

**Jharkhand State Electricity Regulatory Commission
Ranchi**

(Case No. 06 of 2013)

M/s OSD Coke (Consortium) Pvt. Ltd Petitioner

Vrs.

Damodar Valley Corporation & Ors. Respondents

Quorum: (1) T.MUNIKRISHNAIAH, Member (Engineering)
(2) Sunil Verma, Member (Finance)

Present: Learned Lawyer Mr.MS.Mittal
Learned Lawyer Ms. Shilpi John - Petitioner
Learned Lawyer Mr. Prashant Kumar Singh, DVC

Learned Lawyer Mr Anoop Kumar Mehta, BCCL
Mr. Sylvanus Beck Sr. Manager DVC and
Mr.Pradeep Kumar -Respondent

(ORDER)
(30.04.2014)

The petitioner M/s OSD Coke (Consortium) Pvt. Ltd filed a case in the matter of directing the DVC not to deduct 4% transmission losses over and above the actual consumption recorded in the meter and requested the Commission under Section 86(1)(f) of the Electricity Act, 2003 to adjudicate the matter.

Learned Lawyer of the respond has raised the issue of jurisdiction of the Commission as per section 86(1)(f) of the Electricity Act, 2003 and the same has been clarified in the proceeding dated 12.03.2014 is quoted below:

“The lawyer of the respondent has raised the issue of jurisdiction of the Commission as per section 86(1)(f) of the Electricity Act, 2003. The relevant section is quoted below:

“adjudicate upon the disputes between the licensees and generating companies and to refer any dispute for arbitration”

Further, the Learned Lawyer has argued that the OSD Coke (Consortium) is not a generating company and hence the Commission do not have jurisdiction to adjudicate the case.

The lawyer of the petitioner has argued that under section 2 (28) of the Electricity Act, 2003, that the OSD Coke (Consortium) can be treated as a generating company. The relevant section is quoted below:

“generating company” means any company or body corporate or association or body of individuals, whether incorporated or not, or artificial juridical person, which owns or operates or maintains a generating station” and stated that the OSD Coke (Consortium) has to be treated as a generating company as per the relevant section 2(28) of the Electricity Act, 2003”. Accordingly, the Commission has considered this case as a dispute between the generating company and licensee and the Commission decided to adjudicate upon the issue raised by the petitioner.

Petitioner submission

- (1) M/s OSD Coke (Consortium) Pvt. Ltd a company incorporated under the provisions of Companies Act, 1956 having registered office at Kolkata (West Bengal).
- (2) In the year 1993 the respondent Bharat Coking Coal Ltd, Dhanbad (which is herein after referred to as BCCL in short) which is subsidiaries of Coal India Limited set-up Captive Power Plant which was established in order to make Captive requirement of its mines at Munidih, Bhalgora and Bastacola.
- (3) The petitioner was the successful bidder for the operation and maintenance of 2x10MW Captive Power Plant owned by BCCL and subsequently entered into lease agreement on 18.03.2010 with BCCL.
- (4) After execution of the agreement between OSD Coke (Consortium) and BCCL the Captive Power Plant was commissioned in the year 2011 and the process of generation of power was initiated through the transmission of power through DVC grid upto Putki sub-station.
- (5) The Captive Power Plant maintained and run by the petitioner is connected through the 33 KV dedicated line passing through Munidih sub-station upto Putki Sub-station of DVC.
- (6) Energy meter has been installed at Putki sub-station of DVC which records the power received from Munidih Power Plant at Putki Sub-station.
- (7) At the Putki Sub-station a monthly billing report is prepared by DVC, which is jointly signed by the representative of DVC as well as BCCL. In the afodresaid monthly billing report,

- DVC is deducting 4% as transmission and Distribution losses commonly known as “line losses”.
- (8) It is also to mentioned that at Putki Sub-station, DVC is also receiving power through its own grid for onwards transmission and distribution to various areas to the BCCL. The power received from various sources of DVC as well as the power received from the Captive Power Plant operated by the petitioner is being transmitted to various loads of BCCL.

