



**Centre for High Technology
(Ministry of Petroleum & Natural Gas)**

**Request for Selection (RFS) document
for
Selection of Project Developers
for
Commercial Scale 2G Integrated Bioethanol Projects
under
Pradhan Mantri JI-VAN Yojana**

RFS No. CHT/PM JI-VAN/RFS/Commercial/2022/04

Dated: 15.12.2022

ISSUED BY

Centre for High Technology
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1. Though adequate care has been taken while preparing the RFS document, the Project Developers shall satisfy themselves that the document is complete in all respects. Intimation of any discrepancy shall be given to this office immediately. If no intimation is received from any Project Developer within **twenty (20) days from the date of notification of RFS/ Issue of the RFS documents**, it shall be considered that the RFS document is complete in all respects and has been received by the Bidder.
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Place: Noida

Date: 15.12.2022

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Section 1

INTRODUCTION, BACKGROUND & SCHEME DETAILS

Section 1

Introduction, Background & Scheme Details

1.1 INTRODUCTION

- 1.1.1. Centre for High Technology (CHT) was established as a dedicated technology cell of Ministry of Petroleum & Natural Gas (MOP&NG) in 1987 to assess futuristic requirements, acquire, develop and adopt technologies in the fields of refinery processes, petroleum products, work relating to modernization of technologies etc. CHT takes up programmes for performance evaluation, improvement, capability development, technical services etc. for Indian Refineries on a centralized basis. CHT is engaged in promoting indigenous technologies through sponsoring R&D projects and their commercialization in the downstream sector.
- 1.1.2. Government of India through Ministry of Petroleum & Natural Gas (MoP&NG), has notified “Pradhan Mantri Jaiv Indhan- Vatavaran Anukool fasal awashesh Nivaran (JI-VAN) Yojana” vide Extraordinary Gazette of India no. 1037 dated 08.03.2019 for providing financial support to Integrated Bioethanol Projects using lignocellulosic biomass and other Renewable feedstock with an aim to set up Second Generation (2G) ethanol projects across the country.
- 1.1.3. The scheme envisages setting up of 12 Commercial scale and 10 demonstration scale 2G Bioethanol projects. The scheme will be implemented in Phase-wise manner. Under Phase-I (2018-19 to 2022-23), 6 Commercial projects and 5 demonstration projects will be supported. Under Phase-II (2020-21 to 2023-24), remaining 6 commercial projects and 5 demonstration projects will be supported.
- 1.1.4. For Commercial projects, Financial Assistance is subject to a maximum of 20% of the project cost **OR** Rs. 5 crore for every 10 lakh litres summed to Biorefinery’s annual name plate capacity, whichever is lesser, will be provided to make the projects commercially viable. The maximum financial outlay per project has been capped at Rs 150 crore.

For example, for a project cost of Rs 800 crore for generating 3.20 crore litres of 2G ethanol per annum, financial assistance of Rs. 150 crore will be provided. In case, the cost for a project having annual 2G Ethanol capacity of 2 crore litres is Rs. 600 crore, the grant to the tune of Rs 100 crore will be provided.
- 1.1.5. The total cost of the project includes cost of land, cost of total equipment and their erection including biomass supply chain and handling, civil & mechanical work including plant building & sheds, cost of utilities, electrical & instrumentation controls, enabling assets (water & power intake), water and waste management system, pre-commissioning and commissioning charges, working capital, interest during construction and also charges of technology, royalty, charges towards PMC/EPCM services and charges of any special erection involved, besides any contingent expenses.
- 1.1.6. The financial assistance/ grant component for the commercial projects will be released in four stages achieving respective milestones as under:

| Project Milestones | Grant payment | Cumulative Grant |
|--|---------------|------------------|
| Erection/ Installation of Proprietary equipment | 25% | 25% |
| Completion of mechanical erection of the Project | 25% | 50% |
| On reaching 25% of annual production capacity of design value subsequent to mechanical completion and commissioning of Project | 25% | 75% |
| On reaching 75% of annual production capacity of design value | 25% | 100% |

- 1.1.7. Scientific Advisory Committee (SAC) of Ministry of Petroleum & Natural Gas (MoP&NG) is designated as nodal body for appraising and recommending the eligible Project proposals under the Scheme.
- 1.1.8. Projects deemed fit for seeking grant under the Scheme by SAC will be approved by Steering Committee of CHT under the chairmanship of Secretary, MoP&NG for disbursal of funds under the grant.
- 1.1.9. CHT is designated as Nodal Agency for implementation of the scheme and shall provide requisite Secretarial assistance to SAC for selecting eligible Project Developers under the Scheme.
- 1.1.10. This Request for Selection document (hereinafter called RFS for commercial scale projects) has been prepared in line with the guidelines notified in Gazette dated 08.03.2019 by MoP&NG and subsequently incorporating recommendations of SAC. This RFS is only for commercial scale projects.
- 1.1.11. CHT invites proposals for Selection of Project Developers for providing Financial Assistance to set up 6 Commercial scale 2nd Generation Ethanol Projects based on lignocellulosic biomass and other renewable feedstock under Pradhan Mantri JI-VAN Yojana.

