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# JOINT ELECTRICITY REGULATORY COMMISSION

(For State of Goa and Union Territories)

## NOTIFICATION

New Delhi, the 27th June, 2012

**No. JERC-10/2009.**—In exercise of powers conferred under Section 62 (4) read with Section 181 of the Electricity Act, 2003 and all other powers enabling it in this behalf, and after previous publication, the Joint Electricity Regulatory Commission hereby amends Joint Electricity Regulatory Commission for Goa and UTs (Terms and Conditions for Determination of Tariff) Regulations, 2009 by inserting Clause 7(3) after Clause 7(2) in Joint Electricity Regulatory Commission for Goa and UTs (Terms and Conditions for Determination of Tariff) Regulations, 2009.

### **1. Short title and commencement:**

(i) These regulations may be called the Joint Electricity Regulatory Commission for Goa and UTs (Terms and Conditions for Determination of Tariff) (First Amendment) Regulations, 2009.

(ii) These regulations shall come into effect from the date of their publication in the Official Gazette.

**2. Insertion of following Clause 7(3) after Clause 7(2) in Joint Electricity Regulatory Commission for Goa and UTs (Terms and Conditions for Determination of Tariff) Regulations, 2009.**

**(3)** Fuel and Power Purchase cost variation shall be calculated by the distribution licensees using the formula specified below. The frequency of calculation as well as the procedure to be followed by the distribution licensees shall be as detailed below:-

**1. Recovery Periodicity (Cycle)**

The licensee shall compute fuel and power procurement cost variations on quarterly basis and adjustment shall be made in consumers bills starting after a month following the end of the quarter on units billed in the month under consideration. For example, Fuel & Power Purchase Cost Adjustment (FPPCA) for the quarter April-May-June shall be made in the month of July and shall be reflected in the consumer bills raised in the months of August-September and October on the units billed for the month of August, September and October respectively. The formula shall be applicable from 1<sup>st</sup> April of 2012 for the purpose of consideration of Fuel and Power Purchase Cost Adjustment. FPPCA shall be done for all consumer categories except Below Poverty Line (BPL) and Agriculture consumers.

**2. Fuel & Power Purchase Cost Adjustment Formula**

- i. The formula for determination of per unit Fuel & Power Purchase Cost Adjustment ("FPPCA") is as under:

**In words:**

**Per Unit FPPCA (Paisa/unit) =**

**Per Unit Actual Cost of Power Purchase – Per Unit Approved Cost of Power Purchase in the Tariff Order**

i.e.

$$\text{Per Unit FPPCA (Paisa/unit)} = \left[ \frac{(P_{\text{Actual}} - S_{\text{Bulk}})}{\{(X-c) - X_s\} * b} - Z \right] * 1000 - R_{\text{Approved}}$$

Whereas

$$c = \{(X-A) * T_{\text{Approved}} / 100\}$$

$$b = (1 - Y_{\text{Approved}} / 100)$$

Where:

P <sub>Actual</sub>	<p>Actual cost of power purchased during the quarter excluding purchase from unapproved bilateral and other unapproved sources and also excluding transmission charges of PGCIL, SLDC charges, RLDC charges and reactive energy charges (₹ crores).</p> <p><b>Explanatory Note :</b> The actual cost of power purchase during the quarter will include the total cost of power purchased during the quarter through approved sources of power including central generating stations, other approved stations &amp; power purchased through power exchanges limited to the rate given in the Tariff Order of the licensees. UI over drawal charges will be limited to the actual UI rate or UI rate corresponding to 49.7 Hz, whichever is lower. The total cost of power purchase in this formula does not include the transmission charges of PGCIL, SLDC/ RLDC charges and reactive energy charges. Any variation in these charges shall be taken care in the true up.</p>
S <sub>Bulk</sub>	<p>Actual Revenue recognized from Sale of power to persons other than consumers of the licensee during the quarter. (₹ crores).</p> <p><b>Explanatory Note:</b> The actual revenue recognized from sale of power to persons other than utility's consumers includes the revenue recognized by the utility with adjustments of brokerage and Power Exchange charges, if any. The actual revenue from sale will also include the adjustments made through UI mechanism in case of under drawl by the utility.</p>
R <sub>Approved</sub>	<p>Approved per unit cost of power purchase for use in the FPPCA formula as given in the tariff order of the Licensee (paise per unit).</p> <p><b>Explanatory Note:</b> The approved per unit cost of power purchase for the financial year to be considered in the FPPCA formula excluding transmission charges of PGCIL, SLDC charges , RLDC charges and charges for reactive energy (paise per unit) would be calculated and mentioned in the tariff order of the respective utility .</p>

