

**Before the Appellate Tribunal for Electricity  
(Appellate Jurisdiction)**

**Appeal No. 85 of 2007**

Dated : 8<sup>th</sup> July, 2009

**Present : Hon'ble Mr. Justice M. Karpaga Vinayagam, Chairperson  
Hon'ble Mr. A.A. Khan, Technical Member**

**IN THE MATTER OF:**

Orissa Power Transmission Corporation Ltd.  
Janpath, Bhubaneswar, Orissa

.... Appellant

Versus

1. Madhya Pradesh State Electricity Board  
Shakti Bhavan, Rampur  
Jabalpur, Madhya Pradesh.
2. Easter Regional Power committee  
14, Golf Club Road,  
Tollygunge,  
Kolkata – 700033
3. Grid Corporation of Orissa Ltd.  
Having its Headquarters at  
Janpath, Bhubaneswar, Orissa

... Respondents

Counsel for the Appellant(s) : Mr. R. K. Mehta, Ms. Suman Kukrety  
Mr. Mragank, Ms. Nalini Pal, Mr. Premji  
Mr. P. Somasundaram, Ms. Sarvodaya Laxmi

Counsel for the Respondent(s) : Mr. Ravi Shankar Prasad, Sr. Adv.  
Mr. Sakesh Kumar,  
Mr. R.K. Grover, Mr. S.P. Datta, Mr. A.P. Bheru  
Mr. A. K. Garg, Mr. D.K. Srivastava

## **JUDGMENT**

### **Per Hon'ble Mr. A.A. Khan, Technical Member**

1. The Central Electricity Regulatory Commission (the Central Commission or the CERC in short) issued Order dated 20.03.2007 for fixation of wheeling charges in respect of transmission system of Orissa Power Transmission Company Ltd., (the Appellant or OPTCL in short, successor to Grid Corporation of Orissa Limited, referred to as GRIDCO) for wheeling of power from NTPC power station in Eastern Region (ER) through OPTCL's system to Madhya Pradesh State Electricity Board (MPSEB) with effect from 01.04.2001. Aggrieved by the said Order, the Appellant has filed this Appeal.

2. The facts of the case are briefly given below:

2.1 In February 1997, a meeting was held between officials of the GRIDCO, MPSEB and Eastern Region Electricity Board (EREB) to discuss technical and commercial aspects of transfer of about 200 MW of Eastern Region (ER) power to MPSEB. GRIDCO explained difficulties in releasing power in the inter-connected mode i.e. part of GRIDCO system running in parallel to Western Region (WR) system. Subsequently, GRIDCO requested MPSEB to avail power transmitted in radial mode.

2.2 Central Electricity Authority (CEA) allocated 150 MW round the clock power to WR constituents mentioning, inter-alia, the modalities of payment of wheeling charges to GRIDCO. Based on the above, GRIDCO transmitted part of ER surplus power to MPSEB in radial mode w.e.f. 19.05.1997. MPSEB informed GRIDCO that MPSEB was finding it detrimental to receive power in radial mode on account of high frequency in ER and requested the Appellant to operate the system in islanded mode. At this request, GRIDCO synchronized Ib Thermal Power Station (IbTPS) and part of Hirakud – Ib Command area with Western Region (WR) w.e.f. 05.06.1997. It is the case of the Appellant that due to this arrangement, it had to sacrifice a part of Western Orissa load

and the generators in the vicinity of GRIDCO system were at a great risk by connecting the same with the WR being connected through 220 kV D/C line. This arrangement continued till synchronous mode of operation of ER-NER upto 02.03.2003.

2.3 CEA, sometime in 1998 had decided the rate of wheeling charges for use of the respondents' transmission system at 10 paise/kWh, which is said to have included transmission losses of 7.5 paise/kWh. GRIDCO however, did not agree to accept wheeling charges decided by CEA. Hence, MPSEB filed a petition (petition No. 10/2000) before the Commission seeking direction for implementation of wheeling charges decided by CEA.

