

ORISSA ELECTRICITY REGULATORY COMMISSION
BIDYUT NIYAMAK BHAWAN
UNIT-VIII, BHUBANESWAR – 751012

Present : Shri B.K. Das, Chairperson
Shri K. C. Badu, Member

Case Nos. 23, 24, 25, & 26 of 2009

In the matter of: Approval of Open Access Charges (Transmission/wheeling Charges, Surcharge and Additional Surcharge for the FY 2009-10 applicable to open access customers for use of Intra-state transmission/distribution system) in accordance with Section 39, 40 and 42 of the Electricity Act, 2003 read with the provisions of Chapter II (Charges for Open Access) of OERC (Determination of Open Access Charges) Regulations, 2006.

AND

In the matter of: **Case No.23/2009**
M/s. Western Electricity Supply Company of Orissa Ltd.
(WESCO), Burla, Sambalpur . . . **Petitioner**

AND

In the matter of: **Case No.24/2009**
M/s. Southern Electricity Supply Company of Orissa Ltd.
(SOUTHCO), Courtpetta, Berhampur . . . **Petitioner**

AND

In the matter of: **Case No.25/2009**
M/s. Central Electricity Supply Utility of Orissa (CESU), 2nd
Floor, IDCO Towers, Janpath, BBSR . . . **Petitioner**
Versus
1. Shri R P Mahapatra, Retd. Chief Engineer and Member, OSEB, Plot No.-
775 (Pt.), Lane-3, Jayadev Vihar, Bhubaneswar . . . **Objector**

AND

In the matter of: **Case No.26/2009**
M/s. North Eastern Electricity Supply Company of Orissa Ltd. (NESCO),
Januganj, Balasore . . . **Petitioner**
Versus
1. Shri R P Mahapatra, Retd. Chief Engineer and Member, OSEB, Plot No.-
775 (Pt.), Lane-3, Jayadev Vihar, Bhubaneswar . . . **Objector**

For the Petitioners: Mr P K Pradhan, CEO, MR. KC Nanda, AGM and Mr. G C Mohanty, DGM (Com.), WESCO in Case No. 23/09, Mr A K Bohra, CEO and Mr. S K Choudhury, GM (Com), SOUTHCO in Case No. 24/09, Mr. S K Dasgupta, CEO and Mr K V Durgaprasad, CCO, CESU in Case No. 25/09, Mr. S C Singh, GM, and Mr, S D bhanja, AGM, NESCO in Case No. 26/09.

Objector: Mr R P Mahapatra, Retd. Chief Engineer and Member, OSEB.
(in case No.25 & 26 of 2009)

Date of Hearing : 21.03.2009

Date of Order : 03.07.2009

ORDER

1. The Distribution Licensees WESCO, SOUTHCO, CESU and NESCO had filed Applications before this Commission for Determination of Open Access Charges including Transmission /Wheeling Charge, Surcharge and Additional Surcharge for the FY 2009-10 applicable to open access customers for use of intra-state transmission/distribution systems following Sections 39, 40 & 42 of the Electricity Act, 2003, read with OERC (Terms and Conditions for Determination of Open Access Charges) Regulations, 2006, which were registered as Case No. 23/2009, 24/2009, 25/2009 & 26/2009 respectively.
2. All the distribution licensees were directed by the Commission to publish the matter in the English and Oriya Newspapers by 03.03.2009 inviting suggestions/objections if any from various stakeholders to be filed before the Commission on or before 15.03.2009. The Commission further directed the distribution licensees to file a consolidated rejoinder to all the suggestions / objections filed by the interested persons before the Commission on or before 19.03.2009.
3. In response to the Public Notice issued by four nos. of DISCOMs in English/ Oriya Newspapers, only Sri R.P.Mahapatra, Retd. Chief Engineer and Member, OSEB, filed an objection petition on 16.03.2009 objecting to the computation of Wheeling charge and Cross-Subsidy Surcharge of CESU & NESCO against case no 25/2009 & 26/2009 respectively followed by submission of subsequent rejoinder on 23.03.2009 against Case No. 26/2009 of NESCO.
4. The summary of submissions of the applicants are given as under:

(i) Central Electricity Supply Utility of Orissa (CESU)

The representatives of CESU submitted their views on computation of wheeling charges, Cross-Subsidy Surcharge and Additional Surcharge as follows.

(a) **Wheeling Charges:**

CESU submitted that wheeling charges for Open Access customers had been calculated at 85.13 P/Unit for FY 2009-10 basing on the proposed Distribution Cost of Rs.40692.27 lakhs and energy of 4780.27 MU to be distributed in HT during FY 2009-10.

(b) **Cross Subsidy Surcharge:**

CESU had estimated the Cross Subsidy Surcharge in respect of HT and EHT category consumers for FY 2009-10 as mentioned hereunder:

- Distribution loss of 8% as approved for the FY 08-09 is considered for calculation of wheeling charge for realistic assessment of loss of revenue to the utility.
- The transmission loss is generally appropriated while fixing the BST rate, so this loss is not loaded while computing the surcharge.
- The rate per unit charged to a HT /EHT consumer varies with the percentage of load factor at which the consumer avails supply. The Commission while approving Open Access charges for the FY 2008-09 assumed minimum load factor of 20% & up to maximum of 100% for deriving sales rates to different HT consumers. The Consumers availing less than 20% load factor are liable to pay surcharge at minimum of 20% Load Factor.
- The Surcharge has been calculated by CESU basing on the formula prescribed in the National Tariff Policy
- CESU calculated the rate of sale and surcharge per unit for HT and EHT consumers basing on the above principle as given in the table below.