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X	Actual Energy units (kWh) procured during the quarter in consideration excluding unapproved sources (million units). <b>Explanatory Note</b> The actual energy units during the quarter will include the total energy (million units) procured during the quarter through approved sources including central generating stations, other approved stations, power procured through power exchanges and over drawal from the grid. The total energy units procured shall be without considering transmission losses.
A	Actual Energy Units (kWh) procured during the quarter in consideration ( million units) from power exchanges, power generation within the periphery of the licensee & used by licensee and units overdrawn from the grid.
T <sub>Approved</sub>	Approved inter-state transmission losses for the year in consideration as provided in the Tariff Order (%).
Y <sub>Approved</sub>	Approved T&D losses for the year in consideration as provided in the Tariff order (%)
X <sub>s</sub>	Actual Sale of power to persons other than the utility consumers (million units) during the quarter. <b>Explanatory Note:</b> The actual units sold to persons other than utility consumers through bilateral transactions, transactions through power exchanges and under drawl through UI mechanism.
Z	Actual energy units billed for BPL and Agriculture category consumers (million units).

### Terms and Conditions

1. For the purpose of Fuel & Power Purchase Cost Adjustment, all the bills admitted and credits, if any, received by the distribution licensee during the period in consideration, irrespective of the period to which they pertain, shall be considered. The bills or credits for earlier period will not be considered for the purpose of FPPCA.

2. The variation in fuel & power purchase cost adjustment with respect to the approved per unit power purchase cost, as per the formula specified above shall be recoverable/payable based on units billed for each category of consumers except BPL & Agriculture.
3. Per unit rate of FPPCA to be billed to consumers shall be worked out in Paisa after rounding off to the next lower integer in case of fraction less than 0.5 and to the next higher integer in case of fraction equal to or greater than 0.5.
4. The per unit FPPCA so worked out shall be charged differentially as per the approved retail tariff of the consumers. The determination of differential per unit FPPCA is mentioned below:

**Step 1: Determination of Value of K**

$$K = \text{Approved Retail Tariff for a category or sub-category} / \text{Weighted Average Retail Tariff (WART)}$$

The value of K for different consumer category or sub category for the year in consideration will be as provided in the respective Tariff Order.

**Step 2: Determination of proportionate FPPCA (Paisa/unit) consumer category/sub-category wise**

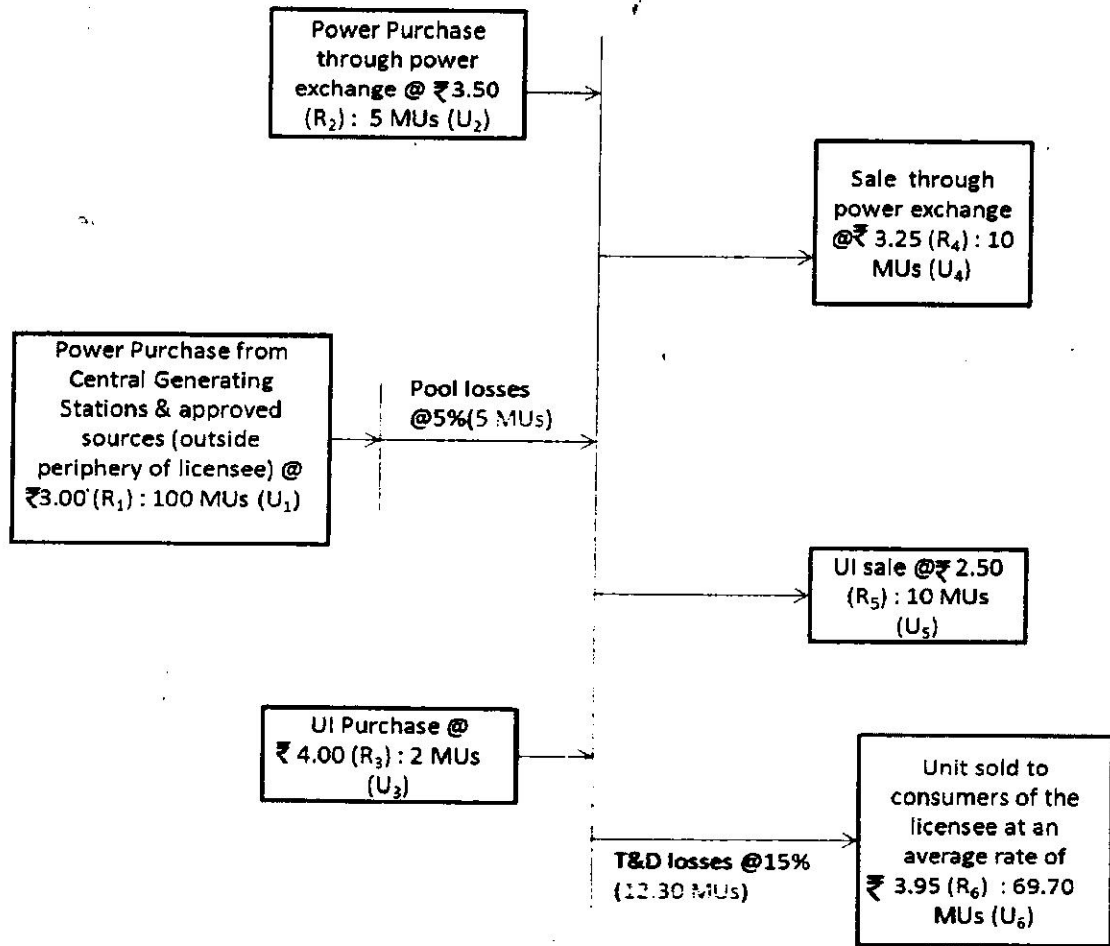
$$\text{FPPCA to be billed for the consumer category or sub-category (Paisa/unit)} = \text{Average FPPCA (Paisa/unit)} * K \text{ for that consumer category or sub-category}$$