1.2 BACKGROUND

- 1.2.1 Government of India has emphasized on achieving energy security of the country with a target of reducing import dependence i.e. usage of fossil fuels by 10% from 2014- 15 levels by the year 2022. This target is to be achieved by adopting a five-pronged strategy which includes, Increasing Domestic Production, Adopting Biofuels & Renewable, Energy Efficiency Norms, Improvement in Refinery Processes and Demand Substitution. This envisages a strategic role for biofuels in the Indian Energy basket. The growing concern about the import dependence for fuel requirement in tandem with environmental pollution issues have driven the need for biofuels that have superior environment benefits and are economically competitive with fossil fuel.
- 1.2.2 National Policy on Biofuels – 2018 is aimed at accelerated promotion of Biofuels with indicative targets of achieving 20% blending in Petrol and 5% blending in Diesel by 2030. Later revised target of 20% blending of ethanol in petrol is proposed by Ethanol Supply Year (ESY) 2025-26.

- 1.2.3 In this direction, Oil Marketing Companies (OMCs) are marketing Ethanol Blended Petrol with percentage of ethanol up to 10% as per the BIS specifications and achieved a target of 10% blending by Jun'22 on Pan India basis.
- 1.2.4 Second Generation (2G) Bioethanol is produced from agricultural residues and by-products, organic wastes; most preferably woody, grassy and waste materials as a feedstock; and biodegradable fractions of municipal & industrial waste. The studies indicate that Lignocellulosic surplus biomass availability in India is around 12-16 crore tons per annum. If exploited, this has potential to yield 2500 to 3000 crore liters of Ethanol per annum and has potential to reduce India's dependence on imported crude oil considerably.
- 1.2.5 2G Ethanol Bio-refineries, apart from producing Cellulosic Ethanol, also produces Pellets (from surplus lignin); Biogas (which can be upgraded to Bio CNG); liquid CO₂/ Dry Ice (for supplies to Poly Houses & Cold Storages, which would support Horticulture activity) & assured quality Compost (which will increase farm yields & reduce chemical fertilizer consumption). Thus 2nd Generation Bio-refineries would be integrated Bioenergy projects.

1.3 **DETAILS OF THE SCHEME**

- 1.3.1 Project Developers (hereafter referred to as PDs) selected by CHT based on this RFS, shall set up commercial scale Second Generation (2G) Bioethanol projects (based on non-food biomass feedstocks and other renewable feedstocks) in accordance with the provisions of this RFS document.
- 1.3.2 PDs can also obtain grant from State Governments/PSUs/Other Agencies up to 20% of the total project cost. Therefore, total grant taken from the Central Government and State Government/PSUs/other Agencies shall not exceed 40% of the total project cost.
- 1.3.3 PDs will have to mandatorily undertake Ethanol Purchase Agreements (EPA) with Oil Marketing Companies (OMCs) in prescribed format for assured procurement of ethanol. The entire 2G ethanol produced from the Commercial projects supported under this Scheme shall be mandatorily supplied to OMCs for the purpose of blending in Petrol. If PD is an Oil Marketing Company (OMC), Ethanol Purchase Agreement (EPA) shall not be required.
- 1.3.4 PDs shall have to submit necessary Detailed Feasibility Report (DFR) along with Biomass Assessment/ waste assessment, supply chain & logistics report duly vetted by a third-party consultant. The DFR should clearly indicate cost involved on various aspects like technology procurement, establishment of plant, Royalties, consultations and any other incidentals which will require any payment to outside agencies from India. Details in relation to proposed sales revenue generated from sale of 2G Ethanol & other by-products produced in the Biorefinery shall also be clearly stated in the DFR.
- 1.3.5 Project proposals is expected to be based on integrated approach for end to end utilisation of biomass for production of ethanol and other value-added products. Bioethanol produced shall be meeting out the BIS standards applicable for blending with petrol.
- 1.3.6 PDs shall submit Technology licensing Agreement with their proposed Technology provider. In case, the PD is the Technology licensor, the same shall not be required.
- 1.3.7 PDs shall submit the land document of the project with the application of RFS.