Table-1

Load Factor (%)	Sale rate for HT in P/U	Surcharge for HT in P/U	Sale rate for EHT in P/U	Surcharge for EHT in P/U
20	452	235	442	318
30	401	184	391	267
40	376	159	366	242
50	361	143	351	226
60	338	121	326	202
70	321	104	308	184
80	309	91	295	171
90	299	81	285	160
100	291	73	276	152

- For irrigation and Agro Industrial category open access surcharge is not envisaged since the RST rates applicable are highly subsidized and Open Access will not be commercially beneficial.
- Open Access for Emergency Power to CPP is not envisaged as emergency requirements for HT & EHT consumers will be for very short period and can be met by way of temporary supply as per OERC Distribution (Conditions of Supply) Code 2004.
- CESU has proposed for separate sale and surcharge rate for Bulk Domestic & Specified Public Purpose category of consumers.
- The surcharge as proposed above for FY 09-10 may be revised if the Commission considers & allows revision of following rates for the ensuing year;
 - Transmission Charge.
 - Retail Supply Tariff (for energy as well as demand charge)
 - B.S.P
 - Standard rate of Distribution loss.

(c) Additional Surcharge:

At present no consumer is availing supply in open access from CESU's network. On receipt of open access application from any intending consumer, CESU will submit to the Commission within 30 (thirty) days of receipt of application on account of additional fixed cost to be incurred towards its obligation to allow open access & for determination of additional surcharge as per CI-3 of OERC (Determination of open access charges) Regulation-2006.

(d) Scheduling & System operation charges

CESU proposes that a sum of Rs.1000/ day or part thereof may be allowed to be paid by all open access customers towards scheduling and operation charges

(ii) North Eastern Electricity Supply Company of Orissa Ltd. (NESCO), Western Electricity Supply Company of Orissa Ltd. (WESCO), Southern Electricity Supply Company of Orissa Ltd. (SOUTHCO)

The representatives of NESCO, WESCO & SOUTHCO submitted their views on computation of Transmission/wheeling charges, Cross-Subsidy Surcharge and Additional Surcharge as follows:

(a) **Transmission/Wheeling Charges:**

The Regulation provides that Open access customers connected to the intra-state transmission/distribution systems shall pay the transmission and wheeling charges as applicable to the appropriate licensees, as the Commission may determine from time to time.

Wheeling charges proposed by NESCO, WESCO & SOUTHCO for HT & EHT consumers are given in the Table below.

Table-2

	EHT	HT
NESCO	Not Applicable	23
WESCO	-do-	28
SOUTHCO	-do-	111

(b) **Cross Subsidy Surcharge:**

NESCO, WESCO & SOUTHCO have estimated the Cross Subsidy Surcharge in respect of HT and EHT category consumers for FY 2009-10 as mentioned hereunder:

Table-3

	NESCO		WESCO		SOUTHCO	
Description	EHT	HT	EHT	HT	EHT	HT
Specified Public purpose		324		51		150
General Purpose (>110kVA)		168		62		164
Public Water Works		341		71		150
Large Industry	180	119	156	48	230	171
Power Intensive Industry	132	64	177	34		74
Mini steel Plant			204	34		
Railway Traction	210		201	79	307	
Heavy Industries			171			
Emergency Supply to CPP	232					
Medium Industry						167

(c) **Additional Surcharge:**

The representatives of NESCO, WESCO & SOUTHCO submitted that the Commission may determine the Additional Surcharge as and when any consumer applies for Open Access on case-to-case basis considering the submission of the licensee.

WESCO, NESCO & SOUTHCO have calculated the O/A Charges as a ratio of cost of distribution at HT and the units estimated to flow in HT system. The

cost of distribution as calculated by them includes expenses on O&M, depreciation, interest, bad debt, contingency and ROE etc.

For the purpose of determination of Cross-Subsidy Surcharge they have worked out the difference between the tariff applicable to relevant category of consumer and the cost of distribution to the said category factoring in the loss of 8% in HT distribution system.

5. Objectors' view:

Mr R P Mahapatra the sole objector submitted that the Open Access Charges for the consumers were to be determined on the following principles:

- (i) Existing consumers seeking Open Access from another DISCOMs.
 - (a) The wheeling charges calculated by the Distribution Companies for supply of power at 33 KV shall take into account the actual location of the consumers. No wheeling charges should be payable by any consumer who is located next to an EHT Substation or is supplied power from an EHT substation through a dedicated/exclusive feeder constructed and maintained by it.
 - (b) Cross subsidy should be determined as per Clause-4(2)(iv) of the OERC (Determination of Open Access Charges) Regulations, 2006. Cost of supply should be determined on the basis of Clause-4(2)(iii)(b) and (c) of the said Regulations. The surcharge Formula prescribed in the National tariff Policy shall also be applicable.
 - (c) The bulk supply price for DISCOMs, is determined on an average basis and is further adjusted to take in to account the load mix. The avoided cost should be determined on the basis of the normative marginal cost. This should be in accordance with Para -8.5 of the National Tariff Policy and should represent the average cost of power purchase of top 5% at the maximum excluding liquid fuel based generation and renewable power.
 - (d) That in order to encourage open access and bringing in competition and efficiency the present stipulation of five years of validity of the Agreement with DISCOMs should be deleted for consumers seeking open access.
- (ii) New Consumers in a DISCOM opting for Open Access from another DISCOM.
 - (a) No wheeling charges should be applicable if the cost of extension of the HT line is borne by the consumer.
 - (b) All other conditions as in Para -(i) above should be applicable.
- (iii) Consumer seeking open access from a Generator/CPP.