**Duties of the Licensees and Designated officer**

1. Every distribution licensee shall appoint a designated officer not below the rank of Executive Engineer with Name, Designation, Telephone no. & Fax and Place of Posting, who shall compute, certify and post the PPCA calculations, PPCA chargeable & related data summary on the licensee's website and clarify to consumers query, if any.
2. The Designated Officer shall send certified copy of FPPCA calculations immediately to Joint Electricity Regulatory Commission.

**Illustration no. 1: Fuel & Power purchase cost adjustment is recoverable from the consumers**

All values mentioned here are for illustrative purposes only



S No.	Particulars	Amount/Units
<b>Numerator = <math>(P_{Actual} - S_{Bulk})</math></b>		
1.	<b><math>P_{Actual} : \{(R_1 * U_1 + R_2 * U_2 + R_3 * U_3) / 10\}</math></b> [Actual cost of power purchased during the quarter excluding purchase from unapproved bilateral and other unapproved sources and also excluding transmission charges of PGCIL, SLDC charges, RLDC charges and reactive energy charges (₹ crores)]	₹ 32.55 Crores
2.	<b><math>S_{Bulk} : \{(R_4 * U_4 + R_5 * U_5) / 10\}</math></b> [Actual Revenue recognized from Sale of power to persons other than consumers of the licensee during the quarter. (₹ crores)]	₹ 5.75 Crores
3.	<b><math>(P_{Actual} - S_{Bulk}) : (1-2)</math></b>	₹ 26.8 Crores
<b>Denominator = <math>\{[(X-c) - X_s] * b\} - Z</math></b>		
4.	<b><math>X : (U_1 + U_2 + U_3)</math></b> [Actual Energy units (kWh) procured during the quarter in consideration excluding unapproved sources (in million units)]	107 MUs (100 MUs + 5 MUs + 2 MUs)
5.	<b><math>A : (U_2 + U_3)</math></b> [Actual Energy Units (kWh) procured during the quarter in consideration (in million units) from power exchanges, state generation stations (including licensee owned & self-	7 MUs (5 MUs + 2 MUs)

S. No.	Particulars	Amount/Units
	generation) and units overdrawn from the grid]	
6.	<b>(X-A): (4-5)</b>	100 MUs
7.	<b>T<sub>Approved</sub>%</b> [Approved inter-state transmission losses as provided in the Tariff Order (in %)]	5%
8.	<b>c = {(X-A)*T<sub>Approved</sub>/100}</b>	5 MU
9.	<b>X<sub>s</sub>: (U<sub>4</sub>+U<sub>5</sub>)</b> [Actual Sale of power to persons other than the utility consumers (in million units) during the quarter]	20 MUs (10 MUs + 10 MUs)
10.	<b>Y<sub>Approved</sub>%</b> [Approved T&D losses for the year in consideration (in %)]	15%
11.	<b>b = (1-Y<sub>Approved</sub>/100)</b>	0.85
12.	<b>Z</b> [Actual energy units billed for BPL and Agriculture category consumers (in million units)]	2 MUs
13.	<b>{[(X-c)- X<sub>s</sub>]*b}-Z</b>	67.7 MUS
14.	<b>(Numerator/Denominator)*1000</b> Actual per unit Rate of Power Purchase	396 Paisa/unit
15.	<b>R<sub>Approved</sub></b> [Approved per unit cost of power purchase for use in the FPPCA formula as given in the tariff order of the Licensee (Paisa per unit)]	350 Paisa/unit
16.	<b>Per Unit FPPCA (Paisa/unit) = Actual per unit Rate of Power Purchase - Approved per unit Rate of Power Purchase (14-15)</b>	<b>46 Paisa/unit to be recovered from the consumers</b>

