



**ORDER**

**OF THE**

**WEST BENGAL ELECTRICITY REGULATORY COMMISSION**

**IN CASE NO:**

**FPPCA – 15 / 07 – 08**

**IN RE APPLICATION OF CESC LTD FOR FUEL & POWER PURCHASE  
COST ADJUSTMENT (FPPCA) FOR THE FINANCIAL YEAR 2006-07, AND  
FOR OTHER ADJUSTMENTS IN TERMS OF THE TARIFF ORDER DATED  
08.05.2006 IN CASE NO TP-27 / 06-07**

**DATE: 29.11.2007**



## CHAPTER – 1 INTRODUCTION

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1.1 The West Bengal Electricity Regulatory Commission (referred as the Commission hereinafter), while disposing of the tariff application of CESC Ltd. by an order dated 8<sup>th</sup> May, 2006 in Case No: TP-27 of 2006-07, directed it to come up with the fuel and power purchase cost adjustments (FPPCA) for the year 2006-07 duly supported by the audited data and the copy of the Annual Accounts.

1.2 In terms of above directives, CESC Ltd., (referred as the 'applicant' hereinafter) submitted the application on 10.08.2007 for ascertaining the FPPCA for the year 2006-07. The applicant provided the necessary particulars and data duly audited. A copy of the Annual Report & Accounts for 2006-07 was also submitted by the applicant separately. In the computations submitted by the applicant, an amount of Rs. 46.00 lakh has been shown as refundable to the consumers towards FPPCA for the year 2006-07. It has however, been stated that the computation of this refundable amount is based on WBSEB's tariff chargeable to it as allowed by the Commission for 2006-07 by its order dated 08<sup>th</sup> May, 2006. Any variation in tariff arising out of any FPPCA allowed to WBSEB for the year 2006-07 and / or for any earlier year (s) would result in a corresponding variation in its entitlement for adjustments.

1.3 The applicant has prayed for carrying out the following adjustments with the FPPCA :

- (i) Refund of an amount of Rs. 2115.00 lakh towards over recovery of fixed charges from the consumers on account of the variations in the quantum of actual sale with that considered in the tariff order for the concerned year.
- (ii) Additional benefits of Rs. 4110.00 lakh to be passed on to the consumers towards sharing of the gains derived from the sale of electricity to person other than its consumers.
- (iii) An amount of Rs. 2194.00 lakh as claimed by it towards incentive for additional generation.



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- (iv) Re-imburement of Rs. 10389.95 lakh paid by it to erstwhile WBSEB towards Late Payment Surcharge (LPSC) in terms of a dues settlement plan directed by the state government.

1.4. Only the first two of above four adjustments, prayed for, are in terms of the Commission's Tariff order dated 08.05.2006 for the year 2006-07. Even then the Commission has taken up examination of the merit of the remaining two items in the later part of the instant order.

1.5 The fuel and power purchase cost adjustments (FPPCA) during an adjustment period are to be admitted in terms of the following formula as enunciated and incorporated by the Commission in its Terms and Conditions of Tariff Regulations, 2005.

**FPPCA (p/kWh) =**

$$\left[ \frac{(F_c + PPC) - C_D \pm A}{[(G_{own} + E_{imp}) \times (1 - L)] (-) Q} - \frac{fc + ppc}{(g_{own} + e_{imp}) \times (1 - L)} \right] \times 100$$

Where:

F<sub>c</sub> (Rs.): Fuel cost of own generation as per Normative parameters fixed by Commission and / or on actual basis (in absence of any norm) for actual level of sales during the adjustment period.

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

C<sub>D</sub>: Cost disallowed by the Commission as having been incurred in breach of its economic generation / purchase obligation, or of order / direction of the Commission, if any, or for any other reason



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during the adjustment period and adjusted corresponding to actual level of sales.

$\pm A$  (Rs.): Adjustment, if any, to be made in the current period to account for any excess / shortfall in recovery of fuel and power purchase cost in the past adjustment period based on directions / orders of the Commission.

$G_{own}$ (kWh): Total energy sent out from the generating stations during the adjustment period based on normative auxiliary consumption or actual auxiliary consumption in the absence of any norm corresponding to actual level of sales.

