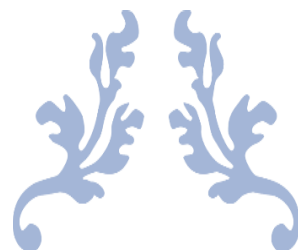


TRIPURA ELECTRICITY REGULATORY COMMISSION



TARIFF ORDER FOR FY 2022-23

Petition No: 2 (Truing up) of 2022 and 4 (MYT) of 2022



True-up of FY 2017-18 to FY 2019-20, Annual Performance Review of FY 2020-21 and ARR Determination for Generation, Transmission and Distribution Business for FY 2021-22 and FY 2022-23 and Retail Supply Tariff for FY 2022-23 of Tripura State Electricity Corporation Limited

September 02, 2022

Table of Contents

1	BACKGROUND AND SALIENT FEATURES OF THE ORDER	16
1.1	Background	16
1.2	Tariff Orders issued by the Commission earlier:	17
1.3	Admission of Current Petition filed by TSECL	18
1.4	Public Consultation Process	19
1.5	State Advisory Committee	21
1.6	Organisation of the Order	21
2	SUGGESTIONS/OBJECTIONS, TSECL'S RESPONSES AND COMMISSION'S RULING.....	22
2.1	Objection 1: Discount to Commercial Tariff to be given for Hospitals	22
2.2	Objection 2: No Increase in Tariff.....	23
2.3	Objection 3: Change in Tariff Category	24
2.4	Objection 4: Billing on Connected Load / Power Failure	24
2.5	Objection 5: Levy of Domestic Tariff for Military Establishments	25
2.6	Objection 6: No Tariff Hike.....	26
3	TRUING UP OF ARR FOR FY 2017-18 TO FY 2019-20, APR OF FY 2020-21 AND ARR OF FY 2021-22 AND FY 2022-23 FOR GENERATION BUSINESS	30
3.1	Background and Approach.....	30
3.2	Norms for Operations.....	31
3.3	Gross Generation and Net Generation	32
3.4	Plant Availability Factor.....	36
3.5	Station Heat Rate	38
3.6	Fuel Purchase Cost	40

3.7	Annual fixed charges (AFC).....	45
3.8	Operation & Maintenance Expenses	45
3.9	Depreciation	50
3.10	Interest on Working Capital	54
3.11	Return on Equity and Tax on Income	58
3.12	Non-Tariff Income	63
3.13	Sharing of Gains and Losses on Controllable Parameters	64
3.14	Summary of True-up for FY 2017-18 to FY 2019-20 and ARR for FY 2020-21 to FY 2022-23 66	
3.15	Generation Tariff for FY 2022-23	73
 4 TRUING UP OF ARR FOR FY 2017-18 TO FY 2019-20, APR OF FY 2020-21 AND ARR OF FY 2021-22 AND FY 2022-23 FOR TRANSMISSION BUSINESS ... 74		
4.1	Background and Approach.....	74
4.2	Transmission Loss.....	75
4.3	Annual Fixed Cost (AFC)	76
4.4	Operation & Maintenance Expenses	76
4.5	Depreciation	81
4.6	Interest and Finance Charges	83
4.7	Interest on Working Capital	84
4.8	Return on Equity and Tax on Return on Equity.....	85
4.9	Non-Tariff Income	89
4.10	Summary of True-up for FY 2017-18 to FY 2019-20 and ARR for FY 2020-21 to FY 2022-23 for Transmission Business	90
 5 TRUING UP OF ARR FOR FY 2017-18 TO FY 2019-20, APR OF FY 2020-21 AND ARR OF FY 2021-22 AND FY 2022-23 FOR DISTRIBUTION BUSINESS 93		
5.1	Background and Approach.....	93

5.2	Energy Sales.....	94
5.3	Distribution Loss.....	97
5.4	Energy Balance	100
5.5	Power Purchase	103
5.6	Intra-State Transmission Charges.....	107
5.7	Operation & Maintenance Expenses	108
5.8	Depreciation	114
5.9	Interest and Finance Charges	116
5.10	Interest on Working Capital	119
5.11	Return on Equity and Tax on Return on Equity.....	120
5.12	Non-Tariff Income	124
5.13	Sharing of Controllable Factor	126
5.14	Summary of ARR for FY 2017-18 to FY 2022-23	129
5.15	Revenue from Sale of Power.....	133
5.16	Revenue Gap/(surplus).....	135
6	COMPLIANCE TO DIRECTIVES OF THE COMMISSION.....	138
7	TARIFF PRINCIPLES AND DESIGN	139
7.1	Tariff Proposal for FY 2022-23	139
7.2	Wheeling Charges	141
7.3	Cross Subsidy	142
7.4	Cross-Subsidy Surcharge.....	143
7.5	Tariff Principles.....	147
7.6	Approved Tariff for FY 2022-23	151
7.7	Approved Miscellaneous and Other Charges for FY 2022-23.....	160

ANNEXURE 1: APPROVED TARIFF SCHEDULE FOR FY 2022-23	164
ANNEXURE 2: TARIFF SCHEDULE FOR FY 2022-23 AFTER CONSIDERING GOVERNMENT SUBSIDY.....	166
APPENDIX 1: NUMBER OF CONSUMERS FROM FY 2017-18 TO FY 2022-23(P)	169
APPENDIX 2: CONNECTED LOAD FROM FY 2017-18 TO FY 2022-23(P).....	170
APPENDIX 3: SALES (MU) FROM FY 2017-18 TO FY 2022-23(P).....	171

List of Tables

Table 1: Name of the Objectors who filed objections/suggestions in writing on Tariff Petition of TSECL	20
Table 2: Plant wise Effective Capacity	32
Table 3: Plant-wise own generation for FY 2017-18 to FY 2022-23 as submitted by TSECL	34
Table 4: Normative PLF and Aux. Consumption and Actual Performance of Generation Plant (%).....	34
Table 5: Own generation from FY 2017-18 to FY 2022-23 approved by the Commission	36
Table 6: Plant wise Availability (%) for FY 2017-18 to FY 2022-23 submitted by TSECL	37
Table 7: Plant wise Availability (%) for FY 2017-18 to FY 2022-23 approved by the Commission	37
Table 8: SHR for FY 2017-18 to FY 2022-23 (kCal/ kWh)	38
Table 9: Revised SHR based on GCV and Fuel Consumption	39
Table 10: Approved SHR (kCal/kWh).....	39
Table 11: Details of APM Gas price notified by MoPNG, Gol.....	41
Table 12: Source wise Supply of Fuel and cost (per SCM) - FY 2017-18 to FY 2022-23	42
Table 13: Fuel consumption and Fuel Cost as per TSECL (Rs. Crore).....	42
Table 14: Quantity of Fuel Purchased for FY 2017-18 to FY 2019-20.....	42
Table 15: Reconciliation of Fuel Cost (Rs. Crore)	43
Table 16: Fuel Purchase Cost of RGTPP for FY 2020-21 to FY 2022-23 as approved by the Commission.....	44
Table 17: Fuel Purchase Cost of BGTPP for FY 2020-21 and FY 2022-23 approved by the Commission.....	44
Table 18: Fuel Cost for FY 2017-18 to FY 2022-23 approved by the Commission...	45
Table 19: Norms for calculation of O&M expenses for Generating Station.....	46
Table 20: O&M Expenses claimed by Petitioner (Rs. Crore).....	46
Table 21: Normative O&M Cost for FY 2017-18 to FY 2019-20 approved by the Commission (Rs. Crore)	48
Table 22: Reconciliation of O&M function-wise with Audited Accounts (Rs. Crore)..	49
Table 23: O&M expenses for FY 2017-18 to FY 2022-23 as approved by the Commission (Rs. Crore)	50
Table 24: Rate of Depreciation as per Tariff Regulations	50
Table 25: Gross Value of Assets and Depreciation claimed for FY 2017-18 to FY 2022-23 (Rs. Crore)	51

Table 26: Capitalisation of Assets of Generation business – Petitioner (Rs. Crore) .	52
Table 27: Depreciation for FY 2017-18 to FY 2022-23 approved by the Commission (Rs. Crore)	54
Table 28: Effective SBI Base Rate from FY 2017-18 to FY 2021-22 (%).....	55
Table 29: Interest on working Capital for FY 2017-18 to FY 2022-23, submitted by TSECL (Rs. Crore).....	55
Table 30: Computation of rate of Interest on Working Capital.....	57
Table 31: Interest on Working Capital for FY 2017-18 to FY 2022-23, approved by the Commission (Rs. Crore).....	58
Table 32: Calculation of Equity Fund and Return on Equity (Rs. Crore)	59
Table 33: Approved Pre-tax Return on Equity (%).....	61
Table 34: Equity Base for Generating Station for FY 2017-18 to FY 2022-23 approved by the Commission (Rs. Crore).....	61
Table 35: RoE for FY 2017-18 to FY 2022-23 approved by the Commission (Rs. Crore).....	62
Table 36: Non-Tariff Income as per Petitioner for FY 2017-18 to FY 2022-23 (Rs. Crore).....	63
Table 37: Non-Tariff Income for FY 2017-18 to FY 2022-23 approved by the Commission (Rs. Crore)	64
Table 38: Actual and Normative Operational Parameters for Fuel Cost for FY 2017-18 to FY 2019-20.....	65
Table 39: Sharing of Financial gain on Fuel Cost for FY 2017-18 to FY 2019-20	65
Table 40: Truing-up of ARR for FY 2017-18 for TSECL (Generation Business) approved by the Commission (Rs. Crore).....	67
Table 41: Truing up of ARR for FY 2018-19 for TSECL (Generation Business) approved by the Commission (Rs. Crore).....	68
Table 42:Truing up of ARR for FY 2019-20 for TSECL (Generation Business) approved by the Commission (Rs. Crore).....	69
Table 43: ARR for FY 2020-21 for TSECL (Generation Business) approved by the Commission (Rs. Crore)	70
Table 44: ARR for FY 2021-22 for TSECL (Generation Business) approved by the Commission (Rs. Crore)	71
Table 45: ARR for FY 2022-23 for TSECL (Generation Business) approved by the Commission (Rs. Crore)	72
Table 46: Generation Tariff for FY 2022-23 approved by the Commission.....	73
Table 47: Transmission Loss from FY 2017-18 to FY 2022-23 as submitted by the Petitioner (%)	75
Table 48: Transmission Loss from FY 2017-19 to FY 2022-23 approved by the Commission (%)	76

Table 49: O&M Expense for Transmission Business for MYT Period (Rs. Crore) as submitted by the Petitioner.....	77
Table 50: Break up of actual O&M Expenses for FY 2017-18 to FY 2019-20 (Rs. Crore).....	78
Table 51: YoY Increase in CPI and WPI index considered by the Commission	78
Table 52: Normative Employee and A&G Expenses for FY 2017-18 to FY 2019-20 approved by the Commission (Rs. Crore).....	79
Table 53: Computation of k-factor	80
Table 54: R&M Expenses approved by the Commission (Rs. Crore).....	80
Table 55: Normative and actual O&M Expenses for FY 2017-18 to FY 2019-20 (Rs. Crore).....	80
Table 56: O&M Expenses approved for FY 2017-18 to FY 2022-23 by the Commission (Rs. Crore)	81
Table 57: Rate of Depreciation as per Tariff Regulations	81
Table 58: GFA and Depreciation for Transmission Asset - Petitioner (Rs. Crore)	82
Table 59: Capitalisation of Assets for Transmission Business - Petitioner (Rs. Crore)	83
Table 60: GFA and Depreciation for Transmission Asset as approved by the Commission (Rs. Crore)	83
Table 61: Interest rate on Working Capital (%)	84
Table 62: Interest on working Capital for Transmission Business as submitted by TSECL (Rs. Crore).....	84
Table 63:: Interest on working Capital for Transmission Business as approved by the Commission (Rs. Crore)	85
Table 64: Calculation of Equity base for Transmission Business as per TSECL (Rs. Crore).....	86
Table 65: Calculation of RoE for Transmission Business as submitted by the Petitioner (Rs. Crore)	86
Table 66: Approved Pre-tax Return on Equity for Transmission business (%).....	87
Table 67: Equity Base for Transmission for FY 2017-18 to FY 2022-23 approved by the Commission (Rs. Crore).....	88
Table 68: Return on Equity for Control Period for Transmission Business as approved by the Commission (Rs. Crore).....	89
Table 69: Non-Tariff Income for Transmission Business as per Petitioner for FY 2017-18 to FY 2022-23 (Rs. Crore).....	89
Table 70: Non-Tariff Income for Transmission Business for FY 2017-18 to FY 2022-23 approved by Commission (Rs. Crore).....	90
Table 71: Aggregate Revenue Requirement for Transmission Business approved for FY 2016-17 to FY 2020-21 in Case No. 4 of 2020 (Rs. Crore).....	90

Table 72: Aggregate Revenue Requirement for Transmission Business for FY 2017-18 to FY 2022-23 as submitted by the Petitioner (Rs. Crore).....	91
Table 73: Aggregate Revenue Requirement for Transmission Business for FY 2017-18 to FY 2022-23 approved by the Commission (Rs. Crore).....	92
Table 74: Growth rate for projection of sales Category wise - by TSECL	95
Table 75: Category-wise Sales submitted by TSECL (MU)	95
Table 76: CAGR computed by the Commission	96
Table 77: Category wise Number of Consumers and Connected Load approved by Commission for FY 2021-22 to FY 2022-23	97
Table 78: Category-wise Sales approved by the Commission (MU).....	97
Table 79: Distribution and T&D Loss from FY 2017-18 to FY 2022-23 (%)	98
Table 80: T&D Loss from FY 2017-18 to FY 2022-23 approved by the Commission (%)	100
Table 81: Energy Balance for FY 2017-18 to FY 2022-23 as submitted by the Petitioner	101
Table 82: Inter State Transmission Loss approved by Commission (%).....	102
Table 83: Energy Balance for FY 2017-18 to FY 2022-23 as approved by the Commission (MU).....	103
Table 84: Actual Power Purchase Cost from FY 2017-18 to FY 2019-20 as submitted by Petitioner	105
Table 85: Provisional Power Purchase cost from FY 2020-21 as submitted by TSECL	105
Table 86: Provisional Power Purchase cost for MYT Control Period from FY 2021-22 to FY 2022-23 as submitted by TSECL.....	105
Table 87: Power Purchase cost for FY 2017-18 to FY 2019-20 approved by the Commission	106
Table 88: Power Purchase cost for FY 2020-21 approved by the Commission	106
Table 89: Power Purchase cost for FY 2020-21 to FY 2022-23 approved by the Commission	107
Table 90: Intra State Transmission Charges (Rs. Crore) as submitted by the Petitioner	108
Table 91: Intra State Transmission Charges approved by the Commission (Rs. Crore).....	108
Table 92: O&M Expense for Control Period as submitted by the Petitioner (Rs. Crore).....	110
Table 93: Break up of O&M Expenses of Distribution business for FY 2017-18 to FY 2019-20 (Rs. Crore)	110
Table 94: Average Increase in CPI and WPI index considered by the Commission.....	111
Table 95: Normative Employee Cost and A&G Expenses for FY 2017-18 to FY 2019-	

20 as approved by the Commission for Distribution (Rs. Crore)	112
Table 96: Computation of k-factor	113
Table 97: R&M Expenses as approved by the Commission (Rs. Crore).....	113
Table 98: O&M Expenses approved for FY 2017-18 to FY 2022-23 by the Commission (Rs. Crore)	113
Table 99: Depreciation rate as per TERC MYT Regulations, 2015	114
Table 100: GFA and Depreciation for Distribution Asset as submitted by Petitioner (Rs. Crore)	114
Table 101: Capitalisation of Assets for Distribution Business - Petitioner (Rs. Crore)	115
Table 102: GFA and Depreciation for Distribution Business approved by the Commission (Rs. Crore)	116
Table 103: Interest and Finance Charges for FY 2017-18 to FY 2022-23 – submitted by TSECL (Rs. Crore).....	117
Table 104: Interest and Finance Charges for FY 2017-18 to FY 2022-23 approved by Commission (Rs. Crore)	119
Table 105: Interest rate on Working Capital (%).....	119
Table 106: Interest on Working Capital as submitted by Petitioner (Rs. Crore)	119
Table 107: Interest on working Capital for distribution business as approved by the Commission (Rs. Crore)	120
Table 108: Calculation of Equity Base as per TSECL (Rs. Crore).....	121
Table 109: Calculation of RoE on Pre-tax basis as per TSECL (Rs. Crore)	122
Table 110: Approved Pre-tax Return on Equity for Distribution business (%)	123
Table 111: Equity Base of Distribution for FY 2017-18 to FY 2022-23 approved by Commission (Rs. Crore)	124
Table 112: Return on Equity for Control Period for Distribution Business as approved by the Commission (Rs. Crore).....	124
Table 113: Non-Tariff Income as per Petitioner for FY 2017-18 to FY 2022-23 (Rs. Crore).....	125
Table 114: Non-Tariff Income for FY 2017-18 to FY 2022-23 approved by the Commission (Rs. Crore)	126
Table 115: Actual Interest on Working Capital loan for Distribution business for FY 2017-18 to FY 2019-20 (Rs. Crore).....	127
Table 116: Sharing of efficiency gains for Interest on Working capital for Distribution for FY 2017-18 to FY 2019-20 (Rs. Crore)	128
Table 117: Additional Energy purchase on account of increase in T&D losses for FY 2017-18 to FY 2020-21 (in MU)	128
Table 118: Cost of additional energy purchase for FY 2017-18 to FY 2020-21.....	129
Table 119: Aggregate Revenue Requirement for Distribution Business approved for	

FY 2017-18 to FY 2020-21 in Case No. 4 of 2020 (Rs. Crore).....	129
Table 120: Aggregate Revenue Requirement for Truing up for FY 2017-18 to FY 2019-20 of Distribution business approved by the Commission (Rs. Crore).....	131
Table 121: Aggregate Revenue Requirement for FY 2020-21 to FY 2022-23 of Distribution business approved by the Commission (Rs. Crore).....	132
Table 122: Category wise Revenue for FY 2017-18 to FY 2022-23 (Rs. Crore)	133
Table 123: Revenue from Inter-State sales from FY 2017-18 to FY 2022-23 (Rs. Crore).....	133
Table 124: Revenue subsidy from FY 2017-18 to FY 2022-23 (Rs. Crore)	134
Table 125: Total Revenue from FY 2017-18 to FY 2022-23 as per Petitioner (Rs. Crore).....	134
Table 126: Weighted average rate of Inter-State sale of power for past 5 years	135
Table 127: Total Revenue from FY 2017-18 to FY 2022-23 approved by the Commission (Rs. Crore)	135
Table 128: Revenue Gap/(Surplus) for FY 2017-18 to FY 2022-23 considered by the TSECL (Rs. Crore).....	136
Table 129: Total Revenue Gap including Past Regulatory assets considered by TSECL (Rs. Crores).....	136
Table 130: Revenue Gap/(Surplus) for FY 2017-18 to FY 2022-23 approved by Commission (Rs. Crore)	136
Table 131: Calculation of Carrying cost as approved by Commission (Rs. Crores)	137
Table 132: Total Revenue Gap including Past Regulatory assets approved by Commission (Rs. Crores)	137
<i>Table 137: Scenario proposed by Petitioner to recover Revenue Gap</i>	<i>139</i>
Table 134: Average Cost of Supply and Regulatory Assets for FY 2022-23 approved by the Commission.....	140
Table 135: Allocation Matrix for segregation of Wire and Supply business	141
Table 136: Segregation of ARR for Distribution Business as approved by the Commission (Rs. Crore)	142
Table 137: Wheeling Charges for FY 2022-23 as approved by the Commission....	142
Table 138: ABR/ACoS for FY 2022-23 as approved by the Commission	143
Table 139: Calculation of C for computation of CSS for FY 2022-23	145
Table 140: Computation of System Loss for FY 2022-23	146
Table 141: Computation of Transmission and wheeling charges per unit for FY 2022-23	146
Table 142: Cross Subsidy Surcharge for FY 2022-23 as approved by the Commission	146
Table 143: Miscellaneous and Other Charges as approved by the Commission	160

Before the
TRIPURA ELECTRICITY REGULATORY COMMISSION

Bidyut Bhawan, Banamalipur, Bhutoria,
Agartala – 799001 (Tripura)

Coram

Shri. D. Radhakrishna, Chairman

Shri. Jiban Krishna Sen, Member

Dated: 02 September, 2022

Petition No: 2 (Truing up) of 2022

In the matter of

Petition of Tripura State Electricity Corporation Limited (TSECL) for Truing-up of FY 2017-18 to FY 2019-20 for Generation, Transmission and Distribution Business under TERC Tariff Regulations (Multi Year Tariff), 2015 and Section 62 of Electricity Act, 2003.

by

Tripura State Electricity Corporation Limited (TSECL)

..... Petitioner

Bidyut Bhawan, North Banamalipur

Agartala – 799001

Tripura

Petition No: 4 (MYT) of 2022

In the matter of

Petition of Tripura State Electricity Corporation Limited (TSECL) for determination of Aggregate Revenue Requirement (ARR) for the Control Period from FY 2021-22 to FY 2022-23 and Retail Supply Tariff for FY 2022-23 along with Annual Performance Review of FY 2020-21 under TERC Tariff Regulations (Multi Year Tariff), 2015 and Section 62 of Electricity Act, 2003.

by

Tripura State Electricity Corporation Limited (TSECL)

..... Petitioner

Bidyut Bhawan, North Banamalipur

Agartala – 799001

Tripura

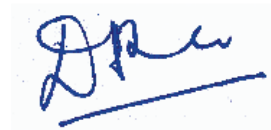
ORDER

The Commission, in exercise of the powers vested under Section 62(1) (d) read with Section 64(3) (a) of the Electricity Act, 2003 and TERC Tariff Regulations (Multi Year Tariff), 2015 and all other powers conferred on the Tripura Electricity Regulatory Commission after thorough examination of the Petition submitted by TSECL in Petition No. 2 (Truing up) of 2022 and Petition No. 4 (MYT) of 2022, all documents and records as submitted and all oral and written submissions made by the Petitioners during Public Hearing and all objections submitted by the objectors, replies thereof from the Petitioner, and other submissions made by the representatives presented and in consultation with the State Advisory Committee or otherwise information received and after due consideration of the consumers' interest and sustainability of the Licensee, the Commission passes the Tariff Order and directives as detailed in the respective Chapters. The Tariff Order will be effective from 01 September, 2022 and remain valid until issuance of further Tariff Order.

This disposes off Petition No. 2 (Truing up) of 2022 and Petition No. 4 (MYT) of 2022.



Jiban Krishna Sen
(Member, TERC)



D. Radhakrishna
(Chairman, TERC)

ABBREVIATIONS

A&G	Administrative and General
Act	Electricity Act, 2003
AGBPP	Assam Gas Based Power Plant
AGTPP	Agartala Gas Turbine Power Plant
APTEL	Appellate Tribunal for Electricity
ARR	Aggregate Revenue Requirement
AT&C	Aggregate Technical and Commercial
BGTPP	Baramura Gas Thermal Power Plant
BPL	Below Poverty Line
CAG	Comptroller and Auditor General
CAGR	Compounded Annual Growth Rate
Capex	Capital Expenditure
CERC	Central Electricity Regulatory Commission
CGS	Central Generating Stations
Ckt. Km	Circuit Kilometre
CPI	Consumer Price Index
Crs.	Crore
CWIP	Capital Works in Progress
DHEP	Doyang Hydro-Electric Project
DPR	Detailed Project Report
FPPCA	Fuel and Power Purchase Cost Adjustment
FY	Financial Year
GAIL	Gas Authority of India Limited
GFA	Gross Fixed Assets
GHEP	Gumti Hydro-Electric Project
GoT	Government of Tripura
HEP	Hydro-Electric Project
HSD	High Speed Diesel
HT	High Tension
IEX	Indian Energy Exchange
kcal	kilo calorie
kV	kilo Volt
LT	Low Tension
MMSCM	Million Metric Standard Cubic Metre

MoP	Ministry of Power
MU	Million Units
MW	Mega Watt
NEEPCO	North Eastern Electric Power Corporation Limited
NEP	National Electricity Policy
NER	North Eastern Region
NHPC	National Hydro Power Corporation Limited
NTI	Non-tariff Income
O&M	Operation and Maintenance
ONGC	Oil and Natural Gas Corporation
OTPC	ONGC Tripura Power Company
PFC	Power Finance Corporation
PGCIL	PowerGrid Corporation of India Limited
PLF	Plant Load Factor
PLR	Prime Lending Rate
POSOCO	Power System Operation Corporation Limited
R&M	Repair and Maintenance
R-APDRP	Restructured Accelerated Power Development and Reforms Programme
REC	Rural Electrification Corporation
RGVY	Rajiv Gandhi Grameen Vidyutikaran Yojana
RGTPP	Rokhia Gas Thermal Power Plant
RHEP	Ranganadi Hydro-Electric Project
RLDC	Regional Load Dispatch Centre
Rs.	Rupees
SBI	State Bank of India
SCM	Standard Cubic Metre
SLM	Straight Line Method
T&D	Transmission and Distribution
TERC	Tripura Electricity Regulatory Commission
TP	Tariff Policy
TPP	Thermal Power Plant
TPGL	Tripura Power Generation Limited
TSECL	Tripura State Electricity Corporation Limited
WPI	Wholesale Price Index

1 Background and Salient Features of the Order

1.1 Background

- 1.1.1 Tripura State Electricity Corporation Limited ((hereinafter referred to as 'TSECL' or the 'Petitioner' or the 'Utility') was formed and registered under the Companies Act 1956 on 9 June, 2004, in compliance with the MOU among Ministry of Power, Government of India & Government of Tripura on 28 August, 2003. TSECL was made functional, under section 131 & 133 of the Electricity Act 2003 (hereinafter referred to as "the Act" or "the EA, 2003"), w.e.f. 1 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. TSECL was the sole electricity utility in Tripura responsible for generation, transmission and distribution of electricity in the State.
- 1.1.2 A 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 operational independent entity from September 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.
- 1.1.3 TSECL filed a Petition for Truing-up of FY 2017-18 to FY 2019-20 and determination of Aggregate Revenue Requirement (ARR) for the Control Period from FY 2021-22 to FY 2023-24 and Retail Supply Tariff for FY 2022-23 and FY 2023-24 along with Annual Performance Review of FY 2020-21 as per Section 62 of the Act read with Tripura Electricity Regulatory Commission (Tariff Procedure) Regulations, 2004, Tripura Electricity Regulatory Commission (Conduct of Business) Regulations, 2004 and Tripura Electricity Regulatory Commission Tariff Regulations (Multi Year Tariff), 2015 (hereinafter referred to as "TERC MYT Regulations, 2015").
- 1.1.4 TSECL in the said Petition has submitted that it has not segregated the account statements for Generation, Transmission and Distribution business completely and the allocation has been undertaken based on certain principles as provided in the Petition. 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.
- 1.1.5 Petitioner has submitted audited accounts FY 2017-18 to FY 2019-20 and for FY 2020-21 and FY 2021-22, audit was still under process. Also, the instant Petition has been filed considering the provisional accounts data till FY 2020-21, wherever applicable and the ARR and tariff for FY 2021-22 & FY 2022-23 has been projected based on the actual data of past years and norms of TERC MYT Regulations, 2015,

as applicable

- 1.1.6 The Commission notified TERC MYT Regulations, 2015 on 18 December, 2015 and the said Regulations were applicable from the date of notification and shall remain in force for a period of five (5) years from the date of publication or until notification of the revised Regulations whichever is later. Since the period of five years is over and the said Regulations are still applicable, the Commission has determined tariff for FY 2022-23 only and not for FY 2022-23 and FY 2023-24 as there is no such provision to determine the tariff for two years.
- 1.1.7 Accordingly, the Commission in the present tariff proceedings is dealing with the following in respect of Petitions filed by TSECL for Truing-up of FY 2017-18 to FY 2019-20 and determination of Aggregate Revenue Requirement (ARR) for the Control Period from FY 2021-22 to FY 2023-24 and Retail Supply Tariff for FY 2022-23 and FY 2023-24 along with Annual Performance Review of FY 2020-21 as per TERC MYT Regulations, 2015 for Generation, Transmission and Distribution Business.

1.2 Tariff Orders issued by the Commission earlier:

- 1.2.1 The chronology of the filing of the Tariff Petitions and issuance of the Tariff Orders from FY 2005-06, are listed below:
- 1.2.2 TSECL filed its first Tariff Petition for FY 2005-06 in accordance with the TERC Tariff Regulations, 2004. The Commission, in exercise of the powers vested under Sections 61, 62 and 64 of the Act carried out a detailed review of the Petition and issued its first Tariff Order on 24 June, 2005.
- 1.2.3 TSECL filed its second Tariff Petition for FY 2006-07 on 4 August, 2006 in accordance with Section 62 of the Act and TERC Tariff Regulations, 2004. The Commission, in exercise of the powers vested under Sections 61, 62 and 64 of the Act issued its second Tariff Order on 14 September, 2006.
- 1.2.4 In FY 2010-11, TSECL submitted a Petition for Fuel & Power Purchase Cost Adjustment (FPPCA) for approval of adjustment of cost against increase of fuel (gas) cost for its own generating stations, namely, Rokhia Gas Thermal Power Plant (RGTPP) and Baramura Gas Thermal Power Plant (BGTPP), and cost incurred for procurement of power from the Central Generating Stations (CGS). The Commission, after due examination of the Petition and considering all the aspects of this matter, issued the FPPCA Order on 13 September, 2010. The Commission subsequently issued the amendment to the Order on 22 September, 2010 after allowing subsidy to some categories of consumers, wherein the Commission allowed Rs. 1.40/unit as FPPCA charge.
- 1.2.5 TSECL did not file any ARR and Tariff Petition from FY 2007-08 to FY 2011-12 despite several reminders from time to time by the Commission. Non-finalization of the Annual Accounts from FY 2007-08 to FY 2011-12 was the main reason for non-

submission of the Tariff Petitions. Therefore, the actual financial health of the Petitioner could not be judged prior to FY 2011-12.

- 1.2.6 Subsequently, after a hiatus of 6 years from the issuance of the second Tariff Order of the Commission, the Petitioner filed its third ARR and Tariff Petition on 20 January, 2012 (Case No. 01 of 2012) for approval of ARR and Tariff for FY 2012-13 along with the Truing-up of ARR for the period from FY 2007-08 to FY 2010-11. As highlighted above, in absence of the audited Annual Accounts for FY 2005-06 and FY 2006-07, the truing-up exercise could not be completed previously. The Commission, according to Regulation 3 of the TERC Tariff Regulations, 2004 and Regulation 25(1) of the TERC (Conduct of Business) Regulations, 2004, also undertook the suo-motu proceedings for truing-up of FY 2005-06 and FY 2006-07 and included the same in the tariff proceedings for FY 2012-13. On 28 March 28, 2012, the Commission issued the third Tariff Order for TSECL, approving the ARR and tariff for FY 2012-13 along with truing up for the period from FY 2005-06 to FY 2010-11.
- 1.2.7 The Petitioner filed its fourth ARR and Tariff Petition on 15 March, 2013, for approval of ARR and Tariff for FY 2013-14 along with the truing-up of the ARR of FY 2011-12 and Review of ARR for FY 2012-13. The Commission, in exercise of the powers vested under Sections 61, 62 and 64 of the Act and all other powers enabling it in this regard and after taking into consideration the submissions made by TSECL, the objections by various stakeholders, response of TSECL, issues raised during the Public Hearing and all other relevant material, issued the fourth Tariff Order for TSECL on 25 June, 2013.
- 1.2.8 Subsequently, the Commission issued an Order with regard to truing-up for FY 2012-13, Review of FY 2013-14 and determination of Tariff for FY 2014-15 on 22 November, 2014.
- 1.2.9 Thereafter, the tariff order was passed on 1 September 2020 after almost 6 years with regard to truing-up for FY 2013-14 to FY 2015-16, determination of the ARR for FY 2016-17 to FY 2020-21 and Retail Tariff for FY 2020-21.

1.3 Admission of Current Petition filed by TSECL

- 1.3.1 TSECL has filed Petition No. 2 (Truing up) of 2022 for Truing-up of FY 2017-18 to FY 2019-20 and Petition No. 4 (MYT) of 2022 determination of Aggregate Revenue Requirement (ARR) for FY 2021-22 and FY 2022-23 and Retail Supply Tariff for FY 2022-23 along with Annual Performance Review of FY 2020-21 as per TERC MYT Regulations, 2015 for Generation, Transmission and Distribution Business. The Prayers of TSECL are as given below:

Petition No. 2 (Truing up) of 2022

- a. Admit this Petition;
- b. Examine the proposal submitted by the Petitioner for a favourable dispensation as detailed in the enclosed proposal;

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- c. Consider the submissions and allow the proposed Truing up for FY 2017-18 to FY 2019-20 (*Three Separate Petitions have been filed for truing up of each year. However, since all the prayers are same except for the year of truing up, the Commission has clubbed all the Petition for truing up together*)
 - 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.
 - g. Pass such orders as the Hon'ble Commission may deem fit and proper, keeping in view the facts and circumstances of the case;

Petition No. 4 (MYT) of 2022

- a. Admit this Petition;
- b. Examine the proposal submitted by the Petitioner for a favourable dispensation as detailed in the enclosed proposal;
- c. Consider the submissions and allow the proposed MYT for FY 2021-22 to FY 23-24 along with Annual
- d. Performance Review of FY 2020-21Pass 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.
- g. Pass such orders as the Hon'ble Commission may deem fit and proper, keeping in view the facts and circumstances of the case;

1.3.2 On preliminary scrutiny of the Petition, the Commission observed several discrepancies and gaps in the Petition filed by TSECL. The Commission observed that as per the TERC MYT Regulations, 2015 and TERC Tariff Procedure Regulations, 2004, significant data and information that is important to process the Tariff Petition was not submitted by the Petitioners. Hence, the Commission sent preliminary data gaps to TSECL citing several discrepancies and gaps in the Petition and supporting information. The reply to data gaps submitted by the Petitioner has been considered by the Commission.

1.4 Public Consultation Process

1.4.1 After admission of the ARR and Tariff Petition, the Commission, in accordance with Section 64 of the Act and Clause 10 of the TERC (Tariff Procedure) Regulations, 2004, directed TSECL to publish its Tariff Petition in abridged form in the newspapers and on their website. Accordingly, the abridged form of the Petition was published on 22 July 2022 in the leading newspapers in Tripura. The Petitioner also posted the public notice and the Petition on their website (www.tsecl.in). The publication invited the attention of all interested parties, stakeholders including members of the public for their objections/suggestions on the said Petition of TSECL on or before 16 August, 2022.

1.4.2 The following stakeholder filed his objections on the Petition of TSECL:

Table 1: Name of the Objectors who filed objections/suggestions in writing on Tariff Petition of TSECL

Sr. No.	Name
1	Maharaja Bir Bikram University
2	BSNL
3	Assistant Garrison Engineer, Agartala, Military Engineering Services
4	ILS Hospitals
5	Tripura Electricity Consumers Association
6	Airports Authority of India
7	Society for Tripura Medical College and Dr BRAM Teaching Hospital
8	CPI (M), Tripura State Committee

1.4.3 The Commission examined the objections received from the objector and fixed the date for public hearing as 22 August, 2022. The Commission invited the objector to take part in the Public Hearing process and present his views in person before the Commission. The Commission, subsequently published the Notice for Public Hearing in the following newspapers on 17 August, 2022:

- a. Dainik Sambad
- b. Syandan
- c. Tripura Times
- d. Daily Desher Katha

1.4.4 The public hearing was conducted at the Commission's office in Banamalipur, Agartala on 22 August, 2022.

1.4.5 The Commission has ensured that the due process contemplated under the Law to ensure transparency and public participation was followed at every stage and adequate opportunity was given to all concerned to express their views. The suggestions and objections raised on TSECL's Petition in writing as well as orally during the Public Hearing, along with TSECL's response and the Commission's

Rulings are summarised in Section 2 of this Order.

1.5 State Advisory Committee

- 1.5.1 The tariff proposal of TSECL was placed before the State Advisory Committee (SAC) in its meeting held on 18 August, 2022 at the Commission's Office. The Committee members were briefed on the Petition filed by TSECL.
- 1.5.2 The SAC members desired that the Commission should verify all the elements of the ARR before issuing the Tariff Order for FY 2022-23. All the members raised their apprehensions on enormous tariff increase required based on the submissions of the Petitioner and requested the Commission to look into the reasonableness of the same.
- 1.5.3 Thus, the Commission has taken all the necessary steps to ensure that the due process, as contemplated under the Act and Regulations framed by the Commission, are followed and adequate opportunity were given to all stakeholders in presenting their views on the Tariff Petition submitted by TSECL.

1.6 Organisation of the Order

This Order is organised in the following Sections:

Chapter 1 (this Chapter) provides a background of the Petitioner, the Petition, public hearing process, and the approach adopted for this Order;

Chapter 2 summarises the written and oral suggestions and objections raised. These are followed by the responses of TSECL and the rulings of the Commission;

Chapter 3 deals with Truing up of FY 2017-18 to FY 2019-20 and discusses the ARR for FY 2021-22 and FY 2022-23 and Generation Tariff for FY 2022-23 along with Annual Performance Review of FY 2020-21;

Chapter 4 deals with Truing up of FY 2017-18 to FY 2019-20 and ARR for FY 2020-21 to FY 2022-23 for TSECL for Transmission business;

Chapter 5 deals with Truing up of FY 2017-18 to FY 2019-20 and ARR for FY 2021-22 and FY 2022-23 and Retail Supply Tariff for FY 2022-23 along with Annual Performance Review of FY 2020-21 for Distribution business;

Chapter 6 summarises the Directives of the Commission;

Chapter 7 details the Commission's Tariff Philosophy and the category-wise retail supply tariffs applicable for FY 2022-23, including charges for Open Access consumers.

2 Suggestions/Objections, TSECL's responses and Commission's Ruling

This section deals with the suggestions/objections raised by various Stakeholders regarding the tariff Petition submitted by TSECL, details of which were provided in the public notice published in various newspapers mentioned earlier. Submissions and responses, pertaining to specific and detailed aspects of tariff, have been taken into account in the formulation of equitable tariff, balancing the interests of stakeholders

2.1 Objection 1: Discount to Commercial Tariff to be given for Hospitals

- 2.1.1 ILS Hospitals and Society for Tripura Medical College and Dr BRAM Teaching Hospital have sought discount of 20% and 30% to the existing Commercial Tariff considering the high operating cost and that these hospitals provide treatment at concessional rate to BPL Families. ILS Hospitals also submitted that Similar concessions have been provided to hospitals by different State Governments considering the role of hospitals in providing services to the people. Society for Tripura Medical College and Dr BRAM Teaching Hospital have also additionally submitted that tariff is unbearable on the part of the Society which is running on no loss no profit basis.

TSECL's Reply

- 2.1.2 TSECL submitted that there has been no increase of electricity tariff in Tripura in the last 8 years since November 2014. During this period, the cost of TSECL on various heads have increased substantially as detailed in the tariff petition. The average increase in the common inflation indices during this period shown below is more than 32% and the increase in inflation is more pronounced in the last few months due to the change in the global geopolitical scenario.

Particulars	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	Combined 8 years
Wholesale Price Index	1.26%	-3.65%	1.73%	2.92%	4.28%	1.68%	1.27%	12.98%	22.47%
Consumer Price Index	6.29%	5.65%	4.12%	3.08%	5.45%	7.53%	5.02%	5.07%	42.21%
Average of WPI and CPI for last 8 years									32.34%

- 2.1.3 Tariff hike for it is critical to recover the increase in additional costs accrued over the past few years as well as to recover the pending accumulated gap of past years. TSECL has accumulated losses of more than INR 377 crores as on 31st March 2021

as per the audited account statements.

- 2.1.4 Pandemic has also impacted the power utilities in a big way and the revenues of the power distribution utilities were reduced due to the lockdown imposed to tackle COVID 19 as well as rebate in tariff provided in the last tariff order. As such, a tariff increase is critical for the financial sustainability of TSECL.
- 2.1.5 Moreover, it is not possible and viable to reduce the tariff or show preference for one consumer (like ILS/Tripura Medical College in this case) as it is against the principles laid down in Section 62 (3) of Electricity Act 2003.
- 2.1.6 The retail supply tariff needs to be increased in alignment with the increasing costs of TSECL, accumulated losses and in general increasing inflation across the globe

Commission's Ruling

- 2.1.7 The Commission agrees with the submission of TSECL that as per provision of Electricity Act 2003, no undue preference can be given to any consumer of electricity. Further, the issue being related to Tariff Design has been dealt in detail in Section 8 of this Order.

