



No. 11/86/2017-Th.II-Part(II)  
Government of India  
Ministry of Power  
.....

Shram Shakti Bhawan, Rafi Marg,  
New Delhi, dated the 02<sup>nd</sup> March, 2022

To,

1. Principal Secretary/Secretary in Charge of Energy / Power  
Departments, All States/UTs
2. Chairman, CEA
3. CMDs of all Central Gencos/ State Gencos/ IPPs
4. Mission Director, National Mission on use of biomass in thermal power  
plants

**Subject: Model contract for use of Biomass in Thermal Power Plants  
(TPPs)**

Sir/Madam,

The undersigned is directed to refer to this Ministry's "Revised Policy for Biomass Utilization for Power Generation through Co-firing in Coal based Power Plants" issued on 8th October, 2021 (copy enclosed).

2. In pursuance of para 3(vii) of the above revised policy, a Model Contract for the use of Biomass in Thermal Power Plants has been prepared and enclosed herewith for information and necessary action please.

3. The Model Contract may be given wide publicity by Mission Directorate (SAMARTH) and also provide the necessary facilitation to the TPPs using the biomass.

*contd.1-*

4. This issue with the approval of Hon'ble Minister for Power, New & Renewable Energy.

Yours Faithfully

Enclosure: As above



Kumar Saurabh  
Deputy Director (Thermal)  
Ministry of Power  
Tele :- 23063746

Copy to:

- (i) PS to Hon'ble Minister for Power & NRE
- (ii) PS to Hon'ble MoS for Power,
- (iii) Sr. PPS to Secretary(Ministry of Power),
- (iv) PPS to AS(SKGR), PPS to AS&FA, PPS to AS(VKD)
- (v) All Joint Secretaries/EA/Chief Engineer (Thermal), Ministry of Power
- (vi) Incharge, NIC, Ministry of Power - with a request to upload this document on the website of MoP.

## MODEL LONG TERM CONTRACT FOR BIOMASS SUPPLY

### Table of Contents

1. SCOPE OF WORK
2. RAW MATERIAL FOR PELLET MANUFACTURING
3. PERIOD OF CONTRACT
4. PRICE AND ITS EFFECTIVENESS
5. QUANTITY DETERMINATION
6. QUALITY DETERMINATION
7. COMPUTATION METHODOLOGY FOR VARIOUS RECOVERIES/QUANTITY ADJUSTMENTS
8. BILLING AND PAYMENT TERMS

### 1. SCOPE OF WORK

1.1 The scope of work under this package shall include supply, loading, transport, and delivery of material at the Power plant as per the guaranteed parameters mentioned in clause xx of the bid document.

#### Details of Material and supply duration:

Sl. No.	Description of Item	Indicative Quantity [to be supplied in Tonnes per day (TPD)]	Total Qty. (Tonnes)
1	Agro residue-based Biomass pellets	XXX	XXXXX

Note: The daily requirement estimated above is indicative only and may change based on the actual plant load factor and requirement of the Power plant.

1.2 Table-1: Technical Specification for Agro residue-based Pellet.

Sl. No	Technical Data	Unit	Specification for Torrefied / Non-Torrefied pellets
1.	Base Material	n. a.	Agro Residue / Crop Residue (wood based pellets will not be acceptable)

Sl. No	Technical Data	Unit	Specification for Torrefied / Non-Torrefied pellets
2.	Diameter	mm	Not more than 25mm No other dimension should exceed 35 mm
3.	Bulk Density	Kg/m <sup>3</sup>	Not less than 600
4.	Fines%(Length<3mm) (ARB*)	wt%	Fines<=5%
5.	Moisture (ARB)*	wt%	Not more than 14%
6.	Gross Calorific Value (ARB)**	Kcal/Kg	Non-Torrefied : 2800-4000 Torrefied: 3400-5000
7.	Hard Groove Grindability Index (HGI)		Not less than 50

\* ARB – As Received Basis

\*\* GCV ranges are indicative.