$E_{imp}$  (kWh): Total energy purchased at the sent out bus from different sources based on approved procurement plans during the adjustment period corresponding to actual level of sales.

$L$  (%): Normative T & D loss fixed by the Commission.

$Q$  (kWh): Quantity of temporary supply sold during the adjustment period.

$fc$  (Rs.): Fuel cost of own generation as allowed by the Commission in the tariff order corresponding of relevant adjustment period.

$ppc$ (Rs.): Power purchase cost allowed by the Commission for the relevant adjustment period in the tariff order.

$g_{own}$  (kWh): Sent out own generation as admitted in the tariff order by the Commission corresponding to the adjustment period.

$e_{imp}$ (kWh): Power purchase at sent out bus as admitted by the Commission in the tariff order corresponding to the adjustment period.

- 1.6 The FPPCA formula referred hereinabove has two distinct parts. The first part is intended to arrive at the rate of fuel and power purchase cost that should reasonably be recovered from the consumers for the particular adjustment



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period under consideration. The second part is meant to work out the rate at which fuel and power purchase cost that has been allowed, to be recovered from the consumers through the power tariff fixed by the Commission on prospective basis. The difference between these two rates is to be the rate at which the additional recovery, if any, is to be affected by the licensees from the consumers, or alternatively the excess recovery, if any, is to be refunded to them, as the case may be.



## CHAPTER -2

# FUEL AND POWER PURCHASE COST ADJUSTMENT (FPPCA) FOR THE FINANCIAL YEAR 2006-07

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2.1 The submission of the applicant by CESC Ltd in regard to FPPCA for the year 2006-07 has been taken up for viewing with reference to its audited accounts for the concerned year and in terms of the Commission FPPCA formula as quoted in the earlier chapter. The values of different factors in the FPPCA formula as claimed by the applicant are being examined before ascertaining the value of each such factor that needs to be assigned for the computation of the rate of FPPCA.

### 2.2 Determinant factors in the first part of the formula

#### (a) FC : (Power Purchase Cost)

The total fuel cost as per the fuel consumption norms set by the Commission for the year 2006-07 works out to Rs. 97243.88 lakh. The detailed computations in this regard have been shown in an Annexure at the end of this chapter. The computations are done with reference to the quantum of actual generations at different power stations based on the actual average heat value of coal and oil which are variable factors depending on the grade mix of coal used. However, for the purpose of ascertaining the rate of FPPCA on the quantum of energy sold to the consumers, the cost of fuel relating to the quantum of energy sold to persons other than the consumers needs to be deducted. As has been shown in the Annexure, the total sent-out energy from the power station at normative rate of auxiliary consumption comes to 7002.120 MU. The quantum of energy exported (i.e., sold to persons other than own consumers) as per the auditors' certificate was 458.32 MU. Considering an additional requirement @ 2% upto the export bus, as per the norm set by the Commission, vide paragraph 5.11 of its Tariff Order dated 8<sup>th</sup> May, 2006, for the concerned year, the quantum related to export comes to 467.67 MU. The proportionate allowable fuel cost on this quantum comes to Rs. 6494.90 lakh. Fuel cost allowable on the quantum of sent-out



energy sold to the consumers, thus, comes to Rs. (97243.88 – 6494.90) lakh or Rs. 90748.98 lakh.

**(b) PPC : POWER PURCHASE COST**

The power purchase requirement of the applicant during 2006-07 was considered 1274.00 MU, vide the statement of Energy Balance at paragraph 5.11 of the Tariff order dated 8<sup>th</sup> May, 2006 for the concerned year. The total quantum of actual purchase and the cost incurred thereon, as per the auditors' certificate came as under:-

Sources	Quantum MU	Cost Rs.	Average rate Paise / kWh
WBSEB	839.12	21487.74	256.07
P.T.C	24.18	1269.18	524.89
R.E.T.L	12.20	483.33	396.17
T.P.T.C.L	8.03	421.65	525.09
NVVNL	39.27	1896.07	482.83
DVC	37.69	1230.62	326.51
<b>Total</b>	<b>960.49</b>	<b>26788.59</b>	<b>278.90</b>

