



**ANDHRA PRADESH ELECTRICITY REGULATORY COMMISSION**

Vidyut Niyantrana Bhavan, Adjacent to 220/132/33/11 KV AP Carbides SS,  
Dinnedevarapadu Road, Kurnool - 518 002, Andhra Pradesh.

Phones: 08518 - 294823,24,25,26

THURSDAY, THE FIFTH DAY OF SEPTEMBER  
TWO THOUSAND AND TWENTY FOUR

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:Present:

**Justice C.V. Nagarjuna Reddy, Chairman**

**Sri Thakur Rama Singh, Member**

**Sri P.V.R.Reddy, Member**

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SUO MOTU ORDER 1 of 2024

*In the matter of*

*Determination of Variable Cost for the period from 01-04-2024 to 31-03-2029 in  
respect of the existing Biomass, Industrial Waste and Bagasse based plants*

**1. Introduction:**

In its previous order on the subject matter in O.P. No. 75 of 2019, the Andhra Pradesh Electricity Regulatory Commission (APERC) determined the variable costs for power generation projects having Long Term PPAs with APDISCOMs using Biomass, Industrial Waste, and Bagasse based fuels for the period from April 1, 2019 to March 31, 2024. The annual escalation of variable cost as determined by the Commission was 5% for that period. This order has not been contested in any court and has been accepted by all relevant stakeholders. The year wise VC determined for Biomass/Industrial

Waste & Bagasse plants for the period FY 2019-24 is shown in the Table below.

**TABLE: 1**

**Year Wise Approved Variable Cost**

<b>Financial year</b>	<b>Biomass/Industrial waste(Rs./Unit)</b>	<b>Bagasse (Rs./Unit)</b>
FY 2019-20	4.77	3.14
FY 2020-21	5.01	3.30
FY 2021-22	5.26	3.47
FY 2022-23	5.52	3.64
FY 2023-24	5.80	3.82

**2. Variable Costs for the Control Period covering FY 2024-29.**

**Suo-motu proceedings.**

As part of fulfilling the regulatory requirement of determining Variable Costs to the Biomass/Industrial Waste and Bagasse based power projects for the time period covering FY 2024-29, this commission on 26th March- 2024, suo-motu initiated proceedings and issued a draft order proposing the continuation of the variable costs determined for FY 2023-24 in OP NO. 75 of 2019, into the next control period (FY 2024-25 to FY 2028-29). This proposal was based on a preliminary assessment that market conditions and input fuel costs which are the primary drivers of VC had not changed sufficiently to warrant a major revision. Stakeholders were invited to submit their objections or suggestions 15th April-2024.

**Engagement of Stakeholder & Consultation Process:**

Commission addressed individual letters to 26 identified Biomass, Bagasse, and Industrial Waste power generators located in the State 4th April, 2024, to elicit their specific views on the draft order.

Further the Commission has been engaged extensively with following key stakeholders to gather their views on the proposed variable cost structure through a letter dated 27.03.2024, including:

- Principal Secretary to Government, GoAP, Energy, I&I Department
- Advisor for Power Sector
- Chairman and Managing Director / APTRANSCO
- Chairman and Managing Director / APEPDCL
- Chairman and Managing Director / APSPDCL
- Chief Executive Officer / AP Solar Power Corporation Ltd.
- Vice Chairman & Managing Director / NREDCAP
- Chief Executive Officer / Managing Director, APSEEDCO

**Views and Objections received in brief:**

In response to the draft order and the public notice issued by the Commission, two developers and AP DISCOMs have submitted their views/Comments and they are briefed as under.

**i) 3F Industries Limited, Tadepalligudem, Andhra Pradesh,**

They utilise industrial waste and biomass as fuels, but due to increased costs and scarcity of these fuels post-COVID, they are facing viability issues. They expressed concerns about the proposed uniform VC rate of FY 2023-24 for the entire period of next five years without any escalation and not considering actual increase in fuel prices.

They stated that the actual fuel prices being higher than those considered by the Commission and requested a revision of the variable cost to at least

Rs. 8/- from 2024-25 onwards. M/s 3 F requested for yearly determination of variable costs rather than a uniform rate for five years.