### 1.3 Mode of transportation:

a) The default mode of transportation is covered truck with the waterproof arrangement, however, the supplier may also offer transport by rail mode with the prior consent of the respective power plant management.

b) Unloading shall be in the scope of Power Plant provided material is loosely filled in the Carriage vehicle. Carriage vehicles should be fully covered and waterproofed during transportation to prevent the material from rain, sunlight and dust aspects.

c) The supplier may supply the material i.e. Biomass pellets packed in bags. In that case, the supplier shall unload the material at his own cost and extra charges, if any, shall be borne by the supplier.

1.4 Before unloading, samples shall be tested for moisture content. However, the HGI report shall be submitted by the Supplier with each carriage vehicle/consignment at the time of supply.

1.5 Demurrage, if any, on the carriage vehicle for reasons attributable to the Supplier will be borne by the Supplier.

## **2. RAW MATERIAL FOR PELLET MANUFACTURING**

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

b. For power stations within a radius of 300 km of NCR use of minimum 50% raw material as stubble /straw/crop residue of rice paddy sourced from Punjab, Haryana or National Capital Region only is mandatory. Successful Bidder has to submit documentary evidence in the form of Certificate from State Authority from where the paddy straw has been sourced.

c. Agro residue-based biomass pellets can be manufactured by mixing single or multiple base materials together.

d. Mixing material such as by-products of woodwork factory like wood chips, sawdust, 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 the same shall be explicitly mentioned by the supplier in consignment details.

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

f. The supplier shall mention the name(s) of agro/crop residue(s) used for manufacturing torrefied / non torrefied pellets and their approximate proportion in consignment details during the dispatch of material.

g. Natural additives/binder such as lignin, starch, animal dung, etc. can be used for manufacturing torrefied / non torrefied pellets if required and the same shall also be explicitly mentioned by the supplier in consignment details.

h. Power plant reserves the right to exclude any base material/additive/ binder or modify their proportion if any adverse impact of the base material/ additives/binder is found on the boiler in long run.

(Information with justification is to be communicated to Mission Directorate in such cases)

## **3. PERIOD OF CONTRACT**

3.1 Period of contract:

#### A) Supply Duration:

The period of contract shall be for a minimum period of seven (7) years. Further, after award, if the supplier is not able to supply the allocated quantity of pellets to **Plant** due to any reason attributed to **Plant** or reason mentioned in force majeure clause, an additional three-months grace period corresponding to each one year of supply period shall be provided to the supplier. Thus, a maximum 21 Months grace period shall be given corresponding to the supply of seven years. In this grace period, the supplier shall be able to supply leftover quantity out of the total allocated quantity of pellets.

#### B) Delivery Commencement:

The supplier shall commence delivery of material within 270 days from the issue of the Purchase Order.

#### 3.2 Delivery Address:

The consignment of pellets shall be delivered to the following address: -  
XYZ (Address of the Plant)

#### 3.3 Delivery Schedule:

Default delivery schedule shall be the quantity allocated to the supplier for the supply of pellets on a daily basis, which is XXX MT per day. Accordingly, the supplier shall deliver that quantity of pellets to the **Plant** site.

There should be continuous off take of the biomass by the plant as per the terms of the contract. Purchaser should not restrict the supply from the supplier unless some exigency happens and with mutual consent with the supplier.

Although the supplier shall supply the pellets as per the above delivery schedule, however, the supplier shall have the flexibility to supply the material in higher quantity than the delivery schedule on mutual consent basis to meet the annual supply requirement. In such a case, the supplier shall give one-week advance intimation to the **Plant** site and the site shall give the consent to supply material in higher quantity after assessing traffic congestion or other aspects as required.

Purchaser can also give a reduced daily delivery schedule to the supplier by giving one-week advance notice through the official e-mail ID of the Engineer-in charge or

e-mail ID of any other person authorized by him and the supplier shall dispatch the consignment accordingly.

Maximum variation in Biomass monthly offtake of Plants shall be within  $\pm 15\%$  of the contracted quantity.

In case, if a Plant is not able to off take the contracted quantity of Biomass in a given period due to technical/non-technical reasons, it may be either stored at Plant end or diverted to other plant of the same organization OR the period of supply in the same plant may be extended without LD. However, Supply quantity of Biomass as identified in contract for a quarter shall be adjusted within the same Quarter.

