



# INNOVATION CHALLENGE IN ELECTRICAL ENERGY STORAGE

Progress Report- 7<sup>th</sup>  
January 2021

## ABSTRACT

Customized Energy Solutions India Pvt. Ltd. (CES) progress report for planning & implementation of the “Innovation Challenge in Electrical Energy Storage” pan India to support the FLCTD project to facilitate deployment & scaling up of low carbon technologies that can address the technology gaps to mitigate climate change and promote use of clean energy applications in selected sectors.

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### CES -IESA <> UNIDO: Plan of action

Tasks	M1	M2	M3	M4	M5	M6
1.1 Coordination support to the PMU to identify subject experts to define the innovation challenge						
1.2. Carryout out publicity of the project among educational institutes, technology R&D centers and laboratories, incubation centers, industries, utilities and MSMEs (towards garnering interest of potential innovators, investors, and other relevant stakeholders in the innovation challenge).						
1.3. Ensuring outreach and participation of the organization and entities and developing communication materials in consultation with PMU, logistics for organizing the events.						
1.4. Publicize the Innovation Challenge on various media and call for applications.						
1.5. Conduct webinars to sensitize the stakeholders based in different parts of the country (in tier-1 and tier-2 cities) about the Challenge;						
1.6. Develop criteria to screen and shortlist applications in consultation with the PMU						
1.7. Develop a Technology Measurement and Verification Process for all shortlisted technologies for the Energy Storage technology area.						
1.8. Liaison with the industry and other end-users and identify champions to participate in technology validation.						

**A. CES & IESA have been carrying out the activities in constant discussion with UNIDO PMU team and the Expert Panel. As of December 2020, the status of the activities are as follows**

Task	Status
1.1 Coordination support to the PMU to identify subject experts to define the innovation challenge	Completed
1.2. Carryout out publicity of the project among educational institutes, technology R&D centers and laboratories, incubation centers, industries, utilities and MSMEs	
1.3. Ensuring outreach and participation of the organization and entities and developing communication materials in consultation with PMU, logistics for organizing the events	
1.4. Publicize the Innovation Challenge on various media and call for applications.	
1.5. Conduct webinars to sensitize the stakeholders based in different parts of the country about the Challenge	
1.6. Develop criteria to screen and shortlist applications in consultation with the PMU	
1.7. Develop a Technology Measurement and Verification Process for all shortlisted technologies for the Energy Storage technology area	In process
1.8. Liaison with the industry and other end-users and identify champions to participate in technology validation	To be completed

Updates on each of the tasks are shared below

### 1.1 Coordination support to the PMU to identify subject experts to define the innovation challenge

- An expert panel team consisting of 6 persons, having domain knowledge of electrical energy storage, has been created by CES and IESA in consultation with the PMU in the month of August 2020.
- Necessary meetings with the Expert Panels were scheduled from time to time since 25<sup>th</sup> of September 2020
- The Expert Panel members have been kept constantly updated on the monthly statuses of the Challenge and have participated in calls as and when required. The Expert Panel will now e-meet in Jan 2021 week 2 to finalize the Test, Measurement & Verification process and also discuss on the applications

### 1.2 Carryout out publicity of the project among educational institutes, technology R&D centers and laboratories, incubation centers, industries, utilities and MSMEs

- CES created a repository shortlisting stakeholders for the outreach of the program - educational institutes, R&D centers and laboratories, incubation centers, industries, utilities, start-ups , MSMEs , Investors, Partners etc.
- CES developed the introductory note/skeleton for external representation of the program after consultation with PMU and have also provided image design for the EES on the website
- Multiple outreach and reminders at suitable intervals for the challenge have been carried out/shared to the pool of stakeholders created
- A dedicated time slot was provided for the launch of the program on *World Energy Storage Day* on 22nd September at the Virtual Expo with a speaking slot to UNIDO representative on the Innovation Panel in the India region. The event witnessed over 2000+ attendees.
- CES conducted a dedicated virtual workshop on the Innovation Challenge on 2nd November 2020 as part of the *India Energy Storage Week*, the annual conference of IESA to get maximum exposure for the challenge and increasing chances of getting better prepared proposals from interested applicants. Specific mentions were made on IESA R&D and Investment Summit on 6th November 2020 as part of IESW Conference The event witnesses 1100+ attendees.
- The agenda to the workshop dated 2.11.20 is attached herewith