**(c) C<sub>D</sub> : COST DISALLOWABLE**

The approved FPPCA formula provides for disallowances of the fuel and power purchase cost incurred by the licensee in breach of the economic generation / purchase obligation etc. The incidence of such cost disallowances arises generally on account of experiencing rate of auxiliary consumption of energy at the power stations and that of the distribution loss in excess of such rates considered and allowed in the tariff order. The overall rate of auxiliary



consumption in the power stations was allowed 9.09% and the same for the distribution loss was considered 15.75% for the year 2006-07 (vide the Statement of Energy Balance as shown in paragraph 5.11 of the Commission's Tariff Order dated 08.05.2006). It is found from the Statement of Energy Balance provided in the audited annual accounts, the actual overall rate of auxiliary consumption and that of the distribution loss were within the aforesaid maximum limits set by the Commission. On the generation front also, the applicant exceeded the target of 7185.000 MU by 517.466 MU. The Commission, therefore, does not disallow any part of the allowable fuel and power purchase cost and the value of the factor  $C_D$  is therefore to be considered as zero.

**(d)  $\pm$  A: ADJUSTMENT RELATING TO EARLIER PERIOD**

Factor A in the referred FPPCA formula signifies the adjustment, if any, to be made in the current period to account for any excess/shortfall in the recovery of fuel and power purchase cost for the past period. The applicant has not asked for any such adjustment and no such adjustment is also found necessary. This factor therefore is nil.

**(e)  $G_{own}$  : SENT OUT ENERGY FROM OWN GENERATION**

Factor  $G_{own}$  has been defined in the approved FPPCA formula as the total energy sent out from the licensee's generating stations during the adjustment periods based on normative or actual auxiliary consumption in the absence of any norm. The quantum of auxiliary consumption as per the norms considered by the Commission in the tariff order for the concerned year comes to 700.346 MU. The



value of factor  $G_{own}$  in the denominator of the first part of the formula is, thus, taken as under:

	MU
Actual Generation	7702.466
Less Auxiliary consumption	700.346
Total	<b><u>7002.12</u></b>
Less Ex-bus generation related to export (Vide Annexure at page 12)	467.670
Total	<b>6534.450</b>

**(f)  $E_{imp}$  : ENERGY PURCHASED**

As enumerated earlier under sub-paragraph 2.2 (b), the actual quantum of purchase during 2006-07 was 960.490 MU.

**(g) (I-L): DISTRIBUTION LOSS FACTOR**

The applicant was allowed 15.75% distribution loss in the tariff order of the concerned year and accordingly, the permitted distribution loss factor comes to 0.8425.

**(h) Q: QUANTUM OF TEMPORARY SUPPLY**

The temporary supply made by the applicant during the year has not been separately quantified. The Commissions, therefore, considers it as zero since that leads to favourable impact on the consumers by lowering the FPPCA to that extent.



### 2.3 Determination of factors in the second part of the formula

The second part of the formula is intended to work out the rate at which the fuel and power purchase cost that was allowed to be recovered from the consumers through the power tariff fixed by the Commission. The values of different factors were considered in the concerned tariff order dated 08-05-2006 as under:-

Factors / Parameters	Value Considered		Reference to the orders of the Commission
$f_c$ : Fuel Cost	Rs lakh 88188.00		Statement of Revenue Requirement at paragraph 8.1 read with paragraph 7.26.1 of the order dated 08-05-2006 in Case No : TP-27/06-07
Less cost attributable to export as 287.21 MU	Rs lakh 3879.00		
	Total:	Rs lakh 84309.00	
ppc : Power Purchase Cost		Rs lakh 33465.00	Statement of Revenue Requirement at paragraph 8.1 read with paragraph 6.2.3 of the order dated 08-05-06 in Case No : TP-27/06-07
$g_{own}$ : Projected sent out energy from power station	6532.00 MU		Statement of Energy Balance at paragraph 5.11 of the above referred order
Less: Quantum related to export	293.06 MU	6238.94MU	
$e_{imp}$ : projected quantum of purchase		1274.00 MU	-do-