- 1.3.8 PDs shall have committed source for enzymes and submit the related document along with the proposal.
- 1.3.9 PDs shall have undertaken trials of proposed Technology and proposed feedstock for the project. Results of such trials shall be shared at the time of RFS.
- 1.3.10 PDs to have entered into EPCM (Engineering, Procurement & Construction Management) Contract/ other execution mode as PMC & EPC/ OBE with reputed organization having proven track record. Preference will be accorded to applicants, whose EPCM/ PMC & EPC/OBE Contractor has established operations in India and, thereby, can optimize local sourcing.
- 1.3.11 All proposals should be annexed with the validated life cycle analysis (LCA) report of the proposed 2G Ethanol Technology for meeting the eligibility criteria of advanced biofuels.
- 1.3.12 The Commercial Projects should be designed for inter-connection with the OMC depots. PDs shall ensure the connectivity of OMC depot before commissioning the project for efficient delivery of 2G Ethanol.
- 1.3.13 PD shall have entered into three years (with a renewable option of two years) contract for operation and maintenance from the vendor/technology supplier or by the PD himself. PD shall submit the document regarding Agreement for O&M before release of 2nd instalment of FINANCIAL ASSISTANCE i.e. after completion of mechanical erection of the Project. In case, PD himself is doing O&M, only self-declaration may be submitted at the time of RFS.
- 1.3.14 PDs shall have Three years (with a renewable option of two years) contract for supply of biomass which can be revised as per the mutual consent of the Biomass supplier as well as Bioethanol project developer. PD shall furnish Biomass agreement before release of 2nd installment of FINANCIAL ASSISTANCE i.e. after completion of mechanical erection of the Commercial Project.
- 1.3.15 PDs / Promoters may include working capital as part of the total project cost.
- 1.3.16 For setting up Commercial projects, PD eligible under the scheme would be State Govt. enterprises, Central Public Sector undertakings & Private Entities as per eligibility criteria defined under Section-3.
- 1.3.17 CHT shall maintain necessary guarantees and legal formalities for channelizing the grant.
- 1.3.18 Project proposals submitted to CHT will be based on the prevailing Ethanol price fixed by the Government. Present Ethanol price is Rs 65.60 per Litre. Projects will also be eligible for policy provisions arising out in future.
- 1.3.19 Each Technology applying under Commercial projects will be eligible for maximum of four projects. If any additional projects(s) are possible within budget of the scheme, fifth project or more may also be considered by the SAC in case the proposals with other technologies are not received against RFS.
- 1.3.20 The project cannot be transferred or sold to a third party without consent of the Government of India.
- 1.3.21 PDs and CHT shall enter into suitable Agreement creating a charge over the Project assets in favour of CHT and for ensuring the disbursement of grant to credible PDs.

- 1.3.22 CHT shall have a pari passu charge over the Project assets in case of Projects being financed by other lending institutions/banks.
- 1.3.23 CHT may incorporate suitable provisions regarding arbitration and seat of arbitration in the agreement to be entered between CHT and selected PDs under the scheme.
- 1.3.24 In case the lending institution exercises its right to step in or take over the project, CHT will also have right to step in along with the lending institution.
- 1.3.25 PDs shall be liable for all IPR, licensing and foreign trade issues during the period of the project.
- 1.3.26 PDs shall also ensure that licensor of the technology has appropriate Freedom to operate (FTO).
- 1.3.27 PDs shall obtain all statutory approval before commissioning of plant.
- 1.3.28 PDs shall obtain Statutory clearance under National Biodiversity Act, if applicable
- 1.3.29 Decision of the SAC and Steering Committee with regard to selection of PDs eligible under the scheme shall be final & binding on all interested PDs.
- 1.3.30 SAC will review the minimum distance criteria of the proposed Biorefinery with other Advanced Biofuel projects based on biomass availability at the proposed location by Project developer, on case to case basis.
- 1.3.31 The PD, on the award of grant, is required to sign a contract agreement with CHT to ensure the timely completion of the projects set up under the scheme and to safeguard interest of the Government.
- 1.3.32 PD shall inform any change in the project after submission of proposal against RFS and obtain consent of CHT.

Section 2

DEFINITIONS

Section 2

Following terms used in the document will carry the meaning and interpretations as described below:

Definitions

2G Bioethanol: Ethanol produced from biomass and cellulosic materials such as bagasse, wood waste, agricultural & forestry residues, grasses etc. The produced ethanol should meet BIS standards IS 15464 (2004).

Biomass resources are the biodegradable and non-edible fraction of products, wastes and residues from agriculture, forestry and related industries as well as the biodegradable fraction of industrial and municipal wastes.

Waste is any substance or object which the holder discards or intends or is required to discard. Raw materials that have been intentionally modified to count as waste (by adding waste material to a material that was not waste) shall not be considered as qualifying under this Scheme.

2G Bioethanol Project Developer (PD) means any Company, Consortium of Companies or a Joint Venture (JV)/ Special Purpose Vehicle (SPV) interested in seeking the grant.

Consortium: Group of Companies that have collectively submitted their interest in availing the benefits under the scheme and agreed to manage the proposed project collectively.

Lead partner of the PD: In case PD is a JV/ SPV or Consortium, there shall be one lead member having at least 49% of the shareholding in the JV/SPV or consortium, which cannot be changed till 5 years from the Commercial Operation Date (COD) of the project.

Project Commissioning: Project is termed as commissioned when all equipments as per rated project capacity have been installed, the product of desired specifications is achieved from the process unit and bioethanol supplies to OMCs is commenced.

