

Tripura State Electricity Corporation Limited

Truing up of FY 2023-24 for Generation, Transmission and Distribution business of TSECL

22 November 2024

Draft Truing up Petition for Generation, Transmission & Distribution Business of
TSECL for FY 2023-24

Filed By



Tripura State Electricity Corporation
Bidyut Bhawan, Banamalipur
Agartala, Tripura (W)

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1. Form -1: Petition

BEFORE THE HON'BLE TRIPURA ELECTRICITY REGULATORY COMMISSION, AGARTALA

File No.

Case No.

IN THE MATTER OF

Filing of the Truing up Petition by Tripura State Electricity Corporation Limited (TSECL) for FY 2023-24 under TERC MYT Regulations 2015 for generation business, transmission business and under TERC Tariff Regulation (Multi Year Distribution and Retail Supply Tariff), 2023 for distribution and retail supply business along with other guidelines and directions issued by the TERC from time to time and under Section 62 of the Electricity Act, 2003 read with the relevant Guidelines.

The TERC Tariff Regulation (Multi Year Distribution and Retail Supply Tariff), 2023, was issued on 15.03.2023. The Truing up Petition consider this notified Tariff Regulation for the distribution and retail supply business.

AND

IN THE MATTER OF

Tripura State Electricity Corporation Limited (hereinafter referred to as "TSECL" or the "utility") -
PETITIONER.

The applicant respectfully submits hereunder:

1. The power supply industry in Tripura had been under the control of the State Government till 31st December 2004. As part of the power sector reforms, Tripura State Electricity Corporation Limited (TSECL) was formed and registered under the Companies Act 1956 on 9th June 2004, in compliance with the MOU among Ministry of Power, Government of India & Government of Tripura on 28th day August 2003. TSECL was made functional, under section 131 & 133 of the Indian Electricity Act 2003, w.e.f. 1st January 2005 with the operational control of all assets related to Generation, Transmission, Distribution & its allied activities related to power sector of Tripura transferred to TSECL from Government of Tripura. This was done with the objective of improving the efficiency of services in this sector. In continuation with this reforms, Tripura Power Generation Limited (TPGL) has been constituted and all assets relating to Generation projects owned by TSECL is being transferred to TPGL with effect from 1st April 2016. However, the demerger of TPGL from TSECL as per provisions of Companies Act 2015, is still in progress, post which the independent functioning of TPGL shall commence. As such, a combined petition for generation and distribution is being filed by TSECL till such stage.
2. The Hon'ble Commission in exercise of power conferred under section 181 of The Electricity Act 2003 and all other powers enabling in this behalf issued the
 - TERC Tariff Regulation 2004,
 - TERC Tariff Procedure Regulation 2004.
 - TERC Conduct of Business Regulation 2004.
3. The present tariff petition is being filed in accordance with the relevant provision of the above-mentioned regulations as well as that of Electricity Act 2003 and National Tariff Policy.
4. This petition includes the True-up for the FY 2023-24 for generation, transmission and distribution. TSECL shall separately submit the MYT petition for FY 24-25 and FY 25-26
5. TSECL along with this petition is submitting the supporting/ supplementary data & information available and shall further make available the same to the extent available with TSECL as may be required by the Hon'ble Commission during its processing.

Prayer

TSECL respectfully prays that the Hon'ble Commission may:

- a. Admit this Petition;
- b. Examine the proposal submitted by the Petitioner for a favorable dispensation as detailed in the enclosed proposal;
- c. Consider the submissions and allow the proposed Truing up for FY 2023-24;
- d. Pass suitable orders for implementation of the tariff proposal;
- e. Approve the terms and conditions of tariff and various other matters as proposed in this petition and the proposed changes therein.

- f. Condone any inadvertent omissions/ errors/ shortcomings and permit TSECL to add/ change/ modify / alter this filing and make further submissions as may be required at a future date.

Pass such orders as the Hon'ble Commission may deem fit and proper, keeping in view the facts and circumstances of the case;



(Smt. Sujata Sarkar)

Deputy General manager

For and on behalf of

Tripura State Electricity Corporation Limited (TSECL)

Dated: 22/11/, 2024



सत्यमेव जयते

INDIA NON JUDICIAL

Government of Tripura

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 Purchased by : TSECL
 Description of Document : Article IA-4 Affidavit
 Property Description : NA
 Consideration Price (Rs.) : 0
 (Zero)
 First Party : TERC
 Second Party : TSECL
 Stamp Duty Paid By : TSECL
 Stamp Duty Amount(Rs.) : 50
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सत्यमेव जयते



Sl. No. 21/Nov/24 Date 22 NOV 2024

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BEFORE THE TRIPURA ELECTRICITY REGULATORY COMMISSION, AGARTALA

File No.

Case No.

IN THE MATTER OF

Filing of the Truing up Petition by Tripura State Electricity Corporation Limited (TSECL) for FY 2023-24 under TERC MYT Regulations 2015 for generation business, transmission business and under TERC Tariff Regulation (Multi Year Distribution and Retail Supply Tariff), 2023 for distribution and retail supply business along with other guidelines and directions issued by the TERC from time to time and under Section 62 of the Electricity Act, 2003 read with the relevant Guidelines.

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SUDIP KUMAR TARAN
 NOTARY, Govt. of Tripura
 Agartala, West Tripura
 Regd. No-35 of 2017



Handwritten signature in blue ink.

The TERC Tariff Regulation (Multi Year Distribution and Retail Supply Tariff), 2023, was issued on 15.03.2023. The Truing up Petition consider this notified Tariff Regulation for the distribution and retail supply business.

AND

IN THE MATTER OF:

Tripura State Electricity Corporation Limited,

Bidyut Bhawan, Banamalipur, Agartala, Tripura PETITIONER

I, **Smt. Sujata Sarkar**, daughter of Late Samir Ranjan Sarkar, aged 46 years, residing at Agartala do solemnly affirm and say as follows:

- 22 NOV 2024**
- I. I am **Smt. Sujata Sarkar**, Deputy General Manager (Commercial & Tariff) of Tripura State Electricity Corporation Limited, the representative of petitioner in the above matter and I am duly authorized by the said petitioner to make this affidavit on its behalf.
 - II. The statements made in the petition herein are true to the best of my knowledge, based on information received and true to my belief and nothing material has been concealed from the statements so made or documents or supporting data etc. attached.

Solemnly affirmed at... .. on this day of... .. , 2024 that the contents of this affidavit are true to my knowledge, no part of it is false or nothing material has been concealed there from and misleading material included therein.

Place: Agartala
Date:

22-11-24
SUDIP KUMAR TARAN
NOTARY, Govt. of Tripura
Agartala, West Tripura
Regd. No-35 of 2017

Dh, Dh
Deponent
(SUJATA SARKAR)
Deputy General Manager,
Commercial & Tariff,
TSECL, Agartala.

3. Summary of Petition

3.1. Preamble

1. Tripura State Electricity Corporation Limited (TSECL) has been created from the Department of Power, Government of Tripura and started its operation from 1st January 2005. TSECL was the sole electricity utility in Tripura responsible for generation, transmission and distribution of electricity in the State. Now, new company named **Tripura Power Generation Limited (TPGL)** has been formed with all generation assets of TSECL with effect from June 2015. TPGL which is now responsible for the State generation started functioning as an independent entity from September 2016.

2. As per the Govt. of Tripura notification dated 14.01.2023, the Transmission operations has been segregated from TSECL by the formation of a **separate company named Tripura Power Transmission Limited (TPTL)**. TPTL has been incorporated on 19th January 2023 as per Companies Act 2013, having CIN-U40106TR2023SGC014192. However, the demerger of TPGL and TPTL from TSECL as per provisions of Companies Act, 2015, is still in progress, post which the independent functioning of TPGL and TPTL shall commence. A consultant has been appointed for the financial demerger and separate accounts work for TPGL and TPTL. Accordingly, TSECL has filed a combined Petition.

3. The Government of Tripura (GoT) vide notification dated 24th July 2007, notified the final opening balance of the assets of TSECL with effect from January 1st 2005. As per this notification of Government of Tripura, Rs. 636.35 Crore worth of Fixed Assets and Rs. 18.39 Cr. of worth of current assets (after netting off current liabilities of Rs. 44.17 Crore) transferred to TSECL from the Department of Power, GoT. The authorized capital of TSECL increased from Rs. 10.00 Crore to Rs. 120.00 Crore. TSECL increased its issued, subscribed and paid-up share capital from Rs. 9.55 Crore to Rs. 109.29 Crore for consideration of other than cash by way of conversion of capital reserve amounting to Rs. 9.50 Crore and conversion of Department of Power loan amounting to Rs. 90.24 Crore.

3.2. Procedural History

Table 1. Details of past Tariff petitions filed by TSECL and Tariff Orders notified by the Commission

Sr. No.	Petition Filed	Date of filing	Order issue date	Remarks
1	First Tariff Petition was filed for the FY 2005-06 in accordance with the Tripura Electricity Regulatory Commission (Tariff Procedure) Regulation 2004, and Tripura Electricity Regulatory Commission (Tariff) Regulation 2004	-	24th June 2005	-
2	Submitted second ARR and Tariff Petition for FY 2006-07	4th August, 2006	14th September, 2006	-
3	In FY 2010-11, TSECL submitted a Petition for Fuel & Power Purchase Cost Adjustment (FPPCA)	FY 2010-11	13th September, 2010	-
4	Petition for Truing-Up for the period FY 2007-08 to FY 2010-11 and determination of ARR for FY 2012-13	20th January, 2012	28th March, 2012	The Order also included review of ARR for FY 2011-12 and determination

Sr. No.	Petition Filed	Date of filing	Order issue date	Remarks
				of ARR and tariff for FY 2012-13.
5	Commission approved the provisional True-Up for FY 2011-12, Review for FY 2012-13 and ARR and Tariff Order for FY 2013-14	-	15th March, 2013	-
6	Commission issued an Order with regard to True-Up for FY 2012-13, Review of FY 2013-14 and determination of Tariff for FY 2014-15	-	22nd November, 2014	-
7	First MYT petition for the control period of FY 2016-17 to FY 2022-23 including truing up of FY 2013-14, FY 2014-15 and FY 2015-16	February 2020	2nd September 2022	Commission notified the new MYT regulations in 2015
8	MYT petition for the control period from FY 2022-23 to 2023-24 along with the true-up for the period from FY 2017-18, 2018-19 and 2019-20	-	2nd September 2022	-
9	MYT petition for True-up petition of FY 20-21 and FY 21-22 and for the APR of the period FY 22-23 and ARR of the period FY 23-24	-	22nd September 2023	-
10	MYT petition for True-up petition of FY 22-23 and for the APR of the period FY 23-24 and ARR of the period FY 24-25	-	14th August 2024	-

3.3. Current Petition

4. Section 62 of the Electricity Act, 2003 mandates the utility to furnish details as may be specified by the State Electricity Regulatory Commission for determination of tariff. In addition, as per the TERC MYT Regulations 2015, issued by the Hon'ble Commission, TSECL is required to file true up Petition based on audited account statements to claim the difference of the actual and the approved ARR and seek the approval of the Hon'ble Commission for the same. The filing is to be done based on the audited account statements.

5. In compliance of this regulatory obligation, TSECL hereby files True-Up Petition for FY 2023-24 for generation business, transmission and distribution & retail supply business separately. The audited accounts of FY 2023-24 along with the audit report is submitted as an Annexure along with this petition.

6. The current petition has been prepared in accordance with the provisions of the following Acts/Policies/Regulations:

- Electricity Act 2003;
- National Electricity Policy;
- National Tariff Policy issued from time to time;
- Tripura Electricity Regulatory Commission Tariff Regulations (Multi Year Tariff), 2015

7. TSECL has made genuine efforts for compiling all relevant information relating to the True-up Petition as required under the Regulations issued by the Hon'ble Commission and has also made every effort to ensure that information provided to the Hon'ble Commission is accurate and free from material errors. However, there may be certain deficiencies owing to the limitations of the management information systems of the TSECL. Hence, TSECL prays before the Hon'ble Commission that the information provided be accepted for the current filing

and at the same time TSECL assures that it is taking appropriate measures to improve its management information system for improved data collection case any additional information or clarification is required, TSECL commits to provide the same as required, during the process of approval of the filed true up petition.