Time	Discussion points	Speaker
12:30 - 12:45	Brief about IESA-UNIDO Start-Up workshop <ul style="list-style-type: none"> <li>• Eligibility Criteria for Startups for Innovation Challenge</li> <li>• Incubation, Accelerator, Mentorship</li> </ul>	Dr Rahul Walawalkar, President & MD, Customized Energy Solutions and President, IESA
12:45 - 13:15	Introduction to FLCTD project and Innovation Challenge <ul style="list-style-type: none"> <li>• Program Objective and Structure</li> </ul>	Mr Sandeep Tandon, National Project Manager, UNIDO

	<ul style="list-style-type: none"> <li>• Benefits offered</li> <li>• Application Process</li> </ul>	
13:15 - 14:15	<p>Innovations in Energy Storage Solutions Technologies and its Applications</p> <ul style="list-style-type: none"> <li>• New research</li> <li>• Indigenous R&amp;D</li> <li>• Objective of Pilot projects</li> </ul>	<p>Dr. Ranjith Krishna Pai, Scientist E, DST          Arghya Sardar, Scientist F, TIFAC          Dr P C Pant, Former Advisor, MNRE          Dr H Purushotham, Former Chairman &amp; MD, NRDC</p>
14:15 – 14:30	<p>Past Winners Insight</p> <ul style="list-style-type: none"> <li>• Experience in being a part of the program</li> <li>• Value generated, and exposure received</li> </ul>	<p>Rajat Gupta, CEO, TESSOL</p>

Link to session: <https://www.youtube.com/watch?v=OrSsFTq73oM>

(This has been updated on IESA YouTube Channel, linked to homepage which is open to all)

The attendees list is attached in the Annexure (Section B) part of this report.

### **13. Ensuring outreach and participation of the organization and entities and developing communication materials in consultation with PMU, logistics for organizing the events**

- CES has carried out various promotional activities for publicizing and active participation of the Innovation challenge project to various stakeholders through the deliverables mentioned

- Monthly podcasts / Emerging Tech Radio: A coverage of Mr. Sandeep Tandon, National Project Manager, UNIDO on the FLCTD Innovation challenge was carried out on October 15<sup>th</sup> 2020 and another coverage of Past Winner- Pluss Advanced Technologies was carried on December 11<sup>th</sup> 2020 on Emerging Tech Radio to highlight the benefits and winner's perspective of the challenge. The podcast was shared on multiple platforms such as Apple music, LinkedIn etc.

*Links to recording:*

1. UNIDO: <https://emergingtechradio.libsyn.com/kick-starting-deployment-of-innovative-ess-technologies-in-india-with-unidos-innovation-challenge>

2. Pluss Advanced Technologies: <https://soundcloud.com/user-353290851/unique-opportunity-for-energy-storage-innovators-to-receive-50k-grant-for-beta-deployments-in-india>

- Dedicated UNIDO Newsletters/Monthly Newsletters coverage: 2 dedicated newsletter had been shared to all the constant contacts of IESA informing about the challenge and deadline at regular intervals.
- ETN Magazine: A coverage of the challenge and quotes from Mr. Sandeep Tandon about the objective and outcome of the challenge has been covered in the November-

December 2020 issue of the Emerging Tech News Magazine which covers IESA Network members and 40,000 + industry readers.

Due to COVID-19 situation, all the outreach and promotional activities had been undertaken using webinars and virtual events organized by IESA during this period.