SAC: Scientific Advisory Committee (SAC) of Ministry of Petroleum & Natural Gas (MoP&NG)

CHT: Centre for High Technology, a body under the aegis of MoPNG

Steering Committee: Steering Committee of CHT under the chairmanship of Secretary, MoP&NG

Section 3

BID INFORMATION AND INSTRUCTION TO BIDDERS

Section 3

BID INFORMATION AND INSTRUCTIONS TO BIDDERS

3.1 The Salient features of RFS are as follows:

| | |
|--------------------------------|---|
| RFS No. | CHT/PM JI-VAN/RFS/Commercial/2022/04 |
| Purpose | Selection of Project Developer (PD) under PM JI-VAN Yojana for Commercial scale 2G Ethanol Projects |
| Inviting Authority | Name: Shekhar R Kulkarni Designation: Director Centre for High Technology OIDB Bhawan, Tower A, 9 th Floor, Plot No. 2, Sector – 73, Noida, Pin – 201301 Uttar Pradesh, India Phone No. +91 120 6909642 Email: kulkarni@cht.gov.in |
| Start date & time | 15.12.2022 17:00 hrs. IST RFS can be downloaded from CHT website www.cht.gov.in & https://eprocure.gov.in/epublish/app |
| Last Date & time of Submission | 15.03.2023 & 17:00 hrs. IST |
| Mode of submission | Proposals to be submitted in 6 sets of hard copies. In addition, Soft copy (CD, pen drive, email) to be submitted to RFS inviting authority on or before last date of submission. |
| CHT PAN Number | AAATC0412A |
| CHT GST Number | 07AAATC0412A1ZR |

PD shall indicate the full postal address, name of the contact person along with telephonic / tele-fax numbers and email address.

3.2 **Technical Pre-Qualification Criteria**

3.2.1 PDs or a partner of the Consortium, JV/SPV shall meet any one of the following criteria:

- a. Experience in Crude Oil Refining or any other industrial domain like Sugar, Food Processing, Paper, Steel, Textile, Cement for at least 2 years continuous operation
- b. Experience in operating continuous process plants for Chemical or Petrochemical production/ handling at least for 2 years after PGTR with minimum 20 KTA capacity
- c. Experience in marketing of fossil fuels or Biofuel blended fossil fuels viz., MS, HSD or ATF for 2 years after date of incorporation under the Company Act.
- d. Experience of manufacturing/ marketing of Renewable fuels (Bioethanol, Biodiesel, Biomethanol, Bio-CNG, Drop-in fuels) for 2 years after date of commissioning of manufacturing unit or incorporation of marketing company under the Factory Act.

- e. Experience in Production/handling of at least 0.1 million tonne per annum large quantities of waste biomass
 - f. Technology licensor having technology for converting Biomass into 2G Ethanol
 - g. A Central Govt. or State Govt. Department, PSU or a local civic body with a mandate of addressing environment pollution
- 3.2.2 PDs which have commenced mechanical erection of their projects before starting of this scheme will not be eligible to avail the benefits of the scheme. However, twelve 2G Ethanol Projects of Oil PSUs, as notified to MoP&NG, shall be eligible for availing the benefits of scheme, if required, in case the mechanical erection of the Project has been commenced but not completed.
- 3.2.3 “Bolt on” plants & “Brownfield projects- are not eligible under the scheme’
- 3.2.4 Foreign investors proposing to set up 2G Ethanol Project in India are also eligible for availing the benefits of the scheme. However, all statutory provisions related to foreign investment in such projects i.e., FDI limit etc. would be applicable.
- “For foreign investor, policy framework on Foreign Direct Investment Consolidated FDI Policy (Effective from August 28, 2017) issued by Department of Industrial Policy and Promotion Ministry of Commerce and Industry Government of India, or as updated/ amended from time to time shall apply”.

3.3 Commercial Pre-Qualification Criteria

- 3.3.1 Proposed Technology of the PDs should have been demonstrated at one fiftieth (1/50th) or higher Capacity, in India or elsewhere. PDs shall submit operational data of 3 months (cumulative or continuous) duration of at least 50% capacity of demonstration/ commercial plant or 1 month (cumulative or continuous) duration for name-plate (100%) capacity of the demonstration/ commercial plant of the proposed Technology for the project for ascertaining the performance of Technology. A team of experts may be entrusted by SAC for due diligence of the demonstration/commercial unit based on which commercial plant is proposed and the recommendation of the SAC shall be final.
- 3.3.2 **Turnover:** The annual turnover of PD during any of the preceding three financial years from the date of RFS publication should be at least Rs 250 Crore (excluding GST/ Excise Duty). In case PD is a newly formed Consortium/JV/SPV, Turnover of Lead Partner may be considered.
- In case the RFS date is within 06 (six) months from end date of preceding financial /accounting year, then audited financial Statement (Balance Sheet, P&L & Cash Flow) for earlier 3 preceding financial years to be submitted.
- If RFS date is more than 6 months from the end date of preceding financial /accounting year, then audited financial Statement (Balance Sheet, P&L & Cash Flow) for 3 preceding financial years to be submitted.
- 3.3.3 Net Worth of PD should be positive on the date of previous year ending for which balance sheet has been prepared. In case PD is a newly formed Consortium/JV/SPV, Net Worth of Lead Partner may be considered.
- Net Worth means the aggregate value of the paid-up share capital and all reserves created out of the profits and securities premium account, after deducting the aggregate value of the

accumulated losses, deferred expenditure and miscellaneous expenditure not written off, as per the audited balance sheet, but does not include reserves created out of revaluation of assets, write-back of depreciation and amalgamation.