8. Accordingly, TSECL prays before the Hon'ble Commission to admit & process this true up Petition for FY 2023-24.

3.4. Contents of the Petition

9. This petition comprises of following main sections namely:

- True-Up Petition for FY 2023-24 for Generation
- True-Up Petition for FY 2023-24 for Transmission
- True-Up Petition for FY 2023-24 for Distribution

4. True Up for FY 2023-24 for Generation

4.1. Introduction

10. The regulatory provisions of Electricity Act 2003, specifies that the Hon'ble Commission shall undertake the True-up of Aggregate Revenue Requirement (hereinafter referred as "ARR") of utility for the period based on the comparison of the actual performance of the year with the approved estimate for that period. In line with the provisions of the Tripura Electricity Regulatory Commission Tariff Regulations (Multi Year Tariff), 2015, the TSECL hereby submits the true-up petition for financial year 2023-24 as per the audited Annual Accounts for FY 2023-24. Accordingly, revised Aggregate Revenue Requirement, revenue and consequent Gap with carrying costs for the period FY 2023-24 are provided in the following paragraphs of this section. The annual accounts for the period FY 2023-24 are also being submitted to the Hon'ble Commission along with this petition for the purpose of true up separately.

11. It is submitted that TSECL has not segregated the account statements for generation, transmission and distribution business completely and the work is under progress. The break-up of costs in generation, transmission and distribution business, wherever necessary for ARR and tariff calculation, have been done based on the division wise break-up of account statements and making suitable assumptions, as necessary, for the common functions like accounts and finance, HR, projects etc. at corporate level. As such, TSECL is submitting a combined petition for generation, transmission and distribution business with segregated ARR calculations as provided below.

12. The last MYT petition submitted by TSECL was for the True-up petition of FY 22-23 and for the APR of the period FY 23-24 and ARR of the period FY 24-25. Based on the petition, the Commission notified the tariff order on 14th August 2024. Based on this latest Tariff Order issued by the Commission (in August 2024), the approved figures for FY 2023-2024 are taken up in this True-Up petition. TSECL requests the Hon'ble Commission to consider the information submitted in this petition and in the formats and allow true-up of expenses as prayed in this petition.

4.2. Own Generation Parameters

4.2.1 Plant Load Factor (PLF) and Auxiliary Consumption

13. TSECL's generation is comprised of gas based RGTPP and BGTPP and hydro based GHEP. The PLFs and auxiliary consumption for the three generation units for the FY 2023-24 is tabulated below:

Table 2: Actual and Approved Plant wise PLF from FY 23-24

PLF calculation	Units	FY 23-24 Approved	FY 23-24 Actual
Rokhia RGTPP			
Gross Generation	MU	324.27	324.270
Installed Capacity	MW	63	63
PLF	%	58.76	58.76
Auxiliary Consumption	%	1.00%	1.00%
Total Net Generation for RGTPP	MW	321.03	321.03
Baramura BGTPP			
Gross Generation	MU	157.24	157.240
Installed Capacity	MW	42	42

PLF calculation	Units	FY 23-24 Approved	FY 23-24 Actual
PLF	%	42.74	42.74
Auxiliary Consumption	%	1.00%	1.00%
Total Net Generation for BGTPP	MW	155.67	155.67
Gumti GHEP			
Gross Generation	MU	16.86	16.86
Installed Capacity	MW	10	10
PLF	%	19.25	19.25
Auxiliary Consumption	%	0.70%	0.70%
Total Net Generation for GHEP	MW	16.74	16.74
Total Gross Generation for all the three generating plants	MU	498.37	498.37
Total Net Generation for all the three generating plants	MU	493.44	493.44

14. In the last year's petition by TSECL (True-up petition of FY 22-23, APR of the period FY 23-24 and ARR for FY 24-25), actual data for FY 23-24 was submitted by TSECL as per Commission's directives and the same was approved by the Commission in the notified Order. Hence, the actual and approved values are same for generation performance.

15. The installed capacity for the years has been calculated based on the average capacity available for the year. It may be noted that PLF of RGTPP has increased to around 58.76%, which equal to the TERC approved value for the year but less than the TERC norms related to PLF in Tariff Regulation (Multi Year Tariff), 2015 i.e. 85%. This is because one of the units out of the three units was shut down as per directive of Tripura State Pollution Control Board as the Environmental Clearance (EC) of the plant which was regularized as only in October 2023. TPGL has obtained the EC for regularization of the existing project of Rokhia in October 2023 from the Ministry of Environment and Pollution Control Board, however the third unit became operational from December 2023 and all the three units together operated from December 2023 onwards. However, for Rokhia in FY 23-24, the overall Gas supply was very less from the APM supply (from GAIL) which was one of the primary reasons and there was no supply from MDP (from ONGC) which has contributed to low overall Gas supply. The Rokhia Unit-8 was shut down for more than 70 days in FY 23-24 owing to unavailability of gas and Unit-9 of the plant was also unavailable for around 55 days due to maintenance and outage issues. A total of 3278 hours (almost 37.5% of run-time) was lost due to outage issues and insufficient gas supply to the Rokhia plant. The shutdown details for Rokhia and Baramura power plants are attached in **Annexure-I** of this petition.

16. The PLF of BGTPP is consistent with the approved values, however it has decreased compared to previous years. There have been constraints in Gas supply for BGTPP in the last few years. The gas availability was 126.17 MMSCM in FY 2022-23. At present (in FY 2023-24), the gas availability of BGTPP is 67.77 MMSCM out of which 67.61 MMSCM is under the Administered Price Mechanism (APM) gas mechanism and balance 0.16 MMSCM is under the MDP (Market Determined Price) mechanism. The Unit #5 of Baramura plant went considerable shutdown due to outage issues and over 362 hours (around 4.41% of runtime) were lost due to outages and maintenance throughout the year. The shutdown details are mentioned in **Annexure-I** of this petition.

17. Compared to the PLF, the availability factor of RGTPP and BGTPP are at around 87.52% and 95.86% respectively for the period FY 2023-24 which is better than the normative value of 85%. As such, the lower PLF was mainly due to

the shortage in supply of gas and directive by TPCB regarding regularization of EC which was in process. The plant wise availability of both the thermal plants in FY 2023-24 are given as:

Table 3: Plant wise Availability %

Plant wise availability	Units	FY 23-24 Approved	FY 23-24 Actual
RGTPP	%	85.0	87.52
BGTPP	%	85.0	95.86

18. In the case of GHEP, out of the three units, only two units run continuously based on the annual average live storage capacity which can generate electricity of 50-60 MUs annually. As such, Gumti plant can presently generate only 7-8 MW output by running two units.

19. It may be noted that the auxiliary consumption of the generating plants has been considered as per actual which is well within the norms of the Commission.

4.2.2 Heat Rate

20. Heat rate of a thermal power plant is a measure of the power plant's energy efficiency. The heat rates calculated for RGTPP and BGTPP for FY 23-24 based on the net calorific values (kcal/Standard Cubic Meter) of the gas being supplied to power plants and consumption of gas (Standard Cubic Meter or SCM) is shown below.

Table 4: Plant wise Heat Rate and Calorific Value of Past Year FY 23-24

Year	Heat Rate (Kcal/kWh)		
	BGTPP	RGTPP	Average
FY 23-24 Approved	3700	3700	3700
FY 23-24 Actual	3574.46	3531.31	3552.89

Year	Calorific Value (Kcal/SCM)		
	BGTPP	RGTPP	Average
FY 23-24 Approved	8275.11	8330.34	8302.72
FY 23-24 Actual	8293.07	8308.59	8300.83

21. It may be observed that actual Gross Station Heat Rate (SHR) of BGTPP has improved in FY 23-24 compared to the previous year, i.e. to **3574.46 kcal/kWh** but still much lower than the normative value of **3700 kCal/kWh**. For Rokhia too, the average heat rate has dipped to **3531.31 kcal/kWh**, which is much lower than the normative value of **3700 kCal/kWh**, due to lower availability of Gas. As such, there is improvement in actual performance on this parameter as compared to the normative FY23-24 values. The Gross Calorific Value (GCV) of BGTPP and RGTPP has been found to be **8293.07** and **8308.59 kcal/SCM** which is almost nearer to the approved average value of **8302.72 kcal/SCM**.

22. It may be noted that the Commission while approving the ARR of generation has considered the actual heat rates and PLF of the plant or in other words the actual performance of the generating plant. Hence, the TSECL has not considered any **Sharing of financial gains** as there is no gain for TSECL if the actual performance is taken into

account for calculation of ARR and hence, there is no question of sharing of gain with the consumer as the entire gain has already been passed to the consumer through pass through of actual fuel cost.

4.3. Interest on Working Capital

23. The working capital is estimated for calculating the normative interest charges to be allowed for financing the working capital requirements. As per TERC Tariff Regulation (Multi Year Tariff), 2015, the working capital norms have been defined separately for thermal generation station and Hydro generating stations, as given below:

24. For Open-cycle Gas Turbine/Combined Cycle thermal generating stations (for RGTPP and BGTPP):

- One month Fuel cost
- Maintenance spares @ 30% of operation and maintenance expenses
- Receivables equivalent to two months of capacity charge and energy charge
- One Month O&M Expenses

25. For Hydro generating station (for GHEP):

- Receivables equivalent to two months of fixed cost
- Maintenance spares @ 15% of operation and maintenance expenses
- One Month O&M Expenses

26. The historical SBI base rate is tabulated below which has been used to calculate the normative interest rate.

Table 5. Historical SBI base rate and interest rate

Effective Date for SBI Base Rate	Interest Rate (%)
15.03.2023	10.10
15.06.2023	10.10
15.09.2023	10.10
15.12.2023	10.25
15.03.2024	10.25

Source - <https://www.sbi.co.in/web/interest-rates/interest-rates/base-rate-historical-data>

27. Based on the above, the normative working capital requirements as per TERC regulations, the normative interest component on same and actual interest (taking 10.10% effective from 01.04.2023 SBI base rate plus 3% additional basis points, i.e., 13.10%) to be incurred for working capital is tabulated below:

Table 6: Interest of Working Capital in Rs Crores

Particulars	FY 2023-24 (Approved)	FY 2023-24 (Actual)
Rokhia gas based thermal power plant (RGTPP)		
Fuel stock	15.78	17.85
Maintenance Spares stock@ 30% of O&M Expenses	14.12	4.07
Receivables for 2 months	0	41.84
O&M expenses for one month	3.92	1.13
TOTAL	33.82	64.89
Normative Interest on Working Capital @ SBI Base Rate + 3%	12.40%	13.10%

Particulars	FY 2023-24 (Approved)	FY 2023-24 (Actual)
Interest on Working Capital	4.19	8.50
Baramura gas based thermal power plant (BGTPP)		
Fuel stock	7.65	8.77
Maintenance Spares stock @ 30% of the O&M Expenses	9.42	1.91
Receivables for 2 months	0	21.35
O&M expenses for one month	2.62	0.53
TOTAL	19.68	32.55
Normative Interest on Working Capital @ SBI Base Rate + 3%	12.40%	13.10%
Interest on Working Capital	2.44	4.26
Gumti Hydro Electric Plant (GHEP)		
Fuel stock	-	-
Maintenance Spares stock @ 30% of the O&M Expenses	0.62	0.71
Receivables for 2 months	0	1.04
O&M expenses for one month	0.35	0.39
TOTAL	0.97	2.15
Normative Interest on Working Capital @ SBI Base Rate + 3%	12.40%	13.10%
Interest on Working Capital	0.12	0.28
Total Interest on Working Capital of TSECL (Generation)	6.75	13.07

4.4 Return on Equity and Tax on Income

28. As per Clause 26 of Tariff Regulation (Multi Year Tariff) 2015, Return on Equity shall be computed at a base rate of 15.50% for thermal stations and 16.50% storage type hydro stations on equity base. So, base rate for calculation of RoE of two gas plants (RGTPP & BGTPP) and GHEP would be 15.50% and 16.50% respectively.

29. The amount of equity base to be considered for calculation of return has been considered based on the relevant clause (clause 21) of Tariff Regulation (Multi Year Tariff) 2015, which states

“For a project declared under commercial operation on or after 16th Oct 2015, if the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan. In case of the generating station declared under commercial operation prior to 16th Oct 2015, debt-equity ratio allowed by the Commission for determination of tariff for the period ending the year before the date of publication of above regulation on the Official Gazette shall be considered”.

30. It may be noted that the Commission in its past orders had considered equity base for the generation projects as 30% of the Gross Fixed Asset Value and as such the same is considered here for the purpose of calculation of RoE based on legal precedent as per past orders. Equity fund of TSECL is calculated after allocating equity fund of TSECL in the Gross fixed assets ratio among generation, transmission and distribution business. After that equity fund of generation business allocated among three plants based on gross fixed assets ratio for each of the plants.

31. As per Clause 27 of Tariff Regulation (Multi Year Tariff) 2015,

The base rate of return on equity as allowed by the Commission under Clause 26 (mentioned above) shall be grossed up with the effective tax rate of the respective financial year. For this purpose, the effective tax rate shall be considered on the basis of actual tax paid in the respect of the financial year in line with the provisions of the relevant Finance Acts.

