in a reduced way. Moreover, some interactions that were planned through project visits had to be transformed into zoom meetings, mainly the auditing process. The complications led to substantially more strenuous work situations, IT-frustrations, and a higher workload on all members of the 2000-Watt team.

4.2. Achievements of Objectives and Results; main challenges

To what extent were the objectives achieved? Which results were achieved?

During and post COVID—19 pandemic, the team collected the data for the whole site and collaborated with different teams in the university to successfully compile the documentation required for certification appraisal.

The team was able to contextualise between 2000WSC certification requirements and existing operational manuals in the university

The team was able to catalyse high level buy-in from the SIU board to implement proposed master planning strategies

Despite various difficulties the team was successful in completing the documentation of the first 2000-Watt smart city site of India and the site was awarded the label “2000-Watt Smart Cities from the label commission.

The **main challenges** faced during this documentation was-

- COVID-19 pandemic- Maharashtra state reported one of the highest covid cases in the year 2020 and 2021. Due to this reason, visiting the campus and data collection for the certification were delayed. As the covid cases have come under control, frequent visits have been performed. Unfortunately, the campus was often closed for students.

- Due to COVID-19 third wave in Europe, auditing of the campus in the month of January 2022 had to be done online. As all the international flights were cancelled, the auditor, 2000WSCA consultants and the university team leaders connected online for two days session where all the comments and doubts were addressed by the university.

4.3. Multiplication / Replication Preparation

What preparatory work was carried out for the multiplication and replication within the project's framework?

It was planned to document the process through video features. Not possible was a planned interaction, discussion, and involvement of students. However, the dissemination actions through videos are all achieved. SIU involved its very professional video team to produce 3 videos with the implementation teams from India and Switzerland.

This entire process has been documented in three different videos and they are as follows:

i. Video 1: Introduction to 2000 WSC certification

[Link: 2kW Film 2 - Introduction to 2000-Watt 12 Jan 22.mp4 - Google Drive](#)

An overarching video describing how climate change is impacting our lives and different mitigation strategies to reverse this impact. The video also discusses the 2000-Watt certification label explaining quantitative and qualitative assessment.

ii. Video 2: Case Study of Symbiosis Campus

[Link: 2KW Case Study Film 4 May.mp4 - Google Drive](#)

Overarching presentation of 2000-Watt principles and a brief understanding from all the different stakeholders involved. All the quantitative and qualitative assessment with respect to SIU campus are explained and highlighting that SIU campus was awarded the first 2000WSCA label in India in May 2022.

iii. Video 3: Process followed by SIU for attaining 2000 WSC transformation

[Link: Process of Transformation- 12 Jan.mp4 - Google Drive](#)

An overview on how the university is heading towards transforming the current path to 2000-Watt path in the next coming years.

iv. Dissemination Outreach Activities

Mr. Kanagaraj Ganesan and Mr. Madhav Bhagwat met Mr. Ralf Heckner, Ambassador of Switzerland to India, Mr. Florin Muller, Head of the Economic and Trade Section and Mr. Jonathan Demenge, Head of Cooperation on December 2022 to brief them on the Master Planning Strategies aligned with 2000WSCA considered for the SIU campus. Mr. Madhav Bhagwat met Mr. Jayesh Ranjan, Principal Secretary of the Industries & Commerce (I&C) and Information Technology (IT) Departments of the State of Telangana in 2022. During the meeting the Principal Secretary was briefed about the transformation of SIU campus for climate neutrality

Mr. Rajkumar conducted two online and one in-person dissemination programmes on the project findings of 2000 WSC transformation of SIU campus to the civil engineering faculties and students.

4.4. Impact / Sustainability

Which impacts were already noticeable up to the end of the project?

Please provide qualitative text and quantitative information (in the table below) in the following three main categories, where applicable:

Ecological	Unit	At the REPIC Project's Completion
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Installed renewable energy capacity	[kW]	7,400 [2041]
Renewable energy produced	[kWh]/year	11,066,043 [2041]
Amount of fossil fuel energy saved	[kWh]/year	10,955,383 [2041]
Greenhouse gas reduction	[t CO ₂ -eq]/year	8,874 [2041]
Newly collected and separated waste	[t]	
Newly recycled waste	[t]	
Economic		
Energy costs (LCOE)	[ct/kWh]	8 cents [2041]
Triggered third-party funding/investments	[CHF]	
Local private income generated	[CHF]	
Social		
Number of beneficiaries	[Number]	The campus has a capacity for 20'000 students, employs 400 full-time faculty and 240 operational staff
Number of new jobs	[Number]	Not applicable
Number of trained personnel	[Number]	Around 25 faculty members deeply involved, unfortunately their students were not involved due to COVID

5. Outlook / Further Actions

5.1. Multiplication / Replication

What are the next planned steps?

What is being done to promote multiplication / replication?

Which hurdles need to be overcome in order to have successful multiplication / replication?