2.4 During the period upto October 2000, MPSEB was making payment of the wheeling charges @17.5 paise/unit. On the petition no. 10/2000 filed by MPSEB, the CERC by Order dated 23.10.2000 directed that wheeling charges will be payable by MPSEB @ 10 paise/unit to GRIDCO w.e.f. 01.01.1998 as decided by CEA. Being aggrieved by this Order, GRIDCO filed an Appeal in the Orissa High Court under section 16 of the Orissa Electricity Regulatory Commissions Act, 1998. The High Court granted stay on the operation of order dated 23.10.2000. The Appeal is still stated to be pending with the High Court.

2.5 On 26.03.2001, the Commission notified Regulations containing the terms and conditions of determination of tariff applicable from 01.04.2001 to 31.03.2004. As regards determination of wheeling charges, these Regulations provided that the importing utility and wheeling utility should mutually agree on the wheeling charges as well as the transmission losses and in the event of their inability to agree, the Member Secretary of the Regional Electricity Board, where the wheeling utility is located, is required to calculate the wheeling charges by applying the principles specified by the Commission using the contract path method. The Regulations further provide that in case of non-agreement on the issue of transmission losses, Member-Secretary of the region concerned

was to carry out studies to determine incremental transmission losses and that in case of a disagreement with the decision of the Member-Secretary the Commission could be approached for a decision.

2.6 For the period from 1.4.2001 onwards, the parties could not mutually agree to the charges for wheeling of power. Hence, MPSEB approached Member-Secretary of the Eastern Region, for fixing the wheeling charges in accordance with the notification dated 26.3.2001. The Member-Secretary gave his report to the Commission recommending payment of wheeling charges @ of 11.60 paise/kWh. The Appellant as well as MPSEB were not satisfied with the said report and approached the Commission for decision in the matter of fixation of wheeling charges. On consideration of the report of the Member-Secretary in the light of the objections received from the parties, the Commission again asked the Member-Secretary for fresh consideration of the matter to re-calculate the wheeling charges by contract path method, as specified in the 2001 Regulations. In compliance of such directions of the Commission, the Member-Secretary submitted a report identifying the contract path for conveyance of the electricity through the system of the Appellant for supplying to MPSEB and recommending wheeling charges of Rs.773.58 lakhs, Rs.776.77 lakhs and Rs.787.32 lakhs for the years 2001-02, 2002-03 and 2003-04 respectively.

2.7 GIRDCO has drawn specific reference to the following findings of the Member-Secretary:

Issue	Comments of EREB
GRIDCO had to open a number of 220 kV and 132 kV lines to facilitate power wheeling; hence there was loss of reliability in GRIDCO system	EREB agreed that due to opening of lines, reliability of GRIDCO system got reduced. Also resulted into low voltage and low security level in certain areas of GRIDCO, but difficult to quantify the exact loss or express it in monetary terms.
The change in arrangement from radial to synchronous mode resulted into better quality supply in MPSEB system and other related benefits.	MPSEB definitely benefited, but again difficult to quantify in monetary form.

2.8 The other salient features of the recommendations made by the Member-Secretary are as under:

- (i) *The opportunity cost cannot be expressed in clear quantifiable terms, so comparison of verifiable opportunity cost with the wheeling charges based on contract path is not possible,*
- (ii) *Wheeling charges have been calculated as per the contract path method and for a new transmission line, and*
- (iii) *The incremental losses for the respondents' system as a whole during the period to facilitate transfer of power to the petitioner were considered as 'nil' since studies indicated that incremental losses for respondents' system were negative during this period.*

2.9 Both the parties have filed their objections to the report dated 30.9.2005 made by the Member Secretary. Since differences between the parties remained unresolved and the adjudication of the petitioner's claim involved detailed study of the factual background and the technical aspects, it was considered appropriate that the matter be looked into by a one-member Bench of the Commission in the first instance. For this purpose, the Commission requested one of its Members, (Mr. A.H. Jung), to make appropriate recommendations for consideration of the Commission. The Member made the following recommendations:

- (a) Wheeling charges payable to the respondents shall be based on contract path method as the transmission charges corresponding to new line along contract path are higher than the transmission charges based on the existing line. The wheeling charges payable are quantified as under:

(Rs. In lakh)	
Year	Wheeling Charges
2001-02	773.58
2002-03	776.77
2003-04	787.32

The wheeling charges recommended by the Member of the Commission were same as recommended by the Member Secretary.