32. The tax amount on RoE has been taken as per actual tax paid as reflected in the account statements and divided in the ratio of paid up capital in the different business functions

Table 7: Calculation of Pre-Tax return on Equity

Sr. No.	Particulars	RGTPP	BGTPP	GHEP
1	Return on Equity as per norms	15.50%	15.50%	16.50%

33. The return on equity computed on paid up capital is summarized in the table given below:

Table 8: Calculation of Equity Fund and Return on Equity in Rs. Crores

Particulars	FY 23-24 (Approved)	FY 23-24 (Actual)
Rokhia gas based thermal power plant (RGTPP)		
Total GFA (Considered for RoE purpose)	256.22	209.80
Normative Equity fund (30% of GFA)	76.87	62.94
Return on Equity	5.60	9.76
Tax on RoE	0	0.00
Baramura gas based thermal power plant (BGTPP)		
Total GFA (Considered for RoE purpose)	217.36	141.61
Normative Equity fund (30% of GFA)	65.21	42.48
Return on Equity	4.75	6.58
Tax on RoE	0	0.00
Gumti Hydro Electric Plant (GHEP)		
Total GFA (Considered for RoE purpose)	30.83	13.42
Normative Equity fund (30% of GFA)	9.25	4.03
Return on Equity	0.72	0.66
Tax on RoE	0	0.00
Total RoE Claimed	11.07	17.01

4.5 Expenditure

4.5.1 Fuel Cost

34. The only fuel used by TSECL for self-generation of energy is natural gas. The natural gas is being sourced from the reserves at Rokhia, Baramura and Konabanpartly under the Average Price Mechanism (APM) at the rates notified by the Ministry of Petroleum and Natural Gas (MoP&NG), Government of India and partly at the Market Determined Price (MDP). TPGL has allocations of 0.58 MMSCMD and 0.40 MMSCMD under the APM gas mechanism for its generation plants at RGTPP and BGTPP respectively.

35. Currently, GAIL is able to supply only 0.38 MMSCMD (65% of allocations) and 0.19 MMSCMD under APM gas mechanism to RGTPP and BGTPP respectively. Other than the APM gas allocations, TSECL also purchased some quantity of gas under Market Determined Price (MDP) to meet the outstanding gas requirements for running the

generation plants at Rokhia and Baramura. Based on the above, source wise (APM and MDP) supply of gas for FY 2023-24 are provided in Table 7 below.

36. As per Clause 25 of Tariff Regulation (Multi Year Tariff) 2015, the landed fuel cost of primary fuel and secondary fuel for tariff determination shall be based on actual weighted average cost of primary fuel and secondary fuel of the three preceding months. This fuel cost includes other costs like metering charges, Vat payable, etc. The latest fuel cost for FY 2023-24 is shown in the table given below:

Table 9: Source wise Supply of Fuel and Fuel Cost (per SCM) in FY 23-24

Particulars	RGTPP	BGTPP
Source wise supply of Natural Gas (In %)		
APM supply from GAIL	100.00%	99.76%
MDP Supply from ONGC	0.00%	0.24%
Fuel Cost (Rs./SCM)		
Cost of APM Supply	15.30	15.04
Cost of MDP Supply	0.00	10.52

37. It may be observed from the table below that the gas prices have been increasing in the past 1-2 years, from 6.10 US\$/MMBtu in April 2022 to 8.17 US\$/MMBtu in March 2024 and ranged from 7.48 to 9.20 US\$/MMBtu in FY 2023-2024. Further, the Gas price ceiling (as notified by MoPNG, GoI) from APM/MDP Gas supply from April 2023 to March 2024 was capped at **6.50 US\$/MMBtu**.

38. The Gas prices are now being revised monthly as per MoPNG notification from April 2023 onwards. The prices of Domestic Gas have now undergone change month wise, and the prices have been mentioned in the table below.

Table 10: Gas prices in US\$/MMBtu in FY 22-24

Period	Gas Price (US\$/MMBtu)	Gas Price ceiling (US\$/MMBtu)
April 2021 – Sept 2021	1.79	3.62
Oct 2021- Mar 2022	2.90	6.13
April 2022 – Sept 2022	6.10	9.92
Oct 2022- Mar 2023	8.57	12.46
April 2023 (1st to 7th)	9.16 & 7.92	6.50
April 2023 (8th to 30th)	7.92	6.50
May 2023	8.27	6.50
June 2023	7.58	6.50
July 2023	7.48	6.50
August 2023	7.85	6.50
September 2023	8.60	6.50
October 2023	9.20	6.50
November 2023	9.12	6.50
December 2023	8.47	6.50
January 2024	7.82	6.50
February 2024	7.85	6.50
March 2024	8.17	6.50

39. In the latest Tariff Order notified by the Commission in August 2024, the Commission has considered the fuel price of Rs.13,071.28/SCM for determination of fuel cost for FY 2023-24 and stated that the actual fuel cost based on actual fuel prices shall be considered at time of truing up. The actual plant wise fuel consumption and fuel costs for FY 2023-24 are tabulated below:

Table 11: Fuel Consumption and Fuel Cost in Rs. Crores

Particulars	FY 23-24 (Approved)	FY 23-24 (Actual)
Rokhia gas based thermal power plant (RGTPP)Rokhia		
Fuel Consumption (In MMSCM)	144.83	137.84
Fuel Cost	189.31	214.22
Baramura gas based thermal power plant (BGTPP)		
Fuel Consumption (In MMSCM)	70.23	67.77
Fuel Cost	91.8	105.23
Total Fuel Cost	281.11	319.45
Cost of HSD Oil		0.02
Total Fuel Cost for Generation in FY 23-24		319.47

40. The cost of HSD oil used for Gas turbine has been booked as Rs 0.02 Crs. which has been considered for the total fuel cost for Generation in Annual Accounts in FY 2023-24. Thus, the total cost of fuel for Generation in FY 2023-24 is amounting to **Rs 319.47 Crores**.

4.5.2 Operation and Maintenance Cost

41. As per Clause 31 (1) (b) of Tariff Regulation (Multi Year Tariff) 2015, Operation and Maintenance expenses of RGTPP and BGTPP has been calculated previously based on the normative cost per MW of capacity as mentioned in the Tariff order dated 14th August 2024. The total O&M cost for the generation taken is as shown below:

Table 12: O&M Expenses as per Norms

Particulars	Amount (Rs. in Lacs per MW)
FY 2023-24	74.73

42. For hydro generating stations, O&M cost is calculated by escalating last year O&M cost by 6.64%.

43. However, in this tariff petition for FY 2023-24, the actual Operation & Maintenance Costs (O&M) have been taken based on the actual audited accounts statements received from TSECL as per the approach of the Commission in their last Tariff Order. Further, we have segregated the costs based on the actual costs incurred towards Employee Costs, Repair & Maintenance Expenses (R&M) and Administrative & General Expenses (AG) from the three generating stations of Rokhia, Baramura and Gumti. The methodology used in calculating these expenses are similar to the ones implemented for the Transmission and Distribution businesses expenses towards O&M as submitted previously in our petition.

44. It may be noted that the actual Operation & Maintenance (O&M) expenses are coming out to be much less than the approved O&M expenses considered in the previous Tariff orders based on the normative cost principle taken

previously in our tariff petitions. Hence, we would like request the Commission to accept the actual costs owing to increase in A&G costs for the power plants. This is due to the rise in costs due to Technical & Manpower Support which have arisen due to expenditure incurred due to Contractual manpower hired for ongoing power infrastructure strengthening projects which have resulted in increase in A&G costs for power plants.

45. The plant wise actual O&M Cost incurred for FY 2023-24 is being proposed by TSECL to determine based on the actual audited expenses booked for the FY 2023-24 as detailed below. Although the actual O&M cost is more than the approved values but lesser than the normative O&M costs owing to limitation of funds, the approved O&M costs may be considered in future if the actual O&M costs increases.

Table 13: O&M Cost in Rs. Crores

Particulars	FY 2023-24 (Approved)	FY 2023-24 (Actual)
Rokhia gas based thermal power plant (RGTPP) Rokhia		
Operation & Maintenance Cost	6.17	13.57
Employee Cost	4.61	4.76
Repair & Maintenance	0.47	0.93
A&G Cost	1.09	7.88
Baramura gas based thermal power plant (BGTPP)		
Actual Operation & Maintenance Cost	6.12	6.25
Employee Cost	3.40	3.57
Repair & Maintenance	1.42	0.97
A&G Cost	1.30	1.72
Gumti Hydro Electric Plant (GHEP)		
Actual Operation & Maintenance Cost	4.15	4.69
Employee Cost	3.73	3.77
Repair & Maintenance	0.28	0.31
A&G Cost	0.39	0.61
Total O&M cost claimed	16.44	24.51

46. It may be noted that the cost of periodic planned maintenance like CIBI, Major Inspection etc. is not being booked under R&M works but are booked as Capex and other R&M activities undertaken under disaster management is also not booked under R&M expenses resulting in understatement of R&M expenses in accounts.

47. It may be noted that the A&G expenses have increased than the approved figures in FY 23-24.

4.5.3 Depreciation

48. For the calculation of depreciation, the depreciation rates have been taken from Tariff Regulation (Multi Year Tariff) 2015 on the gross asset value. However, in account statement depreciation have been calculated as per depreciation rate provided in Companies Act 2013 i.e. based on the useful life.

Table 14: Rate of Depreciation as per Tariff Regulation

Particulars	Depreciation Rate as per
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Tariff Regulation	
Land	0.00%
Building	3.34%
Plant & Machinery	5.28%
Computer	15.00%
Computer and Office Equipment	15.00%
Office Equipment	6.33%
Furniture	6.33%
Vehicles	9.50%

49. Category wise depreciation calculation for the Generating plants are tabled below:

Table 15: Actual Depreciation for FY 23-24 (Rs. in Crores)

Particulars	FY 23-24 (approved)	FY 23-24 (Actual)
Rokhia gas based thermal power plant (RGTPP)		
Total Depreciation on Generation of Rokhia GTPP	4.79	5.18
Baramura gas based thermal power plant (BGTPP)		
Total Depreciation on Generation of Baramura GTPP	5.73	5.84
Gumti Hydro Electric Plant (GHEP)		
Total Depreciation on Generation of Gumti SHP	1.37	0.80
Total Depreciation combining all the Three Generating plants	11.89	11.83

4.6 Non-tariff Income

50. The other income of TSECL covers mainly interest earned on fixed deposits made in various banks, sale of tender forms and other miscellaneous income like sale of scrap, sale of tender, meter rent etc. These incomes are being separately booked under other income category. Earning from investment and other miscellaneous incomes are detailed in the table below from the FY 23-24. The actual data based on audited accounts has been tabulated for the same year. The figures for FY 23-24 have been derived from division wise account statements.

Table 16: Non-Tariff Income (In Rs Crores)

Particulars	FY 23-24 (Approved)	FY 23-24 (Actual)
Non Tariff Income, RGTPP	0.10	0.21
Non Tariff Income, BGTPP	0.01	0.19
Non Tariff Income, GHEP	0.07	0.22
Total	0.18	0.62

4.6.1 Sharing of Financial Gains and Losses

51. It may be noted that the Commission while approving the ARR of generation has considered the actual heat rates and PLF of the plant or in other words the actual performance of the generating plant. However, while calculating the sharing of financial gains, the **Commission has not calculated any sharing of financial gains** and has approved the request of the petitioner TSECL in the previous petition based on the fact as there has been no gain for TSECL if the actual performance is taken into account for calculation of ARR and hence, there is no question of

sharing of gain with the consumer as the entire gain has already been passed to the consumer through passthrough of actual fuel cost.