2.2 Objection 2: No Increase in Tariff

- 2.2.1 Airport Authority of India (AAI) has submitted that it is suffering heavy loss after Covid-19 pandemic and any increase in tariff will impact the financial condition of AAI. Hence AAI requested not to increase the tariff for AAI.

TSECL's Reply

- 2.2.2 TSECL has made similar submission as mentioned herein above in respect of increase in inflation over the years, accumulated loss and requirement of increase in tariff.
- 2.2.3 It further submitted that TSECL had also taken a number of steps to provide relief to the consumers on account of COVID 19 pandemic which included ensuring continuity of supply during lockdown, extension of due date for payment of electricity bills, intimation of meter readings through digital channels, 50% waiver for late payment surcharge and other such relief measures. COVID 19 pandemic has equally impacted the cashflows of TSECL as the revenue flow had reduced considerably. Moreover, it is not possible and viable to reduce the tariff or show preference for one consumer (like AAI in this case) as it is against the principles laid down in Section 62 (3) of Electricity Act 2003.

Commission's Ruling

- 2.2.4 The issue being related to Tariff Design has been dealt in detail in Section 8 of this Order.

2.3 Objection 3: Change in Tariff Category

- 2.3.1 BSNL has sought change in category from Commercial to Industrial for BSNL towers and Exchange buildings.

TSECL's Reply

- 2.3.2 TSECL has made similar submission as mentioned herein above in respect of increase in inflation over the years, accumulated loss and requirement of increase in tariff
- 2.3.3 TSECL is charging such consumers (telecom sector) as per the tariff order of the Commission under the tariff category of commercial consumers. Moreover, electricity tariffs are being charged under commercial category on a nationwide basis for telecom towers be it for the state of Jharkhand, Bihar, UP or Gujarat.

Commission's Ruling

- 2.3.4 The issue being related to Tariff Design has been dealt in detail in Section 8 of this Order.

2.4 Objection 4: Billing on Connected Load / Power Failure

- 2.4.1 Maharaja Bir Bikram University has submitted that energy bills are being generated based on the connected load and not on energy consumed. Further, the university has been facing power failure and TSECL is not providing steady and uninterrupted power supply.

TSECL's Reply

- 2.4.2 TSECL is striving hard in ensuring that continuous/uninterrupted electricity is being provided across the state and the standards of performance are being met. For this, TSECL incurs a lot of fixed cost like network development cost, O&M cost, fixed cost in the power purchase contracts, interest cost etc. It is submitted that a very low percentage of such cost is recovered from the tariff (around 10% at present) and as such further waiver or reduction of cost is not justified under any circumstances. In fact, Tripura has the lowest tariff for fixed charge (charged on the basis of contracted demand or connected load)
- 2.4.3 The electricity tariff for Maharaja Bir Bikram University is as per the Tariff order of the Commission. In case the consumer opts to reduce the fixed component in electricity bill, the contracted demand may be revised based on the actual load, if needed.
- 2.4.4 TSECL has made similar submission as mentioned herein above in respect of increase in inflation over the years, accumulated loss and requirement of increase in tariff.

Commission's Ruling

- 2.4.5 The Commission is of the view that the Commission has allowed tariff based on the ARR submitted by TSECL and recovery of cost is allowed based on two part tariff i.e Fixed and Energy Charge. Though the Fixed Charge levied are lower than actual incurrence and one of the lowest in the country, the recovery of cost is being allowed through Energy Charge. The Commission directs TSECL to take appropriate and necessary action to provide reliable and uninterrupted power supply to the Consumers as per mandate of Electricity Act, 2003, Rules and Regulations made thereunder and Tariff Policy. Further, in respect of submission related to fixed cost being charges by TSECL, the Commission agrees with the submission that the Consumer based on its expected/actual load seek revision in Contract Demand to reduce the incidence of Fixed Cost.

2.5 Objection 5: Levy of Domestic Tariff for Military Establishments

- 2.5.1 Assistant Garrison Engineer, Agartala, Military Engineering Services (MES) submitted that the tariff rates being charged to Military Station by TSECL @ Rs 7.33 per unit are much higher than that are applicable to bulk supply at domestic rates @ Rs 4.03 per unit (Excluding Govt Subsidy).
- 2.5.2 Based on Demi Official letter by Chief of Defence Staff dated 19 Sep 2021, Ministry of Power had approached Forum of Regulators (FoR) for granting Group Housing Society (GHS) Slab/ Special Slab for Armed Forces. The FoR in its meeting held on 01.10.2021 has decided that appropriate decision has to be taken by respective SERCs.
- 2.5.3 Since the majority of troops of Agartala Military Station are staying single in barracks/ billets and the balance in married accommodation and are in the lowest category of power consumption, it is proposed that a special slab lower than that applicable to domestic consumers or at par with domestic consumers be created by TSECL for defence establishment at Agartala Military Station.

TSECL's Reply

- 2.5.4 Defence Establishments have been specifically covered under the category of bulk supply. This is because the nature of load is similar to large organizations and institutions who have a large connected load of 25 kVA or above with a single point of supply. The nature of load of defence establishments is similar to the other consumers falling under bulk supply like educational institutions, universities, large schools, railways etc. It is also important to note that these consumers including MES category typically have a mixed load and have other establishments within the premises under than residential/ domestic usage units like fan/lighting/AC/heating. The load under these large institutions can include mixed load like pumping units/RO units/ water treatment, commercial shops, lifts/escalators, Central AC plants etc.

which cannot be termed as own domestic usage.

- 2.5.5 Bulk Supply tariff is lower than the average cost of supply and also lower than large three phase commercial consumers like hospitals, private educational institutes etc. It is important to note that if domestic tariff is applied to these consumers, the energy booking being done at single point, the tariff would not be charged under the first slab but most of the consumption would be charged under the highest slab whose tariff is INR 7.2 per unit and comparable to the tariff of bulk supply (INR 7.33 per unit). Further, there would be no mechanism to ascertain the limit of monthly consumption by one unit/consumer and as such the applicable slab of domestic usage. Further, there would be non-domestic loads as mentioned above which cannot be charged under the domestic tariff. The Commission has approved the Tariff for Domestic (rural) consumers at the rate of Rs 4.03 per unit and is only applicable to very small consumers having monthly consumption of 100 units per unit and also comes with subsidy support of State Government which will be impacted.
- 2.5.6 Month wise consumption of Military Engineering Services of last 2 years is also enclosed in which it is seen that Monthly average consumption is 2,07,310 units and rate of energy charges is Rs 7.33/unit. Accordingly monthly bill amounts to Rs 15,83,203 and yearly bill amounts to Rs 1.90 Cr. If we compare it with the Domestic Tariff of Rs 4.03/unit we find that annually TSECL will get a further burden of INR ~88 lakhs. Hence it is not appropriate to levy Domestic Tariff as it will result in increase in tariff of other smaller consumers as Tripura is a state with most of the revenue coming from small domestic and commercial consumers.

Commission's Ruling

- 2.5.7 The Commission is conscious of the fact that any reduction in tariff of MES will increase the burden of other consumers. However, the issue has been raised before FOR and states like HP and Delhi has given some relief in tariff. As per provision of Electricity Act, 2003, the Military Engineer Services may approach the Commission for Deemed Distribution Licensee. Having separate tariff for Deemed Licensee may result in the lower tariff.

2.6 Objection 6: No Tariff Hike

- 2.6.1 Tripura Electricity Consumers Association has raised concerns in respect of lower PLF of State Generating Stations and higher T&D loss.
- 2.6.2 CPI(M), Tripura State Committee has also raised similar concern of lower PLF and higher T&D loss. It has also submitted that TSECL has not submitted any details of revenue from Franchisee and O&M expense has shown increase due to the engagement of Franchisee. Further, TSECL has not submitted any detailed tariff structure and has submitted gross tariff hike proposal. Accordingly, TSECL shall withdraw the proposal for tariff hike.

TSECL's Reply

- 2.6.3 The Gross Generation for Rokhia gas based thermal power plant gradually increased from FY 2017-18 to FY 2019-20 from 408.4 MUs to 445.5 MUs respectively. Post year 2019-20 the gross generation dropped to 347.1 MUs because one unit was not operational as per the directive of Ministry of Environment and Forest (MoEF), due to the pending issue of clearance of Environmental Clearance of the existing units. The matter is under process and recently, Petitioner has obtained TOR (Terms of Reference) for conducting the EIA study (Environmental Impact Assessment Study which is also under advanced stage of completion. As such, Petitioner plans to obtain the pending EC within next few months and the shut unit is planned to be made operational from Oct-22. Hence based on this fact plus trends of past years and expected performance, the performance of Rokhia gas based thermal power plant is projected to increase to 469.10 MUs by FY 2023-24. Hence the generation is not going to decrease. The detailed reasoning in this regard has already been provided in the tariff petition. The Gross generation for Baramura gas based thermal power plant has decreased to 174.6 MUs in FY 2018-19 from 183.8 MUs in FY 2017-18 & increased to 240.2 MUs in FY 2019-20 and again decreased to 192.5 MUs in FY 2020-21. Similar increasing and decreasing trend is with PLF also. This is because of constraints in gas availability for BGTPP in the last few years. BGTPP has gas allocations of 0.40 MMSCMD (Million Metric Standard Cubic Metre per Day), out of which 0.2 MMSCMD is under the Administered Price Mechanism (APM) gas mechanism and balance 0.2 MMSCMD under the MDP (Market Determined Price) mechanism. However, of late, GAIL is able to supply gas only up to 0.30 MMSCMD on an average (75% of allocation) of which the APM quota shall be exhausted first and the balance shall be under MDP mechanism. As huge quantity of gas is required initially only to run the gas turbine, it is not technically and economically feasible to run the plant at full capacity with this supply. So, currently BGTPP is able to run only one unit of the plant for most durations resulting in lower PLF. Based on this trend only, the PLF of BGTPP for FY 21-22-to FY 23-24 is projected. The detailed reasoning in this regard has already been provided in the tariff petition. In case of GHEP, out of the total installed capacity of 10 MW, the plant is able to run at capacity of around 3.5 MW continuously based on the annual average live storage capacity which can generate electricity of 9-10 MUs annually. It may be noted that the auxiliary consumption of the generating plants has been considered as per the norms of the Commission. It is important to note that, Petitioner is planning to take up the life extension and R&M of Gumti project under ADB funding which would increase the generation and reduce the tariff of Gumti plant also thereby further improving the affordability of power within the state. The detailed reasoning in this regard has already been provided in the tariff petition.
- 2.6.4 The Distribution Loss has a decreasing trend from 33.71% in FY 2018-19 to 24.74% in FY 2020-21. Further TSECL is making sincere efforts in electrifying the un-

electrified areas of the state at a fast pace under grants and loans provided by the Rural Electrification Corporation (REC) under the Rajiv Grandhi Gramin Viduyatikaran Yojna (RGGVY) and Saubhagya Scheme. Through the implementation of the scheme the TSECL has provided the electricity to the far-flung areas and villages of the Tripura state. At the same time, due to increase in the LT network and the domestic and Kutir Jyoti consumers, losses of the utility are also increasing at considerable pace. Through different loss reducing measures and schemes the TSECL has remained successful to contain the losses at the level mentioned. In the past few years, TSECL has made limited investments in its distribution network for modernization, system improvement and loss reduction. However, now, TSECL is implementing large system improvement schemes under ADB funding as well as under the GoI scheme of RDSS (Revamped Distribution Sector Scheme) to reduce losses and the effect of such measures is expected to gradually reflect in the performance of Distribution losses. As such, for future years, TSECL has undertaken a target of reduction of almost 8% in next 2 years and achieve the target by FY 2023-24.

- 2.6.5 TSECL has submitted that the input rate for providing power to the franchisees are determined to ensure that the revenue earned from the franchisee areas by TSECL increases during the franchisee period and TSECL gets more revenue from the areas than the revenue of baseline year just before award of franchisee.
- 2.6.6 The average per unit revenue from sale of power to consumers (i.e. Average Billing Rate) cannot be compared with the Input rate payable by the distribution franchisees at 11 kV input feeder level in the franchisee area. The input rate is multiplied by the input energy at 11 kV level to get the revenue from franchisees whereas the Average Billing Rate is multiplied by units billed to consumers who are mostly at LT level. Also, the franchises are billed only for the supply of power and the other services for operation and maintenance are to be undertaken by them. On the other hand, the consumers are billed for all the services as a whole including O&M of the distribution network. As such, it is not prudent to compare the two prices.
- 2.6.7 TERC Tariff Regulations, 2015 stipulates the O&M cost to be comprising of Employee cost, R&M expense and A&G expense. O&M expenses have been projected based on TERC MYT Regulations 2015. The employee cost of distribution business has been escalated at the rate of CPI (Consumer Price Index) escalation rate of 5.07% based on the actual prorated expenses of FY 2021-22. R&M expenses have been calculated as 3.98% of GFA (the actual R&M expenses of past year being 3.98% of GFA). The A&G (Administrative and General) expenses have been escalated at the Wholesale Price Index (WPI) of 5.17%. The employee expenses have increased due to the implementation of 7th Pay Commission. The R&M expenses in distribution is quite high as the assets are old and because of the terrain of the state which has high forest coverage, high frequency of gayles, thunderstorms etc. The expenses are required for keeping the reliability of the power supply.

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- 2.6.8 TSECL has made similar submission as mentioned herein above in respect of increase in inflation over the years, accumulated loss and requirement of increase in tariff

Commission's Ruling

- 2.6.9 The Commission notes the submission of TSECL. In the subsequent part of the order, the Commission has dealt with the issues raised by the Objectors to the present tariff Petition.

3 Truing up of ARR for FY 2017-18 to FY 2019-20, APR of FY 2020-21 and ARR of FY 2021-22 and FY 2022-23 for Generation Business

3.1 Background and Approach

- 3.1.1 The Commission in its Order dated 01 September 2020 in Case No. 4 of 2020 and 5 of 2020 has approved Truing-up for FY 2013-14 to FY 2016-17 and ARR for FY 2017-18 to FY 2020-21 with Generation, Transmission and Retail Tariff determination of FY 2020-21. The Tariff Order for determination of tariff for FY 2021-22 was not issued, hence, the same tariff approved for FY 2020-21 was continued for FY 2021-22 as well.
- 3.1.2 The TERC Tariff Regulations, 2015 provides for truing-up of all the parameters of ARR at the end of each year based on the audited annual accounts and prudence check by the Commission. The Commission has conducted the truing-up for ARR for FY 2017-18 to FY 2019-20 based on the audited annual accounts submitted by TSECL for the said period.
- 3.1.3 In compliance of the regulatory obligation, TSECL has filed True-Up Petition for FY 2017-18 to FY 2019-20 for Generation business, Transmission and Distribution & Retail Supply business separately. The audited accounts of the respective years along with the audit report is submitted as an Annexure along with the petition.
- 3.1.4 TSECL has submitted that the new company named Tripura Power Generation Limited (TPGL) has been formed with all generation assets of TSECL with effect from June, 2015. 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. Hence, a combined petition for generation, transmission and distribution is being filed by TSECL till such stage.
- 3.1.5 It is noted that, TSECL has not yet segregated the account statements for Generation, Transmission and Distribution business and the same is under work in progress. However, TSECL in its Petition has provided the break-up of costs in generation, transmission and distribution business, wherever necessary for ARR and tariff calculation, based on the division wise break-up of account statements and making suitable assumptions, as necessary, for the common functions like Accounts & 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. Accordingly, the Commission has relied upon the said submission related to function-wise data submitted by TSECL along with replies to data gaps submitted by TSECL for truing-up of FY 2017-18 to FY 2019-20.
- 3.1.6 The Petitioner has submitted the statutory audit of the account statements for FY 2017-18 to FY 2019-20 and submitted that the statutory audit of FY 2020-21 and FY 2021-22 was still under process. However, the actual performance of the plant and

the provisional accounts without any segregation of the expenses into Generation, Transmission and Distribution business for FY 2020-21 has been provided. The Commission has considered the same, wherever applicable for determination of ARR.

- 3.1.7 Also, the instant petition has been filed considering the projection of data based on the actual data of past years and norms as specified in TERC MYT Regulations, 2015, as applicable for determination of ARR for MYT Period of FY 2020-21 to FY 2023-24. However, the Commission has considered the MYT period till FY 2022-23 as discussed Chapter 1 of this order.
- 3.1.8 It is noted that, there has been delay in filing MYT Petition by the Petitioner. As on date the audited accounts for FY 2019-20 are available and submitted before the Commission, hence, in the present Chapter, the Commission has undertaken the truing-up for FY 2017-18 to FY 2019-20 and determines the ARR for the remaining years of the Control period based on the projections and applicable norms as specified in MYT Regulations 2015.
- 3.1.9 Considering the details provided and additional information obtained during these proceedings, the Commission has undertaken the truing up of ARR of TSECL Generation business for FY 2017-18 to FY 2019-20 and determination of Aggregate Revenue Requirement for FY 2020-21 and the control period i.e. FY 2021-22 to FY 2022-23 and Generation Tariff for FY 2022-23 as set out below.

3.2 Norms for Operations

- 3.2.1 The norms of operation specified under the TERC MYT Regulations, 2015 for thermal generating stations are as follows:
- (a) Normative Annual Plant Availability Factor (NAPAF);
 - (b) Normative Annual Plant Load Factor (NAPLF) for Incentive;
 - (c) Auxiliary Energy Consumption (Aux); and
 - (d) Gross Station Heat Rate (SHR);
- 3.2.2 The Commission has specified the norms in the TERC MYT Regulations, 2015 and has approved the operational norms for the respective years considering other aspects as detailed out in respective Section of this Order. The Petitioner has submitted the actual performance of their own generation plant viz., Rokhia gas based thermal power plant (RGTPP), Baramura gas based thermal power plant (BGTPP) and Gumti Hydro Electric Plant (GHEP) from FY 2017-18 to FY 2019-20. Any variation in the norms as specified in TERC MYT Regulations 2015 and the actual parameters are specified in the tariff Order.
- 3.2.3 Also, the Commission has specified the Norms of Operation till FY 2019-20 in the TERC MYT Regulations, 2015. With respect to determination of ARR for FY 2020-21 to FY 2022-23, the similar norms have either been extrapolated or projected considering the extension of the TERC MYT Regulations, 2015, wherever applicable.

3.2.4 TSECL's submissions on the performance parameters and the Commission's analysis are detailed hereunder.

3.3 Gross Generation and Net Generation

Petitioner's Submission

3.3.1 TSECL has submitted that it owns and operates the following three generating stations viz. RGTPP, BGTPP and GHEP. TSECL in its petition has calculated the installed capacity based on the average capacity available for the respective year. The details of the existing stations along with their capacities and dates of commissioning as submitted by Petitioner, are given in the following Table:

Table 2: Plant wise Effective Capacity

Name of Generation station	Unit	Capacity (MW)	De rated Capacity (MW)	Year of Installation	Status
Gumti Hydro-Electric Project (GHEP)	Unit-I	5	10	June 1976	Only 2 units of 5MW each run at a time and the 3 rd unit is kept as stand by
	Unit-II	5		February 1977	
	Unit -III	5		January 1984	
	Sub-total	15	10		
Baramura Gas Thermal Power Plant (BGTPP)	Unit-IV*	21	21	27 th Nov 2002	In operation
	Unit-V*	21	21	3 rd August 2010	In operation
	Sub-total	42	42		
Rokhia Gas Thermal Power Plant (RGTPP)	Unit-VII	21	21	24 th Sept 2002	In operation
	Unit-VIII	21	21	30 th Mar 2006	
	Unit-IX	21	21	28 th Aug 2013	
	Sub-total	63	63		
Total		120.0	115.0		

3.3.2 Also, PLF of RGTPP for FY considered for truing up i.e. FY 2017-18 to FY 2019-20, has been ranging from around 74% to 81% which is below TERC norms related to PLF in Tariff Regulation (Multi Year Tariff), 2015 i.e. 85%. Also, PLF of RGTPP has dropped from FY 2020-21 as one unit is not operational as per the directive of Ministry of Environment and Forest (MoEF), due to the pending issue of clearance of Environmental Clearance of the existing units. The matter is under process and recently, Petitioner has obtained TOR (Terms of Reference) for conducting the EIA study (Environmental Impact Assessment Study which is also under advanced stage of completion. As such, Petitioner plans to obtain the pending EC within next 4-5 months and the shut unit is planned to be made operational from Oct-22.

3.3.3 With respect to BGTPP, TSECL submitted that PLF was much higher than TERC norms prior to FY 15-16, but due to availability in gas constraint, from FY 2015-16 onwards, the range of PLF is between 48% to 63%. BGTPP has gas allocations of 0.40 MMSCMD (Million Metric Standard Cubic Metre per Day), out of which 0.2 MMSCMD is under the Administered Price Mechanism (APM) gas mechanism and

balance 0.2 MMSCMD is under the MDP (Market Determined Price) mechanism. However, of late, GAIL is able to supply gas only up to 0.30 MMSCMD on an average (75% of allocation) of which the APM quota shall be exhausted first and the balance shall be under MDP mechanism. As huge quantity of gas is required initially only to run the gas turbine, it is not technically and economically feasible to run the plant at full capacity with this supply. So, currently BGTPP is able to run only one unit of the plant for most durations resulting in lower PLF of close to 50%. Therefore, based on gas availability and past trend of PLF, the PLF for FY 2020-21 to FY 2022-23 is projected.

- 3.3.4 In case of GHEP, TSECL submitted that, between FY 2017-18 to FY 2019-20, out of the three units, only two units can run on continuously basis, based on the annual average live storage capacity which can generate electricity of 50-60 MUs annually. As such, GHEP can generate only 7-8 MW output by running two units. However, for projection purpose, TSECL has submitted that out of the total installed capacity of 10 MW, the plant is able to run at capacity of around 3.5 MW continuously based on the annual average live storage capacity which can generate electricity of 9-10 MUs annually.
- 3.3.5 Also, the auxiliary consumption of the generating plants has been considered as per actual which are well within the norms of the Commission. TSECL also requested to review the approved norm of auxiliary consumption of Gumti as 0.7% as provided in clause 38 (IV) a (Chapter 8) of TERC MYT Regulations 2015.
- 3.3.6 Further, it submitted that Petitioner is implementing a generation improvement project under ADB funding which covers the upgradation of Rokhia plant through conversion from open cycle to combined cycle and increase in capacity from 63 MW to 120 MW using the existing quantity of gas. The project is under final stage of completion of due diligence and is planning to start the bidding process for this component in the present fiscal year depending on the getting the EC clearance. This will result in improvement of further efficiency and reduce the tariff of own generation of Rokhia. The project is expected to be completed by FY 2025-26. After starting the construction of this project, Petitioner is also planning to take up the life extension and R&M of Gumti project under ADB funding which would increase the generation and reduce the tariff of Gumti plant also thereby further improving the affordability of power within the State.
- 3.3.7 The Petitioner submits that based on the trend of past years and expected performance, the performance of Generating Plant for FY 2020-21 & FY 2021-22 is projected in the instant petition. With respect to BGTPP, Petitioner submitted though there was a constraint in gas availability from FY 2015-16 onwards, it may continue till FY 2022-23 also. The Installed Capacity, Gross Generation, PLFs and auxiliary consumption for the three generation units for the period FY 2017-18 to FY 2022-23 is tabulated as below:

Table 3: Plant-wise own generation for FY 2017-18 to FY 2022-23 as submitted by TSECL

Particulars	Units	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
		Truing Up			ARR	MYT Control Period	
Rokhia gas based thermal power plant (RGTPP)							
Gross Generation	MU	408.39	439.32	445.54	347.11	341.11	390.92
Installed Capacity	MW	63	63	63	63	63	63
PLF	%	74.00%	79.60%	80.73%	62.90%	61.81%	70.83%
Auxiliary Consumption	%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Net Generation	MU	404.31	434.93	441.08	343.64	337.70	387.01
Baramura gas based thermal power plant (BGTPP)							
Gross Generation	MU	183.77	174.55	240.24	192.50	204.67	210.26
Installed Capacity	MW	42	42	42	42	42	42
PLF	%	49.95%	47.44%	65.30%	52.32%	55.63%	57.15%
Auxiliary Consumption	%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Net Generation	MU	181.93	172.80	237.84	190.57	202.62	208.15
Gumti Hydro Electric Plant (GHEP)							
Gross Generation	MU	43.85	35.50	26.00	7.97	7.30	7.64
Installed Capacity	MW	10	10	10	10	10	10
PLF	%	50.06%	40.53%	29.68%	9.10%	8.33%	8.72%
Auxiliary Consumption	%	0.70%	0.70%	0.70%	0.70%	0.70%	0.70%
Net Generation	MU	43.55	35.25	25.82	7.92	7.25	7.58

Commission's Analysis and Ruling

- 3.3.8 Regulations 37 & 38 of the TERC MYT Regulations, 2015 specify the operational norms related to PLF and Auxiliary consumption for the Thermal and Hydro Generation Power Plant. Further, it is noted that, Petitioner has provided the actual generation for FY 2021-22 in reply to the specific query of the Commission. The same has been considered. Further, the actual gross generation for FY 2017-18 to FY 2019-20 has been considered by the Commission. The actual performance of the Thermal Generation Plant owned by Petitioner till FY 2021-22 and projected performance for FY 2022-23 is outlined in the following Table.

Table 4: Normative PLF and Aux. Consumption and Actual Performance of Generation Plant (%)

Particulars	Norms	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22 [§]	FY 2022-23
PLF							
RGTPP	85	74.00%	79.60%	80.73%	62.90%	60.54%	70.83%
BGTPP	85	49.95%	47.44%	65.30%	52.32%	63.94%	57.15%
Auxiliary Consumption							
RGTPP	1%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
BGTPP	1%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Hydro	0.70%	0.70%	0.70%	0.70%	0.70%	0.70%	0.70%

§ - PLF has been revised based on the actual Generation of FY 2021-22 as provided in data gaps by Petitioner.

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- 3.3.9 TSSECL has submitted that, Lower PLF for RGTPP was due to non-operational of one unit from FY 2020-21 as per the directive of Ministry of Environment and Forest (MoEF), due to the pending issue of clearance of Environmental Clearance of the existing units and is planned to be made operational from Oct-22. However, no further clarification has been provided for the lower PLF in FY 2017-18 to FY 2020-21.
- 3.3.10 With respect to BGTPP, TSECL submitted that though PLF is lower from FY 2015-16 onwards, the same is due to constraints in gas availability for BGTPP. TSECL submitted that BGTPP has gas allocations of 0.40 MMSCMD (Million Metric Standard Cubic Metre per Day), out of which 0.2 MMSCMD is under the Administered Price Mechanism (APM) gas mechanism and balance 0.2 MMSCMD under the MDP (Market Determined Price) mechanism. However, of late, GAIL is able to supply gas only up to 0.20 MMSCMD on an average (50% of allocation) of which the APM quota shall be exhausted first and the balance shall be under MDP mechanism. Currently BGTPP is able to run only one unit of the plant for most durations resulting in lower PLF.
- 3.3.11 However, the Commission would like to highlight that mere submission of the fact that gas constraint is going to affect the availability without any action envisage to factor such risk may not be advisable. Based on the improvement in the gas availability scenario, the PLF of BGTPP has been improved to 65.04% for FY 2019-20. However, there has been again a drop in generation from FY 2020-21, for which no explanation has been provided by TSECL. Also, TSECL has projected the generation from FY 2022-23 onwards based on 4 year CAGR @2.72%. Considering the inconsistency in the gas availability and affecting the PLF of the plant, the Commission has considered the projection of generation as provided by TSECL.
- 3.3.12 Based on the above submission by the Petitioner, the Commission approves the actual PLF for FY 2017-18 to FY 2020-21 and the actual Gross Generation as provided by the Petitioner. With respect to FY 2021-22, the Commission has revised the PLF for the generating plants based on the actual data submitted by TSECL under replies to the data gaps.
- 3.3.13 The Commission observes that, since the actual PLF for FY 2017-18 to FY 2019-20 achieved are below the targeted PLF of 85%, TSECL does not qualify for the incentives for actual generation in excess of ex-bus energy corresponding to target PLF, as per the norms specified in Regulation 37 of TERC MYT Regulations, 2015. However, for FY 2021 to FY 2022-23, the same will be reviewed by the Commission at the time of final truing up of the respective years.
- 3.3.14 Also, the Commission notes that the actual auxiliary consumption is equivalent to the normative auxiliary consumption for each year, for which no explanation has been provided by TSECL. However, the Commission approves the normative / actual Auxiliary Consumption as per TERC MYT Regulations, 2015, based on the certificate as provided by SLDC. As per Regulation 10 (IV) of TERC MYT Regulations, 2015, the Commission has considered the Auxiliary Consumption as a controllable

parameter and need to be considered for computing the sharing of financial gains in accordance with Regulation 10 (VII) of the TERC MYT Regulations, 2015 and have been dealt in subsequent Section of this Order.

- 3.3.15 Accordingly, the approved Gross and Net Generation from the own Generating plants based on the norms as specified in the MYT Regulations 2015, from FY 2017-18 to FY 2022-23, is outlined in the Table below:

Table 5: Own generation from FY 2017-18 to FY 2022-23 approved by the Commission

Particulars	Units	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
		Truing Up			ARR	MYT Control Period	
Rokhia gas based thermal power plant (RGTPP)							
Gross Generation	MU	408.39	439.32	445.54	347.11	334.09	390.92
Installed Capacity	MW	63	63	63	63	63	63
PLF	%	74.00%	79.60%	80.73%	62.90%	60.54%	70.83%
Auxiliary Consumption	%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Net Generation	MU	404.31	434.93	441.08	343.64	330.75	387.01
Baramura gas based thermal power plant (BGTPP)							
Gross Generation	MU	183.77	174.55	240.24	192.50	235.25	210.26
Installed Capacity	MW	42	42	42	42	42	42
PLF	%	49.95%	47.44%	65.30%	52.32%	63.94%	57.15%
Auxiliary Consumption	%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Net Generation	MU	181.93	172.80	237.84	190.57	232.90	208.15
Gumti Hydro Electric Plant (GHEP)							
Gross Generation	MU	43.85	35.50	26.00	7.97	9.39	7.64
Installed Capacity	MW	10	10	10	10	10	10
PLF	%	50.06%	40.53%	29.68%	9.10%	10.72%	8.72%
Auxiliary Consumption	%	0.70%	0.70%	0.70%	0.70%	0.70%	0.70%
Net Generation	MU	43.55	35.25	25.82	7.92	9.32	7.58

3.4 Plant Availability Factor

Petitioner's Submission

- 3.4.1 TSECL has submitted that, the availability factor of RGTPP were higher than 94% and for BGTPP was in the range of 50% to 68%, respectively, during the true-up period i.e. FY 2017-18 to FY 2019-20. Further, the Plant Availability Factor (PAF) for FY 2019-20 to FY 2022-23 has been kept same as the actual availability factor of FY 2018-19 based on the existing performance and fuel supply scenario mentioned in the above relevant para of this tariff order.
- 3.4.2 Also, in case of GHEP, out of the three units, only two units run continuously based on the annual average live storage capacity. Also, the generation from the GHEP is very low as outlined in the Table 5 of this Order. However, TSECL has not provided any details related to PAF of GHEP in the petition as well as to the replies to the data gaps.

3.4.3 The availability factors for the FY 2017-18 to FY 2022-23 are tabulated as below:

Table 6: Plant wise Availability (%) for FY 2017-18 to FY 2022-23 submitted by TSECL

Plant wise availability	Units	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
		Truing Up			ARR	MYT Control Period	
RGTPP	%	93.50%	94.60%	97.90%	79.00%	95.80%	92.16%
BGTPP	%	49.95%	49.10%	67.56%	54.12%	59.53%	55.76%

Commission's Analysis and Ruling

- 3.4.4 As per Regulation 32 of the TERC MYT Regulations, 2015, Full Fixed Cost of Thermal Generating Station can be recovered only if the actual Availability is equal to or higher than the Normative Plant availability factor of 85% as specified in Regulations 37 of the TERC MYT Regulations, 2015.
- 3.4.5 With regards to Hydro Plant also, as per Regulations 33 of the TERC MYT Regulations 2015, Capacity Charges is calculated on a pro-rata basis of actual Plant Availability factor with the Normative Plant Availability factor of 85% as specified in Regulations 38 of the TERC MYT Regulations, 2015.
- 3.4.6 The Petitioner submitted the actual PAF for FY 2017-18 to FY 2021-22 and projected PAF for FY 2022-23 considering average of the past performance. It was noticed that availability is higher than normative Plant availability factor of 85% for RGTPP and lower for BGTPP. The PAF of GHEP has not been provided by TSECL in the petition. Also, TSECL has not provided the certified PAF from SLDC inspite of several reminder.
- 3.4.7 The Commission has noted the submission made by the Petitioner with regards to constraint in gas availability for BGTPP and limited live storage capacity of water for GHEP. With regards to FY 2022-23, considering the improved condition of gas supply, the Commission has considered the normative Plant availability factor of 85% for all the generating plants.
- 3.4.8 Accordingly, the Commission approves the actual availability as specified by the Petitioner for FY 2017-18 to FY 2021-22 and normative availability for FY 2022-23 as shown in the following Table:

Table 7: Plant wise Availability (%) for FY 2017-18 to FY 2022-23 approved by the Commission

Plant wise availability	Units	Norm	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
			Truing Up			ARR	MYT Control Period	
RGTPP	%	85%	93.50%	94.60%	97.90%	79.00%	95.80%	85.00%
BGTPP	%	85%	49.95%	49.10%	67.56%	54.12%	63.94%	85.00%

- 3.4.9 Since the actual availability is higher than normative availability for RGTPP, the Commission allows the recovery of entire trued up fixed charges for FY 2017-18 to FY 2019-20 as determined in subsequent sections of this Order. However, with reference to BGTPP, it has been noticed that actual availability is lower than the normative availability as specified in the TERC MYT Regulations 2015. Accordingly,

the recovery of true-up fixed charges for FY 2017-18 to FY 2019-20 is approved on pro-rata basis as specified in Regulations 37 of TERC MYT Regulations, 2015, and the same is determined in the subsequent sections of this Order. For GHEP, TSECL has not provided any details of PAF and therefore Commission directs TSECL to provide the PAF as certified by the SLDC for all the three plants from FY 2017-18 to FY 2019-20 in the next tariff petition on the basis of which the treatment of fixed charges will be decided for GHEP Plant.

- 3.4.10 With respect to FY 2020-21 to FY 2022-23, the Commission shall consider the treatment of recovery of fixed charges as specified in Regulations 37 and 38 of TERC MYT Regulations, 2015 as per the actual Availability at the time of final Truing-up of ARR for the respective years.

3.5 Station Heat Rate

Petitioner's Submission

- 3.5.1 TSECL has submitted that Station Heat rate of a thermal power plant is a measure of the power plant's energy efficiency and Station Heat Rate calculated for RGTPP and BGTPP for FY 2017-18 to FY 2020-21 is based on the net calorific values (kcal/Standard Cubic Meter) of the gas being supplied to power plants. Further, it has submitted that for Rokhia, the average heat rate has exceeded slightly because of the age of the assets and part shutdown of one unit. Accordingly, the heat rate for FY 2022-23 has been kept same based on the latest performance of FY 2021-22 (upto Dec-21), which is expected to continue.
- 3.5.2 Further, it was submitted that, actual SHR of BGTPP in last eight years was better than norms specified in TERC MYT Regulations, 2015 i.e. 3700 (Kcal/kwh) except in FY 2015-16. For RGTPP, the average heat rate is also same as per the normative value of 3700 kCal/kWh. Also, TSECL has submitted that r, since the plants of Rokhia and Baramura are old and also operating at limited fuel capacity, the Commission is requested to pass through the actual heat rates as shown above.
- 3.5.3 The SHR of BGTPP and RGTPP as submitted by Petitioner for FY 2017-18 to FY 2022-23 is highlighted as below:

Table 8: SHR for FY 2017-18 to FY 2022-23 (kCal/ kWh)

Station Heat Rate	Units	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
		Truing Up			ARR	MYT Control Period	
RGTPP	kcal/kWh	3,790	3,672	3,735	4,093	3,652	3,652
BGTPP	kcal/kWh	3,455	3,459	3,453	3,508	3,913	3,913

Commission's Analysis and Ruling

- 3.5.4 As per Regulations 37 (C) (4) of TERC MYT Regulations 2015, the normative SHR considered for RGTPP and BGTPP is 3700 kCal/kWh.
- 3.5.5 The Commission observes that though the actual SHR as submitted by Petitioner are

well within the norms, however the same doesn't get reconciled while calculating the Heat energy and Fuel Consumption data as provided by Petitioner for FY 2017-18 to FY 2019-20. Considering the calorific value of the gas and the actual fuel consumption as submitted by the Petitioner, the Commission has recalculated actual SHR for RGTPP and BGTPP which is provided in the table below:

Table 9: Revised SHR based on GCV and Fuel Consumption

Station Heat Rate	Units	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21
		Truing Up			ARR
RGTPP	kcal/kWh	3,748	3,697	3,813	3,703
BGTPP	kcal/kWh	3,382	3,471	3,350	3,460

3.5.6 The Commission noticed that the revised SHR as calculated based on Fuel Consumption and calorific value of gas is still within the norms as specified in TERC MYT Regulations 2015 with marginal variance on higher side for RGTPP Plant. The Commission approves the normative station heat rate for RGTPP and BGTPP for MYT Control period. **However, the Commission directs TSECL to provide proper reconciliation of SHR with fuel consumption and calorific value of Gas, while submitting the future petitions.**

3.5.7 Accordingly, the Commission approves the normative Station Heat Rate as per MYT Regulations 2015 for FY 2017-18 to FY 2022-23.

Table 10: Approved SHR (kCal/kWh)

Station Heat Rate	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Actual						
RGTPP	3,748	3,697	3,813	3,703	3,700	3,700
BGTPP	3,382	3,471	3,350	3,460	3,700	3,700
Normative						
RGTPP	3,700	3,700	3,700	3,700	3,700	3,700
BGTPP	3,700	3,700	3,700	3,700	3,700	3,700

3.5.8 TSECL in the petition has submitted 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 calculated a financial gain owing to better performance of TSECL on account of Station Heat Rate. This seems to be an inadvertent error 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 passthrough of actual fuel cost. If the fuel cost would have been calculated on normative SHR and a higher fuel cost would have been considered in ARR, then there would have been a case for calculation of gain sharing with the consumer. As such, TSECL is requesting the Commission to rectify this and not consider any sharing of gains as calculated tariff order dated 1st September 2020.

3.5.9 The Commission would like to state that as per Regulation 10 (IV) of TERC MYT

Regulations, 2015, the Commission has considered the Station Heat Rate as a controllable parameter and hence the difference between the actual SHR and normative SHR as outlined in the above table for the respective years for FY 2017-18 to FY 2019-20 will be considered for computing the sharing of financial gains in accordance with Regulation 10 (VII) of TERC MYT Regulations, 2015 and have been dealt in subsequent section of this Order. With regards to the submission made by TSECL, it is submitted that while approving the Fuel cost, the Commission has calculated the normative fuel cost considering the normative performance parameter such as SHR and Auxiliary consumption, while determining the ARR. Accordingly, the difference between the actual fuel cost and normative fuel cost, if resulting in gain, is shared with the consumers as per Regulation 10 (VII) of TERC MYT Regulations, 2015.

- 3.5.10 Accordingly, the Commission shall consider the sharing of Financial gains in accordance with Regulation 10 (IV) and (VII) of TERC MYT Regulations, 2015, during the final truing-up for FY 2017-18 to FY 2019-20, on prudence check based on the actual SHR achieved and the normative allowed.

