

NOTICE INVITING EXPRESSION OF INTEREST (EOI) FOR SUPPLY OF BIOMASS PELLETS TO ADANI POWER LTD.

Ministry of Power (Mop) issued revised policy dated 8th Oct 2021 with notification number 11/86/2017 Th. II, for Power generation through Co-firing of Biomass in Coal Based Power Plants. The Policy mandates use of 5% to 7% blend of Biomass pellets made, primarily agro residue along with Coal. In order to meet the said requirement, Adani Power Company limited is hereby inviting Expression of Interest (EOI) from interested and eligible parties for "SUPPLY OF BIOMASS PELLETS TO ADANI POWER LTD, @ VARIOUS STATION. All Station details are mentioned below.

INTRODUCTION:

Adani Power Ltd is present across the entire power value chain of conventional & renewable energy and next-generation customer solutions. Adani Power is India's largest integrated power company. The Thermal Power Stations of the Company are located @

1. Adani Power Ltd (APL), Mundra, Kutch, Gujarat, India
2. Adani Power Ltd (APL), Tiroda, Nagpur, Maharashtra, India
3. Adani Power Ltd (APL), Kawai, Rajasthan, India
4. Adani Power Ltd (APL), Udupi, Karnataka, India
5. Adani Power Ltd (APL), Raipur, Chatisgarh, India
6. Adani Power Ltd (APL), Raigarh, Chatisgarh, India
7. Mahan Energen Ltd (MEL), Singrauli, District, Madhya Pradesh, India.
8. Adani Power Jharkhand Ltd. (APJL), Godda, Jharkhand, India

To reduce greenhouse gas emission from its coal-based power plants, Adani Power intends to utilize agro residue-based pellets torrefied or non torrefied pellets along with coal for power generation through biomass co-firing.

BRIEF SCOPE OF WORK:

- The scope of work under this package shall include supply, loading, transport, and delivery of agro residue-based biomass pellets at Project site.
- The pellets supplied shall adhere to the technical specification given in EOI document.
- Detailed scope and methodology are as specified in the EOI Documents.

INTENT OF SPECIFICATION:

Adani Power Limited is operating pulverized coal based Thermal Power stations at various location in India. In order to reduce carbon emission of coal fired power plant and also to reduce air pollution by discouraging stubble burning, Owner intend to procure agro residue-based biomass pellets for co-firing in pulverized coal fired units.

- The scope of work under this package shall include supply, loading, transport, and delivery of agro residue-based biomass pellet at Project Site.
- Supervision of Unloading shall be in the scope of Owner. Pellets shall be loose filled in the carriage vehicle. Carriage vehicle should be fully covered and waterproof during transportation to prevent the material from rain, sunlight and to prevent dusting. Carriage vehicle should be self-tipping type.
- If supplier, supplies the material packed in bags or in non-tipping type consignment, it shall not be accepted, or supplier shall unload the material at his own cost at Adani Power plant. In that case, for any extra halt of carriage vehicle, demurrage shall not be payable by Owner.
- The pellets supplied shall adhere to the technical specification given in this document.

SUPPLY DURATION:

The bidder should ensure an Initial Supply of 100 MT to conduct the pilot test (Trial of Biomass) in the Boiler. Post successful review of the performance and reliability of the biomass firing, supply on continuous/daily basis for remaining period shall be considered as per the condition mentioned in document. The supplier shall start delivery of material within 15 days from the issue of purchase order.

DELIVERY SCHEDULE:

Default delivery schedule shall be the quantity allocated to supplier for supply of pellets on daily basis and accordingly, the supplier shall deliver that quantity of pellets to Project site. Although supplier shall supply the pellets as per default delivery schedule and quantity, however, supplier shall have the flexibility to supply the material in greater quantity than delivery schedule on mutual consent basis to meet the monthly supply requirement. In such case, supplier shall give one-week advance intimation to Owner and Owner shall give the consent to supply material in greater quantity after assessing various aspects as required. Owner can also give reduced delivery schedule to supplier by giving one-week advance notice through official e-mail ID of SPOC (Single Point of Contact) or e-mail ID of any other person authorized by him and supplier shall dispatch the consignment accordingly.

BIOMASS QUANTITY REQUIREMENT:

TABLE – 1 : APL – BIOMASS REQUIREMENT										
Sr No	Description	UOM	APL Mundra	APL Tiroda	APL Kawai	APL Udupi	APL Raipur	APL Raigarh	MEL Mahan	APJL Godda
1	Biomass quantity required	T/day	2400	2129	800	750	1120	435	900	1150
2	Biomass quantity required	T/3 month	216000	191610	72000	67500	100800	39150	81000	103500

TECHNICAL SPECIFICATION OF BIOMASS PELLETS:

Bidder can supply only one type or combination of both Torrefied and Non-Torrefied as per the specification after taking consent from Owner. The bidder shall quote the price for pellets and its GCV (ARB*). The pellets shall adhere to the technical specification given in following table.

However, any variation in GCV or Percentage of fines beyond the limit specified in technical specification shall be rationalized as per Price and Quantity Adjustment.

GCV based Price adjustment will be finalized during commercial term finalization.

Table No. 2. Technical specification for Biomass pellets (Non- torrefied/ torrefied).