- (a) The SLDC scheduling and system operation charges may be fixed @Rs.1,000.00 per day.
 - (b) The reactive energy charges will be applicable only when the reactive energy at the point of drawal exceeds the reactive energy injected in to the system by the Generator/CPP. These charges should be as provided in the Orissa Grid Code namely 5 paise per KVARh. This should however be subject to the condition that the bulk supplier is required to make payment for drawal of additional KVARH from other sources and required to make payment for the same.
 - (c) In case the entire quantity of energy required by a consumer is drawn from a single source, the meter rent as approved by the Commission should apply. In many instances the consumer is required to pay the cost of the meter, and in such a case no meter rent should be charged.
 - (d) However, if power supply is required by a consumer from more than one source to meet his requirements, special metering arrangement will have to be done in which case special metering charges should be levied, but subject to the condition that the cost of the meter is borne by the Transmission / Distribution Licensee.
 - (e) In case power through open access is availed by a consumer during periods of statutory power cut or restrictions due to major breakdown in the transmission system, no surcharge should be payable.
- (iv) The Commission is to determine the normative principles to be applied for determination of open access charges. Further, DISCOMs may be asked to furnish their definite proposals based on the Tariff Orders of the Commission for the year 2009-10 relating to BSP, Transmission Charges and RST.
- (v) The cross subsidy surcharge and other open access charges, so determined may be given effect to from 01.05.2009. In the subsequent years the proposal of the DISCOMs for open access charges may be included in their Application for determination of ARR and heard during the tariff hearing.
6. Further, Mr R P Mohapatra in his rejoinder on dtd. 23.03.2009 stated that
- (a) DISCOMs who are allowed unusually low BSP due to load mix, should not supply power under open access to EHT & HT consumers of another DISCOMs of the State.
 - (b) the Commission may kindly specify the formula for determination of the BSP for the different DISCOMs and also determine the principles for computing the open access charges to bring in efficiency through competition.

- (c) there should be a reduction in the cross subsidy surcharge for the EHT and HT consumers as per the Statute.
7. In compliance with the objections raised by Mr R P Mahapatra, CESU has submitted that
- (a) Any 33/11KV network emanating from the EHT Substation whether dedicatedly feeding power to a particular consumer or exclusively constructed by a consumer becomes an integral part of the distribution licensee system network. So any consumer availing power through Open Access irrespective of its location is liable to pay wheeling charges for drawing power in Open Access arrangement.
 - (b) CESU purchases bulk power from a single source i.e. GRIDCO which is a bulk trading license holder for Orissa. The principle of weighted marginal cost of power purchase (Fixed + variable costs) from marginal sources can only be considered when a DISCOM sources power from multiple sources.
 - (c) The fixed cost incurred in order to supply power to the consumer is spread through the initial period of supply. The distribution utility should not suffer on account of non-drawl by the consumer for any reasons. Hence the stipulation of 5 years agreement for three phase consumers may not be deleted for consumers seeking open access.
 - (d) Any open access customer is liable to pay wheeling charges whenever power is sourced from another supplier through the network of the incumbent licensee. When such a consumer bears the cost of additional network to avail power in open access, relaxation of additional surcharge on wheeling charges can be considered.
 - (e) For net drawal of reactive energy by the open access customer, reactive energy charges as allowed by the Commission is to be payable whether the bulk supplier makes payment for the same or not.
 - (f) The statutory power cuts or restrictions due to major breakdowns in the transmission system are applicable to all consumers who draw power from the system. An open access customer is linked to the system and so from operational point of view insulating such a customer from demand restriction will be difficult. So for any drawal during demand restriction surcharge is payable.
8. The Commission has carefully examined all the responses received from the objector on the methodology for estimating the Cross-subsidy Surcharge and the Additional Surcharge. As the subject matter of all the above cases are similar in nature, the Commission heard the views of all the applicants, the respondent M/s. OPTCL and the objector Sri R. P. Mahapatra analogously and passed the following common order.

9. Commission's observations:

The Open Access Charges (Transmission/wheeling Charges, Surcharge and Additional Surcharge applicable to open access customers for use of Intra-state transmission/ distribution system) under the provisions of the Act were first fixed by the Commission for 2008-09 in its order dated 29.03.2008 in Case No. 66, 67, 68 & 69 of 2006. The detailed procedures and methodologies for computation of surcharge for different consumer categories have been elaborately described in the said order.