3.4 No-Go Condition

The following categories of projects/promoters will be ineligible for financial support under the scheme:

- a. Declared willful defaulters, as per RBI norms
- b. Declared Non-cooperative borrowers, as per RBI norms
- c. Entities who have availed one-time settlement (OTSs); are not eligible under the scheme.

3.5 Guidelines for IRR calculations

- 3.5.1 Bioethanol produced from these projects blended with petrol will result in to reduction in GHG emissions, however the impact of the carbon credit will not be considered in project evaluation.
- 3.5.2 The Financial analysis shall produce an estimate of the financial inputs, outputs, gains of the Project. The Financial analysis shall be made on the basis of year-wise cash flow of the project. Financial analysis to be shown in both scenarios i.e. with FINANCIAL ASSISTANCE and without FINANCIAL ASSISTANCE.
- 3.5.3 The analysis must cover the computation of key decision criterion like Internal rate of return, net present value (NPV) of cash flows, debt service coverage ratio (DSCR), breakeven (BE) analysis etc.
- 3.5.4 Financial analysis of capital investment proposals shall be carried out based on realistic set of assumptions duly considering present prices of input/ output, market forces, etc.
- 3.5.5 The life of assets from the date of completion of the project shall be assumed as per life determination given in Schedule-II of the Companies Act, 2013 or 25 years whichever is less.
- 3.5.6 The Debt: Equity ratio of 50:50 shall be considered (excluding FINANCIAL ASSISTANCE).
- 3.5.7 The initial investment shall comprise of the total project cost as indicated in the proposal and shall also include incremental value of working capital. The capacity utilization shall be taken as per the technical estimates [100% by 3rd Year]
- 3.5.8 The determination of operating cash flows shall provide the YoY operating income, input/ raw material cost, operating expenses etc., during the project life. Operating income of a project represents total realization or savings from the operations, after implementation of the project.
- 3.5.9 Feedstock (biomass) price on dry basis shall be considered based on tariff proposed by Central Electricity Regulatory Commission vide Order: 07.11.2022 (CERC RE Tariff Order for FY 2022-23) and thereafter as advised by CERC from time to time. The state wise rates as per Tariff Order 2022-23 are given in the Annexure-1. The CERC price shall be used only for normalizing the proposals for assessing degree of viability.
- 3.5.10 Till any further guideline is issued by the Govt., the price of 2G ethanol to be taken at maximum rate, as presently applicable for 1G ethanol ex-mill price of ethanol derived from 100% sugarcane juice for those mills (who will divert 100% sugarcane juice for production of ethanol thereby not producing any sugar) for IRR calculation as applicable on the date of submission of RFS. As GST

and transportation charges are payable additionally, ex-mill price as indicated above shall be used. Price of other products shall be considered as prevailing in the market at the time of RFS.

- 3.5.11 Landed cost of inputs/ raw material shall include all incidental costs involved including the taxes. However, the taxes for which the input credit is available shall not be considered in cost.
- 3.5.12 The operating expenditure of the project shall include cost of the feedstock, Enzymes, chemicals, consumables, utilities (like power, water, and fuel) repairs and maintenance, wages and salaries, rent and insurance, depreciation, other administrative expenses etc.
- 3.5.13 The expenses under these various heads shall be as per agreements, contracts and be based on estimated realistic set of assumptions and experience, wherever applicable. The basis for estimating the expenditure shall be clearly indicated in the proposal. The terminal cash flow shall mainly represent the salvage value of the project plus release of incremental working capital.
- 3.5.14 Salvage value shall be considered for Land to be valued at original cost and for other items as the book value determined under the Companies Act, 2013. The net cash flow shall be estimated on 'after tax basis', as payment of taxes is an outflow of cash. Similarly, tax shield/ benefit allowable due to financial charges like Interest on Debt, etc., shall also be considered appropriately in the cash flows.
- 3.5.15 Corporate tax to be considered on the project on standalone basis. Loss, if any, to be carried forward for adjustment with future profit. Minimum Alternative Tax (MAT) to be considered, wherever applicable.
- 3.5.16 All deductions / rebates/ benefits etc. wherever available under the income tax act to be considered.

3.6 Process Flow Chart for Approval of FINANCIAL ASSISTANCE (Given in Annexure-2)

- 3.6.1 CHT shall issue RFS for selection of PD for providing FINANCIAL ASSISTANCE.
- 3.6.2 PDs shall submit their proposals including duly vetted DFR & other documents as per RFS.
- 3.6.3 SAC shall appraise the proposals and recommend to Steering Committee.
- 3.6.4 Steering Committee shall accord in-principle approval for grant of FINANCIAL ASSISTANCE
- 3.6.5 The PD shall report tie-up of Financing Arrangements for the total project cost within 3 months from the date of receipt of in-principle approval. The Validity of the in-principal approval will be 3 months from the date of its issuance.
- 3.6.6 PD shall submit the proposal including financial commitment Letters etc. for Final Approval.
- 3.6.7 SAC shall appraise the proposals if required.
- 3.6.8 Steering Committee shall accord final approval for grant of FINANCIAL ASSISTANCE
- 3.6.9 CHT & PD shall execute Memorandum of Agreement (MoA).
- 3.6.10 FINANCIAL ASSISTANCE shall be disbursed as per MoA.