**ii) Redan Infrastructure Pvt Ltd Gangavaram, Chittoor District.**

They highlighted the significant increase in demand for biomass and industrial waste due to industrialization, leading to higher fuel costs. Additionally, they mention the rise in diesel and petrol prices, resulting in increased transportation costs for fuel collection from a radius of 75 to 100 km. M/s Redan noted that operational and maintenance expenses have also risen, coupled with a lower Plant Load Factor (PLF) averaging around 70%. In light of these factors, they respectfully requested the Honourable Commission to consider an annual variable cost escalation of 15% based on the costs approved for FY 2023-24 for the next control period.

**iii). Public Hearing:**

APERC issued a public notice on 25.05.2024 regarding holding of public hearing on 12.06.2024. During the hearing, the representative from M/s 3F Sri. Ch.V.S. Prasannanjaneyulu, presented his views. He reiterated the challenges in sourcing affordable Rice Husk and other fuels, emphasising the need for revising the proposed variable cost. Further the APERC directed APDISCOMs to submit the remarks on the objections filed by objectors, Viz, 3F industries Limited and M/s.Redan Infrastructure Pvt. Ltd within 4 weeks.

**iv). Objections/Views submitted by APDISCOMs:**

In response to the directions of APERC, objections raised by certain developers and the views expressed in the public hearings by different stakeholders, the APDISCOMs have submitted their objections/views on 24th July 2024. Salient points of their submission are as under.

On the objection raised by M/s 3 F Industries Limited regarding **Fuel Cost & Mix**, APDISCOMs emphasised that the fuel mix for Biomass/Industrial Waste generators includes various sources, such as Juliflora, Rice Husk, and Agricultural Residues. They argued that the cost of Rice Husk, as presented by 3F Industries, does not fully reflect the cost of the overall fuel mix. APDISCOMs referenced previous Commission orders and Central Electricity Authority (CEA) reports, advocating for a balanced mix of fuels to determine the average fuel cost, ensuring that the variable cost is not disproportionately influenced by fluctuations in the price of any single fuel type.

Regarding Redan Infrastructure's request for an **annual escalation rate of 15%** APDISCOMs argued that the CERC's RE Tariff Regulation 2024 set an annual escalation rate of 3.45% and may please be considered.

APDISCOMs further stated that the Hon'ble Commission may be pleased to continue the earlier proposal as per the draft order dated 26.03.2024 for continuation of existing Variable Cost or consider the fuel price and its escalation as fixed by CERC in its RE tariff Regulation 2024 dated 12.06.2024 as was ordered in OP No 75 of 2019.

The variable cost array as arrived by APDISCOMs for FY:2024-25 to FY:2028-2029 duly considering fuel cost and its escalation as fixed by CERC in its 2024 regulation by retaining all other parameters as per earlier VC order of this Hon'ble commission in OP NO 75 of 2019 dated 10.02.2020, is shown in the following Table.

**TABLE 2:****Proposed Variable Cost by APDISCOMs.**

<b>Financial year</b>	<b>Biomass/Industrial waste(Rs./Unit)</b>	<b>Bagasse (Rs./Unit)</b>
FY 2024-25	6.00	3.95
FY 2025-26	6.21	4.09
FY 2026-27	6.42	4.23
FY 2027-28	6.64	4.37
FY 2028-29	6.87	4.52

**Commission's Analysis and Decision:**

APDISCOMs requested for continuation of earlier methodology of CERC approved fuel price and escalation with technical norms of Station Heat Rate (SHR) and Auxiliary Consumption (AC) as per the previous order.

The request of the two Industrial Waste based plant developers, one M/s 3F that for FY 2024-25 the variable cost can be Rs 8.00/Unit for FY 2024-25 with escalation and other M/s Redan that escalation factor be 15%, can not be accepted as they are on higher side.

The variable costs are essential to the tariff framework and required to be compensated to the power developers to meet the operating expenses and mirror the fluctuating expenses of fuel (including transportation) and technical parameters such as SHR & AC. APERC is committed to ensuring these costs are equitable, effectively balancing the interests of power producers with prevailing market conditions.

