

**IN THE APPELLATE TRIBUNAL FOR ELECTRICITY**  
**NEW DELHI**

**(APPELLATE JURISDICTION)**

**APPEAL NO. 291 of 2016**  
**AND**  
**APPEAL NO. 344 OF 2016**

**Dated: 28<sup>th</sup> May, 2020**

**Present: Hon'ble Mr. Ravindra Kumar Verma, Technical Member**  
**Hon'ble Mr. Justice R.K. Gauba, Judicial Member**

**APPEAL NO. 291 of 2016**

**In the matter of:**

**NLC India Limited**

First Floor, No. 8, Mayor Sathyamurthy Road,  
FSD, Egmore Complex of Food Corporation of India,  
Chetpet, Chennai – 600 031  
Tamil Nadu, India

... **Appellant**

*Versus*

- 1. Central Electricity Regulatory Commission,**  
3<sup>rd</sup> & 4<sup>th</sup> Floor, Chanderlok Building,  
36, Janpath,  
New Delhi-110 001
- 2. Tamil Nadu Generation and Distribution Company Ltd**  
800, Anna Salai,  
Chennai- 600 002
- 4. Power Company of Karnataka Limited**  
KPTCL Building, Kaveri Bhavan,  
K.G. Road,  
Bangalore -560 001
- 5. Mangalore Electricity Supply Co. Ltd.**  
Paradigm Plaza, AB Shetty Circle,  
Mangalore – 575 001

6. **Gulbarba Electricity Supply Co. Ltd.**  
Station Main Road,  
Gulbarga – 585 102
7. **Hubli Electricity Supply Co. Ltd.**  
Corporate Office, Navanagar,  
PB Road,  
Bubli – 580 025
8. **Chamundeshwari Electricity Supply Corporation Ltd.**  
Corporate Office, No. 927, LJ Avenue,  
New Kantaraja Urs Road,  
Saraswathipuram,  
Mysore – 570009
9. **Kerala State Electricity Board Ltd.**  
Vidhyuthi Bhavan, Pattom,  
Thiruvananthapuram – 695 004
10. **Puducherry Electricity Department**  
137, N.S.C. Bose Road, Salai,  
Puducherry – 605 001 ... **Respondents**

**APPEAL NO. 344 of 2016**

**In the matter of:**

**NLC India Limited**

First Floor, No. 8, Mayor Sathyamurthy Road,  
FSD, Egmore Complex of Food Corporation of India,  
Chetpet, Chennai – 600 031  
Tamil Nadu, India ... **Appellant**

*Versus*

1. **Central Electricity Regulatory Commission,**  
3<sup>rd</sup> & 4<sup>th</sup> Floor, Chanderlok Building,  
36, Janpath,  
New Delhi-110 001
2. **Tamil Nadu Generation and Distribution Company Ltd**  
800, Anna Salai,  
Chennai- 600 002 ... **Respondents**

Counsel for the Appellant(s) : Mr. M.G. Ramachandran, Sr. Adv.  
Ms. Ranjitha Ramachandran  
Ms. Poorva Saigal  
Ms. Anushree Bardhan  
Mr. Shubham Arya

Counsel for the Respondent(s) : Mr. Manu Seshadri for R-1  
Mr. S. Vallinayagam for R-2

## **J U D G M E N T**

### **PER HON'BLE MR. JUSTICE R.K. GAUBA, JUDICIAL MEMBER**

1. This matter was heard and reserved for judgment prior to restrictions being imposed due to National Lockdown for containing spread of coronavirus (Covid-19).

2. The matter at hand raises question concerning increased consumption of primary fuel due to savings achieved in the use of secondary fuel oil, much costlier fuel than the primary fuel used in thermal power generation. The appellant is aggrieved because the Electricity Regulatory Commission has denied the benefit on such account in favour of the appellant in respect of its two units, at the stage of truing-up of the actual capital expenditure and tariff for the period 2009-2014, by the impugned orders.

