The Ministry of New Renewable Energy, Govt. of India, is currently implementing a MNRE - UNDP / GEF assisted Project on "Removal of Barriers to Biomass Power Generation in India." The key objective of the Project is to accelerate the adoption of environmentally sustainable biomass power technologies by removing the barriers identified, thereby laying the foundation for the large scale commercialization of biomass power through increase access to financing. As part of this Project, the Ministry is planning for establishment of a few Model Investment Projects (MIPs) in the different parts of the country with a view to focus on removal of barriers related to Technology, Size and Sustainability.

2. The proposals are invited for establishment of 2 MW capacity project for Cogeneration in SME (Small and Medium Enterprise) clusters, particularly in Khandasari, Food Processing, Oil and Solvent Extraction Industries / Clusters and / or for Decentralized Distributed Power Generation for electrification at different locations to demonstrate techno-economic viability for replacing the existing DG sets with appropriate Biomass based Boiler -Turbine Systems.

3. The partial financial assistance for such projects with matching contribution from the promoter will be limited to Rs. 200 lakhs per MW for 5 no. of projects.

4. Expression of Interest (EOI) is invited from State Govt. Organizations / Agencies, Independent Power Producers (IIP), Project Promoters, and other Investors for establishment of above-mentioned MIPs. Interested Organizations / Project Promoters can submit their proposal to the Project Management Cell (PMC), Ministry of New and Renewable Energy, Block 14, CGO Complex, Lodi Road, New Delhi – 110003 Telefax: 011-24369788, Email: jainvk@nic.in. The last date for submission of the EOI is 24 October 2014.

5. The Ministry reserves the right to reject all or any of the proposals without assigning any reason thereof.
1. **Background**

1.1 The Ministry of New Renewable Energy, Govt. of India, is currently implementing a MNRE - UNDP / GEF assisted Project on “Removal of Barriers to Biomass Power Generation in India.” The key objective of the Project is to accelerate the adoption of environmentally sustainable biomass power technologies by removing the barriers identified, thereby laying the foundation for the large scale commercialization of biomass power through increase access to financing. As part of this Project, the Ministry is planning for establishment of a few Model Investment Projects (MIPs) in the different parts of the country with a view to focus on removal of barriers related to Technology, Size and Sustainability.

1.2. The proposals are invited for establishment of 2 MW capacity project for Cogeneration in SME (Small and Medium Enterprise) clusters, particularly in Khandsari, Food Processing, Oil and Solvent Extraction Industries / Clusters and / or for Decentralized Distributed Power Generation for electrification at different locations to demonstrate techno-economic viability for replacing the existing DG sets with appropriate Biomass based Boiler -Turbine Systems.

1.3. The partial financial assistance for such projects with matching contribution from the promoter will be limited to Rs. 200 lakhs per MW for 5 no. of projects.

2. **About Model Implementation Projects (MIPs) and Implementation Approach**

2.1 Cogeneration Technology has been widely in use in large capacity sugar mills as well as in other industries but it is yet to gain popularity and widespread usage at the small capacity, up to 2 MW level. It has been reported that the existing khandsari units use stand-alone diesel generator (DG) sets of (600 – 1000 kW) for cane crushing and cane crystallization process and open pan firing of dried bagasse for thickening of cane juice into syrup before crystallization. The DG sets used at such units on an average consume 1000 liters of diesel per day. In addition, the industry ends up using nearly 70% of its own available bagasse in the energy intensive and inefficient open pan firing process. This can be replaced by proven boiler turbine system. There are other similar Small and Medium Enterprise, which require both thermal as well as electrical energy and are operating on DG sets to meet their energy requirements.
2.2 In view of the above, as part of this Project, the Ministry is contemplating 5 nos. of projects of 2 MW capacity for Cogeneration in SME (Small and Medium Enterprise) Clusters, particularly in Khandsari, Food Processing, Oil and Solvent Extraction industries and / or for Decentralized Power Generation and Distribution at different locations to demonstrate techno-economic viability for replacing the existing DG sets with appropriate Biomass based Boiler-Turbine Systems. This will promote utilization of locally available resources, elimination of use of fossil fuel (LDO) and improve livelihood security through enhance electricity supply.

2.3 The broad features which are to be incorporated while formulating the project proposal are as follows -:

i) The Maximum installed capacity of each project should be up to 2 MW;

ii) For projects based on cogeneration in SME, less than 50% of the total installed capacity can be used by the industry for captive use and the balance is to be distributed to the local areas for meeting unmet demand of the electricity inter-alia lighting, water pumping and other (micro enterprises) or to be fed to the grid; and

iii) Projects based on biomass combustion for power generation, part of the power is to be distributed to local areas for electrification and the surplus is to be fed to the grid or supplied to local industries.

3. Financial Support for MIPs

3.1 The partial financial support with matching contribution from the promoter for such project will be limited to Rs. 200 lakh per MW for 5 nos. of projects at different locations / industry sectors.