In case of diversion, Price of pellet for the diverted plant will be decided after mutual agreement between the destination Plant and the supplier. If distance from supplier works to the diverted plant is within  $\pm 10\%$  of the distance of destination plant from supplier works, the price will remain same. However, in case of distance from supplier works to the diverted plant is more than 10% of the distance of destination plant, then supplier will get proportional compensation for transportation cost assuming 20% of the landed cost of pellet of that consignment at destination plant as total transportation cost.

#### **4. PRICE & ITS EFFECTIVENESS**

4.1 Price Basis: - Free on Road/Rail at Plant SITE STORES.

4.2 Freight charges: -The materials shall be dispatched by road on "Freight paid" basis through supplier's transporter.

4.3 Price escalation:

For destination Prices quoted by the Supplier shall be subject to adjustment during performance of the Contract to reflect changes in the cost of labour, Diesel, Electricity in accordance with the procedures specified below:

It is understood that the price component of the items for any shipment/dispatch comprises of a fixed portion (designated as 'F' and the value of which is specified hereunder) and a variable portion linked with the indices for labour, Diesel, Electricity (description and co-efficient as enumerated below).

The amount of price adjustment towards variable portion payable/recoverable on each shipment/dispatch shall be computed as under:

$$EC = EC_1 - EC_0$$

$EC_1$  will be computed as follows:

$$EC_1 = EC_0 \{F + a \times (A_1/A_0) + b \times (B_1/B_0) + c \times (C_1/C_0) + Lb \times (L_1/L_0)\}$$

**Where**  $EC$  = Adjustment to **FOR destination** Price Component expressed in the currency of the Contract payable to the contractor for each shipment/dispatch.

$EC_1$  = Adjusted Amount of **FOR destination** Price Component expressed in the currency of the Contract payable to the Contractor for each shipment/dispatch.

$EC_0$  = **FOR destination** Price for the item in the currency of the Contract, shipment/dispatch wise.

**F = The fixed portion of Component of the Contract Price. It shall be 0.15.**

**a = Co-efficient of High speed Diesel fuel.**

**b = Co-efficient Electricity.**

**c = Co-efficient of WPI (Food article index).**

**Note: Value of a, b and c each will be 0.20.**

**Lb = Co-efficient for labour component which shall be 0.25**

**A<sub>0</sub>** = High Speed diesel oil price as on one month prior to date of submission of Price bid. **A<sub>1</sub>** = High Speed diesel oil price as on one month prior to the date of shipment.

**Note:** Price of High-Speed diesel oil, at Pump Station of Indian Oil Corporation or HP or any other Govt. oil company nearest to the Project Site, where the material



shall be delivered. (Selling price inclusive of taxes and duties as per litre of H.S.D. Oil).

**B<sub>0</sub>** = WPI (Electricity) as on one month prior to date of submission of Price bids.

**B<sub>1</sub>** = WPI (Electricity) as on one month prior to the date of shipment.

**Note:** As per Office of Economic Advisor

**C<sub>0</sub>** = WPI (Food Article) as on one month prior to date of submission of Price bids

**C<sub>1</sub>** = WPI (Food Article) as on one month prior to the date of shipment.

**Note:** as per office of the Economic Advisor

**L<sub>0</sub>** = All India Consumer Price Index for Industrial workers (All Indian Monthly Average) as on one month prior to date of submission of Price bid.

**L<sub>1</sub>** = All India Consumer Price Index for Industrial workers (All Indian Monthly Average) as on one month prior to the date of shipment.

**Note:** As published by Labour Bureau Shimla, Govt. of India.

#### 4.4 Security Deposit:

Security Deposit shall be Rs. 5000/- (Rupees Five thousand) per MTPD quantity per year of supply period. Thus, for 100 MTPD awarded quantity for seven-year supply period, Security Deposit shall be Rs 35,00,000/- (Thirty-five Lakh only). Supplier shall deposit a minimum of 25% of total Security Deposit amount within 30 days of issue of Purchase Order and the remaining amount shall be recovered from running bill @ 10% of the Basic value of bills subject to maximum Security Deposit (SD).