- (b) There is no opportunity cost to the respondents for conveyance of power to the petitioner.
- (c) No payment is due to the respondents on account of transmission losses as incremental losses on account of the transaction in question are negative.
- (d) The excess amount collected by the respondents from the petitioner on account of wheeling charges should be refunded to the petitioner in a manner to be decided by the Commission.
- (e) If more than one entity has utilized the transmission system of the respondents for transfer of power, the Member-Secretary shall allocate the wheeling charges to the petitioner in the ratio of duration and quantum of contracted power of the State of Madhya Pradesh.

2.10 In the above background, the Commission gave its Order dated 20.03.2007. The Commission agreed with the findings and recommendations made in the order dated 29.1.2007 by the Single Member and affirmed the wheeling charges recommended by it. Against the said Order, the Appellant has filed this appeal.

3. The main contentions of the Appellant challenging the order dated 20.03.2007 are as under:

- (a) By making special arrangement at the request of MPSEB, GRIDCO had to sacrifice a part of Western Orissa load and Generators in the vicinity were at a great risk by connecting through only on 220 kV D/C line, GRIDCO needs to be compensated for this loss/risk.
- (b) MPSEB requested GRIDCO to wheel power @17.5 paise/unit, which was reduced to 10 paise/unit by CEA. GRIDCO had to make special arrangement for supply of power in islanded mode by isolating two units of Ib TPS and synchronizing with the WR system, as MPSEB was not in a position to avail

power in radial mode, whether CERC was justified in determining wheeling charges as under:

FY	Wheeling charges paise/unit
2001-02	3.34
2002-03	3.85
2003-04	3.54

- (c) GRIDCO is entitled to the opportunity cost keeping in view the findings of Member Secretary, EREB, quoted earlier;
- (d) Central Commission should have adopted cost of a new transmission line with back to back HVDC system for determining the opportunity cost;
- (e) Central Commission should have appreciated that in view of the definition of 'Contract Path' and clause 4.9.2.3 of the Notification dated 26.03.2001 of CERC, it is only a new line 'capable of carrying power' which could be the basis for determining the wheeling charge;
- (f) In the above background, the Appellant has sought for:
  - (i) Setting aside of the order dated 23.03.2007 of the Central Commission;
  - (ii) Fixation of the transmission charge on the basis of 'contract path method'; and
  - (iii) Allowing transmission losses.

4. MPSEB (and its successor MP Power Trading Co. Ltd., MPPTCL) the Respondent herein has countered the claims of the Appellant and has submitted that:

- (a) The historical background sought to be applied by the Appellant has nothing to do with the fixation of the wheeling charges for the period in question as the wheeling charges would be determined in accordance with the notification dated 26.03.2001. MPSEB has drawn attention of this

Tribunal towards findings of the Member Secretary, Eastern Regional Electricity Board (EREB) on Verifiable Opportunity Cost, which is given below:

Item	Finding
Commercial opportunities/ gains availed by MPSEB and loss to GRIDCO	The issue of PLF of Ib TPS after synchronization with WR was earlier deliberated at CERC and therefore, issue of backing down at Ib TPS was not considered.

- (b) GRIDCO had submitted vide its letter dated 13/09/2005 a list of opportunity gain by MPSEB and indirect loss suffered by it due to special arrangement made by it to facilitate wheeling of power to MPSEB. The comment of EREB on each of this is as follows:
- (i) there is no loss to GRIDCO in the transaction although their system frequency has improved along with PLF of Ib TPS and loss is reduced.
  - (ii) it is not correct to say that MPSEB has benefited, it is an arrangement made by the CEA to transmit the power on the basis of displacement mode.
  - (iii) As per the Eastern Regional Power Committee (ERPC) study, GRIDCO is a gainer due to improved PLF of Ib TPS;
5. Before we proceed further, we may have a look at relevant clauses of the Regulations notified on 26.03.2001:

***“4.9.2 Wheeling through SEB/State Utility system:***

*4.9.2.1 In case of wheeling of power through SEB/state utility system, the importing utility and the wheeling utility shall endeavour to mutually agree on wheeling charges as well as transmission losses. In such cases, approval of the Commission shall not be required. However, the wheeling utility shall not deny use of its system merely on the basis of non-agreement on wheeling charges.*

*4.9.2.2 If the parties are not able to agree on the wheeling charges, the Contract Path method shall be used for calculation of wheeling charges. Monthly transmission charges of this path would be payable in proportion to contracted power vis-à-vis SIL of*



*the lines in the contracted path. The monthly transmission charges for the contract path shall be calculated as per the provisions of this notification.*

*4.9.2.3 In case, wheeling utility makes some special arrangement (such as backing down cheaper generation) to facilitate exchange, the verifiable opportunity cost or the charges calculated as per contract path method, which ever is higher, shall be payable to the wheeling utility. In any case, the wheeling charges shall not exceed the charges corresponding to a new transmission line of adequate capacity along the contracted path. The Member Secretary, REB of the region in which wheeling utility is located, shall calculate wheeling charges by applying the principles enumerated above.*

*4.9.2.4 The incremental transmission losses on account of wheeling shall be payable in kind i.e. the transmission losses shall be compensated by an equivalent amount of energy charged to the importing utility. In case of non-agreement on the issue of transmission losses, the studies to determine incremental transmission losses in the wheeling utility system shall also be carried out by the Member Secretary of the region concerned.*

*4.9.2.5 The Commission may be approached in case of disagreement with the decision of Member Secretary, REB. Pending the final order of the Commission, decision of the Member Secretary, REB shall be implemented on provisional basis.” (emphasis supplied)*

6. The Tariff Regulations notified by the Commission on 26.03.2001 define contract path under CHAPTER 4 - INTER-STATE TRANSMISSION - 4.1. as is reproduced below:

*(iv) 'Contract Path' means the shortest route formed by a series of transmission lines capable of carrying contracted power between the point of receipt to point of delivery in the wheeling system.*

7. It is the case of the Appellant that as Member Secretary reported that opportunity cost cannot be expressed in clear quantifiable terms, some mechanism should be devised to compensate the Appellant for the losses suffered by them. The Appellant has further argued that the statement recorded in the minutes of the meetings held on 14<sup>th</sup>/15<sup>th</sup> September 2005 to the effect that opportunity cost claimed is not verifiable cannot be said to be the decision arrived at the meeting. The Appellant has also submitted that power transfers in radial mode were not feasible without HVDC back-to-back station until synchronization of Eastern Region with Western Region on 3.2.2003 and accordingly, the cost of HDVC back-to-back station should be considered for calculation of cost of the new transmission line.

8. We have gone through the Order of the Central Commission and considered the rival contentions of the parties. On our careful consideration of the above, we find that all the contentions of the Appellants have been properly considered by the Central Commission in its order impugned.

9. As regards the submissions relating to the decision taken in the meeting held on 14/15<sup>th</sup> September 2005, the Central Commission has held that “22. *The first contention of the respondents that the statement recorded in the minutes of the meetings held on 14th and 15th September 2005 to the effect that opportunity cost claimed is not verifiable cannot be said to be the decision arrived at the meeting, is without basis. **Learned counsel for the respondents has taken us through the minutes, which have been signed by representatives of all the parties, including the respondents. If the respondents were not agreeable to the minutes, they should have either objected to what has been recorded therein or could have pressed for amendments at a later date. In the objections filed before the Commission the respondents have not pointed out any discrepancy in the minutes or the conclusions arrived at by the Member-Secretary that it was difficult to quantify the opportunity cost in monetary terms.***” (Emphasis supplied)

10. After signing the minutes, it cannot be correct to contend that the decision taken was not with the consent of the Appellant. Alternatively, the Appellant should have established that the minutes were signed by the representative of the Appellant under any undue influence or coercion, which is not the case here. Hence, the contention of the Appellant that the minutes of the meetings held on 14th and 15th September 2005 to the effect that opportunity cost claimed is not verifiable cannot be said to be the decision arrived at the meeting, is not tenable.