- The financial support for setting up the cogeneration plant will be Rs. 150 lakh;

- The balance will be for Creation of Infrastructure for Establishing fuel supply linkages, creation of power distribution network and evacuation facility up to a max of 5km, preparation of DPR and Bid Document, developing rural electricity distribution franchisees, organization of awareness meeting / workshops etc. Further, this assistance will be released in installments linked with the progress.

3.2 Terms and Conditions for providing Financial Support

i) Cost towards Purchase of land, its development, fencing / boundary wall, administrative building, use of old power plant and / or its retrofitting and refurbishing or any other such item will not be considered as part of the project cost for financial support from the Ministry;

ii) Financial Support will be limited to new Plant & Machinery;

iii) Assistance can be released in installments linked with the progress upon sanction of the project.
4. The Criteria for the Selection of Projects

4.1 Only projects that have all the requisite clearances and approvals from state government/agencies, including financial tie-up may apply. The broad criteria for short listing of the projects will be as follows:

i) Submission of relevant documents /papers in respect of approval from State Nodal Agency, land document, clearance from State Pollution Control Board, Power Purchase Agreement, proof of financial closure, completion of other related actions as proof along with the proposal;

ii) Present status and financial health of the Project Developer and the power plant for taking up such project;

iii) Availability of biomass and reliability of the fuel linkage system;

iv) Innovative character of the proposed fuel supply chain;

v) Social and Environmental Impact;

vi) Time schedule for implementation of the project; and

vii) Scope of replicability (in the proposed state).

5. Format for the Proposal

The Proposal for establishment of the said MIPs should have information on the following, in addition to Performa given at Annexure – I:-

i) Creditworthiness of the Applicant Company
   - Brief write up on Company Profile and its current business, reasons for entering into this area, if not already working in the biomass sector, Experience in setting up of plants of similar capacity in the past, if so a write up on the plant and its operating experience,

   - Creditworthiness / profitability of the company. Attach year wise turnover and profit for last 3 years with supporting documents such as MoA, AoA, annual turnover / annual report etc.

ii) Details of the Project
   Location of the proposed project, schematic/layout of the plant, size & specifications of critical units, electricity utilization plan other than evacuation to the grid, if any, innovative features, treatment of effluent, management of fuel logistics.

iii) Availability of Biomass
   Type of Biomass and quantity per day proposed to be used, its availability within the radius of 50 km, other competing uses of biomass in the catchment area, fuel supply linkages proposed to be employed for the project, and landed cost of the crop residue / biomass etc.
iv) Breakup of the Project Cost
Cost of the plant with detailed break up for civil work, various plant & machinery and other proposed innovative features, infrastructure for establishing fuel supply linkages; list of major identified equipment suppliers / EPC contractors and their quotations,

v) Status of Approvals / Clearances from State Govt./ State Nodal Agencies and Tie-ups with FIs for Term Loan
- Acceptance of Detailed Project Report (DPR) and allotment /registration of the Project;
- Documents for acquisition of land required and its conversion for industrial use for setting up the project;
- Power Purchase Agreement with SEB / DISCOM / third parties for sale of power,
- Statutory clearance from State Pollution Control Board;
- Identification of suppliers for various Plant & Machinery / EPC contractors and their quotations; and
- Any other approval / clearance / tie up required for setting up the project,

vi) Means of Finance
Proof of availability of promoter’s equity, a copy of sanction letter for term loan and appraisal note from FIs, if already sanctioned, or a letter from FI stating willingness for sanctioning the term loan for the project

vii) Implementation Plan and Outcomes
- Action Plan for project implementation, time schedule etc.;
- Anticipated social, environmental impact in the area and estimation of GHG emission reduction ; and
- Economic/financial viability of the proposed project.

6. Other Conditions

i) The project (s) which had already been sanctioned for financial support of this Ministry under the Programme on Grid Interactive Biomass Power & Bagasse Cogeneration or proposals from the beneficiaries / technology suppliers who have not implemented the sanctioned projects will not be considered for MIPs under this Project;

ii) The Ministry reserves the right to reject any or all the proposals submitted in response to this EOI without assigning any reasons whatsoever;

iii) The proposals can be sent by Registered Post / Courier or in Person, so as to reach the Ministry by the time and date stipulated by the Ministry; and
iv) The Ministry shall not be responsible for any delay in submission of the proposal. Any proposal received by the Ministry after the deadline may not be accepted by the Ministry.