4.6.2 Summary of true up for FY 2023-24

52. Based on the details of expenditure and non- tariff income given above and determined in accordance with TERC tariff regulations, the total annual revenue requirement of FY 2023-24 is calculated. We are submitting below generation station wise true up claim as given below: -

4.6.3 True up of Generation for FY 2023-24

Table 17: Summary of Actuals for True-up of Generation of FY 2023-24 in Rs. Crores

Particulars	Actual FY 2023-24				Approved FY 2023-24				Gap (Actual-Approved) FY 2023-24			
	RGTPP	BGTPP	GHEP	Total	RGTPP	BGTPP	GHEP	Total	RGTPP	BGTPP	GHEP	Total
1. Installed Capacity (MW)	63.00	42.00	10.00	115.00	63.00	42.00	10.00	115.00	0.00	0.00	0.00	0.00
2. Generation (MU)	324.27	157.24	16.86	498.37	324.27	157.24	16.86	498.37	0.00	0.00	0.00	0.00
3. Auxiliary Consumption	3.24	1.57	0.12	4.93	3.24	1.57	0.12	4.93	0.00	0.00	0.00	0.00
Net units available forsale(2-3)	321.03	155.67	16.74	493.44	321.03	155.67	16.74	493.44	0.00	0.00	0.00	0.00
Expenditure												
1.Fuel Cost	214.22	105.23	-	319.47	189.31	91.8	-	281.11	24.91	13.43		38.36
2. Operation & Maintenance Cost	13.91	6.35	4.73	24.99	6.17	6.12	4.15	16.44	7.74	0.23	0.58	8.55
3.Finance Cost	-	-	-	-								
4. Depreciation	5.18	5.84	0.80	11.83	4.79	5.73	1.37	11.89	0.39	0.11	-0.57	-0.06
5. Interest on Working Capital	8.53	4.26	0.28	13.07	4.19	2.44	0.12	6.75	4.33	1.82	0.16	6.32
Total Expenditure (1+2+3+4+5)	241.84	121.70	5.81	369.35	204.46	106.09	5.64	316.19	37.38	15.60	0.17	53.16
Add: Return on Equity	9.76	6.58	0.66	17.00	5.6	4.75	0.72	11.07	4.16	1.83	-0.06	5.93
ARR	251.60	128.28	6.48	386.36	210.06	110.84	6.36	327.26	41.54	17.44	0.12	59.09
Less: Non-Tariff Income	0.21	0.19	0.22	0.62	0.1	0.01	0.07	0.18	0.11	0.18	0.15	0.44
Net ARR	251.39	128.09	6.26	385.74	209.96	110.83	6.29	327.08	41.43	17.26	-0.03	58.65



5. True Up for FY 2023-24 for Transmission

5.1. Working Capital

53. TSECL does not have any long terms loan taken for transmission business and as such is not considering any interest on loans. However, the interest on working capital is being claimed on normative basis as provided below:

54. The working capital is estimated for calculating the normative interest charges to be allowed for financing the working capital requirements. The Petitioner is eligible for interest on working capital worked out on methodology specified in the Regulations for transmission business as provided below:

1. Receivables equivalent to two months of fixed cost;
2. Maintenance spares @ 15% of operation and maintenance expenses specified in Clause 31; and
3. Operation and maintenance expenses for one month.

55. In accordance with the TERC Tariff Regulations (Multi Year Tariff), 2015, the interest on the working capital requirement would be the SBI Base Rate plus 300 basis points as on 1st April of the year (here with effect from 1st April, 2020) for which the tariff is determined. The Petitioner in the instant Petition has considered the interest rate on working capital requirement at 13.10% (taking 10.10% effective from 01.04.2023 SBI base rate plus 3% additional basis points) for FY 2023-24.

56. The historical SBI base rate is tabulated below which has been used to calculate the normative interest rate.

Table 18. SBI base rate (%)

Effective Date for SBI Base Rate	Interest Rate (%)
15.03.2023	10.10
15.06.2023	10.10
15.09.2023	10.10
15.12.2023	10.25
15.03.2024	10.25

57. Based on the above, the normative working capital requirements as per TERC regulations, the normative interest component on same and actual interest to be incurred for working capital, taken as 13.10% as on 01.04.2023, is tabulated below:

Table 19: Interest on Working Capital in Rs. Crores

Particulars	FY 2023-24 (Approved)	FY 2023-24 (Actual)
Receivables for 2 months of fixed cost	0.00	10.33
Maintenance Spares stock @ 15% of O&M	3.92	5.02

Particulars	FY 2023-24 (Approved)	FY 2023-24 (Actual)
Costs		
O&M expenses for 1 month	2.18	2.79
TOTAL Working Capital	6.10	18.14
Normative Interest on Working Capital @ SBI Base Rate + 3%	12.40%	13.10%
Interest on Working Capital on Transmission of TSECL	0.76	2.38

5.2. Return on Equity and Tax on Income

58. As per Clause 26 of Tariff Regulation (Multi Year Tariff) 2015, Return on Equity (RoE) shall be computed at a base rate of 15.50% for thermal stations and 16.50% storage type hydro stations on equity base. So, Base rate for calculation of RoE of two gas plants (RGTPP & BGTPP) and GHEP would be 15.50% and 16.50% respectively.

59. The amount of equity base to be considered for calculation of return has been considered based on the relevant clause (clause 21) of Tariff Regulation (Multi Year Tariff) 2015, which states

“For a project declared under commercial operation on or after 16th Oct 2015, if the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan. In case of the generating station declared under commercial operation prior to 16th Oct 2015, debt-equity ratio allowed by the Commission for determination of tariff for the period ending the year before the date of publication of above regulation on the Official Gazette shall be considered”.

60. It may be noted that the Commission in its past orders had considered equity base for the generation projects as 30% of the Gross Fixed Asset Value and as such the same is considered here for the purpose of calculation of RoE based on legal precedent as per past orders. Equity fund of TSECL is calculated after allocating equity fund of TSECL in the Gross fixed assets ratio among generation, transmission and distribution business. After that equity fund of generation business allocated among three plants based on gross fixed assets ratio for each of the plants.

61. As per Clause 27 of Tariff Regulation (Multi Year Tariff) 2015,

The base rate of return on equity as allowed by the Commission under Clause 26 (mentioned above) shall be grossed up with the effective tax rate of the respective financial year. For this purpose, the effective tax rate shall be considered on the basis of actual tax paid in the respect of the financial year in line with the provisions of the relevant Finance Acts.

62. Since TPGCL is a newly incorporated company, the Minimum Alternative Tax (MAT Rate) rate has been considered for calculation of RoE as shown below.

Table 20: Calculation of Pre-Tax Return on Equity

Sr. No.	Particulars	RGTPP	BGTPP	GHEP
1.	Return on Equity as per norms	15.50%	15.50%	16.50%

63. The tax amount on RoE has been taken as per actual tax paid as reflected in the account statements and divided in the ratio of paid-up capital in the different business functions.

64. The return on equity computed on paid up capital is summarized in the table given below as per Commission order by taking effective rate of return as 15.50%, the following RoE for Transmission as:

Table 21: Calculation of Equity Fund and Return on Equity in Rs. Crores

Particulars	FY 23-24 (Approved)	FY 23-24 (Actual)
Transmission business		
Total GFA	181.32	390.70
Normative Equity fund (30% of GFA excl. Grant)	54.40	117.21
Equity fund considered for RoE (Min of actual and normative)	25.59	117.21
Return on Equity	3.97	18.17
Tax on RoE	0	0

5.3. Expenditure

5.3.1 Operation and Maintenance Cost

65. The actual O&M cost for Transmission business found out as per actual audited accounts is found higher than the approved values. The increase in value of O&M costs are attributed mainly because of the increase in cost of repair and maintenance of transmission assets due to infrastructure upgradation and rise in A&G costs (professional fees, hiring charges for vehicles).

66. The plant wise actual O&M Costs incurred in FY 2023-24 are detailed below:

Table 22: O&M Cost for Transmission business in FY 23-24 (in Rs. Crores)

Particulars	FY 2023-24 (Approved)	FY 2023-24 (Actual)
Transmission		
Actual Operation & Maintenance Cost	26.12	33.46
Employee Cost	21.28	20.11
Repair & Maintenance	2.59	6.31
A&G Cost	2.25	7.03
Total O&M Cost	26.12	33.46

67. The actual O&M cost as per the audited account statements should be allowed as the approved cost as per the provisional statement.

5.3.2 Depreciation

68. For the calculation of depreciation, the depreciation rates have been taken from Tariff Regulation (Multi Year Tariff) 2015 on the gross asset value. However, in account statement depreciation have been calculated as per depreciation rate provided in Companies Act 2013 i.e. based on the useful life.

Table 23: Rate of Depreciation as per Tariff Regulation

Particulars	Depreciation Rate as per Tariff Regulation
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Land	0.00%
Building	3.34%
Plant & Machinery	5.28%
Computer	15.00%
Computer and Office Equipment	15.00%
Office Equipment	6.33%
Furniture	6.33%
Vehicles	9.50%

69. Category wise depreciation calculation for ARR is tabled below:

Table 24: Actual Depreciation for Transmission in FY 23-24 (In Rs Crores)

Particulars	FY 23-24 (Approved)	FY 23-24 (Actual)
Total Depreciation on Transmission Assets	3.34	8.01

5.3.3 Non-tariff Income

70. The other income of TSECL covers mainly interest earned on fixed deposits made in various banks, sale of tender forms and other miscellaneous income like sale of scrap, sale of tender, meter rent etc. These incomes are being separately booked under other income category. Earning from investment and other miscellaneous incomes are detailed in the table below for the FY 23-24. The actual data based on audited accounts has been tabulated for FY 23-24. The figures for FY 23-24 have been studied from the consolidated account statements which was found to around Rs 200,000 /-, hence in valuation in crores it Rs 0.02 Cr, as considered below:

Table 25: Non-Tariff Income (In Rs Crores)

Particulars	FY 23-24 (Approved)	FY 23-24 (Actual)
Non-Tariff Income on Transmission Business	0.07	0.02
Total	0.07	0.02

5.3.4 Summary of true up for FY 2023-24

71. Based on the details of expenditure and non- tariff income given above and determined in accordance with TERC tariff regulations, the total annual revenue requirement of FY 23-24 is calculated. We are submitting below generation station wise ARR and tariff proposal for FY 2023-24.

72. Hence the True up for Transmission is being shown for the respective FY 2023-24 as given below:

5.3.5 True up of Transmission for FY 2023-24

Table 26: Summary of Actuals for True-up of Transmission of FY 2023-24 in Rs. Crores

Particulars	Approved (FY 2023-24)	Actual (FY 2023-24)	Gap (Actual – Approved)
True-up for Transmission business on FY 2023-24			
Expenditure			
2. Operation & Maintenance Cost			
Employee Cost	21.28	20.11	-1.17
Repair & Maintenance	2.59	6.31	3.72
A&G Cost	2.25	7.03	4.78
Total O&M Expenses	26.12	33.46	7.34
3. Finance Cost	-	-	-
4. Depreciation	3.34	8.01	4.67
5. Interest on Working Capital	0.76	2.38	1.62
Total Expenditure (1+2+3+4+5)	30.22	43.84	13.62
Add: Return on Equity	3.97	18.17	14.20
ARR	34.19	62.01	27.82
Less: Non-Tariff Income	0.07	0.02	-0.05
Net ARR	34.12	61.99	27.87

Table 27. Total units transmitted and Transmission charges

Particulars	Value
Total Units Transmitted in FY 23-24 (MUs)	1235.62
Transmission charges in FY 23-24 (Paise/kWh)	50.619

6. True Up for FY 2023-24 for Distribution

6.1. Introduction

73. The last MYT petition submitted by TSECL for the True-up petition of FY 22-23 and for the APR of FY 23-24 and ARR of the period FY 24-25, TSECL had considered the MYT Regulations of TERC of 2015. Based on the petition, the Commission notified in the tariff order issued on 14th August 2024, to consider the latest regulations published by the Commission in March 2023 for Distribution tariff determination. Based on the latest Tariff Order issued by the Commission, the approved figures for FY 2023-2024 are taken up in this True-Up petition for computation of Distribution ARR. TSECL requests the Hon'ble Commission to consider the information submitted in this petition for the truing-up of the year 2023-24 based on the TERC Distribution MYT Regulations 2023, for the Distribution business of TSECL.

6.2. Energy Balance

74. TSECL procures power both from the central generating stations of NTPC, NEEPCO, OTPC as well as from state owned generating stations of TPGL whose ARR has already been covered above. The total power purchased is utilized to meet the demand within the state (intra state sales) and the surplus power is being sold outside the state. Out of the power sold outside the state, a major quantum of around 160 MW is being sold to Bangladesh. Apart from Bangladesh, TSECL also supplies power to Manipur and Mizoram on bilateral basis and the balance power is sold on short term power market including IEX, DSM, swapping etc.