3.6 Fuel Purchase Cost

Petitioner's Submission

- 3.6.1 The Petitioner has submitted that the only fuel used for self-generation of energy at RGTPP and BGTPP is natural gas which is being sourced from the reserves at Rokhia, Baramura and Konaban partly 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). Accordingly, Petitioner has made allocations of 0.58 MMSCMD and 0.40 MMSCMD under the APM gas mechanism for its generation plants at RGTPP and BGTPP respectively.
- 3.6.2 Further Petitioner submitted that currently, GAIL is able to supply only 0.50 MMSCMD (86% of allocation) and 0.30 MMSCMD (75% of allocation) under APM gas mechanism to RGTPP and BGTPP respectively. As huge quantity of gas is required initially only to run the gas turbine, it is not technically and economically feasible to run the Baramura plant at full capacity with this supply. So, currently BGTPP is procuring only 0.20 MMSCMD from GAIL under APM gas mechanism and running one unit for most of the time. Other than the APM gas allocations, Petitioner 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.
- 3.6.3 The Petitioner submitted that, the APM prices notified by MoPNG, GoI during the control period is tabulated below whereby it may be observed that there was an average reduction of 10% in average gas price in FY 2017-18 over FY 2016-17 and a subsequent increase of around 30% in FY 2018-19. Besides the increase in raw

gas prices in FY 2018-19, there was also an increase in taxes applicable on gas price (through VAT charges and the transportation cost of gas) in FY 2018-19 leading to an effective increase of around 40% in FY 2018-19. However, in FY 2019-20, it may be observed that there was an average decrease of around 10% in raw gas prices. Further, there was a reduction in gas prices in FY 2020-21 also. In April 2022 more than 110% increase has been notified in raw APM gas price which is from USD 2.9/MMBTU to USD 6.1/MMBTU. The increase of end cost after incorporation of foreign exchange, transportation cost, VAT etc. is projected to be on the higher side for Petitioner. Further, Petitioner has projected the fuel cost based on the latest rate as notified and effective from April 2022 and Petitioner has already received a fuel bill based on the escalated rates for the first fortnight of April 2022. This is expected to increase the overall costs of TSECL by around INR 250 crores assuming the same levels of gas price is prevalent for the entire year. Accordingly, the TSECL has requested the Commission to take a note of this and accordingly compute the ARR of Petitioner and pass this impact as the base tariff revision for the current year in order to prevent accumulation of gap and resultant carrying cost.

Table 11: Details of APM Gas price notified by MoPNG, GoI

Period	Gas Price (US\$)
April 2016 - Sept 2016	3.06
Oct 2016 - Mar 2017	2.50
April 2017 - Sept 2017	2.48
Oct 2017 - Mar 2018	2.89
April 2018 - Sept 2018	3.06
Oct 2018 - Mar 2019	3.36
April 2019 - Sept 2019	3.69
Sept 2019 - Mar 2020	3.23
April 2020 - Sept 2020	2.39
Sept 2020 - Mar 2021	1.79
April 2021 - Sept 2021	1.79
Sept 2021 - Mar 2022	2.90
April 2022 - Sept 2022	6.10

- 3.6.4 The Petitioner further submitted that as per Regulation 25 of the TERC MYT Regulations, 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 fuel cost for FY 2017-18 to FY 2022-23 is shown in the table given below:

Table 12: Source wise Supply of Fuel and cost (per SCM) - FY 2017-18 to FY 2022-23

Particulars	FY 2017-18		FY 2018-19		FY 2019-20		FY 2020-21		FY 2021-22		FY 2022-23	
	RGTPP	BGTPP	RGTPP	BGTPP	RGTPP	BGTPP	RGTPP	BGTPP	RGTPP	BGTPP	RGTPP	BGTPP
Source wise supply of Natural Gas (In %)												
APM supply from GAIL	94.60%	96.92%	89.93%	98.83%	88.38%	74.84%	97.55%	90.79%	97.71%	71.18%	97.71%	71.18%
MDP Supply from ONGC	5.39%	3.07%	10.07%	1.17%	11.62%	25.16%	2.45%	9.21%	2.29%	28.82%	2.29%	28.82%
Fuel Cost (Rs./SCM)												
APM Supply	4.67	4.55	6.90	6.22	7.90	6.66	5.57	4.34	5.87	4.96	15.60	13.18
MDP Supply	7.75	7.64	8.78	8.59	8.78	9.79	9.24	12.09	9.70	9.73	15.60	13.18

3.6.5 Based on the above submission, TPGCL has claimed the Plant wise fuel consumption and fuel cost as tabled below:

Table 13: Fuel consumption and Fuel Cost as per TSECL (Rs. Crore)

Particulars	Units	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
		Truing Up			ARR	MYT Control Period	
Rokhia gas based thermal power plant (RGTPP)							
Fuel Consumption	MMSCM	183.92	195.64	203.61	154.11	149.91	171.36
Fuel Cost	Rs. Crore	87.78	138.70	163.05	87.18	89.33	267.26
Average Price	Rs./SCM	4.77	7.09	8.01	5.66	5.96	15.60
Baramura gas based thermal power plant (BGTPP)							
Fuel Consumption	MMSCM	75.22	73.48	97.33	80.61	96.56	99.42
Fuel Cost	Rs. Crore	35.90	45.85	72.40	40.72	61.17	131.00
Average Price	Rs./SCM	4.77	6.24	7.44	5.05	6.33	13.18
Total							
Fuel Consumption	MMSCM	259.15	269.12	300.94	234.73	246.47	270.78
Fuel Cost	Rs. Crore	123.68	184.55	235.45	127.90	150.50	398.26
Average Price	Rs./SCM	4.77	6.86	7.82	5.45	6.11	14.71

Commission's Analysis and Ruling

3.6.6 The Commission, vide data gaps sent to the Petitioner, directed to submit the month-wise data of fuel price and quantum, along with the bills raised by the fuel suppliers. In its reply to the data gaps sent by the Commission, the Petitioner submitted that TSECL doesn't maintain the monthly stock as desired and has provided the details computed on an annual basis only. The year wise quantity of fuel purchased in SCM is for Rokhia and Baramura TPP, as provided by Petitioner is outlined in the table below:

Table 14: Quantity of Fuel Purchased for FY 2017-18 to FY 2019-20

Particulars	Units	FY 2017-18	FY 2018-19	FY 2019-20
		Truing Up		
Rokhia gas based thermal power plant (RGTPP)				
ONGC	SCM	99,26,764	1,97,10,081	2,36,49,729
GAIL	SCM	17,39,97,007	17,59,32,018	17,99,58,197
Sub Total	SCM	18,39,23,771	19,56,42,099	20,36,07,926

Particulars	Units	FY 2017-18	FY 2018-19	FY 2019-20
		Truing Up		
Baramura gas based thermal power plant (BGTPP)				
ONGC	SCM	23,09,626	8,63,389	2,44,91,956
GAIL	SCM	7,29,12,511	7,26,17,012	7,28,38,668
Sub Total	SCM	7,52,22,137	7,34,80,401	9,73,30,624
Total				
ONGC	SCM	1,22,36,390	2,05,73,470	4,81,41,685
GAIL	SCM	24,69,09,518	24,85,49,030	25,27,96,865
Total Fuel Purchased	SCM	25,91,45,908	26,91,22,500	30,09,38,550

- 3.6.7 The Commission observed that the fuel consumption details provided agency wise reconciles with the total quantum of gas purchased as provided by the Petitioner in the petition. However, the Commission has also tried to reconcile the cost with the amount as highlighted in the audited annual accounts of FY 2017-18 to FY 2019-20 which is outlined as below:

Table 15: Reconciliation of Fuel Cost (Rs. Crore)

Particulars	Units	FY 2017-18	FY 2018-19	FY 2019-20
		Truing Up		
RGTPP	Rs. Crs	87.78	138.70	163.05
BGTPP	Rs. Crs	35.90	45.85	72.40
Total Fuel Cost as per petition	Rs. Crs	123.68	184.55	235.45
Fuel Cost as per Audited Accounts				
Natural Gas	Rs. Crs	123.68	184.55	235.45
Difference	Rs. Crs	0.00	0.00	0.00

- 3.6.8 In view of the above, the Commission approves the cost of Natural gas as per audited annual accounts of FY 2017-18 to FY 2019-20. Also, additionally, the Commission approves the cost of HSD for gas based thermal power projects as per Annual Audited accounts of FY 2017-18 to FY 2019-20 respectively, which was also proposed by the Petitioner. However, the Petitioner has not claimed the cost of HSD for FY 2019-20, but the Commission has approved the same based on the audited accounts.
- 3.6.9 With respect to FY 2020-21 to FY 2022-23, the Commission has computed the Gas consumption and the Fuel Cost based on the normative operational parameter as specified in the MYT Regulations 2015 and as specified in the above relevant para of this order, subject to prudence check at the time of true-up. With regards to HSD Oil Cost, the Petitioner has not claimed the same separately and therefore, the Commission will approve the same at the time of True-up of FY 2020-21 to FY 2022-23, subject to prudence check.
- 3.6.10 Based on the approach adopted for FY 2020-21 and FY 2022-23, the Commission has recomputed the Fuel Cost based on the normative parameter for RGTPP and BGTPP and is outlined in the Table below:

Table 16: Fuel Purchase Cost of RGTPP for FY 2020-21 to FY 2022-23 as approved by the Commission

Particulars	Units	FY 2020-21	FY 2021-22	FY 2022-23	FY 2020-21	FY 2021-22	FY 2022-23
		Petitioners Submission			Approved by Commission		
Installed Capacity	MW	63	63	63	63	63	63
Days	Nos.	365	365	365	365	365	365
PLF	%	62.90%	61.81%	70.83%	62.90%	60.54%	70.83%
Gross Generation	MU	347.11	341.11	390.92	347.11	334.09\$	390.92
Auxiliary Consumption	%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Net Generation	MU	343.64	337.70	387.01	343.64	330.75	387.01
Heat Rate*	kcal/kWh	3,702.50	3,651.67	3,651.67	3,700.00	3,700.00	3,700.00
GCV of gas	kcal/SCM	8,339.22	8,309.11	8,330.34	8,339.22	8,309.11	8,330.34
Overall Heat	G. cal.	1285193	1245617	1427493	1284324	1236133	1446386
Gas consumption	M. SCM	154.11	149.91	171.36	154.01	148.77	173.63
Price of Gas	Rs./1000 SCM	5,657	5,959	15,596	5,657	5,959	15,596
Total Normative cost of Gas	Rs. Crore	87.18	89.33	267.26	87.12	88.65	270.80

Table 17: Fuel Purchase Cost of BGTPP for FY 2020-21 and FY 2022-23 approved by the Commission

Particulars	Units	FY 2020-21	FY 2021-22	FY 2022-23	FY 2020-21	FY 2021-22	FY 2022-23
		Petitioners Submission			Approved by Commission		
Installed Capacity	MW	42	42	42	42	42	42
Days	Nos.	365	365	365	365	365	365
PLF	%	52.32%	55.63%	57.15%	52.32%	63.94%	57.15%
Gross Generation	MU	192.50	204.67	210.26	192.50	235.25	210.26
Auxiliary Consumption	%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Net Generation	MU	190.57	202.62	208.15	190.57	232.90	208.15
Heat Rate*	kcal/kWh	3,459.95	3,912.95	3,912.93	3,700.00	3,700.00	3,700.00
GCV of gas	kcal/SCM	8,261.86	8,293.56	8,275.11	8,261.86	8,293.56	8,275.11
Overall Heat	G. cal.	666022	800860	822715	712232	870425	777945
Gas consumption	M. SCM	80.61	96.56	99.42	86.21	104.95	94.01
Price of Gas	Rs./1000 SCM	5,051	6,335	13,177	5,051	6,335	13,177
Total Normative cost of Gas	Rs. Crore	40.72	61.17	131.00	43.54	66.48	123.87

* - Heat Rate recomputed under Petitioners submission based on GCV, Gas Consumption and Generation.

\$ - Considered based on the actual generation data provided for FY 2019-20

3.6.11 Accordingly, the Commission approves the Fuel Cost for FY 2017-18 to FY 2022-23 as outlined in the following Table:

Table 18: Fuel Cost for FY 2017-18 to FY 2022-23 approved by the Commission

Particulars	Units	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
		Truing Up		ARR		MYT Control Period	
Rokhia gas based thermal power plant (RGTPP)							
Fuel Consumption	MMSCM	181.55	195.79	197.60	154.01	148.77	173.63
Fuel Cost	Rs. Crs	86.65	138.80	158.23	87.12	88.65	270.80
Avg. Price	Rs./SCM	4.77	7.09	8.01	5.66	5.96	15.60
Baramura gas based thermal power plant (BGTPP)							
Fuel Consumption	MMSCM	82.30	78.33	107.48	86.21	104.95	94.01
Fuel Cost	Rs. Crs	39.28	48.88	79.95	43.54	66.48	123.87
Avg. Price	Rs./SCM	4.77	6.24	7.44	5.05	6.33	13.18
Total							
Fuel Consumption	MMSCM	263.85	274.11	305.08	240.22	253.72	267.64
Fuel Cost	Rs. Crs	125.93	187.68	238.19	130.67	155.14	394.67
Avg. Price	Rs./SCM	4.77	6.85	7.81	5.44	6.11	14.75
HSD amount	Rs. Crs	0.09	0.12	0.08	-	-	-
Total Fuel Cost	Rs. Crs	126.01	187.80	238.27	130.67	155.14	394.67

3.7 Annual fixed charges (AFC)

3.7.1 Regulation 23 of the TERC MYT Regulations, 2015 specifies the components of Annual Fixed Charges as follows:

- Return on equity;
- Interest on loan capital;
- Depreciation;
- Interest on working capital;
- Operation and maintenance expenses;
- Recovery of fee for tariff petition filing; and
- Minus Non-tariff income

Provided that special allowance in lieu of R&M where opted in accordance to Clause18 and/or separate compensation allowance in accordance to Clause19, wherever applicable shall be recovered separately and shall not be considered for computation of working capital.

3.8 Operation & Maintenance Expenses

Petitioner's Submission

- 3.8.1 TSECL submits that, as per Regulation 31 (1) (b) of TERC MYT Regulations, 2015, Operation and Maintenance (O&M) expenses of RGTPP and BGTPP has been calculated based on the normative cost per MW of capacity and for Hydro Generating stations, O&M cost is calculated by escalating O&M cost of previous year by 6.64%.
- 3.8.2 The details of the norms of the O&M Expenses for RGTPP and BGTPP are as provided below:

Table 19: Norms for calculation of O&M expenses for Generating Station

Particulars	Amount (Rs. Lakh per MW)
FY 2017-18	56.72
FY 2018-19	60.57
FY 2019-20	64.68
FY 2020-21	69.08
FY 2021-22	73.77
FY 2022-23	78.78

- 3.8.3 Further, though the actual O&M cost for FY 2017-18 to FY 2019-20 as per the audited accounts, has been segregated between Generation, Transmission and Distribution function, TSECL has claimed normative O&M expenses in the tariff petition.
- 3.8.4 TSECL has submitted that actual O&M cost of each plants of TSECL booked in account statements of previous years are currently much less as compared to normative O&M cost. This is because 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. As such, the normative expenses have been claimed in this petition.
- 3.8.5 The normative O&M expenses as claimed is outlined in the table below:

Table 20: O&M Expenses claimed by Petitioner (Rs. Crore)

Particulars	Units	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
		Truing Up			ARR	MYT Control Period	
Norms - O&M Expenses	Rs. Lakh/MW	50.35	53.78	57.44	61.35	65.52	69.98
RGTPP							
Effective Capacity	MW	63	63	63	63	63	63
O&M Expenses of RGTPP	Rs. Crore	31.72	33.88	36.19	38.65	41.28	44.09
BGTPP							
Effective Capacity	MW	42	42	42	42	42	42
O&M Expenses of BGTPP	Rs. Crore	21.15	22.59	24.12	25.77	27.52	29.39
GHEP							
O&M Expenses of GHEP	Rs. Crore	3.85	4.10	4.37	4.66	4.97	5.30
Total normative O&M cost	Rs. Crore	56.72	60.57	64.68	69.08	73.77	78.78

Commission's Analysis and Ruling

- 3.8.6 Regulations 31 (I)(b) of TERC MYT Regulations, 2015 specifies the norms for calculation of O&M Expenses of gas based generating plant as stated below:

“31. Operation and Maintenance Expenses:

- I. Normative Operation and Maintenance expenses of thermal generating station shall be as follows:*
- b. Open Cycle Gas Turbine/Combined Cycle generating stations:*

Year	Gas Turbine/ Combined Cycle Generating stations other than small gas turbine power generating stations	Small gas turbine power generating stations	Baramura Gas Thermal Project and Rokhia Gas Thermal Project (below 25MW units)	Advance F Class Machines
<i>FY 2015-16</i>	15.59	35.70	44.14	28.36
<i>FY 2016-17</i>	16.57	38.13	47.14	30.29
<i>FY 2017-18</i>	17.61	40.73	50.35	32.35
<i>FY 2018-19</i>	18.72	43.50	53.78	34.56
<i>FY 2019-20</i>	19.90	46.46	57.44	36.91

3.8.7 Regulations 31 (III) of TERC MYT Regulations, 2015 specifies the norms for calculation of O&M expenses of Hydro based generating plant as stated below:

“III. Hydro Generating Station

a. Following operations and maintenance expense norms shall be applicable for hydro generating stations (in Rs lakh)

- i. The operation and maintenance expenses shall be derived on the basis of actual operation and maintenance expenses for the years 2009-10 to 2013-14, based on the audited balance sheets, excluding abnormal operation and maintenance expenses, if any, after prudence check by the Commission.*
- ii. The normalized operation and maintenance expenses after prudence check, for the years 2009-10 to 2013-14, shall be escalated at the rate of 6.04% to arrive at the normalized operation and maintenance expenses at the 2013-14 price level respectively and then averaged to arrive at normalized average operation and maintenance expenses for the 2009-10 to 2013-14 at 2013-14 price level. The average normalized operation and maintenance expenses at 2013-14 price level shall be escalated at the rate of 6.64% to arrive at the operation and maintenance expenses for year 2014-15 and thereafter escalated at the rate of 6.64% p.a., to arrive at the O&M expenses for the control period.”*

3.8.8 As stated above, Regulation 31 of the TERC MYT Regulations, 2015 specifies the methodology for determination of normative O&M expenses for thermal and Hydro based Generating Stations. Regulation 31 (I) specifies the normative O&M expenses in Rs. lakh/MW for the gas-based thermal Generating Stations and Regulation 31 (III) specifies the methodology for determining the normative O&M expenses for existing Hydro Generating Stations.

3.8.9 With regards to the O&M norms of Gas based Power Plant, the Commission has observed that the norms in the TERC MYT Regulations 2015 is till the period FY 2019-20 and therefore, the Commission has projected the O&M expenses for FY 2020-21 on a pro-rata basis considering the similar escalation factor as considered for FY 2015-16 to FY 2019-20 and accordingly, the derived O&M escalation rate for the gas based Power Plant is 6.81% which is considered for projection of O&M norms for FY 2020-21 to FY 2022-23.

3.8.10 With regards to the O&M norms of Hydro based Power Plant, though as per the Regulations, it is specified that an average O&M expenses of FY 2009-10 to FY 2013-

14 is required to be considered and to be escalated at the rate as specified in the MYT Regulations 2015 to derive the O&M expenses for FY 2014-15 and which will be further escalated @6.64% p.a. to arrive at the O&M expenses for the control period.

- 3.8.11 The Commission in the last tariff order issued on 1 September 2020, has considered the base expenses as actual expenses for FY 2015-16 and the escalation factor of 6.64% was levied on the same to derive the O&M expenses for FY 2016-17 to FY 2020-21. Also, the Commission has observed that for the Generation Function as such, post implementation of TERC MYT Regulations, 2015, the FY 2016-17 is a first year, whereby TSECL has segregated the individual O&M cost of Generation Function plant wise and therefore, the same is considered as the base O&M expenses to be considered for future comparison and justification purpose.
- 3.8.12 Accordingly, the similar approach has been considered by the Commission in the current tariff order, whereby the escalation norm of 6.64% p.a. has been considered on the normative O&M cost of GHEP of FY 2016-17 as approved in the last tariff order to determine the normative O&M cost for FY 2017-18 to FY 2022-23. The similar approach has been adopted by TSECL also.
- 3.8.13 Accordingly, the normative O&M cost as approved by the Commission for FY 2017-18 to FY 2019-20 is outlined in the Table below:

Table 21: Normative O&M Cost for FY 2017-18 to FY 2019-20 approved by the Commission (Rs. Crore)

Particulars	Units	FY 2017-18	FY 2018-19	FY 2019-20
		Truing Up		
Norms - O&M Expenses	Rs. Lakh/MW	50.35	53.78	57.44
RGTPP				
Effective Capacity	MW	63	63	63
O&M Expenses of RGTPP	Rs. Crore	31.72	33.88	36.19
BGTPP				
Effective Capacity	MW	42	42	42
O&M Expenses of BGTPP	Rs. Crore	21.15	22.59	24.12
GHEP				
O&M Expenses of GHEP	Rs. Crore	3.85	4.10	4.37
Total normative O&M cost	Rs. Crore	56.71	60.57	64.69

- 3.8.14 Also, the Audited Annual Accounts of TSECL for FY 2017-18 to FY 2019-20, as provided by the Petitioner, is a consolidated financial statement of Generation, Transmission and Distribution Function and is yet to be disaggregated function wise. The notification of the transfer scheme providing segregation of assets and liabilities to the successor entities is still pending as on date and therefore, all the financial transaction related to Generation, Transmission and Distribution Function is accounted in the books of TSECL. The Petitioner in replies to data gaps has submitted that the asset transfer has not taken place from TSECL to the newly

incorporated company-TPGL. The financial segregation is still in progress and only the administrative segregation has been completed.

- 3.8.15 Accordingly, the Petitioner has submitted the actual allocation of O&M cost for Generation, Transmission and Distribution function, wherever necessary for ARR and tariff calculation, 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.
- 3.8.16 The Commission has reconciled the function-wise O&M cost as provided by the Petitioner with the consolidated audited annual accounts. The reconciliation carried out by the Commission is outlined as below:

Table 22: Reconciliation of O&M function-wise with Audited Accounts (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20
	Truing Up		
O&M Expenses as per audited accounts	241.53	232.40	236.16
O&M expenses - Function wise			
RGTPP	19.85	7.35	4.13
BGTPP	10.02	4.60	5.93
GHEP	2.97	2.93	8.43
Generation Function	32.84	14.88	18.48
Transmission Function	19.65	22.23	21.58
Distribution Function	189.03	195.28	196.09
Total O&M Expenses as per Petitioner	241.53	232.40	236.16

- 3.8.17 The Commission accepts the justification provided by the Petitioner on increase in Employee Cost and A&G cost for FY 2017-18. With respect to R&M expenses, the practise adopted by Petitioner for booking the cost of periodic planned maintenance as CAPEX and not R&M needs to be discontinued and the impact of the same to be considered in line with the proper accounting principle considering the nature of capital and revenue expenditure. However, in case the same is even capitalised, TSECL would be claiming the depreciation and RoE on the same and hence the cost becomes a passthrough accordingly. Therefore, considering the same under Revenue expenses may result in double accounting and hence the Commission doesn't agree with the justification provided by TSECL on the lower expenses.
- 3.8.18 The Commission observes that the actual O&M expenses for Generation Function are lower than the normative O&M expenses as specified in Regulations 31 (1) (b) of TERC MYT Regulations, 2015. The Commission would like to highlight that the O&M norms as specified in the Regulations, is the ceiling cost which the Commission can allow and since the actual cost is lower than the normative cost, the Commission at present approves the O&M expenses in line with the audited annual accounts for FY 2017-18 to FY 2019-20. However, for FY 2021-22 to FY 2022-23, the normative O&M cost has been considered for the determination of Aggregate Revenue Requirement for Generation function and the same will be reviewed at the time of the truing-up of the respective years.

3.8.19 With regards to GHEP Generating Station, as specified earlier that, since FY 2016-17 being first year is considered as the base year, the normative expenses as specified in Regulations 31 (III) of TERC MYT Regulations, 2015 is calculated with an escalation factor of 6.64% p.a. on the base year expenses of FY 2016-17. The Petitioner has also claimed normative O&M expenses for GHEP. Also, since the audited accounts of FY 2017-18 to FY 2019-20 are available, the Commission has considered the normative cost as a ceiling cost and approved the lower of the actual or normative cost for the truing up purpose. Based on the cost as approved for FY 2020-21, the same has been considered as base expenses and considered the escalation factor of 6.64% p.a. for determination of normative O&M expenses from FY 2020-21 onwards.

3.8.20 The O&M expenses as approved by the Commission for determination of ARR for FY 2017-18 to FY 2022-23 are outlined in the table below:

Table 23: O&M expenses for FY 2017-18 to FY 2022-23 as approved by the Commission (Rs. Crore)

Plant wise	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
RGTPP	19.85	7.35	4.13	38.65	41.28	44.09
BGTPP	10.02	4.60	5.93	25.77	27.52	29.39
GHEP	2.97	2.93	4.37	3.42	3.65	3.89
O&M Expenses	32.84	14.88	14.43	67.84	72.45	77.38

3.9 Depreciation

Petitioner's Submission

3.9.1 TSECL has considered the depreciation rates as per Tariff Regulation (Multi Year Tariff) 2015 on the gross asset value. The Petitioner submitted that in account statement provided for FY 2017-18 to FY 2019-20, the depreciation has been calculated as per depreciation rate provided in Companies Act 2013 i.e. based on the useful life. Accordingly, the rate of depreciation considered by Petitioner for calculation of Depreciation is as provided below:

Table 24: Rate of Depreciation as per Tariff Regulations

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%

3.9.2 Based on the reply to the data gaps, TSECL has submitted the actual value of the gross value of assets and the asset base for calculation of depreciation. Further it has submitted that the booked value of assets is based on the original gross value and no revaluation has been done for the value of assets.

3.9.3 With regards to the capitalisation, the Petitioner, in its reply to the data gaps has submitted the actual capitalisation for FY 2017-18 to FY 2019-20 and in order to project the value of assets for FY 2020-21 to FY 2022-23, the total capitalisation expected to be incurred in these years is projected based on the trend of actual addition of assets in the past few years on provisional basis which is equivalent to 1-2% of GFA value.

3.9.4 The actual value of the Gross Fixed Assets for FY 2017-18 to FY 2019-20 and projection for FY 2020-21 to FY 2022-23 along with the depreciation claimed by the Petitioner is outlined in the table below:

Table 25: Gross Value of Assets and Depreciation claimed for FY 2017-18 to FY 2022-23 (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Rokhia gas based thermal power plant (RGTPP)						
Opening GFA	260.52	282.18	281.14	280.29	273.86	282.36
Addition during the year	21.66	-1.04	-0.85	-6.43	8.50	-8.50
Closing GFA	282.18	281.14	280.29	273.86	282.36	273.86
Depreciation	4.71	6.15	6.13	6.24	6.28	6.30
Avg. Dep. Rate	1.73%	2.18%	2.18%	2.25%	2.26%	2.26%
Baramura gas based thermal power plant (BGTPP)						
Opening GFA	163.81	177.43	177.05	179.39	215.68	184.08
Addition during the year	13.62	-0.38	2.34	36.29	-31.6	36.34
Closing GFA	177.43	177.05	179.39	215.68	184.08	220.42
Depreciation	2.85	3.74	3.74	4.32	4.60	4.75
Avg. Dep. Rate	1.67%	2.11%	2.10%	2.19%	2.30%	2.35%
Gumti Hydro Electric Plant (GHEP)						
Opening GFA	16.08	17.42	16.71	16.57	15.14	20.69
Addition during the year	1.34	-0.71	-0.14	-1.43	5.55	-4.94
Closing GFA	17.42	16.71	16.57	15.14	20.69	15.75
Depreciation	0.49	0.64	0.64	0.65	0.65	0.65
Avg. Dep. Rate	2.92%	3.75%	3.83%	4.09%	3.62%	3.57%
GROSS TOTAL	477.03	457.97	460.18	488.75	472.64	489.99
Total Depreciation	8.05	10.53	10.51	11.20	11.53	11.70

Commission's Analysis and Ruling

3.9.5 Regulations 29 of TERC MYT Regulations, 2015, provide the details on the basis of which the Petitioner can claim the depreciation and is specified as follows:

V. Depreciation shall be calculated annually based on Straight Line Method and at rates specified in Annexure-8 of these regulations for the assets of the generating station and transmission/distribution system..... (Emphasis Added)

VI. Depreciation shall not be allowed on assets funded by consumer contribution (i.e., any receipts from consumers that are not treated as revenue) and capital subsidies/ grants.

3.9.6 The above Regulations clearly provide for allowance of depreciation on assets on

Straight Line Method and at the rates as specified in TERC MYT Regulations 2015. Also, no depreciation shall be allowed on assets funded by Consumer Contribution or Capital Subsidies / Grant.

- 3.9.7 As per the significant Accounting policies as specified in the audited accounts, it has been specified that depreciation is calculated based on their useful life and considering the date of use. Also, with regards to the Grants, the audit report also specifies that the same is included as deferred income and are credited to the Profit & Loss account on a systematic basis over the expected lives of assets and presented within the income. Accordingly, the depreciation on assets funded by grant is considered as income and is adjusted within the profit & loss account.
- 3.9.8 Also, as per the data provided by the Petitioner, the actual capitalisation during FY 2017-18 to FY 2019-20 and projected for FY 2020-21 to FY 2022-23, is provided in the table below, whereby the Petitioner has not submitted any documentary evidence regarding the actual capitalisation of assets that have been actually put to use.

Table 26: Capitalisation of Assets of Generation business – Petitioner (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
RGTPP	21.66	-1.04	-0.85	-6.43	8.50	-8.50
BGTPP	13.62	-0.38	2.34	36.29	-31.60	36.34
GHEP	1.34	-0.71	-0.14	-1.43	5.55	-4.94
Total Capitalisation	36.62	-2.13	1.35	28.43	-17.55	22.90

- 3.9.9 The Commission observed that the amount of capitalisation is very abnormal with no consistency and no explanation has been provided by the Petitioner for decapitalisation and capitalisation of assets for all the years. Therefore, it is necessary to analyse the scheme wise details along with the spill over of the CAPEX and its capitalisation. **Accordingly, the Commission directs the Petitioner to provide the scheme wise details of CAPEX, Capitalisation and justification for any delay in commissioning of the asset at the time of submission of final truing up of FY 2020-21 to FY 2022-23.**
- 3.9.10 However, considering the minor capitalisation amount undertaken by the Petitioner, the Commission approved the additional capitalisation and decapitalisation of assets as proposed by the Petitioner. **However, the Commission directs the Petitioner to provide the documentary evidence of capitalisation for any future submission on tariff filing for consideration.**
- 3.9.11 In addition to the above capitalisation, Petitioner has submitted that in order to enhance its own generation and improve the efficiency of generation, Petitioner has plans of converting the existing open cycle operation of Baramura gas based plants to combined cycle mode and installation of new 120 MW CCGT at Rokhia. Further, the Renovation and Modernization/ life extension project of 3X5 MW GHEP is also planned to be taken up immediately. Since pre-project activities and fund tie up is not

completed yet, hence, expected benefits from the implementation of these projects has not been considered in this document as these projects are expected to be complete after the end of control period. However, the above mentioned projects are expected to be initiated within the control period and Petitioner is currently exploring various options for tying up the funding arrangements for the project.

3.9.12 Considering the above capital expenditure plan envisaged to be undertaken, the Commission would like to state that as per TERC MYT Regulations 2015, a capital investment plan is required to be submitted to the Commission for approval highlighting the following year wise details:

- a) On-going projects that will spill into the control period under review
- b) New projects that will commence within the control period and will be completed within the control period
- c) New projects that will commence within the control period but may be completed within or beyond the control period.
- d) Relevant commercial and technical details along with cost benefit analysis for each of the major item proposed under capital investment plan.

3.9.13 However, the Petitioner has not provided any details as specified in the Regulations and accordingly, the Commission directs Petitioner to submit the capital investment plan at the earliest providing the details as specified above within 6 months of the issue of this tariff order.

3.9.14 Further, the Commission in the previous Tariff Order had ruled as follows

“However, the Commission directs the Petitioner to submit the Fixed Assets and Depreciation Register before the Commission for its review and consideration of the depreciation amount claimed by the Petitioner. Accordingly, the Commission will revisit the allowable depreciation, after preparation and submission of the Fixed Assets Register, duly audited by the Statutory Auditor, in the next year’s Tariff Order”.

3.9.15 It is observed that despite several directions from the Commission in this regard, the Petitioner has not complied with the Commission’s directive regarding submission of Fixed Assets Register. As detailed in previous Orders, due to the absence of the Fixed Assets and Depreciation register, it is difficult for the Commission to ascertain the GFA value of the Petitioner. However, considering the audited account statement which also follows the Straight Line Method for calculation of depreciation, the Commission in absence of Fixed Assets Register, approves the depreciation in line with the audited accounts for FY 2017-18 to FY 2019-20. Also, even though the Petitioner has submitted in the petition that the depreciation claimed are as per Tariff Regulation (Multi Year Tariff) 2015 on the gross asset value, whereas the accounts specified SLM depreciation rate as per Companies Act, 2013, it has been observed that TSECL has claimed the depreciation as per accounts only for truing up. The same is also considered by the Commission for calculation of depreciation.

3.9.16 Based on the above observation, the Commission has calculated the average rate of depreciation at the rates applicable for various classes of assets as per TERC MYT Regulations, 2015. The average rate of depreciation is applied to arrive at the allowable depreciation for FY 2017-18 to FY 2022-23 respectively. However, while considering the weighted average depreciation rate, the Commission has not considered depreciation for the assets block whereby the accumulated depreciation exceeds 90% of the Gross Fixed Assets value. Also, the opening balance of Gross Fixed Assets as on FY 2017-18 has been considered equivalent to the closing balance approved by the Commission for FY 2016-17 in the tariff order dated 1st September 2020. The Capitalisation as proposed by Petitioner has been approved by the Commission.

3.9.17 The summary of depreciation as approved by the Commission is shown in the Table below:

Table 27: Depreciation for FY 2017-18 to FY 2022-23 approved by the Commission (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Rokhia gas based thermal power plant (RGTPP)						
Opening GFA	240.88	262.54	261.50	260.65	254.22	262.72
Addition during the year	21.66	-1.04	-0.85	-6.43	8.50	-8.50
Closing GFA	262.54	261.50	260.65	254.22	262.72	254.22
Avg. Dep. Rate	1.73%	2.18%	2.18%	2.54%	2.54%	2.54%
Depreciation	4.37	5.72	5.70	6.54	6.57	6.57
Baramura gas based thermal power plant (BGTPP)						
Opening GFA	158.12	171.74	171.36	173.70	209.99	178.39
Addition during the year	13.62	-0.38	2.34	36.29	-31.60	36.34
Closing GFA	171.74	171.36	173.70	209.99	178.39	214.73
Avg. Dep. Rate	1.67%	2.11%	2.10%	2.55%	2.56%	2.56%
Depreciation	2.76	3.62	3.62	4.89	4.97	5.03
Gumti Hydro Electric Plant (GHEP)						
Opening GFA	31.77	33.11	32.40	32.26	30.83	36.38
Addition during the year	1.34	-0.71	-0.14	-1.43	5.55	-4.94
Closing GFA	33.11	32.40	32.26	30.83	36.38	31.44
Avg. Dep. Rate	2.92%	3.75%	3.83%	2.01%	2.01%	2.01%
Depreciation	0.95	1.23	1.24	0.63	0.68	0.68
Total						
Opening GFA	430.77	467.39	465.26	466.61	495.04	477.49
Addition	36.62	-2.13	1.35	28.43	-17.55	22.90
Closing GFA	467.39	465.26	466.61	495.04	477.49	500.39
Avg. Dep. Rate	1.80%	2.27%	2.27%	2.51%	2.51%	2.51%
Depreciation	8.07	10.57	10.56	12.07	12.22	12.28

3.10 Interest on Working Capital

Petitioner's Submission

3.10.1 The Petitioner has submitted that the working capital is estimated for calculating the normative interest charges to be allowed for financing the working capital requirements. As per TERC MYT Regulations, 2015, the working capital norms have been defined separately for thermal generation station and Hydro generating stations, as given below:

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

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

For Hydro generating station (for GHEP):

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

3.10.2 Further the Petitioner has considered the historical SBI base rate as tabulated below for calculation of normative interest rate:

Table 28: Effective SBI Base Rate from FY 2017-18 to FY 2021-22 (%)

Effective Date for SBI Base Rate	Interest Rate (%)
01-04-2017	9.10
01-07-2017	9.00
01-10-2017	8.95
01-01-2018	8.65
01-04-2018	8.70
01-07-2018	8.95
01-10-2018	9.00
10-12-2018	9.05
10-09-2019	8.95
16-12-2019	8.45
10-03-2020	8.15
10-06-2020	7.40
10-09-2020	7.40
10-12-2020	7.30
10-03-2021	7.40
15-06-2021	7.50
15-09-2021	7.45
15-12-2021	7.55

3.10.3 Based on the above submission, the Petitioner has calculated the normative working capital requirements as per TERC regulations and has tabulated below:

Table 29: Interest on working Capital for FY 2017-18 to FY 2022-23, submitted by TSECL (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Rokhia gas based thermal power plant (RGTPP)						
Fuel Cost for 30 days*	7.32	11.56	13.59	7.27	7.44	22.27
Receivables for 2 months	23.80	33.31	37.99	25.10	26.09	57.06
O&M Expenses for one month	2.64	2.82	3.02	3.22	3.44	3.67
Maint Spares @30% of O&M Expenses	9.52	10.16	10.86	11.60	12.38	13.23
TOTAL	43.28	57.86	65.44	47.19	49.35	96.23

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Normative Interest rate	12.10%	11.70%	12.05%	11.15%	10.40%	10.55%
Interest on Working Capital	5.24	6.77	7.89	5.26	5.13	10.15
Baramura gas based thermal power plant (BGTPP)						
Fuel Cost for 30 days*	2.99	3.83	6.03	3.39	5.10	10.92
Receivables for 2 months	11.95	14.08	18.93	13.88	17.85	30.23
O&M Expenses for one month	1.76	1.88	2.01	2.15	2.29	2.45
Maint Spares @30% of O&M Expenses	6.34	6.78	7.24	7.73	8.26	8.82
TOTAL	23.04	26.57	34.22	27.15	33.50	52.41
Normative Interest rate	12.10%	11.70%	12.05%	11.15%	10.40%	10.55%
Interest on Working Capital	2.79	3.11	4.12	3.03	3.48	5.53
Gumti Hydro Electric Plant (GHEP)						
Receivables for 2 months	0.78	0.87	0.89	1.00	1.06	1.10
O&M Expenses for one month	0.32	0.34	0.36	0.39	0.41	0.44
Maint Spares @15% of O&M Expenses	0.58	0.62	0.66	0.70	0.75	0.79
TOTAL	1.68	1.82	1.91	2.09	2.22	2.34
Normative Interest rate	12.10%	11.70%	12.05%	11.15%	10.40%	10.55%
Interest on Working Capital	0.20	0.21	0.23	0.23	0.23	0.25
Total Interest on Working Capital	8.23	10.09	12.24	8.52	8.85	15.93

Commission's Analysis and Ruling

3.10.4 As per the Regulation 31 of the TERC MYT Regulations, 2015, the calculation of the normative working capital requirements of Gas and Hydro based Generating Station is specified which is outlined as below:

30. Interest on Working Capital:

I. The working capital shall cover:

b. Open-cycle Gas Turbine/Combined Cycle thermal generating stations

- i. Fuel cost for 30 days corresponding to the normative annual plant availability factor, duly taking into account mode of operation of the generating station on gas fuel and liquid fuel;*
- ii. Liquid fuel stock for 15 days corresponding to the normative annual plant availability factor, and in case of use of more than one liquid fuel, cost of main liquid fuel duly taking into account mode of operation of the generating stations of gas fuel and liquid fuel;*
- iii. Maintenance spares @ 30% of operation and maintenance expenses specified in Clause 31;*
- iv. Receivables equivalent to two months of capacity charge and energy charge for sale of electricity calculated on normative plant availability factor, duly taking into account mode of operation of the generating station on gas fuel and liquid fuel; and*
- v. Operation and maintenance expenses for one month.*

c. Hydro generating station:

- i. Receivables equivalent to two months of fixed cost;*
- ii. Maintenance spares @ 15% of operation and maintenance expenses specified in Clause 31; and*
- iii. Operation and maintenance expenses for one month.*

- 3.10.5 The Commission has computed the total working capital requirement in accordance with Regulation 31. To estimate the working capital requirement for FY 2017-18 to FY 2022-23 corresponding to O&M expenses, the Commission has taken the normative O&M expenses as specified in earlier Section of this order.
- 3.10.6 With regards to the consideration of Receivables while calculating the Interest on Working Capital, the Commission has observed that there is no separate billing of Generation and Transmission function has been undertaken to the retail supply business and the operation of the entities has been undertaken as a single business without any commercial arrangement. Therefore, considering Revenue as a component for calculation of working capital requirement for Generation, Transmission and Distribution function separately will result in double accounting and hence in case of own Generating Stations, no amount shall be allowed towards receivables, to the extent of supply of power by the Generation Business to the Retail Supply Business, so as to avoid any double accounting and additional burden on the consumers.
- 3.10.7 Also, while computing the IoWC, the Commission has found out the arithmetical errors in calculation which was rectified by TSECL vide replies to the data gaps.
- 3.10.8 As per Regulations 31 (III) of TERC MYT Regulations 2015, the interest rate for computing IoWC is considered as the weighted average SBI Base plus 300 basis points as on 1st April of the year for which tariff is determined.