3.7 Documents to be submitted by PD at the time of RFS

- 3.7.1 Documents meeting Technical and Commercial Pre-Qualification Criteria

- 3.7.2 IRR of the project as per section 3.3 and as given in Annexure-2
- 3.7.3 Detailed Feasibility Report (DFR)
- 3.7.4 Biomass Assessment/ waste assessment, supply chain & logistics report duly vetted by a third-party consultant
- 3.7.5 Technology licensing Agreement with their proposed Technology provider
- 3.7.6 Document regarding land availability for the project
- 3.7.7 Results of trials of proposed Technology and proposed feedstock for the project
- 3.7.8 Validated life cycle analysis (LCA) report of the proposed 2G Ethanol Technology for meeting the eligibility criteria of advanced biofuels.
- 3.7.9 Self-declaration, if PD himself is doing operation & maintenance (Refer clause 1.3.13).
- 3.7.10 Contract Agreement for supply of biomass with Biomass supplier (Refer clause 1.3.14)
- 3.7.11 Ethanol Purchase Agreements (EPA) with Oil Marketing Companies (OMCs). Format of Agreement shall be uploaded shortly. If PD is an Oil Marketing Company (OMC), Ethanol Purchase Agreement (EPA) shall not be required.
- 3.7.12 PDs shall also ensure that licensor of the technology has appropriate Freedom to operate (FTO) (Refer clause 1.3.26).
- 3.7.13 PDs shall have committed source for enzymes and submit the related document along with the proposal (Refer clause 1.3.8).
- 3.7.14 Checklist as per Annexure-3

Please note that decision of the SAC and Steering Committee with regard to selection of PDs eligible under the scheme shall be final & binding on all interested PDs.

Thanking you,

Yours faithfully,

(Shekhar R Kulkarni)
RFS Inviting Authority
(For and on behalf of Centre for High Technology)

Biomass price as per tariff proposed by Central Electricity Regulatory Commission

The Commission, as per Regulation 38 of the RE Tariff Regulations, has specified the Biomass fuel price for third year of the Control Period (i.e. FY 2022-23) in the table below:

| States | Biomass Price for FY 2021-22 (Rs/ MT) | Biomass Price for FY 2022-23 (Rs/ MT) |
|----------------|---------------------------------------|---------------------------------------|
| Andhra Pradesh | 3492.3 | 3666.92 |
| Haryana | 3975.3 | 4174.07 |
| Maharashtra | 4065.6 | 4268.88 |
| Punjab | 4158 | 4365.90 |
| Rajasthan | 3470.25 | 3643.76 |
| Tamil Nadu | 3435.6 | 3607.38 |
| Telangana | 3492.3 | 3666.92 |
| Uttar Pradesh | 3553.2 | 3730.86 |
| Other States | 3734.85 | 3921.59 |

Bagasse price as per tariff proposed by Central Electricity Regulatory Commission

The Commission, as per Regulation 44 (1) of the RE Tariff Regulations, has specified the Bagasse fuel price for third year of the Control Period (i.e. FY 2022-23) in the table below:

| States | Bagasse Price for FY 2021-22 (Rs/ MT) | Bagasse Price for FY 2022-23 (Rs/ MT) |
|----------------|---------------------------------------|---------------------------------------|
| Andhra Pradesh | 1971.90 | 2070.50 |
| Haryana | 2804.55 | 2944.78 |
| Maharashtra | 2763.60 | 2901.78 |
| Punjab | 2468.55 | 2591.98 |
| Tamil Nadu | 2124.15 | 2230.36 |
| Telangana | 1970.85 | 2069.39 |
| Uttar Pradesh | 2199.75 | 2309.74 |
| Other States | 2387.7 | 2507.09 |

Guidelines for IRR

1. Timeline for Cash Flows: Pre-construction period + 20 years (Post Construction)
2. Capacity: 100% CUF (Capacity Utilisation Factor) by 3rd year from Project commissioning
3. No Escalation: The Financial model is to be built with constant prices throughout. No escalation to be taken for Revenues, Feedstock, and other operating expenditures. Hence in the model, from year 3 onwards (first year with 100% CUF), the EBIDTA should be same.
4. GST to be certified that the Capex GST is offset by net Revenue GST and hence not considered. In case it is not offset, the differential may be taken in the respective years cash flow
5. Project Cost: The elements of project cost must be shown in the workings
6. Debt-Equity Ratio: 50:50 before FINANCIAL ASSISTANCE. The interest payments on Debts taken to be shown in the cash flows.
7. Funding: To ensure that funding for project cost is procured, maintaining the Debt equity ratio of 50:50 and show the FINANCIAL ASSISTANCE infusion as per RFS timelines. Because FINANCIAL ASSISTANCE is conditional, both the cases with and without FINANCIAL ASSISTANCE to be worked out.
8. Ethanol price to be taken as Rs 65.60 without any escalation.
9. Feedstock prices to be taken without any escalation based on plant location (include the transportation cost/handling charges (if any) as per the RFS document.
10. Working Capital: The Cash flows must show the Working capital infused, incremental infusion over the years (if any) and must show the release of working capital at the end of project.
11. Salvage Value: The salvage value at 5% excluding land, which will be taken at original cost.
12. Taxation:
 - i. Since new tax rates have been notified from FY 2020-21 onwards for those companies which shall opt for it, hence PDs are requested to take only those rates, which represent the intent of management on date.
 - ii. Minimum Alternate tax to be taken where applicable.
 - iii. Tax rates must include Cess and Surcharge, wherever applicable.
 - iv. To be evaluated on a standalone basis without off setting of losses (if any) from group business profits.
13. Returns and Ratios:
 - i. Equity IRR: Debt (50%) is included in project funding. Hence compute the Equity CF (Cash flows to equity shareholders). IRR is to be computed on the Equity CF.
 - ii. NPV at Discount factor: Discount factor to be decided by the PDs and must be indicated in the assumptions. The NPV of Equity CFs on such discount factor to be computed.
 - iii. DSCR: Compute the DSCR only for those years in which debt exists. Then compute the average for these years. If in any year the debt obligations are not met, it is to be mentioned that debt cannot be serviced.
 - iv. Breakeven analysis:
 - a. Breakeven Ethanol price at 100% operation
 - b. Price of Ethanol with NPV=0
 - c. Price of Ethanol for achieving threshold IRR