10. The Commission has approved the Annual revenue requirement and Transmission charges of OPTCL for the FY 2009-10 vide its order dtd 20.03.2009 and also approved the ARR of Distribution licensees on dtd. 20.03.2009 for the financial year 2009-10. The Cross-subsidy Surcharge and Additional Surcharge to be charged to open access consumers now needs to be re-determined, basing on the new tariffs and costs approved by the Commission in the said order.
11. Surcharge is to be levied on open access customers under Section 42 (2) of the Electricity Act, 2003. While determining the surcharge, the Commission has to keep in view the loss of cross subsidy from such consumers who opt to take supply from a person other than the incumbent distribution licensee. The distribution company on the other hand is spending money towards the cost of power purchase, charges for transmission, losses in transmission of the OPTCL, wheeling cost of this power in its own distribution system in addition to covering the expenses towards the cost of energy lost in distribution. The distribution utility is entitled to a return on equity on its own investment. Thus, the difference between the revenue realized from a consumer less all the aforesaid charges is the margin available to the distribution utility for supply to an HT consumer. This margin goes towards cross-subsidizing supplies to certain classes of consumers.
12. On the other hand there are some consumers who may be getting electricity from the distribution utility and paying a charge which may be less than total expenses incurred by the utility for such supply. As explained in para 11 above, the margin available from sale to an HT consumer is the cross subsidy surcharge that is available for the consumers below the cost of supply. Hence, an attempt is always made to reach a revenue neutral position such that the margin available from subsidizing consumers is adequate to meet the gap due to the subsidized consumers. The objective of the Electricity Act, 2003 is to reduce the cross subsidy in the tariff structure so that the consumers move towards the concept of meeting the full cost of supply with gradual reduction of the cross subsidy in a phased manner.
13. In this connection, the formula for computation of surcharge prescribed in the tariff policy in para 8.5.1 is quoted as under:

Accordingly, when open access is allowed the surcharge for the purpose of sections 38, 39, 40 and sub-section 2 of section 42 would be computed as the difference between (i) the tariff applicable to the relevant category of consumers and (ii) the cost of the distribution

licensee to supply electricity to the consumers of the applicable class. In case of a consumer opting for open access, the distribution licensee could be in a position to discontinue purchase of power at the margin in the merit order. Accordingly, the cost of supply to the consumer for this purpose may be computed as the aggregate of (a) the weighted average of power purchase costs (inclusive of fixed and variable charges) of top 5% power at the margin, excluding liquid fuel based generation, in the merit order approved by the SERC adjusted for average loss compensation of the relevant voltage level and (b) the distribution charges determined on the principles as laid down for intra-state transmission charges.

Surcharge formula:

$$S = T - [C (1 + L / 100) + D]$$

Where

S is the surcharge

T is the Tariff payable by the relevant category of consumers;

C is the Weighted average cost of power purchase of top 5% at the margin excluding liquid fuel based generation and renewable power

D is the Wheeling charge

L is the system Losses for the applicable voltage level, expressed as a percentage

The cross-subsidy surcharge should be brought down progressively and, as far as possible, at a linear rate to a maximum of 20% of its opening level by the year 2010-11.

OERC has broadly adopted the above principle laid out in the National Tariff Policy for determination of cross-subsidy surcharge. But we have certain uniqueness in the structural and functional aspects of power sector in the State. Hence, we have incorporated certain modifications in the interpretation of definitions of the above formula while keeping in mind the realities of our State. As such, we have adopted the following principles for calculating the open access surcharge as already laid out in our earlier Order on this subject dated 29.03.2008.

T = applicable tariff for EHT and HT consumers at different load factor

$C = \text{Power Purchase cost plus transmission charge payable by DISCOMs.}$

In Orissa GRIDCO being the deemed trading licensee, is the State aggregator of power. It purchases power from different sources including renewable sources and resells the same to DISCOMs at bulk supply price (BSP) fixed by the Commission. This has become necessary to maintain a uniform retail tariff throughout the State. All the four DISCOMs of the State meet their requirement of power only through GRIDCO as all the subsisting PPAs with generators are made with the latter. In this scenario of single buyer model of power purchase it is prudent to accept the BSP as approved by the Commission as the cost of power purchase for respective DISCOM. It is not sensible to ascribe weighted average cost of power purchase of top 5% at the margin by GRIDCO to any particular DISCOM or several DISCOMs because the power procured by GRIDCO has already been pooled at their end before it is resold to DISCOMs. Hence, we have no alternative but to accept the BSP of respective DISCOM as the power purchase cost for calculation of cross-subsidy surcharge. It is not out of place to mention here that the transmission loss in State Transmission Network is inbuilt in the BSP. In addition to BSP as stated above all the DISCOMs pay transmission charges to State Transmission Utility (OPTCL) for transmitting power in its EHT network to be delivered at inter-connection points with the DISCOMs. Hence, for our purpose cost of power purchase by DISCOMs is sum of BSP of respective DISCOMs and transmission charges.

$L = \text{loss at HT } 8\%$, whereas transmission loss of 4% is included in the BSP and need not be put in the formula

$D = \text{Wheeling charge levied by DISCOMs} = \text{Distribution cost/ Input at HT}$

14. Further, the main objective of tariff policy is to ensure financial viability of the sector as well as protection of the consumer interest. Keeping this in mind the surcharge is to be calculated. Our views in this regard has already been mentioned in our order dtd. 29.03.2008. The relevant extract of Para-39 of the said Order is reproduced below:

The fixation of the surcharge need to be realistic so that the extent of compensation available to the DISCOMs do not reduce drastically so as to affect their financial viability and, at the same time, give a signal to the enterprising consumers that they can source their power from generators and other licensees for optimizing their efficiency.