3. The legal framework for electricity supply industry in India underwent transformation by reforms being ushered in with the enactment of the Electricity Act, 2003 which not only de-licensed (substantially) the

generation of power but also sought to strengthen the regulatory mechanism such that the benefits of competition, efficiency, economical use of resources, good performance and optimum investment reach the consumer at the end of the supply chain. The responsibility of determination of tariff is placed on the Electricity Regulatory Commissions which lay down ground rules by framing "*Tariff Regulations*" (under Section 61) and also undertake "*determination of tariff*" (under Section 62). The conjoint effect of the guiding principles provided by the statute indicates that safeguarding of "*consumers' interest*" and "*recovery of cost of electricity in reasonable manner*" stand out as the foremost parameters. The balance thus requires to be struck wherein the consumer gets the benefit of electricity at the lowest possible tariff rates and, at the same time, generator gets reasonable returns on its investments and enterprise.

4. The tariff for supply of electricity from a thermal generating station comprises of several components that include return on equity, interest on loan capital, depreciation, interest on working capital, operational and maintenance expenses, cost of secondary fuel, cost of primary fuel, etc. Generally speaking, the thermal power stations depend on coal, lignite or gas as the primary fuel. It is well known that in case of coal and lignite fired thermal stations deployment of secondary fuel which forms a small proportion of the fuel used for generation of electricity is very limited in the

whole process but, in comparison, the expenditure incurred on Secondary Fuel Oil Consumption (SFC) is disproportionately high.

5. We are dealing with the case concerning a generator of electricity which is controlled by a Government of India Enterprise and, therefore, governed by the regulatory regime of Central Electricity Regulatory Commission (hereinafter referred to variously as “CERC” or “*Central Commission*” or “*Commission*”). The CERC, in exercise of its jurisdiction under Section 61 of Electricity Act, 2003 has been framing and notifying, from time to time, regulations specifying the terms and conditions for the determination of tariff. For the purposes of adjudication of the dispute brought through the present two appeals, the Central Electricity Regulatory Commission (Terms & Conditions of Tariff) Regulations, 2009 (in short, “*2009 Tariff Regulations*”) would be the relevant Regulations. These were notified on 19.01.2009 and were in force for the period 01.04.2009 to 31.03.2014. It may be mentioned here that these 2009 Tariff Regulations were replaced by Central Electricity Regulatory Commission (Terms & Conditions of Tariff) Regulations, 2014 (in short, “*2014 Tariff Regulations*”) which were enforced from 01.04.2014 to 31.02.2019.

6. Prior to coming into force of 2014 Tariff Regulations, the Cost of Secondary Fuel Oil (SFC) for “*coal based and lignite fired stations*” was

included in the annual fixed cost which was part of what is described as “*capacity charge*”, the other broad head of component of tariff being the “*energy charge*” which would represent the primary fuel cost only. With the coming into force of 2014 Tariff Regulations, however, Secondary Fuel Cost (SFC) is also taken as a component of “*energy charge*” calculation of which also factors in the primary fuel cost.

7. The Tariff Regulations also lay down the “*norms of operation*”. The operational norms applicable to “*thermal generating stations*” were specified in the then prevalent Regulation no. 26 of 2009 Tariff Regulations which subject is covered by corresponding Regulation no. 36 in 2014 Tariff Regulations. Having regard to the changes which have been brought about in the 2014 Tariff Regulations, we would like to make it clear that conclusions that we reach in the present matter will be treated as based on interpretation of 2009 Tariff Regulations.

8. The heat energy input (kCal) required to generate 1kWh (one unit) of electrical energy at generator terminals of a thermal generating station is known as “*gross station heat rate*” (in short, “*GSHR*”). The GSHR required to be maintained by thermal generating stations is specified by 2009 Tariff Regulations differently for existing stations or new stations (commissioned on or after 01.04.2009), the norms also varying dependent on the nature of the primary fuel used.