Prayer of the Petitioner

The Petitioner prays for the following reliefs in the petition:

- (1) For setting aside the Monthly Billing Reports prepared by the respondent Damodar Valley Corporation, in which the Respondent illegally and contrary to the provisions of law, are deducting 4% of the total units received at Putki Sub-station of Damodar Valley Corporation.
- (2) To revise the Monthly Billing Report on the basis of the actual units received at the Putki sub-station Damodar Valley Corporation from where onwards transmission is being made in respect of the units generated and transmitted at the Captive Power plant of Bharat Coking Coal Limited situated at Munidih.
- (3) For directing the respondent No. 5 i.e. Bharat Coking Coal Limited to give credit for excess deductions made to the extent of 4%, on account of illegal deduction as transmission loss made by Damodar Valley Corporation in respect of the units generated at Munidih Captive Power Plant of Bharat Coking Coal Limited, and transmitted to the Putki Sub-station of Damodar Valley Corporation for further transmission of electrical energy to Bharat Coking Coal Limited..

Submission of the Respondent DVC

- (1) The respondent has stated that M/s. OSD Coke (Consortium) Pvt. Ltd. Is not a consumer of DVC and the petitioner is a lease holder of BCCL for operation and maintenance by Captive Power Plant owned by BCCL.
- (2) The respondent has also stated that any power entered /injected into the DVC system passes through DVC switchyard equipment’s transformers, busbars, there is a transmission and distribution loss.
- (3) The respondent DVC entered into minutes with BCCL from time to time in connection with synchronization of Munidih Captive Power Plant with DVC Grid at Putki Sub-station.

- (4) Responent DVC has submitted that their overall power received from various sources and power sold to various consumers and licensee and received, their T&D loss is 4%. Accordingly they have considered as 4% T&D loss and the same is deducted from the units received from CPP to Putki Sub-station.

Submission of the responent, BCCL

- (1) The Captive Power Plant, Munidih, 2x10 MW has been installed to generate power for Captive consumption by BCCL by Munidih and adjoining area.
- (2) The BCCL has entered into lease agreement dated 18.03.2010 with the petitioner for a period of 20 years for the operation and maintenance of the 2x10MW Captive Power Plant at Munidih.
- (3) The Captive Power Plant is connected through 33KV dedicated line passing through Munidih Sub-station to Putki Sub-station of DVC.
- (4) Injected power at Putki sub-station to DVC is being recorded by the meter installed. This injected power is being adjusted in Munidih and Balgora Sub-stations.
- (5) The responent BCCL has raised with DVC the matter of deducting 4% transmission losses from the injected power recorded by the meter at DVC Putki Sub-station.

Findings of the Commission

- (1) M/s. OSD Coke (Consortium) Pvt. Ltd. a company is incorpoarated underthe provisions of Companies Act, 1956, having its registered office at kolkata is the petitioner.
- (2) The petitioner is the successful bidder for the operation and maintainance of Captive Power Plant of capacity of 2x10MW owned by M/s Bharat Coking Coal Ltd, at Munidih.
- (3) Both the parties had entered into an agreement on 18.10.2010. As per the agreement the petitioner has to operate & Maintainacne the Captive Power Plant (2x10MW) of BCCL and supply the power generated from the Munidih Power plant to Munidih sub-station and subsequently to DVC Grid.
- (4) As per Clause 7.1 of the agreement, M/s BCCL will pay the petitioner for the energy injected into the DVC grid system.
- (5) In the Monthly Billing Report signed by the representatives of BCCL and DVC, the net imported energy is recorded after deducting 4% T&D loss from the imput energy to Putki Sub-station from C.P.P, Munidih.
- (6) Aggrieved for the adjustment of 4% T&D losses, the petitioner filed this case to the Commission.