Checklist to be filled by PD

| Name of the PD: | | | | |
|---|---|-------------------------------------|---|---|
| Name of the Lead Partner: | | | | |
| Biomass | | | | |
| Name of the Licensor: | | | | |
| Location: | | | | |
| Plant Capacity (Ethanol Production in KLPD): | | | | |
| Operating days: | | | | |
| RFS Clause No. | RFS Conditions | RFS Criteria | Conditions Fulfilled (OK/Not OK) | Remarks (Details along with reference to the document submitted) |
| 3.2.1 | Technical Pre-qualification Criteria | | | |
| 3.2.1a | Whether PD has experience in Crude Oil Refining or any other industrial domain like Sugar, Food Processing, Paper, Steel, Textile, Cement for at least 2 years continuous operation? | Either of the conditions (3.2.1a-g) | | |
| 3.2.1b | Whether PD has experience in operating continuous process plants for Chemical or Petrochemical production / handling at least for 2 years after PGTR with minimum 20 KTA capacity? | | | |
| 3.2.1c | Whether PD has experience in marketing of fossil fuels or Biofuel blended fossil fuels viz., MS, HSD or ATF for 2 years after date of incorporation under the Company Act? | | | |
| 3.2.1d | Whether PD has experience of manufacturing / marketing of Renewable fuels (Bioethanol, Biodiesel, Biomethanol, Bio-CNG, Drop-in fuels) for 2 years after date of commissioning of manufacturing unit or incorporation of marketing company under the Factory Act? | | | |
| 3.2.1e | Whether PD has experience in Production/handling of at least 0.1 million tonne per annum large quantities of waste biomass? | | | |
| 3.2.1f | Whether PD is Technology licensor having technology for converting Biomass into 2G Ethanol? | | | |
| 3.2.1g | Whether PD is a Central Govt. or State Govt. Department, PSU or a local civic body with a mandate of addressing environment pollution? | | | |
| 3.2.2 | Whether PDs has commenced mechanical erection of their projects before starting of this scheme? | No / Oil PSU exempted | | |
| 3.2.3 | Is "Bolt on" plants & "Brownfield projects?" | No | | |
| 3.2.4 | Is PD a Foreign investors? | Yes/No | | |

| | | | | |
|-------|--|--------------------------------|--|--|
| | For foreign investor, policy framework on Foreign Direct Investment Consolidated FDI Policy (Effective from August 28, 2017) issued by Department of Industrial Policy and Promotion Ministry of Commerce and Industry Government of India, or as updated/ amended from time to time shall apply | Required for Foreign investors | | |
| 3.3 | Commercial Pre-Qualification criteria | | | |
| 3.3.1 | a. Whether proposed Technology of the PD demonstrated at one fiftieth (1/50 th) or higher Capacity, in India or elsewhere. | Required | | |
| | b. PD to provide Operational data of 3 Months (Cumulative or Continuous) duration of at least 50% capacity of demonstration/commercial plant or 1 Month (Cumulative or Continuous) | Required | | |
| 3.3.2 | a. Turnover: The annual turnover during any of the preceding three financial years from the date of RFS publication should be at least Rs 250 Crore (excluding GST/ Excise Duty). | Required | | |
| | FY 2021-22 | | | |
| | FY 2020-21 | | | |
| | FY 2019-20 | | | |
| | b. Audited financial Statement (Balance Sheet, P&L & Cash Flow) for earlier 3 preceding financial years | Required | | |
| | c. Balance Sheet | Required | | |
| | d. P&L | Required | | |
| | e. Cash Flow | Required | | |
| 3.3.3 | Net Worth of an Entity should be positive on the date of previous year ending (FY 2021-22) for which balance sheet has been prepared. | Required | | |
| 3.4 | No-Go conditions | | | |
| | -Whether PD, a declared wilful defaulters, as per RBI norms? | NO | | |
| | -Whether PD, a declared Non-cooperative borrower, as per RBI norms? | NO | | |
| | -Whether PD has availed one-time settlement (OTSs)? | NO | | |
| 3.5 | OPEX | Required | | |
| | -Cost of feedstock | To be included | | |
| | -Consumables | To be included | | |
| | - Utilities (like power, water, and fuel) | To be included | | |
| | - Repairs and maintenance | To be included | | |
| | - Wages and salaries | To be included | | |
| | - Rent and insurance | To be included | | |
| | - Depreciation | To be included | | |
| | - Administrative expenses | To be included | | |
| | Whether Salvage value considered for Land to be valued at original cost and for other items as the book value determined under the Companies Act, 2013 | Yes | | |

