



ORDER

OF THE

**WEST BENGAL ELECTRICITY REGULATORY
COMMISSION**

IN CASE NO:

FPPCA – 66 / 13 – 14

**IN RE APPLICATION OF THE WEST BENGAL
STATE ELECTRICITY DISTRIBUTION
COMPANY LIMITED FOR
FUEL & POWER PURCHASE COST
ADJUSTMENT (FPPCA) FOR
THE FINANCIAL YEAR 2012- 2013**

DATE: 04.03.2014



CHAPTER – 1 INTRODUCTION

- 1.1 The West Bengal Electricity Regulatory Commission (hereinafter referred to as the 'Commission') determined the Aggregate Revenue Requirement (In short 'ARR') as well as tariff of the West Bengal State Electricity Distribution Company Limited (in short 'WBSEDCL') for the year 2012 – 2013 by an Order dated 01 December, 2012, in Case No. TP – 53 / 12 – 13. The fuel and power purchase cost as allowed in the tariff order dated 01.12.2012 is subject to adjustments in accordance with the West Bengal Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2011, as amended (hereinafter referred to as the 'Tariff Regulations').
- 1.2 Accordingly, WBSEDCL submitted its application on 07.11.2013 for ascertaining the Fuel and Power Purchase Cost Adjustment (in short 'FPPCA') for the financial year 2012 – 2013 showing the computation as per the formula specified in the Tariff Regulations along with audited annual accounts for 2012 – 2013 and the relevant data as would be required for ascertaining the amount of allowable Fuel and Power Purchase Cost (in short "FPPC") for the financial year 2012 – 2013.
- 1.3 The Fuel and Power Purchase Cost (FPPC) during the referred adjustment period, i.e., financial year 2012 – 2013, is to be admitted in terms of the following formula as specified by the Commission in schedule 7A to the Tariff Regulations.

$$\text{"FPPC (In Rs.)"} = \{FC + (PPC - C_D) + (\pm A)\}$$

Where –

- i) The adjustment period for fuel and power purchase cost will normally be on annual basis, if not otherwise decided by the Commission.



- ii) FPPC: Re-determined Fuel and Power Purchase Cost against application of FPPCA.
- iii) FC: Fuel cost of own generation as per normative parameters fixed by the Commission or on actual basis in absence of any norm and UHV range as may be allowed under regulation 5.8 commensurate with actual level of energy sales to own consumers and / or licensee during the adjustment period in accordance with the following methodology:

t = Norms of Transmission and Distribution loss in % considered for sale of power from licensee to licensee

d = Norms of distribution loss in %

E_O = Admitted Energy for own consumption by licensee,

E_{SL} = Energy sale to other licensee in MU

E_{SC} = Energy sale to consumer in MU

Fuel-Cost = Fuel cost at generation bus of own generating stations = Cost determined on the basis of normative parameters of SHR and oil consumption rate against actual level of energy sent out plus normative auxiliary energy consumption.

FC_{IUC} = Per unit of Fuel Cost at distribution input
= Fuel-Cost ÷ Actual overall energy available at input of the distribution system which includes power purchase from different services.

FC_{Adm_d} = Admitted Fuel Cost for sale to licensee

$$= \frac{E_{SL}}{(1 - t \times 0.01)} \times FC_{IUC}$$



$$\begin{aligned} FC_{Adm_C} &= \text{Admitted Fuel Cost for sale to consumer} \\ &= \frac{E_{SC} + E_O}{(1 - d \times 0.01)} \times FC_{IUC} \end{aligned}$$

$$FC = FC_{Adm_d} + FC_{Adm_C}$$

iv) PPC (Rs.): Total cost incurred including the cost for fuel for power purchase from different sources commensurate with actual level of energy sales during the adjustment period.

v) C_D (Rs.): Cost disallowable by the Commission as per following methods:

Let d = Norms of distribution loss in %
 t = Norms of Transmission and Distribution loss in % considered for sale of power from licensee to licensee

E_g = Actual energy sent out in MU from own generating station

E = Excess amount of auxiliary energy consumption in MU,

E_P = Total energy purchased in MU

E_O = Admitted Energy for own consumption by licensee

E_{SC} = Energy sale to consumer in MU

E_{SL} = Energy sale to other licensee in MU

E_{Adm} = Admitted amount of energy entitled for purchase

$$= \frac{E_{SC} + E_O}{(1 - d \times 0.01)} + \frac{E_{SL}}{(1 - t \times 0.01)} - E - E_g$$

