ODISHA ELECTRICITY REGULATORY COMMISSION
BUDYUT NIYAMAK BHAWAN
PLOT NO.-4, CHUNOKOLI, SAILASHREE VIHAR
BHUBANESWAR - 751021
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Present: Shri Gajendra Mohapatra, Officiating Chairperson
Shri S. K. Ray Mohapatra, Member

Case No. 85/2021

M/s. SAIL, Rourkela Steel Plant …….. Petitioner
Vrs.
OREDA …….. Respondents

In the matter of: **Application under Regulations 12.6 and 12.7 of OERC (Procurement of Energy from Renewable Sources and its Compliance) Regulations, 2015.**

For Petitioner: Shri Akash Acharya on behalf of M/s. SAIL.

For Respondent: Ms. Sujata Das, OREDA.

ORDER

Date of Hearing: 17.05.2022 **Date of Order:10.06.2022**

The Petitioner, M/s. Steel Authority of India Ltd. (SAIL) a Public Sector Unit under Govt. of India is having an Integrated Steel Plant namely Rourkela Steel Plant (RSP) at Rourkela in the district of Sundargarh, Odisha. The electrical power requirement is met from various sources such as its own captive power plants, the Distribution Licensee i.e. TPWODL through Short Term Open Access. There are three captive power plants in RSP namely CPP-I (4X25 MW), CPP-II (2x60 MW) and PBS (2x18.5, 1x6.5, 1x14 MW). CPP-II is a conventional coal based power plant of (2x60 MW) capacities run by NTPC SAIL Power Supply Company (NSPCL), a JV company of SAIL and NTPC. CPP-I and PBS (CPP-3) are run by RSP.

The petitioner has prayed the Commission to exempt the Rourkela Steel Plant (RSP), SAIL from all RPO since the day of notification of the Regulation till date and may also declare that the requirement of the Regulation so far as RPO is concerned shall not be applicable to CPPs which are co-generation units.

2. To substantiate its prayer, the Petitioner-M/s. SAIL has submitted the following:

(a) In RSP, special technology is used for generating power from by-products of steel making process in the plant as described below:

- Top Recovery Turbine-Generator (TRTG): Lot of gas is generated in BFs as by-products with very good calorific value (~900 kcal/Nm^3 and is used in various places in the plant as fuel. In modern Blast Furnaces (BFs), the gas comes out of the furnace at a high pressure of about 4 Kg/cm2, but for utilization of the gas, the pressure required is about 1 Kg/cm2. This reduction of pressure is achieved by passing the high pressure gas through a gas turbine called Top Recovery Turbine (TRT) which drives a generator to generate electrical power. It is evident that for power generation this technology does not need any additional fuel input. At RSP the TRT of Blast Furnace-5 is connected to a 14 MW generator. Power output from this generator is connected to PBS for further distribution in the plant.

- Back Pressure Turbine Generator (BPTG): The hot coke extracted from the coke ovens have to be quenched (cooled) to bring down the temperature and quenching is done using inert gas. The heat extracted by the inert gas is used to produce steam at high pressure which in turn is passed through a Back Pressure Turbine (BPT) to bring down the pressure. The turbine drives a generator to generate power. At RSP 6.5 MW generator is driven by a BPT steam turbine installed in the Coke Dry Quenching (CDQ) plant of Coke Oven Battery- 6. The boiler is a waste heat recovery boiler. This generator is also connected to the PBS for further distribution of the power throughout the plant.

- BF and Co Gas based Steam Turbine Generator (STG): The BF gas after pressure reduction and cleaning is used as a fuel to fire steam boilers which produce steam at high pressure and medium pressure. High pressure steam is used to run steam turbines which drive Generator for power generation. The medium pressure steam is used in various processes in the steel plant as an alternate form of energy.

- During coking process in Coke Ovens (CO), large quantity of gas is generated. A mixture of BF gas and CO gas is known as Mixed Gas. This gas is used as a fuel for heating the coal in the Coke Oven itself. It is also used as fuel for firing steam boilers which produce steam for power generation as well as other processes. The power generated in the said process is used internally in the plant operation.
- At RSP, the gas coming out of BF-5 is used as fuel in 3 nos. of gas fired boilers which use BF gas as fuel. Steam produced by these boilers run 2x18.5 MW Steam Turbine Generators (STG-1&2) to generate power. These boilers do not use coal or any other fossil fuel for steam generation. The steam used in these boilers is also used to drive turbo-blowers which supply cold blast to Blast Furnace-5.