9. The first captioned appeal relates to lignite-fired thermal generating station of the appellant, it being described as Stage-I Expansion (420 MW). The second appeal relates to lignite-fired power station described as Stage-I (600 MW). There is no dispute as to the fact that in terms of Regulation 26(ii) of 2009 Tariff Regulations, the normative SHR in respect of each of these power stations is to be taken as 2750 kCal/kW.

10. The Secondary Fuel Consumption (SFC) is also specified by the Tariff Regulations and there is no dispute that for the purposes of the two power stations in question, Regulation 26(III)(b)(i) would specify the SFC at 2 ml/kWh. The learned counsel on both sides agreed that the normative SHR of 2750 kCal/kWh specified as above by the 2009 Tariff Regulations was expected to be achieved primarily through use of lignite and also by use of costlier secondary fuel oil to bring the heat level in the boiler to the optimum level, the actual operating condition being to use lesser SFC and thereby substitute the primary fuel consumption (lignite) in its place to achieve the required SHR.

11. As has been mentioned earlier, in the regime covered by 2009 Tariff Regulations, the “*energy charge*” is one of the two parts comprised in the tariff and represents “*recovery of primary fuel cost*”, all other components -- including the cost of secondary fuel oil -- forming part of the “*capacity charge*” (Regulation 13). Regulation no. 21 of 2009 Tariff Regulations

guides, *inter-alia*, the computation of “*capacity charge*” and “*energy charge*” for thermal generating stations. The clause (6) of Regulation no. 21, to the extent relevant here, may be quoted thus:

“(6) *Energy charge rate (ECR) in rupees per kWh on ex-power plant basis shall be determined to three decimal places in accordance with the following formulae:*

(a) *For coal based and lignite fired stations*

$$ECR = [(GHR - SFC \times CVSF) \times LPPF / CVPF + LC \times LPL] \times 100 / (100 - AUX)$$

...”

12. The notes below the said formula clarify that energy charge rate (ECR) is to be determined in terms of “*Rupees per kWh sent out*”. The GHR in the above formula is same as the GSHR explained earlier. Noticeably, it is to be deducted by the product of “*SFC*” (i.e. *specific fuel oil consumption in ml/kWh*) and “*CVSF*” (i.e. *Calorific value of secondary fuel, in kCal per ml*), the sum thus reached being multiplied by sum derived from division of “*LPPF*” (i.e. *Weighted average landed price of primary fuel, in Rupees per kg, per litre or per standard cubic metre, as applicable, during the month*) by “*CVPF*” (i.e. *Gross calorific value of primary fuel as fired, in kCal per kg, per litre or per standard cubic metre, as applicable*). The formula then requires the product of “*LC*” (*Normative limestone consumption in kg per kWh*) and “*LPL*” (*Weighted average landed price of limestone in Rupees per kg*) to be added. The figure thus derived is

multiplied by the figure of “100” and divided by the balance of the “normative auxiliary consumption in percentage” (AUX)

13. At the heart of the matter is the stipulation in Regulation no. 25 of 2009 Tariff Regulations, which reads thus:

- “25. (1) Recovery of capacity charge, energy charge, transmission charge and incentive by the generating company and the transmission licensee shall be based on the achievement of the operational norms specified in this Chapter.
- (2) *The Commission may on its own revise the norms of Station Heat Rate specified in this Chapter in respect of any of the generating stations for which relaxed norms have been provided.*
- (3) The savings on account of secondary fuel oil consumption in relation to norms shall be shared with beneficiaries in the ratio of 50:50, in accordance with the following formula at the end of the year:

$$(SFC \times NAPA F \times 24 \times NDY \times IC \times 10 - Acsfo y) \times LPSFy \times 0.5$$

Where,

$AC_{sfo y}$  = Actual consumption of secondary fuel oil during the year in ml”

[Emphasis supplied]

14. The formulation given in clause (3) of Regulation 25 quoted above needs some explanation. The SFC, as already noted, represents the secondary fuel oil consumption. The next component “NAPAF” is described as “normative annual plant availability factor” which, for present purposes, would be 80%. The expression “NDY” means “number of days”. The next factor “IC” in the above-quoted formula means “installed capacity”. The expression “Acsfo y”, as clearly spelt out in the Regulation

quoted above means “*actual consumption of secondary fuel oil during the year in ml*”. The component “*LPSFy*”, on the other hand, means “*weighted average landed price of secondary fuel in Rs./ml*”.