Table 30: Computation of rate of Interest on Working Capital

FY	Effective Date of SBI Base Rate	Effective SBI Base Rate	Additional Basis points	Rate of IoWC
FY 2016-17	05-10-2015	9.30%	3.00%	12.30%
FY 2017-18	01-04-2017	9.10%	3.00%	12.10%
FY 2018-19	01-04-2018	8.70%	3.00%	11.70%
FY 2019-20	10-12-2018	9.05%	3.00%	12.05%
FY 2020-21	10-03-2020	8.15%	3.00%	11.15%
FY 2021-22	10-03-2021	7.40%	3.00%	10.40%
FY 2022-23	15-03-2022	7.55%	3.00%	10.55%

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

- 3.10.9 The Commission has computed the IoWC for FY 2017-18 to FY 2022-23 considering the above rates as follows:

Table 31: Interest on Working Capital for FY 2017-18 to FY 2022-23, approved by the Commission (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Rokhia gas based thermal power plant (RGTPP)						
Fuel Cost for 30 days*	7.22	11.57	13.19	7.26	7.39	22.57
Receivables for 2 months	-	-	-	-	-	-
O&M Expenses for one month	2.64	2.82	3.02	3.22	3.44	3.67
Maint Spares @30% of O&M Expenses	9.52	10.16	10.86	11.60	12.38	13.23
TOTAL	19.38	24.55	27.06	22.08	23.21	39.47
Normative Interest rate	12.10%	11.70%	12.05%	11.15%	10.40%	10.55%
Interest on Working Capital	2.35	2.87	3.26	2.46	2.41	4.16
Baramura gas based thermal power plant (BGTPP)						
Fuel Cost for 30 days*	3.27	4.07	6.66	3.63	5.54	10.32
Receivables for 2 months	-	-	-	-	-	-
O&M Expenses for one month	1.76	1.88	2.01	2.15	2.29	2.45
Maint Spares @30% of O&M Expenses	6.34	6.78	7.24	7.73	8.26	8.82
TOTAL	11.38	12.73	15.91	13.51	16.09	21.59
Normative Interest rate	12.10%	11.70%	12.05%	11.15%	10.40%	10.55%
Interest on Working Capital	1.38	1.49	1.92	1.51	1.67	2.28
Gumti Hydro Electric Plant (GHEP)						
Receivables for 2 months	-	-	-	-	-	-
O&M Expenses for one month	0.32	0.34	0.36	0.29	0.30	0.32
Maint Spares @15% of O&M Expenses	0.58	0.62	0.66	0.51	0.55	0.58
TOTAL	0.90	0.96	1.02	0.80	0.85	0.91
Normative Interest rate	12.10%	11.70%	12.05%	11.15%	10.40%	10.55%
Interest on Working Capital	0.11	0.11	0.12	0.09	0.09	0.10
Total Interest on Working Capital	3.83	4.47	5.30	4.06	4.18	6.54

3.11 Return on Equity and Tax on Income

Petitioner's Submission

3.11.1 TSECL has submitted that in line with Regulations 26 of TERC MYT Regulations, 2015, Return on Equity is required to be computed at a base rate of 15.50% for thermal stations and 16.50% storage type hydro stations on equity base. Accordingly, Base rate for calculation of RoE of two gas plants (RGTPP & BGTPP) and GHEP would be 15.50% and 16.50% respectively.

3.11.2 Further the Petitioner has submitted that the amount of equity base to be considered for calculation of return has been calculated based on the Regulations 21 of TERC MYT Regulations, 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”.

3.11.3 The Petitioner has submitted 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.

3.11.4 Accordingly, the Equity fund of Petitioner is calculated after allocating equity fund of Petitioner 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.

3.11.5 With regards to the Income Tax, as per Clause 27 of TERC MYT Regulations, 2015, the Return on Equity is required to be grossed up with effective tax rate and is stated as below:

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.

3.11.6 Additionally, the Petitioner has submitted that 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. Also, for projection purpose, since TPGCL is a newly incorporated company, the Minimum Alternative Tax (MAT Rate) rate of 15% has been considered for calculation of Tax RoE.

3.11.7 Based on the above submission, the Return on Equity claimed by the Petitioner is outlined in the Table below:

Table 32: Calculation of Equity Fund and Return on Equity (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Rokhia gas based thermal power plant (RGTPP)						
Total GFA	271.35	281.66	280.72	277.08	278.12	278.12
Normative Equity fund (30% of GFA)	81.41	84.50	84.22	83.12	83.44	83.44
Return on Equity	12.62	13.10	13.05	12.88	12.93	12.93
Tax on RoE	1.64	1.45	1.62	0.41	1.94	1.94
Baramura gas based thermal power plant (BGTPP)						
Total GFA	170.62	177.24	178.22	197.53	199.87	202.24
Normative Equity fund (30% of GFA)	51.19	53.17	53.47	59.26	59.96	60.67
Return on Equity	7.93	8.24	8.29	9.19	9.29	9.40
Tax on RoE	1.03	0.91	1.03	0.29	1.39	1.41
Gumti Hydro Electric Plant (GHEP)						
Total GFA	16.75	17.06	16.64	15.85	17.92	18.22
Normative Equity fund (30% of GFA)	5.03	5.12	4.99	4.76	5.37	5.47
Return on Equity	0.83	0.84	0.82	0.78	0.89	0.90
Tax on RoE	0.10	0.09	0.10	0.02	0.13	0.14
Total RoE Claimed	24.15	24.64	24.91	23.58	26.58	26.72

Commission's Analysis and Ruling

- 3.11.8 The computation of the Pre-tax Return on Equity considered by the Petitioner is after considering the actual tax paid as reflected in the account statements and divided in the ratio of paid up capital in the different business functions and for projection purpose, the Minimum Alternative Tax (MAT Rate) rate of 15% has been considered for calculation of Tax RoE. However, based on the audited accounts made available for FY 2017-18 to FY 2019-20, it was observed that only provision of deferred tax was made with no impact highlighted in the current tax as specified in the profit and loss account. Therefore, the Commission has sought the supporting documents and income tax challan for the income tax paid for the respective years. TSECL replied that the actual tax payment made is zero i.e. no actual tax payment has been made, however, in future tax payment may arise if the accumulated losses are wiped out, hence the deferred tax provision has been made in the accounts. Accordingly, the submission made by TSECL in the Petitions that Pre-tax Return on Equity is calculated after considering the actual tax paid is erroneous and the petitioner should refrain from such submission in the next submission. Accordingly, the Commission has not considered any tax on RoE for truing up for FY 2017-18 to FY 2019-20.
- 3.11.9 Also, as per the accounts of FY 2019-20, huge accumulated loss of Rs. 390.61 Crore has been highlighted in the balance sheet, which will initially be adjusted against the profit for computation of tax as per the relevant provisions of the income tax act. Accordingly, the Commission feels that there is a probability that no income tax liability may arise in near future and hence the effective tax rate as specified in Regulations 27 of TERC MYT Regulations, 2015 is considered to be Zero for FY 2020-21 to FY 2023-23. Also, as per the Regulations, the actual tax paid in the financial year to be considered for calculation of effective tax rate. Since the actual Income tax paid for latest available FY 2019-20 is also zero, the same is considered for computation of tax on Return on Equity.
- 3.11.10 The relevant clause is stated as below:

27. Tax on Return on Equity:

I. The base rate of return on equity as allowed by the Commission under Clause 26 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 by the concerned generating company or the transmission/distribution licensee, as the case may be. The actual tax income on other income stream (i.e., income of non generation or non transmission /distribution business, as the case may be) shall not be considered for the calculation of "effective tax rate" computed as per the formula given below:

$$\text{Rate of pre-tax return on equity} = \text{Base rate} / (1-t)$$

- 3.11.11 Therefore, the computation of Pre-Tax Return on Equity by Petitioner is not in line with the MYT Regulations 2015 and is recomputed by the Commission as outlined below to be considered for calculation of RoE for FY 2017-18 to FY 2019-20:

Table 33: Approved Pre-tax Return on Equity (%)

Sr. No.	Particulars	RGTPP	BGTPP	GHEP
A.	Return on Equity as per norms	15.50%	15.50%	16.50%
B.	Effective Tax Rate	0.00%	0.00%	0.00%
C.	Pre-tax Return on Equity $[A/(1-B)]$	15.50%	15.50%	16.50%

3.11.12 However, the Commission states that the effective tax rate for FY 2020-21 to FY 2022-23 would be reviewed during the True Up proceedings depending on actual tax paid by the Petitioner under Corporate Tax or MAT regime and as specified in the audited Financial statement.

3.11.13 With regards to Equity allocation to the generating station, the petitioner has stated that minimum of 30% of GFA value or the Equity fund after allocating in the Gross fixed assets ratio among generation, transmission and distribution business is considered for calculation of equity base. Also, it is observed that Rs. 665.75 crore is the Equity capital as per balance sheet of FY 2017-18 to FY 2019-20 which has been considered by the Petitioner for allocation of equity to Generation, Transmission and Distribution in the GFA Ratio.

3.11.14 However, while computing the Contribution from equity, Petitioner has not considered the grants / subsidies / consumer contribution, which has also been utilised to fund the capitalisation of the assets. In view of the above, the Commission has considered the approach of calculating the equity base by limiting the same to 30% of funded value of Gross Fixed Assets i.e. after deducting the value of the assets that is created through grants / subsidies / consumer contribution from the Gross Fixed Assets.

3.11.15 Also, the Petitioner has not provided any data on asset created through government grants. Accordingly, the Commission has calculated the percentage of Capital Grants towards GFA for TSECL as a company as a whole, due to non-availability of audited segregated data and the same has been considered for calculation of equity base of the Generating station. Also, the derived capital grants towards GFA of FY 2019-20 has been considered for FY 2020-21 to FY 2022-23 for projection purpose. The contribution of Capital Grants towards GFA from FY 2020-21 to FY 2022-23 will be reviewed by the Commission at the time of final true-up based on the audited accounts.

3.11.16 The detailed calculation of Equity base as approved by the Commission is outlined in the following table:

Table 34: Equity Base for Generating Station for FY 2017-18 to FY 2022-23 approved by the Commission (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
As per Balance Sheet of TSECL						
GFA	1,450.01	1,479.14	1,489.22			
CWIP	119.54	167.24	246.65			
Capital Grant	634.59	689.51	709.47			
Capital Grant towards GFA	586.26	619.47	608.66			

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Capital Grant towards GFA (%)	40.43%	41.88%	40.87%	40.87%	40.87%	40.87%
Calculation of Equity Base of Generation Plant						
RGTPP						
Opening GFA	240.88	262.54	261.50	260.65	254.22	262.72
Closing GFA	262.54	261.50	260.65	254.22	262.72	254.22
Average	251.71	262.02	261.08	257.44	258.47	258.47
Capital Grant towards GFA	101.77	109.73	106.71	105.22	105.64	105.64
Equity base for RoE calculation	44.98	45.69	46.31	45.67	45.85	45.85
BGTPP						
Opening GFA	158.12	171.74	171.36	173.70	209.99	178.39
Closing GFA	171.74	171.36	173.70	209.99	178.39	214.73
Average	164.93	171.55	172.53	191.84	194.19	196.56
Capital Grant towards GFA	66.68	71.84	70.51	78.41	79.37	80.34
Equity base for RoE calculation	29.47	29.91	30.60	34.03	34.45	34.87
GHEP						
Opening GFA	31.77	33.11	32.40	32.26	30.83	36.38
Closing GFA	33.11	32.40	32.26	30.83	36.38	31.44
Average	32.44	32.75	32.33	31.54	33.60	33.91
Capital Grant towards GFA	13.11	13.72	13.21	12.89	13.73	13.86
Equity base for RoE calculation	5.80	5.71	5.73	5.59	5.96	6.01

3.11.17 The Petitioner has not considered any interest on Loan in the tariff Petition and hence the Commission has also not computed the same.

3.11.18 Based on the approach as adopted by the Commission, the approved Equity base of all the Generating Station is considered for calculation of Pre-Tax Return on Equity as specified in Table 33 of this Order. The approved Return on Equity is calculated as per Regulations 26 and 27 of TERC MYT Regulations, 2015 and is outlined in the following table:

Table 35: RoE for FY 2017-18 to FY 2022-23 approved by the Commission (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
RGTPP						
Equity Base for the year	44.98	45.69	46.31	45.67	45.85	45.85
Pre-tax RoE	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%
Return on Equity	6.97	7.08	7.18	7.08	7.11	7.11
BGTPP						
Equity Base for the year	29.47	29.91	30.60	34.03	34.45	34.87
Pre-tax RoE	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%
Return on Equity	4.57	4.64	4.74	5.27	5.34	5.40
GHEP						
Equity Base for the year	5.80	5.71	5.73	5.59	5.96	6.01
Pre-tax RoE	16.50%	16.50%	16.50%	16.50%	16.50%	16.50%
Return on Equity	0.96	0.94	0.95	0.92	0.98	0.99
Total RoE	12.50	12.66	12.87	13.28	13.43	13.50

3.12 Non-Tariff Income

Petitioner's Submission

- 3.12.1 The Petitioner has submitted that 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. The figure submitted for FY 2017-18 to FY 2019-20 are based on the figures derived from division wise account statement. Also, the figures for FY 2019-20 to FY 2022-23 have been derived based on the previous years' trend.

Table 36: Non-Tariff Income as per Petitioner for FY 2017-18 to FY 2022-23 (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
RGTPP	0.95	0.22	0.00	-	0.38	0.31
BGTPP	0.00	0.05	0.10	0.05	0.37	0.12
GHEP	0.80	0.68	0.82	0.35	0.54	0.64
Total	1.75	0.95	0.93	0.41	1.29	1.07

Commission's Analysis and Ruling

- 3.12.2 As per Regulations 23 of TERC MYT Regulations, 2015, Non-Tariff income is required to be deducted to arrive at the Annual Fixed Charges of the Generating Station.
- 3.12.3 The Petitioner has submitted that it has not segregated the account statements for generation, transmission and distribution business completely and the allocation has been undertaken based on certain principles, wherever necessary for ARR and tariff calculation. This has been undertaken 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.
- 3.12.4 The Petitioner has provided the details of consolidated amount of the Non-Tariff Income with providing break-up of the same component wise and has reconciled the same with the available audited. However, though provisional accounts for FY 2020-21 has been provided by TSECL, no bifurcation has been provided on the Non-Tariff income booked for different function wise. The Commission in the said order, approves the Non-Tariff Income of Generating Station as proposed by the Petitioner for the purpose of truing up of FY 2017-18 to FY 2019-20.
- 3.12.5 With regards to the FY 2020-21 to FY 2022-23, the Petitioner has considered the provisional actual number for FY 2020-21 to FY 2021-22 and the past 5 year average for FY 2022-23. Accordingly, the Commission approves the Non-Tariff Income as projected by the Petitioner for FY 2020-21 to FY 2022-23.

Table 37: Non-Tariff Income for FY 2017-18 to FY 2022-23 approved by the Commission (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
RGTPP	0.95	0.22	0.00	-	0.38	0.31
BGTPP	0.00	0.05	0.10	0.05	0.37	0.12
GHEP	0.80	0.68	0.82	0.35	0.54	0.64
Total	1.75	0.95	0.93	0.41	1.29	1.07

3.13 Sharing of Gains and Losses on Controllable Parameters

Petitioner's Submission

- 3.13.1 TSECL has submitted 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 calculated a financial gain owing to better performance of TSECL on account of Station Heat Rate. This seems to be an inadvertent error 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 passthrough of actual fuel cost. If the fuel cost would have been calculated on normative SHR and a higher fuel cost would have been considered in ARR, then there would have been a case for calculation of gain sharing with the consumer. As such, TSECL is requesting the Commission to rectify this and not consider any sharing of gains as calculated in Table 82 of tariff order dated 1st September 2020.

Commission's Analysis and Ruling

- 3.13.2 Regulations 10 (IV) of TERC MYT Regulations, 2015 clearly states that the generating station shall carry out truing up of tariff of generating station based on the performance of Controllable Parameters such as SHR, Secondary Fuel Oil Consumption, Auxiliary Energy Consumption and Refinance of Loan. Also, as per Regulations 7 (IV), it specifies that the Commission will broadly classify costs incurred by generating company as controllable and non-controllable, for which the target will be set and such targets will be used for computing revenue requirement.
- 3.13.3 Also, as per Regulations 10 (VII) of TERC MYT Regulations, 2015, the financial gains on account of controllable parameters shall be shared with the beneficiaries in the ratio of 60:40.

“VII. The financial gains by a generating company or the Transmission or the Distribution licensee, on account of controllable parameters shall be shared between generating company or the Transmission or the Distribution licensee and the beneficiaries on monthly basis with annual reconciliation. The financial gains computed shall be shared in the ratio of 60:40 between generating

company or the Transmission or the Distribution licensee as the case may be, and the beneficiaries.”

- 3.13.4 In view of the aforementioned Regulations, at the time of truing up, it is necessary to share any financial gain on account of controllable parameters with the beneficiaries, which has not been proposed by the Petitioner. However, the Petitioner has claimed that there is an inadvertent error as there is no gain for TSECL as the entire gain has already been passed to the consumer through passthrough of actual fuel cost. The Commission would like to submit that the cost approved against fuel cost is a normative cost which is higher than the actual cost resulting in the gain to TSECL which has been shared with the consumers as per Regulations 10 (VII) of TERC MYT Regulations, 2015.
- 3.13.5 Accordingly, the Commission has computed sharing mechanism of financial gain due to resultant saving in normative and actual expenses of Fuel Expenses for FY 2017-18 to FY 2019-20.

Sharing of Fuel Expenses:

- 3.13.6 With regards to Fuel Expenses, the difference between the actual fuel cost and the normative fuel cost as due to consideration of norms for SHR and Auxiliary Consumption Loss is considered for sharing of Financial Gains.
- 3.13.7 The detailed with regards to the approved actual operational parameters and the norms as specified in the MYT Regulations 2015 is outlined in the below table which is considered for calculation of the normative and actual fuel cost.

Table 38: Actual and Normative Operational Parameters for Fuel Cost for FY 2017-18 to FY 2019-20

Particulars	Units	FY 2017-18	FY 2018-19	FY 2019-20	Norm as per Regulations
		Approved Actual Norms			
Station Heat Rate	kCal/kWh				
RGTPP		3,748	3,697	3,813	3,700
BGTPP		3,382	3,471	3,350	3,700
Auxiliary Consumption	%				
RGTPP		1.00%	1.00%	1.00%	1%
BGTPP		1.00%	1.00%	1.00%	1%

- 3.13.8 Based on the above operational parameters, the normative Fuel Cost has been computed and the difference of actual and normative fuel cost will be considered as a financial gain to be shared with the beneficiaries in the ratio of 60:40. The detailed computation of the same is as outlined below:

Table 39: Sharing of Financial gain on Fuel Cost for FY 2017-18 to FY 2019-20

Particulars	Units	FY 2017-18		FY 2018-19		FY 2019-20	
		RGTPP	BGTPP	RGTPP	BGTPP	RGTPP	BGTPP
Installed Capacity	MW	63	42	63	42	63	42
Days	Nos.	365	365	365	365	366	366
PLF	%	74.00%	49.95%	79.60%	47.44%	80.51%	65.12%
Gross Generation	MU	408.39	183.77	439.32	174.55	445.54	240.24
Auxiliary Consumption	%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%

Particulars	Units	FY 2017-18		FY 2018-19		FY 2019-20	
		RGTPP	BGTPP	RGTPP	BGTPP	RGTPP	BGTPP
Net Generation	MU	404.31	181.93	434.93	172.80	441.08	237.84
Heat Rate	kcal/kWh	3,700	3,700	3,700	3,700	3,700	3,700
GCV of gas	kcal/SCM	8,323	8,262	8,302	8,245	8,343	8,270
Overall Heat	G. cal.	15,11,043	6,79,949	16,25,484	6,45,835	16,48,498	8,88,888
Gas consumption	M. SCM	181.55	82.30	195.79	78.33	197.60	107.48
Price of Gas	Rs./1000 SCM	4,772.70	4,772.70	7,089.40	6,240.42	8,007.83	7,438.71
Total Normative cost of Gas	Rs. Crs	86.65	39.28	138.80	48.88	158.23	79.95
Actual Fuel Cost	Rs. Crs	87.78	35.90	138.70	45.85	163.05	72.40
Financial Gain, if Actual cost is lower than normative	Rs. Crs	-	3.38	0.10	3.02	-	7.55
Sharing with Beneficiaries	Rs. Crs	-	1.35	0.04	1.21	-	3.02

3.14 Summary of True-up for FY 2017-18 to FY 2019-20 and ARR for FY 2020-21 to FY 2022-23

- 3.14.1 Based on the approval of various components of the ARR, the Commission has undertaken the truing up exercise for FY 2017-18 to FY 2019-20 as elaborated above in accordance with the tariff Regulations and justification, the Commission approves the ARR comprising of Fuel Cost and Annual Fixed Charges (AFC) in the determination of Revenue Requirement process.
- 3.14.2 Also, the Commission has undertaken the exercise for determination of ARR for FY 2020-21 and MYT period of FY 2021-22 to FY 2022-23 based on approval of various ARR Components, as elaborated above in accordance with the tariff Regulations and justification. The Commission has accordingly approved the ARR comprising of Fuel Cost and Annual Fixed Charges (AFC) in the determination of Revenue Requirement process for the said purpose.
- 3.14.3 Considering the FY 2017-18 to FY 2019-20, the Commission would like to highlight that the AFC as calculated considering the truing up of various components is recoverable at Target normative availability, as specified in Regulations 37 of TERC MYT Regulations, 2015.
- 3.14.4 As the actual Availability of the BGTPP Generating Station was lower than the target normative Availability approved for recovery of full AFC as highlighted in Table 7, the Commission has approved the recovery of trued-up AFC on pro-rata basis for BGTPP.
- 3.14.5 The Computation of ARR comprising of Fuel Cost and Annual Fixed Charges (AFC) along with the disallowance due to non-achievement of target normative availability in the truing up of FY 2017-18 to FY 2019-20 and determination of ARR for FY 2020-21 to FY 2022-23 is outlined in the table below:

Table 40: Truing-up of ARR for FY 2017-18 for TSECL (Generation Business) approved by the Commission (Rs. Crore)

Sr. No	Particulars	RGTPP			BGTPP			GHEP			Total	
		Approved in Sep 2020	TSECL Submn	Approved	Approved in Sep 2020	TSECL Submn	Approved	Approved in Sep 2020	TSECL Submn	Approved	TSECL Submn	Approved
A	Annual Fixed Charges											
1	O&M Expenses	31.72	31.72	19.85	21.15	21.15	10.02	3.85	3.85	2.97	56.71	32.84
2	Depreciation	4.80	4.71	4.37	2.91	2.85	2.76	0.50	0.49	0.95	8.21	8.07
3	Interest and Finance Charges	-	-	-	-	-	-	-	-	-	-	-
4	Return on Equity	6.87	14.26	6.97	4.52	8.96	4.57	0.96	0.93	0.96	12.35	12.50
5	Interest on Working Capital	2.37	5.24	2.35	1.36	2.79	1.38	0.11	0.20	0.11	3.84	3.83
6	Sharing of (gains)	-	-	-	-	-	-1.35	-	-	-	-	-1.35
7	Less: Non-tariff Income	0.74	0.95	0.95	-	0.00	0.00	0.62	0.80	0.80	1.36	1.75
8	Reduction in AFC due to Low availability	-	-	-	-	-	7.72	-	-	-	-	7.72
	Total	45.02	54.97	32.59	29.94	35.75	9.65	4.80	4.67	4.19	79.75	46.42
B	Energy Charges											
1	Fuel Cost	88.85	87.78	86.65	37.70	35.90	39.28				126.55	125.93
2	HSD Cost	0.06	0.06	0.03	0.02	0.03	0.06				0.08	0.09
	Total	88.90	87.84	86.68	37.73	35.93	39.34	-	-	-	126.63	126.01
C	Net ARR	133.92	142.81	119.26	67.66	71.68	48.99	4.80	4.67	4.19	206.38	172.44
1	Gross Generation (MU)	408.29	408.39	408.39	178.57	183.77	183.77	43.85	43.85	43.85	630.71	636.01
2	Net Generation (MU)	404.21	404.31	404.31	176.78	181.93	181.93	43.63	43.55	43.55	624.62	629.78
3	Energy Charge Rate (Rs./kWh)	2.20	2.17	2.14	2.13	1.97	2.16					
4	PLF (%)	73.98%	74.00%	74.00%	48.54%	49.95%	49.95%	50.06%	40.54%	50.06%		
5	PAF (%)	93.40%	93.50%	93.50%	46.80%	49.95%	49.95%	97.70%				

Note: *The Petitioner has made some errors in computation of ARR which was rectified at the time of replies to data gaps, and revised number has been considered.

Table 41: Truing up of ARR for FY 2018-19 for TSECL (Generation Business) approved by the Commission (Rs. Crore)

Sr. No	Particulars	RGTPP			BGTPP			GHEP			Total	
		Approved in Sep 2020	TSECL Submn	Approved	Approved in Sep 2020	TSECL Submn	Approved	Approved in Sep 2020	TSECL Submn	Approved in Sep 2020	TSECL Submn	Approved
A	Annual Fixed Charges											
1	O&M Expenses	33.88	33.88	7.35	22.59	22.59	4.60	4.10	4.10	2.93	60.57	14.88
2	Depreciation	4.80	6.15	5.72	2.91	3.74	3.62	0.50	0.64	1.23	8.21	10.57
3	Interest and Finance Charges	-	-	-	-	-	-	-	-	-	-	-
4	Return on Equity	6.78	14.55	7.08	4.48	9.16	4.64	0.95	0.93	0.94	12.21	12.66
5	Interest on Working Capital	2.81	6.77	2.87	1.47	3.11	1.49	0.11	0.21	0.11	4.39	4.47
6	Sharing of (gains)	-	-	-0.04	-	-	-1.21	-	-	-	-	-1.25
7	Less: Non-tariff Income	0.62	0.22	0.22	-	0.05	0.05	0.52	0.68	0.68	1.14	0.95
8	Reduction in AFC due to Low availability	-	-	-	-	-	6.04	-	-	-	-	6.04
	Total	47.65	61.13	22.76	31.45	38.55	7.05	5.14	5.20	4.53	84.25	34.35
B	Energy Charges											
1	Fuel Cost	132.10	138.70	138.80	46.97	45.85	48.88				179.07	184.55
2	HSD Cost	0.14	0.03	0.03	0.05	0.09	0.09				0.19	0.12
	Total	132.24	138.73	138.83	47.02	45.94	48.96	-	-	-	179.26	184.67
C	Net ARR	179.89	199.86	161.60	78.47	84.49	56.02	5.14	5.20	4.53	263.51	222.14
1	Gross Generation (MU)	439.33	439.32	439.32	173.61	174.55	174.55	35.51	35.50	35.50	648.45	649.37
2	Net Generation (MU)	434.94	434.93	434.93	171.87	172.80	172.80	35.33	35.25	35.25	642.14	642.98
3	Energy Charge Rate (Rs./kWh)	3.04	3.19	3.19	2.73	2.65	2.83					
4	PLF (%)	79.61%	79.60%	79.60%	47.19%	47.44%	47.44%	40.54%	40.53%	40.53%		
5	PAF (%)	94.10%	94.60%	94.60%	49.10%	49.10%	49.10%	86.40%				

Note: * The Petitioner has made some errors in computation of ARR which was rectified at the time of replies to data gaps, and revised number has been considered.

Table 42: Truing up of ARR for FY 2019-20 for TSECL (Generation Business) approved by the Commission (Rs. Crore)

Sr. No	Particulars	RGTPP			BGTPP			GHEP			Total	
		Approved in Sep 2020	TSECL Submn	Approved	Approved in Sep 2020	TSECL Submn	Approved	Approved in Sep 2020	TSECL Submn	Approved	TSECL Submn	Approved
A	Annual Fixed Charges											
1	O&M Expenses	36.19	36.19	4.13	24.12	24.12	5.93	4.37	4.37	4.37	64.69	14.43
2	Depreciation	4.80	6.13	5.70	2.91	3.74	3.62	0.50	0.64	1.24	10.51	10.56
3	Interest and Finance Charges	-	-	-	-	-	-	-	-	-	-	-
4	Return on Equity	6.78	14.67	7.18	4.49	9.31	4.74	0.95	0.92	0.95	12.22	12.87
5	Interest on Working Capital	3.15	7.89	3.26	1.83	4.12	1.92	0.12	0.23	0.12	5.11	5.30
6	Sharing of (gains)	-	-	-	-	-	-3.02	-	-	-	-	-3.02
7	Less: Non-tariff Income	0.59	0.00	0.00	-	0.10	0.10	0.43	0.82	0.82	1.02	0.93
8	Reduction in AFC due to Low availability	-	-	-	-	-	3.31	-	-	-	-	3.31
	Total	50.34	64.87	20.26	33.36	41.20	9.78	5.52	5.34	5.86	89.21	35.90
B	Energy Charges											
1	Fuel Cost	147.67	163.05	158.23	71.23	72.40	79.95	-	-	-	218.91	238.19
2	HSD Cost	-	-	0.03	-	-	0.05	-	-	-	-	0.08
	Total	147.67	163.05	158.27	71.23	72.40	80.00	-	-	-	218.91	238.27
C	Net ARR	198.01	227.92	178.53	104.59	113.61	89.79	5.52	5.34	5.86	308.12	274.18
1	Gross Generation (MU)	445.53	445.54	445.54	239.95	240.24	240.24	26.01	26.00	26.00	711.49	711.78
2	Net Generation (MU)	441.07	441.08	441.08	237.55	237.84	237.84	25.88	25.82	25.82	704.51	704.74
3	Energy Charge Rate (Rs./kWh)	3.35	3.70	3.59	3.00	3.04	3.36	-	-	-	-	-
4	PLF (%)	80.73%	80.73%	80.73%	65.22%	65.30%	65.30%	0.00%	29.68%	29.68%	-	-
5	PAF (%)	85.00%	97.90%	97.90%	85.00%	67.56%	67.56%	85.00%	-	-	-	-

Note: * The Petitioner has made some errors in computation of ARR which was rectified at the time of replies to data gaps, and revised number has been considered.

Table 43: ARR for FY 2020-21 for TSECL (Generation Business) approved by the Commission (Rs. Crore)

Sr. No	Particulars	RGTPP		BGTPP		GHEP		Total	
		Petitioner Submission	Approved	Petitioner Submission	Approved	Petitioner Submission	Approved	Petitioner Submission	Approved
A	Annual Fixed Charges								
1	O&M Expenses	38.65	38.65	25.77	25.77	4.66	3.42	69.08	67.84
2	Depreciation	6.24	6.54	4.32	4.89	0.65	0.63	11.20	12.07
3	Interest and Finance Charges	-	-	-	-	-	-	-	-
4	Return on Equity	13.29	7.08	9.48	5.27	0.81	0.92	23.58	13.28
5	Interest on Working Capital	5.26	2.46	3.03	1.51	0.23	0.09	8.52	4.06
6	Sharing of (gains)	-	-	-	-	-	-	-	-
7	Less: Non-tariff Income	-	-	0.05	0.05	0.35	0.35	0.41	0.41
8	Reduction in AFC due to Low availability	-	-	-	-	-	-	-	-
	Total	63.44	54.73	42.54	37.39	5.99	4.71	111.97	96.83
B	Energy Charges								
1	Fuel Cost	87.18	87.12	40.72	43.54			127.90	130.67
2	HSD Cost	-	-	-	-			-	-
	Total	87.18	87.12	40.72	43.54	-	-	127.90	130.67
C	Net ARR	150.63	141.86	83.25	80.93	5.99	4.71	239.87	227.50
1	Gross Generation (MU)	347.11	347.11	192.50	192.50	7.97	7.97	547.58	547.58
2	Net Generation (MU)	343.64	343.64	190.57	190.57	7.92	7.92	542.13	542.13
3	Energy Charge Rate (Rs./kWh)	2.54	2.54	2.14	2.28				
4	PLF (%)	62.90%	62.90%	52.32%	52.32%	9.10%	9.10%		
5	PAF (%)	79.00%	79.00%	54.12%	54.12%				

Note: *The Petitioner has made some errors in computation of ARR which was rectified at the time of replies to data gaps, and revised number has been considered.

Table 44: ARR for FY 2021-22 for TSECL (Generation Business) approved by the Commission (Rs. Crore)

Sr. No	Particulars	RGTPP		BGTPP		GHEP		Total	
		Petitioner Submission	Approved	Petitioner Submission	Approved	Petitioner Submission	Approved	Petitioner Submission	Approved
A	Annual Fixed Charges								
1	O&M Expenses	41.28	41.28	27.52	27.52	4.97	3.65	73.77	72.45
2	Depreciation	6.28	6.57	4.60	4.97	0.65	0.68	11.53	12.22
3	Interest and Finance Charges	-	-	-	-	-	-	-	-
4	Return on Equity	14.87	7.11	10.69	5.34	1.02	0.98	26.58	13.43
5	Interest on Working Capital	5.13	2.41	3.48	1.67	0.23	0.09	8.85	4.18
6	Sharing of (gains)	-	-	-	-	-	-	-	-
7	Less: Non-tariff Income	0.38	0.38	0.37	0.37	0.54	0.54	1.29	1.29
8	Reduction in AFC due to Low availability	-	-	-	-	-	-	-	-
	Total	67.18	56.99	45.92	39.13	6.33	4.86	119.43	100.98
B	Energy Charges								
1	Fuel Cost	89.33	88.65	61.17	66.48			150.50	155.14
2	HSD Cost	-	-	-	-			-	-
	Total	89.33	88.65	61.17	66.48	-	-	150.50	155.14
C	Net ARR	156.51	145.64	107.09	105.61	6.33	4.86	269.94	256.12
1	Gross Generation (MU)	341.11	334.09	204.67	235.25	7.30	9.39	553.08	578.73
2	Net Generation (MU)	337.70	330.75	202.62	232.90	7.58	9.32	547.90	572.97
3	Energy Charge Rate (Rs./kWh)	2.65	2.68	3.02	2.85				
4	PLF (%)	61.81%	60.54%	55.63%	63.94%	8.33%	10.72%		
5	PAF (%)	95.80%	95.80%	59.53%	63.94%				

Note: *The Petitioner has made some errors in computation of ARR which was rectified at the time of replies to data gaps, and revised number has been considered.

Table 45: ARR for FY 2022-23 for TSECL (Generation Business) approved by the Commission (Rs. Crore)

Sr. No	Particulars	RGTPP		BGTPP		GHEP		Total	
		Petitioner Submission	Approved	Petitioner Submission	Approved	Petitioner Submission	Approved	Petitioner Submission	Approved
A	Annual Fixed Charges								
1	O&M Expenses	44.09	44.09	29.39	29.39	5.30	3.89	78.78	77.38
2	Depreciation	6.30	6.57	4.75	5.03	0.65	0.68	11.70	12.28
3	Interest and Finance Charges	-	-	-	-	-	-	-	-
4	Return on Equity	14.87	7.11	10.82	5.40	1.04	0.99	26.72	13.50
5	Interest on Working Capital	10.15	4.16	5.53	2.28	0.25	0.10	15.93	6.54
6	Sharing of (gains)	-	-	-	-	-	-	-	-
7	Less: Non-tariff Income	0.31	0.31	0.12	0.12	0.64	0.64	1.07	1.07
8	Reduction in AFC due to Low availability	-	-	-	-	-	-	-	-
	Total	75.10	61.62	50.38	41.99	6.59	5.02	132.07	108.63
B	Energy Charges								
1	Fuel Cost	267.26	270.80	131.00	123.87			398.26	394.67
2	HSD Cost	-	-	-	-			-	-
	Total	267.26	270.80	131.00	123.87	-	-	398.26	394.67
C	Net ARR	342.35	332.41	181.38	165.86	6.59	5.02	530.33	503.30
1	Gross Generation (MU)	390.92	390.92	210.26	210.26	7.64	7.64	608.81	608.81
2	Net Generation (MU)	387.01	387.01	208.15	208.15	7.58	7.58	602.74	602.74
3	Energy Charge Rate (Rs./kWh)	6.91	7.00	6.29	5.95				
4	PLF (%)	70.83%	70.83%	57.15%	57.15%	8.72%	8.72%		
5	PAF (%)	92.16%	85.00%	55.76%	85.00%				

Note: *The Petitioner has made some errors in computation of ARR which was rectified at the time of replies to data gaps, and revised number has been considered.

3.15 Generation Tariff for FY 2022-23

- 3.15.1 Based on the approved Aggregate Revenue requirement including Annual Fixed Cost and Energy Charges, the Commission approves the Generation Tariff for FY 2022-23 as shown in the following Table:

Table 46: Generation Tariff for FY 2022-23 approved by the Commission

Sr. No.	Particulars	UoM	FY 2022-23	
			Petition	Approved
	RGTPP			
1	Annual Fixed Charges	Rs. Crore	75.10	61.62
2	Energy Charges	Rs./kWh	6.91	7.00
	BGTPP			
1	Annual Fixed Charges	Rs. Crore	50.38	41.99
2	Energy Charges	Rs./kWh	6.29	5.95
	GHEP			
1	Annual Fixed Charges	Rs. Crore	6.59	5.02
	Total			
1	Annual Fixed Charges	Rs. Crore	132.07	108.63
2	Energy Charges for thermal Station (wt. Avg.)	Rs./kWh	6.69	6.63

4 Truing up of ARR for FY 2017-18 to FY 2019-20, APR of FY 2020-21 and ARR of FY 2021-22 and FY 2022-23 for Transmission Business

4.1 Background and Approach

- 4.1.1 The Commission in its Order dated 01 September 2020 in Case No. 4 of 2020 and 5 of 2020 has approved Truing-up for FY 2013-14 to FY 2016-17 and ARR for FY 2017-18 to FY 2020-21 with Generation, Transmission and Retail Tariff determination of FY 2020-21. The Tariff Order for determination of tariff for FY 2021-22 was not issued, hence, the same tariff approved for FY 2020-21 and was continued for FY 2021-22 as well.
- 4.1.2 The TERC Tariff Regulations, 2015 provides for truing-up of all the parameters of ARR at the end of each year based on the audited annual accounts and prudence check by the Commission. The Commission has conducted the truing-up for ARR for FY 2017-18 to FY 2019-20 based on the audited annual accounts submitted by TSECL for the said period.
- 4.1.3 In compliance of the regulatory obligation, TSECL has filed True-Up Petition for FY 2017-18 to FY 2019-20 for Generation business, Transmission and Distribution & Retail Supply business separately. The audited accounts of the respective years along with the audit report is submitted as an Annexure along with the petition.
- 4.1.4 It is noted that, TSECL has not yet segregated the account statements for Generation, Transmission and Distribution business and the same is under work in progress. However, TSECL in its Petition has provided the break-up of costs in generation, transmission and distribution business, wherever necessary for ARR and tariff calculation, based on the division wise break-up of account statements and making suitable assumptions, as necessary, for the common functions like Accounts & 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. Accordingly, the Commission has relied upon the said submission related to function-wise data submitted by TSECL along with replies to data gaps submitted by TSECL for truing-up of FY 2017-18 to FY 2019-20.
- 4.1.5 The Petitioner has submitted the statutory audit of the account statements for FY 2017-18 to FY 2019-20 and submitted that the statutory audit of FY 2020-21 and FY 2021-22 was still under process. The Commission has relied on the TERC MYT Regulations, 2015 for truing up of all the parameters of ARR at the end of each year based on the audited accounts and prudence check by the Commission.
- 4.1.6 Also, the instant petition has been filed considering the projection of data based on the actual data of past years and norms as specified in TERC MYT Regulations, 2015, as applicable for determination of ARR for MYT Period of FY 2020-21 to FY 2023-24. However, the Commission has considered the determination of ARR

process till FY 2022-23 as discussed in Chapter 1 of this Order.

- 4.1.7 It is noted that, there has been delay in filing MYT Petition by the Petitioner. As on date the audited accounts for FY 2019-20 are available and submitted before the Commission, hence, in the present Chapter, the Commission has undertaken the truing-up for FY 2017-18 to FY 2019-20 and determines the ARR for the remaining years of the Control period based on the projections and applicable norms as specified in MYT Regulations 2015.
- 4.1.8 Considering the details provided and additional information obtained during these proceedings, the Commission has undertaken the prudence check for approval of each expenditure and determination of Revenue Requirement of TSECL Transmission Business for the FY 2017-18 to FY 2022-23 as set out below:

4.2 Transmission Loss

Petitioner's Submission

- 4.2.1 The Petitioner in the submission in relation to the energy balance has highlighted the intra-state transmission loss of 6% for FY 2017-18 to FY 2018-19 and projected the similar trend for FY 2020-21 to FY 2022-23, as shown in the following Table with the exception for FY 2019-20 highlighting the InStS transmission loss as 5.70%:

Table 47: Transmission Loss from FY 2017-18 to FY 2022-23 as submitted by the Petitioner (%)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
Transmission Loss	6.00%	6.00%	5.70%	6.00%	6.00%	6.00%

- 4.2.2 The Petitioner has assumed the intrastate transmission loss to be in the range of 5.70% to 6% of the energy at state bus in the respective years in absence of complete voltage wise metering and calculation of losses.