TECHNICAL SPECIFICATION FOR BIOMASS PELLETS			
Sr No	Technical data	UOM	Biomass pellet specification
1	Base Material	-	Agro residue / Crop residue/wood chips/Forest residue - waste (Base material should not be from any agro-product which can produce oil residue during pulverization)
2	Diameter with cylindrical shape	mm	<ul style="list-style-type: none"> ▪ Preferred 8 to 8.5 mm ▪ Not more than 25 mm ▪ No other dimension should exceed 35 mm
3	Length	mm	4 – 32 mm
4	Bulk density	Kg/M3	Not less than 600 kg/m3
5	Fines %		Fines ≤ 5%
6	Gross calorific value (ARB*)	kCal/kg	APML/APRL/REL/REGL station: Preferred > 3500 UPCL: Preferred > 3900 APML/APRL/REL/REGL station: Not less than 3200 UPCL: Not less than 3600
7	Moisture (ARB*)	%	Preferred: < 8.5 % or Range - 9 % - 14 %
8	Ash (ARB*)	%	Preferred: < 5% Not more than 20%
9	Particle size distribution (After crushing and pulverizing in site lab pulverizer)	%	3 mm plus size < 5% 2 – 3 mm size : 10 to 12 % 1 – 2 mm size : 10 to 15 % Below 1 mm size : 75 to 78 %
10	Chlorine	%	Not more than 0.5
11	Sulphur	%	Not more than 0.2

Note: During contract period, diameter of pellets may be revised/modified based on result of test firing on mutual consent basis without any financial/cost implication to either Owner or supplier.

Base material for pellet manufacturing shall be agro residue which means the left over portion of the agriculture produce such as stubble/straw/stalk/husk of those agro residue which are surplus and not being used as animal fodder such as paddy, soya, arhar, gwar, cotton, gram, jawar, bajara, moong, mustard, seasam, til, maize, sunflower, jute, coffee etc., groundnut shell, coconut shell, castor seed shell etc., pine needle, elephant grass, sarkanda (Munj Grass craft) and horticulture waste such as dry leaves and trimmings generated during the maintenance and pruning of trees and plants.

Agro residue-based biomass pellets can be manufactured by mixing single or multiple base material together. Mixing material such as byproduct of woodwork factory such as wood chips, saw dust, furniture waste etc., bagasse, press mud, molasses, bamboo dust or natural additives/binder such as lignin, starch, and animal dung may also be used with agro residue in limited proportion to enhance material properties and same shall be explicitly mentioned by supplier in consignment details.

Wood obtained from tree cutting shall not be treated as agro residue and shall be not to be used as base material or mixing purpose whatsoever.

Agro-residue base should not be used from any material which may produce oil residue during the process of pulverization and processing as the oil residue will reduce the flowability of the coal mass and may be fire prone inside the mill.

Owner reserve the right to exclude any Base material/ Mixing material/additive/ binder or modify their proportion, if any adverse impact of the Base material/ Mixing material/additive/binder is found on boiler in long run.

Price Variation:

Bidder shall quote proposed Biomass pricing on basis of "INR/Mkcal" (GCV on ARB Basis) including Biomass cost, applicable taxes/duties/cess GST etc.

Actual payment shall be made based on Basic Biomass Price "INR/MT" (Considering GCV) calculated based on the actual quantity of Biomass received at Unloading Point and Unloading Point GCV as measured in line with the specified provision.

GCV based Price adjustment will be finalized during commercial term finalization

Rejection of Consignment:

The consignment of biomass pellets arrived at project site shall adhere to the technical specification as per Table 2. The Biomass Pellet's rejection criteria shall be as per the following Table.3.

Supplier shall provide detailed test reports for all the parameters (as per Table No. 03) from reputed NABL accredited laboratory along with the supply consignment.

Owner has the right to reject the material on visual inspection basis where very high moisture content is visible and free moisture is observed at the biomass sample before unloading.

Bio-mass samples shall be collected manually during truck unloading at the owner's end as per standard procedure. Samples shall be prepared and sealed properly and to be tested at owner's lab. The owner's lab report shall be the basis for payment/price correction/rejection. Supplier's representative shall witness the process of sampling, sample preparation and analysis at owner's end. One set of sealed final quality sample shall be preserved as referee sample which may be tested from any reputed 3rd party lab in case of any dispute. The charges for 3rd party lab testing shall be paid by the party whosoever has raised the dispute. Price correction formula or rejection price shall be finalized during PO placement.

Table 3. REJECTION CRITERIA FOR BIOMASS PELLET CONSIGNMENT

Sr No	Technical data	UOM	APL Tiroda /APL Kawai /APL Raipur/APL Raigargh /MEL Mahan/ APJL Godda - Rejection level	APL Mundra / APL Udupi – Rejection level
1	Gross calorific value (ARB*)	kCal/kg	<3200	<3500
2	Moisture (ARB*)	%	>14%	>14%
3	Ash (ARB*)	%	>20%	>20%
4	Chlorine	%	> 0.5	> 0.5
5	Sulphur	%	> 0.25	> 0.25

TESTING STANDARD/ METHOD:

Biomass pellets sample shall be tested in the Project site lab as per following equivalent standard given in the Table 4 below.

Sr No	Technical data	Testing Standards/Methods
1	Diameter	ISO 17829 or equivalent method may be referred. Note: ISO 17829 refers for the Solid Biofuels —For the determination of length and diameter of pellets
2	Fines % (< 3 mm) (ARB)	ISO 18846 or equivalent method may be referred. Note: ISO 18846:2016 specifies a method for determining the amount of material passing through a sieve with 3,15 mm diameter round hole.
3	Gross Calorific value (ARB)	IS 1350 or equivalent method may be referred. Note: Indian Standard methods of test for coal and coke
4	Moisture (ARB)	IS 1350 or equivalent method may be referred/ Handheld moisture meter may also be used.