11. The Appellant has contended that in view of the definition of ‘Contract Path’ and clause 4.9.2.3 of the Notification dated 26.03.2001 of CERC, it is only a new line ‘capable of carrying power’ which could be the basis for determining the wheeling

charge. As per the Regulations, the contract path is the shortest path which is capable of carrying the contracted power from the point of input to the point of delivery. The Member-Secretary in his report identified the shortest path that was necessary to transmit the contracted power to MPSEB through the grid network of the appellant.

12. The Central Commission in its Order has correctly recorded, thus at para 12, that *“12. There was no transmission line to directly carry power to the petitioner’s system from NTPC generating stations in Eastern Region. Therefore, point of receipt of power on the respondents’ system has been taken as 400 kV Rourkela sub-station which is the nearest sub-station of Power Grid Corporation of India Limited to the boundary of Western Region’. The Member-Secretary has considered 220 kV D/C Rourkela-Tarkera-Budhipadar-Korba (Orissa Portion) line as the contract path, though the petitioner is actually supplied power generated at Ib TPS through 220 kV D/C Budhipadar-Korba transmission line as noted above.”*

13. Regarding the feasibility of the transfer of power in radial mode or otherwise, the Central Commission has correctly observed thus at para 24, that *“24. it is seen that in the ERPC meetings held on 14/15.9.2005, the respondents had suggested that the cost of new D/C line from Bisra to Korba may be evaluated and based on such evaluation, a report be submitted to the Commission. This will go to show that in the respondents’ own reckoning double-circuit line is capable of carrying the contracted power. Accordingly the Member–Secretary in his report dated 30.9.2005 has considered the cost of a new transmission line without HVDC back–to–back station as being “capable of carrying contracted power”. **There are many A.C. inter-regional lines through which power transfer has taken place on numerous occasions during the past several years.** It is also to be noted that Surge Impedance Loading (SIL) of one circuit of 220 kV line is of the order of 150 MW (actual value depending on type of conductor used). A line is normally capable of carrying power in excess of the SIL. Thus, 220 kV double-circuit line is capable of carrying 300 MW, allocated to the petitioner from NTPC generating stations in Eastern Region.*

*Therefore, the argument of the respondents that without HVDC back-to-back station the contracted path is not capable of transferring the contracted power has no merit, as it does not have any technical basis. On the contrary, on technical considerations it is established that the contracted path or any other 220 kV D/C transmission line is capable of carrying contracted power. The respondents' contention now that the inter-regional transmission could not have been possible without HVDC back-to-back station is hypothetical and without any basis." (emphasis supplied)*

14. The above is a matter of fact correctly determined by the Central Commission based on the evidence provided. The Central Commission has recorded that a 220 kV double-circuit line is capable of carrying the quantum of power under consideration through the system of the appellant. From the above extracts from the commission's Order we find that the Commission has considered the inputs available before it and has rightly concluded that the '*respondents' contention now that the inter-regional transmission could not have been possible without HVDC back-to-back station is hypothetical and without any basis.* The Commission has also recorded that ***there are many A.C. inter-regional lines through which power transfer has taken place on numerous occasions during the past several years'***. Under the circumstances, we do not wish to disturb the facts ascertained by the Commission to establish that the 220 D/C line under consideration was capable of carrying the contracted power to MPSEB and constituted the contract path in terms of the Regulations. **(Emphasis supplied).**

15. As regards the contention that 'it is only a new line capable of carrying power' which could be the basis for determining the wheeling charge under Regulation para 4.9.2.3, we observe that the relevant portion is couched in the negative. The Regulations do not allow the wheeling charges to exceed the charges corresponding to a new transmission line. As per the scheme of Regulations, firstly the wheeling charges should be determined on mutual consent basis. Where mutual consent is somehow not forthcoming, the contract path method would be adopted for determination of wheeling

charges. In case the wheeling utility makes special arrangement to facilitate wheeling of power from the point till the point of delivery, the concept of opportunity cost to the wheeling utility comes into consideration. As the parties could not work out mutually agreed wheeling charges, on reference, the Member-Secretary, identified the shortest transmission route for supply of power as required under the Regulations, which is 220 kV D/C Rourkela-Tarkera-Budhipadar-Korba (Orissa Portion) and recommended the wheeling charges. The above route has been established as being capable of carrying the required power to the destination point in MPSEB network.