(b) CPP-1 uses BF gas and CO gas for firing 6 nos. High Pressure Boilers and 3 Nos. Medium Pressure Boilers. High pressure steam produced at 59kg/Cm2 is used to drive steam turbines coupled to generator for electrical power generation. High Pressure steam is also used to drive blowers which supply cold blast to the Blast Furnaces. There are 4 generators of installed capacity of 25MW each. Boilers of CPP-1 are designed to use BF Gas (BFG) and Mixed Gas (MG) as primary fuel. However to meet shortfall condition of BFG/ MG, coal can also be used as fuel in the boilers for producing steam. Power being generated in the generating units of PBS and CPP-1 is using latent energy from by-product of the steel making process and without using any other external fuel for power generation. These generators save substantial amount of fossil fuel and there by contributing to energy conservation and pollution control. In addition, both the power plants are producing electrical power as well as steam (more than one form of output energy).

(c) The term 'Co-generation' as defined under section 2 (12) of Electricity Act, 2003 *means a process which simultaneously produces two or more forms of useful energy (including electricity).* The captive power plants of RSP produce two types of output i.e. both power as well as steam for process requirement of the steel and By-Product gases produced in the steel making process is used as

supplementary fuel. Thus, both the captive generating plant CPP-1 & PBS of RSP meet the eligibility conditions to qualify as "Co-generation plant". The details of energy generated in different captive units of RSP and RPO arising out of the same are given below:

FY	CPP-I Gen	CPP-II Gen	PBS Gen	Total Gen	OA	Solar	Co. Gen	RP Obligation		
							(CPP-I + PBS)	Solar	Non-Solar	Total
	MU	MU	MU	MU	MU	MU	MU	MU	MU	MU
2015-16	124.89	501.79	89.85	2	67.12	1.51	214.74	2.41	19.59	22.00
2016-17	215.85	875.45	161.81	1253.11	192.59	1.43	377.66	7.72	37.11	44.83
2017-18	188.32	893.11	141.95	1223.38	233.83	0.98	330.27	12.15	41.11	53.26
2018-19	189.69	891.89	142.95	1224.53	212.87	0.51	332.64	15.20	41.26	56.46
2019-20	245.72	869.79	154.02	1269.53	239.67	0.20	399.75	19.33	44.92	64.25
2020-21	223.88	920.10	212.86	1356.91	160.06	0.22	436.74	15.37	42.73	58.10

OA – Open Access

It is clearly evident from the above table that electrical energy produced through captive co-generation plants of RSP is far in excess of RPO requirement as per OERC Regulations, 2015.

(d) Section-2(p) of the OERC (Procurement of Energy from renewable sources and its compliances) Regulations, 2015 states that:

*"**2.(p)** 'Obligated entity' means the entity mandated under clause (e) of sub-section (1) of Section 86 of the Act to fulfil the renewable purchase obligation and any other entity identified under clause 3.1 of these Regulations;*

3.1 *This shall be applicable to:*

(a) Distribution licensee (or any entity procuring power on their behalf); and

(b) Any other person consuming electricity (a) generated from conventional Captive Generating Plant having capacity of 5 MW and above for his own use and/or (b) procured from conventional generation through open access and third party sale."

A bare reading of the above provision makes it clear that only those entities, which are covered under the statutory provision of Section 86(1)(e) of Electricity Act, 2003 have the obligation to purchase power from renewable sources. Section 86(1)(e) of Electricity Act, 2003 states that:

"86. *Functions of the State Commission: (1) The State Commission shall discharge the following functions namely:*

(e). Promote cogeneration and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person, and also specify, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licensee"

(e) The phrase *"the total consumption of electricity in the area of a distribution licensee"* in Section 86(1) (e) of Electricity Act only refers to the total quantity of electricity consumed by the consumers of distribution licensee for the purposes of measurement of RPO as a percentage of such consumption. The same cannot be interpreted to mean various modes of consumption in the State and include consumption from CPPs and consumption from Open Access in the area of distribution licensee and to impose RPO on them. If the legislature intended to include such consumption, then the reference to the area of distribution licensee is superfluous and otiose. The reference to distribution licensee clearly restricts the obligation under Section 86(1) to such licensees. The mandate cast upon the Commission is to regulate the procurement of power of distribution licensee under Section 86(1)(b) and while doing so it is entitled to impose RPO on the distribution licensee. Hence, the power to impose the Renewable and Co-generation Energy Purchase Obligation under Section 86(1)(e) has to be read in context of other functions under Section 86(1) particularly Section 86(1)(b) which provides for regulation of power procurement of distribution licensee and can thus be only extended to Distribution Licensee.