75. The actual energy balance of TSECL for the FY 2023-24 along with the approved figures is shown below:

Table 28: Energy Balance figures for the year FY 23-24 of TSECL:

Sr.No.	Particulars	Actual for FY 23-24	Approved for FY 23-24
1.	State Generation	498.37	498.37
a.	Rokhia GTP	324.27	324.27
b.	Baramura GTP	157.243	157.24
c.	Gumti HEP	16.859	16.86
2.	Aux. Consumption	4.933	4.93
3.	Energy sent out (1-2)	493.44	493.44
4.a	Power Purchase from Central Generating Stations	2672.73	2,951.85
4.b	Short Term Power Purchase	-	-
5.	BI-LATERAL-SALE (a+b+c+d)	1364.193	1,772.38
a.i)	Energy Trading	0	0
a. ii)	Energy Swapping	0	0
b.	UI / DSM	43.703	67.36
c.	Sale to Mizoram	40.617	67.71
d.	Sale to Manipur	0.000	0.00
e.	IEX	206.635	604.39
f.	Bangladesh Sale	1073.238	1,032.92

Sr.No.	Particulars	Actual for FY 23-24	Approved for FY 23-24
6.	Transmission Loss (inter-state)	81.307	88.56
a.	Inter-State Transmission Loss (%)	3.50%	3.00%
7.	ISGS Energy at State Bus (4-5-6)	1227.23	1,090.92
8.	Energy at State bus (3+7)	1720.68	1,584.36
9.	Intra-State Tr. Loss up to 11kV (in MU)	51.62	47.53
10.	Intra-State Transmission Loss (%)	3.00%	3.00%
11.	Energy at 11 kV level (8-9)	1669.06	1,536.83
12.	Distribution & Comm. loss (MU)	433.43	269.34
13.	Distribution & Comm. loss (%)	25.97%	17.53%
14.	Energy billed	1235.62	1,267.49
15.	% of T&D Loss	28.19%	20.00%

76. Based on the above, it may be observed that the T&D losses of TSECL have reduced from the previous year figures of 30.40% in FY 23 to 28.19% in FY 24 and has improved compared to previous year, however it is still higher than the approved figures of 20.00%. TSECL prays before the Commission to approve the actual T&D loss as shown above since TSECL is taking a number of steps for reduction of T&D losses and undertaking two large system strengthening and improvement schemes under RDSS (GoI funded) and under ADB funding Distribution network strengthening and augmentation work which will help in achieving the target T&D losses. However, both the projects are presently under implementation and undergoing progress in the current financial year. This has resulted in higher distribution & commercial losses, which has increased the T&D losses for this particular year than the approved values. Due to the unfinished system strengthening and Distribution improvement work, it has resulted in higher distribution & commercial losses, which has increased the overall T&D losses for this particular year than the approved values.

6.3. Interest on Working Capital

77. The TERC Tariff Regulation (Multi Year Distribution and Retail Supply Tariff), 2023, issued on 15.03.2023, has updated the provision for normative Interest on Working Capital based on the methodology outlined in the Regulations. The Petitioner is eligible for interest on working capital worked out on methodology specified in the Distribution Regulations specific for distribution business as provided below:

1. Operation and Maintenance expenses (O&M) for one month;
2. Receivables equivalent of Two months of expected revenue accounted from distribution business;
3. Maintenance spares @ 40% of Repair & Maintenance (R&M) expenses for one month
Less:
4. Security deposits from consumers, if any;

78. In accordance with the TERC Tariff Regulation (Multi Year Distribution and Retail Supply Tariff), 2023, the Interest on the Working Capital should be on normative basis and the rate of interest shall be equal to the **State Bank Advance Rate (SBAR)** as of the date on which petition on which determination of tariff is accepted by the Commission. The Petitioner in the instant Petition has considered the interest rate on working capital at the rate of State Bank Advanced Rate (SBAR) applicable for the year which is equivalent as per SBI benchmark

prime lending rate applicable for FY 2023-24. For the truing-up of FY 2023-24, the rate of benchmark prime lending rate as of 01.04.2024 is equal to **14.85%**, which has been considered for computation of Interest on Working Capital.

79. The Petitioner in accordance with the above-mentioned Regulations, calculated the interest on working capital as shown in the table below:

Distribution Business

Table 29: IoWC calculation for Distribution Business for FY 23-24 (All figures are in Rs. Crore)

Particulars	FY 2023-24 (Actual)	FY 2023-24 (Approved)
Receivables (2 month)	208.26	145.40
Maintenance Spares @40% of R&M expenses	9.47	35.34
O&M Expense for 1 month	20.29	19.63
Less: Security deposit from consumers	46.45	--
Working Capital	191.58	200.37
Rate of Interest	14.85%	12.40%
Interest on Working Capital	28.45	24.85

6.4. Return on Equity and Tax on Return on Equity

80. The Regulation 27 of the TERC Tariff Regulation (Multi Year Distribution and Retail Supply Tariff), 2023 provides direction for treatment of return on equity. The amount of equity base to be considered for calculation of return has been considered based on the relevant clause (clause 27) of TERC Tariff Regulation (Multi Year Distribution and Retail Supply Tariff), 2023. The relevant extract of the regulation is as under:

“27. Treatment of Return on Equity:

- I. *Return on equity shall be computed on 30% of the capital base or actual equity, whichever is lower:*

Provided that assets funded by consumer contribution, capital subsidies/grants and corresponding depreciation shall not form part of the capital base. Actual equity infused in the Distribution Licensee as per book value shall be considered as perpetual and shall be used for computation in this Regulation:

Provided, that accumulated depreciation, over and above debt repayment, shall be used to reduce the equity base for return on equity after debt repayment is over.

- II. *The return on the equity invested in working capital shall be allowed from the date of start of commercial operation:*
- III. *Distribution Licensee shall be allowed 11% post-tax return on equity. In case, the repo rate is above 8%, there will be 14% post tax return on equity.”*

81. The Regulation 21 of the TERC Tariff Regulation (Multi Year Tariff) 2015 provides guidelines for Debt-Equity ratio.

“21. Debt-Equity Ratio:

- I. For a project declared under commercial operation on or after the date of publication of this regulation on the Official Gazette, the debt-equity ratio would be considered as 70:30 as on COD. If the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:

Provided that:

- where equity actually deployed is less than 30% of the capital cost, actual equity shall be considered for determination of tariff;
- the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment;
- any grant obtained for the execution of the project shall not be considered as a part of capital structure for the purpose of debt:equity ratio.”

82. As per the TERC Tariff Regulation (Multi Year Distribution and Retail Supply Tariff), 2023, return on equity shall be computed on 30% of the capital base or actual equity, whichever is lower, same is considered here for the purpose of calculation of RoE. Equity fund of TSECL is calculated after allocating equity fund of TSECL in the Gross fixed assets ratio among generation, transmission and distribution business.

83. The return on equity has been computed on capital base and is summarized in the table given below:

Distribution Business

Table 30: Return on Equity calculation for Distribution Business for FY 23-24 (All figures are in Rs. Crore)

Particulars	FY 2023-24 (Actual)	FY 2023-24 (Approved)
Equity fund (Allocated based on assets ratio)	321.83	102.07
Average GFA for Distribution	812.26	710.54
Normative Equity (30% of GFA)	243.68	213.16
Equity considered for RoE (Min of actual and normative)	243.68	100.28

84. The TERC Tariff Regulation (Multi Year Distribution and Retail Supply Tariff), 2023 does not mention about the methodology for computation of Rate of pre-tax return on equity. However, Regulation 27 of TERC Tariff Regulation (Multi Year Tariff) 2015 provides for grossing up of base rate of return on equity with the effective tax rate of the respective financial year and the effective tax rate is be computed as per the following formula.

“Rate of pre-tax return on equity = Base rate / (1-t)

Where “t” is the effective tax rate in accordance with Clause (I) of this regulation and shall be calculated at the beginning of every financial year based on the estimated profit and tax to be paid estimated in line with the provisions of the relevant Finance Act applicable for that financial year to the company on pro-rata basis by excluding the income of non-generation or non-transmission/distribution business, as the case may be, and the corresponding tax thereon. In case of generating company or the Transmission or the Distribution licensee paying Minimum Alternate Tax (MAT), “t” shall be considered as MAT rate including surcharge and cess.”

85. The Petitioner has considered Minimum Alternative Tax (MAT Rate) to be Nil for the period FY 2023-24 as approved by the commission for the calculation of pre-tax RoE as shown below:

Distribution Business

Table 31: Calculation of Annualized RoE on Pre-tax basis for Distribution Business in FY 23-24 (All figures are in Rs. Crore)

Particulars	FY 2023-24 (Actual)	FY 2023- 24(Approved)
Equity considered for RoE	243.68	100.28
Rate of RoE	11.00%	15.50%
Return on Equity without Tax	26.80	15.54
Tax Paid at Actual	0.00	0.00%

6.5. Depreciation

86. The Regulation 24 of the TERC Tariff Regulation (Multi Year Distribution and Retail Supply Tariff), 2023 provides direction for treatment of depreciation. The relevant extract of the regulation is as under:

“24. Treatment of Depreciation:

- I. Depreciation shall be calculated for each year of the control period on the original cost of the fixed assets of the corresponding year
- II. Depreciation shall not be allowed on assets funded by capital subsidies consumer contributions or grants
- III. The Commission shall define the rate of depreciation for each of the components of the fixed assets based on the useful life of the assets, as indicated at Annexure - II, and after considering the salvage value of the categories of the assets

Provided the salvage value of the category of the assets shall be as decided by the Commission taking into account the costs of removal / disposal of assets. However, the salvage value of the any category of assets defined at Annexure – II shall not exceed 10% of the initial cost of the asset.

- IV. The rate of depreciation should be based on Straight Line Method (SLM) over the useful life of the assets, after factoring the salvage value of the assets

Provided that Land shall not be treated as a depreciable asset and its cost shall be excluded while computing 90% of the original cost of asset.”

87. However, the commission is yet to define the rate of depreciation based on the useful life of the assets. Hence, for the calculation of depreciation, the depreciation rates have been taken from Companies Act 1956/TERC Tariff Regulations 2004 under the Straight-Line Method on the gross asset value and no depreciation is claimed on assets created out of government grants. However, in account statement depreciation have been calculated as per depreciation rate provided in Companies Act 2013.

Table 32: Rate of Depreciation as per Companies Act 1956

Particulars	Depreciation Rate
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Particulars	Depreciation Rate
Land	0.00%
Building	3.34%
Plant & Machinery	5.28%
Computer	15.00%
Computer and Office Equipment	15.00%
Office Equipment	6.33%
Furniture	6.33%
Vehicles	9.50%

88. As already mentioned above, the gross asset base booked in account statements includes assets created out of government grants. However, in accordance with accounting procedures as well as regulatory practices in other states, depreciation on such assets has not been claimed to be recovered through tariff and ARR. Further, the assets which have completely depreciated have also been deducted from the total gross value of assets shown in account statements for the purpose of calculation of depreciation.

89. The approved and actual value of depreciation for FY 2023-24 is provided below:

Table 33: Actual Depreciation for Distribution business for FY 23-24 (Rs In Crores)

Particulars	FY 2023-24 (Actual)	FY 2023-24 (Approved)
Total Depreciation in Distribution for FY 23-24	11.52	9.64

6.5.1 Capital Investment in FY 2023-24

90. TSECL in FY 2023-24 has incurred Capital Expenditure for certain distribution projects for its capital investment amounting to Rs 328.38 Crores in schemes such as given below as:

Table 34. Capital Investments in FY 2023-24

Particulars	FY 2023-24
Provable Expenditure under ADB	213.00
Provable Expenditure under RDSS	115.38
TOTAL	328.38

91. The capital expenditure incurred on accounts of the two schemes are described below:

- a. ADB Distribution strengthening, improvement and augmentation work- This work has started in FY 2022-23 and is currently undergoing in this financial year, has been started to increase the distribution efficiency and improve the network of TSECL within the state of Tripura. It includes the installation of new feeders, augmentation replacement of power transformers with high capacity transformer, extension addition of power transformers, DT transformer installation, Conversion of existing 66-kV substations to 132-kV substations with enhanced transformation and current carrying capacity, installation of secondary transmission lines, integrating existing 11kV and 33kV feeder lines into the main grid and improving LT connectivity in rural and urban areas by strengthening the existing feeders in such locations.

- b. RDSS Power Distribution development scheme- The Revamped Distribution Sector Scheme (RDSS) is a long-term scheme undertaken by TSECL for power distribution strengthening and enabling quality and effective power supply within the state of Tripura. This scheme has been started in FY 2020-21 and is undergoing in various phases to incorporate the addition of new smart meters in the system, enabling the distribution sector to be more financially sustainable and operationally efficient and strengthening the power distribution network to reduce the AT&C losses within 15% by FY 2025.

92. The detail asset wise capitalization on account of the above schemes are mentioned in the annual audited accounts of FY 2023-24.