At present, the Hon'ble CERC notified the Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2024 vide order dated: 12.06.2024. This regulation provides a detailed framework for calculating fuel costs,

escalation rates and other important parameters based on State wise characteristics, terms and conditions necessary for determination of RE tariffs.

The methodology used by CERC involves comprehensive market analysis, including trends in supply and demand, inflation rates, and transportation costs. These factors ensure that the set prices reflect realistic and fair market values.

In view of the reasons stated supra, this Commission is inclined to adopt the CERC regulation -2024 for determination of VC for Biomass/Industrial Waste and Bagasse based power generating plants for the control period FY 2024-29. By adopting these rates and methods as outlined in CERC regulation APERC aligns with national standards with state wise customisation and ensures consistency in regulatory practices across jurisdictions. It is expected that adoption of these figures from the CERC order enhances transparency and provides a robust basis for APERC's pricing model.

### **Final Determination of Variable Costs: Cost Determination**

After a thorough review of all stakeholder inputs and in accordance with the guidelines set forth by the Central Electricity Regulatory Commission (CERC) in their Regulation dated June 12, 2024, adopting the price per MT arrived at by CERC, the final variable costs for FY 2024-25 have been meticulously calculated. These calculations apply to the CERC's stipulated annual escalation rate of 3.45%, reflecting adjustments based on current economic indicators such as inflation and market trends in fuel supply and



demand. This method ensures that our pricing structure remains aligned with national standards and fair market practices.

### **Detailed Calculation of Year Wise Variable Costs**

#### **1. Biomass/Industrial Waste:**

##### **Parameters considered for FY 2023-24:**

Fuel Cost for Biomass/Industrial Waste Project (FC): Rs 3983/MT

Station Heat Rate (SHR): 4200 Kcal/Kwh

Gross Calorific Value (GCV): 3100 Kcal/Kg.

Auxiliary Consumption: 10%

Formula for Variable Cost =  $SHR \times FC / (GCV \times (1 - Aux))$

Annual Fuel Cost escalation: 3.45%.

#### **2. Bagasse Based Cogeneration Plants:**

##### **Parameters considered for FY 2023-24:**

Fuel Cost for Bagasse based Co-Gen Project (FC): Rs 2249/MT

Station Heat Rate (SHR): 3600 Kcal/Kwh

Gross Calorific Value (GCV): 2250 Kcal/Kg.

Auxiliary Consumption: 8.5%

Formula for Variable Cost =  $SHR \times FC / (GCV \times (1 - Aux))$

Annual Fuel Cost escalation: 3.45%.

Based on the above parameters and escalation rate the trajectory of allowable Variable Cost for Biomass/Industrial Waste and Bagasse based generating plants in the state of Andhra Pradesh for the control period covering FY 2024-29 is shown in the Table below:



**Table 3:**

**Approved Variable Cost for the Control Period FY 2024-29**

<b>Financial year</b>	<b>Biomass/Industrial Waste (Rs./Unit)</b>	<b>Bagasse (Rs./Unit)</b>
FY 2024-25	6.00	3.93
FY 2025-26	6.20	4.07
FY 2026-27	6.42	4.21
FY 2027-28	6.64	4.35
FY 2028-29	6.87	4.50

These rates are set to undergo annual adjustments at the same escalation rate throughout the control period as above, ensuring consistency and predictability for all stakeholders.

All stakeholders, including power producers and APDISCOMs, are directed to adhere to these rates, effective from April 1, 2024, to March 31, 2029.

**14. Conclusion: Summary and Future Outlook**

The Commission emphasises the critical importance of maintaining a balanced approach between the needs of power producers and the broader consumer base. By standardising variable costs, the Commission aims to ensure sustainability and fairness in the energy sector.

The OP shall accordingly stand disposed of.

**Sd/-**  
**P.V.R. Reddy**  
**Member**

**Sd/-**  
**Justice C.V. Nagarjuna Reddy,**  
**Chairman**

**Sd/-**  
**Thakur Rama Singh**  
**Member**