In case after having been issued the Notification of Award/Purchase Order of a package, if the bidder does not accept the Notification of Award/Purchase Order or do not submit an acceptable Performance Security, which results in tender being annulled then the bidder shall be treated ineligible for participation in retendering of this particular package. Further, such vendor shall also be dealt as per the provisions of the policy for Withholding and Banning of Business Dealings.

If after award of the Purchase Order/Contract it is found that the manufacturing plant from which supplies are being made, is not registered in the name of the Contractor/ one of the Partner of Consortium, to whom Purchase Order/Contract is awarded,

then the Contract shall be terminated and security deposit of the bidder is liable to be forfeited and bidder is also liable to be debarred for participation in subsequent tenders.

Note: Security Deposit may be submitted in any of the following forms:

- a. A crossed Demand Draft/ Bankers Cheque drawn in favor of **Plant** payable at respective Location.
- b. An irrevocable Bank Guarantee as per the Plant standard format from any Nationalized Bank/ Scheduled Bank as acceptable to Plant owner.

#### **4.5 Liquidated Damages (LD):**

4.5.1 The Supplier shall have to commence delivery of material within 270 days from the date of issue of the Purchase Order. To facilitate initial capacity ramp up, no Liquidated Damage shall be levied for initial 120 days from the delivery start date (hereinafter referred to as 'NO LD period').

4.5.2 Liquidated Damage (LD) shall not be applicable for short supply up to 15% in a month against aggregate of daily delivery schedule in that month. However, for monthly short supply beyond 15%, liquidated damage (LD) shall be recovered from supplier @ 5% of price of the biomass pellets for shortfall quantities.

4.5.3 Although the Supplier shall supply the material as per quantity ordered to supply on a daily basis (i.e. XXX MT per day), the Supplier shall have the flexibility to supply the material in higher quantity than offered to supply on daily basis on mutual consent basis to meet the annual supply requirement.

4.5.4 In such case, the supplier shall give one-week advance intimation to the Plant site and the site shall give the consent to supply material in higher quantity after assessing the traffic congestion or other aspects as required.

4.5.5 Modification of the Purchase Order quantities by Generating utilities up to a maximum reduction of 15% may be done by giving three-months notice during the supply period. Further reduction in order quantity and /or notice period, if any, may be done with mutual agreement between the Supplier & Generating utility.

4.5.6 Further, in case the supplier realizes that it has quoted higher quantities than its capabilities, in that case, the PO may be revised with a maximum reduction of 15% by giving three-months notice. Further reduction in order quantity and /or notice period, if any, may be done with mutual agreement between the

Supplier & Generating utility. However, Supplier has to pay penalty for short supply, if any, till the revision of PO.

4.5.7 Penalties for short supply calculated on monthly basis will be levied at the rate of 5% of the awarded price for the shortfall quantity.

4.5.8 GST extra as applicable shall also be levied on Liquidated Damages.

4.5.9 Total amount of LD for shortfall in supply shall not exceed 5% of the total contract price.

## 5. QUANTITY DETERMINATION

a. Weighing of vehicles shall be carried out on weighbridges (for tare and gross) at Power Plant. The Supplier may witness the weight of vehicles once in 15 days, Power Plant Fuel sourcing (FS) representative will accompany the Supplier representative when any such visit is carried out. Supplier shall intimate Power Plant FS representative via e-mail at least two days in advance about the date of such visit.

**Net weight =Gross weight less the Tare weight, both as measured at Power Plant weighbridge**

Power Plant may provide a copy of calibration certificates of weighbridge if requested by the Supplier. Power Plant shall undertake the calibration of Weigh Bridge in line with the schedule/practice as recommended by Legal Metrology.

b. Any other contingency may be mutually discussed and settled.

c. Net adjusted quantity received at the Plant i.e. quantity worked out by Power Plant after carrying out adjustment due to quality variations for the Base Parameters, if any, shall be applicable for payment.