6.6. Expenditure

6.6.1. Power Purchase Cost

93. TSECL is currently purchasing power from central generating stations of NEEPCO, NHPC and OTPC Palatana in which Tripura is having allocated share/ allocation of power. The central sector allocations and power purchase from ISGS (Inter-state Generating Stations) along with the fixed and energy charge split in the FY 2023-24 are given below:

Table 35: Source wise Power Purchase from CGS in FY 2023-24

Station	Energy (MU)	AFC	Amount (Rs.)		Rate (Rs./kWh)		
			Energy Charge	Total	Fixed Rate	Energy Rate	Total Rate
Assam GPP	73.19	226,962,635	357,842,962	584,805,597	3.10	4.89	7.99
Agartala GPP	74.25	207,174,008	339,453,938	546,627,946	2.79	4.57	7.36
Kopili -II	13.58	12,233,831	20,595,684	32,829,515	0.90	1.52	2.42
Ranganadi	84.86	142,502,757	119,629,601	262,132,358	1.68	1.41	3.09
Doyang	10.93	47,989,812	38,088,645	86,078,457	4.39	3.48	7.87
Khandong	0.00	0	0	0			
Kopili	15.01	0	35,262,773	35,262,773	0.00	2.35	2.35
Pare	34.35	-	183,403,580	183,403,580		5.34	5.34
Monarchak	635.10	1,677,045,786	1,530,034,630	3,207,080,416	2.64	2.41	5.05
TOTAL NEEPCO	941.27	2,313,908,830	2,624,311,813	4,938,220,642	2.46	2.79	5.25
Loktak	33.90	86,488,671	61,708,022	148,196,693	2.55	1.82	4.37
Palatana	1194.31	1,558,324,409	2,509,472,463	4,067,796,872	1.30	2.10	3.41

Station	Energy (MU)	AFC	Amount (Rs.)		Fixed Rate	Rate (Rs./kWh)	
			Energy Charge	Total		Energy Rate	Total Rate
BgTPP	335.57	707,604,059	1,170,722,535	1,878,326,594	2.11	3.49	5.60
Solar Power	5.53			21,538,473			3.89
TOTAL	2510.58	4,666,325,969	6,366,214,833	11,054,079,274	1.86	2.54	4.40
PGCIL				1,249,498,531			0.50
TOTAL PP	2510.58			12,303,577,805			4.90
Short-term Power Purchase	162.15			905,218,504			5.58
TOTAL with Short-Term	2672.74			13,208,796,309			4.94

94. The power purchase quantum has marginally decreased this year to 2672.74 MU compared to previous year quantum of 2675.49 MU in FY 2022-23. There has been an increase in quantum of power is attributed to increase in allocation of power from NTPC BgTPP (Bongaigaon plant) in FY 23-24 at 335.57 MU compared to 96.77 MU in FY 2022-23. On the other hand, the quantum of power from NHPC Loktak has decreased to 33.90 MU compared to 56.14 MU in previous year. Due to contingency measures, TSECL purchase extra quantum of power from short term power purchase sources from power exchanges (like IEX, PXIL, DSM etc.) to compensate for the short term decrease in own generation and to compensate any short term shortfall in meeting the demand. This year short-term power purchase have increased to around 162.15 MU compared to 124.06 MU in FY 2022-23. The remaining quantum of power purchase from Central Generating stations like NEEPCO, OTPC have shown slight decrease except for NTPC BgTPP. This is due to the re-allocation of NTPC Bongaigaon Power Plant which was initially planned to be de-listed in FY 23-24 due to having high average cost of INR 6.7 per unit, has now been re-allocated 50 MW after getting directives from the Ministry of Power, in order to increase the quantum of sales for inter-state sale of power to Bangladesh. The current allocation of power from the Central Generating sources to TSECL stands at 474.01 MW in FY 2023-24.

95. The power purchase rates for these CSGS and the associated transmission charges paid to PGCIL for transmission of power to state bus of Tripura, are governed by CERC tariff regulations and are uncontrollable by TSECL. The rate of power purchase per unit have decreased slightly compared to last year at Rs 4.94/kWh from Rs 4.98/kWh. The actual power purchase cost along with approved cost in total and in terms of rate per unit are tabulated below:

Table 36: Source wise Power purchase cost for FY 23-24

Particulars	Actual(FY 2023-24)			Approved(FY 2023-24)		
	Cost (In Cr.)	Energy Purchased (MU)	Rs./kWh	Cost (In Cr.)	Energy Purchased (MU)	Rs./kWh
NEEPCO	493.82	941.27	5.25	548.21	1,105.83	4.96
NHPC	14.82	33.90	4.37	16.61	43.17	3.85
NTPC	187.83	335.57	5.60	157.15	294.29	5.34
OTPC Palatana	406.78	1194.31	3.41	406.18	1,243.89	3.27
NEEPCO Solar	2.15	5.53	3.89	2.25	6.61	3.40
PGCIL Charges	124.95			116.64	-	-
Short-term power purchase	90.52	162.15	5.58	112.25	258.05	4.35
Total Power Purchase Cost billed for FY 23-24	1320.88	2672.73	4.94			
Arrears & late payment of purchase of power	29.02	-	-	-	-	-
Prior period purchase of power booked in FY 23-24	33.68	-	-	-	-	-
Total Power Purchase Cost for FY 23-24	1,383.58	2672.73	4.94	1,359.30	2951.85	4.60

6.6.2. Operation & Maintenance Expenses

96. Operation and Maintenance expenses of TSECL includes following major heads:

- **Employee Cost:** Employee expenses comprise of salaries, dearness allowance, bonus, terminal benefits in the form of pension & gratuity, leave encashment and staff welfare expenses.
- **Repair & Maintenance expenses:** The A&G expenses of TSECL mainly cover expenses for administrative requirements like telephone, electricity, vehicles lease, statutory taxes to be paid etc. and payment of outsourced agencies like statutory auditors, legal charges, consultancy fees etc.
- **Administration and General (A&G) Expenses:** Regular Repair and Maintenance of the electrical system as well as the civil and IT infrastructure is critical for operating the system and ensuring that assets are able to serve for complete expected life.

97. It is to be noted that O&M expenses of TSECL for the FY 2023-24 are more than the approved O&M expenses as shown in table below. The rise in O&M Costs is mainly attributed to increase in A&G expenses on account of increase in technical and manpower costs incurred for various power infrastructure projects undertaken by TSECL in various schemes such as ADB, RDSS projects which has been implemented for power infrastructure improvement and strengthening projects. TSECL has hired contractual manpower and support staff for executing the power infrastructure strengthening projects for necessary augmentation and strengthening work for improvement of overall distribution network within the state of Tripura.

98. The total O&M expenses incurred in distribution business in the year FY 23-24 is tabled below as:

Table 37: O&M Expenses (Approved vs Actual) in Rs Crores

Name of Generation station	FY 2023-24 (Actual)	FY 2023-24 (Approved)
Employee Cost	158.28	192.39
Repair & Maintenance	23.66	26.31
A&G	61.55	16.91
Total O&M Expenses	243.50	235.61

6.6.3. Interest and Financial Charges

99. While preparing the final truing-up for FY 2023-24, the TSECL has considered the following for the total Interest and Finance charges:

- Interest on loans
- Guarantee Fee
- Bank Commission for letter of credit
- Interest on consumer security deposit

100. The TSECL has taken loans from the PFC/REC/ Govt. of Tripura. The details about the loan taken by TSECL is given below:

Loan from PFC: The fund is released by PFC under various schemes. 100% of the approved cost is provided as loan from the Government of India through Gross Budgetary Support (GBS) for the implementation of IPDS scheme at 10.65% annually, for Strengthening of sub-transmission and distribution network in the urban areas. The loan along with interest thereon shall be converted into grant once the establishment of the required system is achieved and verified by an independent agency appointment by Ministry of Power (MoP). No conversion to grant will be made in case projects are not completed within 3 years from date of sanction of the project. In such case, TSECL has to bear full loan and interest repayment and as such, the same has been considered as of now, as per accruals booked in account statements.

Loan from PNB (Earlier UBI): This is a working capital loan taken for the payment of outstanding dues of NEEPCO and OTPC in FY 2016-17. Since this is a working capital loan and the same has been claimed as per norms separately, the same is not considered here in this petition.

Loan from REC for RGGVY and DDUGJY: The fund is released by REC under RGGVY and DDUGJY scheme for rural electrification purposes. 90% of the approved cost is provided as grant and remaining 10% as loan. This fund is not given directly to TSECL but is disbursed through Government of Tripura (GoT). TSECL is paying interest on this loan on behalf of GoT in 10 equal yearly installments. In the accounts, this loan is treated under head 'GoT loan'. The moratorium period of 5 years is provided on repayment of this loan. The loan from REC for RGGVY and DDUGJY have been taken at 10.59% and at 10.14% on quarterly basis.

Loan from REC for Saubhagya scheme: The fund is released by REC under Saubhagya scheme at 11.06% monthly rate for rural electrification project within the state of Tripura.

Loan from Govt. of Tripura (GoT): The Government of Tripura loan is disbursed as interest free loans from the state government under budgetary Non-Plan consideration and to be repaid to the GoT under 30 equal installments within a period of 15 years as provided in Memorandum of the government of Tripura dated 17th July 2009. The TSECL is persuading with the government of Tripura to convert this interest free loan into equity portion. But till it is converted into equity the amount has been treated as loan.

101. The details of loans taken and rate of interest along with repayment schedules are given below for FY 2023-24 of TSECL as:

Table 38: Soource wise loan taken with opening and closing balance

SL No.	Name of Scheme/ Bank	Source	Purpose	Amount (Taken)/ Original Loan	Rate of Int. (%)	Moratorium period	Re-payment Schedule	Balance Amount as on 31.03.2023 (Amt)	Interest charges paid as on FY 2023-24 (Amt)	Balance Amount as on 31.03.2024 (Amt)
1	Punjab National Bank	Bank	Term Loan	2,500,000,000	7.85%	0	10 Years	461,749,478	104,869,067	331,892,288
2	Punjab National Bank	Bank	Term Loan	1,000,000,000	6.95%	0	10 Years	869,800,452		733,039,892
3	Bank of India	Bank	Term Loan	1,000,000,000	7.50%	6 Months	12 Years	832,800,000	62,453,871	727,200,000
	Canara Bank	Bank	Temporary Loan/ Overdraft against FD	371,328,170	5.25%	0	-	-	8,949,323	369,999,007
	State Bank of India	Bank	Temporary Loan/ Overdraft against FD	145,000,000	2.50%	0	-	-	3,182,700	144,999,032
4	SAUBHAGYA	REC	Electrification	326,523,420	11.06%	3 Years	30 Years	326,523,420	36,101,973	299,313,130
5	DDUGJY(Tr-I)	REC	Electrification	35,623,899	10.14%	3 Years	10 Years	35,623,899	5,932,182	32,061,507
6	DDUGJY(Tr-II)	REC	Electrification	22,888,217	10.14%	3 Years	10 Years	22,888,217		20,599,397
7	RGGVY	REC	Electrification	178,810,971	10.59%	5 years	10 Years	22,375,026	2,072,858	5,111,886

SL No.	Name of Scheme/ Bank	Source	Purpose	Amount (Taken)/ Original Loan	Rate of Int. (%)	Moratorium period	Re-payment Schedule	Balance Amount as on 31.03.2023 (Amt)	Interest charges paid as on FY 2023-24 (Amt)	Balance Amount as on 31.03.2024 (Amt)
8	Revolving bill Payment Facility (RBPF)	PFC	GENCO Bill payment	2,161,207,980	8.50%	6 Months	1 Year	819,520,138	82,624,044	948,548,704
9	IPDS	PFC	Strengthening of sub-transmission and distribution network in the urban areas	175,929,800	10.65%	1.5 year	30 Years	146,608,165	15,226,679	134,879,509
10	GOT	GOT	Power purchase/ Int. Free	2,000,000,000	0.00%	0	0	000,000,000	-	2,000,000,000
Total								537,888,795	321,412,697	5,747,644,352

102. The table below shows the source wise interest from loans which has been spent on during FY 2023-24:

Table 39: Interest on Loan for the FY 2023-24 (In Crores)

Particulars	Total in Rs. crores (Actual)	Total in Rs. crores (Approved)
Interest Rate on IPDS Loan from PFC @ 10.65%	1.52	1.58
Loan Processing Fees	1.05	1.79
Bank Commission for Letter of Credit	1.83	0.06
Saubhagya loan from REC @11.06%	3.61	3.48

Particulars	Total in Rs. crores (Actual)	Total in Rs. crores (Approved)
DDUGJY loan from REC @ 10.14%	0.59	0.62
RGGVY loan from REC @ 10.59%	0.21	0.24
Interest on Consumer Security deposit	4.36	
Proposed Interest & finance charges for Truing up of FY 23-24	13.17	
Approved Interest & finance charges in Tariff Order for FY 23-24	7.76	

6.7. Income

6.7.1. Income from Sale of Power

103. TSECL supplies power both within the state to the consumers of Tripura at the retail supply tariff notified by TERC as well as to other states based on bilateral contracts or surplus availability from time to time. The power within Tripura is completely met (except during peak period) before supplying the surplus power to other states.

104. The detailed breakup of source wise interstate sales and revenue is given in the below table for FY 2023-24:

Table 40: Units Sold and Revenue from Inter-State Sale of power in FY 2023-24

Parameter	FY 2023-24		
	Sales (MU)	Revenue (Rs. Cr.)	Sale per Unit in Rs/kWh
UI	43.703	14.013	3.21
Sale to Mizoram	40.617	38.417	9.46
Sale to Manipur	0.000	0.00	0.00
IEX	206.635	103.729	5.02
Bangladesh Sale	1073.238	699.795	6.52
Delayed payment charges for Energy sold to Mizoram and Manipur	-	15.26	-
Total Interstate sales	1364.19	871.21	6.27

105. The average rate per unit (Rs/kWh) for sale of power to Bangladesh by TSECL is Rs 6.52/kWh for FY 23-24. TSECL supplies the largest quantum of power to Bangladesh in bilateral sale under a PPA and the revenue accounted for such sale of power is considered for computation of inter-state sales.