## 2.4 Computation of FPPCA

Putting the value admitted and assigned to different factors to the FPPCA formula, the rate of FPPCA works out as under:-

$$\begin{aligned}
 \text{FPPCA (p/kWh)} &= \left[ \frac{\text{Rs. (90748.98+26788.59—0±0) lakh}}{\{(6534.450+960.490—0±0) \times 0.8425—0\} \text{MU}} - \frac{\text{Rs. (84309.00+33465.00) lakh}}{\{(6238.940+1274.000) \times 0.8425\} \text{MU}} \right] \times 100 \\
 &= \left( \frac{\text{Rs. 117537.57 lakh}}{6314.487 \text{ MU}} - \frac{\text{Rs. 117774.00 lakh}}{6329.652 \text{ MU}} \right) \times 100 \\
 &= (186.14 — 186.07) \text{ paise / kWh or (+) 0.07}
 \end{aligned}$$

## 2.5 Amount recoverable from the consumers on account of FPPCA

It thus comes out from the computations shown above, that the applicant is required to recover @ 0.07 paise per kWh from its consumers. The total number of units sold by the applicant to its consumers during 2006-07 was 6424.29 MU as per the audit certificate. The total recoverable amount, thus works out to a sum of Rs 44.97 lakh.



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**Annexure (see pages 6 & 9)**

**COMPUTATION OF FUEL COST AT DIFFERENT POWER STATIONS OF CESC LTD ON NOMATIVE BASIS**

Sl No.	Particulars	Unit	Stations				Total
			Budge- Budge	Titagarh	Southern	New Cossipore	
1.	Generation (Actual)	MU	4370.035	1837.215	1010.116	485.100	7702.466
2.	Rate of Auxiliary Consumption	%	9.00	9.08	9.19	9.77	
3.	Auxiliary Consumption	MU	393.303	166.819	92.830	47.394	700.346
4.	Sent out energy (1 – 3)	MU	3976.732	1670.396	917.286	437.706	7002.120
5.	Station Heat Rate (Normative)	Kcal/kWh	2650.00	2952.00	2923.00	5125.00	
6.	Total Heat Required (1 × 5)	M.Kcal	11580592.75	5423458.68	2952569.07	2486137.50	22442758
7.	Sp. Oil consumption (Normative)	MI/kWh	2.0	2.5	2.5	0.0	
8.	Oil consumption (1 × 7)	KL	8740.07	4593.04	2525.29	0.00.	15858.40
9.	Heat Value of Oils (as per submission)	Kcal/lit	9543	9420	9554	0.00	
10.	Heat from Oil (8× 9)/1000	M.Kcal	83406.49	43266.41	24126.62	0.00	150799.52
11.	Heat from Coal (6 -10)	M.Kcal	11497186.26	5380192.27	2928442.45	2486137.50	22291958.48
12.	UHV of coal (Normative based on mid value of declared range of the actual grade-wise consumption)	K.cal/kg	3730	4671	4345	6016	
13.	Coal Consumption (11/12) × 1000	MT	3082355.57	1151828.79	673979.85	413254.24	5321418.45
14.	Coal required at 1.5% Normal transit loss	MT	3129294.99	1169369.33	684243.50	419547.45	5402455.27
15.	Average price of Oil (Audited)	Rs. / KL	31994.00	27284.90	30766.50	0.00	
16.	Average price of coal (Audited)	Rs. /MT	1497.40	1929.00	1860.70	2448.00	
17.	Cost of oil (8× 15)/100000	Rs. lakh	2796.30	1253.21	776.94	0.00	4826.45
18.	Cost of coal (14×16)/100000	Rs. lakh	46858.06	22557.13	12731.72	10270.52	92417.43
19.	Total Fuel Cost (17+18)	Rs. lakh	49654.36	23810.34	13508.66	1027052	97243.88
20.	Ex-bus Generation related to export (considering 2% addl. upto export bus as per tariff Order)	MU					467.67
21.	Fuel cost on quantity related to export (97243.90 ×467.67/7002.120)	Rs. lakh					6494.90
22.	Fuel cost allowable for distribution function (19-21)	Rs. lakh					90748.98