Commission's Analysis and Ruling

- 4.2.3 The Commission notes that, in past Orders, it has been approving T&D loss for TSECL. There is no segregation of Transmission and Distribution Loss. In the past Orders, the Commission had approved the transmission loss of 6% and the same target has been submitted by the Petitioner in the present Petition.
- 4.2.4 The Commission is of view that, four (4) years of the Control Period are already over. Hence, stipulating the same target for years would not be prudent. However, since the actual transmission loss is not available due to absence of complete voltage wise metering and calculation of losses, the Commission at present approves the same target of 6% of transmission loss for FY 2017-18 to FY 2021-22, as the financial year is completed and such improvement cannot be foreseen now. Also, half of the FY 2022-23 is over and therefore, the Commission has approved the 6% for FY 2022-23 also.
- 4.2.5 Further, the Commission directs TSECL to complete the boundary metering and

commence the measurement and accounting of separate voltage-wise losses for Transmission business. The progress of the same shall be submitted to the Commission in next Tariff Petition.

- 4.2.6 In view of the above, the transmission loss approved by the Commission for the Control Period is shown in the following Table:

Table 48: Transmission Loss from FY 2017-19 to FY 2022-23 approved by the Commission (%)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
Transmission Loss	6.00%	6.00%	5.70%	6.00%	6.00%	6.00%

4.3 Annual Fixed Cost (AFC)

- 4.3.1 Regulation 23 of the MYT Regulations, 2015 specifies the components of Annual Fixed Cost for a transmission system including communication system as follows:

- Return on equity;
- Interest on loan capital;
- Depreciation;
- Interest on working capital;
- Operation and maintenance expenses;
- Recovery of fee for tariff petition filing; and
- Minus Non-tariff income

4.4 Operation & Maintenance Expenses

Petitioner's Submission

- 4.4.1 TSECL has submitted that TERC MYT Regulations, 2015 stipulates the O&M cost to be comprising of Employee cost, R&M expense and A&G expense. The Petitioner has submitted the O&M expenses for FY 2017-18 to FY 2019-20 based on the audited annual accounts. With respect to FY 2020-21, TSECL has considered the actual expenses based on the provisional accounts and for FY 2021-22, the actual expenses of nine months are pro-rated to derive at the estimated O&M expenses.
- 4.4.2 From FY 2022-23 onwards, the employee cost of transmission business has been escalated at the rate of CPI (Consumer Price Index) escalation rate of 5.07% based on the actual prorated expenses of FY 2021-22. R&M expenses have been calculated as 1.02% of GFA (the actual R&M expenses of past year being 1.02% of GFA). The A&G (Administrative and General) expenses have been escalated at the Wholesale Price Index (WPI) of 5.17%. The O&M expenses have been projected similar to the distribution business since the nature of business is similar and most of the O&M expenses in TSECL is on account of the distribution business only.
- 4.4.3 Also, the total employee cost has increased to a huge extent in 2017-18 due to the impact of the 7th Pay Commission which resulted in an average increase of the employee pay by 22% from April to June 2017. There was a further revision of salary for selected staff in 2018-19 leading to an average increase of around 8%.

- 4.4.4 With regards to the component wise explanation on actual O&M Expenses for Transmission and Distribution business, TSECL has submitted as follows:
- 4.4.5 Based on the above submission, the Petitioner has submitted the actual O&M expenses for FY 2017-18 to FY 2019-20 and projected O&M expenses for FY 2020-21 to FY 2022-23 as stated below:

Table 49: O&M Expense for Transmission Business for MYT Period (Rs. Crore) as submitted by the Petitioner

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Employee Cost	16.09	16.04	17.19	17.14	18.06	18.93
R&M Cost	1.85	2.50	2.36	3.57	3.76	3.95
A&G Cost	1.71	3.69	2.03	2.42	3.59	2.47
Total	19.65	22.23	21.58	23.14	25.41	25.35

Commission's Analysis and Ruling

- 4.4.6 The Commission notes that, Regulation 31 (IV) of TERC MYT Regulations, 2015 specifies the norms for O&M Expenses for Transmission system based on number of bays and transmission line length. However, TSECL in its Petition has proposed the recovery of actual O&M expenses for FY 2017-18 to FY 2021-22 and has applied the different principle for determination of normative O&M Expenses for Transmission System, which is applicable for Distribution system for projection of O&M expenses for FY 2022-23. In reply to specific query regarding the justification of the same, TSECL submitted that, TERC MYT Regulations 2015 provides for calculation of O&M expenses based on the number of voltage wise bays and nature wise voltage wise length of transmission lines, however the segregated data of voltage wise and nature wise line length of transmission lines and voltage wise bays is not available with TSECL. TSECL requested the Commission to consider the actual expenditure as per the account statements.
- 4.4.7 The Commission notes that, TSECL has not submitted any data regarding the number of bays and transmission line length for different voltages. In absence of such data, the Commission cannot proceed for determination of normative O&M Expenses for Transmission as per norms specified in TERC MYT Regulations, 2015. Further, the Commission notes that transmission business and distribution network business involves the transmission and supply of power through a power network and therefore to some extent is similar in nature. Hence, the adoption of principle for determination of normative O&M Expenses of distribution business would be appropriate approach at present. In view of this, the Commission determines the normative O&M Expenses for transmission business for MYT Control Period as under:

Base O&M Expenses

- 4.4.8 The actual O&M Expenses for FY 2017-18 to FY 2019-20 for TSECL as a whole Utility has been reconciled as per Table 22 of this Tariff Order. However, the

Commission has considered the break-up of actual audited expenses of Transmission Business for FY 2017-18 to FY 2019-20 as shown in the following Table:

Table 50: Break up of actual O&M Expenses for FY 2017-18 to FY 2019-20 (Rs. Crore)

Particulars	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20
	Approved	Truing Up		
Employee Cost	13.76	16.09	16.04	17.19
A&G Expenses	1.77	1.85	2.50	2.36
R&M Expenses	4.41	1.71	3.69	2.03
Total	19.95	19.65	22.23	21.58

- 4.4.9 For determining the O&M Expenses for the Control period, the Commission has considered the normative O&M Expenses for FY 2016-17 for transmission business as base expenses which was approved in the last tariff order. Accordingly, the Commission has considered the base expenses for Transmission as Rs. 19.95 Crore as approved for FY 2016-17 in last tariff order which comprises of employee cost of Rs. 13.76 Crore, A&G Expenses of Rs. 1.77 Crore and R&M Expenses of Rs. 4.41 Crore, respectively.

Escalation factor

- 4.4.10 The escalation factor has been considered based on average of preceding 3 years of CPI and WPI index as per Regulations 31 (V) of MYT Regulations 2015. The average of 3 years of increase in CPI indices is considered as escalation factor for Employee cost and WPI indices for A&G expenses.
- 4.4.11 While calculating the escalation factor, the Commission has considered 2011-12 data series of WPI to work out escalation rate for O&M expenses. However, it was noticed that the base of CPI series for Industrial workers (CPI_{IW}) has been changed by the Labour Bureau, from 2001 to 2016 resulting in change in number from September 2020 onwards. Therefore, from FY 2020-21, Labour of Bureau has discontinued publication of CPI based on 2001 series and instead of the same, CPI based on 2016 series has been published. Since, the old base has been discontinued from September 2020, the Commission has considered the new base from September 2020 onwards and modified the same on pro-rata basis to appropriately reflect CPI based on 2001 series so as to maintain consistency and accordingly has calculated the escalation number for FY 2020-21.
- 4.4.12 Also, for FY 2022-23, WPI and CPI of FY 2021-22 has been considered. The average preceding 3 years inflation of CPI and WPI index considered by the Commission is shown in the following Table:

Table 51: YoY Increase in CPI and WPI index considered by the Commission

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Increase in CPI	4.28%	4.22%	5.35%	5.87%	5.35%	5.35%
Increase in WPI	0.33%	2.98%	2.96%	2.42%	5.32%	5.32%

4.4.13 With respect to the submission of TSECL that the impact of the 7th Pay Commission which resulted in an average increase of the employee pay by 22% from April to June 2017 and further revision of salary for selected staff in 2018-19 leading to an average increase of around 8%, TSECL has not been able to submit the incremental impact of the 7th Pay commission on the employee expenses, function wise and have only provided the detail of % impact. Also, the Commission recognise the fact that TERC MYT Regulations, 2015 provides for allowance of O&M Expenses on normative basis plus any provision for expenses beyond the control of the Distribution Licensee and one time expected expenses, such as recovery/adjustment of terminal benefits, implications of pay commission, arrears and Interim Relief. However, such additional provision for expenses needs to be considered on actual basis whereas TSECL has provided only the impact in percentage term rather than on absolute term. The Commission understands that the increase in employee expenses is on account of the impact of 7th pay commission, however as stated above, a detailed analysis of the expenses is required to be undertaken whereby such expenses are required to be paid and not allowed on a provisional basis. The Commission in the review order dated 14 December 2020, has directed TSECL to provide the detail submission of the 7th pay commission with respect to amount actual paid and the provision made in the accounts along with the calculation of the impact of 7th pay commission on the salaries as well as the number of employees to whom the impact of 7th Pay commission was provided alongwith the documentary evidence, which has not been provided by TSECL. However, considering the fact that there has been an impact of 7th Pay commission, the Commission is inclined to consider the impact of 7th Pay commission @22% for FY 2017-18 on the base expenses approved in FY 2016-17 at present which has been escalated further to determine normative employee expenses. However, TSECL is directed to provide the detail calculation of the 7th Pay impact in the next tariff petition which can be considered as expenses beyond the control of the Distribution Licensee, subject to the prudence check.

4.4.14 Accordingly, the Commission determines the normative employee cost and A&G Expenses for FY 2017-18 to FY 2022-23 by applying the escalation factor over base expenses, as shown in the following Table:

Table 52: Normative Employee and A&G Expenses for FY 2017-18 to FY 2019-20 approved by the Commission (Rs. Crore)

Particulars	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20
	Approved		Truing Up	
Employee Cost	13.76	13.76	17.38	18.12
A&G Expenses	1.77	1.77	1.78	1.83
Total	15.53	15.53	19.16	19.94

4.4.15 As regards to R&M Expenses, the Commission determines the k-factor based on actual R&M Expenses for Truing up year i.e. FY 2017-18 to FY 2019-20 and Gross Fixed Assets for the respective years. Further, the allocation of Gross Fixed assets to the Transmission business has been considered based on the approved GFA after true-up in this Order. The k-factor so derived has been considered for FY 2020-21

and the balance Control Period i.e. FY 2020-21 to FY 2022-23. The Computation of K-Factor is outlined as shown in the following Table:

Table 53: Computation of k-factor

Particulars	FY 2017-18	FY 2018-19	FY 2019-20
	Truing Up		
Actual R&M expenses	1.71	3.69	2.03
Approved Opening GFA	152.08	177.29	184.89
K-Factor of the year	1.13%	2.08%	1.10%
Average K-factor	1.45%		

- 4.4.16 For computation of R&M Expenses for each year of the Control period, the Commission has considered the following formula:

$$R\&M_n = K_b * GFA_n$$

Whereby, K_b value is formulated, which is basically the percentage of R&M expense with respect to the actual value of total assets for past years.

- 4.4.17 Further, the Commission determines the R&M Expenses for Control Period as shown in the following Table:

Table 54: R&M Expenses approved by the Commission (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Opening approved GFA	152.08	177.29	184.89	180.98	176.70	187.10
k-factor	1.45%	1.45%	1.45%	1.45%	1.45%	1.45%
R&M Expenses	2.20	2.56	2.67	2.62	2.55	2.70

- 4.4.18 However, the audited accounts for FY 2017-18 to FY 2019-20 is available with the Commission whereby the Commission in this order is undertaking a true-up exercise and therefore the normative O&M expenses and actual O&M Expenses is compared for approval purpose. It is submitted that the norms are considered to be ceiling and any cost above that represent the inefficiencies and needs to be borne by the Utility. Accordingly, minimum of actual or normative cost is allowed for true-up purpose and will be considered as base for determination of O&M Expenses for future period i.e. FY 2020-21 to FY 2022-23, whereby escalation of WPI and CPI index will be applied for Employee and A&G expenses and k-factor for determination of R&M expenses. The normative, actual and approved O&M cost component wise for FY 2017-18 to FY 2019-20 is highlighted as below:

Table 55: Normative and actual O&M Expenses for FY 2017-18 to FY 2019-20 (Rs. Crore)

Particulars	FY 2017-18			FY 2018-19			FY 2019-20		
	Normative	Actual	Minimum	Normative	Actual	Minimum	Normative	Actual	Minimum
Employee Cost	17.38	16.09	16.09	18.12	16.04	16.04	19.09	17.19	17.19
A&G Cost	1.78	1.85	1.78	1.83	2.50	1.83	1.88	2.36	1.88
R&M Cost	2.20	1.71	1.71	2.56	3.69	2.56	2.67	2.03	2.03
Total	21.36	19.65	19.58	22.51	22.23	20.43	23.64	21.58	21.10

- 4.4.19 In view of the above, considering the approved O&M expenses for FY 2019-20 and applying the escalation of WPI and CPI Index as well as k Factor, the O&M Expenses as approved by the Commission for transmission business for FY 2020-21 and FY 2021-22 is shown in the following Table:

Table 56: O&M Expenses approved for FY 2017-18 to FY 2022-23 by the Commission (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Employee Cost	16.09	16.04	17.19	18.20	19.17	20.20
A&G Cost	1.78	1.83	1.88	1.93	2.03	2.14
R&M Cost	1.71	2.56	2.03	2.62	2.55	2.70
Total	19.58	20.43	21.10	22.74	23.75	25.04

4.5 Depreciation

Petitioner's Submission

- 4.5.1 TSECL has considered the depreciation rates as per Tariff Regulation (Multi Year Tariff) 2015 on the gross asset value. The Petitioner submitted that in account statement provided for FY 2017-18 to FY 2019-20, the depreciation has been calculated as per depreciation rate provided in Companies Act 2013 i.e. based on the useful life. Accordingly, the rate of depreciation considered by Petitioner for calculation of Depreciation is as provided below:

Table 57: Rate of Depreciation as per Tariff Regulations

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%

- 4.5.2 Based on the reply to the data gaps, TSECL has submitted the actual value of the gross value of assets and the asset base for calculation of depreciation.
- 4.5.3 With regards to the capitalisation, the Petitioner, in its reply to the data gaps has submitted the actual capitalisation for FY 2017-18 to FY 2019-20 and in order to project the value of assets for FY 2020-21 to FY 2022-23, the total capitalisation expected to be incurred in these years is projected based on the trend of actual addition of assets in the past few years on provisional basis.
- 4.5.4 Based on the consideration of the above depreciation rate, the depreciation claimed by the Petitioner for the Transmission business on the Gross Value of the assets is outlined as below:

Table 58: GFA and Depreciation for Transmission Asset - Petitioner (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Opening GFA	303.31	328.52	336.12	332.21	327.93	338.33
Addition during the year	25.21	7.60	-3.91	-4.28	10.40	-1.50
Closing GFA	328.52	336.12	332.21	327.93	338.33	336.83
Depreciation	4.94	6.55	6.56	6.71	6.77	6.83
Avg. Dep. Rate	1.56%	1.97%	1.96%	2.03%	2.03%	2.02%

Commission's Analysis and Ruling

- 4.5.5 The Commission computed the depreciation as per Regulation 29 of TERC MYT Regulations, 2015. The scheduled rates of depreciation have been considered as per Annexure 8 to TERC MYT Regulations, 2015.
- 4.5.6 It is observed that despite several directions from the Commission in this regard, the Petitioner has not complied with the Commission's directive regarding submission of Fixed Assets Register. As detailed in previous Orders, due to the absence of the Fixed Assets and Depreciation register, it is difficult for the Commission to ascertain the GFA value of the Petitioner. However, considering the audited account statement which also follows the Straight Line Method for calculation of depreciation, the Commission in absence of Fixed Assets Register, approves the depreciation in line with the audited accounts for FY 2017-18 to FY 2019-20. Also, even though the Petitioner has submitted in the petition that the depreciation claimed are as per Tariff Regulation (Multi Year Tariff) 2015 on the gross asset value, whereas the accounts specified SLM depreciation rate as per Companies Act, 2013, it has been observed that TSECL has claimed the depreciation as per accounts only for truing up. The same is also considered by the Commission for calculation of depreciation.
- 4.5.7 Based on the above observation, the Commission has calculated the average rate of depreciation at the rates applicable for various classes of assets as per TERC MYT Regulations, 2015. The average rate of depreciation is applied to arrive at the allowable depreciation for FY 2017-18 to FY 2022-23 respectively. The Commission has considered the calculation of depreciation based on the details provided by TSECL in replies to the data gaps and while considering the weighted average depreciation rate, the Commission has not considered depreciation for the assets block whereby the accumulated depreciation exceeds 90% of the Gross Fixed Assets value. Also, the opening balance of Gross Fixed Assets as on FY 2017-18 has been considered equivalent to the closing balance approved by the Commission for FY 2016-17 in the tariff order dated 1st September 2020.
- 4.5.8 As regards the addition of GFA, as per the data provided by the Petitioner, the actual capitalisation during FY 2017-18 to FY 2019-20 and projected for FY 2020-21 to FY 2022-23, is provided in the table below, whereby the Petitioner has not submitted any documentary evidence regarding the actual capitalisation of assets that have been actually put to use.

Table 59: Capitalisation of Assets for Transmission Business - Petitioner (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Capitalisation of Assets	25.21	7.60	-3.91	-4.28	10.40	-1.50

4.5.9 The Commission observed that the amount of capitalisation is very abnormal with no consistency and no explanation has been provided by the Petitioner for decapitalisation and capitalisation of assets for all the years. Therefore, it is necessary to analyse the scheme wise details along with the spill over of the CAPEX and its capitalisation. **Accordingly, the Commission directs the Petitioner to provide the scheme wise details of CAPEX, Capitalisation and justification for any delay in commissioning of the asset at the time of submission of final truing up of FY 2020-21 to FY 2022-23.**

4.5.10 However, considering the minor capitalisation amount undertaken by the Petitioner, the Commission approved the additional capitalisation and decapitalisation of assets as proposed by the Petitioner. **However, the Commission directs the Petitioner to provide the documentary evidence of capitalisation for any future submission on tariff filing for consideration.**

4.5.11 Accordingly, the depreciation approved by the Commission for truing up of FY 2017-18 to FY 2019-20 and for FY 2020-21 to FY 2021-22 is shown in the following Table:

Table 60: GFA and Depreciation for Transmission Asset as approved by the Commission (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Opening GFA	152.08	177.29	184.89	180.98	176.70	187.10
Addition during the year	25.21	7.60	-3.91	-4.28	10.40	-1.50
Closing GFA	177.29	184.89	180.98	176.70	187.10	185.60
Avg. Dep. Rate	1.56%	1.97%	1.96%	2.81%	2.81%	2.79%
Depreciation	2.57	3.57	3.59	5.02	5.11	5.20

4.6 Interest and Finance Charges

Petitioner's Submission

4.6.1 The Petitioner has submitted that it has not considered any interest charge for FY 2017-18 to FY 2022-23 for the transmission business as it does not have any long term loan and has not incurred any actual expense towards interest and finance charges.

Commission's Analysis and Ruling

4.6.2 The Commission accepts the submission of TSECL and has not considered any interest and finance charges for Control period for Transmission business.

4.7 Interest on Working Capital

Petitioner's Submission

4.7.1 The Petitioner has submitted that the TERC MYT Regulations, 2015 provides for normative interest on working Capital based on the methodology outlined in the Regulations. Accordingly, the Petitioner is eligible for interest on working capital worked out on methodology specified in the Regulations for transmission business as provided below:

- i. Receivables equivalent to two months of fixed cost;
- ii. Maintenance spares @ 15% of operation and maintenance expenses specified in Clause 31; and
- iii. Operation and maintenance expenses for one month.

4.7.2 Also, in accordance with the TERC MYT Regulations, 2015, the interest on the working capital requirement considered is SBI Base Rate plus 300 basis points as on 1st April of the year for which tariff is determined. The Petitioner in the instant Petition has considered the following interest rate on working capital requirement:

Table 61: Interest rate on Working Capital (%)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Normative Interest Rate on Working Capital	12.10%	11.70%	12.05%	11.15%	10.40%	10.55%

4.7.3 Accordingly, the Petitioner in accordance with the MYT Regulations, 2015, has calculated the interest on working capital for Transmission business as shown in the table below:

Table 62: Interest on working Capital for Transmission Business as submitted by TSECL (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Receivables for 2 months	7.10	7.91	7.85	7.79	8.54	8.58
O&M Expenses for one month	1.64	1.85	1.80	1.93	2.12	2.11
Maint Spares @15% of O&M Expenses	2.95	3.33	3.24	3.47	3.81	3.80
Total Working Capital Requirement	11.69	13.10	12.88	13.19	14.47	14.50
Rate of Interest (%)	12.10%	11.70%	12.05%	11.15%	10.40%	10.55%
Interest on Working Capital	1.41	1.53	1.55	1.47	1.50	1.53

Commission's Analysis and Ruling

4.7.4 The Commission has computed the interest on working capital as per principles specified in TERC MYT Regulations, 2015. With regards to the consideration of Receivables while calculating the Interest on Working Capital, the Commission has observed that there is no separate billing has been undertaken to the retail supply business and the operation of the entities has been undertaken as a single business

without any commercial arrangement. Therefore, considering Revenue as a component for calculation of working capital requirement for Generation, Transmission and Distribution function separately will result in double accounting and hence, no amount shall be allowed towards receivables, to the extent of supply of power by the Transmission Business to the Retail Supply Business, so as to avoid any double accounting and additional burden on the consumers.

4.7.5 As per Regulations 31 (III) of MYT Regulations 2015, the interest rate for computing loWC is considered as the weighted average SBI Base plus 300 basis points as on 1st April of the year for which tariff is determined and as specified in Table 28Table 30 of this order.

4.7.6 In view of the above, interest on working capital for transmission business approved for FY 2017-18 to FY 2022-23 is shown in the following Table:

Table 63:: Interest on working Capital for Transmission Business as approved by the Commission (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Receivables for 2 months	-	-	-	-	-	-
O&M Expenses for one month	1.78	1.88	1.97	1.90	1.98	2.09
Maint Spares @15% of O&M Expenses	3.20	3.38	3.55	3.41	3.56	3.76
Total Working Capital Requirement	4.98	5.25	5.52	5.31	5.54	5.84
Rate of Interest (%)	12.10%	11.70%	12.05%	11.15%	10.40%	10.55%
Interest on Working Capital	0.60	0.61	0.66	0.59	0.58	0.62

4.8 Return on Equity and Tax on Return on Equity

Petitioner's Submission

4.8.1 TSECL has submitted that in line with Regulations 26 of TERC MYT Regulations, 2015, Return on Equity is required to be computed at a base rate of 15.50% for transmission business.

4.8.2 Further, it is submitted that, the amount of equity base to be considered for calculation of return has been considered based on the relevant Regulation 21 of TERC MYT Regulations, 2015 as shown under:

“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.”

4.8.3 The Petitioner has submitted that the Commission in its past orders had considered equity base for the transmission 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.

- 4.8.4 Accordingly, the 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 transmission business is allocated based on gross fixed assets ratio.

Table 64: Calculation of Equity base for Transmission Business as per TSECL (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Equity fund (Allocated based on assets ratio)	150.84	151.06	149.89			
Average GFA	315.91	332.32	334.16	330.07	333.13	337.57
Normative Equity (30% of GFA)	94.77	99.70	100.25	99.02	99.94	101.27
Equity considered for RoE (Min of actual and normative)	94.77	99.70	100.25	99.02	99.94	101.27

- 4.8.5 With regards to the Income Tax, as per Clause 27 of TERC MYT Regulations, 2015, the Return on Equity is required to be grossed up with effective tax rate and is stated as below:

“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.

- 4.8.6 Additionally, the Petitioner has submitted that 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. Also, for projection purpose, The tax portion on Return on Equity has been claimed based on the MAT rate of 15% on the RoE figures.
- 4.8.7 Based on the above submission, the Return on Equity claimed by the Petitioner is outlined in the Table below:

Table 65: Calculation of RoE for Transmission Business as submitted by the Petitioner (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Normative Equity (30% of GFA)	94.77	99.70	100.25	99.02	99.94	101.27
Rate of Return (%)	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%
Return on Equity – Post Tax	14.69	15.45	15.54	15.35	15.49	15.70
Income tax Paid	1.91	1.71	1.93	0.49	2.32	2.35
Return on Equity - Pre Tax	16.60	17.17	17.46	15.83	17.81	18.05

Commission’s Analysis and Ruling

- 4.8.8 The computation of the Pre-tax Return on Equity considered by the Petitioner is after considering the actual tax paid as reflected in the account statements and divided in the ratio of paid up capital in the different business functions and for projection purpose, the Minimum Alternative Tax (MAT Rate) rate of 15% has been considered

for calculation of Tax RoE. However, based on the audited accounts made available for FY 2017-18 to FY 2019-20, it was observed that only provision of deferred tax was made with no impact highlighted in the current tax as specified in the profit and loss account. Therefore, the Commission has sought the supporting documents and income tax challan for the income tax paid for the respective years. TSECL replied that the actual tax payment made is zero i.e. no actual tax payment has been made, however, in future tax payment may arise if the accumulated losses are wiped out, hence the deferred tax provision has been made in the accounts. Accordingly, the submission made by TSECL in the Petitions that Pre-tax Return on Equity is calculated after considering the actual tax paid is erroneous and the petitioner should refrain from such submission in the next submission. Accordingly, the Commission has not considered any tax on RoE for truing up for FY 2017-18 to FY 2019-20.

- 4.8.9 Also, as per the accounts of FY 2019-20, huge accumulated loss of Rs. 390.61 Crore has been highlighted in the balance sheet, which will initially be adjusted against the profit for computation of tax as per the relevant provisions of the income tax act. Accordingly, the Commission feels that there is a probability that no income tax liability may arise in near future and hence the effective tax rate as specified in Regulations 27 of TERC MYT Regulations, 2015 is considered to be Zero for FY 2020-21 to FY 2023-23. Also, as per the Regulations, the actual tax paid in the financial year to be considered for calculation of effective tax rate. Since the actual Income tax paid for latest available FY 2019-20 is also zero, the same is considered for computation of tax on Return on Equity.

- 4.8.10 The relevant clause is stated as below:

27. Tax on Return on Equity:

1. The base rate of return on equity as allowed by the Commission under Clause 26 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 by the concerned generating company or the transmission/distribution licensee, as the case may be. The actual tax income on other income stream (i.e., income of non generation or non transmission /distribution business, as the case may be) shall not be considered for the calculation of "effective tax rate" computed as per the formula given below:

$$\text{Rate of pre-tax return on equity} = \text{Base rate} / (1-t)$$

- 4.8.11 Therefore, the computation of Pre-Tax Return on Equity by Petitioner is not in line with the MYT Regulations 2015 and is recomputed by the Commission as outlined below to be considered for calculation of RoE for FY 2017-18 to FY 2019-20:

Table 66: Approved Pre-tax Return on Equity for Transmission business (%)

Sr. No.	Particulars	RoE
A.	Return on Equity as per norms	15.50%
B.	Effective Tax Rate	0.00%
C.	Pre-tax Return on Equity $[A/(1-B)]$	15.50%

- 4.8.12 However, the Commission states that the effective tax rate for FY 2020-21 to FY 2022-23 would be reviewed during the True Up proceedings depending on actual tax paid by the Petitioner under Corporate Tax or MAT regime and as specified in the audited Financial statement.
- 4.8.13 Regulation 26 of TERC MYT Regulations, 2015 specifies for computation of Return on Equity for Control period. Further, Regulation 21 of TERC MYT Regulations, 2015 specifies for computation debt equity and limited the amount of equity to 30% of GFA after excluding the consumer contribution or grant.
- 4.8.14 The Commission in previous Chapter of this Order has adopted a certain principle for computation of Regulatory equity, in absence of assets register and after considering the consumer contribution/grant. For computing the equity capital, the Commission has considered the same principle for the Control period.
- 4.8.15 As discussed in earlier chapter, the equity capital has been computed as 30% of Gross Fixed assets after excluding consumer contribution/grant. However, the segregated details of consumer contribution/grant are not available at this stage before the Commission, hence, the Commission applies the uniform percentage of consumer contribution/grant across generation, transmission and distribution business for FY 2017-18 to FY 2019-20. Also, the derived capital grants towards GFA of FY 2019-20 has been considered for FY 2020-21 to FY 2022-23 for projection purpose. The contribution of Capital Grants towards GFA from FY 2020-21 to FY 2022-23 will be reviewed by the Commission at the time of final true-up based on the audited accounts.
- 4.8.16 The detailed calculation of Equity base as approved by the Commission is outlined in the following table:

Table 67: Equity Base for Transmission for FY 2017-18 to FY 2022-23 approved by the Commission (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
As per Balance Sheet of TSECL						
GFA	1,450.01	1,479.14	1,489.22			
CWIP	119.54	167.24	246.65			
Capital Grant	634.59	689.51	709.47			
Capital Grant towards GFA	586.26	619.47	608.66			
Capital Grant towards GFA (%)	40.43%	41.88%	40.87%	40.87%	40.87%	40.87%
Calculation of Equity Base of Transmission Business						
Opening GFA	152.08	177.29	184.89	180.98	176.70	187.10
Closing GFA	177.29	184.89	180.98	176.70	187.10	185.60
Average	164.68	181.09	182.93	178.84	181.90	186.35
Capital Grant towards GFA	66.58	75.84	74.77	73.09	74.34	76.16
Equity base for RoE calculation	29.43	31.57	32.45	31.72	32.27	33.06

- 4.8.17 The Petitioner has not considered any interest on Loan in the tariff Petition and hence the Commission has also not computed the same.
- 4.8.18 Based on the approach as adopted by the Commission, the approved Equity base of Transmission business is considered for calculation of Pre-Tax Return on Equity as

specified in Table 66 of this Order. The approved Return on Equity is calculated as per Regulations 26 and 27 of TERC MYT Regulations, 2015 and is outlined in the following table:

Table 68: Return on Equity for Control Period for Transmission Business as approved by the Commission (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Equity Base for the year	29.43	31.57	32.45	31.72	32.27	33.06
Pre-tax RoE	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%
Return on Equity	4.56	4.89	5.03	4.92	5.00	5.12

4.9 Non-Tariff Income

Petitioner's Submission

- 4.9.1 The Petitioner has submitted that 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. The figure submitted for FY 2017-18 to FY 2019-20 are based on the figures derived from division wise account statement. Also, the figures for FY 2019-20 and FY 2022-23 have been derived based on the previous years' trend.
- 4.9.2 Further, for FY 2017-18, the Petitioner has stated that the figures for FY 17-18 have been studied from the consolidated account statements which was found to around 5000 /-, hence in valuation it is almost negligible and hence considered as NIL. Also, the non-tariff income in FY 2019-20 was slightly higher due to booking of prior period items on account of adjustment in depreciation.

Table 69: Non-Tariff Income for Transmission Business as per Petitioner for FY 2017-18 to FY 2022-23 (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Non-Tariff Income	0.01	-	0.07	0.39	0.23	0.27

Commission's Analysis and Ruling

- 4.9.3 As per Regulations 23 of TERC MYT Regulations, 2015, Non-Tariff income is required to be deducted to arrive at the Annual Fixed Charges of the Transmission business.
- 4.9.4 The Petitioner has submitted that it has not segregated the account statements for generation, transmission and distribution business completely and the allocation has been undertaken based on certain principles, wherever necessary for ARR and tariff calculation. This has been undertaken 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.
- 4.9.5 The Petitioner has provided the details of consolidated amount of the Non-Tariff

Income with providing break-up of the same component wise and has reconciled the same with the available audited. However, though provisional accounts for FY 2020-21 has been provided by TSECL, no bifurcation has been provided on the Non-Tariff income booked for different function wise. The Commission in the said order, approves the Non-Tariff Income of Transmission Function as proposed by the Petitioner for the purpose of truing up of FY 2017-18 to FY 2019-20.

- 4.9.6 With regards to the FY 2020-21 to FY 2022-23, the Petitioner has considered the provisional actual number for FY 2020-21 to FY 2021-22 and the past 5 year average for FY 2022-23. However, there was an error while computing the average of Non-tariff income for FY 2022-23 and hence the Commission has redetermine the same considering the past 5 year average of actual Non-Tariff as proposed and approved for FY 2017-18 to FY 2021-22.

Table 70: Non-Tariff Income for Transmission Business for FY 2017-18 to FY 2022-23 approved by Commission (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Non-Tariff Income	0.01	-	0.07	0.39	0.23	0.14

4.10 Summary of True-up for FY 2017-18 to FY 2019-20 and ARR for FY 2020-21 to FY 2022-23 for Transmission Business

- 4.10.1 The Commission has approved the Annual Revenue Requirement for each Year of the MYT Control Period i.e. from FY 2016-17 to FY 2020-21 whereby truing up was undertaken for FY 2016-17 in Case No. 4 of 2020 vide order dated 01 September 2020 as outlined below:

Table 71: Aggregate Revenue Requirement for Transmission Business approved for FY 2016-17 to FY 2020-21 in Case No. 4 of 2020 (Rs. Crore)

Sl. No.	Particulars	Units	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21
			Approved by Commission				
A	Fixed Charge						
1	O & M Expenses	Rs. Crore	18.32	20.45	21.33	22.54	23.86
2	Depreciation	Rs. Crore	3.18	3.20	3.19	3.23	3.29
3	Interest on Working Capital Loans	Rs. Crore	0.53	0.58	0.58	0.63	0.62
4	Return on Equity	Rs. Crore	4.18	4.35	4.32	4.36	4.44
5	Total Fixed Charge	Rs. Crore	26.21	28.58	29.42	30.76	32.21
6	Less: Non-Tariff Income	Rs. Crore	0.06	0.00	0.03	0.03	0.03
7	Total Cost	Rs. Crore	26.16	28.58	29.39	30.73	32.18
B	Total unit transmitted or wheeled	MUs					1114.06
C	Transmission Charge	Paisa/kwh					28.88

- 4.10.2 Based on the approval of various components of the ARR, the Commission has undertaken the truing up exercise for FY 2017-18 to FY 2019-20 as elaborated above in accordance with the tariff Regulations and justification, the Commission approves Annual Fixed Cost (AFC) in the determination of Aggregate Annual Revenue Requirement process.
- 4.10.3 Also, the Commission has undertaken the exercise for determination of ARR for FY 2020-21 and MYT period of FY 2021-22 to FY 2022-23 based on approval of various ARR Components, as elaborated above in accordance with the tariff Regulations and justification. The Commission has accordingly approved the Annual Fixed Charges (AFC) in the determination of Revenue Requirement process for the said purpose.
- 4.10.4 Considering the FY 2017-18 to FY 2019-20, since the audited accounts were available, the Commission has calculated AFC considering the truing up of various components which is recoverable at Target Normative Annual Transmission System Availability Factor, as specified in Regulations 39 of MYT Regulations 2015.
- 4.10.5 The Commission notes that, the actual Availability of the Transmission system is not provided by TSECL. The Commission with an apprehension has approved the total recovery of AFC and direct Petitioner to provide actual Transmission System Availability along with SLDC certificate and Normative Annual Transmission System Availability Factor (NATAF) for the MYT Control period in the next tariff petition filing process.
- 4.10.6 Based on the above analysis, the submitted and approved Annual Revenue Requirement for truing up year of FY 2017-18 to FY 2019-20 and for FY 2020-21 to FY 2022-23 is shown in the Table below:

Table 72: Aggregate Revenue Requirement for Transmission Business for FY 2017-18 to FY 2022-23 as submitted by the Petitioner (Rs. Crore)

S. No.	Particulars	Units	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
			Truing Up			ARR	MYT Control Period	
A	Fixed Charge							
1	O & M Expenses	Rs. Crore	19.65	22.23	21.58	23.14	25.41	25.35
2	Depreciation	Rs. Crore	4.94	6.55	6.56	6.71	6.77	6.83
3	Interest on Working Capital Loans	Rs. Crore	1.41	1.53	1.55	1.47	1.50	1.53
4	Return on Equity	Rs. Crore	16.60	17.17	17.46	15.83	17.81	18.05
5	Total Fixed Charge	Rs. Crore	42.60	47.48	47.16	47.15	51.49	51.76
6	Less: Non-Tariff Income	Rs. Crore	0.01	-	0.07	0.39	0.23	0.27
7	Total Cost	Rs. Crore	42.59	47.48	47.09	46.76	51.26	51.49
B	Total unit transmitted or wheeled	MUs	1,269.82	1,284.19	1,462.46	1,460.72	1,424.87	1,380.22
C	Transmission Charges	Paisa/kwh	33.54	36.97	32.20	32.01	35.97	37.31

Table 73: Aggregate Revenue Requirement for Transmission Business for FY 2017-18 to FY 2022-23 approved by the Commission (Rs. Crore)

S. No.	Particulars	Units	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
			Truing Up			ARR	MYT Control Period	
A	Fixed Charge							
1	O & M Expenses	Rs. Crore	19.65	22.23	21.58	22.74	23.75	25.04
2	Depreciation	Rs. Crore	2.57	3.57	3.59	5.02	5.11	5.20
3	Interest on Working Capital Loans	Rs. Crore	0.60	0.61	0.66	0.59	0.58	0.62
4	Return on Equity	Rs. Crore	4.56	4.89	5.03	4.92	5.00	5.12
5	Total Fixed Charge	Rs. Crore	27.39	31.31	30.87	33.27	34.44	35.98
6	Less: Non-Tariff Income	Rs. Crore	0.01	-	0.07	0.39	0.23	0.14
7	Total Cost	Rs. Crore	27.39	31.31	30.80	32.88	34.21	35.84
B	Total unit transmitted or wheeled	MUs						1,340.69
C	Transmission Charges	Paisa/kwh						26.73

Note: The Commission has determined Transmission Charge for in Paisa/kWh only for FY 2022-23.

4.10.7 Based on the Annual Fixed Charges as approved above and in line with Regulations 34 (I) of MYT Regulations 2015, transmission charges are required to be recovered on monthly basis from the Transmission System User.

5 Truing up of ARR for FY 2017-18 to FY 2019-20, APR of FY 2020-21 and ARR of FY 2021-22 and FY 2022-23 for Distribution Business

5.1 Background and Approach

- 5.1.1 The Commission in its Order dated 01 September 2020 in Case No. 4 of 2020 and 5 of 2020 has approved Truing-up for FY 2013-14 to FY 2016-17 and ARR for FY 2017-18 to FY 2020-21 with Generation, Transmission and Retail Tariff determination of FY 2020-21. The Tariff Order for determination of tariff for FY 2021-22 was not issued, hence, the same tariff approved for FY 2020-21 was continued for FY 2021-22 as well.
- 5.1.2 The TERC Tariff Regulations, 2015 provides for truing-up of all the parameters of ARR at the end of each year based on the audited annual accounts and prudence check by the Commission. The Commission has conducted the truing-up for ARR for FY 2017-18 to FY 2019-20 based on the audited annual accounts submitted by TSECL for the said period.
- 5.1.3 In compliance of the regulatory obligation, TSECL has filed True-Up Petition for FY 2017-18 to FY 2019-20 for Generation business, Transmission and Distribution & Retail Supply business separately. The audited accounts of the respective years along with the audit report is submitted as an Annexure along with the petition
- 5.1.4 It is noted that, TSECL has not yet segregated the account statements for Generation, Transmission and Distribution business and the same is under work in progress. However, TSECL in its Petition has provided the break-up of costs in generation, transmission and distribution business, wherever necessary for ARR and tariff calculation, based on the division wise break-up of account statements and making suitable assumptions, as necessary, for the common functions like Accounts & 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. Accordingly, the Commission has relied upon the said submission related to function-wise data submitted by TSECL along with replies to data gaps submitted by TSECL for truing-up of FY 2017-18 to FY 2019-20.
- 5.1.5 The Petitioner has submitted the statutory audit of the account statements for FY 2017-18 to FY 2019-20 and submitted that the statutory audit of FY 2020-21 and FY 2021-22 was still under process. The Commission has relied on the TERC MYT Regulations, 2015 for truing up of all the parameters of ARR at the end of each year based on the audited accounts and prudence check by the Commission.
- 5.1.6 Also, the instant petition has been filed considering the projection of data based on the actual data of past years and norms as specified in TERC MYT Regulations, 2015, as applicable for determination of ARR for MYT Period of FY 2020-21 to FY 2023-24. However, the Commission has considered the MYT period till FY 2022-23

as discussed Chapter 1 of this order.