15. It has been prescribed in our Open Access Charges Regulation, 2006 that the wheeling charges shall also be determined following the same principle as laid down for determination of transmission charge. In Orissa, we have got four distribution utilities. The cost of distribution of each utility and the amount of energy handled in the distribution system also varies from utility to utility. The total cost of distribution divided by the total energy handled

in the distribution system gives the postage stamp rate for utilisation of distribution system. For our purpose, we are only considering the energy handled in the HT distribution system.

16. The transmission and wheeling charges has been determined and quantified in the Transmission Tariff order and Retail Supply Tariff order passed by the Commission in Case No. 63/2008 and Case No. 66, 67, 68 & 69 of 2008 respectively. So also the Commission has approved the transmission loss and distribution loss which is 4% at EHT and 8% at HT distribution system for FY 2009-10. The transmission charge approved by the Commission for FY 2009-10 comes to 20.5P/U. Due to separation of SLDC functions from transmission business, the Distribution licensees have to pay SLDC charges as prescribed in the order in the case No.65 dt. 20.03.2009 over and above the transmission charges. The total transmission charges including SLDC charges comes to 21 P/U for FY 2009-10.
17. For the year 2009-10, the Commission has approved the following Bulk Supply Price in respect of four distribution companies.
 1. WESCO 154.00 per KWH
 2. NESCO 130.00 per KWH
 3. SOUTHCO 70.00 per KWH
 4. CESU 101.50 per KWH
18. Besides above, Demand charge @ Rs.200/- KVA is payable if the DISCOMs exceed the approved permitted Simultaneous Maximum Demand (SMD) for them. The Permitted SMD would mean monthly SMD recorded upto maximum of 10% over and above the approved SMD in the current tariff order to take care of monthly variations in the demand. Any excess drawl over the permitted SMD will have to be paid back @Rs.200 per KVA per month. This is again subject to the condition that the annual average SMD shall be limited to the SMD permitted in the Tariff Order. The details of approved SMD for 2009-10 for all the DISCOMs is given in the table below:

Table – 4

Name of the DISCOMs	SMD Approved for 2009-10 (In MVA)
CESU	976.99
NESCO	679.70
WESCO	1007.67
SOUTHCO	362.24
Total (All Orissa)	3026.60

19. Further the wheeling charge has been calculated based on the figures approved by the Commission in the Order vide Case No. 66, 67, 68 & 69 on dt.20.03.2009. The calculation of wheeling charges pertaining to each DISCOM is tabulated below for ready reference:

Table – 5

	CESU	NESCO	WESCO	SOUTHCO
Purchase (MU)	6,045.00	4,285.00	6,430.00	2,161.00
Sale (MU)				
EHT	1,264.50	1,286.56	1,573.00	225.41
HT	950.97	511.85	1,518.00	260.25
LT	2,239.40	1,501.04	1,892.54	1,071.93
TOTAL (MU)	4,454.87	3,299.45	4,983.54	1,557.59
Energy Handled at HT (MU)	4,780.50	2,998.44	4,857.00	1,935.59
Cost (Rs. cr.)				
Total RR Excl. Mis Receipt. (Rs. cr.)	1,243.46	839.42	1,371.65	372.95
less Cost of Power Purchase (Rs. cr.)	613.57	557.05	990.22	151.27
Less Cost of Transmission (Rs. cr.)	126.95	89.99	135.03	45.38
Less Amortisation of Regulatory Assets (Rs. cr.)	151			19
Net Distribution Cost (Rs. cr.)	351.95	192.39	246.40	157.30
Wheeling Charge (P/U) for 2009-10 (Net Distribution Cost/ Energy handled at HT)	73.62	64.16	50.73	81.27

20. There are various consumer categories availing supply at HT & EHT from the DISCOMs but consumers only with contract demand 1 MW and above can avail the benefits of open access under the present Open Access Regime as per the phasing notified in the Open Access Regulation of OERC. In light of this, we will only be discussing about the applicable tariff for HT & EHT group of consumers.
21. The electricity tariff structure of Orissa has been fully rationalized voltage-wise. Essentially, it consists of two major components i.e. the demand charge which is Rs.200 per KVA per month both for EHT & HT class of consumers (excepting few small ones) in addition to energy charge expressed in paise per KWH.
22. The energy charges as applicable to HT & EHT class of consumers w.e.f 01.04.2009 are given below:-

Table – 6**Energy Charges for HT & EHT Consumers**

Load Factor (%)	HT	EHT
up to 50%	300 p/u	290 p/u
>50% = <60%	225 p/u	202 p/u
>60%	220 p/u	202 p/u

23. In addition to the above charges, a customer service charge of Rs.250 and Rs.700/- per HT and EHT consumers respectively per month are levied by the DISCOMs.
24. The above tariff structure indicates that with a uniform demand charge, the rate per unit varies according to the extent of use i.e. as the load factor goes on increasing the demand charge per unit declines. Its impact is that, the overall per unit charge of a consumer goes on declining as his load factor increases more and more. This is irrespective of the category to which the consumer might belong. The comparative picture about the rates payable at different load factor assuming Maximum Demand equal to full contracted capacity is given in the tables below:-