E_E = Excess energy purchased = $E_P - E_{Adm}$

C_D = $E_E \times EP_{Avg}$

When EP_{Avg} = Average cost of power purchase.

vi) A: Adjustment, if any, to be made in the current period to account for any claim due to excess / shortfall in recovery of fuel and power purchase



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cost in the past adjustment period based on directions / orders of the Commission. (+A) shall be considered as the amount to be recovered from consumer and purchaser of electricity under the purview of the Commission when the licensee has already incurred such expenses. (-A) shall be considered as the amount to be refunded to the consumer and purchaser of electricity under the purview of the Commission because such amount of less expenses has been incurred by the licensee against any prior period adjustment.

- vii) Such re-determined fuel and power purchase cost (FPPC) of the licensee will be further adjusted for gain sharing as per Schedule – 9B to the Tariff Regulations for the parameters related to fuel cost to the extent it has impact in the fuel cost.”

As it comes out from the FPPCA formula quoted above, the actual cost incurred by the licensee for purchase of power requires to be reduced by the amount of the part of such cost, considered disallowable by the Commission. The computations of such disallowable cost are required to be done with reference to the amount admissible for the purchase of power computed following the methodologies specified in schedule 7A to the Tariff Regulations.

- 1.4 FPPCA formula provides for adjustment of allowable fuel and power purchase cost for the gain sharing in accordance with Schedule – 9B to the Tariff Regulations. WBSEDCL has got no coal fired thermal power station to operate. Its own generation of electricity is from Hydro Generating stations and in terms of Part – B of the referred schedule, gains accruing to it, if any, due to its actual performance being better than the norms set for any year are to be retained by it without any sharing.
- 1.5 The norm for distribution loss of WBSEDCL for the year 2012 – 2013 was considered to be 17.50% in the tariff order. As it comes out from the data as



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provided by WBSEDCL in its submission, the actual rate of distribution loss experienced by it on the quanta of sales to consumers works out as under:

Sl. No.	Particulars	Energy (MU)
1	Total Energy purchased (net of CTU loss) including energy swap in but excluding UI in	33275.110
2	Energy sent out from own generating stations	1250.298
3	STU Grid loss	1197.514
4	Net UI Energy drawn	156.137
5	Net Energy Available with WBSEDCL from own generating stations and from purchase of power [(1)+(2) -(3)+(4)]	33484.031
6	Energy sold to persons other than own consumer and licensee and energy swap out including transmission loss	2534.662
7	Pumping energy for Purulia Pumped Storage Project (PPSP) including normative transmission loss	1122.172
8	Energy available at distribution input for sale to consumer and licensee [(5)-(6)-(7)]	29827.197
9	Energy sold to licensee at EHV & sale to Sikkim	1833.353
10	Transmission loss on energy sold to licensee & Sikkim	66.495
11	Energy received for wheeling	10.518
12	Energy wheeled	9.739
13	Loss for wheeling	0.779
14	Net Energy Available with WBSEDCL for sale to own consumers [(8) + (11) - {(9)+(10)+(12)+(13)}]	27927.349
15	Energy sold to own consumers and sale to licensee at HV level	20789.943
16	Own consumption	42.000
17	Distribution loss [(14) - {(15)+(16)}]	7095.406
18	Distribution loss in % [(17)/(14)x100]	25.41

- 1.6 As it comes out from the above, the actual distribution loss of WBSEDCL (i.e., 25.41%), as a percentage of power available for distribution exceeded the same considered in the tariff order for the concerned year and as such, no gain accrued to it in this respect to share with the consumers.



CHAPTER – 2 COMPUTATIONS OF THE AMOUNT OF ALLOWABLE FUEL AND POWER PURCHASE COST

2.1 In this part of the order, the Commission takes up the determination of fuel and power purchase cost allowable to WBSEDCL on the quantum of power sold by it to the consumers and other licensees during the financial year 2012 – 2013.

