

## ONGC Energy Centre

### Call for Proposal

#### **“Demonstration of integrated bioprocess for bioethanol production using lignocellulosic waste and valorisation of residual lignin”**

ONGC Energy Centre (OEC) is engaged in In-house and collaborative research in various energy areas. Some of the key technology areas where the OEC is working include- (i) Hydrogen Generation, (ii) Biotechnology for Energy, (iii) Geothermal Energy, (iv) Solar Energy and (v) Uranium & Helium Exploration.

With an aim to recover energy from agricultural based lignocellulosic waste (like rice straw) and to curb air pollution caused because of stubble burning, ONGC Energy Centre (OEC) invites interested academic and research institutions in the country to jointly work with OEC to Demonstrate an indigenous developed bioethanol generation system using lignocellulosic waste integrated with valorisation of residual lignin, and thereafter to prepare a detailed techno-economic feasibility report of the demonstrated system.

The following are the proposed Objectives/Scope and Key Deliverables for the proposed project work.

#### **Proposed Objectives/Scope:**

- Demonstration of 1 to 10 Tons per day bioethanol generation system using lignocellulosic biomass.
- The optimization of process parameters for mixed type of bio waste.
- Valorisation of residual lignin into value added products in line with circular economy.
- Toxicological studies of cultures/materials to be used in the process.
- Characterization of end product and by-product formed.
- Demonstration of the process with optimized conditions.
- The process developed should be repeatable, reproducible and scalable for pilot trials.
- Data collection, analysis & documentation of the process and modeling to project to ascertain the performance in the different weather conditions.
- Feasibility studies and techno economic analysis with complete life cycle assessment of the process demonstrated, including energy and material balance of the process.

#### **Proposed Key Deliverables**

- Demonstration of bioethanol generation system using mixed type of lignocellulosic biomass.
- Valorisation of residual lignin into value added products.
- Techno-economic feasibility report and projections for scale up.
- Detailed technology transfer documents including design details, drawings and specifications etc.
- Monthly, quarterly and final project completion report.
- Publications and Patents/ IPR.

Interested organizations may please send a concept note (about 4 pages) giving information of proposed scope, methodology, time frame, energy consumption estimation and deliverables (including tentative/targeted specifications of the product/process proposed to be developed) to [ongcenergycentre@ongc.co.in](mailto:ongcenergycentre@ongc.co.in), preferably by 10<sup>th</sup> November 2022. Preference would be given to the proposals including availability of required space suitable timelines (12 to 18 months) for demonstration.

The call for proposal and formats for sending the proposal and the General R&D Terms and Conditions under R&D guidelines head are outlined in the link provided below.

<https://ongcindia.com/web/eng/sustainability/energy-center/about-us/home>