106. For Manipur and Mizoram Sale, currently TSECL is supplying only power to Mizoram and discontinued sale of power to Manipur. For sale of power to Mizoram, TSECL has supplied 40.617 MU at an average tariff of **Rs 4.46/kWh**, which is fixed as per PPA with TSECL. It may be noted that the rate of energy sold to Mizoram at actual for FY 23-24 is found out to be higher than the fixed rate of PPA, that is at **Rs 9.46/kWh**, this is because of the inclusion of arrears in billing amount paid to TSECL. The total inter-state sales quantum for FY 23-24 is of 1364.19 MU and Revenue generated from such inter-state sales is **Rs 855.95 Crores** computed at Rs 6.27/kWh. There has been a delayed payment charges of an amount of Rs 15.26 Crores on account of inter-state sales booked in FY 23-24, for delayed payment from Mizoram and Manipur, accounted in previous years, which has been considered in true-up, hence the total inter-state sales of FY 23-24 for TSECL is around **Rs 871.21 Crores**.

107. For Intra-State Sale of power, TSECL has supplied more power to consumers in FY 2023-24 from previous year in FY 2022-23, from 1150.27 MU to 1235.62 MU this year, having an increase of around 7.42% overall across all categories. The detail category wise energy sales and revenue from Intra-State sale of power from TSECL is mentioned below in the table as follows:

Table 41: Units Sold and Revenue from Intra-State Sale of Power in FY 2023-24

Category	Billing 23-24
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	Energy (MU)	Amount (Rs Cr.)	Sale per Unit (Rs/kWh)
Domestic	657.18	370.77	5.64
Public Lighting	14.98	8.31	5.55
Commercial	79.38	63.59	8.01
Irrigation & Water	60.02	32.22	5.37
Public Water Works	149.96	83.98	5.60
Industries	50.56	40.01	7.91
Mobile Tower	67.08	54.21	8.08
Bulk Supply	153.28	132.47	8.64
Tea Garden	3.17	2.60	8.18
TOTAL	1,235.62	788.16	6.38
Prepaid Reconciliation amount owing to arrears		12.27	
Total Amount for Intra-State Energy Sales (Rs Cr.)		800.43	

108. Thus, the Total Units Sold in FY 2023-24 from Intra-State Sale of power within the state of Tripura is around **1235.62 MU** and Total Revenue from Intra-State Energy Sales is amounting to around **Rs 800.43 Crores**.

109. The detailed actual sales vs. approved sales for both Intra-state and Inter-State sale of TSECL for the year FY 2023-24 are provided below:

Table 42: Sale from Power of TSECL for FY 2023-24

Particulars	FY 2023-24 (Actual)			FY 2023-24 (Approved)		
	Sales (MU)	Revenue (In Cr)	Rs/kWh	Sales (MU)	Revenue (in Cr)	Rs/kwh
Intra-State sale of power	1235.62	800.43	6.48	1213.09	890.9	7.34
Total Inter-State Sales	1364.19	871.21	6.39	1671.250	1,092.24	6.54
Total Sale of Power by TSECL	2599.81	1671.64	6.43	2884.34	1983.14	6.88

6.7.2 Non-Tariff Income

110. The Regulation 29 of the TERC Tariff Regulation (Multi Year Distribution and Retail Supply Tariff), 2023 provides direction for treatment of Non-Tariff Income. The relevant extract of the regulation is as under:

“29. Non-Tariff Income:

- I. All incomes being incidental to electricity business and derived by the Licensee from sources, including but not limited to profit derived from disposal of assets, income from rent of land and

buildings, delayed payment surcharge, meter rent (if any), income from investments other than contingency reserves, interest income on advance to suppliers and contractors income from rent from staff quarters, income from rent from contractors income from hire charges from contractors and others, supervision charges for capital works, income from consumer charges levied in accordance with Schedule of Charges approved by the Commission, income from recovery against theft and/or pilferage of electricity, income from advertisements income from sale of tender documents, miscellaneous receipts from the consumers and income to Licensed business from the Other Business of the Distribution Licensee shall constitute Non-Tariff Income of the Licensee

- II. Interest on security deposits, in excess of the rate specified by the Commission shall be considered as non-tariff income of the Licensees*
- III. The amount received by the Licensee on account of Non-Tariff Income shall be deducted from the aggregate revenue requirement in calculating the net revenue requirement of such Licensee.”*

111. The Regulation 30 of the TERC Tariff Regulation (Multi Year Distribution and Retail Supply Tariff), 2023 provides direction for treatment of Income from Other Business. The relevant extract of the regulation is as under:

“30. Income from Other Business:

- I. Where the Licensee is engaged in any other business, the income from such business will be deducted from the Aggregate Revenue Requirement in calculating the revenue requirement of the Licensee in the manner and in proposition as may be specified by the Commission.*

Provided that the Licensee shall follow a reasonable basis for allocation of all joint and common costs between the Distribution Business and the Other Business and shall submit the Allocation Statement as approved by the Board of Directors to the Commission along with its application for determination of tariff;

- II. Provided further that where the sum total of the direct and indirect costs of such Other Business exceed the revenues from such Other Business or for any other reason, no amount shall be allowed to be added to the aggregate revenue requirements of the Licensee on account of such other Business.”*

112. The other income of TSECL mainly covers the following:

- Income earned on the subsidy paid by State Government of Tripura (GoT) against the commitment of State Government for reduction in retail supply tariff,
- Interest earned on fixed deposits made in various banks and as detailed under the head of ‘Investments’, and
- Other Miscellaneous Income like sale of scrap, sale of tender, meter rent etc.

Subsidy

113. Regarding the subsidy provided by State Government, section 65 of Electricity Act 2003, mandates that, “If the State Government requires the grant of any subsidy to any consumer or class of consumers in the tariff

determined by the State Commission under section 62, the State Government shall, notwithstanding any direction which may be given under section 108, pay, within in advance in the manner as may be specified, by the State Commission the amount to compensate the person affected by the grant of subsidy in the manner the State Commission may direct, as a condition for the license or any other person concerned to implement the subsidy provided for by the State Government:

114. Provided that no such direction of the State Government shall be operative if the payment is not made in accordance with the provisions contained in this section and the tariff fixed by State Commission shall be applicable from the date of issue of orders by the Commission in this regard.”

115. Hence, the Act clearly states that the subsidy for reduction of tariff, if desired by the State Government, has to be paid in advance by the State Government and in the scenario of the State Government not paying the subsidy in advance, the tariff reduction on account of the subsidy promised shall not be applicable.

116. In the year FY 2023-24, TSECL has received financial grant in the form of subsidy from Government of Tripura in two parts: - i) Revenue in the form of Grant (Rs 65.38 Crs.); ii) Revenue Grant in the form of State Disaster Relief Assistance from Government of Tripura (Rs.4.43 Crs.).

117. As such, for calculation of ARR of FY 23-24, the subsidy actually paid by State Governments in the form of revenue grant and in the form of State Relief Assistance has been considered in the part of Non-Tariff Income, which is amounting to **Rs. 69.81 Crores**. This have been considered along with Other Income as part of the Non-Tariff income related to distribution business of TSECL. The total Non-Tariff Income accounted for Distribution business in FY 23-24 is tabled below as:

Table 43: Non-Tariff Income & Grant (Approved vs Actual) in Rs Crores

Particulars	FY 2023-24 (Actual)	FY 2023-24 (Approved)
Other Income	33.43	49.24
Revenue subsidy from GoT	69.81	60.00
Total Other Income	103.24	109.24

6.8. Summary of Truing Up

Table 44: Summary of Approved TERC Order for Generation, Transmission, Distribution for the FY 2023-24: (In Rs Crores)

Particulars	FY 2023-24 (Actual)	FY 2023-24 (Approved)	Gap (Actual-Approved)
Power purchase cost	1383.58	1359.30	24.28
Own Generation Cost	385.22	327.08	58.13
Intra State Transmission Cost	61.99	34.12	27.87
O&M expense	243.50	235.61	7.89
Depreciation	11.52	9.64	1.88
Interest on working capital	28.45	24.85	3.60
Interest and finance charges	13.17	7.76	5.41
Reasonable Return on Equity without Tax	26.80	15.54	11.26
Aggregate Revenue Requirement (ARR)	2154.22	2013.90	140.32

Particulars	FY 2023-24(Actual)	FY 2023-24(Approved)	Gap (Actual-Approved)
Less: Other income (Excluding Revenue Subsidy from Government)	33.43	49.24	-15.81
Less: Reduction in Power Purchase on account of higher T&D Loss	0	-	0.00
Net Aggregate Revenue Requirement	2120.79	1964.66	156.13
Revenue from intra-state sale of Power	871.21	1092.24	-221.03
Revenue from inter-state sale of Power	800.43	890.9	-90.47
Revenue Subsidy from Govt. of Tripura	69.81	60.00	9.81
Revenue Gap/(Surplus)	379.34	(78.48)	457.82
Gap/(Surplus) already considered for FY 23-24 in order dated 14.08.2024		42.67	
Net Revenue Gap/(Surplus)	379.34	(121.15)	500.49

118. Based on the truing-up exercise done for FY 2023-24, it is seen that a gap/surplus of **Rs.(78.48) Crores** was found to be approved in the tariff order dated 14th August 2024, for TSECL, which is computed as a revenue surplus by the Commission. However, at actual based on the actual data submitted above, the total gap under truing-up is coming out to be **Rs.379.34 Crores** which implies that there is a revenue deficit of TSECL based on the truing-up of actual expenses. The Commission in its order dated 20.09.2023, has already approved a Gap of **Rs 42.67 Crores** for FY 23-24 when determining the tariff of FY 2023-24. The total revenue gap approved by the Commission is **Rs (121.15) Crores** for FY 2023-24. Hence, TSECL is requesting to allow additional total gap of **Rs. 500.49 Crores** need to be passed on to the consumers through an increase in tariff through this petition. Subsequent treatment of this gap would be further elaborated in the MYT Tariff petition which is to be submitted before the Commission.

7. Annexure

7.1. Outage Data of Rokhia for FY 2023-24:

Table 45: Outage Data of Rokhia for FY 2023-24

Sr. No.	Outage Period	Unit No.	Outage hours	Reason for outage
1	6.00hrs. of 02-04-23 to 11.48hrs. of 02-04-23	U#7	5.48	Manually shut downfor maintenance purpose i.e. To clean Combustion chamber oil & Starting Engine compartment oil and to check PMG bush & bolt.
2	18.32hrs. of 21-04-23 to 7.23hrs. of 22-04-23	U#7	12.91	Compressor bleed valve POS trouble Trip,Low Lube oil Pressure,Gen. Lockout relay optd, Unit lockout relay optd.
3	18.40hrs. of 27-04-23 to 8.19hrs. of 28-04-23	U#7	14.19	E/F in 132KV Transformer panel,Gene. Over voltage relay optd.
4	18.06hrs. of 14-05-23 to 12.16hrs. of 15-05-23	U#7	18.10	Turbine Underspeed.
5	6.01hrs. of 18-05-23 to 12.37hrs. of 18-05-23	U#7	6.36	Gen. Lockout relay Optd, Reverse power relay Optd.
6	13.09hrs. of 23-05-23 to 15.10hrs. of 23-05-23	U#7	2.01	Turbine Underspeed and at the time of Monarchak feeder tripped.
7	18.04hrs. of 23-05-23 to 19.10hrs. of 23-05-23	U#7	1.06	Turbine underspeed during decreasing load of 5MW as per SLDC.
8	19.46hrs. of 23-05-23 to 13.25hrs. of 24-05-23	U#7	18.19	After FSNL, tripped due to turbine underspeed.
9	5.56hrs. of 09-06-23 to 13.48hrs. of 09-06-23	U#7	8:32	Turbine Underspeed.
10	12.53hrs. of 29-06-23 to 14.02hrs. of 29-06-23	U#7	1:49	Turbine Underspeed.
11	23.30hrs. of 07-08-23 to 12.42hrs. of 08-08-23	U#7	13.12	Turbine underspeed
12	8.28hrs. of 10-08-23 to 12.42hrs. of 10-08-23	U#7	4.14	Turbine underspeed
13	22.21hrs. of 10-08-23 to 11.45hrs. of 17-08-23	U#7	133.24	Manually tripped for maintenance purpose
14	10.57hrs. of 29-08-23 to 16.46hrs. of 30-08-23	U#7	30.29	Tripped due to high Lube oil header temperature as malfunctioning of the cooling water pump.
15	12.05hrs. of 07-09-23 to 18.58hrs. of 07-09-23	U#7	6.53	As L.O. Header temperature and Drain temperature raise abnormally due to Cooling Water Pump 1 failed to run(C.W.P 2 faulty) So, had to stop the machine.
16	13.14hrs. of 17-09-23 to 16.11hrs. of 17-09-23	U#7	3.37	As L.O. Header temperature and Drain temperature raise abnormally due to Cooling Water Pump 1 failed to run(C.W.P 2 faulty) So, had to stop the machine.
17	18.42hrs. of 30-09-23 to 12.46hrs. of 02-10-23	U#7	42.04	AS CPW motor of U#7 not functioning properly, and leakage of water has increased at the pump and also abnormal sound increased in the pump motor. So, had to stopped machine for maintenance of CWP motor.