2.2 The values of different factors in the FPPCA formula referred to in the earlier chapter are worked out and admitted as under:

2.2.1 FC (FUEL COST):

WBSEDCL has got no coal fired thermal generating station to operate. It only operates a diesel generating station at Rudranagar in Sagar Island to meet up the local demand. The expenditure incurred for oil for operating that station was Rs. 6.00 lakh as found from the audited accounts and the same is considered for computation of admissible fuel cost as per the formula given in paragraph 1.3. The admissible fuel cost as per the formula works out as under:

Factor Notation	Nomenclature	Unit	Value
t	Norms of Transmission loss considered for sale to licensee	%	3.5
d	Norms of distribution loss for sale to consumers	%	17.50
E _O	Admitted energy for own consumption	MU	42.00
E _{SL}	Energy sale to other licensee	MU	1833.353
E _{SC}	Energy sale to consumer and sale to licensee at HV level	MU	20789.943
Fuel Cost	Fuel cost at generation bus of own generating station	Rs. in Lakh	6.00
	Net energy available at distribution input	MU	29827.197
FC _{IUC}	Per unit Fuel Cost at distribution input	Rs./kWh	0.0000201
FC _{Adm_d}	Admissible Fuel Cost for sale to licensee		
=	$\frac{E_{SL}}{(1 - t \times 0.01)} \times FC_{IUC}$	Rs. in Lakh	0.38
FC _{Adm_C}	Admissible Fuel Cost for sale to consumer and for own consumption		
=	$\frac{E_{SC} + E_O}{(1 - d \times 0.01)} \times FC_{IUC}$	Rs. in Lakh	5.08
FC	FC _{Adm_d} + FC _{Adm_C}	Rs. in Lakh	5.46



2.2.2 PPC (POWER PURCHASE COST):

2.2.2.1 The quanta of power purchased by WBSEDCL from different sources and cost incurred thereon during 2012 – 2013 as per submission of WBSEDCL and audited annual report and accounts 2012 – 2013 have been enumerated in Annexure – 2A. As may be seen therein, the quantum of power purchased (net of CTU grid loss) during the year came to 33275.110 MU. The net cost incurred thereon after adjusting the rebate for power purchase is Rs. 1142946 lakh. Thus the average cost of power purchase comes to 343.48 paise / kWh.

2.2.2.2 It is seen from the statement of technical particulars of audited accounts that WBSEDCL has drawn 549.532 MU as unscheduled interchange (UI) during the year 2012 – 2013 against which the amount payable is Rs. 9037.00 lakh (note no. – 23 to the annual accounts). It is also seen from the statement of technical particulars of the annual accounts that WBSEDCL has also surrendered 393.395 MU during the year 2012 – 2013 under UI against which an amount of Rs. 7574.00 lakh was receivable by them (note no. 21 to the annual accounts). Since there is no net UI receivable, the adjustment of amount in the Annual Performance Review (APR) for the year 2012 – 2013 in accordance with the Tariff Regulations becomes nil.

2.2.2.3 Out of the total purchase (net of CTU grid loss) of 33275.110 MU, WBSEDCL sold energy to persons other than own consumers and licensees to the tune of 1393.091 MU. Besides, 1141.571 MU was swapped out by WBSEDCL during the period 2012 – 2013. The proportionate purchase cost of quantum of sale to persons other than consumers and licensees, comes to Rs. 47849.89 lakh. The proportionate cost of the swap out energy comes to Rs. 39210.68 lakh. The quantum of purchase relating to distribution to own consumers and licensee and cost thereon come as under:



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Particulars	Purchase (MU)	Cost (Rs. in Lakh)
Total Purchase	33275.110	1142946.00
Less: Proportionate purchase cost of energy that is sold to the persons other than its own consumers & licensees.	1393.091	47849.89
Less: Proportionate purchase cost of energy that has been swapped out during the year	1141.571	39210.68
Quantum for effecting distribution to consumers and licensees	30740.448	1055885.43
Average per unit (kwh) cost of power in the distribution system (paise/kWh)		343.48

2.3 C_D: Cost Disallowable:

2.3.1 The actual amount of energy put to use for distribution to the consumers and licensees of WBSEDCL is computed as below:

Sl. No.	Description	Quantity (MU)
1	Total energy purchased (Net of CTU Grid loss)	33275.110
2	STU Grid Loss	1197.514
3	Net U. I. Energy drawn	156.137
4	Net energy available with WBSEDCL from purchase [(1)-(2)+(3)]	32233.733
5	Energy sold to persons other than own consumers and licensees	1393.091
6	Energy Swap Out	1141.571
7	Pumping energy for Purulia Pumped Storage Project (PPSP) including normative transmission loss	1122.172
8	Net purchased energy available with WBSEDCL for distribution to own consumers and licensees [(4) - {(5)+(6)+(7)}]	28576.899