## CHAPTER – 3 ADJUSTMENTS PRAYED FOR TO THE AMOUNTS OF FPPCA

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- 3.1 As mentioned in paragraph 1.3 of this order, the applicant proposed for carrying out the adjustments relating to the under or over recovery of fixed charges on account of the variations in the quantum of the actual sales with the quantum of sales considered in the tariff order for the concerned year and to pass on to its own consumers a part of the additional amount of gains it derived from the sale of electricity during the off-peak period to the persons other than its own consumers in accordance with the stipulation made in paragraph 7.26.2 of Commission's tariff order dated 08-05-2006 in Case No. TP-27/06-07.
- 3.2 In addition to the two adjustments as stated in the earlier paragraph, the applicant asked for allowing performance incentives to it for achieving a high level of generation during the concerned year and for adjustment of the same with the amount of FPPCA. It also asked for re-imburement of an amount of Rs 10389.95 lakh paid by it to erstwhile WBSEB towards late payment surcharge (LPSC) in terms of a dues settlement plan and to get the amount adjusted along with the amount of FPPCA. All the referred adjustments asked for are being viewed hereafter one by one in the subsequent paragraphs.
- 3.3 Adjustments of the over recovery of fixed charges**

It was stipulated in the concluding part of the paragraph 5.2.2 of the Commission's tariff order dated 08-05-2006 for the year 2006-07 that any under or over recovery of the permitted fixed charges on account of variation in the quantum of actual sales with that considered for fixing the tariff would be adjusted suitably in due course on ascertaining the actual sales figure. As we get from the submission, the quantum of actual sales during 2006-07 was 6424.29 MU as against 6311.65 MU considered in the tariff order and hence, it is a case



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of over recovery of the amount of fixed charges. The amount refundable to the consumers towards such over recovery works out as under:-

Sl. No.	Item	Unit	
1.	Net Revenue Requirement for the year as allowed by the Commission (reference page 109 of order dated 08-05-2006)	Rs Lakh	236310.00
2.	Fuel Cost of own generation (reference page 108 read with paragraph 7.26.1 of the order dated 08-05-2006)	"	84309.00
3.	Cost of power purchased (reference page 108 of the order dated 08-05-2006)	"	33465.00
4.	Total variable charges included in the amount of Net Revenue allowed (3+4)	"	117774.00
5.	Net fixed cost allowed (1-4)	"	118536.00
6.	Sales considered in the Tariff Order (reference page 109 of order dated 08-05-2006)	MU	6311.65
7.	Actual sales (as per submission along w2ith audited accounts)	MU	6424.29
8.	Vairation in Sales (7-6)	MU	112.64 Excess
9.	Over recovery of fixed charges $\frac{118536.00 \times 112.64}{6311.65}$	RS lakh	2115.44

The Commission decides to adjust the amount of Rs 2115.44 lakh which represents the excess recovery of fixed charges by way of refund to the consumers.

**3.4 Adjustment relating to additional amount of gains derived from sale of electricity to persons other than the consumers**

In its tariff order dated 08-05-2006 for the concerned year, the Commission considered to pass on to the consumers 60% of the gains to be derived by the applicant by sales of electricity to persons other than to consumers. The quantum



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of such sale and the average selling price were considered in the referred tariff order 287.21 MU and 225.00 paise / kWh respectively. As the quantum of such sale as well as the average price were considered to be highly influenced by the fluctuating demand and supply conditions in the market, it was stipulated in the tariff order that the adjustments of the amount of gains to be passed on to the consumers would be taken up on actual basis when all the relevant audited data would be made available to the Commission. Now we get from the submission of the licensee, duly certified by the auditors, the total amount of revenue earning from sale of 458.32 MU of electricity to persons other than the licensee's own consumers during the year 2006-07. The same is Rs 15800.79 lakh. The average selling price came to 344.75 lakh paise/Kwh. The additional amount that now requires to be passed on to the consumers by way of adjustment works out as under:-