Sr. No.	Outage Period	Unit No.	Outage hours	Reason for outage
18	5.50hrs. of 06-10-23 to 19.50hrs. of 06-10-23	U#7	14	Bound to stop the machine as CPW motor of U#7 failed to operate.
19	13.10hrs. of 28-02-24 to 14.45hrs. of 29-02-24	U#7	25.35	Manually shutdown as GT U#8 started and taken into circuit as three Unit cannot run together due to lack of Gas supply from ONGC & GAIL.
20	15.30hrs. of 02-03-24 to 17.05hrs. of 02-03-24	U#7	2.15	Tripped due to excessive combustion trouble.
21	9.42hrs. of 31-03-24 to 11.22hrs. of 31-03-24	U#7	1.20	Tripped due to low lube oil pressure
22	13.08hrs. of 31-03-24 to 14.12hrs. of 31-03-24	U#7	1.04	Tripped due to low lube oil pressure/Turbine underspeed
23	15.19hrs. of 28-12-23 to 13.44hrs. Of 08-01-2024	U#8	262.25	As per discussion with higher authority the Unit Forcefully taken shutdown due to non-availability of Gas .
24	19.41hrs. of 08-01-24 to 20.38hrs. of 08-01-24	U#8	1.37	Tripped due to gas control valve servo trouble, SRV and GCV problem.
25	5.10hrs. of 09-01-24 to 19.46hrs. of 15-01-24	U#8	158.36	Tripped due to gas control valve servo trouble, SRV and GCV problem.
26	16.13hrs. of 18-01-24 to 13.46hrs. of 19-01-24	U#8	21.33	Stopped manually due to lack of Gas supply from ONGC and Gail as U#7 and U#9 in circuit.
27	12.18hrs. of 20-01-24 to 11.59hrs. Of 28-02-24	U#8	1439.41	Stopped manually due to lack of Gas supply from ONGC and Gail as U#7 and U#9 in circuit.
28	17.25hrs. of 27-03-24 to 15.45hrs. of 28-03-24	U#8	22.20	Manually stopped due to oil leakage in 2nd bearing side.
29	16.20hrs. of 28-03-24 to 17.10hrs. of 28-03-24	U#8	0.50	Tripped during synchronize
30	0.32hrs. of 13-04-23 to 17.58hrs. of 13-04-23	U#9	17.26	Manually shut downfor maintenance purpose i.e. To clean Combustion chamber oil & Starting Engine compartment oil,to change vertical & horizontal dresser coupling both sides collars and gaskets.
31	13.41hrs. of 16-04-23 to 16.14hrs. of 16-04-23	U#9	3.13	Under Freq. Optd relay.
32	17.41hrs. of 10-05-23 to 12.10hrs. of 11-05-23	U#9	19.09	Over Temperature Trip, HP control speed signal loss
33	8.14hrs. of 05-06-23 to 18.02hrs. of 11-06-23	U#9	154.28	GCV not following reference trip/High Vibration trip.
34	8.28hrs. of 02-07-23 to 19.55hrs. of 02-07-23	U#9	11.27	Due to E/F-II on 132KV Transformer panel.
35	11.05hrs. of 28-11-23 to 15.58hrs. of 28-11-23	U#9	4.53	Manually tripped for emergency maintenance purpose.
36	23.47hrs. of 07-12-23 to 8.40hrs. of 08-12-23	U#9	9.33	Tripped due to high exhaust pressure and P2 pressure low.
37	18.32hrs. of 15-01-24 to 15.45hrs. of 18-01-24	U#9	54.08	Due to over Temperature trip
38	1.22hrs. of 19-01-24 to 8.40hrs. of 19-01-24	U#9	7.18	Due to HP speed signal loss/PPRO difference trip
39	10.21hrs. of 19-01-24 to 11.00hrs. of 19-01-24	U#9	0.39	Due to PPRO composite trip(s)/Control oil pressure low trip
40	12.04hrs. of 19-01-24 to 12.01hrs. of 20-01-24	U#9	24.37	Due to HP overspeed FLT-CTRL i/p trouble/Due to HP speed signal loss/PPRO difference trip
41	10.27hrs. of 22-01-24 to 11.42hrs. of 22-01-24	U#9	1.15	Due to over Temperature trip

Sr. No.	Outage Period	Unit No.	Outage hours	Reason for outage
42	10.52hrs. of 27-01-24 to 11.36hrs. of 27-01-24	U#9	1.24	Due to Control oil pressure low trip
43	03.54hrs. of 29-02-24 to 16.32hrs. Of 27-03-24	U#9	637.18	Tripped due to overtemperature trip/HP control speed signal loss.
44	23.17hrs. of 27-03-24 to 15.50hrs. Of 12-04-24(outage mention till 31-03-24)	U#9	73.23	Tripped due to control oil pressure low trip.

7.2. Outage Data of Baramura for FY 2023-24:

Table 46: Outage Data of Baramura for FY 2023-24

Sr. No.	Date	Outage hours	Loss in MU	Reason for outage
1	06.04.23	2.01	0.04235	Tripped due to high exhaust temperature, control speed signal loss, and gas fuel hydraulic trip pressure low. Earth fault and fire incident near 132 KV Chakmaghat line, but breaker did not trip.
2	20.04.23	11.19	0.23765	Tripped due to high exhaust temperature, control speed signal trouble, and gas fuel hydraulic trip pressure low. Dharmanagar to PK Bari 132 KV feeder trip and 132 KV Mohanpur breaker trip.
3	01.05.23	17.17	0.36295	Smoke observed along with heavy oil leakage from dresser coupling at LGB side.
4	08.06.23	2.00	0.04200	Tripped due to Vippro composite trip and GCV not following reference.
5	09.06.23	0.43	0.01505	Tripped due to Vippro composite trip and GCV not following reference.
6	10.06.23	0.20	0.00700	De-synchronized due to generator breaker tripped due to overvoltage and 37.5 MVA transformer tripped due to restricted earth fault. SLDC unable to provide information about the external transmission line fault.
7	14.06.23	0.38	0.01330	Manually de-synchronized due to Unit#5 going to part load (4 MW) and 132 KV Ambassa feeder tripped due to distance relay operated.
8	15.06-16.06.23	9.38	0.20230	Tripped due to lube oil header temperature high. Start attempted twice but failed due to starting problem of diesel engine. Maintenance done by GTMSD, unit started next morning.
9	16.06.23	0.15	0.00525	De-synchronized due to fault at Dharmanagar to PK Bari 132 KV feeder line and 37.5 MVA transformer tripped due to standby earth fault.
10	2.07.23	5.03	0.10605	De-synchronized due to 132 KV main bus/switchyard planned shutdown.
11	03.07.23	0.08	0.00280	De-synchronized due to 37.5 MVA transformer breaker tripped for standby earth fault relay operated.
12	04.07.23	0.19	0.00665	De-synchronized due to 37.5 MVA transformer breaker tripped for standby earth fault relay operated and 132 KV PK Bari to Dharmanagar S/S breaker tripped due to earth fault.
13	22.07.23	0.20	0.00700	De-synchronized due to 37.5 MVA transformer breaker tripped for standby earth fault relay operated.
14	25.07.23	0.55	0.01925	De-synchronized due to 37.5 MVA transformer breaker tripped for earth fault relay operated and 66KV auto transformer tripped due to earth fault.
15	26.07.23	0.20	0.00700	De-synchronized due to 37.5 MVA transformer breaker tripped for standby earth fault relay operated and 132 KV PK Bari to Kamalpur feeder tripped due to earth fault.
16	19.08.23	2.35	0.04725	Tripped due to protective speed signal loss.
17	19.08.23	3.55	0.08225	Tripped due to protective speed signal loss.
18	22.08.23	0.43	0.01505	Tripped due to protective speed signal loss.
19	23.08.23	1.30	0.03150	De-synchronized due to fault at 132kV transmission line and SLDC informed that breaker opened at Jirania and Gamaitilla sub-station.
20	23.08.23	13.53	0.29155	Tripped due to generator differential lockout. Checking the IR value of stator found healthy and replaced the servo valve of SRV & GCV by repaired one. Unit started but unable to synchronize due to generator breaker problem. Maintenance done, unit synchronized.
21	24.08.23	7.27	0.15645	Tripped due to protective speed signal loss.

Sr. No.	Date	Outage hours	Loss in MU	Reason for outage
22	18.09.23	2.37	0.05495	Tripped due to protective speed signal trouble, gas fuel hydraulic trip pressure low.
23	23.09.23	2.13	0.04655	Due to generator protective differential trip and negative phase STG. 132 KV Agt. feeder tripped due to Z1 tripped, RYB phase distance relay tripped.
24	2.10.23	5.37	0.11795	Generator differential trip.
25	9.10.23	15.58	0.32480	Shutdown taken by GTMSD for maintenance.
26	12.10.23	5.37	0.11795	Due to 86U1/86U2/8661/86G2 trip relay operated, AVR PT-4,5,6 core 1 fuse fail & protective speed signal trouble.
27	18.11-19.11.23	28.24	0.59640	Due to DF/DT STG-1.
28	21.11.23	1.06	0.02310	Due to 86U1/86U2/8661/86G2 trip relay operated, AVR PT-4,5,6 core 1 fuse fail & protective speed signal trouble.
29	21.11.23	2.15	0.04725	Due to DF/DT STG-1 protection operated, 86U1/86U2/8661/86G2 trip relay operated, AVR PT-4,5,6 core 1 fuse fail, and protective speed signal trouble.
30	22.11.23	6.50	0.14350	Due to loss of excitation without U/V protection operated, DF/DT STG-1 protection operated, and protective speed signal trouble.
31	07.02.24	2.44	0.05810	nit tripped due to control speed signal lost, HP112HF protective speed signal trouble, protective speed status trip, and gas fuel hydraulic pressure low.
32	09.03.24	1.05	0.02275	Protective speed signal trouble, gas pressure hydraulic pressure low, protective status trip, 86U1/86U2, 86G1/86G2 trip relay operative, AVR PT 4,5,6 core-1, AVR DF/DT STG1 protective relay trip 86U1/86U2.
33	15.03.24	2.33	0.05355	Fire detected, Generative operative trip, protective speed signal trouble, Gas pressure, Hydro pressure low, protective status trip, 86U1/86U2, 86G1/86G2, relay trip, operative AVR, 4,5,6 core-1, fuse fault, AVR, DF/DT STG1 protective relay trip
34	15.03.24	1.20	0.04900	Protective speed signal trouble
35	16.03.24	1.23	0.02905	Vipro composite trip
36	21.03.24	0.45	0.01575	Tripped due to vipro composite trip protective status trip, Gas fuel hydr, Trip pressure low, 86U1/86U2, 86G1/86G2, relay faulty, AVR RT, 4,5,6 Core, 1 fuse fail, 86U1/86U2 Trip relay OPTD
37	21.03.24	0.09	0.00315	Tripped due to vipro composite trip protective status trip, Gas fuel hydr, Trip pressure low, Communicaiton failure in the control system in S-core, Mark-VI.
38	21.03.24	6.03	0.12705	Starting Diesel engine problem (Due to heavy smoke)
39	22.03.24	12.39	0.26565	Mtc. Of starting diesel engine problem
40	23.03.24	19.24	0.40740	Control of speed signal lost, protective speed signal trouble, Gas pressure Hydr. Pressure low, Compressor bleed, viv pos trouble trip.
41	24.03.24	22.36	0.47460	Protective speed signal trouble, Gas pressure Hydr. Pressure low
42	25.03.24	23.42	0.49770	Tripped due to Control speed signal lost, protective speed signal trouble, protective status trip, Gas fuel hydr., Trip pressure low, 86U1/86U2 Relay faulty, AVR PT4,5, 6, core 1 fuse fall, 86U1/86U2 Trip relay OPTD.
43	26.03.24	123.43	2.59805	Tripped due to vipro composite trip protective status trip, Gas fuel hydr, Trip pressure low, 86U1/86U2, 86G1/86G2, relay faulty, AVR RT, 4,5,6 Core, 1 fuse fail, 86U1/86U2.

Total Generation loss in MUs = 7.7749 MU in FY 2023-24 for Baramura plant.