16. Related with the above issue it is the contention of the Appellant that due to these arrangements there was lack of reliability in its system besides disturbances in the voltage profile. The Appellant also referred to two instances of its system breakdown, which the Appellant feels is somehow linked to its supply to MPSEB.

17. First we take up the contention that the Appellant is entitled to the charges towards the alleged opportunity cost to it. The Commission in its Order has rightly held that *'the opportunity costs to the respondents (GRIDCO) should be equal to the net of costs and benefits in the islanded mode of operation as compared to foregone alternative, that is, power transfer in radial mode'*. The Regulations under para 4.9.2.3 provide that

*'In case, wheeling utility makes some special arrangement (such as backing down cheaper generation) to facilitate exchange, **the verifiable opportunity cost** or the charges calculated as per contract path method, which ever is higher, shall be payable to the wheeling utility. In any case, **the wheeling charges shall not exceed** the charges corresponding to a new transmission line of adequate capacity along the contracted path. The Member Secretary, REB of the region in which wheeling utility is located, shall calculate wheeling charges by applying the principles enumerated above'. (emphasis supplied)*

18. The term 'the verifiable opportunity cost' gives an indication that the opportunity cost that can be levied on the utility importing the power, should be verifiable. The Regulations have sought to differentiate between verifiable and non-verifiable opportunity costs. It is only the verifiable opportunity cost that can be considered for fixation of the wheeling charges. The Member-Secretary gave reference to the

deliberations of the meeting held on 14/15.9.2005 and after considering the available material before him, recorded as under: '*EREB agreed that due to opening of lines, reliability of GRIDCO system got reduced. Also resulted into low voltage and low security level in certain areas of GRIDCO, but difficult to quantify the exact loss or express it in monetary terms*' and then recommended as under:

- i. *The opportunity cost cannot be expressed in clear quantifiable terms, so comparison of verifiable opportunity cost with the wheeling charges based on contract path is not possible,*
- ii. ....
- iii. *The incremental losses for the respondents' system as a whole during the period to facilitate transfer of power to the petitioner were considered as 'nil' since studies indicated that incremental losses for respondents' system were negative during this period.*

19. MPSEB in its submission sought to draw the attention of this Tribunal to the following findings of the Member – Secretary:

*The issue of PLF of Ib TPS after synchronization with WR was earlier deliberated at CERC and therefore, issue of backing down at Ib TPS was not considered.*

20. The MPSEB further submitted that due to the arrangements of isolation of Ib TPS of the GRIDCO from ER, there was improvement in the PLF of the Ib TPS. This was so as otherwise due to high frequency in the ER system and inadequate evacuation system, the PLF of generating stations in ER, in general, were required to back-down. This way the Appellant has been benefited due to the special arrangement made for supply of power to MPSEB.

21. We find that Commission has deliberated on the above issue at length in its Order, after considering the views of Member Secretary and Mr. Jung, which we would not like to repeat here. We agree with the views of the Central Commission that there were no verifiable opportunity costs incurred by the Appellant, which could be considered for determination of wheeling charges. Regarding the transmission losses, the Central

Commission has concluded that there were no incremental transmission losses to the Appellant as a result of the arrangements made for supply of power to MPSEB.

22. We find no valid reason to overrule the findings of the Commission in this regard. Since we have agreed that there was no verifiable opportunity cost to the Appellant and that wheeling charges have been determined on the basis of the contract path method as per the Regulations, we do not agree with the Appellant's contention that the Commission should have adopted cost of a new transmission line with back to back HVDC system for determining the opportunity cost. Ultimately, we conclude that all the contentions urged by the learned counsel for the Appellant would fail since the impugned order of the Central Commission is justified.

23. In view of the above, the appeal is dismissed as devoid of merits.

24. There is no order as to costs.

**( A.A. Khan )**  
**Technical Member**

**(Justice M. Karpaga Vinayagam)**  
**Chairperson**

Dated: 8<sup>th</sup> July, 2009.

**Reportable/Non-reportable.**