- (7) The petitioner has stated that he is already incurring T&D losses from C.P.P. to Putki Sub-Station, and DVC is deducting another 4% T&D loss on the energy recorded at the injection point of the Putki Sub-station as DVC system losses.
- (8) DVC has claimed the system losses as 4%. Also submitted the details of own generation, power purchase from others, overall utilization, Unutilised units and finally system losses as 4.16%.
- (9) As per the single line wiring diagram, the DVC is supplying to various loads with the power received from Munidih CPP Plant and also from other sources of generation.

Commission's Conclusion:

- (1) M/s. OSD Coke (Consortium) Pvt. Ltd. is the lease holder for the operation and maintenance of CPP of BCCL and the power is fed from the CPP to Munidih and from Munidih to DVC's 132/33KV Putki sub-station through a 33 KV dedicated feeder.
- (2) DVC is deducting 4% as T&D losses on the units recorded by the energy meter at the injection point of 132/33KV Putki sub-station.
- (3) The Commission has to decide whether the claim of 4% system losses deducted from the units injected into DVC grid at Putki sub-station is justifiable or not.
- (4) The transmission and distribution losses of transmission system is the "difference in generated and distributed units" is known as transmission & distribution losses. The transmission and distribution losses are two types:- Technical losses and the other commercial losses. The technical losses of the transmission system depends upon the load current flowing through the transmission line and also the voltage at which the power is transmitted from the generation station to the load point. The following illustrations will explain the aspect of the transmission and distribution losses:

Illustration No.1:-

The transmission loss is $= I^2 R$ where I is current flowing through transmission line and R is the Resistance of the transmission line. Further, the transmission losses are proportional to the square of the current flowing through the conductor. If there is variation of 1% in the flow of current which leads to an increase of more than 1% in T&D losses.

The resistance $R = \frac{L}{a}$ Where ρ is resistivity of the conductor and L= length of the conductor and a = cross of section of the conductor. It means that the transmission losses will vary with the resistance of the transmission line and the current flowing through the transmission line..

Example:

Assume the resistance of the conductor = R Ohms and current flowing through the conductor is 10 Amps then $I^2 R$ loss = $10^2 R = 100 R$ units

Assume the current flowing through conductor is increased by 10% then the $I^2 R$ loss will be = $11^2 R = 121 R$ units.

Therefore, the increase in loss due to increase of 10% load current is = $121 R - 100 R = 21 R$ and the percentage of increase with 10% increase in load current is = 21%.

This shows that, with a marginal increase in the load current, the $I^2 R$ losses will be increased considerably.

Illustration No.2:

Now let us consider, how the load current is varied with respect to the potential (voltage) at which the power is transmitted in the transmission line i.e. power transmitted "P" = $\sqrt{3} VI \cos \phi$

Where "v" is voltage at which the power is transmitted.

Where "I" is current flowing in the transmission line.

$\cos \phi$ is the Power Factor

Therefore, current $I = \frac{P}{\sqrt{3} V \cos \phi}$

Assume the power transmitted through a transmission line is = 100 KW at 11KV potential and power factor is .95

Then the current flowing through the transmission line is $I = 100\text{kw}/11\text{KV} \times 0.95$
 $= 100 \times 1000\text{w}/11 \times 1000 \times 0.95$
 $= 9.57$ Amps

For the same power if it is transmitted at 33KV potential, then the current flowing through the line is $I = 100\text{KW}/33\text{kv} \times 0.95$
 $= 2.88$ Amps.

It shows if the power is transmitted at higher voltages, then the current flowing through transmission line will be reduced and thereby $I^2 R$ losses will be reduced..

- (5) It is to mention here, that the consumers of DVC are of 33 KV and above and the total power supplied to various consumers /licensees of DVC are at higher voltage levels and thereby the transmission and distribution losses of the respondent DVC is to be low.

The transmission and distribution losses approved for the respondent DVC by the Commission for FY 2012-13 is 3% as against 4% the losses submitted by DVC.