#### **14. Publicize the Innovation Challenge on various media and call for applications.**

- Apart from the coverage as mentioned earlier under the point Section 1.3, ETN Magazine. we have reached out to other media houses for wider spread.

- A press release report dossier has already been shared in the weekly updates to UNIDO team where mentions of other media houses that mentioned the coverage were shared. Among them are – Saur Energy, Energetica India, PV Magazine, The Financial Express, ET Energy World, Climate Samurai, Outlook India, Yahoo Finance, Women Entrepreneur India, Arunachal Times, Energy Infra Post, Power Line, CEO Insights etc.

- Brochures, posters, flyers etc. were developed by the editorial team and shared to our database contacts along with an introductory email about the challenge, benefits, who can apply and last date of application. This communication has been communicated multiple times under Reminder Email during the Challenge.

- Social media promotions were carried out since November, on various platforms such as LinkedIn, YouTube and Facebook throughout the program by CES Media team

- IESA featured UNIDO as a Partner to the mentioned events in all the social media Conduct webinars to sensitize the stakeholders based in different parts of the country about the Challenge

- Apart from the session and workshops as mentioned earlier under Section1.2, dedicated webinars “IESA UNIDO Webinar for UNIDO Electrical Energy Storage Innovation Challenge” were carried out to promote the innovation challenge and familiarize with the application process.

- **Webinar 1:** First Webinar was conducted on 23.11.2020. The program structure involved - Introduction to the Innovation challenge, the eligibility criteria for Start-ups, the program objective and structure along with the benefits offered, process for application of the challenge and its M&V process involved. The webinar witnessed an attendance of 177 participants.

The agenda of the webinar is as follows:

Discussion points	Speaker	Duration
Welcome Remarks	Dr Rahul W. President and MD, IESA	10 mins
FLCTD Program Details and Application Procedure	Mr. Sandeep Tandon, National Project Manager UNIDO	30 mins
Past Winner Experience with FLCTD project and its contribution in the company's scale-up	Mr. Manoj Modi, Head R&D, Shakti Pumps	15 mins
Requirement of Technology Validation in Energy Storage	Dr Satyajit Phadke, Program Manager -R&D, CES	15 mins
Q&A		20 mins

Link to recording: <https://www.youtube.com/watch?v=lg39SFKuoCw>

- **Webinar 2:** Second Webinar was conducted on 8.12.2020. Similar discussions were raised in this webinar. The objective of this round of webinar was to reach out to the ones who missed the first webinar and the ones who had queries regarding the application fill up procedure. A specific topic on “Application Fillup procedure” for the attendees was planned. The webinar witnessed an attendance of 97 participants.

The Agenda of the webinar is as follows.

Discussion points	Speaker	Duration
Welcome Remarks	Dr Rahul W. President and MD, IESA	10 mins
FLCTD Program Details and Application Procedure	Mr. Sandeep Tandon, National Project Manager UNIDO	20 mins
Past Winner Experience with FLCTD project and its contribution in the company’s scale-up	Mr Vishnu Sasidharan, Vice President - New Product Initiatives, Pluss Advanced Technologies	15 mins
Requirement of Technology Validation in Energy Storage	Dr Satyajit Phadke, Program Manager - R&D, CES	15 mins
Application fill-up procedure	Mr Shivam Kashyap, Asst Manager, IESA	15 mins
Q&A		15 mins

Link to recording: [https://www.youtube.com/watch?v=J6y\\_SojuLno&t=284s-](https://www.youtube.com/watch?v=J6y_SojuLno&t=284s-)

- Apart from these dedicated webinars shared, there are various other webinars and external participations where mentions about the Challenge were made. For example IESA Working Group Meetings, IESA-NITI Aayog Energy Storage Manufacturing Webinar, Railway Electrification – A Virtual Conference etc.

The attendees list is attached in the Annexure (Section B) part of this report.