**Determination of Differential FPPCA to be recovered from the consumers of different consumer categories**

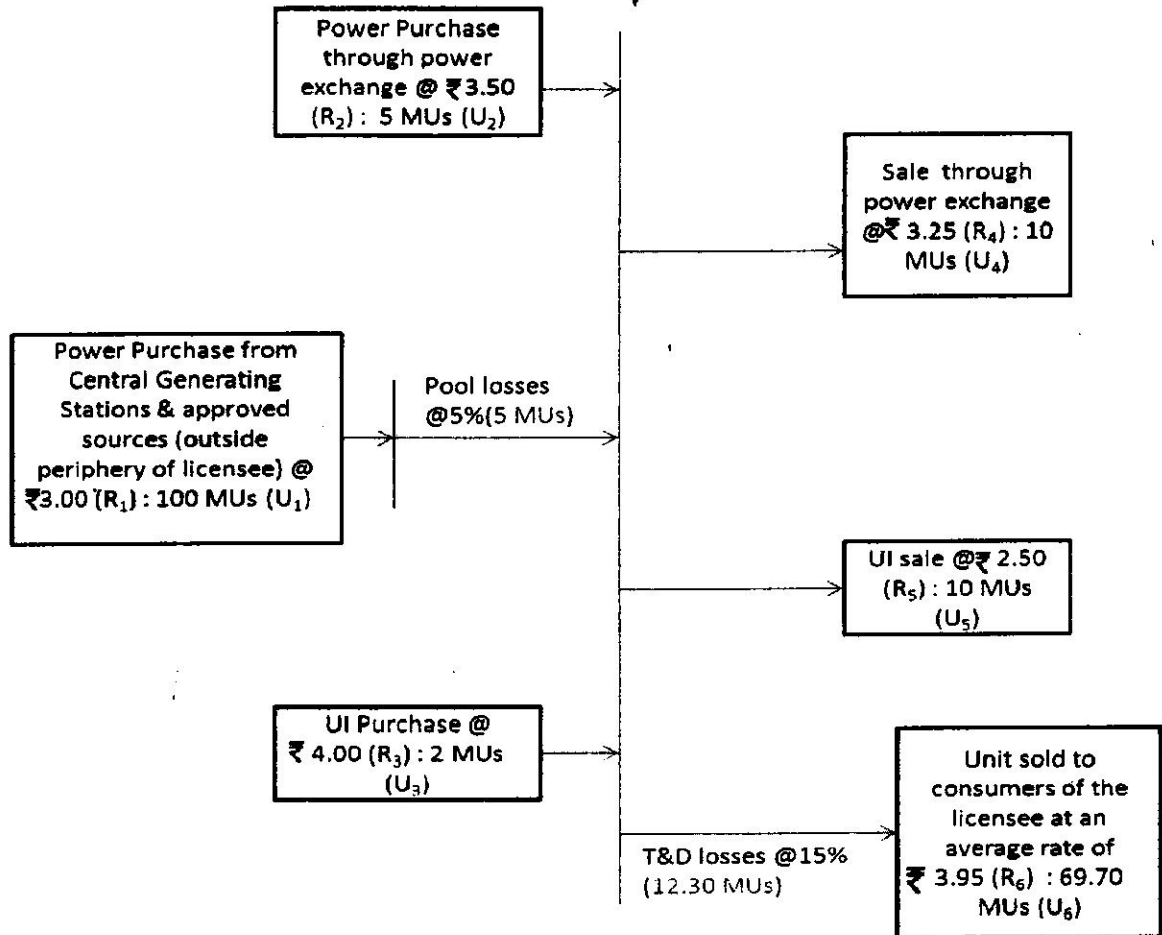
S. No.	Category / Sub-category (assuming there are only 3 categories)	Actual MUs which were billed after actual T&D Losses	Retail Tariff (RT) (₹ Per Unit)	WART - Weighted Average Retail Tariff of all categories (₹ /unit)	K (RT/WART)	FPPCA (Paisa per Unit) to be recovered from consumers
A	Domestic	40.62				
1	50-150 KWh	24.372	3.2	3.69	0.87	
2	Above 150 KWh	10.155	3.5	3.69	0.95	
3	0-50 KWh	6.093	1.9	3.69	0.52	
B	Non-Domestic/Commercial	16.925	4.65	3.69	1.26	
C	Industrial	10.155	4.5	3.69	1.22	
	<b>Total</b>	<b>67.7</b>	<b>3.69</b>			