## 6. QUALITY DETERMINATION

6.1 Power Plant will carry out the sampling and analysis of torrefied / non torrefied pellets at Power Plant as per the provisions of either BIS or ASTM at the option of Power Plant. Power Plant will carry out the sampling and testing process as per the relevant BIS (IS 436 Part-1) standards for vehicle top sampling.

6.2 The authorized representatives of Power Plant and pellet supplier shall jointly witness the process of sample collection and preparation of the laboratory samples. The representatives shall put their signature on the sample tags in evidence of the process of sampling. Both consumer and pellet supplier shall sign on the samples register maintained by the Power Plant at the unloading end.

6.3 For purpose of rejection test before unloading, samples shall be tested for moisture content by Power Plant. If test result of any sample collected from a truck/consignment meets Technical parameter criterion for moisture content as given in (Table 1) then truck will be allowed for unloading, otherwise, truck (Consignment) will be rejected if test result meets the rejection criterion as given in (Table 3) and it shall be the supplier's responsibility to carry it back on his own cost.

6.4 For testing of GCV and other Technical parameters, single sample shall be prepared for all the consignments received in a day from a particular Supplier. For avoidance of doubt, in case supply is from multiple Suppliers in a day, Supplier-wise sample shall be prepared for all the consignment received in a day.

6.5 The final laboratory sample shall be divided into 3 (three) parts. Part-1 of the sample is for analysis of GCV and other technical parameters by Power Plant lab at site. Part-2 sample is to be handed over to the pellet supplier for its own analysis. Part- 3 of the sample, called Referee sample, shall be sealed jointly and shall be kept with Power Plant under proper lock and key arrangement.

6.6 The Power Plant's representative will have the right to witness sampling and testing of pellets for the Base Parameters at the loading end.

6.7 The supplier's representative will have the option to witness the sample collection, preparation, testing of the main sample, and final packing of the reserve sample. Any dispute related to sampling, preparation, and analysis activity has to be raised strictly within 48 hours of the respective activity. Further, any dispute related to testing results may be raised strictly within 7 days of the declaration of the results by the Power Plant. The disputes concerning sampling and testing may be entertained only if backed up by logical and justifiable reasons. Frivolous/repeated disputes may invite penal action by Power Plant.

6.8 As this process of sampling and preparation is a continuous round the clock process to deal with the multiple consignment workloads, so Power Plant would carry out the process as per the time deemed suitable for the process. Hence, it is the responsibility of the supplier's representative to be available at all times to witness the same.

6.9 Power Plant may request Supplier to withdraw representative who is not diligent and/or is not cooperative. Frivolous/unreasonable objections to the sampling and testing process at Power Plant will not be entertained. It may be noted that witnessing testing (if any) carried out outside the Power Plant lab will not be feasible and should be avoided.

6.10 Power Plant may also consider (at its option) sharing part of the sample (third sample) with the Supplier. The third sample is for reference of the Supplier only and results of analysis of the third sample will not be considered for determining the payments.

6.11 Referee samples will be preserved in the Power Plant laboratory under locked almirah in sealed condition in a moisture-free area for 30 days (from the date of declaration of such results) in the safe custody of the Power Plant.

6.12 Generally, Quality reports will be generated within 7 working days of receipt of the material and the same will be communicated to the Supplier, subject to receipt of loading end quality report.

6.13 In case dispute is raised within the stipulated time period, the Reference sample shall be analyzed in a NABL accredited laboratory as notified by Power Plant from time to time, expense of which shall be borne equally by both Power Plant and pellet supplier. Expense borne on supplier part shall be adjusted against payment to the supplier. NABL accredited laboratory report of referee sample shall be final and binding on both the parties.

6.14 It may be noted that referee samples shall only be used in case of conflict of quality and price adjustment, whereas, in case of rejection of consignment due to Total moisture (TM) content, Power Plant reported TM content result will be final and binding.

6.15 To prevent misuse of the facility by disputing the majority of results of the lot, Power Plant will abort this reserve testing process in case if the reserve sample results (first two) are within the repeatability limits (as per BIS 1350) from original results. In this case, original results will be considered for payment purposes.