- 5.1.7 It is noted that, there has been delay in filing MYT Petition by the Petitioner. As on date the audited accounts for FY 2019-20 are available and submitted before the Commission, hence, in the present Chapter, the Commission has undertaken the true-up for FY 2017-18 to FY 2019-20 and determines the ARR for the remaining years of the Control period based i.e. FY 2020-21 to FY 2022-23, on the projections and applicable norms as specified in MYT Regulations 2015.
- 5.1.8 The Commission would like to state that even though FY 2020-21 is completed at the time of filing of the petition, the Petitioner has not provided any actual performance of the same and has submitted the ARR based on the past performance and applicable norms of TERC MYT Regulations, 2015. Also, in replies to the data gaps, has just submitted the annual accounts without segregation of the data into function wise viz., Generation, Transmission and Distribution. Also, the delay in completion of the audit for FY 2020-21 is unacceptable and needs to be completed within the time frame as provided in the Companies Act. The Commission has provided necessary direction for completion of the audit and the timeframe for the same in the relevant chapter of this tariff order.
- 5.1.9 Considering the details provided and additional information obtained during these proceedings, the Commission has undertaken the prudence check for approval of each expenditure and determination of Revenue Requirement of TSECL Distribution Business for the FY 2017-18 to FY 2022-23 as set out below:

5.2 Energy Sales

Petitioner's Submission

Consumer Profile

- 5.2.1 The Petitioner in the true-up petition has provided the details of cumulative sales for the FY 2017-18 to FY 2019-20. However, vide its replies to the data gaps, the Petitioner has provided the actual category wise sales and its revenue for FY 2017-18 to FY 2019-20. Further it also submitted that there has been a rapid increase in RGGVY/Kuti Jyoti connections due to the implementation of various rural electrification schemes like RGGVY, DDUGJY and Saubhagaya scheme (of late).
- 5.2.2 Also, with regards to the projection for FY 2020-21 to FY 2022-23, the Petitioner has projected the actual provisional sales for FY 2020-21 and projection based on past sales trend for FY 2021-22 to FY 2022-23. As per TSECL, it has been observed that the growth rate in Tripura over the last few years has been slow owing to various demand side management measures, use of energy efficient appliances, slow growth of industries and increase in prosumers. This trend is expected to continue for the next 2 years and as such the growth rates have been taken based on the past trends.
- 5.2.3 Further TSECL has submitted that in the instant petition, TSECL has proposed some

tariff provisions to incentivize growth of industries and promote increase industrial consumption in the state. This would not only help the development and economic growth in the state but also help TSECL improve its HT:LT ratio of sales, reduce losses and improve revenue. Based on the approval from TERC and subsequent response, the future trajectory of sales may be taken accordingly in the next MYT period of corrections, if any, may be done during the true up of the future years.

- 5.2.4 Accordingly, based on the past trend, the growth rate and basis of the same, considered by TSECL for each category of consumers is outlined as below:

Table 74: Growth rate for projection of sales Category wise - by TSECL

Sr. No	Category of Consumers	Growth Rate	Basis
1.	Domestic	2.65%	3 year CAGR
2.	Public lighting	-0.06%	2 year CAGR
3.	Commercial	0.24%	1 year CAGR
4.	Irrigation & Water	5.14%	3 year CAGR
5.	Public water works	5.28%	3 year CAGR
6.	Industries	4.09%	3 year CAGR
7.	MOBILE TOWER	-0.06%	2 year CAGR
8.	Bulk supply	-1.26%	2 year CAGR
9.	Tea Garden	29.30%	3 year CAGR
10.	Kutirjyoti	17.03%	3 year CAGR

- 5.2.5 Accordingly, the Petitioner has submitted the actual category wise energy sales for FY 2017-18 to FY 2020-21 and projected the Sales for FY 2022-23 based on the past trends applying the growth rate as outlined in the table above. Accordingly, the category wise actual sales for FY 2017-18 to FY 2020-21 and projected sales for FY 2021-22 to FY 2022-23 are shown in the following table:

Table 75: Category-wise Sales submitted by TSECL (MU)

S. No.	Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
		Truing Up			ARR	MYT Control Period	
1	Kutir Jyoti	10.69	16.87	20.44	17.13	20.04	23.46
2	RGGVY	527.97	470.06	510.64	571.09	586.24	601.78
3	Domestic						
4	Commercial	75.40	57.20	71.83	72.00	72.17	72.34
5	Irrigation	32.69	31.67	34.38	38.00	39.95	42.00
6	Public water works	65.08	62.03	66.48	75.95	79.96	84.18
7	Industries	46.71	40.10	40.12	43.44	45.22	47.07
8	Tea, Coffee & Rubber Garden	1.29	1.45	2.35	2.80	3.62	4.68
9	Bulk supply	90.92	102.09	90.81	87.54	86.44	85.35
10	Public Lighting	47.85	53.73	47.79	46.07	46.04	46.01
11	Mobile Towers	29.42	33.03	29.38	28.32	28.31	28.29
12	Total Intra-State sale of power	928.03	868.23	914.22	982.33	1,007.98	1,035.17

Commission's Analysis and Ruling

- 5.2.6 The Commission notes that the Petitioner has submitted the actual energy sales for the period from FY 2017-18 to FY 2019-20 vide replies to the data gaps and has not submitted in the true-up petition. 6-17 to FY 2018-19. Further, energy sales for FY 2019-20 and FY 2020-21 have been projected. The Commission observes that, energy sales during FY 2018-19 are reduced around by 6.4% over previous year. TSECL has projected the provisional energy sales for FY 2020-21 and energy sales for FY 2021-22 to FY 2022-23 are projected based on CAGR growth rate considered in Table 74.
- 5.2.7 The Commission has considered the actual energy sales for FY 2017-18 to FY 2020-21 as submitted by the Petitioner. For projecting the energy sales for remaining years of the Control Period, the actual energy sales for FY 2020-21 has been considered as base data and the growth rate is applied on the same for projection purpose.
- 5.2.8 For projecting the energy sales, the Commission has analysed the growth rate for different period as shown in the following Table and accordingly has approved the Growth rate category wise:

Table 76: CAGR computed by the Commission

S. No.	Particulars	CAGR				
		5 Yr	3 Yr	YoY	TSECL	Approved
1	Kutir Jyoti	12.51%	15.08%	-16.20%	17.03%	15.08%
2	RGGVY	0.00%	0.00%	0.00%	0.00%	0.00%
3	Domestic	5.36%	5.50%	11.84%	2.65%	5.50%
4	Commercial	-0.82%	-5.10%	0.24%	0.24%	0.24%
5	Irrigation	2.07%	-0.44%	10.52%	5.14%	5.14%
6	Public water works	-0.62%	-4.77%	14.24%	5.28%	5.28%
7	Industries	0.20%	-3.47%	8.29%	4.09%	4.09%
8	Tea, Coffee & Rubber Garden	20.72%	31.70%	19.16%	29.30%	31.70%
9	Bulk supply	2.69%	0.58%	-3.61%	-1.26%	0.58%
10	Public Lighting	2.69%	0.58%	-3.61%	-0.06%	0.71%
11	Mobile Towers	2.69%	0.58%	-3.61%	-0.06%	0.58%

- 5.2.9 From the above table, the growth rate for most of the consumer categories works out to be similar to the proposed growth rate of TSECL except for few categories. It has been noticed that TSECL has proposed the negative growth rate for certain categories due to YoY negative trend which may be due to the COVID pandemic and lockdown Impact. The Commission is of view that TSECL has adopted the conservative approach for projection of energy sales for FY 2021-22 to FY 2022-23, without considering the ground realities and impact of relaxation of lockdown in the State. Therefore, the Commission has tried to normalise the same considering the relaxation in the COVID norm at present and will be reviewed at the time of truing up of the respective years.
- 5.2.10 With respect to number of consumers and connected load of each category of consumers, TSECL has not provided any rationale on the projection of the Number

of consumers and connected load and no reference of the same was also provided in true-up petition for FY 2017-18 to FY 2019-20. The Commission has considered the similar logic as provided in para 5.2.7 and 5.2.8 for projection purpose for number of consumers and connected load and is outlined in the following table:

Table 77: Category wise Number of Consumers and Connected Load approved by Commission for FY 2021-22 to FY 2022-23

S. No.	Particulars	FY 2021-22	FY 2022-23	FY 2021-22	FY 2022-23
		No. of Consumers - No		Connected Load - KW	
1	Kutir Jyoti	80,207	85,070	11.28	14.01
2	RGGVY	-	-	-	-
3	Domestic	8,21,975	8,94,670	218.77	244.83
4	Commercial	80,892	87,890	61.38	69.67
5	Irrigation	7,784	8,343	28.99	31.57
6	Public water works	7,836	8,444	62.68	67.55
7	Industries	6,101	6,464	119.60	133.21
8	Tea, Coffee & Rubber Garden	51	55	1.00	1.08
9	Bulk supply	1,419	1,588	45.40	50.81
10	Public Lighting	3,295	3,853	14.20	17.21
11	Mobile Towers	1,687	1,800	15.29	15.40

5.2.11 Based on the above analysis, the energy sales approved by the Commission for the Period from FY 2017-18 to FY 2022-23 are shown in the following Table:

Table 78: Category-wise Sales approved by the Commission (MU)

S. No.	Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
		Truing Up			ARR	MYT Control Period	
1	Kutir Jyoti	10.69	16.87	20.44	17.13	19.71	22.68
2	RGGVY	527.97	470.06	510.64	571.09	602.49	635.62
3	Domestic						
4	Commercial	75.40	57.20	71.83	72.00	72.17	72.34
5	Irrigation	32.69	31.67	34.38	38.00	39.95	42.00
6	Public water works	65.08	62.03	66.48	75.95	79.96	84.18
7	Industries	46.71	40.10	40.12	43.44	45.22	47.07
8	Tea, Coffee & Rubber Garden	1.29	1.45	2.35	2.80	3.69	4.85
9	Bulk supply	90.92	102.09	90.81	87.54	88.04	88.55
10	Public Lighting	47.85	53.73	47.79	46.07	46.33	46.60
11	Mobile Towers	29.42	33.03	29.38	28.32	28.49	28.65
12	Total Intra-State sale of power	928.03	868.23	914.22	982.33	1,026.05	1,072.55

5.3 Distribution Loss

Petitioner's Submission

5.3.1 The Petitioner has submitted the actual Distribution loss of FY 2017-18 to FY 2019-20, provisional loss for FY 2020-21 and projected the distribution loss for FY 2021-22 to FY 2022-23 as shown in the following Table:

Table 79: Distribution and T&D Loss from FY 2017-18 to FY 2022-23 (%)

S. No.	Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
		Truing Up			ARR	MYT Control Period	
1	Distribution Loss - Approved	26.42%	32.55%	17.02%			
2	Distribution Loss - TSECL	22.25%	28.08%	33.71%	28.46%	24.74%	20.21%
3	T&D Loss - Target to achieve	22.00%	22.00%	22.00%			
4	T&D Loss - Approved in last order	30.61%	36.52%	22.00%			
5	T&D Loss - as per TSECL	26.92%	32.39%	37.49%	32.75%	29.26%	25.00%

- 5.3.2 For FY 2017-18 and FY 2018-19, the Petitioner has submitted that it may be observed that TSECL has actually improved upon its performance in terms of T&D losses from approved figures and as such, TSECL requests the Commission to approved the actual T&D loss as shown above and not claim any reduction in power purchase cost since the same is actual and uncontrollable cost on part of TSECL.
- 5.3.3 With respect to FY 2019-20, as per Petitioner, it may be observed that T&D losses is 37.49% as against the approved 22.00%. The increased losses for FY 2019-20 can be attributed to the impact of Saubhagya and DDUGJY electrification scheme, due to this schemes, household rural electrification has been increased, thereby increasing the accounted energy and also increase in commercial losses. Also, the approved figure for FY 19-20 was on provisional basis.
- 5.3.4 Further, TSECL submitted that high level of T&D loss, is due to increase in the LT:HT ratio as a result of extensive village electrification, new service connection in remote areas over the years, huge increase in the last mile connectivity and LT network etc. During this period, the State has also seen a number of severe gayles and thunderstorms resulting in damage to the electrical network and increasing load on the electrical network thereby increasing technical losses. TSECL has been suffering from old ageing and overloaded assets like transformers/lines due to limited investment in strengthening and upgradation of distribution network particularly in HT network of 33 kV and 11 kV.
- 5.3.5 However, TSECL submitted that, it is making sincere efforts in electrifying the un-electrified areas of the State at a fast pace under grants and loans provided by the Rural Electrification Corporation (REC) under the Rajiv Grandhi Gramin Viduyatikaran Yojna (RGGVY) and Saubhagya Scheme. TSECL has provided the electricity to the far flung areas and villages to of the Tripura State through the implementation of these scheme. At the same time, due to increase in the LT network and the domestic and Kutir Jyoti consumers, the losses are also increasing at considerable pace. According to TSECL, through different loss reducing measures and schemes, the TSECL has remained successful to contain the losses at the level mentioned in the Petition.
- 5.3.6 Also, In the past few years, TSECL has made limited investments in its distribution network for modernization, system improvement and loss reduction. However, now, TSECL is implementing large system improvement schemes under ADB funding as well as under the GoI scheme of RDSS (Revamped Distribution Sector Scheme) to

reduce losses and the effect of such measures is expected to gradually reflect in the performance of T&D losses. As such, for future years, TSECL has undertaken a target of reduction of almost 8% in next 2 years and achieve T&D target of 22% by FY 24.

- 5.3.7 Accordingly, in light of above made submission, Petitioner has requested the Commission to approve the Distribution losses of the TSECL as submitted in the Petition.

Commission's Analysis and Ruling

- 5.3.8 The Commission notes that, TSECL has considered the actual Distribution Loss for FY 2017-18 to FY 2020-21 and projected T&D loss for FY 2021-22 to FY 2022-23. The Commission notes that, in past Orders, it has been approving T&D loss for TSECL. There is no segregation of Transmission and Distribution Loss. However, from the last tariff order onwards, TSECL has submitted the separate transmission and distribution loss and accordingly, the commission has also approved the segregated Transmission and Distribution loss. Further, while segregating the T&D loss into Transmission Loss and Distribution loss, TSECL has considered the Transmission loss of 6% and balance is considered to be distribution loss.
- 5.3.9 The Commission notes that TSECL has signed UDAY MoU with Government of Tripura and Government of India, wherein target for T&D loss reduction has been agreed. The targets T&D losses under UDAY MoU are 26.30% for FY 2016-17, which subsequently reduced to 14.60% by FY 2018-19. Further, it is observed that, the target stipulated under UDAY scheme has not been met by TSECL.
- 5.3.10 Based on the query raised by the Commission for not achieving the target T&D Loss as per UDAY Scheme, TSECL has replied that In UDAY scheme, the T&D losses and AT&C losses were calculated in a different methodology with the assumption that the sale to Bangladesh is a sale of power within the state (since it is done from the intra state transmission network) and as such, the sale to Bangladesh was considered as part of both input energy and sales. However, in the above figures of actual performance, the sales to Bangladesh has been removed from the net input energy itself and as such, the figures above are more than the UDAY targets.
- 5.3.11 The Commission feels that the UDAY scheme clearly stated that AT&C losses above 15% won't be compensated through tariffs and the objective of the scheme was to reduce the AT&C loss to PAN India levels of 15%. It is a clear mandate by the Central Government that Consumer should not be asked to pay the price of inefficiencies of the Discom, therefore AT&C Losses in excess of 15% shall not be passed on to the consumers but shall be borne by Discom. However, the target to achieve this AT&C loss of 15% as per UDAY Scheme was by FY 2018-19 and still the Commission has approved the T&D Loss of 22% for FY 2016-17 to FY 2018-19 which has not been achieved by TSECL and such inefficiencies cannot be passed on to the consumers.

5.3.12 The Commission is of view that, four (4) years of the Control Period are already over. Hence, stipulating the same target for years would not be prudent. However, since the actual bifurcation of transmission and distribution loss is not available due to absence of complete voltage wise metering and calculation of losses, the Commission at present approves the same target of 22% of T&D Losses for FY 2017-18 to FY 2019-20 and 20% for FY 2020-21 as approved in the tariff order dated 1 September 2020. Also, for FY 2021-22, T&D loss of 20% is approved as the financial year is completed and such improvement cannot be foreseen now. Also, half of the FY 2022-23 is over and therefore, the Commission has approved the 20% for FY 2022-23 also. However, the target T&D loss for FY 2023-24 would be 18%.

5.3.13 The T&D loss approved by the Commission for FY 2017-18 to FY 2022-23 is shown in the following Table:

Table 80: T&D Loss from FY 2017-18 to FY 2022-23 approved by the Commission (%)

S. No.	Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
		Truing Up			ARR	MYT Control Period	
1	T&D Loss - as per TSECL	26.92%	32.39%	37.49%	32.75%	29.26%	25.00%
2	T&D Loss - Approved	22.00%	22.00%	22.00%	20.00%	20.00%	20.00%

5.4 Energy Balance

Petitioner's Submission

5.4.1 TSECL procures power both from the central generating stations of NTPC, NEEPCO, OTPC and NTPC as well as from State owned generating stations. 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.

5.4.2 The Petitioner has submitted the Energy Balance based on the actual Power Purchase, Sales and T&D Loss for FY 2017-18 to FY 2020-21. However, the same has been projected for FY 2021-22 to FY 2022-23.

5.4.3 Additionally, the Petitioner has submitted that presently it has an agreement for sale of power to Bangladesh sale till the end of FY 2025-26 and as such, the same has been considered in the projections. However, the energy balance and financial projections for TSECL is expected to be heavily impacted if the sale to Bangladesh does not continue further beyond FY 2025-26 and the gap between cost and revenue will increase significantly in such a scenario. Therefore, TSECL has requested the Commission to assess the dynamic situation based on the sale to Bangladesh while approving the ARR projections of TSECL.

5.4.4 In addition to the above submission, TSECL has submitted that in the PoC

mechanism, the transmission losses are calculated as the sum of the losses applicable at the injection point and the losses applicable at the withdrawal point. The Regional Load Dispatch Centre also published the weekly average transmission loss of a region on its website for each year and also for the last week which is used by the stakeholders for calculation of transmission losses, calculation of transmission charges and billing of energy and energy management. This report clearly states the regional transmission losses to be in the range of 2.5-3.5% on an average basis for the last few years (as against 1-1.5% losses considered by the Commission in the last tariff order). The actual value of interstate transmission loss based on total of injection loss and withdrawal loss for FY 2017-18 to FY 2019-20 has been computed and provided in the energy balance submission. Because of this, the surplus quantum of energy not sold or lost in the system (due to the difference of approved and actual losses) is coming higher. As such, the Commission is requested to correct this error and consider the average inter-state transmission losses in the NER region as provided by TSECL in its tariff petition (this is the average cumulative losses in the region including the losses at injection point and drawl point).

5.4.5 Based on the above submission, the Petitioner has submitted the Energy Balance for FY 2017-18 to FY 2022-23 as shown in the following table:

Table 81: Energy Balance for FY 2017-18 to FY 2022-23 as submitted by the Petitioner

Power Purchase Data	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Energy from CGS	2,321.22	2,545.20	2,415.30	2,421.21	2,552.07	2,411.81
Inter State Sales	1,709.29	1,880.45	1,619.99	1,456.13	1,717.62	1,682.38
Energy Trading	10.863	0.336	-			
Energy Swapping	1.384	5.082	-			
DSM	76.135	106.262	103.87	77.06	61.45	61.45
Sale to Mizoram	41.264	41.604	57.23	47.4	49.36	49.36
Sale to Manipur	41.264	41.571	57.39	47.12	49.78	49.78
IEX	595.928	679.679	347.6	281.99	551.97	516.73
Bangladesh Sale	942.451	1005.92	1,053.90	1,002.56	1,005.05	1,005.05
Inter-State Transmission Loss	3.68%	3.02%	3.38%	3.47%	3.31%	3.31%
Inter State Transmission Loss	85.34	76.79	81.71	84.08	84.58	79.93
Power Purchase from Other Sources	113.44	53.25	44.13	37.58	121.92	121.92
ISGS Energy at State Bus	640.03	641.21	757.72	918.59	871.79	771.42
Energy from State Generation	629.78	642.98	704.74	542.13	553.08	608.81
Energy at State Bus	1,269.82	1,284.19	1,462.46	1,460.72	1,424.87	1,380.22
Intra State Transmission Loss	76.189	77.05	83.34	87.64	85.49	82.81
Intra State Transmission Loss (%)	6.00%	6.00%	5.70%	6.00%	6.00%	6.00%
Energy at 11 kV level	1,193.63	1,207.14	1,379.12	1,373.07	1339.37	1297.41
Energy Sales	928.028	868.23	914.22	982.33	1,007.98	1,035.17
Distribution Loss	265.6	338.91	464.9	390.74	331.39	262.24
Distribution Loss (%)	22.25%	28.08%	33.71%	28.46%	24.74%	20.21%
T&D Loss (%)	26.92%	32.39%	37.49%	32.75%	29.26%	25.00%

*-Revised as per additional submission

Commission's Analysis and Ruling

- 5.4.6 For the purpose of computing energy balance, the Commission has considered actual energy purchase for FY 2017-18 to FY 2019-20. For FY 2020-21, the Commission has considered the energy purchase/availability as submitted by the Petitioner. For FY 2021-22 to FY 2022-23, the Commission has considered the source wise energy availability as submitted by the Petitioner. However, the additional energy availability on account of reduced target T&D loss has been considered as energy sale through Trading.
- 5.4.7 With respect to the submission of TSECL on PoC loss, it has specified on the report which clearly states the regional transmission losses to be in the range of 2.5-3.5% on an average basis for the last few years, however the report of the same was not submitted by TSECL to support their claim. The Commission has collated the data of inter-state transmission loss from the POSOCO website and analysed the data of loss provided on weekly basis and has average out for the respective Financial Year. Also, it has been noticed that post November 2020, the Hon'ble CERC has revised the computation of PoC losses as per CERC (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2020 notification No. L-1/250/2019/CERC dated 4th May-2020 and has come into force w.e.f. 01st November 2020 vide notification dated 08th August-2020. The new regulations has replaced the extant CERC Regulations (notified in 2010), which has been in effect since July 2011 and modify the existing point of connection (PoC) mechanism of tariff computation. As per POSOCO's guidelines, Inter State Transmission System transmission loss will be calculated on PAN India basis by NLDC for each week. Based on the Transmission loss computed by POSOCO for FY 2017-18 to FY 2021-22, the Commission has considered the following Inter State Transmission Loss as declared by POSOCO and Loss of FY 2021-22 has been considered for FY 2022-23.

Table 82: Inter State Transmission Loss approved by Commission (%)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
As per TSECL	3.68%	3.02%	3.38%	3.47%	3.31%	3.31%
Approved by Commission	0.54%	0.58%	0.38%	1.70%	3.35%	3.35%

- 5.4.8 It was also observed that there was a data arithmetical error while submitting the energy balance by TSECL whereby either Energy procured from CGS doesn't reconcile with the overall energy procurement source wise or Gross Energy was considered from State Generating Station rather than Net Energy. Also, no basis of calculation of intra-State Transmission loss was provided resulting in 5.70% intra State transmission loss against the proposed loss of 6%. Such type of data inconsistency has been rectified by the Commission while approving the Energy balance for FY 2017-18 to FY 2022-23.

5.4.9 Based on the approved energy sales, target T&D loss and Tripura Drawl-ISTS POC loss, the Commission approves the energy balance as shown in the following Table:

Table 83: Energy Balance for FY 2017-18 to FY 2022-23 as approved by the Commission (MU)

Power Purchase Data	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Energy from CGS	2,305.78	2,545.20	2,415.30	2,362.14	2552.07	2411.81
Inter State Sales	1,709.29	1,880.45	1,619.99	1,456.13	1,878.79	1,714.88
Energy Trading	10.86	0.34	-	0	161.17	58.71
Energy Swapping	1.38	5.08	-	0	0	0
DSM	76.14	106.26	103.87	77.06	61.45	-
Sale to Mizoram	41.26	41.60	57.23	47.40	49.36	49.36
Sale to Manipur	41.26	41.57	57.39	47.12	49.78	49.78
IEX	595.93	679.68	347.60	281.99	551.97	551.97
Bangladesh Sale	942.45	1,005.92	1,053.90	1,002.56	1,005.05	1,005.05
Inter-State Transmission Loss	0.54%	0.58%	0.38%	1.70%	3.35%	3.35%
Inter State Transmission Loss	12.42	14.80	9.21	40.07	85.61	80.90
Power Purchase from Other Sources	113.44	53.25	44.13	37.58	121.92	121.92
ISGS Energy at State Bus	697.51	703.20	830.22	903.53	709.59	737.95
Energy from State Generation	629.78	642.98	704.74	542.13	572.97	602.74
Energy at State Bus	1,327.30	1,346.18	1,534.97	1,445.66	1,282.56	1,340.69
Intra State Transmission Loss	79.64	80.77	92.10	86.74	76.95	80.44
Intra State Transmission Loss (%)	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%
Energy at 11 kV level	1,247.66	1,265.41	1,442.87	1,358.92	1205.61	1260.25
Energy Sales	928.03	868.23	914.22	982.33	1,026.05	1,072.55
Distribution Loss	319.63	397.18	528.65	376.59	179.56	187.70
Distribution Loss (%)	25.62%	31.39%	36.64%	27.71%	14.89%	14.89%
T&D Loss (%)	30.08%	35.50%	40.44%	32.05%	20.00%	20.00%

5.5 Power Purchase

Petitioner's Submission

- 5.5.1 TSECL has submitted that, it procures power from Central Generating Stations of NEEPCO, NHPC and OTPC Palatana in which Tripura is having allocated share/ allocation of power. Also, the power purchase rates for these CGS 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.
- 5.5.2 As per Petitioner, there was commencement of generation of 100 MW from NEEPCO Monarchak from December 2016 which has caused the power purchase cost of NEEPCO to increase from FY 2017-18. The second unit of NTPC Bongaigaon Plant was completed on March'18. OTPC Palatana is generating at full capacity from June 2018 due to better availability of gas which has resulted in an additional supply of 200 MUs in FY 2018-19. Also, TSECL has one of the highest power purchase cost in the region.

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- 5.5.3 Accordingly, for FY 2017-18 to FY 2020-21, TSECL has submitted the actual power procurement quantum and cost. For FY 2021-22, TSECL has projected the power purchase quantum and cost on pro-rata basis considering the nine month actuals.
- 5.5.4 TSECL further submitted that for FY 2017-18 and FY 2018-19, there is a small gap of Rs. 2.45 Crores and Rs. 2.99 Crores in the actual audited power purchase cost as compared to the approved power purchase cost based on the provisional account statements which is requested to be pass through since the power purchase from central generating station is an uncontrollable cost.
- 5.5.5 For the projected period, TSECL has planned to further optimize its power procurement cost by the following measures:
- To surrender costly NTPC Bongaigaon Power having high average cost of INR 6.7 per unit from FY 2023 (Allocation reduced from 56 MW to 6MW)
 - Increased around 25 MW off take (from merchant power quota) from OTPC Pallatana planned from July'22 having low rate of INR 3.3 per unit
 - Further, the own generation from Rokhia is also expected to increase to full capacity with the operation of the third unit from October 2022 as mentioned above.
- 5.5.6 Further, it has stated that there is no new generation capacity expected to be added or disposed during the projected period. Therefore, for the projection purpose, for FY 2022-23, TSECL has considered the equivalent extrapolated energy of FY 2021-22 and incorporating the effects of change in allocations for NTPC Bongaigaon and Pallatana. With respect to cost, the average rate for power purchase rate is escalated by 1.45% each year based on the trend observed in the last few years.
- 5.5.7 With respect to Inter-State Transmission Charges, TSECL has claimed the actual PGCIL charges for FY 2017-18 to FY 2020-21 and extrapolated the charges for FY 2021-22 based on the actual 9 months data. For FY 2022-23, TSECL has considered the escalation by 1.45% each year based on the trend observed in the last few years.
- 5.5.8 The Petitioner has submitted the actual Inter-State transmission charges for FY 2016-17 to FY 2018-19 and escalated by 3% for each subsequent year based on the trend observed in the last few years. Also, it submitted that there is an increase of around Rs. 85 crores (increase of around 160%) in FY 2021-22 due to change in PoC mechanism as per the order from CERC which was effective from April 2021. Therefore, the Commission is requested to approve the transmission charge as projected.
- 5.5.9 Accordingly, the power purchase cost as submitted by the Petitioner for the FY 2017-18 to FY 2022-23 is as shown in the following Table:

Table 84: Actual Power Purchase Cost from FY 2017-18 to FY 2019-20 as submitted by Petitioner

Power Purchase Data	2017-18			2018-19			2019-20		
	Cost	Energy Purchased	Cost Per Unit	Cost	Energy Purchased	Cost Per Unit	Cost	Energy Purchased	Cost Per Unit
	Rs. Crore	MU	Rs/Unit	Rs. Crore	MU	Rs/Unit	Rs. Crore	MU	Rs/Unit
NEEPCO	1,048.67	351.67	3.35	1,063.78	381.73	3.59	1,114.87	464.41	4.17
NHPC	93.30	25.18	2.70	70.98	23.31	3.28	39.85	17.84	4.48
NTPC	94.22	75.25	7.99	203.29	133.20	6.55	225.67	173.37	7.68
OTPC	1,063.01	347.45	3.27	1,200.13	369.58	3.08	1,028.17	335.55	3.26
NEEPCO Solar	6.58	1.91	2.90	7.02	2.03	2.90	6.73	1.95	2.90
Trading/Swapping	113.44	21.58	1.90	53.25	13.04	2.45	44.13	17.38	3.94
PGCIL Charges		40.91			46.91			43.99	
Prior Period Items		3.81			-			-	
Effective Tax Rate - AFC - FY 17-18		4.32			-			-	
Arrears Bill		4.76			-			-	
TOTAL	2,419.22	876.83	3.62	2,598.45	969.80	3.73	2,459.42	1,054.49	4.29

Table 85: Provisional Power Purchase cost from FY 2020-21 as submitted by TSECL

Power Purchase Data	2020-21		
	Cost	Energy Purchased	Cost Per Unit
	Rs. Crore	MU	Rs/Unit
NEEPCO	870.76	369.81	4.25
NHPC	71.24	22.61	3.17
NTPC	130.81	160.65	12.28
OTPC	1,284.01	423.42	3.30
NEEPCO Solar	5.32	1.54	2.90
Trading/Swapping	37.58	10.33	2.75
PGCIL Charges		51.93	
Total	2,399.73	1,040.29	4.34

Table 86: Provisional Power Purchase cost for MYT Control Period from FY 2021-22 to FY 2022-23 as submitted by TSECL

Power Purchase Data	FY 2021-22			FY 2022-23		
	Cost	Energy Purchased	Cost Per Unit	Cost	Energy Purchased	Cost Per Unit
	Rs. Crore	MU	Rs/Unit	Rs. Crore	MU	Rs/Unit
NEEPCO	1,182.50	485.23	4.10	1,182.50	492.26	4.16
NHPC	47.74	20.52	4.30	47.74	20.81	4.36
NTPC	313.71	210.84	6.72	42.05	25.93	6.17
OTPC	1,002.76	333.80	3.33	1,134.16	383.01	3.38
NEEPCO Solar	5.36	1.56	2.90	5.36	1.58	2.94
Trading/Swapping	121.92	34.48	2.83	121.92	34.98	2.87
PGCIL Charges		135.44			137.40	
TOTAL	2,674.00	1,221.86	4.57	2,533.73	1,095.96	4.33

Commission's Analysis and Ruling

- 5.5.10 The Commission notes that TSECL submits the actual power purchase cost for FY 2017-18 to FY 2020-21. The Commission notes that audited accounts are available and has tried to reconcile the cost with the audited balance sheet available. The Commission notes that the source-wise power purchase cost was reconciled with the power purchase cost reported in the audited accounts by TSECL in replies to the data gaps. However, for FY 2019-20, the same was not reconciled.
- 5.5.11 The Commission approves the power purchase cost for FY 2017-18 to FY 2019-20 based on audited accounts and for FY 2020-21 based on the provisional accounts. Further, in addition to this, an amount of Rs. 12.89 Crore is claimed towards power purchase cost for prior period based on audited accounts for FY 2017-18. In line with the audited balance sheet, the Commission approves the power purchase cost of Rs. 12.89 Crore towards prior period. Accordingly, the power purchase cost approved for FY 2017-18 to FY 2019-20 after true-up is shown in the following Table:

Table 87: Power Purchase cost for FY 2017-18 to FY 2019-20 approved by the Commission

Power Purchase Data	2017-18			2018-19			2019-20		
	Cost	Energy Purchased	Cost Per Unit	Cost	Energy Purchased	Cost Per Unit	Cost	Energy Purchased	Cost Per Unit
	Rs. Crore	MU	Rs/Unit	Rs. Crore	MU	Rs/Unit	Rs. Crore	MU	Rs/Unit
NEEPCO	1,048.67	351.68	3.35	1,063.78	381.73	3.59	1,114.87	460.72	4.13
NHPC	93.30	25.18	2.70	70.98	23.31	3.28	39.85	17.84	4.48
NTPC	94.22	75.25	7.99	203.29	133.20	6.55	225.67	170.37	7.55
OTPC	1,063.01	347.45	3.27	1,200.13	369.58	3.08	1,028.17	330.55	3.21
NEEPCO Solar	6.58	1.91	2.90	7.02	2.03	2.90	6.73	1.95	2.90
Trading/Swapping	113.44	21.58	1.90	53.25	13.04	2.45	44.13	17.38	3.94
PGCIL Charges		40.91			46.91			43.99	
Prior Period Items		3.81			-			-	
Effective Tax Rate - AFC - FY 17-18		4.32			-			-	
Arrears Bill		4.76			-			-	
TOTAL	2,419.22	876.83	3.62	2,598.45	969.80	3.73	2,459.42	1,042.80	4.24

- 5.5.12 For FY 2020-21, the Commission sought the reconciliation of source-wise power purchase cost with provisional accounts submitted by the Petitioner. The Commission after due validation approves the power purchase cost for FY 2020-21 based on provisional accounts as shown in the following Table:

Table 88: Power Purchase cost for FY 2020-21 approved by the Commission

Power Purchase Data	2020-21		
	Cost	Energy Purchased	Cost Per Unit
	Rs. Crore	MU	Rs/Unit
NEEPCO	870.76	369.81	4.25
NHPC	71.24	22.61	3.17
NTPC	130.81	160.65	12.28
OTPC	1,284.01	423.42	3.30

Power Purchase Data	2020-21		
	Cost	Energy Purchased	Cost Per Unit
	Rs. Crore	MU	Rs/Unit
NEEPCO Solar	5.32	1.54	2.90
Trading/Swapping	37.58	10.33	2.75
PGCIL Charges		51.93	
Total	2,399.73	1,040.29	4.34

5.5.13 For FY 2021-22 to FY 2022-23, the Commission has considered the energy purchase based on approved T&D loss and energy balance as discussed in earlier Section of this Order. For these years, source-wise the average rate of power purchase has been considered same as submitted by the Petitioner. With regards to the Inter-State transmission charges, 1.45% escalation for each subsequent year is considered as submitted by the Petitioner.

5.5.14 The approved Power Purchase cost for FY 2020-21 to FY 2022-23 is shown in the following Table:

Table 89: Power Purchase cost for FY 2020-21 to FY 2022-23 approved by the Commission

Power Purchase Data	FY 2021-22			FY 2022-23		
	Cost	Energy Purchased	Cost Per Unit	Cost	Energy Purchased	Cost Per Unit
	Rs. Crore	MU	Rs/Unit	Rs. Crore	MU	Rs/Unit
NEEPCO	1,182.50	485.23	4.10	1,182.50	492.26	4.16
NHPC	47.74	20.52	4.30	47.74	20.81	4.36
NTPC	313.71	210.84	6.72	42.05	25.93	6.17
OTPC	1,002.76	333.80	3.33	1,134.16	383.01	3.38
NEEPCO Solar	5.36	1.56	2.90	5.36	1.58	2.94
Trading/Swapping	121.92	34.48	2.83	121.92	34.98	2.87
PGCIL Charges		135.44			137.40	
TOTAL	2,674.00	1,221.86	4.57	2,533.73	1,095.96	4.33

5.5.15 The Commission is wary of the fact that to achieve the renewable target set by Government of India, Renewable Purchase Obligation (RPO) by obligated entities including TSECL is required to be monitored. No details has been provided by TSECL on the same. The Commission is of the view that it will take up issue of compliance of RPO in separate proceedings.

5.6 Intra-State Transmission Charges

Petitioner's Submission

5.6.1 The Petitioner in the present Petition has submitted Intra-State Transmission Charges, which is in line with the standalone ARR submitted for separate Transmission business of TSECL for FY 2017-18 to FY 2022-23.

Table 90: Intra State Transmission Charges (Rs. Crore) as submitted by the Petitioner

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Intra State Transmission charges	42.59	47.48	47.09	46.76	51.26	51.49

Commission's Analysis and Ruling

- 5.6.2 The Commission in the previous Chapter of this Order as per Para 4.10.6, has approved the Annual fixed cost for Transmission Business for the Control Period. The Commission has considered the same Annual fixed cost as intra-state transmission charges for the FY 2017-18 to FY 2022-23 as shown in the following Table:

Table 91: Intra State Transmission Charges approved by the Commission (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Intra State Transmission charges	27.39	31.31	30.80	32.88	34.21	35.84

5.7 Operation & Maintenance Expenses

Petitioner's Submission

- 5.7.1 TSECL has submitted that TERC MYT Regulations, 2015 stipulates the principle of determination of O&M expenses, which comprise of Employee cost, R&M expense and A&G expense.
- **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.
- 5.7.2 The Petitioner has submitted the actual O&M expenses for FY 2017-18 to FY 2019-20 based on the audited annual accounts and for FY 2020-21 based on the provisional accounts. For FY 2021-22, the expenses has been prorated based on the actual expenses till December 2021.
- 5.7.3 For FY 2022-23, the projection of these expenses has been done in accordance with the TERC MYT Regulations, 2015, whereby the employee cost of distribution business has been escalated at the rate of CPI (Consumer Price Index) escalation

rate of 5.07% based on the actual prorated expenses of FY 2021-22. R&M expenses have been calculated as 3.98% of GFA (the actual R&M expenses of past year being 3.98% of GFA). The A&G (Administrative and General) expenses have been escalated at the Wholesale Price Index (WPI) of 5.17%. Accordingly, the Petitioner has considered following WPI and CPI Index for projection of Employee cost and A&G cost.

- 5.7.4 With regards to the component wise explanation on actual O&M Expenses for Distribution business, TSECL has submitted the explanation for employee and R&M expenses as follows:

Employee Expenses

- 5.7.5 The reason for deviation in the actual and approved O&M expenses is mainly on account of the high difference in the employee cost which again was due to non-consideration of impact of 7th Pay Revision in the employees cost in the last tariff order dated 1st September 2020. The Commission had calculated the employee cost for distribution business based on the formula provided in TERC MYT Regulations 2015 and considering actual employee expense of FY 2015-16 as base and applying the yearly escalation factor based on CPI and WPI.
- 5.7.6 However, the Commission has erroneously not considered the impact of 7th Pay Commission as a one time provision which is allowed as per regulations and is a justified expenditure already incurred. The formula prescribed in clause 31 (V) of TERC MYT regulations, 2015 clearly allows provisional increases (apart from inflation increase) based on pay commission. The formula prescribed in clause 31 (V) of TERC MYT regulations, 2015 is produced below:

“Employee cost shall be escalated by consumer price index (CPI), adjusted by provisions for expenses beyond the control of the Distribution Licensee and one time expected expenses, such as recovery/adjustment of terminal benefits, implications of pay commission, arrears and Interim Relief, governed by the following formula:

$$EMP_n = (EMP_b * CPI \text{ inflation}) + Provision$$

- 5.7.7 It is pertinent to note that TSECL had mentioned the impact of 7th Pay Commission in its petition clearly stating an increase of around 22% in FY 2017-18 and around 4% in FY 2016-17. This impact should be considered by the Commission under the Provision, as provided in the above formula. The same was also claimed by TSECL in the review petition filed by TSECL on the tariff order dated 1st September 2020. The Commission on its order dated on the review petition dated 14th December 2020 had stated the following:

“Para 1.8: Therefore, it would be appropriate to allow such impact based on actual audited details, subject to prudence check. Hence, the Commission shall

consider such impact at time of truing up of such years based on audited accounts.”