Table – 7

LOAD FACTOR BASED TARIFF FOR CONSUMERS AT EHT FOR FY 2009-10						
	Demand Charge	Normal Energy Ch.<=50%	Energy ch.>50%<=60%	Energy ch.>60%	Power Factor	
	(Rs./KVA)	(P/KWH)	(P/KWH)	(P/KWH)	0.9	
EHT	200	290	202	202		
Actual CD in KVA	Actual L.F	Max. Units per month	L.F. Limit for incentive	Av. Energy Rate	Demand Component	Total Rate
				(P/KWH)	(P/KWH)	(P/KWH)
1	100%	657	50%	246.00	30.44	276.44
1	95%	624	50%	248.32	32.04	280.36
1	90%	591	50%	250.89	33.82	284.71
1	85%	558	50%	253.76	35.81	289.58
1	80%	526	50%	257.00	38.05	295.05
1	75%	493	50%	260.67	40.59	301.26
1	70%	460	50%	264.86	43.49	308.34
1	65%	427	50%	269.69	46.83	316.53
1	60%	394	50%	275.33	50.74	326.07
1	55%	361	50%	282.00	55.35	337.35
1	50%	329	50%	290.00	60.88	350.88
1	45%	296	50%	290.00	67.65	357.65
1	40%	263	50%	290.00	76.10	366.10
1	35%	230	50%	290.00	86.98	376.98
1	30%	197	50%	290.00	101.47	391.47
1	25%	164	50%	290.00	121.77	411.77
1	20%	131	50%	290.00	152.21	442.21

Table – 8

LOAD FACTOR BASED TARIFF FOR CONSUMERS AT HT FOR FY 2009-10						
	Demand Charge	Normal Energy Ch.<=50%	Energy ch.>50%<=60%	Energy ch.>60%	Power Factor	
	(Rs./KVA)	(P/KWH)	(P/KWH)	(P/KWH)	0.9	
HT	200	300	225	220		
Actual CD in KVA	Actual L.F	Max. Units per month	L.F. Limit for incentive	Av. Energy Rate	Demand Component	Total Rate
					(P/KWH)	(P/KWH)
1	100%	657	50%	260.50	30.44	290.94
1	95%	624	50%	262.63	32.04	294.68
1	90%	591	50%	265.00	33.82	298.82
1	85%	558	50%	267.65	35.81	303.46
1	80%	526	50%	270.63	38.05	308.68
1	75%	493	50%	274.00	40.59	314.59
1	70%	460	50%	277.86	43.49	321.34
1	65%	427	50%	282.31	46.83	329.14
1	60%	394	50%	287.50	50.74	338.24
1	55%	361	50%	293.18	55.35	348.53
1	50%	329	50%	300.00	60.88	360.88
1	45%	296	50%	300.00	67.65	367.65
1	40%	263	50%	300.00	76.10	376.10
1	35%	230	50%	300.00	86.98	386.98
1	30%	197	50%	300.00	101.47	401.47
1	25%	164	50%	300.00	121.77	421.77
1	20%	131	50%	300.00	152.21	452.21

25. As indicated in Tables - 7 and 8 in the rationalized tariff structure, there is a variation in rate payable by the consumers for operation at different load factors. Therefore, fixing a particular rate may be correct only for a particular load factor. To be fair to the distribution utility as well as to the consumer, it is necessary to determine the extent of loss of revenue that could occur due to the migration of consumer from an embedded utility for calculation of surcharge.
26. The rate per unit billed to a consumer, less the bulk supply price of a utility, less the transmission charge, is the marginal benefit in the form of cross subsidy from an EHT consumer.
27. Likewise the rate per unit billed to a HT consumer, less the bulk supply price of a utility, less the transmission charge, less the wheeling charge, is equal to the marginal benefit from a HT consumer. Of course, loss in HT Distribution system will have to be taken into consideration.
28. The Act envisages reduction of cross subsidy and the National Tariff Policy envisages the cross subsidy surcharge will be reduced in a linear manner to a maximum of 20% of its

opening level by the year 2010-11. **The transmission and distribution loss in four utilities is taking an improved trend and there may be further improvement by the year 2010-11. We believe that improvement in loss reduction would, to some extent, be able to offset the impact due to withdrawal/ reduction of cross subsidy.**