15. What stands out from the above overview of the relevant regulations is that energy charge rate (ECR) is calculated in terms of Regulation no. 21 on monthly basis whereas the sharing of the savings on account of reduction in secondary fuel oil consumption under Regulation no. 25 would occur, in accordance with formula given there-under, “*at the end of the year*”.

16. The dispute stems from disinclination of the Central Commission to factor in the reduced cost of consumption of secondary fuel in calculation of the energy charge and insistence instead on computation based on normative secondary fuel oil consumption.

17. A similar dispute concerning coal-fired thermal generating station of NTPC had come up before the Central Commission, in context of 2009 Tariff Regulations, in Petition No. 285/MP/2013 which was decided by the said Commission by its Order dated 10.07.2015. Relevant part of the said decision may be quoted as under:

*“12. Perusal of ECR formula in Regulation 21(6) (a) reveals that the effect of secondary fuel oil is to determine as to how much heat the fuel oil is contributing which will be deducted from the Gross Normative Station Heat Rate. Now the question for our consideration is whether energy*

charge would be adjusted after the end of the year based on actual consumption of secondary fuel oil or it would remain as computed based on normative SFC for the month. The petitioner has submitted that the respondent be directed to calculate ECR with normative value of SFC (1ml/kWh). However, in formula for computation of ECR, SFC has been specified as specific fuel oil consumption in ml per kWh, and not the normative specific fuel consumption, implying that it has to be on actual basis. The petitioner has contended that as per Regulation 25 (3) of 2009 Tariff Regulations, savings in SFC in relation to norms shall be shared by the generating company with the beneficiaries in the ratio of 50:50. Regulation 25 (3) of the 2009 Tariff Regulations is extracted as under:

“25 (3) The savings on account of secondary fuel oil consumption in relation to norms shall be shared with beneficiaries in the ratio of 50:50, in accordance with the following formula at the end of the year:

$(SFC \times NAFAP \times 24 \times NDY \times IC \times 10 - ACsfoy) \times LPSFy \times 0.5$

Where,

ACsfoy = Actual consumption of secondary fuel oil during the year in ml.

...

15. Since the energy charge in 2009 Tariff Regulations comprises only the coal cost, the amount of specific oil consumption has bearing on the energy charge. For example, if the actual specific oil consumption is 0.12 ml/kWh against the normative specific oil consumption of 1.00 ml/ kWh, then the quantity of coal consumed per kwh i.e. specific coal consumption (kg/kwh) would be higher in case of secondary oil consumption of 0.12 ml/kWh. The cost of specific coal consumption is energy charge rate. If ECR is not revised based on the actual SFC, the additional specific coal consumption cost due to less consumption of SFC would remain unrecovered. This can be explained by the following example:

Assuming

Cost of coal = ` 2000/ton

GCV of oil = 10000 kcal/liter

SFC Actual = 0.12 ml/kwh

GCV of Coal = 3800 kcal/kg.

SFC Normative = 1 ml/kwh Normative Station Heat Rate = 2425 kcal/kwh

	<b>Normative</b>	<b>Actual</b>
<b>Cost of oil consumption</b>	Sp. Oil consumption x cost of oil/liter	
	$\frac{1\text{ml/kwh} \times \text{Rs.}35000}{1000000}$	$\frac{0.12 \text{ ml} \times \text{Rs.}35000}{1000000}$
	Rs. 0.035/kwh	Rs. 0.0042 /kwh
<b>Heat contribution of oil</b>	Gross calorific value of oil x Sp. Oil consumption	
	$\frac{10000 \text{ kcal/liter} \times 1 \text{ ml/kwh}}{1000}$	$\frac{1000 \times 0.12}{1000}$