- 5.7.8 As such, now based on the audited accounts, TSECL requests the Commission to consider the actual employee cost and the other O&M expenses based on the audited statement of accounts.

Repairs & Maintenance Expenses

- 5.7.9 The R&M expenses in distribution is quite high as the assets are old and because of the terrain of the State which has high forest coverage, high frequency of gayles, thunderstorms etc. The expenses are required for keeping the reliability of the power supply.
- 5.7.10 Based on the above submission, Petitioner has claimed the following O&M expenses for FY 2017-18 to FY 2022-23 as shown in the following Table:

Table 92: O&M Expense for Control Period as submitted by the Petitioner (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Employee Expenses	147.47	151.51	153.40	143.93	135.45	142.32
A&G Expenses	21.17	20.49	20.82	33.18	19.13	20.12
R&M Expenses	20.39	23.29	21.87	26.24	23.56	26.79
O&M Expenses	189.03	195.28	196.09	203.34	178.14	189.23

Commission’s Analysis and Ruling

- 5.7.11 The Commission notes that, Regulation 31 (V) of TERC MYT Regulations, 2015 specifies the principle for O&M Expenses for Distribution system. As per the said principle, the employee expenses are linked to CPI inflation, A&G Expenses to WPI inflation and R&M Expenses are linked to Gross Fixed Assets. The Commission determines the normative O&M Expenses for Distribution Business for Control Period from FY 2017-18 to FY 2022-23 as under:

Base O&M Expenses

- 5.7.12 O&M Expenses for FY 2017-18 to FY 2019-20 for TSECL as a whole Utility has been approved as per Table 22 of this tariff order. However, the Commission has considered the break-up of actual audited expenses for FY 2017-18 to FY 2019-20 as shown in the following Table:

Table 93: Break up of O&M Expenses of Distribution business for FY 2017-18 to FY 2019-20 (Rs. Crore)

Particulars	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20
	Approved	Truing Up		
Employee Cost	112.10	147.47	151.51	153.40
A&G Expenses	13.29	21.17	20.49	20.82
R&M Expenses	24.18	20.39	23.29	21.87
Total	149.56	189.03	195.28	196.09

- 5.7.13 For the purpose of truing up, the Commission approves the O&M Expenses based on audited annual account, after due prudence check. Further, the Commission disallows the Penal interest paid for FY 2017-18 to FY 2019-20.
- 5.7.14 For determining the normative O&M Expenses for the Control period, the Commission has considered the normative O&M Expenses for FY 2016-17 for distribution business as base expenses which was approved in the last tariff order. As stated, the Commission has considered the base normative expenses for Distribution as Rs. 149.56 Crore, which comprises of employee cost of Rs. 112.10 Crore, A&G Expenses of Rs. 13.29 Crore and R&M Expenses of Rs. 24.18 Crore.

Escalation factor

- 5.7.15 The escalation factor has been considered based on CPI and WPI index. The YoY increase in CPI indices is considered as escalation factor for Employee cost and WPI indices for A&G expenses. As per Regulations 31 (V) of MYT regulations 2015, CPI and WPI inflation is required to be considered based on average increase in preceding three years. Accordingly, the Commission has considered the weighted average inflation rate of WPI:CPI of preceding three years of the respective Financial year.
- 5.7.16 While calculating the escalation factor, the Commission has considered 2011-12 data series of WPI to work out escalation rate for O&M expenses. However, it was noticed that the base of CPI series for Industrial workers (CPI_{IW}) has been changed by the Labour Bureau, from 2001 to 2016 resulting in change in number from September 2020 onwards. Therefore, from FY 2020-21, Labour of Bureau has discontinued publication of CPI based on 2001 series and instead of the same, CPI based on 2016 series has been published. Since, the old base has been discontinued from September 2020, the Commission has considered the new base from September 2020 onwards and modified the same on pro-rata basis to appropriately reflect CPI based on 2001 series so as to maintain consistency and accordingly has calculated the escalation number for FY 2020-21.
- 5.7.17 Accordingly, the escalation factor of CPI and WPI for projecting O&M expenses is outlined in the following table, whereby the CPI and WPI of FY 2021-22 has been considered for FY 2022-23.

Table 94: Average Increase in CPI and WPI index considered by the Commission

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Increase in CPI	4.28%	4.22%	5.35%	5.87%	5.35%	5.35%
Increase in WPI	0.33%	2.98%	2.96%	2.42%	5.32%	5.32%

- 5.7.18 With respect to the submission of TSECL that the impact of the 7th Pay Commission which resulted in an average increase of the employee pay by 22% from April to June 2017 and further revision of salary for selected staff in 2018-19 leading to an average

increase of around 8%, TSECL has not been able to submit the incremental impact of the 7th Pay commission on the employee expenses, function wise and have only provided the detail of % impact. Also, the Commission recognise the fact that TERC MYT Regulations, 2015 provides for allowance of O&M Expenses on normative basis plus any provision for expenses beyond the control of the Distribution Licensee and one time expected expenses, such as recovery/adjustment of terminal benefits, implications of pay commission, arrears and Interim Relief. However, such additional provision for expenses needs to be considered on actual basis whereas TSECL has provided only the impact in percentage term rather than on absolute term. The Commission understands that the increase in employee expenses is on account of the impact of 7th pay commission, however as stated above, a detailed analysis of the expenses is required to be undertaken whereby such expenses are required to be paid and not allowed on a provisional basis. The Commission in the review order dated 14 December 2020, has directed TSECL to provide the detail submission of the 7th pay commission with respect to amount actual paid and the provision made in the accounts along with the calculation of the impact of 7th pay commission on the salaries as well as the number of employees to whom the impact of 7th Pay commission was provided alongwith the documentary evidence, which has not been provided by TSECL. However, considering the fact that there has been an impact of 7th Pay commission, the Commission is inclined to consider the impact of 7th Pay commission @22% for FY 2017-18 on the base expenses approved in FY 2016-17 at present which has been escalated further to determine normative employee expenses. However, TSECL is directed to provide the detail calculation of the 7th Pay impact in the next tariff petition which can be considered as expenses beyond the control of the Distribution Licensee, subject to the prudence check.

- 5.7.19 Accordingly, the Commission determines the normative employee cost and A&G Expenses for FY 2017-18 to FY 2019-20 by applying the escalation factor over base expenses, as shown in the following Table:

Table 95: Normative Employee Cost and A&G Expenses for FY 2017-18 to FY 2019-20 as approved by the Commission for Distribution (Rs. Crore)

Particulars	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20
	Base Exp	Truing Up		
Employee Cost	112.10	141.56	147.53	155.42
A&G Expenses	13.29	13.33	13.73	14.13
Total	125.38	154.89	161.25	169.56

- 5.7.20 As regards to R&M Expenses, the Commission determines the k-factor based on actual R&M Expenses for Truing up year i.e. FY 2017-18 to FY 2019-20 and Gross Fixed Assets for the respective years as submitted by Petitioner. Further, the allocation of Gross Fixed assets to the Distribution business has been considered based on the approved GFA after true-up in this Order. The k-factor so derived has been considered for FY 2020-21 and the balance Control Period i.e. FY 2020-21 to

FY 2022-23. The Computation of K-Factor is outlined as shown in the following Table:

Table 96: Computation of k-factor

Particulars	FY 2017-18	FY 2018-19	FY 2019-20
	Truing Up		
Actual R&M expenses	20.39	23.29	21.87
Approved Opening GFA	609.56	659.02	682.68
K-Factor of the year	3.34%	3.53%	3.20%
Average K-factor	3.36%		

5.7.21 For computation of R&M Expenses for each year of the Control period, the Commission has considered the following formula:

$$R\&M_n = K_b * GFA_n$$

Whereby, K_b value is formulated, which is basically the percentage of R&M expense with respect to the actual value of total assets for past years.

5.7.22 Further, the Commission determines the R&M Expenses for Control Period as shown in the following Table:

Table 97: R&M Expenses as approved by the Commission (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Opening GFA	609.56	659.02	682.68	695.32	695.61	710.16
k-factor	3.36%	3.36%	3.36%	3.36%	3.36%	3.36%
R&M Expenses	20.48	22.14	22.93	23.36	23.37	23.86

5.7.23 However, the audited accounts for FY 2017-18 to FY 2019-20 is available with the Commission whereby the Commission in this order is undertaking a true-up exercise and therefore the normative O&M expenses are considered. It is submitted that the norms are considered to be ceiling and any cost above that represent the inefficiencies and needs to be borne by the Utility vice versa any cost below that represent the efficiencies and gains are required to be shared with the beneficiaries. Accordingly, normative cost as determined for FY 2019-20 will be considered as base for determination of O&M Expenses for future period i.e. FY 2020-21 to FY 2022-23, whereby escalation of WPI and CPI index will be applied for Employee and A&G expenses and k-factor for determination of R&M expenses.

5.7.24 In view of the above, considering the approved normative O&M expenses for FY 2019-20 and applying the escalation of WPI and CPI Index as well as k Factor, the O&M Expenses as approved by the Commission for distribution business for FY 2020-21 to FY 2022-23 is shown in the following Table:

Table 98: O&M Expenses approved for FY 2017-18 to FY 2022-23 by the Commission (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Employee Cost	141.56	147.53	155.42	164.55	173.35	182.62
A&G Cost	13.33	13.73	14.13	14.47	15.25	16.06
R&M Cost	20.48	22.14	22.93	23.36	23.37	23.86
Total	175.36	183.39	192.49	202.38	211.96	222.53

5.8 Depreciation

Petitioner's Submission

- 5.8.1 The Petitioner has submitted the detail regarding the Gross Fixed Assets and Asset wise calculation of Depreciation based on the account statements of the respective years. The Petitioner has submitted the audited accounts for FY 2017-18 to FY 2019-20 and provisional accounts for FY 2020-21.
- 5.8.2 Further the Petitioner has submitted that the depreciation is calculated in the following manner:
- full year depreciation on the opening balance of GFA;
 - reduction of depreciation on assets which are fully depreciated;
 - reduction of depreciation on assets created out of government grants;
- 5.8.3 Also, the deprecation rates to be charged on each class of assets is in line with the "Annexure: 8" to the TERC MYT Regulations, 2015 and is highlighted below:

Table 99: Depreciation rate as per TERC MYT Regulations, 2015

Asset	Depreciation Rate as per SLM
Land under full ownership	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%

- 5.8.4 TSECL has submitted that 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
- 5.8.5 Based on the consideration of the above depreciation rate, the GFA added for FY 2017-18 to FY 2020-21 and the projected depreciation for FY 2021-22 to FY 2022-23 for the distribution business claimed by the Petitioner is outlined as below:

Table 100: GFA and Depreciation for Distribution Asset as submitted by Petitioner (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Opening GFA	595.00	644.46	668.12	680.76	681.05	695.60
Addition of GFA	49.46	23.66	12.64	0.29	14.55	7.49
Closing GFA	644.46	668.12	680.76	681.05	695.60	703.09
Average GFA	619.73	656.29	674.44	680.91	688.33	699.35
Depreciation	6.17	8.19	8.15	7.15	7.26	7.36
Avg. Dep. Rate	1.00%	1.25%	1.21%	1.05%	1.05%	1.05%

Commission's Analysis and Ruling

- 5.8.6 The Commission computed the depreciation as per Regulation 29 of TERC MYT Regulations, 2015. The scheduled rates of depreciation have been considered as per Annexure 8 to TERC MYT Regulations, 2015.
- 5.8.7 Though, TSECL submitted the function wise gross fixed assets based on allocation statements, it is observed that despite several directions from the Commission in this regard, the Petitioner has not complied with the Commission's directive regarding submission of Fixed Assets Register. As detailed in previous Orders, due to the absence of the Fixed Assets and Depreciation register, it is difficult for the Commission to ascertain the GFA value of the Petitioner. However, considering the audited account statement which also follows the Straight Line Method for calculation of depreciation, the Commission in absence of Fixed Assets Register, approves the depreciation in line with the audited accounts for FY 2017-18 to FY 2019-20. Also, even though the Petitioner has submitted in the petition that the depreciation claimed are as per Tariff Regulation (Multi Year Tariff) 2015 on the gross asset value, whereas the accounts specified SLM depreciation rate as per Companies Act, 2013, it has been observed that TSECL has claimed the depreciation as per accounts only for truing up. The same is also considered by the Commission for calculation of depreciation.
- 5.8.8 Based on the above observation, the Commission has calculated the average rate of depreciation at the rates applicable for various classes of assets as per TERC MYT Regulations, 2015. The actual average rate of depreciation is applied to arrive at the allowable depreciation for FY 2017-18 to FY 2022-23 respectively. The Commission has considered the calculation of depreciation based on the details provided by TSECL in replies to the data gaps and while considering the weighted average depreciation rate, the Commission has not considered depreciation for the assets block whereby the accumulated depreciation exceeds 90% of the Gross Fixed Assets value. Also, the opening balance of Gross Fixed Assets as on FY 2017-18 has been considered equivalent to the closing balance approved by the Commission for FY 2016-17 in the tariff order dated 1st September 2020.
- 5.8.9 As regards the addition of GFA, as per the data provided by the Petitioner, the actual capitalisation during FY 2017-18 to FY 2019-20 and projected for FY 2020-21 to FY 2022-23, is provided in the table below, whereby the Petitioner has not submitted any documentary evidence regarding the actual capitalisation of assets that have been actually put to use.

Table 101: Capitalisation of Assets for Distribution Business - Petitioner (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Capitalisation of Assets	49.46	23.66	12.64	0.29	14.55	7.49

- 5.8.10 The Commission observed that the amount of capitalisation is very abnormal with no

consistency and no explanation has been provided by the Petitioner for decapitalisation and capitalisation of assets for all the years. Therefore, it is necessary to analyse the scheme wise details along with the spill over of the CAPEX and its capitalisation. **Accordingly, the Commission directs the Petitioner to provide the scheme wise details of CAPEX, Capitalisation and justification for any delay in commissioning of the asset at the time of submission of final truing up of FY 2020-21 to FY 2022-23.**

- 5.8.11 However, considering the minor capitalisation amount undertaken by the Petitioner, the Commission approved the additional capitalisation and decapitalisation of assets as proposed by the Petitioner. **However, the Commission directs the Petitioner to provide the documentary evidence of capitalisation for any future submission on tariff filing for consideration.**
- 5.8.12 The Commission has not considered the depreciation on the assets funded through grants, in line with the provisions of TERC MYT Regulations, 2015 and approach adopted in previous Tariff Orders.
- 5.8.13 Accordingly, the depreciation approved by the Commission for truing up of FY 2017-18 to FY 2019-20 and for FY 2020-21 as well as Control Period from FY 2021-22 to FY 2022-23 is shown in the following Table:

Table 102: GFA and Depreciation for Distribution Business approved by the Commission (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Opening GFA	609.56	659.02	682.68	695.32	695.61	710.16
Addition during the year	49.46	23.66	12.64	0.29	14.55	7.49
Closing GFA	659.02	682.68	695.32	695.61	710.16	717.65
Avg. Dep. Rate	1.00%	1.25%	1.21%	1.06%	1.07%	1.07%
Depreciation	6.32	8.37	8.33	7.39	7.51	7.66

5.9 Interest and Finance Charges

Petitioner's Submission

- 5.9.1 TSECL has submitted that it has considered the following for total interest and finance charges for FY 2017-18 to FY 2019-20 as outlined below:
- Interest on loans from REC and IPDS
 - Guarantee Fee
 - Bank Commission for letter of credit
- 5.9.2 For MYT Control period, TSECL has taken some term loans under the Central Government Schemes of RGGVY, DDUGJY, Soubhagya and IPDS. In addition to this, the finance charges such as guarantee charge, bank commission for Letter of Credit etc. have been shown under interest and finance charges.
- 5.9.3 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). 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 will have to bear full loan and interest repayment. As no interest payment and repayment schedule is mentioned for PFC loan for the computation of interest and finance charges in this petition no repayment of loan from PFC has been considered.
- **Loan from REC:** The fund is released by REC under RGGVY scheme. 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. TSECL is paying interest on this loan on behalf of GoT in four quarterly instalments. In the accounts, this loan is treated under head 'GoT loan'. The moratorium period of 5 years is provided on repayment of this loan. Since this is not the loan given to TSECL and fund received on behalf of the GoT,
- **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 instalments 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 have been treated as loan.
- **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.

5.9.4 The Interest and Finance Charges submitted by TSECL for FY 2017-18 to FY 2019-20 on actual basis and projected for FY 2020-21 to FY 2022-23 is outlined in the table below:

Table 103: Interest and Finance Charges for FY 2017-18 to FY 2022-23 – submitted by TSECL (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Interest on REC loan for RGGVY @average rate of 10.5%	1.41	1.11	0.91	0.75	0.59	0.46
Interest on IPDS loan @average rate of 11.067%	-	-	-	1.79	1.80	1.81
Interest on Soubhagaya Loan (10.75% quarterly and 10.66% Monthly)	-	-	-	3.00	3.48	3.31
Interest for DDUGJY(10.75% quarterly and 10.66% Monthly)	-	-	-	0.57	0.62	0.59
Bank Commission for Letter of Credit	0.16	0.01	0.66	-	-	-
Loan Processing Fees	0.02	0.13	0.39	1.31	-	-
Total Interest & Finance Charges	1.58	1.25	1.96	7.41	6.49	6.17

Commission's Analysis and Ruling

- 5.9.5 TSECL has submitted the claim in relation to interest on REC loan for truing up year of FY 2017-18 to FY 2019-20. It has been observed that TSECL has claimed only the part of the interest amount pertaining to REC loan as compared to the total interest amount highlighted in audited accounts. However, TSECL has not provided any supporting or documentary evidence for the said interest amount even after the same was sought by the Commission.
- 5.9.6 Also, with regards to the projection of interest on loan, no details has been provided by TSECL on the IPDS, Saubhagya and DDUGJY loan and just provided the loan profile of the same. No justification or supporting document has been provided by TSECL. The Scheme such as IPDS, Saubhagya and DDUGJY has been funded through grants and loan amount and the details of which are necessary to allow such claims. **Therefore, TSECL is directed to provide the overall details of the scheme highlighting the total capex amount, activities to be undertaken under such scheme, phasing of the capitalisation, funding pattern and interest liability for overall period of the scheme, in the next tariff petition.**
- 5.9.7 It was observed that for FY 2017-18, there was no separate interest on REC loan and as per Schedule 20 to the Notes of the accounts, the whole interest is booked in the name of interest on UBI loan which as per TSECL is for working capital loan. Hence the interest proposed against REC loan been not reflected in the audited accounts, the same is disallowed for FY 2017-18. With respect to Interest on loan for FY 2018-19 and FY 2019-20, no bifurcation of the loan is provided in the notes to accounts and even TSECL has not provided any bifurcation of the loan against the data gaps raised by the Commission. However, considering the audited statement, the Commission accepts the interest and finance charges as proposed by TSECL for FY 2018-19 and FY 2019-20 considering that the interest on REC loan is included in the total interest amount in the Audited accounts.
- 5.9.8 Also, for the amount claimed for FY 2020-21 to FY 2022-23, even though no details have been provided by TSECL and mere loan profile statement has been provided, the Commission understands that such schemes are envisaged to be undertaken for improvement of the distribution system and is a need for the Power development within the State. Therefore, the Commission approves the amount as projected by TSECL with direction to provide all justification along with the supporting documents and the break-up of the interest cost as per different sources in next tariff petition.
- 5.9.9 Accordingly, the Commission approved the interest and finance charges as submitted by TSECL for Distribution business, after due prudence check with audited accounts for FY 2017-18 to FY 2019-20 and projection for FY 2020-21 to FY 2022-23 as outlined below:

Table 104: Interest and Finance Charges for FY 2017-18 to FY 2022-23 approved by Commission (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Interest on REC loan for RGGVY	-	1.11	0.91	0.75	0.59	0.46
Interest on IPDS loan	-	-	0.39	1.79	1.80	1.81
Interest on Soubhagaya Loan	-	-	-	3.00	3.48	3.31
Interest for DDUGJY	-	-	-	0.57	0.62	0.59
Bank Commission	0.16	0.13	-	-	-	-
Loan Processing Fees	0.02	0.01	0.66	1.31	-	-
Total Interest & Finance Charges	0.18	1.25	1.96	7.41	6.49	6.17

5.10 Interest on Working Capital

Petitioner's Submission

5.10.1 The Petitioner has submitted that the TERC MYT Regulations, 2015 provides for normative interest on working Capital based on the methodology outlined in the Regulations. Accordingly, the Petitioner is eligible for interest on working capital worked out on methodology specified in the Regulations for Distribution business as provided below:

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

5.10.2 Also, in accordance with the TERC MYT Regulations, 2015, the interest on the working capital requirement considered is SBI Base Rate plus 300 basis points as on 1st April of the year for which tariff is determined. The Petitioner in the instant Petition has considered the following interest rate on working capital requirement:

Table 105: Interest rate on Working Capital (%)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Interest Rate on Working Capital	12.10%	11.70%	12.05%	11.15%	10.40%	10.55%

5.10.3 Accordingly, the Petitioner in accordance with TERC MYT Regulations, 2015, has calculated the interest on working capital for Distribution business as shown in the table below:

Table 106: Interest on Working Capital as submitted by Petitioner (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Receivables for 2 months	94.54	98.31	129.94	117.01	144.21	164.51
O&M Expenses for one month	15.75	16.27	16.34	16.95	14.84	15.77
Maint Spares @15% of O&M Expenses	28.35	29.29	29.41	30.50	26.72	28.38
Total Working Capital Requirement	138.65	143.87	175.69	164.46	185.77	208.67
Rate of Interest (%)	12.10%	11.70%	12.05%	11.15%	10.40%	10.55%
Interest on Working Capital	16.78	16.83	21.17	18.34	19.32	22.01

* - The Petitioner has made some errors in computation of IWC, which have been corrected by the Commission

Commission's Analysis and Ruling

- 5.10.4 The Commission has computed the interest on working capital as per principles specified in TERC MYT Regulations, 2015. Further, Regulation 30 specifies for consideration of fixed cost for computation of receivables.
- 5.10.5 As per Regulations 31 (III) of MYT Regulations 2015, the interest rate for computing loWC is considered as the weighted average SBI Base plus 300 basis points as on 1st April of the year for which tariff is determined and as specified in Table 30 of this order. .
- 5.10.6 In view of the above, interest on working capital for Distribution business approved for FY 2017-18 to FY 2022-23 is shown in the following Table:

Table 107: Interest on working Capital for distribution business as approved by the Commission (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Receivables for 2 months	86.28	86.99	103.05	104.67	112.89	131.74
O&M Expenses for one month	14.61	15.28	16.04	16.87	17.66	18.54
Maint Spares @15% of O&M Expenses	26.30	27.51	28.87	30.36	31.79	33.38
Total Working Capital Requirement	127.19	129.78	147.96	151.89	162.35	183.67
Rate of Interest (%)	12.10%	11.70%	12.05%	11.15%	10.40%	10.55%
Interest on Working Capital	15.39	15.18	17.83	16.94	16.88	19.38

5.11 Return on Equity and Tax on Return on Equity

Petitioner's Submission

- 5.11.1 The Petitioner submitted that the Regulation 26 of the TERC MYT Regulations, 2015 specifies for Return on Equity (RoE) @15.5% on equity base.

“26. Return on Equity:

Return on equity shall be computed in rupee terms, on the equity base determined in accordance with Clause 21.

Return on equity shall be computed at the base rate of 15.50% for thermal generating stations, transmission/distribution system including communication system and run of the river hydro generating station, and at the base rate of 16.50% for the storage type hydro generating stations and run of river generating station with pondage.”

- 5.11.2 Further it has submitted that the amount of equity base to be considered for calculation of return has been considered based on the relevant Regulations 21 of TERC MYT Regulations, 2015.

“21. Debt-Equity Ratio:

- 1. 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:

- i. where equity actually deployed is less than 30% of the capital cost, actual equity shall be considered for determination of tariff:*
- ii. the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment:*
- iii. 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.”*

5.11.3 Also, the Petitioner has stated that the Commission in its past orders had considered equity base for the transmission and distribution business as 30% of the Gross Fixed Asset Value and as such the same is considered here for the purpose of calculation of RoE.

5.11.4 Accordingly, the Equity fund of TSECL is calculated after allocating equity fund of TPECL in the Gross fixed assets ratio among generation, transmission and distribution business. After that equity fund of distribution business is allocated based on gross fixed assets ratio

5.11.5 Based on the above submission, the Petitioner has computed return on equity on considering actual equity for FY 2017-18 to FY 2019-20 and the projected paid up capital for FY 2020-21 to FY 2022-23 as summarized in the table given below:

Table 108: Calculation of Equity Base as per TSECL (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Equity fund (Allocated based on assets ratio)	295.90	298.33	302.53			
Average GFA	619.73	656.29	674.44	680.90	688.32	699.34
Normative Equity (30% of GFA)	185.92	196.89	202.33	204.27	206.50	209.80
Equity considered for RoE (Min of actual and normative)	185.92	196.89	202.33	204.27	206.50	209.80

5.11.6 With regards to the Income Tax, as per Clause 27 of TERC MYT Regulations, 2015, the Return on Equity is required to be grossed up with effective tax rate and is stated as below:

“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.

5.11.7 Additionally, the Petitioner has submitted that 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. Also, for projection purpose, The tax portion on Return on Equity has been claimed based on the MAT rate of 15% on the RoE figures.

5.11.8 Based on the above submission, the Return on Equity claimed by the Petitioner is

outlined in the Table below:

Table 109: Calculation of RoE on Pre-tax basis as per TSECL (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Normative Equity (30% of GFA)	185.92	196.89	202.33	204.27	206.50	209.80
Rate of Return (%)	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%
Return on Equity - Pre-Tax	28.82	30.52	31.36	31.66	32.01	32.52
Income tax Paid	3.74	3.39	3.89	1.00	4.80	4.88
Return on Equity - Post Tax	32.56	33.90	35.25	32.67	36.81	37.40

Commission's Analysis and Ruling

- 5.11.9 Regulation 26 of TERC MYT Regulations, 2015 specifies for computation of Return on equity for Control period. Further, Regulation 21 of TERC MYT Regulations, 2015 specifies for computation debt, equity and limited the amount of equity to 30% of GFA after excluding the consumer contribution or grant.
- 5.11.10 The computation of the Pre-tax Return on Equity considered by the Petitioner is after considering the actual tax paid as reflected in the account statements and divided in the ratio of paid up capital in the different business functions and for projection purpose, the Minimum Alternative Tax (MAT Rate) rate of 15% has been considered for calculation of Tax RoE. However, based on the audited accounts made available for FY 2017-18 to FY 2019-20, it was observed that only provision of deferred tax was made with no impact highlighted in the current tax as specified in the profit and loss account. Therefore, the Commission has sought the supporting documents and income tax challan for the income tax paid for the respective years. TSECL replied that the actual tax payment made is zero i.e. no actual tax payment has been made, however, in future tax payment may arise if the accumulated losses are wiped out, hence the deferred tax provision has been made in the accounts. Accordingly, the submission made by TSECL in the Petitions that Pre-tax Return on Equity is calculated after considering the actual tax paid is erroneous and the petitioner should refrain from such submission in the next submission. Accordingly, the Commission has not considered any tax on RoE for truing up for FY 2017-18 to FY 2019-20.
- 5.11.11 Also, as per the accounts of FY 2019-20, huge accumulated loss of Rs. 390.61 Crore has been highlighted in the balance sheet, which will initially be adjusted against the profit for computation of tax as per the relevant provisions of the income tax act. Accordingly, the Commission feels that there is a probability that no income tax liability may arise in near future and hence the effective tax rate as specified in Regulations 27 of TERC MYT Regulations, 2015 is considered to be Zero for FY 2020-21 to FY 2023-23. Also, as per the Regulations, the actual tax paid in the financial year to be considered for calculation of effective tax rate. Since the actual Income tax paid for latest available FY 2019-20 is also zero, the same is considered for computation of tax on Return on Equity.

- 5.11.12 The relevant clause is stated as below:

27. Tax on Return on Equity:

I. The base rate of return on equity as allowed by the Commission under Clause 26 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 by the concerned generating company or the transmission/distribution licensee, as the case may be. The actual tax income on other income stream (i.e., income of non generation or non transmission /distribution business, as the case may be) shall not be considered for the calculation of “effective tax rate” computed as per the formula given below:

$$\text{Rate of pre-tax return on equity} = \text{Base rate} / (1-t)$$

5.11.13 Therefore, the computation of Pre-Tax Return on Equity by Petitioner is not in line with the MYT Regulations 2015 and is recomputed by the Commission as outlined below to be considered for calculation of RoE for FY 2017-18 to FY 2019-20:

Table 110: Approved Pre-tax Return on Equity for Distribution business (%)

Sr. No.	Particulars	RoE
A.	Return on Equity as per norms	15.50%
B.	Effective Tax Rate	0.00%
C.	Pre-tax Return on Equity $[A/(1-B)]$	15.50%

5.11.14 However, the Commission states that the effective tax rate for FY 2020-21 to FY 2022-23 would be reviewed during the True Up proceedings depending on actual tax paid by the Petitioner under Corporate Tax or MAT regime and as specified in the audited Financial statement.

5.11.15 Regulation 26 of TERC MYT Regulations, 2015 specifies for computation of Return on Equity for Control period. Further, Regulation 21 of TERC MYT Regulations, 2015 specifies for computation debt equity and limited the amount of equity to 30% of GFA after excluding the consumer contribution or grant.

5.11.16 The Commission in previous Chapter of this Order has adopted a certain principle for computation of Regulatory equity, in absence of assets register and after considering the consumer contribution/grant. For computing the equity capital, the Commission has considered the same principle for FY 2017-18 to FY 2022-23.

5.11.17 As discussed in earlier chapter, the equity capital has been computed as 30% of Gross Fixed assets after excluding consumer contribution/grant. However, the segregated details of consumer contribution/grant are not available at this stage before the Commission, hence, the Commission applies the uniform percentage of consumer contribution/grant across generation, transmission and distribution business for FY 2017-18 to FY 2019-20. Also, the derived capital grants towards GFA of FY 2019-20 has been considered for FY 2020-21 to FY 2022-23 for projection purpose. The contribution of Capital Grants towards GFA from FY 2020-21 to FY 2022-23 will be reviewed by the Commission at the time of final true-up based on the audited accounts.

5.11.18 The detailed calculation of Equity base as approved by the Commission is outlined in the following table:

Table 111: Equity Base of Distribution for FY 2017-18 to FY 2022-23 approved by Commission (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
As per Balance Sheet of TSECL						
GFA	1,450.01	1,479.14	1,489.22			
CWIP	119.54	167.24	246.65			
Capital Grant	634.59	689.51	709.47			
Capital Grant towards GFA	586.26	619.47	608.66			
Capital Grant towards GFA (%)	40.43%	41.88%	40.87%	40.87%	40.87%	40.87%
Calculation of Equity Base of Distribution Business						
Opening GFA	609.56	659.02	682.68	695.32	695.61	710.16
Closing GFA	659.02	682.68	695.32	695.61	710.16	717.65
Average	634.29	670.85	689.00	695.46	702.88	713.90
Capital Grant towards GFA	256.45	280.95	281.60	284.25	287.28	291.78
Equity base for RoE calculation	113.35	116.97	122.22	123.37	124.68	126.64

5.11.19 The Petitioner has not considered any interest on Loan in the tariff Petition and hence the Commission has also not computed the same.

5.11.20 Based on the approach as adopted by the Commission, the approved Equity base of Distribution business is considered for calculation of Pre-Tax Return on Equity as specified in Table 110 of this Order. The approved Return on Equity is calculated as per Regulations 26 and 27 of TERC MYT Regulations, 2015 and is outlined in the following table:

Table 112: Return on Equity for Control Period for Distribution Business as approved by the Commission (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Equity Base for the year	113.35	116.97	122.22	123.37	124.68	126.64
Pre-tax RoE	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%
Return on Equity	17.57	18.13	18.94	19.12	19.33	19.63

5.12 Non-Tariff Income

Petitioner's Submission

5.12.1 The Petitioner has submitted that the other income of TSECL covers mainly 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 other miscellaneous income like sale of scrap, sale of tender, meter rent etc. These incomes are being separately booked under other income category.

5.12.2 With regards to Subsidy, TSECL has submitted that the subsidy provided by State Government, under section 65 of Electricity Act 2003, mandates that,

“Section 65. (Provision of subsidy by State Government):

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, in advance and in such manner as may be specified, 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 licence or any other person concerned to implement the subsidy provided for by the State Government:

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.”

5.12.3 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. As such, for calculation of ARR, the subsidy actually paid by State Governments as revenue grant have been considered under other income as against the subsidy committed by State Government.

5.12.4 Accordingly, the actual data based on available accounts has been tabulated for FY 2017-18 to FY 2019-20. Also, the figures for FY 2020-21 to FY 2021-22 are from the provisional accounts and for FY 2022-23 to FY 2023-4, the same has been derived based on the previous years' trend.

Table 113: Non-Tariff Income as per Petitioner for FY 2017-18 to FY 2022-23 (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Other Income	45.15	72.73	36.61	30.04	33.88	32.59
Revenue subsidy from GoT	30.00	20.00	47.58	54.21	47.00	50.00
Non-Tariff Income	75.15	92.73	84.19	84.25	80.88	82.59

Commission's Analysis and Ruling

5.12.5 As per Regulations 23 of TERC MYT Regulations, 2015, Non-Tariff income is required to be deducted to arrive at the Annual Fixed Charges of the Distribution business.

5.12.6 The Petitioner has submitted that it has not segregated the account statements for generation, transmission and distribution business completely and the allocation has been undertaken based on certain principles, wherever necessary for ARR and tariff calculation. This has been undertaken 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.

5.12.7 The Petitioner has provided the details of consolidated amount of the Non-Tariff Income without providing the break-up of the same component wise and has

reconciled the same with the available audited. However, though provisional accounts for FY 2020-21 has been provided by TSECL, no bifurcation has been provided on the Non-Tariff income booked for different function wise. The Commission in the said order, approves the Non-Tariff Income of Distribution Function as proposed by the Petitioner for the purpose of truing up of FY 2017-18 to FY 2019-20.

5.12.8 With regards to the FY 2020-21 to FY 2022-23, the Petitioner has considered the provisional actual number for FY 2020-21 to FY 2021-22 and the past 5 year average for FY 2022-23. However, there was an error while computing the average of Non-tariff income for FY 2022-23 and hence the Commission has redetermine the same considering the past 5 year average of actual Non-Tariff as proposed and approved for FY 2017-18 to FY 2021-22.

5.12.9 Also, with respect to the subsidy amount, the Commission has considered the same as part of revenue and is excluded from Non-tariff income computation.

5.12.10 Accordingly, the Non-tariff income approved by the Commission is shown in the following Table:

Table 114: Non-Tariff Income for FY 2017-18 to FY 2022-23 approved by the Commission (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Non-Tariff Income	45.15	72.73	37.18	30.04	33.88	43.80

5.13 Sharing of Controllable Factor

Commission's Analysis and Ruling

5.13.1 Regulation 10 (VI) of TERC MYT Regulations, 2015 specifies the controllable parameters for distribution business, which includes the O&M Expenses, Interest on Working Capital and T&D Losses. Further, Regulation (VII) of TERC MYT Regulations, 2015 specifies the treatment of such controllable parameter on account of sharing of efficiency gains and losses as under:

“The financial gains by a generating company or the Transmission or the Distribution licensee, on account of controllable parameters shall be shared between generating company or the Transmission or the Distribution licensee and the beneficiaries on monthly basis with annual reconciliation. The financial gains computed shall be shared in the ratio of 60:40 between generating company or the Transmission or the Distribution licensee as the case may be, and the beneficiaries.”

O&M Expenses

5.13.2 As per Regulations 10 (VI) (I) (i) of MYT Regulations 2015, Variation in O&M expenses will be considered as a Controllable parameter for distribution business and only financial gain has to be shared with the consumers in the ratio of 60:40 as

per Regulation 10 (VI) of TERC MYT Regulations, 2015. However, with respect to any loss, the same has to be borne by the licensee due to their inefficiencies.

5.13.3 The Commission in earlier Section of this Order has allowed O&M Expenses on normative basis. Since audited accounts for FY 2017-18 to FY 2019-20 are available, the Commission has considered the sharing of gains for O&M Expenses.

5.13.4 However, it has been observed that the actual O&M expenses of distribution business are higher than the normative O&M expenses resulting in loss and hence no sharing mechanism has been considered by Commission with respect to O&M expenses.

Interest on Working capital

5.13.5 As per Regulations 10 (VI) (I) (f) of MYT Regulations 2015, Variations in working capital requirements will be considered as a Controllable parameter for distribution business and only financial gain has to be shared with the consumers in the ratio of 60:40 as per Regulation 10 (VI) of TERC MYT Regulations, 2015.

5.13.6 The Commission in earlier Section of this Order has allowed Interest on Working capital on normative basis. Since audited accounts for FY 2017-18 to FY 2019-20 are available, the Commission has considered the sharing of gains for Interest on Working capital comparing the normative and actual interest on working capital loan. However, TSECL has not provided any bifurcation of the interest on loan as reflected in the audited accounts and therefore the Commission would like to show its discontentment on the approach of TSECL and the data quality. The Commission, by its own, is computing the actual Interest on working Capital Loan based on the data available with segregating the same into Generation, Transmission and distribution function in the ratio of their ARR, after deducting the Interest on debt allowed in the preceding paragraph.

Table 115: Actual Interest on Working Capital loan for Distribution business for FY 2017-18 to FY 2019-20 (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20
Total Interest as per Audited Accounts	18.72	21.89	11.16
Interest allowed for REC Loan	-	1.11	1.30
Net interest on working capital loan	18.72	20.78	9.86
Generation	2.30	2.98	1.58
Transmission	0.37	0.42	0.18
Distribution	16.05	17.38	8.10

5.13.7 Based on the above computation, the Commission has considered the sharing of gains for Interest on Working capital as shown in the following Table

Table 116: Sharing of efficiency gains for Interest on Working capital for Distribution for FY 2017-18 to FY 2019-20 (Rs. Crore)

FY 2017-18				FY 2018-19				FY 2019-20			
Norma tive	Actual	Gain / (Loss)	Sharing of Gain / (loss)	Norma tive	Actual	Gain / (Loss)	Sharing of Gain / (loss)	Norma tive	Actual	Gain / (Loss)	Sharing of Gain / (loss)
15.39	16.05	(0.66)	-	15.18	17.38	(2.20)	-	17.83	8.10	9.73	3.89
15.39	16.05	(0.66)	-	15.18	17.38	(2.20)	-	17.83	8.10	9.73	3.89

T&D Losses

5.13.8 Further, the Commission notes that, actual T&D losses for TSECL are much higher than target specified for the respective financial year. Hence, the Commission decides to reduce the power purchase cost on account of higher T&D losses. Further, it is noted that, the provisional details for FY 2020-21 are available till now. From provisional details, it has been observed that, actual T&D losses for FY 2020-21 is 32.05% as approved in Table 83 of this order. The Commission intends not to burden the consumer with the additional power purchase cost on account of such increase in losses more than the target loss of 20%. Hence, the Commission disallows the power purchase cost for FY 2017-18 to FY 2019-20 for truing up purpose and for FY 2020-21 on provisional basis, which shall be revised at time of truing-up.