6.16 Any pellet that is received at Power Plant will not be returned/ permitted to be collected by the Supplier unless agreed to in writing by Power Plant.

6.17 Standards/Methods as per the table below will be referenced/used for quality determination:

Sl. No.	Technical Data	Testing Method/Standard
1.	Dimension (Diameter & Length)	ISO 17829 or Equivalent method may be referred
2.	Fines (%)	ISO 18846 or Equivalent Method may be referred
3	GCV(ARB)	IS 1350 or equivalent method may be referred
4.	Moisture content (ARB)	Method based upon IS 1350 or equivalent method may be referred (Hand-Held Moisture Meter may also be used)
5.	HGI	ISO 5074 or equivalent method may be referred

6.18 For Determination of Total Moisture (TM) content:

a. Samples shall be collected from each truck/dumper for TM determination.

b. TM will be determined by Power Plant lab validated method based on IS 1350,

(10g of 2.90mm passing sample will be heated for 2 hours at 108 +/- 2 Deg C. Total Moisture will be computed as per the formula below:

$$TM\% = (W1-W2) \times 100 / W1$$

Where: W1= Initial Weight of Sample (10 grams)

W2= Final Weight of Sample.

Note: Before unloading, samples shall be tested for moisture at Station end. If this value is in the rejection level range, the consignment shall be rejected and it shall be the suppliers' responsibility to carry it back at his own cost.

## **7. COMPUTATION METHODOLOGY FOR VARIOUS RECOVERIES /QUANTITY ADJUSTMENTS**

7.1 The supplier shall guarantee technical parameters of agro residue-based pellets as given in table-1 under clause 1.2. The characteristics contained in Technical Specification (table-1 under clause 1.2.) shall be adhered to and maintained and non-adherence shall result in 'Quantity and Price Adjustment' as per clause 7.2 or even rejection as per clause 7.4 of this volume.

## 7.2 Acceptance range with/without pro-rata price / quantity adjustment:

7.2.1 The agro residue-based pellets supplied shall conform to technical specifications as given in Table-1 under clause 1.2. But, in case consignment of agro residue-based pellets does not meet the guaranteed parameters for GCV, moisture content, and fines %, but are within the acceptable limit as given in table 2, the consignment shall be accepted but with a pro-rata price/ quantity adjustment as applicable.

Table 2: Parameters on Acceptable Limits

Sl. No.	Technical Data	Units	Acceptance range Without Price /Quantity adjustment	Acceptance range with pro-rata Price / Quantity adjustment
1a	Gross Calorific Value (ARB*) - Torrefied	Kcal/Kg	As per clause 7.2.2.1	
1b	Gross Calorific Value (ARB*) – Non torrefied	Kcal/Kg	As per clause 7.2.2.2	
2	Total Moisture (ARB*)	Wt%	Not more than 14%	
3	Fineness% (ARB)	Wt %	Fineness <= 5%	Fineness > 5%

\*ARB: As the received basis.

### 7.2.2 Price Adjustment for Gross Calorific Value (GCV)

If a consignment of agro residue-based pellets does not meet the guaranteed parameters for Gross Calorific Value (ARB) but is within the acceptable limit, the consignment shall be accepted but with pro-rata upward or downward price adjustment as calculated using the following formula:

#### 7.2.2.1 Torrefied pellet:

a. Stipulation of limits for Quoted GCV: Based on the Base material and Mixing material as per technical specification, Bidder is required to quote GCV value of biomass in Kcal/Kg within the range as mentioned below:

b. In case of Torrefied Pellet  
Minimum Limit- 3400 Kcal/Kg  
Maximum Limit-5000 kcal/Kg

c. Supplier shall supply the agro residue based torrefied biomass pellets of GCV not less than 3400 kcal/kg. Price shall be adjusted for GCV variation of supplied material as below:

For GCV (ARB) $\geq$ 3400Kcal/Kg [For GCV more than or equal to 3400 Kcal/Kg]

d. Pro-rata price adjustment shall be done for GCV variation within acceptable GCV range of supplied material as per following formula: -