2.3.2 In accordance with methodologies, as explained in the earlier chapter, the amount of excess power purchase cost works out as under:



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Sl. No.	Factor Notation	Nomenclature	Unit	Value
1	E_{SC}	Quanta of energy sold to consumers	MU	20789.943
2	E_O	Admitted energy for own consumption	MU	42.00
3	d	Normative distribution loss	%	17.50
4	-	$\frac{E_{SC} + E_O}{(1 - d \times 0.01)}$	MU	25250.84
5	E_{SL}	Energy sold to other licensees at EHV and sale to Sikkim	MU	1833.353
6	t	Normative T & D loss for E_{SL} (5)	%	3.50
7	-	$\frac{E_{SL}}{(1 - t \times 0.01)}$	MU	1899.848
8	E	Auxiliary consumption in excess of norms	MU	0.00
9	E_g	Energy sent out from own generating station	MU	1250.298
10	E_{Adm}	Purchase of energy admitted [(4) + (7) – (8) – (9)]	MU	25900.390
11	E_P	Total energy purchased for distribution and supply to own consumers and licensees	MU	28576.899
12	E_E	Excess energy purchased [(11) – (10)]	MU	2676.509
13	EP_{Avg}	Average purchase cost	Paise / kwh	343.48
14		Cost of excess power purchase [(12) x (13) / 10]	Rs in Lakh	91932.73

2.3.3 In terms of regulation 2.8.61 of the Tariff Regulations, the disallowance on account of excess power purchase cost due to excess distribution loss over the norms in distribution loss will be limited to an amount equal to summation of Return on Equity (ROE) and net UI receivable amount subject to the following conditions:

- i) Net UI receivable amount = UI receivable amount over the year – UI payable amount over the year;
- ii) Net UI receivable amount ≥ 0 .



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- 2.3.4 UI charge receivable amount during the year 2012 – 2013 was Rs. 7574.00 lakh (as per Note 21 (B) of the Annual Accounts for the year 2012 – 2013) and UI charge payable amount during the year 2012 – 2013 was Rs. 9037.00 lakh (as per Note 23 of the Annual Accounts for 2012 – 2013). Thus, the net UI receivable is less than zero.
- 2.3.5 The ROE for the year 2012 – 2013 as admitted in the tariff order dated 01.12.2012 for the years 2011 – 2012 and 2012 – 2013 in case no. TP-53/11-12 was Rs. 42213.60 lakh.
- 2.3.6 The actual distribution loss of WBSEDCL during the year 2012 – 2013 was 25.41% as against the normative distribution loss of 17.5%. The excess power purchase cost due to excess distribution loss is Rs. 91932.73 lakh. But in terms of regulation 2.8.6 of the Tariff Regulations, the disallowable amount will be limited to Rs. 42213.60 lakh. Thus the Commission considers the cost disallowable (C_D) as Rs. 42213.60 lakh.
- 2.3.7 The admissible ROE will be determined in the Annual Performance Review (APR) for the year 2012 – 2013. In case of any difference between the ROE considered in the tariff order and ROE admitted in APR and consequent upon that difference the changes in cost disallowed (C_D) will, however, be taken care of in APR order for 2012 – 2013.

2.4 A (PRIOR PERIOD ADJUSTMENTS):

- 2.4.1 WBSEDCL claimed an amount of Rs. 60150.00 lakh being the amount of prior period cost adjustment allowed to following agencies as against the amounts shown therein for the period prior to 2012 - 2013 towards power purchase cost.

Sl. No.	Name of the Agency	Particular	Amount (Rs. in lakh)
1	Damodar Valley Corporation		
	i)	Arrear due to fuel surcharge for the period from Oct. 2011 to March 2012	171.00
	ii)	Arrear due to revision of fixed charge for Mejia V for the period from May 2008 to March 2012	350.00



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2	NTPC Limited	Arrear due to rate revision for the prior period	3400.00
3	NHPC Limited	Arrear due to rate revision for the prior period	4341.00
4	Amit Bio Energy Industries Ltd	Arrear due to rate revision for the prior period	169.00
5	Himadri Chemical Ind. Ltd.	Arrear due to rate revision for the prior period	14.00
6	DPL	Arrear due to rate revision for the prior period	865.00
7	DPSCCL	Arrear due to rate revision for the prior period	2.00
	WBPDCCL	Arrear FPPCA & APR orders for 2008-09 to 2010-11	50793.00
		Total	60105.00

The above amounts of arrear payment have duly been provided in the accounts as evident from note no. 25 of annual report and accounts 2012-13. The Commission, thus, admits Rs. 60105.00 lakh on actual basis towards prior period adjustment during the year 2012 - 2013.