(f) The Regulations contemplate fulfilment of obligations through the instruments of Renewable Energy Certificates (RECs). Purchase of such certificates is deemed to be purchase of electricity. This is contrary to the mandate of the Act which contemplates only purchase of electricity which is not the same as purchase of RECs. The Hon'ble Supreme Court in the case of *State of AP vs. NTPC* reported in (2002) 5 SCC 203 has interpreted the words purchase of electricity to mean purchase of electricity alone and not purchase of goods other than electricity. By way of subordinate legislation the Commission should not sidestep the said requirement and impose an obligation to purchase goods other than electricity such as RECs.

(g) The CPPs save T&D losses, hence, already contributing to the saving of conventional fuels and containing pollution to that extent. The National Electricity Policy states that:

"5.2.2. The Government of India has initiated several reform measures to create a favourable environment for addition of new generating capacity in the country. The Electricity Act 2003 has put in place a highly liberal framework for generation. There is no requirement of licensing for generation..... Captive generation has been freed from all controls."

"5.2.24 The liberal provision in the Electricity Act, 2003 with respect to setting up of captive power plant has been made with a view to not only securing reliable, quality and cost effective power but also to facilitate creation of employment opportunities through speedy and efficient growth of industry."

The petitioner stated that saddling the CPPs with RPO in spite of being de-licensed, cannot create a "favourable environment" for the CPPs.

(h) The Petitioner has sought relief in similar footing to Case No.66/ 2019, where the Commission, vide its Order dated 08.12.2020, has recognized power generated at the generating stations of M/s. Tata Steel Ltd, Kalinganagar as "Co-generation" and thereby has granted relief to M/s. Tata Steel Ltd of RPO under OERC (Procurement of Energy from Renewable Sources and its Compliance) Regulations, 2015 as energy generated in the co-generation units is in excess of RPO.

3. In response to the query raised by the Commission on why the energy generated from co-generation plant should be declared as renewable source of generation and why RPO is applicable for such generation, the Petitioner submitted that the by-products such as steam and gases are harnessed/ processed for generation of power. The particular statement given in the application of RSP clearly shows such multiple process of power generation. Further, the APTEL in Order dated 26.04.2010 in Appeal No.57 of 2009 has concluded as follows:

"29. In a typical co generation power plant which is liquid fuel or gas based heat is cogenerated as a by product or industrial waste and is harnesses for further power generation and for industrial use. For example, in a gas based co generation power plant, heat recovery steam generators are installed which recover heat from the exhaust of gas turbines and the same heat is used for industrial purpose and running steam turbines, which are in turn used for further power generation."

In response to the query regarding whether SAIL has got any benefit under Perform Achieve and Target (PAT) in respect of this type of co-generation plant, the petitioner has

stated that SAIL has not got any benefit under PAT and unless it is exempted from the payment of RPO, it will go on sustaining economic loss for such period.

4. The Respondent, OREDA has submitted that taking into consideration the consumption of power from various sources, the quantum of obligation of the petitioner is as follows:

	Consumption from CPP(MU)	**RPO obligation for CPP (solar+ non-solar @ 3% (MU)**	**Consumption from open access**	**RPO obligation for Open Access (MU)**
2015-16	716.53	21.4956	67.12	2.0136
2016-17	1253.11	37.5933	192.59	8.66655
2017-18	1223.38	36.7014	233.83	17.53725
2018-19	1224.53	36.7359	212.87	20.22265
2019-20	245.72	7.3716	239.67	26.3637
2020-21	223.88	6.7164	160.06	17.6066
Total	**4887.14**	**146.6142**	**1106.14**	**92.41035**

The obligation from CGP is @3% for the period from 2015-16 to 2020-21 and from Open Access is @3%, 4.5%, 7.5%, 9% and 11% for 2015-16, 2016-17, 2017-18, 2018-19, 2019-21 respectively. The total consumption from solar sources was 4.85 MUs and from Co-generation sources was 436.74 MUs as against the total obligation of 239.02 MUs. OREDA has further submitted that if the WHRB based power plants of petitioner are recognized as co-generation plant and power generated from such plant is considered as renewable power, the Commission may consider relaxing the provision of applicability of RPO and its compliance thereof. The Commission may also decide on whether the petitioner needs to fulfill RPO against consumption from Open Access sources.