*Adjusted FOR price = [Quoted FOR price \*x Actual GCV (ARB) ]/Quoted GCV (ARB)*

\*FOR Price- FOR Destination Price

e. In case upward GCV variation is more than the Maximum Limit for Torrefied pellet then Price adjustment on account of GCV shall be limited to Maximum Limit for Torrefied pellet only.

f. The downward GCV variation from Minimum limit, pro-rata price adjustment shall be done for GCV variation of supplied material as per following formula:

For GCV 3400 Kcal/Kg $>$  GCV $\Rightarrow$ 3000 Kcal/Kg [For GCV less than 3400 Kcal/Kg AND more than or equal to 3000 Kcal/Kg]

*Adjusted FOR price = 0.75x [Quoted FOR price x Actual G(ARB) ] /Quoted GCV (ARB)*

For GCV 3000 Kcal/Kg $>$ GCV $\Rightarrow$ 2600 Kcal/Kg [For GCV less than 3000 Kcal/Kg AND more than or equal to 2600 Kcal/Kg]



*Adjusted FOR price = 0.5x [Quoted FOR price × Actual G(ARB) ]/ Quoted GCV (ARB)*

For GCV < 2600 Kcal/Kg [For GCV less than 2600 Kcal/Kg]

g. In case of GCV (ARB) is less than 2600 kcal/Kg, no payment shall be made for already delivered and consumed material of GCV less than 2600 Kcal/kg.

Note: In case, supplier is found to frequently supply the material of GCV less than 3400 Kcal/Kg or found to take deviations in other technical parameters, warning letter shall be issued to supplier.

h. However, if material is supplied below 2600 Kcal/Kg in more than 3 (Three) instances during the currency of contract even after issuing warning letter then Contract shall be liable for cancellation.

i. Material supplied of GCV less than 2600 Kcal/Kg is liable for rejection and no payment shall be made for material already delivered and consumed.

#### 7.2.2.2 Non-Torrefied pellet:

a. Stipulation of limits for Quoted GCV: Based on the Base material and Mixing material as per technical specification, Bidder is required to quote GCV value of biomass in Kcal/Kg within the range as mentioned below:

b. In case of Non-Torrefied Pellet

Minimum Limit- 2800 Kcal/Kg

Maximum Limit-4000 kcal/Kg

c. Supplier shall supply the agro residue based Non-Torrefied biomass pellets of GCV not less than 2800 kcal/kg. Price shall be adjusted for GCV variation of supplied material as below:

For GCV (ARB) >= 2800 Kcal/Kg [For GCV more than or equal to 2800 Kcal/Kg]

d. Pro-rata price adjustment shall be done for GCV variation within acceptable GCV range of supplied material as per following formula: -

$$\text{Adjusted FOR price} = [\text{Quoted FOR price} \times \text{Actual GCV (ARB)}] / \text{Quoted GCV (ARB)}$$

\* FOR Price- FOR Destination Price

e. In case upward GCV variation is more than the Maximum Limit for Non - Torrefied pellet then Price adjustment on account of GCV shall be limited to Maximum Limit for Non-Torrefied pellet only.

f. The downward GCV variation from Minimum limit, pro-rata price adjustment shall be done for GCV variation of supplied material as per following formula:

For GCV 2800 Kcal/Kg > GCV=>2400 Kcal/Kg [For GCV less than 2800 Kcal/Kg AND more than or equal to 2400 Kcal/Kg]

$$\text{Adjusted FOR price} = 0.75 \times [\text{Quoted FOR price} \times \text{Actual G(ARB)}] / \text{Quoted GCV (ARB)}$$

For GCV 2400 Kcal/Kg > GCV=>2000 Kcal/Kg [For GCV less than 2400 Kcal/Kg AND more than or equal to 2000 Kcal/Kg]

$$\text{Adjusted FOR price} = 0.5 \times [\text{Quoted FOR price} \times \text{Actual G(ARB)}] / \text{Quoted GCV (ARB)}$$

For GCV < 2000 Kcal/Kg [For GCV less than 2000 Kcal/Kg]

g. In case of GCV (ARB) is less than 2000 kcal/Kg, no payment shall be made for already delivered and consumed material of GCV less than 2000 Kcal/kg.