	10 kcal/kwh	1.2 kcal/kwh
<b>Heat contribution of coal</b>	2425-10	2425-1.2
	2415 kcal/kwh	2423.8 kcal/kwh
<b>Specific coal consumption</b>	$\frac{\text{Heat contribution of coal}}{\text{Gross calorific value of coal}}$	$\frac{2423.8}{3800}$
	$\frac{2415}{3800} = 0.6355 \text{ kg/kwh}$	0.6378 kg/kwh
<b>Cost of specific coal</b>	$\frac{0.6355 \times 2000}{1000}$	$\frac{0.6378 \times 2000}{1000}$
	Rs. 1.271	Rs. 1.2756
<b>Difference in cost</b>	$1.2756 - 1.2710 = 0.0046 = 0.46 \text{ paise/kWh}$	

16. Perusal of billing data given in the petition reveals that the respondent is adjusting Energy Charge at the end of a year by taking average of (normative SFC+ actual SFC)/2 of a year. This methodology has been adopted by NTPC to share the savings in the consumption of actual SFC in comparison to normative SFC. However, the said methodology is in deviation to Regulation 21 (6) of the Tariff Regulations. However, NTPC is charging less by applying this methodology as compared to the energy charge considering normative specific fuel oil consumption 1ml/kWh.

17. In view of the above discussions, there is no merit in the contention of the petitioner. It is clarified that the decision in this case shall not be used to reopen the settled cases.”

[Emphasis supplied]

18. The learned counsel for the appellant explained, and the learned counsel for the respondent would not join issue with him on this, that the SHR of 2750 kCal/kW is normative and fixed for lignite-fired thermal power station. If secondary fuel oil consumption is 2 ml/kW, the remaining part of SHR of 2750 kCal/kW is achieved by use of primary fuel i.e. lignite. To illustrate, learned counsel submitted, since 1 ml of specific fuel oil consumption produces a heat rate of 10 kCal/kW, for 2 ml of oil consumption 20 kCal/kW relates to specific oil consumption, the balance

of 2730 kCal/kW being relatable to lignite. Further, if there is saving in the specific fuel oil consumption – 1 ml of oil in place of 2 ml – 2740 kCal/kW will relate to consumption of primary fuel (lignite), 10 kCal/kW having been achieved through specific secondary fuel oil consumption.

19. We note that Regulation no. 26 of 2009 Tariff Regulations only specifies the normative SHR, there being no provision for reduction in the normative SHR by reason of reduced use of specific fuel oil. The generator is entitled to factor in the additional cost incurred towards primary fuel consumption on account of reduced secondary fuel oil consumption to achieve efficiency while maintaining the normative SHR, the Regulations also obliging it to share the benefits in the differential of the cost of specific fuel oil.

20. The data relating to the case of NTPC which led to the Order dated 10.07.2015 of the Central Commission, as shown in the table forming part of the extract quoted above vividly brings out the savings which had to be shared under Regulation no. 25. If the generator had adhered to the norms the cost of SFC would have been Rs. 0.035/kW and that of primary fuel (coal in that case) at Rs. 1.271/kW, it totalling up to Rs. 1.306/kW. In contract, by reducing the secondary fuel oil consumption the expenditure on that account was brought down to Rs. 0.0042/kW though this increased the price of primary fuel, the cost whereof had escalated marginally to Rs.

1.2756/kW, the total cost coming to Rs. 1.2798/kW showing net saving of Rs. 0.0262/kW. Noticeably the Central Commission acknowledged in that case that, by this methodology, NTPC was charging less as compared to the energy charge calculated by factoring in normative fuel oil consumption, the calculation of ECR by the method other than the one adopted by NTPC resulting in its “*additional specific coal consumption cost*” remaining “*uncovered*”.