5. Heard the Petitioner and Respondent on virtual mode. The Commission observed that as per Section 86(1)(e) of the Electricity Act, 2003, it is mandated for promotion of co-generation and generation of electricity from renewable sources of energy. Therefore, the Commission is of the view that there should not be any Renewable Purchase Obligation on the quantum of consumption of electricity from co-generation sources. The Commission, vide its Order dated 08.12.2020 in Case No. 66/2019, in the matter of exemption and relaxation from applicability of RPO and its compliance thereof to M/s. Tata Steel Ltd. which generates such captive co-generation power from waste heat recovery process has held as follows:

"16. Heard the parties at length. The Commission observed that as per the OERC (Procurement of Energy from Renewable Sources and its Compliance) Regulations, 2015, the petitioner company is an obligated entity since it consumes electricity from its CGPs having capacity of 1 MW and above and also procures power through open access for its use. In the present application the petitioner has submitted that its CGPs are having co-generation facility and cited various judgements of Hon'ble APTEL in respect of relaxation of RPO in case of Co-generation power plants.

17. Therefore, considering the various judgements of the Hon'ble APTEL as submitted by the petitioner and its prayer, this Commission is inclined to relax the provision for industry of the Petitioner having co-generation CGP under Regulation 12.6 and 12.7 of the OERC RPO Regulations, 2015, towards its obligation for meeting renewable purchase obligation treating the Petitioner as a co-generation plant. The petitioner shall be exempted from Renewable purchase Obligation when its consumption from cogeneration CGP is more than its Renewable Purchase Obligation for the respective time period. This is because the petitioner also avails its power from sources other than Cogeneration CGP. OREDA shall monitor its Cogeneration Consumption and Renewable purchase obligation accordingly. The relaxation shall be applicable from FY 2019-20 onwards since the transaction of REC has already been settled for past periods. We are relaxing the provisions of the Regulation on the basis of the judgement of Hon'ble APTEL and the said judgements have not dealt with any refund of REC and a settled thing cannot be unsettled now. The petitioner shall provide necessary data/information on its consumption and generation and also power availed through open access, to OREDA as and when required by it for verification with regard to RPO compliance."

6. The Commission observed that in the instant case the Petitioner M/s. SAIL, Rourkela Steel Plant, Rourkela, Dist- Sundargarh, Odisha has two CGPs having co-generation facilities, i.e. CPP-I of 100 MW and PBS of 57.5 MW Capacity. Therefore, the directions of the Commission in the aforesaid Case No. 66/2019 dated 08.12.2020 shall be applicable to M/s. SAIL in the present case for relaxation of the provisions under Regulations 12.6 and 12.7 of the OERC (Procurement of Energy from renewable sources and its compliances) Regulations, 2015 towards meeting RPO treating the Petitioner's WHRB based CPP-1 and PBS of capacity 100 MW and 57.5 MW respectively as co-generation plants. However, it has been observed that as per the submission of the petitioner, coal can also be used as fuel in the boilers for producing steam to meet shortfall condition of BFG/ MG in CPP-1. Therefore, the Commission is of the view that CPP-1 of (4x25 MW) capacity shall be under RPO to the extent of percentage of his consumption met through fossil fuel sources such as coal. The Petitioner's cogeneration facilities (CPP-1 & PBS) shall be exempted from RPO when its consumption from its co-

generation sources is more than its RPO for the respective time period. If the consumption from cogeneration sources is less than its RPO, the Petitioner shall offset the remaining obligation through procurement of renewable power and/or through RECs.

7. The State Agency, OREDA shall compute the RPO of the Petitioner based on its total consumption and compare the same with the consumption from its co-generation sources from FY 2015-16 till FY 2020-21. The Computation of energy generated from coal used in CPP-1 shall be done according to the following formula:

E(C) = [(Qc x GCVc) / ((Qc x GCVc) + (Qg x GCVg))] x E(T)

Where,

E(C) = Electrical energy generated from coal at Generator terminal during the month (kWh);

Qg = Quantity of gas consumed during the month (m3);

GCVg = Weighted average Gross Calorific Value (GCV) of gas consumed during month (kCal/m3);

E(T) = Gross electrical energy generated at Generator Terminal during the month (kWh);

Qc = Quantity of coal burnt during the month (kg);

GCVc = Weighted average GCV of coal burnt during the month (kCal/kg).

If there is any difficulty in obtaining the above figures, then the petitioner shall not get any RPO exemption for power generated from CPP-1 for any month in which coal was used. The petitioner is directed to provide the data/ information as required by OREDA for computation of RPO from FY 2015-16 till FY 2020-21. OREDA may also collect the required data/ information from the office of EIC and SLDC for verifying the compliance data provided by the Petitioner. The EIC and SLDC are directed to provide the required data for the purpose as and when sought by OREDA.

8. The case is accordingly disposed of.

Sd/-

(S. K. Ray Mohapatra)
Member

Sd/-

(G. Mohapatra)
Officiating Chairperson