| | | | | |
|-------|--|-------------|--|--|
| 3.5 | Whether tax shield/ benefit allowable due to financial charges like Interest on Debt, etc., considered appropriately in the cash flows? | Yes | | |
| | Whether Corporate tax considered on the project on standalone basis? | Yes | | |
| | Whether Loss, if any, carried forward for adjustment with future profit? | Yes | | |
| | Whether Minimum Alternative Tax (MAT) considered, wherever applicable? | Yes | | |
| | Whether all deductions / rebates / benefits etc. considered? | Yes | | |
| | Whether Ethanol meets BIS specification? | Yes | | |
| | Whether CO2 price realization is considered? | Information | | |
| | Whether the operating expenses under various heads included as per agreements, contracts and based on realistic set of assumptions and experiences wherever applicable | Yes | | |
| | Whether FINANCIAL ASSISTANCE requirement is as per eligibility? | Yes | | |
| | a. 20% of project cost | | | |
| | b. Rs 5 crore for every 10 lakh litre of Ethanol production | | | |
| | c. Rs 150 crore | | | |
| | Minimum of a, b, and c above | | | |
| | FINANCIAL ASSISTANCE sought from any other Govt. agency (Rs. Crore) | Yes | | |
| | IRR (Please attach detailed IRR calculations along with cash flow statement) | Required | | |
| 3.5.1 | Whether reduction in GHG emissions (carbon credit impact) considered? | NO | | |
| | Whether Price of feed stock taken from Annexure-1 of RFS? | Yes | | |
| | Whether Ethanol Price is taken as Rs 65.60 per Litre? | Yes | | |
| | Whether the life of assets (from project completion date) determined as per Schedule-II of the Companies Act, 2013 or 25 years whichever is less? | Yes | | |
| | Whether the Debt: Equity ratio of 50:50 considered excluding FINANCIAL ASSISTANCE)? | Yes | | |
| | The capacity utilization taken as per the technical estimates [100% by 3rd Year] | Yes | | |
| 3.5.2 | Whether landed cost of inputs/ raw material included all incidental costs involved including the taxes (except input credit taxes)? | Required | | |
| 1.1.5 | Whether the initial investment shall comprise of the total project cost and incremental value of working capital. | Required | | |
| | Total Project Cost | | | |
| | Working Capital | | | |

| | | | | |
|---------------|--|----------------|--|--|
| 3.5.7 | The capacity utilization taken as per the technical estimates [100% by 3rd Year] | | | |
| 3.5.8 | Operating cash flows | To be attached | | |
| 3.5.2 & 3.5.3 | Key decision criterion of financial analysis | Required | | |
| | a. IRR (Please attach detail calculations) | | | |
| | with FINANCIAL ASSISTANCE | Required | | |
| | without FINANCIAL ASSISTANCE | Required | | |
| | b. NPV | | | |
| | with FINANCIAL ASSISTANCE | Required | | |
| | without FINANCIAL ASSISTANCE | Required | | |
| | c. Debt service Coverage Ratio (DSCR) | Required | | |
| | d. Break Even analysis | Required | | |
| 3.7 | Documents to be submitted by PD at the time of RFS | | | |
| 3.7.3 | Whether Detailed Feasibility Report (DFR) submitted covering standard heads? | Required | | |
| 3.7.4 | Whether Biomass Assessment / waste assessment report duly vetted by third party submitted? | Required | | |
| | Whether Supply chain & logistics report duly vetted by third party submitted? | Required | | |
| 3.7.5 | Whether Technology License Agreement signed? | Required | | |
| 3.7.6 | Document regarding land availability | Required | | |
| 3.7.7 | Whether results of trial at demonstration plant with proposed feedstock submitted? | Required | | |
| | Indicate proposed feedstock | To indicate | | |
| 3.7.8 | Validated Life Cycle Analysis of proposed technology | Required | | |
| 3.7.9/1.3.13 | Agreement for O&M of plant (Declaration if PD himself is doing O&M) | To indicate | | |
| 3.7.10/1.3.14 | Contract Agreement for supply of biomass with Biomass supplier | To indicate | | |
| 3.7.11 | Ethanol Purchase Agreement with OMCs | To indicate | | |
| 3.7.12/1.3.26 | Freedom to operate (FTO) with Licensor | Required | | |
| 3.7.13/1.3.8 | Document regarding committed source of Enzymes | Required | | |
| 1.3.12 | Documentary proof for connectivity with OMC depot (Not required if PD is an OMC) | To indicate | | |