The relevant portion of the Tariff order pertains to T&D losses is reproduced below:

“7.6 The Petitioner submitted that as it is supplying power in bulk to the WBSEDCL & JSEB and majorly to HT consumers at 33 kV and above voltage level within the Damodar valley area; it incurs very low T&D losses. The T&D loss projected by the Petitioner for FY 2012-13 is 4.5% based on past trend.

7.7 Further, in addition to the projected energy sold in the Jharkhand area, the Petitioner also submitted the projected sales in the West Bengal area and the projected energy wheeled from its inter-state transmission system for the purposes of computation of the energy requirement for the entire Damodar Valley area. The projected energy sales in West Bengal area for FY 2012-13 has been submitted as 7760 MU based on the past trend. While the energy wheeled projected during the year is 315 MU.

7.8 Based on the total projected energy sales in the Damodar Valley area, the T&D losses and the energy wheeled from the system, the Petitioner submitted the energy requirement for the year as 20169 MU”.

Commission’s view on T&D loss:

7.9 The Commission finds that the trend of T&D losses increasing over the previous years is not acceptable. The actual T&D losses in FY 2008-09 were 3.0% only, while that in FY 2011-12 is 4.6%. The increase in T&D losses, and as such higher than 3%, is not acceptable as the Petitioner supplies mostly to the HT consumers. In view of above, the Commission approves the targeted T&D loss for FY 2012-13 to be 3.0%, subject to true up based on actual. However, the Commission directs the Petitioner to make all out efforts to restrict the T&D losses within the targeted level.

7.10 Further, to estimate the energy requirement for FY 2012-13, the Commission has considered the energy sales to the West Bengal area and energy wheeled as per the submission made by the Petitioner, subject to true up based on audited annual accounts in the subsequent retail tariff Orders. Accordingly, the total energy requirement as approved by the Commission for FY 2012-13 works out to be 17944 MU.

It shows that the DVC has submitted the over all system losses as 4% for the quantum of power transmitted i.e. 17,405 MUs (Energy sales within the state of Jharkhand is 9331 MU, in West Bengal 7760 MU and energy wheeled 315 MU and the total is 17405MU) in their licensed area of Jharkhand State and West Bengal and the Commission has approved 3% as the system losses.

- (6) In the present case, the petitioner is transmitting power from CPP to Putki Sub-station through 33KV dedicated feeder and the quantum of power transmitted is very less, is around 6.0MU to 8.0MU per month.
- (7) The power sent from CPP Munidih to Putki sub-station is already undergoing transmission losses of the 33 KV line and net energy is injected into the 132/33kV Putki Sub-station at the 33KV Bus.
- (8) Further, the power received from CPP plant and power received from other sources to Putki Sub-station both put together is feeding to the various loads under 132/33KV Putki Sub-station. Hence the T&D losses under the grid sub-station of Putki is resultant flow of the total current (i.e. the power received from Putki Sub-station and the power received from other sources).
- (9) The Commission directed the respondent DVC to work out and submit the system losses for the power sent out from 132/33KV Putki Sub-station up to BCCL load points in the proceedings dated 12.03.2014, the relevant portion is reproduced below:-
“Respondent DVC is directed to work out the system losses for the power sent out from Putki Sub-station upto the 33/11KV Sub-station situated near the BCCL load points”, but the respondent DVC has not submitted the detailed calculations of their system losses.
- (10) Further, the power received from CPP units is very much less compared to the total power transmitted by respondent DVC to the entire licensed area. This adds up to more than 17,000 MU. Hence deducting 4% system losses of the DVC grid system of its licensed area from the units recorded at the injection point of Putki Sub-station is not justifiable.

In view of the above findings, the Commission directs the respondents DVC to consider the units recorded at the injection point (at Putki Sub-station) by the energy meter installed without deducting 4% T&D losses. Further the other respondent BCCL is directed to consider the units recorded by the energy meter at the injection point of 132/33KV Putki Sub-station.

With the above, the case is disposed off at no cost.

Let a copy of this order be sent to the parties.

Sd/-
Member (Engg.)

Sd/-
Member (Fin)