29. In para 8.5.1 of the National Tariff Policy, it is stated that “when open access is allowed the surcharge for the purpose of Sections 38, 39, 40 & sub-section (2) of Section 42 would be computed as the difference between (i) the tariff applicable to the relevant category of consumers and (ii) the cost of the distribution licensees to supply electricity to the consumers of the applicable class”. In that context, we have explained the tariff applicable to EHT and HT category of consumers at a normative level of operation for different levels of load factors with 100% MD in tables 7 & 8.
30. Normally Power Intensive Category of industries at EHT operate at about a Load factor of 80% where the overall paise/unit rate works out to 295.05 inclusive of Demand & Energy Charge assuming that the industry has reached its full contracted demand. This rate could be reduced /increased if the load factor goes up or down.
31. The tables stated above indicate the variation of charges payable by consumers operating at load factor from 20% upto 100%. In respect of HT consumers it varies from 290.94 paise/unit at 100% load factor to 452.21 P/U at a load factor of 20%. Likewise in case of EHT consumers the rate varies from 276.44 P/U at 100% load factor to 442.21 P/U at a load factor of 20%. In Orissa situation industries normally operate between 20 to 100% of load factor.
32. An Open Access consumer will be interested to opt for supply from another Licensee or a Generator only when some financial relief is available to him. A consumer opting out of a Licensee and going to a new source will have to pay for the following.
 - (a) Cost of power purchase to generator/energy charge to a licensee as the case may be
 - (b) Cost of transmission charge at EHT payable to OPTCL
 - (c) Transmission loss at EHT
 - (d) Wheeling charges at HT
 - (e) Loss at HT
 - (f) Surcharge payable to the utility
 - (g) Additional surcharge, if applicable.
33. Suppose an embedded customer in a distribution system proposes to shift to another distribution licensee. Physically he remains connected to the incumbent licensee. Therefore, he is required to pay charges such as wheeling charges including losses in HT system and cross subsidy surcharge to the incumbent licensee. This is in addition to transmission charges and losses along with other applicable SLDC charges payable to OPTCL and SLDC respectively.
34. For direct purchase from a Generator/Licensee, he has to pay to the Generator or the Licensee for energy charges depending upon the source to which he chooses to migrate.

35. The problem is, because he is connected to the incumbent license's system, his maximum demand gets recorded in the overall maximum demand of the incumbent licensee. The incumbent licensee pays for the demand charges to the bulk supply licensee. It is difficult to distinguish to the extent, the maximum demand of the consumer affects the overall maximum demand of the incumbent licensee due to diversity of consumers drawal in the system. Hence, it is difficult to ascertain the maximum demand component of this consumer in the recorded overall maximum demand of the incumbent licensee.
36. The system power factor may not be affected due to the shifting of large number of consumers from one utility to other but the recorded maximum demand for bulk purchase of the embedded licensee will continue to record the total Maximum Demand as before which is a reflection of both Active & Reactive Load. Hence the migration needs to be suitably compensated, so that the embedded licensee is not unduly burdened due to higher recording of Maximum Demand. As an example, if the migrating consumers were supplied power from other independent sources bereft of embedded licensee's distribution system, the recorded Maximum Demand for bulk purchase of the embedded licensee would have been lower. This is also to be noted that the revenue requirement of a DISCOM is determined based on an expected Maximum Demand, beyond which they are liable to pay a penalty to the Bulk Supplier.
37. The different applicable rates of surcharge both for HT & EHT consumers have been worked out below as per the principles stated in the foregoing paragraphs.

The surcharge formula prescribed in National Tariff Policy as stated earlier is again reproduced:

$$S = T - [C (1+L/100) + D]$$

Where, the notations have their usual meaning as mentioned in Para 13 of this Order which are

S is the surcharge;

T is the Tariff payable by the relevant category of consumers,

C is the Power purchase cost which is sum of BSP of the DISCOM and transmission including SLDC charges

D is the Wheeling charge;

L is the system losses for the applicable voltage level, expressed as a percentage.

For the purpose of above formula we adopt EHT transmission loss as 4% and HT wheeling loss as 8% as approved by the Commission in the tariff order for FY 2009-10.

Table - 9

Name of the licensee	Bulk supply price including transmission loss of 4.0% (P/U) (C)	Wheeling charges (p/u) for HT as per the nomenclature in the formula (D)	Transmission charges /Wheeling charges (p/u) for EHT as per the nomenclature in the formula including SLDC charges (D)
WESCO	154.00	50.73	21
NESCO	130.00	64.16	21
SOUTHCO	70.00	81.27	21
CESU	101.50	73.62	21

Example: (at HT)

As an example Surcharge S in case of WESCO for a consumer operating at a L.F. of 80%

$$= T - (C (1 + L / 100) + D)$$

Where,

T = Applicable Tariff for HT at 80% LF = 308.68 p/u

C = Power purchase cost plus Transmission charge by DISCOMs

L = Loss at HT = 8%

D = Wheeling charge (As per Table-5 which is Distribution cost / Input MU at HT

= 50.73 P/U)

S for WESCO at HT with 80% LF = 308.68 – (175.00 (1 + 8 / 100) + 50.73) = 68.95 P/U say 69 P/U

Note: The Bulk Supply Price of the DISCOMs from GRIDCO includes transmission loss of 4.0% at EHT.

Accordingly, surcharge for different DISCOMs at different load factors at HT is worked out and presented in the table below:

Table - 10

Surcharge as per Tariff policy for FY 2009-10 at HT

Wheeling charge p/u	Load Factor %	100%	90%	80%	70%	60%	50%	40%	30%	20%
	Tariff (HT) p/u	291	299	309	321	338	361	376	401	452
	Surcharge P/U									
50.73	WESCO	51	59	69	82	99	121	136	162	212
64.16	NESCO	64	72	81	94	111	134	149	174	225
81.27	SOUTHCO	111	119	129	142	159	181	197	222	273
73.62	CESU	85	93	103	115	132	155	170	196	246

Example: (at EHT)

As an example Surcharge S in case of WESCO for consumer operating at a LF of 80% = $T - (C (1 + L / 100) + D)$

Where,

T = Applicable Tariff for EHT at 80% LF = 295.05 p/u

C = Power purchase cost plus Transmission charge payable by DISCOMs

*L = Transmission Loss = 4.0% already inbuilt in power purchase cost (not to be considered again)

D = Transmission charge /Wheeling charge at EHT = 21 P/U

S for WESCO at EHT with 80% LF = 295.05 – (154 + 21) = 120.05 P/U

*Note: The Bulk Supply Price of the DISCOMs from GRIDCO includes transmission loss of 4.0% at EHT.