- The Certificate Ceremony celebration where the first 2000-Watt Smart Cities label for Symbiosis International University, Pune, will be presented in a ceremonial form had to be postponed and may now take place in June 2023 at the occasion of the G20 Vice-Chancellor meeting at Symbiosis in Pune. This was mainly due to delays related to travel restrictions but also changes in the local Government representatives. There is a new Chief of PMRDA (Pune Metropolitan Development Authority) and it is important to get the support from PMRDA, as it is also in charge of university campuses. The incorporation into the program of the G20 university vice-chancellor meeting will give the project a broad national and international exposure.
- As mentioned before, it would be good to streamline and digitalize the analysis and certification process and to make the process less costly. 2000WSCA has signed several MOUs with interested partner organizations such as GRIHA, NIUA, Maharashtra Government, PMRDA and we should be able to develop a toolkit that can be more easily applied for further applications and scaling-up projects.
- A proposed Toolkit development in collaboration with Brihanmumbai Municipal Corporation (BMC) and Pune Metropolitan Region Development Authority (PMRDA) to mainstream climate actions related to built-environment in their jurisdictions as per 2000WSC framework.

5.2. Impact / Sustainability

What are the sustainable effects (environmental, socio-economic aspects, CO₂ relevance, resource efficiency, etc.) expected during the multiplication phase, in the medium term?

The certification project is the starting point for a well-structured GHG reduction process to climate neutrality over several years. However, the impact and sustainability of a pilot certification exercise is naturally limited, and one cannot expect miracles in creating a national and international impact, immediately. But the project allowed significant learnings and will give way to further replications within other university campuses but also townships in India. Unfortunately, the expected impact of involving many students had to be abandoned due to the COVID restrictions.

6. Lessons Learned / Conclusions

What are this project's main findings and conclusions?

Which recommendations can be made for similar projects, or within this context?

Interesting observations within the project's context: Which of your personal impressions would you like to share?

There are many lessons learned while applying and adapting the criteria and measurements developed for Swiss townships and universities in an Indian context. The involvement of a significant number of specialised faculty members – unfortunately without many students – proved to be an excellent opportunity to share experiences with Indian leaders. They were very receptive but obviously, the kind of engagement and commitment of the Indian youth is not comparable to the motivation of the European climate youth – for example the young people of Fridays for Future movement – as the Indian priorities and aspirations are totally different. However, the key message that a sustainable lifestyle is possible without compromising quality of life was well understood and will need its own

Indian interpretation. Our recent cooperation with the PoP Organisation may be a first indication of the shifting awareness.

In this sense, the certification process at Symbiosis University was a first and very effective exercise showing that the philosophy and practice of the 2000-Watt society is a very attractive orientational goal. Unlike other labels that are only focusing on efficiency, the 2000-Watt label also addresses social justice. And this was highly appreciated and highlighted by Dr. Mazumdar and the entire faculty: the notion that every citizen of this world has the same rights to a lifestyle with sustainable emissions levels of 2000 Watt is a good orientation and in line with the principles and values of the Symbiosis University, indeed very much in line with the philosophy of the founding father of India, Mahatma Gandhi.

7. References

References list of publications, reports, etc.

8. Annex:

When available: Reports, press articles, brochures, test results, etc

Annexure 1 shows the certificate for the SIU campus

Annexure 2 shows some photos from the process



Symbiosis International University Lavale Campus
Dr. M.S. Shejul
Registrar
Lavale, Pune, Maharashtra

Liestal, 31st march, 2022

[2000-Watt-Site](#)

> [Award of the label to the 2000-Watt Smart Cities Symbiosis International University Lavale Campus](#)

Dear Mr. Shejul,

We are pleased to inform you of the positive decision on behalf of the Label Commission to award the "2000-Watt Smart Cities" label to the Lavale Campus of Symbiosis International University.

The Lavale Campus is awarded the label for having met the defined guidelines and goals of the 2000-Watt Society with demonstrable and exemplary results in its planning.

The 2000-Watt Smart Cities label is supported and awarded in India by the 2000-Watt Smart Cities Association. The Association is authorized by the Swiss Federal Office of Energy to adapt and market the Swiss 2000-Watt Site Certificate in India.

We wish you continued success.

For further questions we are at your disposal at any time. Many thanks for your commitment.

Kind regards

A handwritten signature in black ink, appearing to read "Maren Kornmann", is written over a light blue horizontal line.

Maren Kornmann
Office Certification Body 2000-Watt Sites Switzerland
Managing Director of the Energy City Association

Attachment: Decision Label Commission
Copy to: Kanag Ganesan Site Consultant, Andreas Binkert 2000-Watt Smart Cities Association, Ricardo Bandli, SFOE

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Annexure-



Image 1: 2000-Watt Swiss and Indian Team presenting the Analysis results



Image 2: SIU team attending the workshop session at Symbiosis International University, Lavale campus Pune



Image 3: 2000WSCA Indian team having a meeting with IMK Architects at SIU Pune

Certificate 2000-Watt Smart Cities



2000
Watt
Smart
Cities
India

First Certification

Symbiosis International University Lavale Campus, Pune

The ownership of the Symbiosis International University Lavale Campus, Pune, after thorough examination and careful evaluation, receives the label «2000-Watt Smart Cities»

valid until **March 31, 2026**

The Lavale Campus is recognized in **Transformation** for its demonstrable and exemplary results under the 2000-Watt Smart Cities criteria.

Zurich, March 31, 2022

President
2000-Watt Smart Cities
Association

President
Swiss Label Commission
2000-Watt Sites

Swiss certificate to better life,
resource efficiency and climate neutrality