

Project Steering Committee
Minutes of the Meeting

The 5th meeting of the Project Steering Committee (PSC) for the Project on Facility for Low Carbon Technology Deployment (FLCTD) was held online using Microsoft Teams platform on the 27th of October 2020, under the Chairmanship of Director General, Bureau of Energy Efficiency (BEE). The meeting was attended by the following officials:

S. No.	Name	Designation and Organization
1.	Mr. Abhay Bakre	Director General, Bureau of Energy Efficiency
2.	Mr. R. K. Rai	Secretary, Bureau of Energy Efficiency
3.	Mr. Milind Deore	Director, Bureau of Energy Efficiency
4.	Dr. Neelima Alam	Scientist E, Technology Mission Division, Department of Science and Technology
5.	Dr R. S. Agarwal	Senior Advisor and Coordinator (SPPU), Ozone Cell
6.	Mr. Mayur Karmarkar	Director – Asia, Sustainable Energy International Copper Association
7.	Mr. A.K. Asthana	Senior Technical Expert, GIZ
8.	Mr. Shyam Sundar	Joint Director, Bureau of Energy Efficiency
9.	Mr. Bibek Ranjan Patnaik	Project Engineer, Bureau of Energy Efficiency
10.	Dr. René Van Berkel	Representative, UNIDO Regional office in India
11.	Mr. Sanjay Shrestha	Project Manager, UNIDO, HQ
12.	Mr. Sandeep Tandon	National Project Manager, FLCTD, UNIDO
13.	Mr. Keshav Das	Programme Coordinator, UNIDO
14.	Mr. Sailendra Misra	Financial Expert, FLCTD, UNIDO
15.	Mr. Kiran Kumar	Technical Expert, FLCTD, UNIDO
16.	Ms. Reshmi Vasudevan	Programme Expert, FLCTD, UNIDO
17.	Mr. Rishabh Goel	Project Associate, FLCTD, UNIDO

The following was discussed during the meeting:

1. The DG, BEE Chaired the fifth Project Steering Committee (PSC) and after welcoming the members invited the FLCTD Project Management Unit to present the project progress.
2. The National Project Manager (NPM) made a presentation and provided an update on the activities carried out in the project since the last PSC meeting that was held on 9th December 2019. NPM informed that all the action points of the previous Project Steering Committee meeting have been addressed and the work has been completed. The

Innovation challenge for the newly inducted Technology Verticals of Industrial IoT, Energy Storage Solution, and Industrial Resource Efficiency is scheduled for launch on 1st November 2020.

3. Activities implemented by the PMU since the last PSC meeting were presented:

a) The annual Innovation challenge for the year 2020 was launched on 2nd March 2020 and the challenge cycle was completed with the conclusion of final selection round on 8th October. Due to lockdown, the entire screening process to shortlist applicants for grant support was conducted online for the first time. The publicity was done through multiple webinars, workshops, and social media outreach and as a result, the programme website received 177 applications. 13 innovations have been selected as winners in this cycle under the Waste Heat recovery, Space Conditioning, and Pumps & Motors category, which were selected from screening and shortlisting by expert panel members between July and September.

b) Status update of technology demonstration by the Winners of the innovation challenge of the year 2018 was provided. Out of 13 winners, eight had completed the technology demonstration and final M&V reports have been submitted to BEE. Five are in various stages of completion and there's only one out of those five which is facing challenge and PMU is trying to sort out the design issue of that particular technology under the space conditioning vertical to conduct the demonstration.

c) 15 Winners of the 2019 innovation challenge received contract in May 2020. Due the lockdown, the technology demonstration has been delayed but the PMU carried out discussion with all of them on a bi-monthly basis to understand the impact of lockdown and challenges faced by the firms. Two out of 15 firms, M/s Encon Thermal Engineers and M/s New Leaf Dynamics have already commissioned their innovative solutions and validation is planned to be completed by November 2020.

d) Two rounds of project review discussions with the Bureau of Energy Efficiency were held in June and August wherein the addition of new technology verticals was discussed and agreed upon. Thereafter, three new technology verticals, Industrial IoT, Electrical Energy Storage, and Industrial Resource Efficiency have been added and the innovation challenge will be launched in November. The experts' panel meetings were held for all three verticals and the panel has finalized the Terms of Reference for the Innovation challenge and the selection criteria.

e) For the Energy Storage technology vertical, UNIDO has engaged Customized Energy Solution based in Pune to provide support to the PMU to carryout publicity, run the innovation challenge cycle and assist in conducting technology demonstration and assist in measurement and verification. CII-GBC will continue to support the PMU in the area of Industrial Resource Efficiency and Industrial IoT.

f) Another activity initiated by the PMU is the accelerator programme being implemented by Sangam Ventures. The first batch of accelerator had participation of 15 companies out of which 5 firms have applied to the 2020 Innovation challenge cycle. In the second accelerator cycle, the scope of the technology areas was broadened considering the addition of new verticals to the FLCTD Innovation challenge. The 2nd batch of the

accelerator was launched on 24th August 2020 and 28 start-ups have been selected which are undergoing the 3 to the 4-month mentoring, training support to develop business plan. This batch includes five women-led start-ups and now the team has increased the engagement and number of the mentors as well to 32, including few women mentors.

g) Update was provided about the activity carried out by Intellectap. The timeline of Financial Due-Diligence of select winners of the 2018 innovation challenge was hampered due to the pandemic and the scenario for the companies to raise funds had entirely changed. The key findings of the assignment were that the firms had considerable difficulty in engaging or finding new customer segments and their business models were weak. The support was provided in terms of recommendations to improve the business model, as well as guidance on the development of the business plan. Though the companies had matured technology their investor readiness or the position to attract investment was found to be relatively low. Based on which it was recommended that while these technologies are being validated and tested in the field, longer-term engagement to provide strategic inputs strengthening their business models shall be undertaken. Besides, financial institutions both for Debt and Equity financing have been identified under the assignment carried out by Intellectap.