2.4.2 In view of above, Rs. 60105.00 lakh is being considered as prior period adjustment only.

2.5 Allowable Fuel and Power Purchase Cost:

2.5.1 Putting the value of factors, as discussed and admitted in the foregoing paragraphs, the amount of allowable fuel and power purchase cost to WBSEDCL for the year 2012 – 2013 works out as under:

Sl. No.	Particulars / Factors	As admitted by the Commission (Rs. in Lakh)
1	FC: Fuel Cost	5.46
2.	PPC: Power Purchase Cost	1055885.43
3.	C _D : Cost Disallowable.	42213.60
4.	A: Prior Period's Adjustment	60105.00
5.	FC+(PPC-C_D)+(±A)	1073782.29



ANNEXURE – 2A ACTUAL POWER PURCHASE FOR 2012 – 2013

Sl. No.	Sources	Quantum	Cost
		(MU)	(Rs. in Lakh)
1	NTPC LIMITED	3763.574	141299.00
2	PTC INDIA LIMITED (CHUKHA, KIRICHHU & TATA (HEP)	1750.105	33053.00
3	NHPC LIMITED (RANGEET & TEESTA V HEP)	626.568	17101.00
4	DVC	1499.527	64659.00
5	DPL	177.864	6167.00
6	WBPDCL	20979.941	712604.00
7	DPSC LIMITED	204.026	10165.00
8	GOVT. OF SIKKIM	0.081	4.00
9	CESC LIMITED	48.506	2212.00
10	WBREDA	1.116	39.00
11	TATA POWER CO. LTD., HALDIA	167.445	3115.00
12	HIMADRI CHEMICALS & IND LTD.	27.494	820.00
13	SHREE RENUKA SUGARS LTD	49.741	1716.00
14	RESHMI CEMENTS LTD	3.344	95.00
15	NEORA HYDRO LTD	6.703	241.00
16	ELECTRO STEEL CASTINGS LTD, HALDIA	63.144	1598.00
17	NIPPON POWER LTD	10.801	389.00
18	ENNORE COKE LTD	4.036	85.00
19	BENGAL ENERGY LTD	124.482	3535.00
20	TPTCL	973.435	36790.00
21	TATA POWER TRADING CO LTD	77.509	2696.00
22	NTPC VIDYUT VYAPAR NIGAM LTD	194.358	9070.00
23	MPPL	1.871	77.00
24	PTC INDIA LTD – SHORT TERM	1296.267	51273.00
25	POWER EXCHANGE INDIA LTD	44.070	1832.00
26	INDIAN ENERGY EXCHANGE LTD	202.506	10540.00
27	SWAP IN POWER	1263.604	38775.00
28	TOTAL (1 TO 27)	33562.118	1149950.00
29	LESS: CTU LOSS	287.008	-
30	GROSS QUANTA & COST OF POWER PURCHASE [(28) – (29)]	33275.110	1149950.00
31	LESS: REBATE FOR TIMELY PAYMENT	-	7004.00
32	NET POWER PURCHASE COST & QUANTA OF ENERGY PURCHASED	33275.110	1142946.00



CHAPTER – 3 ORDER

- 3.1 The analyses in the earlier chapter show that the aggregate amount of fuel and power purchase cost that can be allowed to WBSEDCL for the year 2012 – 2013 comes to Rs. 1073782.29 lakh.
- 3.2 The Commission decides, in terms of regulation 2.8.7.1 of the Tariff Regulations, to consider this amount of Rs. 1073782.29 lakh allowable towards fuel and power purchase cost along with the Annual Performance Review for the year 2012 – 2013 or that for any other ensuing year or through a separate order, as may be decided by the Commission.
- 3.3 WBSEDCL is to take note of this Order.

Sd/-
(SUJIT DASGUPTA)
MEMBER

DATED: 04.03.2014