## 15. Develop criteria to screen and shortlist applications in consultation with the PMU

- CES R&D team, in consultation with PMU have developed the Terms of Reference which involves the objectives and Parameters for Selection for applicants.
- A Screening and Shortlisting Criteria for shortlisting of applicants have been developed and updated to the UNIDO team
- A score board with weightage and guidelines for evaluation have been developed.


CES R&D team is currently working on the Measurement & Verification process and will finalize the parameters once the applications are reviewed in the next phase of the work i.e in Section 1.7. As of the next steps, the applications are to be reviewed and a meeting is to be scheduled with the expert panel in January.



## B. Annexure


### 1. Repository for outreach

Outreach among various stakeholders of the industry has been made. This included R&D Institutions, Startups, IESA Members, Incubation centers, investment stakeholders, media partners, IESA partners etc. Attached herewith are the database excel sheets and other outreach updates-

Outreach Stakeholder Database	 Outreach Stakeholder database
UNIDO Media Coverage Dossier	 UNIDO Coverage Dossier.pdf
ETN Magazine cover	 ETN Coverage UNIDO _ energy stora




### 2. Application Follow-ups: Ensuring completion of applications

Several rounds of telephonic and email reminder/ follow-ups were carried out to ensure the completion of the application fill up of the applicants. Attached herewith are the status update sheet that was maintained. 2 dedicated resources from CES, IESA deputed to execute these activities in the last weeks of the application process.

Applications follow up status	 Applications_2020 UNIDO18.12.20.xlsx
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### 3. Webinars/Workshop participant details

The webinars conducted by IESA had seen participations from various backgrounds of the industry. The first and second webinars saw 175+ and 95+ participants respectively and IESW had seen more than 1000+ participants. The details of the participants are attached here.

Activities	List	No. of participants
Webinar 1	 Webinar 1 Stakeholder database	177
Webinar 2	 Webinar 2 Stakeholder database	97
IESW Workshop	 IESW Workshop Stakeholder database	100+ direct attendees

## C. Glossary

Sr.No	Abbreviation	Expansion Term
1.	AIIB	Asian Infrastructure Investment Bank
2.	ARAI	Automotive Research Association of India
3.	BCIC	Bangalore Chamber of Industry and Commerce
4.	BEE	Bureau of Energy Efficiency
5.	BIS	Bureau of Indian Standards
6.	BVES	German Energy Storage Association
7.	CES	Customized Energy Solutions India Private Limited
8.	CESA	California Energy Storage Alliance
9.	CII	Confederation of Indian Industry
10.	DST	Department of Science and Technology
11.	EESL	Energy Efficiency Services Limited
12.	ESI	Energy Storage India
13.	ESS	Energy Storage Solutions
14.	FLCTD	Facility for Low Carbon Technology Deployment
15.	GEF	Global Environmental Facility
16.	GESA	Global Energy Storage Alliance
17.	GIZ	German Agency for International Cooperation
18.	GOI	Government of India
19.	ICAT	International Centre for Automotive Technology
20.	IEEMA	Indian Electrical & Electronics Manufacturers' Association
21.	IESA	India Energy Storage Alliance
22.	IGEF	Indo-German Energy Forum
23.	IP	Intellectual Property
24.	ISGF	India Smart Grid Forum
25.	ISID	Inclusive and Sustainable Industrial Development
26.	M & V	Measurement & Verification
27.	MeitY	Ministry of Electronics and Information Technology, Government of India
28.	MOVE	Moving Onward Vehicle Electrification
29.	MSME	Micro, Small and Medium Enterprises
30.	NITRA	Northern India Textile Research Association
31.	NPM	National Project Manager
32.	PMU	Project Management Unit
33.	PSC	Project Steering Committee
34.	SECI	Solar Energy Corporation of India Limited
35.	SOW	Scope of Work
36.	TOR	Terms of Reference
37.	UNIDO	United Nations Industrial Development Organization
38.	WB- ESMAP	World Bank Energy Sector Management Assistance Program

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