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**Illustration no. 2: Fuel & Power purchase cost adjustment is refundable to the consumers**

All values mentioned here are for illustrative purposes only



S No.	Particulars	Amount/Units
<b>Numerator = <math>(P_{Actual} - S_{Bulk})</math></b>		
1.	$P_{Actual} : \{(R_1 * U_1 + R_2 * U_2 + R_3 * U_3) / 10\}$ [Actual cost of power purchased during the quarter excluding purchase from unapproved bilateral and other unapproved sources and also excluding transmission charges of PGCIL, SLDC charges, RLDC charges and reactive energy charges (₹ crores)]	₹ 32.55 Crores
2.	$S_{Bulk} : \{(R_4 * U_4 + R_5 * U_5) / 10\}$ [Actual Revenue recognized from Sale of power to persons other than consumers of the licensee during the quarter. (₹ crores)]	₹ 5.75 Crores
3.	$(P_{Actual} - S_{Bulk}) : (1-2)$	₹ 26.8 Crores
<b>Denominator = <math>\{[(X-c) - X_s] * b\} - Z</math></b>		
4.	$X : (U_1 + U_2 + U_3)$ [Actual Energy units (kWh) procured during the quarter in consideration excluding unapproved sources (In million units)]	107 MUs (100 MUs + 5 MUs + 2 MUs)
5.	$A : (U_2 + U_3)$ [Actual Energy Units (kWh) procured during the quarter in consideration (In million units) from	7 MUs (5 MUs + 2 MUs)

S No.	Particulars	Amount/Units
	power exchanges, state generation stations (including licensee owned & self-generation) and units overdrawn from the grid]	
6.	<b>(X-A) : (4-5)</b>	100 MUs
7.	<b>T<sub>Approved</sub>%</b> [Approved inter-state transmission losses as provided in the Tariff Order (in %)]	5%
8.	<b>c = {(X-A)*T<sub>Approved</sub>/100}</b>	5 MU
9.	<b>X<sub>s</sub> : (U<sub>4</sub>+U<sub>5</sub>)</b> [Actual Sale of power to persons other than the utility consumers (in million units) during the quarter]	20 MUs (10 MUs + 10 MUs)
10.	<b>Y<sub>Approved</sub>%</b> [Approved T&D losses for the year in consideration (in %)]	15%
11.	<b>b = (1-Y<sub>Approved</sub>/100)</b>	0.85
12.	<b>Z</b> [Actual energy units billed for BPL and Agriculture category consumers (in million units)]	2 MUs
13.	<b>[{(X-c)- X<sub>s</sub> }*b]-Z</b>	67.7 MUs
14.	<b>(Numerator/Denominator)*1000</b> Actual per unit Rate of Power Purchase	396 Paisa/unit
15.	<b>R<sub>Approved</sub></b> [Approved per unit cost of power purchase for use in the FPPCA formula as given in the tariff order of the Licensee (Paisa per unit)]	410 Paisa/unit
16.	<b>Per Unit FPPCA (Paisa/unit) = Actual per unit Rate of Power Purchase - Approved per unit Rate of Power Purchase (14-15)</b>	<b>14 Paisa/unit to be refunded to consumers</b>

**Determination of Differential FPPCA to be refunded to the consumers of different consumer categories**

S. No.	Category / Sub-category (assuming there are only 3 categories)	Actual MUs which were billed after actual T&D Losses	Retail Tariff (RT) (₹ Per Unit)	WART - Weighted Average Retail Tariff of all categories (₹ /unit)	K (RT/WART)	FPPCA (Paisa per Unit) to be refunded to consumers
A	Domestic	40.62				
1	50-150 KWh	24.372	3.2	3.69	0.87	12
2	Above 150 KWh	10.155	3.5	3.69	0.95	13
3	0-50 KWh	6.093	1.9	3.69	0.52	07
B	Non-Domestic/Commercial	16.925	4.65	3.69	1.26	18
C	Industrial	10.155	4.5	3.69	1.22	17
	<b>Total</b>	<b>67.7</b>	<b>3.69</b>			

R. K. MALIK, Secy.

[ADVT. III/4/Enty./218-I/12]