Sl. No.		RS in lakh
1.	Revenue earnings by way of sale to persons other than the consumers (Net of wheeling charges paid of effect such sale)	15800.79
2.	Cost of sale (Fuel cost vide paragraph 2 (a) of this order)	6494.90
3.	Gain derived from such sale (1-2)	9305.89
4.	Amount to be passed on to the consumers (60% of Rs 9305.89 lakh)	5583.53
5.	Amount already passed on to the consumers through tariff order (vide paragraph 7.25.4 of the order dated 08-05-2006)	1550.00
6.	Balance amount now to be adjusted to the consumers accounts (4-5)	4033.53

### **3.5. Performance incentives**

The applicant asked for allowing performance incentives to it and for adjusting the same with the amount of FPPCA. The applicant submitted that it achieved a high level of generation during 2006-07 and thus could partially avoid import of costlier power. It proposed to allow performance incentive @ 25 paise per unit on the



quantum of sent out power beyond 75% PLF achieved at its Budge-Budge, Southern and Titagarh power stations excluding the quantum of export. The amount of incentive worked out by the applicant on the stated principle was Rs 2194.00 lakh. The Commission, after giving careful consideration to that claim of the licensee, finds that it will not be appropriate to link the question of allowing performance incentive and carrying out adjustment with the amount of FPPCA in the absence of any such stipulation in the tariff orders for the concerned year and also in the absence of declared norms for incentives. Hence the adjustment asked for on this account is not allowed.

### **3.6 Re-imburement of Late Payment Surcharge**

The applicant has also asked for re-imburement of an amount Rs 10389.95 lakh paid by it to erstwhile WBSEB as Late Payment Surcharge (LPSC) in terms of a dues settlement plan directed by the State Government and for adjusting the same with the amount of FPPCA. It appears from the submission of the applicant and the letter it obtained from the then WBSEB, that the dues were pertaining to the period upto 31<sup>st</sup> December, 2000, and those were cleared in installments over a period upto 31<sup>st</sup> March, 2006. The circumstances leading to default in making scheduled payments to the then WBSEB for purchase of power giving rise to the LPSC is not quite clear to the Commission. Besides, a late payment surcharge does not constitute an element of FPPCA. The Commission is not convinced of the admissibility of the recovery of the amount of LPSC from the consumers. The applicant may, however, if it so wishes, take up the matter in a separate petition bringing out the facts and figures and presenting its arguments so as to enable the Commission to decide upon the issue.



## CHAPTER – 4 SUMMING UP THE FINDINGS AND ORDERS

- 4.1 Summing up the findings, as given in the preceding chapters, the net amount refundable to the consumers of CESC Ltd on account of FPPCA and other adjustments in accordance with the stipulations made in the tariff order dated 8<sup>th</sup> May, 2006 in Case NO.: TP-27/06-07, is found to be as under:

Sl. No.	On account of	Amounts Realisable from / Refundable to the consumers (Rs in lakh)	
1.	Fuel & Power purchase Cost Adjustment (FPPCA) for the financial year 2006-07	Realisable	44.97
2.	Over recovery of fixed charges on account of variation in the quantum of actual sale to consumers	Refundable	2115.44
3.	Additional amount of gains derived from the sale of electricity to persons other than the consumers to its own consumers	Refundable	4033.53
	<b>Total</b>	<b>Net Refundable</b>	<b>6104.00</b>

- 4.2 It follows that the applicant is required to give credit amounting to a total sum of Rs 6104.00 lakh to its consumers accounts. As will be seen, almost the entire amount resulted from the fact of better performance of the applicant on the front of sales to both its own consumers and to others who are not its own consumers. The Commission decides to carry forward the entire creditable amount for adjustments in favour of the consumers to the aggregate revenue requirement of the applicant for the year 2008-09. The applicant is, therefore, directed to take note of this order of the Commission while submitting the Tariff Revision application for the financial year 2008-09 to the Commission.

**Sd/-**  
(R.P. Samaddar)  
Member

**Sd/-**  
(Prititosh Ray)  
Member

**Sd/-**  
(S.N. Ghosh)  
Chairperson