7. Organizations interested in the establishment of the afore-mentioned projects may submit Two Copies of the EOI, as per the Proforma given in Annexure I to the Project Management Cell (PMC), Ministry of New and Renewable Energy, Govt. of India, Block No. 14, C.G.O. Complex, Lodi Road, New Delhi, India – 110003, Telefax : 24369788, Email : jainvk@nic.in. The last date for submission of the EOI is 24 October 2014.
Annexure - I
F. No. 10/37/PMC/BM-2013
Ministry of New and Renewable Energy
Project Management Cell

PROFORMA FOR SUBMISSION OF EXPRESSION OF INTEREST (EOI) FOR ESTABLISHMENT OF
MODEL INVESTMENT PROJECTS BASED ON BIOMASS COMBUSTION FOR GENERATION OF
GRID INTERACTIVE POWER
(To be filled in duplicate)

A. General Information
A1. Name of the Project / Power Plant: ________________________________
________________________________________

A2. Type of User / Beneficiary: Khandari Udyog / Food Processing Industry/
Oil & Solvent Extraction Industry / Independent Power Producers (IIP) /
Cooperative Mill / Agro-Processors /Power Generation Companies, others (Please specify)

A3. Contact Details
Project / Power Plant Location :
________________________________________________________
Village:
________________________________________________________
Taluka / Block:
________________________________________________________
District : ________________________________ Pin
Code________________
State:
________________________________________________________

A4. Details of Contact Person
Name & Designation of the Applicant: ________________________________
Phone: ________________________________
Contact Address: ________________________________
Fax: ________________________________
Email: ________________________________

B. Business model for Decentralized Distribution

B1. Installed Capacity of the Plant (MW):
________________________________________
(a) Thermal (MW)
(b) Power (MW)

i. Captive requirement (MW):
________________________________________
ii. Surplus Exportable (MW): __________________________

iii. Decentralized Distribution (MW): __________________________

iv. Technology to be used: Combustion / Cogeneration

v. Boiler Operating Configuration:
   - Pressure(kg/cm²) _______
   - Temperature(°C) _______

vi. Expected Total Project Cost (Rs in Lakh):
   - Cost of the proposed Plant __________________________
   - Infrastructure of Establishing Fuel Supply Linkages __________________________
   - Infrastructure for Power Evacuation to grid __________________________
   - Any other Innovative Feature (Please specify) __________________________

vii. Means of Finance:
   - Equity/Term Loan/Any other agency

viii. Name of Financial Institution Approached: __________________________

ix. Agreed Conditions for Loan(s):
   - Approved schedule for disbursals of loan(s) ________________
   - Interest rate ________________
   - Moratorium ________________
   - Repayment period ________________
   - Security ________________
   - Any Other ________________

C. Details of Fuel Availability:

C1. Type of Biomass proposed to be used: Bagasse/Cane Trash/Cotton Stalks/ Rice Husk /Other Crop / Residues /Wood Produced in dedicated Energy Plantation / Wild Bushes (Prosopis Juliflora), other (please specify)

C2. Type of Biomass Resource to be used : Surplus Field Distributed Biomass / Captive Biomass.

C3. Likely Composition of Biomass to be used (% percent of various types of biomass)

<table>
<thead>
<tr>
<th>Name of Biomass</th>
<th>Annual Availability (%)</th>
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C4. Availability of Biomass in nearby areas: (High/ Medium / Low)
C5. Is there seasonal variation in the availability of biomass:  Yes / No

*If yes, please provide details of seasonal availability of different biomass types*

<table>
<thead>
<tr>
<th>Biomass type</th>
<th>Biomass price (Rs/ton)</th>
<th>Months of availability</th>
<th>Approx. procuring distance (km)</th>
<th>Mode of transportation</th>
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**D. Details of Fuel Supply Linkages**

D1. How biomass is to be collected from the field?

____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

D2. How biomass is to be transported from field to the project site?

____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

D3. Details of biomass storage (how and where):
  - Onsite storage:
    ______________________________________________________________________
    ______________________________________________________________________
    ______________________________________________________________________
  - Offsite Storage
    ______________________________________________________________________
    ______________________________________________________________________
    ______________________________________________________________________
  - For how many days (average) storage before usage:____________

D4. Details of fuel (Biomass) processing before usage:

<table>
<thead>
<tr>
<th>Biomass type</th>
<th>Preprocessing done before final usage</th>
<th>Approximate processing cost / ton</th>
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D5. Details of average cost involved in the collection, storage and processing of the biomass fuel.

<table>
<thead>
<tr>
<th>Biomass Type</th>
<th>Collection Cost (per ton)</th>
<th>Storage Cost (per ton)</th>
<th>Preprocessing Cost if any (per ton)</th>
<th>Total Cost of Biomass Fuel (per ton)</th>
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D6. Contact details of biomass suppliers in the Catchment /Command Area :

<table>
<thead>
<tr>
<th>Name of the Supplier</th>
<th>Type &amp; Quantity of Biomass to be supplied</th>
<th>Contact Details</th>
<th>Supply Agreement Finalized (Y/N)</th>
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D7. Innovative / Novel Features / Practices to be Incorporated in the Plant / Facility

a. Fuel Supply Chain :
   Development of Entrepreneurs’ for Secured and Sustained Fuel Supply
   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________

b. Development of Biomass Depots.
   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________

c. Business Model for Decentralize Distribution
   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________

d. Any other Innovative Practice(s) proposed to be incorporated for sustainability the Model :
   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________

e. Enclose a copy each of the following document(s), if finalized and available:
   - Pre-feasibility / Feasibility /Detailed report of the proposed Project
   - Appraisal Note of FI(s) and loan agreement
   - Loan Disbursement Schedule
   - Any other document / information relevant to the proposed project which you may wish to add in support of the proposal