Note: In case, supplier is found to frequently supply the material of GCV less than 2800 Kcal/Kg or found to take deviations in other technical parameters, warning letter shall be issued to supplier.

h. However, if material is supplied below 2000 Kcal/Kg in more than 3 (Three) instances during the currency of contract even after issuing warning letter then Contract shall be liable for cancellation.

i. Material supplied of GCV less than 2000 Kcal/Kg is liable for rejection and no payment shall be made for material already delivered and consumed.

### 7.3 Recovery on Account of Excess Fines in Consignment

Dimension of agro residue-based pellets has been given in the technical specification which shall be adhered to. Dust, crushed agro residue-based pellets in consignment as received at Power Plant shall be treated as fines and there shall be recovery on account of excess fines (ARB) if it exceeds 5%. The recovery on account of excess fines will be worked out as per the following formula.

Recovery= Adjusted price of biomass pellets x W x (Weight% of fines beyond 5%.)

This amount shall be recovered from the payment of that consignment.

### 7.4 Rejection level

The consignment of agro residue based pellets arrived at the Power Plant shall initially be tested for following before unloading and shall be rejected if total moisture (as given in table 3) exceeds the rejection level given as follows:

Table-3 Rejection Level

Sr. No	Technical Data	Unit	Rejection Level
1	Total Moisture (ARB)	Wt%	More than 14%

## 8. BILLING AND PAYMENT TERMS

The Contractor shall submit the bills in triplicate on completion of delivery of material at Power Plant and payment shall be released based on the methodology as below:

8.1 The bills are to be submitted along with the following supporting documents (as applicable), including but not limited to: -

- i. Copy of weighment certification by Power Plant.
- ii. Copy of Quality reports of loading end

- iii. Copy of Power Plant receipt end quality reports.
- iv. Certified working for deriving payable quantity.
- v. Original challan copies of truck engaged in transportation
- vi. HGI Certificate from NABL accredited lab
- vii. Composition of Biomass pellets

8.2 75% of payable amount shall be paid on receipt of materials at site Balance 25% shall be paid on receipt and acceptance of test results.

8.3 However, it may happen that a vendor may supply material with lower GCV, and takes the 75% payment which may be more than the payment due against the adjusted amount as per GCV of the supplied material. To discourage such cases, contractors defaulting on quality of pellets, resulting in actual payment less than 15% of the invoiced amount, shall only be paid 50% of the invoiced value on receipt of the material, instead of the 75% for subsequent six months. The remaining 50% shall be paid on receipt and acceptance of test results. The facility may be restored based on satisfactory performance in previous six months.

8.4 Payment to the supplier shall be made fortnightly, i.e. payment for quantity delivered from 1st to 15th of a given month shall be made by 30th or 31st of that month and similarly, payment for quantity delivered from 16th to 30th or 31st of a given month shall be done by 15th of next month. However, payment shall be processed only after receipt of invoice complete in all respects with supporting documents.

8.5 In case the payment to the supplier is delayed beyond 45 days after submission of invoice complete in all respects with supporting documents, the supplier will get an interest on the outstanding payments @12% or interest rate as per extant guidelines of the Government, if any.

8.6 All the relevant payments due as per the contract shall be released to the Contractor on production of documentary evidence such as LR copy/ e-way bill/ toll tax receipts etc, to ensure that Biomass Pellets have been supplied from bidder's declared place (District) of manufacturing plant.

In case the location of manufacturing Plant is not yet finalized, then bidder may declare the tentative location of manufacturing Plant. However, the Bidder shall declare the location of their manufacturing Plant within 90 days of placement of Award.

If a Contractor does not declare the Plant Location within 90 days of placement of Award, then the Contract is liable to be terminated and security deposit of the bidder is liable to be forfeited and the bidder is liable to be debarred for participation in subsequent tenders.

However, in the event of declaration of location of manufacturing plant after the placement of Award, the FOR destination price quoted by the bidder and incorporated in NOA/PO, shall remain the same.

**To,  
Plant Address,  
Village,  
India.**