i) The project progress on the FLCTD project results framework were presented. Out of 20 Innovation challenges, 9 have been completed and 3 are being announced. Against the target of 120 innovations to be identified, 41 winners have been selected till date and 28 start-ups have been provided grant support. Also, the exercise on the Project's Component 2 has been initiated by PMU. The Terms of reference to carry out the assignment for the identification of centres for research and deployment of climate mitigation technologies in India and Overseas has been prepared.

i) Overview of project financial and physical progress was shared with the participants of the meeting committee. The project's overall value of US \$8.712 million, while the expenditure of USD 3.6 Million is achieved.

j) Mid-term Review of FLCTD project which was carried out in early part of 2020, were presented. Three key MTR recommendations were detailed that required attention and approval of PSC were – (a) to provide 3½ years extension to the project duration to complete the targets outlined in the project document; (b) expand the membership of PSC to include other stakeholders mainly the Government of India initiatives such as Atal Innovation Mission, BIRAC, Start-up India, and AGNii; (c) flexibility in grant conditions was recommended by the MTR team as a measure of increasing the effectiveness of grant support which was based on the feedback provided by the winners during the review. New payment terms proposed for grant disbursement are as follow:

- 20% on receipt of the implementation plan by the Winner after contract signing
- 30% on completion and acceptance of 1st set of field- trial
- 35% on completion and acceptance of balance field-trial
- 15 % on receipt of the final M&V report

Following the completion of the presentation by the NPM, the Chair of the Steering Committee invited remarks from the participants.

4. Mr. Sanjaya Shrestha, Project Manager highlighted that going forward the programme will have six verticals in total. With more verticals being added, more winners would be identified, and targets to identify 120 innovations could be achieved. He also suggested adding another vertical on heating technologies including boilers, burners, which could help Indian industries decarbonize. He suggested extending the project duration for 3 years and accelerating the project activities to meet the targets.
5. DG, BEE concurred with the suggestion of adding a new vertical on Heating Appliances and extending the programme for a maximum of 3 years. He suggested presenting the FLCTD programme to the Mission Innovation (MI) to explore possible synergies between the two programmes as MI leads two innovation challenges on the global front on Smart Grid and Off-Grid. Since now the innovation challenge cycle is quite established in terms of implementation.
6. Dr. Neelima Alam, Scientist G, DST mentioned that India is leading the 3 technology areas of Mission Innovation, out of which the technology areas of “Smart-grid” Innovation Challenge 1 (IC 1), ‘Off-grid Access to Electricity’ Innovation Challenge 2, are being led by DST. In addition, India is also co-leading the Analysis and Joint-Research sub-group.
7. Dr. René Van Berkel, UNIDO Representative India suggested accelerating the programme activities by adding a new vertical. He suggested focusing on the outreach, advocacy, and publicity of three new verticals being launched in November and urged the PMU to drive the campaign to attract the maximum number of applications before adding another vertical on heating appliances. It was suggested to launch the new vertical only after seeing the response to the innovation challenge i.e. by early next year.
8. Mr. R.K. Rai, Secretary, BEE by highlighting the example of the recent innovation challenge cycle wherein the programme received 177 applications but the winners were narrowed down to 13, suggested waiting for the outcome of the innovation challenge being launched before adding another vertical. He recommended strengthening the PMU team and increasing the outreach activities to attract more applications.
9. Mr. Mayur Karmarkar suggested broadening the scope of existing Pumps and Motor vertical to Pumps and Motor-driven systems. Besides, it was also recommended to illustrate through appropriate examples of the technology innovations that shall fit into the new thematic areas of Industrial IoT and Industrial Resource Efficiency.
10. Dr. R S Agarwal highlighted that the programme has picked up momentum and the quality of technology solutions supported so far has been highly satisfactory. He mentioned that FLCTD has positioned itself fairly by validating the lab-scale prototypes which otherwise get pinned and rarely commercialize. Given the unique support being provided by the FLCTD project, he suggested that therefore the innovation cycle should continue till 2022.
11. Mr. Milind Deore, Director mentioned about an important parameter of component 1.2 of the project, which states “Approximately 120 low-carbon innovations demonstrated, and around one third of winning technology innovations (40) commercially scaled up and deployed as business models. It was suggested to focus on the project efforts to see these innovations get commercialized.

12. Mr. A.K. Asthana endorsed the suggestion on proposed project extension. He mentioned that though much of the demonstrations have been done in WHR vertical but awareness of the technology solutions is yet to be created amongst the industries and the stakeholders. He suggested to present these innovative technology solutions to industries bodies by the entrepreneur detailing the cost economics and the business model.
13. Based on the consensus of participants to a 3-year extension of the project, the Chair of the Project Steering Committee recommended the following action points:
 - a) Letter for extension of the project duration from February 2021 to February 2024 to be issued by the Bureau of Energy Efficiency.
 - b) Mission Innovation team in DST to be approached by the PMU to explore synergies.
 - c) To launch the new verticals i.e. IoT, IRE & ES
 - d) Prepare a work plan till February 2024 keeping sufficient margins for completion of all activities detailed in the project document.
 - e) Identify the new verticals and the additional areas for existing verticals.
 - f) Carryout wider dissemination of project information and conduct publicity and outreach campaigns to be undertaken for broader coverage.
 - g) Create awareness amongst industries, associations, and stakeholders on the technology solutions supported under the programme for replication.
 - h) Manpower in the Project Management Unit to be strengthened.

The PSC concluded with closing remarks from the PSC Chair. The meeting was adjourned with the vote of thanks to the Chair.