21. The appellant relied upon the decision of the Central Commission in the case of *NTPC* and prayed before it for the benefit of similar method of calculation. Its prayer to that effect was rejected by the impugned orders with the observations (as appearing in Order dated 21.07.2016 in Petition No. 474/GT/2014 which is subject matter of first captioned appeal, the reasoning in the other matter being similar) reading thus:

*“62. The petitioner in this petition has sought for substitution of the actual SFC in lieu of normative SFC, in the ECR determination under Regulation 21(6) for the period 2009-14, in terms of the order dated 10.7.2015. The Commission in its order dated 10.7.2015 while holding that the methodology adopted by NTPC was not in conformity to the Regulation 26(a) of the 2009 Tariff Regulations had observed that NTPC was charging less by applying the said methodology. Accordingly, the decision in the case of NTPC cannot be made applicable to the instant case of the petitioner. The petitioner has also prayed for recovery from the beneficiaries along with interest, the differential amount due to revision of ECR consequent to application of actual SFC in lieu of normative SFC. It is noticed that the Commission in the said order had clarified that the said decision cannot be used to reopen settled cases. In the light of the above discussions, the submissions of the petitioner are not acceptable and the prayer of the petitioner for substitution of the*

*actual SFC in lieu of normative SFC in the ECR determination is accordingly rejected.”*

*[Emphasis supplied]*

22. The observation of the Central Commission that the decision in *NTPC* cannot be used to “*reopen settled cases*” is inappropriate. If a formula had been accepted as sound in the previous case, there is no reason why it should not apply universally. The matters before the Central Commission in which the impugned orders were passed relate to truing-up and, therefore, it cannot be said that they are cases which had been “*settled*” earlier.

23. In our view, it was not correct on the part of the Central Commission to say in its Order dated 10.07.2015 in the matter of *NTPC* that the method of calculation applied there was in deviation of Regulation 21(6). The said view is in the teeth of conclusion recorded in para 12 of the said order (quoted earlier) that the element of “*SFC*” appearing in the formula for calculation of ECR in Regulation 21(6) implies that it has to be “*on actual basis*”. We endorse the said view (in para 12) for the reason that in the explanatory notes below clause (6) of Regulation 21, the qualifying word “*normative*” has been added wherever required (i.e. in relation to auxiliary energy consumption and limestone consumption). In sharp contrast, the explanatory note of SFC begins with the expression “*specific*”, which is it

clearly indicative of the actual secondary fuel oil consumption being factored in rather than normative SFC.

24. The Central Commission, in our view, has fallen in error by declining to follow the principle laid down in the previous decision dated 10.07.2015 in the matter of *NTPC*, this rendering it a case of inconsistency, the impugned orders being vitiated by the element of arbitrariness. In our view, subject to scrutiny being made of the claim of savings actually made by reduction of the secondary fuel oil consumption (which has to be shared with the beneficiaries in terms of Regulation 25), the Central Commission must follow its decision in the matter of *NTPC* for purposes of the present claims of the appellant. We order accordingly. After all, the additional expenditure incurred on primary fuel (lignite) on account of reduced SFC cannot be left *uncovered*".

25. For the foregoing reasons, the impugned orders to the extent thereby the benefit of dispensation in the case of *NTPC* (as referred to above) was declined to the appellant in the truing-up exercise for the periods in question are set aside. The Central Commission is directed to examine the data presented by the appellant and take appropriate decision on the subject of computation of ECR following the principle laid down in its Order dated 10.07.2015 in the matter of *NTPC*.

26. The parties are directed to appear before the Central Commission for further proceeding in light of above directions on 04.08.2020.

27. The appeals and the pending applications, if any, are disposed of in above terms.

**PRONOUNCED IN THE VIRTUAL COURT THROUGH VIDEO CONFERENCING**  
**ON THIS 28<sup>th</sup> DAY OF MAY, 2020.**

**(Justice R.K. Gauba)**  
Judicial Member

**(Ravindra Kumar Verma)**  
Technical Member

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