

**JHARKHAND STATE ELECTRICITY REGULATORY COMMISSION  
RANCHI**

Case No. 01 of 2005-06

Jharkhand State Electricity Board (JSEB), Ranchi ..... Applicant

CORAM

Shri S.K.F. KUJUR, Chairman  
Shri P.C. VERMA, Member (Tech)  
Smt. S. SINHA, Member (Legal)

IN THE MATTER OF

**Approval of formula for recovery of Fuel Price and Power Purchase Cost Adjustment charges.**

**ORDER**

(15.7.2006)

The additional Power Purchase Cost on account of increase in Power Purchase Cost and in case of own generation, increase in the fuel cost will be adjusted as per the Fuel & Power Purchase Cost Adjustment which has been detailed below:

1.0 FPPCA shall be computed as per the following formulae:

$$FPPCA = \frac{F_{OG} + PPP_O + B}{SE}$$

Where :

**FPPCA** is the Fuel & Power Purchase Cost Adjustment in Rs./KWh

<b>Part</b>	<b>Code</b>	<b>Description</b>
Part- 1	$F_{OG}$	Own Generation Fuel Cost Price Adjustment and relates to the Adjustment on account of variations in the landed price of fuel at Licencee's own thermal stations, upto the level of generation as determined* by JSERC from time to time.
Part-2	$PPP_O$	Power Purchase Cost Adjustment for variation in unit price of power purchase, for the permitted quantity, from that specified for power purchase from other entities, including Central Sector Stations, State Sector Stations, other licensees, Independent Power Producers, Non-conventional Energy producers, Captive Power Plants etc, as determined from to time.
Part- 3	$B$	A balancing term B to take care of under or over adjustment of revenue through previous FPPCA due to actual units sold in the present quarter being different from the forecast based on the previous quarter

\* **Determined** levels/Permitted quantity have the connotation as approved by JSERC in Tariff Order or any other annual reviews/Orders.

**SE** Total Energy sold less Energy consumption (sold) to the Agricultural and Rural Domestic category of consumers in the previous “ Control Period” in Million Units (The Control Period shall mean a Quarter of the particular financial year i.e.1<sup>st</sup> Qrt April-June, 2<sup>nd</sup> Qrt July–Sept, 3<sup>rd</sup> Qrt Oct–Dec, 4<sup>th</sup> Qrt Jan–March.)

These components are explained in details in paragraphs below.

**1.1 Own Generation Fuel Cost Adjustment:**

The part for ‘Own Generation Fuel Cost Adjustment’ shall be computed as follows:

$${}^kF_{OG} = \sum_{n=1} [ OGD_B \times ( VC_A - VC_B ) ]$$

Where:

$F_{OG}$	Adjustment on account of variations in landed price of Fuel at Thermal Power Stations of the licensee in Rs. millions.
$n$	1 to K, the thermal power station of the Licensee.
$OGD_B$	Is the approved base level of delivered energy as considered by JSERC at the bus bar from thermal plants (million units)
$VC_B$	Is the base variable cost per unit in Rs / kwh calculated on the net output using permitted auxiliary consumptions as approved by JSERC in Tariff Order
$VC_A$	Is the actual variable cost per unit for the previous control period on the basis of actual landed price of fuel (determined as per the mode approved by JSERC) at Licensee’s generation stations, expressed in Rs. / Kwh calculated on the net output using permitted auxiliary consumption and the actual fuel cost and actual Gross Calorific value and the SHR approved by JSERC .

**1.2 Power Purchase Costs Adjustment:**

The part for ‘Power Purchase Costs Adjustment’ shall be computed as follows:

$$PPP_O = \{ \sum_{n=1}^k \{ ( TC_A - TCb ) \times Q_A \} \}$$

where:

$PPP_O$	Adjustment on account of variation power purchase price from other entities in Rs. Million
$TC_A$	Is the base total cost per unit of the power purchased from a particular source, inclusive of transmission charge, computed based on the principles laid down in the respective arrangements in Rs./KWh as approved by JSERC in Tariff Order;
$TC_B$	Is the actual total cost per unit of delivered energy, inclusive of transmission charge, computed based on the principles laid down in the respective arrangements approved by the Commission in Rs /KWh for the previous control period.
$Q_A$	Is the permitted level of power purchases from each source in million units by the JSERC as per tariff order
$n$	Number of sources of power from 1 to k

### 1.3 BALANCING TERM B:

A balancing term B shall be added in the formulae to take care of under or over adjustment of revenue through previous FPPCA due to actual units sold in the present quarter being different from the forecast based on the previous quarter and shall be computed as:

$$B = FPPCA_{n-1} (QA_{n-1} - QA_{n-2})$$

Where,

$FPPCA_{n-1}$  = Fuel and Power Purchase Cost Adjustment in Rs/Kwh in the previous control period (quarter)

$QA_{n-1}$  = Actual units sold in quarter previous to the present one.

$QA_{n-2}$  = Actual units sold two quarter previous to the present one.

Note: Balancing Term “B” shall be calculated separately for each applicable category and added together to compute “B”.

### 1.4 TOTAL ENERGY ON WHICH FPPCA IS TO BE DISTRIBUTED:

SE = Total of sold energy in the control period less (–) energy sold to agriculture and rural domestic category of consumers.

### 2.0 IMPLEMENTATION OF FPPCA:

- (i) Only cost of fuel and power purchase as per the Tariff Order with respect to Methodology and Merit Order of Power Purchase from each entity shall be allowed.
- ii) FPPCA shall be computed due to variation in cost of fuel and power purchased made on the basis of the levels of generation of power and those of purchase of power from other sources as determined by the Commission in the Tariff Order.
- iii) The FPPCA will be recovered in the form of an incremental energy charge (Rs./KWH) and shall be recovered from all consumers other than Agricultural and Rural Domestic Category of Consumers.
- iv) The formulae for computation of FPPCA per kWh for each category of consumer is given below:

The total cost of fuel surcharge shall be distributed amongst the different categories of consumers in proportion to the revenue contribution of the category of consumer as percent of the total revenue for the base years as per Tariff Order excluding revenue from rural domestic and agricultural category of consumers. Within each category, the apportioned fuel surcharge shall be spread equally over each unit (kwh) of consumption/sale for that category.

Let:

$R_i$  = Revenue contribution of  $i^{\text{th}}$  category of consumer in Rupees.

$R_{ag}$  = Revenue contribution of rural domestic and agricultural category of consumer in Rupees.

$ES_i$  = No. of units sold to  $i^{\text{th}}$  category of consumer.

$FS_i$  = Fuel surcharge apportioned in rupees to  $i^{\text{th}}$  category of consumer.

FPPCA = Total fuel surcharge (Rupees).

$FPPCAU_i$  = Fuel surcharge per unit (Rs/kwh) to  $i^{th}$  category of consumer.

$$FS_i = \frac{R_i}{\sum R_i - R_{ag}} * FPPCA$$

$$FPPCAU_i = \frac{FS_i}{ES_i} \text{ Rs per kwh.}$$

$$FPPCAU_i = \frac{FS_i}{ES_i} \times 100 \text{ Paise per kwh.}$$

v) Licensee will submit the calculations of FPPCA and with all relevant informations and supporting documents to the Commission within 20 days of the start of the quarter for approval. The Commission after due scrutiny and clarifications obtained if any from Licensee shall approve the FPPCA to be charged within 30 days of the start of the quarter.

Sd/-S. Sinha  
Member (Legal)

Sd/- P.C. Verma  
Member (Tech)

Sd/- S.K.F. Kujur  
Chairman