

Facility for Low Carbon Technology Deployment (FLCTD) BEE UNIDO GEF Project

Terms of Reference

Annual Innovation Challenge for the Waste Heat Recovery Vertical of the FLCTD project 2020

[Last Date for Application: 31st May 2020]

The **Facility for Low Carbon Technology Deployment (FLCTD)** project, implemented by the United Nations Industrial Development Organization (UNIDO) in collaboration with the Bureau of Energy Efficiency (BEE) is launching the 2020 annual Innovation challenge.

The Challenge is open for Waste Heat Recovery technology innovations across all industrial sectors. These innovations shall be deployed to address technology gaps and improve overall energy efficiency in industries and commercial operations for the following areas:

- **High temperature range:** Innovations demonstrating heat recovery at temperature ranges above 600 degree Celsius for productive end-use applications such as, but not limited to, power generation, pre-heating of feedstock, pre-heating of primary / secondary air, space conditioning or any other use in the process or utility service that requires heating. The innovation should demonstrate reduction in the energy released in atmosphere from the production processes that are either continuous or intermittent (batch process) type, without effecting product quality.
- **Medium temperature range:** Innovations demonstrating heat recovery at temperature ranges between 600 degree and 150 degree Celsius for productive end-use applications such as, but not limited to, power generation, pre-heating of feedstock, pre-heating of primary / secondary air, moisture removal from feedstock or solid fuel, space conditioning or any other use in the process or utility service that requires heating. The innovation should demonstrate reduction in the energy released in atmosphere from the production processes that are either continuous or intermittent (batch process) type, without effecting product quality.
- **Low temperature range:** Innovations demonstrating heat recovery at temperature range below 150 degree Celsius for productive end applications such as, but not limited to, pre-heating of feedstock, moisture removal from solid fuel, cooling or any other use in the process or utility service that utilizes heat. The innovation should demonstrate reduction in the energy released in atmosphere from the production processes that are either continuous or intermittent (batch process) type.

Eligibility and Qualifiers

All innovative solutions should be based on proof-of-concept or early stage prototype and clearly indicate the technology gap being addressed.

Following are the indicative qualifiers:

- ✓ Innovations that result in overall efficiency improvements
- ✓ Emerging and novel technology applications that reduces energy consumption, including through power generation, system heat requirement reduction, reduction/substitution in use of fossil fuel
- ✓ Design improvements that reduce energy consumption, overcome application constraints and improve economic feasibility
- ✓ Heat recovery from untapped/un-utilized sources of heat

Who Can Apply?

- The innovation challenge is open to Entrepreneurs, Startups, Indian Technical Institutes / Universities, Research Institutes, Micro, Small and Medium Enterprises, Industries, Public Sector Enterprises and Government Laboratories.
- Consortium of Indian companies, non-profit organization, associations, academic institution, R&D organization
- Indian Start-up companies and collaborations with Industry/Academia/research institutes/ are highly encouraged to apply
- Technologies funded under Department of Science and Technology (DST) and other government schemes, at pre-market phase (TRL 4 - TRL 6) and ready for field demonstration will be given preference
- Innovation teams with **women entrepreneurs** will be given preference.

Incentives for Participation

- **Grant** up to USD 50,000 to the winners for technology demonstration and validation at multiple locations, wherever required;
- **Performance Verification** to establish the efficacy of innovative technology in working conditions;
- **Business Acceleration and Mentoring** support from industry experts;
- Fund-raising support after successful completion of technology validation;
- Recognition from Bureau of Energy Efficiency and UNIDO;
- Grant disbursement will be linked to the progress. Indicative progress-based milestones are:
 - 30% of the award grant will be given to the innovator winning the innovation challenge

- 50% after installation/commissioning of the innovation
- 20% at the end of the deployment phase, upon completion of Technology Verification Reporting

Parameters for Selection

This is only an indicative list, and is not exhaustive, and is subject to change and modification.

- Nature of innovation (Technology/Product design/Process Innovation)
- Addresses a key issue/technology gap in the industry
- Replication potential
- Energy saving and greenhouse gas emission reduction potential
- Financials (pay-back period, Internal Rate of Return)
- Technology readiness stage (R&D/ Prototype/ Pilot demonstration/ Commercial)
- Intellectual Property Rights/ Patents (granted/ applied)
- Expertise of the project team

General Guidelines, Terms, and Conditions

- Participant shall submit solutions/ product designs owned by them or to which they have right to claim and use as owned by them. Suitable documents to this effect must be submitted along with the entry.
- Participant shall ensure that any submission made in the Challenge does not violate any of theirs or any third party's intellectual property rights, confidentiality, trade secret and violate any statutory provisions.
- BEE, UNIDO, its employees, members of Expert Panel and organizers of this innovation challenge shall in no event be liable for any violation of IPR, or license or permits required from third party.
- Participant shall not assign any rights, obligations, or privileges hereunder without the prior written consent of Organizers of the Challenge.
- BEE, UNIDO, Organizers, members of Expert Panel, supporting organizations or any employee or agent shall not be liable for, any costs incurred or loss or liability or loss in expectation of profits or loss due to failure of understanding the terms and conditions of the Challenge or of any expected benefit of the participant in relation to entry and submission in the Challenge.
- By way of selecting the entries for evaluation at any Stage or for Final Award, Participants shall not be entitled to claim or have got endorsement from BEE and UNIDO of any sought whatsoever, or have earned approval of any sought whatsoever of BEE and UNIDO, for use in any form whatsoever anywhere in the Industry.
- At any Stage while evaluating the entries, organizers shall be free to contact the Participants and carry out discussions on the matter submitted by the Participants and seek clarifications. Any solicitation by participants in whatever form in respect of their entries shall not be entertained and entries of such participant shall be disqualified from the Innovation Challenge.
- BEE/UNIDO/Organizers may change the Terms and Conditions of participation at any time without prior notice. It shall be sole responsibility of the Participants to update themselves of information posted in the website from time to time.
- BEE/UNIDO/Organizers may disqualify a Participants from the Challenge for breach of any of the conditions of this Challenge, or discontinue this Challenge.