Accordingly, surcharge for different DISCOMs at different load factors at EHT is worked out and presented in the table below:

Table - 11
Surcharge as per Tariff policy for FY 2009-10 at EHT

Wheeling ch. p/u	Load Factor %	100%	90%	80%	70%	60%	50%	40%	30%	20%
	Tariff (EHT) p/u	276	285	295	308	326	351	366	391	442
	Surcharge p/u									
21	WESCO	101	110	120	133	151	176	191	216	267
21	NESCO	125	134	144	157	175	200	215	240	291
21	SOUTHCO	185	194	204	217	235	260	275	300	351
21	CESU	154	162	173	186	204	228	244	269	320

38. The fixation of the surcharge needs to be realistic so that the extent of compensation available to the DISCOMs do not reduce drastically so as to affect their financial viability and, at the same time, give a signal to the enterprising consumers that they can source their power from generators and other licensees for optimizing their efficiency.
39. As HT and EHT consumers are an enlightened group of consumers there should not be really any difficulty for them to forecast their own load factor of operation and carry out commercial negotiations with Generator /Licensee to whom they would be migrating. A linear approach for determining the exact rate in steps of 1% between 20% to 30% or 30% to 40% etc. can be worked out. For Load Factor below 20%, the surcharge at 20% shall apply. The surcharge shall be indicated in each monthly bill raised by the embedded licensee.

40. There are certain consumers for whom the above mentioned surcharges need not be applied. The provisions of Para 8.5.2 of the National Tariff Policy in this regard is quoted here under:

“No surcharge would be required to be paid in terms of sub-section (2) of Section 42 of the Act on the electricity being sold by the generating companies with consent of the competent government under Section 43(A)(1)(c) of the Electricity Act, 1948 (now repealed) and on the electricity being supplied by the distribution licensee on the authorization by the State Government under Section 27 of the Indian Electricity Act, 1910, (now repealed), till the current validity of such consent or authorizations.

41. The mode of recovery of surcharge has already been explained in Para 8.5.3 of the National Tariff Policy which is reproduced below and requires no elaboration:

“The surcharge may be collected either by the distribution licensee, the transmission licensee, the STU or the CTU, depending on whose facilities are used by the consumer for availing electricity supplies. In all cases the amounts collected from a particular consumer should be given to the distribution licensee in whose area the consumer is located. In case of two licensees supplying in the same area the licensee from whom the consumer was availing supply shall be paid the amounts collected.

42. **Additional Surcharge :**

The Electricity Act, 2003 envisages levy of additional surcharge under sub-section (4) of Sec. 42. According to this Section, a consumer opting to avail the facility of open access from a person **other than the distribution licensee of its area** of supply is liable to pay an additional surcharge on the charges of wheeling to meet the fixed cost of such distribution licensee arising out of its obligation to supply. We are conceiving a situation where the consumer is embedded to a particular distribution licensee utilizes the physical infrastructure of the embedded licensee for drawing power from the system. In such a situation, the question of assets getting stranded does not arise.

43. This kind of additional surcharge can be levied when new infrastructure is created for the customer to receive supply from a system other than that of the embedded distribution licensee. For example, a CGP gives power supply directly to such a consumer through an independent feeder. In such a situation, the assets of embedded licensee may become stranded, that too if no new consumers are coming forward to utilize these assets. As long as the consumer remains connected to the embedded distribution licensee, it will only be a change of commercial principle and billing methodology. Hence, no additional surcharge over and above the billing charge needs to be given to the embedded licensee.
44. Para 8.5.6 of National Tariff Policy provides that in case outages of generator supplying to a consumer on open access, standby arrangements should be provided by the licensee on the

payment of tariff for temporary connection to that consumer category as specified by the Appropriate Commission. In case of Orissa, tariff for temporary supply is applicable to the appropriate class to which a consumer belongs. Obviously, the same rate can be applied as per the prevailing tariff structure.

45. To sum up we decide and direct as under:
- (i) The wheeling charge and surcharge as indicated in Tables-10 and 11 are applicable for the year 2009-10 w.e.f. 1.4.2009 and may undergo change from time to time as may be decided by the Commission.
 - (ii) The transmission loss at EHT (4.0%) and wheeling loss for HT level (8%) are applicable for the year 2009-10 and may undergo change as may be decided by the Commission from time to time.
 - (iii) The additional surcharge would be determined and guided as per the broad principles enumerated from para 42 to 44 above.
46. These charges will be notified for the FY 2009-10 and will remain in force until further order.
47. Accordingly the case Nos.23, 24, 25 & 26 of 2009 relating to Open Access proceedings are disposed off and the charges are approved in accordance with the relevant provisions of the Electricity Act, 2003 and OERC (Determination of Open Access Charges) Regulations, 2006.

Sd/-
(K.C. BADU)
MEMBER

Sd/-
(B.K. DAS)
CHAIRPERSON