5.13.9 Based on the approved own generation, sales and energy balance for FY 2017-18 to FY 2020-21, the Commission has computed additional energy purchase as shown in the following table:

Table 117: Additional Energy purchase on account of increase in T&D losses for FY 2017-18 to FY 2020-21 (in MU)

Sl. No.	Particulars	Derivation	FY 2017- 18	FY 2018- 19	FY 2019- 20	FY 2020- 21
			Truing Up			ARR
1	Own generation	A	636.01	649.37	711.78	547.58
2	Total Power Purchase	B	2,419.22	2,598.45	2,459.42	2,399.73
3	Gross energy availability	C=A+B	3,055.24	3,247.82	3,171.20	2,947.31
4	Energy sales within State	D	928.03	868.23	914.22	982.33
5	Energy sales outside the State	E	1,709.29	1,880.45	1,619.99	1,456.13
6	Total energy sales	F=D+E	2,637.32	2,748.68	2,534.21	2,438.46
7	Gross energy not sold	G=C-F	417.92	499.14	636.99	508.85
8	Permissible self-consumption (equal to the auxiliary consumption of own generation)	H	6.23	6.39	7.04	5.45
9	Target T&D Loss	I	22%	22%	22%	20%
10	Target Energy at State Bus	J = D / (1-I)	1,189.78	1,113.12	1,172.08	1,227.91
11	Permissible T&D loss	K = J - D	261.75	244.89	257.86	245.58
12	NER Loss (Tripura Drawl Loss)	L	12.42	14.80	9.21	40.07
13	Additional Energy Purchase	M = G - H - K - L	137.52	233.07	362.89	217.75

5.13.10 Accordingly, the Commission has computed the cost towards such additional energy purchase for FY 2017-18 to FY 2020-21 and the same is disallowed from the ARR approved for these years as shown in the following Table:

Table 118: Cost of additional energy purchase for FY 2017-18 to FY 2020-21

Particulars	Units	Derivation	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21
			Truing Up			ARR
Fuel cost	Rs. Crore	A	126.01	187.80	238.27	130.67
Net energy generated (from fuel based plants)	MU	B	586.24	607.73	678.92	534.21
Total Power Purchase cost	Rs. Crore	C	835.92	922.89	998.81	988.37
Total power purchase quantum	MU	D	2,419.22	2,598.45	2,459.42	2,399.73
Total fuel and power purchase cost	Rs. Crore	E=A+C	961.94	1,110.69	1,237.08	1,119.03
Total energy quantum (own generation from fuel based plants + power purchase)	MU	F=B+D	3,005.46	3,206.18	3,138.34	2,933.94
Average fuel and power purchase cost	Rs./kWh	G=(E×10)/F	3.20	3.46	3.94	3.81
Additional energy purchase	MU	J	137.52	233.07	362.89	217.75
Cost of additional energy purchase	Rs. Crore	K = I×J/10	44.01	80.74	143.04	83.05

5.14 Summary of ARR for FY 2017-18 to FY 2022-23

5.14.1 The Commission has approved the Annual Revenue Requirement for each Year of the MYT Control Period i.e. from FY 2016-17 to FY 2020-21 whereby truing up was undertaken for FY 2016-17 in Case No. 4 of 2020 vide order dated 01 September 2020 as outlined below:

Table 119: Aggregate Revenue Requirement for Distribution Business approved for FY 2017-18 to FY 2020-21 in Case No. 4 of 2020 (Rs. Crore)

Sl. No.	Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21
		Approved by Commission			
1	Power Purchase Cost	818.90	914.18	930.63	958.54
2	Inter State Transmission Charges	55.48	52.63	54.21	55.84
3	Intra State Transmission Charges	28.58	29.39	30.73	32.18
4	Cost of State own/ TSECL Generation	206.38	263.51	308.12	311.54
5	O&M Expenses	153.52	160.54	170.02	180.18
6	Depreciation	5.91	5.94	5.98	6.01
7	Interest on Term Loans & Fin. Charges	0.16	0.26	0.25	0.32
8	Return on Equity	17.45	17.32	17.37	17.41
9	Interest on Working Capital	14.83	14.20	15.96	14.91
10	Recovery of ARR & Tariff Petition Fees	0.50	0.30	0.44	0.41
11	Reduction in power purchase on account of higher T&D Losses	(48.55)	(88.00)	-	
12	Gross ARR	1,253.16	1,370.27	1,533.69	1,577.43
13	Less: Non-Tariff Income (Excluding Government Grant)	32.13	25.98	26.46	24.14
14	Net ARR	1,221.03	1,344.29	1,507.23	1,553.29

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- 5.14.2 Based on the approval of various components of the ARR, the Commission has undertaken the truing up exercise for FY 2017-18 to FY 2019-20 as elaborated above in accordance with the tariff Regulations and justification, the Commission approves the Aggregate Revenue requirement of Distribution business. .
- 5.14.3 Also, the Commission has undertaken the exercise for determination of ARR for FY 2020-21 and MYT period of FY 2021-22 to FY 2022-23 based on approval of various ARR Components, as elaborated above in accordance with the tariff Regulations and justification.
- 5.14.4 Considering the FY 2017-18 to FY 2019-20, since the audited accounts were available, the Commission has calculated sharing of gains on the controllable factor as specified in Regulations 10 (VII) of MYT Regulations 2015.
- 5.14.5 Also, as specified in Regulations 10 (VI) (i) (e) of MYT Regulations, 2015, the Commission has disallowed the power purchase cost proportionate to incremental T&D loss for FY 2017-18 to FY 2020-21.
- 5.14.6 Based on the above analysis, the submitted and approved Aggregate Revenue Requirement for each Year of the MYT Control Period from FY 2017-18 to FY 2022-23 is shown in the Table below:

Table 120: Aggregate Revenue Requirement for Truing up for FY 2017-18 to FY 2019-20 of Distribution business approved by the Commission (Rs. Crore)

Sr. No.	Particulars	TSECL Petition			Approved by the Commission		
		FY 2017-18	FY 2018-19	FY 2019-20	FY 2017-18	FY 2018-19	FY 2019-20
1.	Power Purchase Cost	835.92	922.89	1,010.84	835.92	922.89	998.81
2.	Inter State Transmission Charges	40.91	46.91	43.99	40.91	46.91	43.99
3.	Intra State Transmission Charges	42.59	47.48	47.09	27.39	31.31	30.80
4.	Cost of State own/ TSECL Generation	219.16	289.55	346.88	172.44	222.14	274.18
5.	O&M Expenses	189.03	195.28	196.09	175.36	183.39	192.49
6.	Depreciation	6.17	8.19	8.15	6.32	8.37	8.33
7.	Interest on Term Loans & Fin. Charges	1.58	1.25	1.96	0.18	1.25	1.96
8.	Return on Equity	32.56	33.90	35.25	17.57	18.13	18.94
9.	Interest on Working Capital	16.78	16.83	21.17	15.39	15.18	17.83
10.	Reduction in power purchase on account of higher T&D Losses	-	-	-	(44.01)	(80.74)	(143.04)
11.	Sharing of (gains)	-	-	-	-	-	(3.89)
12.	Gross ARR	1,384.70	1,562.29	1,711.43	1,247.46	1,368.84	1,440.39
13.	Less: Non-Tariff Income (Excluding Government Grant)	45.15	72.73	37.18	45.15	72.73	37.18
14.	Net ARR	1,339.55	1,489.56	1,674.25	1,202.30	1,296.11	1,403.21

Table 121: Aggregate Revenue Requirement for FY 2020-21 to FY 2022-23 of Distribution business approved by the Commission (Rs. Crore)

Sr. No.	Particulars	TSECL Petition		Approved by the Commission	
		FY 2020-21	FY 2021-22	FY 2020-21	FY 2022-23
1.	Power Purchase Cost	988.37	1,086.42	988.37	958.56
2.	Inter State Transmission Charges	51.93	135.44	51.93	137.40
3.	Intra State Transmission Charges	46.76	51.26	32.88	35.84
4.	Cost of State own/ TSECL Generation	239.87	269.94	227.50	503.30
5.	O&M Expenses	203.34	178.14	202.38	222.53
6.	Depreciation	7.15	7.26	7.39	7.66
7.	Interest on Term Loans & Fin. Charges	7.41	6.49	7.41	6.17
8.	Return on Equity	32.67	36.81	19.12	19.63
9.	Interest on Working Capital	18.34	19.32	16.94	19.38
10.	Reduction in power purchase on account of higher T&D Losses	-	-	(83.05)	-
11.	Gross ARR	1,595.84	1,791.07	1,470.86	1,910.46
12.	Less: Non-Tariff Income (Excluding Government Grant)	30.04	33.88	30.04	43.80
13.	Net ARR	1,565.80	1,757.19	1,440.82	1,866.67

5.15 Revenue from Sale of Power

Petitioner's Submission

Revenue from Intra-State sales

- 5.15.1 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. Also, the power within Tripura is completely met (except during peak period) before supplying the surplus power to other States.
- 5.15.2 TSECL has submitted the detailed break-up of the actual revenue for various categories of consumers for FY 2017-18 to FY 2020-21. The revenue for FY 2022-23 has been prorated based on the nine month sales and revenue available on the provisional basis. Also, the revenue for FY 2022-23 has been projected based on the average existing tariff of FY 2020-21 multiplied by total sales as per the Energy Balance table. The revenue submitted by the Petitioner is shown in the following Table:

Table 122: Category wise Revenue for FY 2017-18 to FY 2022-23 (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Domestic	233.37	257.07	307.99	312.26	334.96	344.64
Commercial	49.53	38.22	50.82	49.13	49.87	49.99
Irrigation	17.01	16.75	17.96	20.21	21.01	22.09
Water Works	39.13	37.53	37.92	43.52	46.94	49.41
Industries	31.75	28.77	28.80	32.00	32.21	33.53
Mobile Towers	22.36	24.23	23.81	21.52	21.65	21.64
Bulk Supply	77.94	81.44	85.78	75.01	74.56	73.63
Tea, Coffee & Rubber Plants	2.44	2.64	2.59	2.34	3.45	4.46
Public Lighting	14.12	15.29	15.03	27.06	13.70	13.69
Revenue from Intra-State Sale of Power	487.65	501.92	570.70	573.80*	598.35	613.07

*-Breakup of the same was not provided by TSECL in the revised submission

Revenue from Inter-State sales

- 5.15.3 The Petitioner has been selling power to the States of Manipur and Mizoram and Export to Bangladesh which is considered as inter-State sale of power.
- 5.15.4 The actual revenue from such inter-state sales has been submitted by Petitioner for FY 2017-18 to FY 2020-21. For FY 2021-22 to FY 2022-23, the same has been projected based on escalation of 3% on the weighted average tariff of FY 2020-21.

Table 123: Revenue from Inter-State sales from FY 2017-18 to FY 2022-23 (Rs. Crore)

Particulars	Units	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
		Truing Up			ARR	MYT Control Period	
Sale of Power	MUs	1,709.29	1,880.45	1,619.99	1,456.13	1,717.62	1,682.38
Revenue from Sale of Power	Rs. Crore	742.32	879.72	847.63	809.50	844.94	870.29

Revenue Subsidy from Government of Tripura

5.15.5 TSECL has claimed subsidy received from Government of Tripura as Non-Tariff Income. TSECL has claimed the actual Revenue as per the audited accounts of FY 2017-18 to FY 2020-21.

5.15.6 Further TSECL submitted that the projected figure is based on the budget estimated of State Government to provide subsidy in the existing tariff regime.

Table 124: Revenue subsidy from FY 2017-18 to FY 2022-23 (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Revenue Subsidy	30.00	20.00	47.00	54.21	47.00	50.00

5.15.7 Based on the revenue from sale of Intra-State and Inter-State Power as well as Revenue from Subsidy from Government of Tripura, the total revenue claimed by Petitioner for FY 2017-18 to FY 2022-23 is outlined in the table below:

Table 125: Total Revenue from FY 2017-18 to FY 2022-23 as per Petitioner (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Revenue from Intra-State Sale of Power	487.65	501.92	570.70	573.80	598.35	613.07
Revenue from Inter-State Sale of Power	742.32	879.72	847.63	809.50	844.94	870.29
Revenue subsidy	30.00	20.00	47.00	54.21	47.00	50.00
Total Revenue	1,259.97	1,401.64	1,465.34	1,437.51	1,490.29	1,533.36

Commission's Analysis and Ruling

5.15.8 The Commission notes that audited annual accounts for FY 2017-18 to FY 2019-20 are available. Hence, the Commission has considered the revenue from inter-state sale of power, intra-state sale of power and revenue from government subsidy based on audited annual accounts for the respective years. Similarly, the Commission has considered the revenue for FY 2020-21 based on provisional accounts submitted by the Petitioner.

5.15.9 With respect to Revenue from Intra-State Sales, for FY 2021-22 to FY 2022-23, the Commission has recomputed the Revenue on the sales approved in Table 78 of this order, based on the existing tariff as approved on 1st September 2020 tariff order.

5.15.10 With respect to Revenue from Inter-State Sales, as regards to FY 2021-22, the Commission notes that, the TSECL has submitted the sales based on revised provisional sales. However, though the revision in inter-state sales has been revised in the replies to the data gaps, the similar impact of the same has not been provided by TSECL in Energy balance and respective power purchase as well as T&D Loss. Therefore, the Commission is inclined to consider the data as provided in the petition

for FY 2021-22. For FY 2022-23, the Commission has considered the sales as provided in the Petition and approved vide Table 83 whereby the quantum considered is similar to FY 2021-22 without considering the sale quantum of DSM. However, the weighted average rate for computing the revenue is considered by escalating 6.25% based on the Year on Year growth considering the trend of growth in last five years as outlined in the table below:

Table 126: Weighted average rate of Inter-State sale of power for past 5 years

Particulars	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21
Weighted Average Rate for Inter-State sale of Power	2.65	3.70	4.34	4.68	5.23	5.56
YoY growth		39.62%	17.38%	7.72%	11.84%	6.25%
CAGR Growth	5 Year	4 Year	3 Year	2 Year	YoY	Considered
Growth Rate	15.97%	10.71%	8.58%	9.01%	6.25%	6.25%

5.15.11 The revenue from government subsidy has been considered based on prevailing and submitted by the Petitioner.

5.15.12 In view of the above, the revenue from sale of power considered by the Commission for the Control period is shown in the following Table:

Table 127: Total Revenue from FY 2017-18 to FY 2022-23 approved by the Commission (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
From Intra-State Sale of Power	487.65	501.92	570.70	573.80	630.37	661.16
From Inter-State Sale of Power	742.33	879.72	847.63	809.50	1,109.74	1,076.22
Revenue subsidy	30.00	20.00	47.58	54.21	47.00	50.00
Total Revenue	1,259.98	1,401.64	1,465.91	1,437.51	1,787.11	1,787.38

5.16 Revenue Gap/(surplus)

Petitioner's Submission

5.16.1 For calculating the total regulatory asset, TSECL has considered the revenue gap at existing tariff. Further the gap is calculated considering the revenue from retail and bulk sales and the total cost of distribution business for the respective FY 2017-18 to FY 2022-23.

5.16.2 Based on the proposed Aggregate Revenue Requirement and total Revenue for FY 2017-18 to FY 2022-23, TSECL has proposed the revenue gap as shown in Table below:

Table 128: Revenue Gap/(Surplus) for FY 2017-18 to FY 2022-23 considered by the TSECL (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Net ARR	1,339.55	1,489.56	1,674.25	1,565.80	1,757.19	1,907.36
Less: Total Revenue	1,259.97	1,401.64	1,465.34	1,437.51	1,490.29	1,533.36
Revenue Gap/(surplus)	79.58	87.92	208.91	128.29	266.90	374.00

5.16.3 The Total Revenue gap as proposed by TSECL, based on the revised submission considering the replies to data gaps, including the approved regulatory asset pending for liquidation as per past orders is outlined as below:

Table 129: Total Revenue Gap including Past Regulatory assets considered by TSECL (Rs. Crores)

Particulars	Amount
Approved Regulatory Asset as per Last Tariff Order	308.15
Carrying cost on approved regulatory asset for 2 years @ 11%	33.90
Additional Gap Proposed under True up of FY 2017-18 to FY 2019-20 in this petition	380.37*
Gap proposed under APR of FY 21 and FY 22	395.19
Less: Gap approved in Last tariff Order	-29.76
Gap at existing Tariff of FY 23	374.00
Total Gap till FY 23	1,461.84

* - Arithmetical Error in the calculation as proposed

Commission's Analysis and Ruling

5.16.4 Based on the approved Aggregate Revenue Requirement and total Revenue for FY 2017-18 to FY 2022-23, the Commission determines the revenue gap as shown in Table below:

Table 130: Revenue Gap/(Surplus) for FY 2017-18 to FY 2022-23 approved by Commission (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Truing Up			ARR	MYT Control Period	
Net ARR	1,202.30	1,296.11	1,403.21	1,440.82	1,740.47	1,866.67
Less: Total Revenue	1,259.98	1,401.64	1,465.91	1,437.51	1,787.11	1,787.38
Revenue Gap/(surplus)	(57.67)	(105.54)	(62.70)	3.31	(46.65)	79.28

5.16.5 As regards the carrying cost, the Commission notes that TSECL has not filed the Tariff Petition on time. Hence, it would not be prudent to allow carrying cost on revenue gaps approved in this Order. However, the Commission notes that, TSECL has also sought carrying cost from FY 2018-19 onwards in the last petition, which was accordingly approved by the Commission. Therefore, the Commission finds that approach of TSECL in this regard justified and the same has been adopted by the Commission to arrive at cumulative revenue gap for FY 2022-23. Accordingly, the

Commission has recalculated the carrying cost, based on the standalone gap approved in this order:

Table 131: Calculation of Carrying cost as approved by Commission (Rs. Crores)

Particulars	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
Opening Gap	232.02	174.35	68.81	6.11	9.42	(37.23)
Addition	(57.67)	(105.54)	(62.70)	3.31	(46.65)	79.28
Recovery	-	-	-	-	-	-
Closing Gap	174.35	68.81	6.11	9.42	(37.23)	42.05
Rate of Interest (%)		11.70%	12.05%	11.15%	10.40%	10.55%
Carrying cost	-	14.22	4.51	0.87	(1.45)	0.25
Total Carrying cost	18.41					

5.16.6 Accordingly, the Total Revenue gap approved by the Commission, including the approved regulatory asset as per past orders, is outlined as below:

Table 132: Total Revenue Gap including Past Regulatory assets approved by Commission (Rs. Crores)

Sr. N	Particulars	Petition	Analysis
a	Net ARR for FY 2022-23	1,857.36	1,866.67
b	Less: Total Revenue from sale of power	1,483.36	1,787.38
1	<u>Standalone Revenue Gap/(surplus) for FY 2022-23 - (A)</u>	374.00	79.28
2	<u>Past Gaps</u>		
a	Revenue gap/(surplus) for Truing up of ARR for FY 2013-14	33.66	33.66
b	Revenue gap/(surplus) for Truing up of ARR for FY 2014-15	76.92	76.92
c	Revenue gap/(surplus) for Truing up of ARR for FY 2015-16	108.72	108.72
d	Revenue gap/(surplus) for Truing up of ARR for FY 2016-17	12.72	12.72
e	Revenue gap/(surplus) for Provisional Truing up of ARR for FY 2017-18*	(41.91)	
f	Revenue gap/(surplus) for Provisional Truing up of ARR for FY 2018-19*	24.21	
g	Revenue gap/(surplus) for Review of ARR for FY 2019-20*	13.76	
h	Carrying cost*	50.31	
i	Revenue gap/(surplus) for Review of ARR for FY 2020-21*	29.76	
j	<u>Cumulative Revenue gap as per Review Order - Approved Regulatory Assets (B)</u>	308.15	232.02
3	<u>Carrying cost on approved regulatory asset for 2 years @ 11% - (C)</u>	33.90	18.41
4	<u>Gap Proposed under True up of FY 2017-18 to FY 2019-20 in this petition - (D)</u>	380.36	(225.91)
a	Revenue gap/(surplus) for Truing up of ARR for FY 2017-18	79.58	(57.67)
b	Revenue gap/(surplus) for Truing up of ARR for FY 2018-19	87.92	(105.54)
c	Revenue gap/(surplus) for Truing up of ARR for FY 2019-20	208.91	(62.70)
5	<u>Gap proposed under APR of FY 21 (after adjustment of allowed gap in last order) and FY 22 - (E)</u>	365.43	(43.34)
a	Revenue gap/(surplus) for Provisional Truing up of ARR for FY 2020-21	128.29	3.31
b	Revenue gap/(surplus) for Provisional Truing up of ARR for FY 2021-22	266.90	(46.65)
c	Less: Gap Approved Earlier	(29.76)	
6	<u>Total Gap till FY 2022-23 - (summation of A to E)</u>	1,461.83	60.47

* - Standalone true-up gap considered separately.

5.16.7 The treatment of this revenue gap is elaborated in the subsequent chapter of this Order.

6 Compliance to Directives of the Commission

- 6.1.1 The Commission in the last tariff order dated 01 September, 2020 has issued multiple directions to TSECL. TSECL, in its Tariff Petition has not submitted any compliance status of the directives given by the Commission.
- 6.1.2 The Commission directs TSECL to submit the compliance status of the directives given by the Commission in order dated 01 September, 2020 within 3 months of the date of the order. Failure to comply with the directions of the Commission will compel us to take appropriate action as per provision of the Act.

7 Tariff Principles and Design

7.1 Tariff Proposal for FY 2022-23

Petitioner's submission

- 7.1.1 TSECL submitted the cumulative revenue gap of Rs. 1461.83 Crore for FY 2022-23. TSECL further submitted that the revenue at existing tariff would not be sufficient enough to meet the annual revenue requirement of each of the years during control period. Besides, when the revenue gap carried over from previous years is considered, it becomes imperative that there is a need to increase the existing tariff to make it sufficient enough to meet the requirement and recover the pending gap of past years which has accumulated over the past few years.
- 7.1.2 The last tariff order in Tripura was issued around 8 years back where there was a tariff revision done. Since there has been no tariff hike in the last eight years, the tariff in Tripura is not cost reflective now and is also less than similar states with similar fuel mix and subsidy provided by State Government. This necessitates an increase in tariff of Tripura to make it cost reflective and prevent further accumulation of regulatory assets and accumulated losses of TSECL which can be detrimental for the sustainability of the power sector in Tripura.
- 7.1.3 There is a huge gap proposed of INR 1462 crores which is more than 200% of the present revenue from the sale of power within the state. As such, it is clear that there is a need to increase the existing tariff to make it sufficient enough to meet the requirement and recover the pending gap of past years which has accumulated over the past few years. Since this is a high amount and includes gap of a long period of more than 10 years, TSECL is proposing three scenarios of tariff hike along with the calculated time frame of recovery of the total gap.
- 7.1.4 The Commission is requested to consider one of these scenarios depending upon the approved amount of regulatory assets and an appropriate time period considered justified

Table 133: Scenario proposed by Petitioner to recover Revenue Gap

Particulars	Scenarios	10% average hike across all categories	20% average hike across all categories	30% average hike across all categories
Additional Revenue at Proposed Tariff in FY 22-23		61.30	122.6	183.90
Time Taken for Bridging Regulatory Gap	years	18	10	7.5

Commission's Analysis and Ruling

- 7.1.5 The Commission in this Order has undertaken the truing up for FY 2017-18 to FY 2019-20 and APR for FY 2020-21 and computed the revenue gap arising out of such truing up. Such revenue gap has been carried forward to consider for recovery during FY 2022-23.
- 7.1.6 Further, the Commission has determined the Aggregate Revenue Requirement for FY 2021-22 to FY 2022-23. The revenue gap/(surplus) for the said period is determined in the previous Chapter of this Order. Such revenue gap/(surplus) has been carried forward and mechanism of the recovery of the same is described in the subsequent section of this order.
- 7.1.7 The cumulative revenue gap approved by the Commission for FY 2022-23 is Rs 60.47 Crore as shown in para 5.16.6 above.
- 7.1.8 For full recovery of this Gap, there would be increase in consumer tariff by 9%. However, the Commission is of the view that with increasing efficiency in operations and reduction in losses next year, TSECL would be in a position to absorb the revenue gap of Rs 60.47 Crore in FY 2023-24. Accordingly, the Commission decides to continue with the existing Tariff approved vide order dated 1 September, 2020.
- 7.1.9 The Commission has determined the Net ARR for FY 2022-23, which includes the cost of purchase towards inter-state sale. After deducting the projected revenue of Rs. 1076.22 Crore from inter-state sale of power, the Commission approves the Net ARR for FY 2022-23 as Rs. 740.45 Crore, which is Aggregate Revenue Requirement for sale of power within State after considering subsidy amount of Rs 50 Crore as submitted by TSECL.
- 7.1.10 Accordingly, the Commission approves the Average Cost of Supply for FY 2022-23 as shown in the following Table:

Table 134: Average Cost of Supply and Regulatory Assets for FY 2022-23 approved by the Commission

Sl. No.	Particulars	Approved for FY 2022-23
1	Net ARR for FY 2022-23 for recovery through Tariff (excluding Revenue from Inter-State sale) (Rs. Crore)	740.45
2	Average Cost of Supply (Rs./kWh)	6.90
3	Regulatory Asset (Rs. Crore)	60.47

- 7.1.11 The Commission has created the regulatory asset of Rs. 60.47 Crore. The Commission notes that this Regulatory Assets shall be revised after final truing up for FY 2020-21 onwards and the same shall be considered by the Commission for recovery through tariff in next tariff Petition.

7.2 Wheeling Charges

Petitioner's submission

7.2.1 No submission has been made by TSECL with respect to Wheeling Charges.

Commission's Analysis and Ruling

7.2.2 TERC MYT Regulations, 2015 specifies that distribution licensee should segregate the accounts of licensed business into wheeling business and retail supply business. The Commission notes that neither TSECL has not segregated its account in wheeling and retail supply business nor proposed any wheeling charges computation in the Petition. Such lackluster approach may not be appreciable and it is directed to TSECL to provide the complete tariff petition as per the provisions of the MYT Regulations, as applicable.

7.2.3 Considering the approach as adopted in the last tariff order, the Commission considers the similar allocation matrix which are also specified in other SERC's Tariff Regulations whereby the ARR has been segregated into wheeling and retail supply business based on this allocation matrix and wheeling charges has been determined thereafter. The Allocation matrix considered by the Commission is outlined in the following table:

Table 135: Allocation Matrix for segregation of Wire and Supply business

Sl. No.	Particulars	Allocation Ratio	
		Wire	Retail Supply
1	Power Purchase Cost	0%	100%
2	Inter State Transmission Charges	0%	100%
3	Employee Cost	60%	40%
4	A&G Expenses	50%	50%
5	R&M Expenses	90%	10%
6	Depreciation	90%	10%
7	Interest and Finance Charges	90%	10%
8	Return on Equity	90%	10%
9	Interest on Working Capital	10%	90%
10	Less: Non-Tariff Income	0%	100%

7.2.4 Accordingly, the Commission segregated the ARR approved for Distribution business for FY 2022-23 into ARR for Wheeling business and retail supply business. Further, as regards cost of generation, the Commission has considered this cost as part of power purchase cost and allocated to retail supply business only. The segregated ARR for FY 2022-23 approved by the Commission is shown in the following Table:

Table 136: Segregation of ARR for Distribution Business as approved by the Commission (Rs. Crore)

Sl. No.	Particulars	ARR- FY 2022-23		
		Wire	Retail Supply	Total
1	Power Purchase Cost	-	958.56	958.56
2	Inter State Transmission Charges	-	137.40	137.40
3	Intra State Transmission Charges	35.84	-	35.84
4	Cost of State own/ TSECL Generation	-	503.30	503.30
5	Employee Cost	109.57	73.05	182.62
6	A&G Expenses	8.03	8.03	16.06
7	R&M Expenses	21.47	2.39	23.86
8	Depreciation	6.89	0.77	7.66
9	Interest and Finance Charges	5.55	0.62	6.17
10	Return on Equity	17.67	1.96	19.63
11	Interest on Working Capital	1.94	17.44	19.38
12	Gross ARR	206.96	1,703.51	1,910.46
13	Less: Non-Tariff Income (Excluding Government Grant)	-	43.80	43.80
14	Net ARR	206.96	1,659.71	1,866.67

7.2.5 Further, for computation of wheeling charges, the Commission approves the wheeling charges for FY 2022-23 as shown in the following Table:

Table 137: Wheeling Charges for FY 2022-23 as approved by the Commission

Sl. No.	Particulars	UoM	FY 2022-23
1	Distribution Cost	Rs. Crore	206.96
2	Total Energy input into Distribution System	MU	1,260.25
3	Distribution cost for wires business for 33 kV voltage level (assuming 35% of cost at 33 kV)	Rs. Crore	72.44
4	Wheeling Charges	Rs./kWh	0.57

7.2.6 The Wheeling charges determined above are applicable for use of the distribution system of TSECL by other licensees or generating companies or captive power plants or consumers/users who are permitted open access at 33 kV voltage level under relevant regulations of the Commission.

7.3 Cross Subsidy

7.3.1 An element of cross-subsidy is inherent in the present tariff structure. The Commission has continued with the tariff approved in previous Tariff Order. The tariffs of different consumer categories in relation to the approved ACoS is such that the tariffs for some categories of consumers are higher than the ACoS while the tariffs for other categories are lower than the ACoS.

7.3.2 However, the cross-subsidy considering the similar tariff is more or less rationalised as shown in the Table below, it is directed to the Petitioner to provide the proper road map for reduction in cross subsidy in line with the provisions of the Electricity Act and

National Tariff Policy in the Tariff Petition to be submitted in the future.

Table 138: ABR/ACoS for FY 2022-23 as approved by the Commission

Category of Consumers	FY 2022-23				
	Sales	Revenue	Average Billing Rate (ABR)	Average Cost of Supply (ACoS)	Cross Subsidy
	(MU)	(Rs. Crore)	(Rs./kWh)	(Rs./kWh)	%
Kutir Jyoti	22.68	6.01	2.65	6.73	39%
Domestic	635.62	359.70	5.66	6.73	84%
Commercial	72.34	53.86	7.44	6.73	111%
Irrigation	42.00	24.31	5.79	6.73	86%
Water Works	84.18	56.26	6.68	6.73	99%
Industries	47.07	41.29	8.77	6.73	130%
Tea, Coffee & Rubber Plants	4.85	3.58	7.38	6.73	110%
Bulk Supply	88.55	66.01	7.45	6.73	111%
Public Lighting	46.60	27.98	6.00	6.73	89%
Mobile Towers	28.65	22.17	7.74	6.73	115%
Total	1,072.55	661.16	6.16	6.73	92%

7.4 Cross-Subsidy Surcharge

Petitioner's Submission

7.4.1 No submission has been made by TSECL with respect to Cross Subsidy Surcharge (CSS).

Commission Analysis and Ruling

7.4.2 As per Section 2(47) of the said Electricity Act, 2003 defines "Open Access", while the Section 42 of the said Act inter-alia mandates the Distribution Licensee to provide Open Access to eligible consumers, subject to payment of "Cross Subsidy Surcharge" and other applicable open access charges. Also, as per Tripura Electricity Regulatory Commission (Terms and Condition of Open Access) Regulation, 2010, consumers with a connected load of 1 MW and above shall be allowed open access against which the open access charges are required to be paid by such consumers.

7.4.3 The Commission notes that TSECL has not proposed any CSS computation in the Petition. Such lackluster approach may not be appreciable and it is directed to TSECL to provide the complete tariff petition as per the provisions of the MYT Regulations, as applicable.

7.4.4 The Commission observes that Hon'ble APTEL in its Judgment dated March 24, 2015 in Appeal No. 103 of 2012 had stipulated the methodology for determination of tariff and cross-subsidy with reference to the VCoS. However, at present, the voltage-wise losses are not available and the actual voltage-wise losses would be available only after appropriate metering and measurement of separate losses undertaken by TSECL. Further, the framework prescribed by the Hon'ble APTEL requires that the

category-wise tariffs be determined on the basis of ACoS as well as VCoS, and also the tariffs for all categories should be within $\pm 20\%$ of the overall ACoS for the Distribution Licensee.

- 7.4.5 The Commission feels that since the segregation of assets is still pending with the various function and in the absence of a realistic assessment of the voltage-wise losses, the determination of VCoS and thereafter CSS, may lead to incorrect conclusions. Further, there is no denying that the cost of supply at higher voltages, i.e., 220 kV, 132 kV, etc., will be lower than the cost of supply at lower voltages, i.e., LT, 11 kV, etc., on account of the lower distribution losses at higher voltages and non-utilisation of the assets at lower voltages for supplying electricity to the consumers at higher voltages.
- 7.4.6 As per the provisions of Section 42(2) of the Electricity Act 2003, the cross-subsidy surcharge needs to be based on the current level of cross subsidy. Accordingly, the consumers who opted for open access needs to be charged for the compensation of current level of cross subsidy which prevailed during the period and in order to avoid the burden of the same getting passed on other consumers who are with the Distribution Licensee
- 7.4.7 Therefore, in this order, the Commission has determined category-wise tariffs on the basis of ACoS, while at the same time moving towards the philosophy that the tariffs for the consumers taking supply at higher voltages is lower than that for consumers taking supply at lower voltages. However, this objective cannot be achieved immediately till the submission of reliable data. The Commission, in earlier chapter of this Order, has already directed TSECL to segregate the voltage wise losses. In view of this, the Commission does not accept the methodology proposed by TSECL.
- 7.4.8 Also, the Central Government notified the revised National Tariff Policy on 28th January 2016 and has revised the “Surcharge Formula” as follows:

$$S = T - [C / (1 - L / 100) + D + R]$$

Where,

S is the Surcharge

T is the Tariff Payable by the relevant category of consumers including reflection the Renewable Purchase Obligation

C is the per unit weighted average cost of power purchase by the Licensee, including meeting the Renewable Purchase Obligation

D is the aggregate of transmission, distribution and wheeling charge applicable to the relevant voltage level.

L is the aggregate of transmission, distribution and commercial losses, expressed as a percentage applicable to the relevant voltage level

R is the per unit cost of carrying regulatory assets

Provided that the surcharge shall not exceed 20% of the tariff applicable to the

category of the consumers

seeking open access.

7.4.9 Based on the above formula, the Commission has worked out the various components of CSS formulae based on the approved values of FY 202-23 and computed category wise CSS in accordance with the Tariff Policy 2016.

Computation of Cross Subsidy Surcharge for FY 2022-23:

- **Computation of Weighted Average cost of Power – “C”**

Computation of C is per unit weighted average cost of power purchase which is calculated based on the approved power purchase cost excluding PGCIL cost and including the cost of own generation. The detail calculation is provided as below:

Table 139: Calculation of C for computation of CSS for FY 2022-23

Particulars	FY 2022-23		
	MUs	Cost	Rs./kWh
Own Generation	602.74	503.30	8.35
Power Purchase	2,533.73	958.56	3.78
Total	3,136.47	1,461.86	4.66

- **Computation of system Loss - “L”**

Computation of L is the aggregate of transmission, distribution and commercial losses. The Commission notes that at present, the voltage-wise losses are not available and TSECL has made certain assumptions. The actual voltage-wise losses would be available only after appropriate metering and measurement of separate losses undertaken by TSECL. Further, the framework prescribed by the Hon'ble APTEL requires that the category-wise tariffs be determined on the basis of ACoS as well as VCoS, and also the tariffs for all categories should be within $\pm 20\%$ of the overall ACoS for the Distribution Licensee.

The Commission feels that being the first petition filed by TSECL based on the segregation of various function and in the absence of a realistic assessment of the voltage-wise losses, the determination of VCoS and thereafter CSS, may lead to incorrect conclusions. Accordingly, the overall system loss has been considered for computation of loss for the category of consumers and the Commission directs the Petitioner to provide the actual voltage wise loss for determination of CSS in future tariff petition submission.

The Approved wheeling losses of the whole distribution system and the transmission losses are used to arrive at the grossed up total system losses for the Petitioner which is shown in the following table:

Table 140: Computation of System Loss for FY 2022-23

Particulars	Loss (%)
Intra-State Transmission Loss	6.00%
Wheeling Loss	14.89%
Total System Loss	20.00%

- Computation of transmission, distribution and wheeling Charges – “D”**

The Component D is the aggregate of the Transmission and Wheeling charges as approved in the tariff order along (including PGCIL charges and intra-state) and is outlined in the following table:

Table 141: Computation of Transmission and wheeling charges per unit for FY 2022-23

Particulars	Unit	FY 2022-23
Inter-State Transmission Charges	Rs. Crores	137.40
Intra-State Transmission Charges	Rs. Crores	35.84
Total Transmission Charges	Rs. Crores	173.24
Sales	MUs	1,072.55
Total Transmission Charges	Rs./kWh	1.62

- Computation of Average Billing Rate ‘T’:**

The effective Average Billing Rate as per tariff approved for FY 2022-23 has been considered.

- Determination of Cross Subsidy Surcharge ‘S’:**

The category wise CSS applicable to open access consumers arrived on consideration of the components ABR, C, L & D from the above referred respective sections is provided in the tables below:

Table 142: Cross Subsidy Surcharge for FY 2022-23 as approved by the Commission

Consumer Category	T (ABR)	C	WL	TL	L	D=WL + Tx	CSS Comp uted - a	20% of Tariff - b	CSS - Min (a,b)
	Rs./unit		%				Rs./unit		
Commercial									
<i>Semi-commercial: All units</i>	7.38	4.66	14.89%	6.00%	20.00%	1.62	-	1.48	-
<i>Three phase : All units</i>	7.82	4.66	14.89%	6.00%	20.00%	1.62	0.37	1.56	0.37
<i>Three phase Group</i>	7.89	4.66	14.89%	6.00%	20.00%	1.62	0.44	1.58	0.44
IRRIGATION									
<i>Upto 5 H.P. : All units</i>	4.96	4.66	14.89%	6.00%	20.00%	1.62	-	0.99	-
<i>Above 5 H.P. : All units</i>	6.17	4.66	14.89%	6.00%	20.00%	1.62	-	1.23	-
WATER WORKS : All units	6.68	4.66	14.89%	6.00%	20.00%	1.62	-	1.34	-
INDUSTRIAL									
<i>Upto 5 H.P.(E-R/5)</i>	6.18	4.66	14.89%	6.00%	20.00%	1.62	-	1.24	-

Consumer Category	T (ABR)	C	WL	TL	L	D=WL + Tx	CSS Comp uted - a	20% of Tariff - b	CSS - Min (a,b)
	Rs./unit		%			Rs./unit			
<i>Upto 5 H.P.(E-U/5)</i>	6.70	4.66	14.89%	6.00%	20.00%	1.62	-	1.34	-
<i>Above 5 - 20 H.P.</i>	8.22	4.66	14.89%	6.00%	20.00%	1.62	0.78	1.64	0.78
<i>Above 20 - 100 H.P.</i>	8.85	4.66	14.89%	6.00%	20.00%	1.62	1.41	1.77	1.41
<i>Above 100 H.P.</i>	9.35	4.66	14.89%	6.00%	20.00%	1.62	1.91	1.87	1.87
Tea, Coffee & Rubber garden	7.38	4.66	14.89%	6.00%	20.00%	1.62	-	1.48	-
BULK SUPPLY : All units	7.45	4.66	14.89%	6.00%	20.00%	1.62	0.01	1.49	0.01
PUBLIC LIGHTING									
Panchayat : All units	5.40	4.66	14.89%	6.00%	20.00%	1.62	-	1.08	-
Nagar Panchayat / Municipal Area : All units	6.55	4.66	14.89%	6.00%	20.00%	1.62	-	1.31	-
Special public utility	5.70	4.66	14.89%	6.00%	20.00%	1.62	-	1.14	-
Mobile Tower	7.74	4.66	14.89%	6.00%	20.00%	1.62	0.30	1.55	0.30

7.4.10 CSS determined above shall be applicable to consumer availing open access as per TERC (Terms and Condition of Open Access) Regulation, 2010, as amended from time to time.

7.5 Tariff Principles

7.5.1 The Commission is guided by the provisions of the EA 2003, National Tariff Policy and other Orders by APTEL in the matter of Tariff design, TERC Tariff Regulations, 2015. The Commission has considered the main objectives of the Electricity Act, 2003 including the protection of the interest of consumers, the supply of electricity to all areas and rationalisation of tariffs. Apart from the above, the Commission also taken into consideration TSECL's submissions as well as the Public responses in these proceedings.

7.5.2 Section 61 of the Act lays down the broad principles and guidelines for determination of retail supply tariff. The guiding principles as laid down in Section 61 of the Act are as follows:

- The principles and methodologies specified by the Central Commission for determination of the tariff applicable to generating companies and transmission licensees;
- The generation, transmission, distribution and supply of electricity are conducted on commercial principles;
- The factors which would encourage competition, efficiency economical use of the resources, good performance and optimum investments;
- Safeguarding of consumers, interest and at the same time, recovery of the cost of electricity in a reasonable manner;
- The principles rewarding efficiency in performance;
- Multi-year tariff principles;

-
- g) That the tariff progressively, reflects the cost of supply of electricity, and also reduces and eliminates cross-subsidies within the period to be specified by the Appropriate Commission;
 - h) The promotion of co-generation and generation of electricity from renewable sources of energy;
 - i) The National Electricity Policy and Tariff Policy.

7.5.3 Further, the Commission is well within its power to make required changes in the tariff structure even if the Licensee has not proposed such changes or no indication has been given to the public regarding the intended changes. In this context, the Hon'ble Appellate Tribunal of Electricity (APTEL), vide its Order in Appeal No. 106 of 2008, has ruled that the Commission has the power to design the tariff as per its own wisdom. It also mentions that the Commission does not need to seek public comments before announcement of the tariff. The relevant part of the APTEL Order in Appeal No. 106 of 2008 is reproduced below:

“ ...

14) It is not the case of the appellant that the Commission had no power to create a tariff design different from the one proposed by the licensee. The Commission has the power to design the tariff as per its own wisdom. The Commission need not, before issuing the actual order, publicly announce the tariff it proposed and call for public comments. In fact this is not even the appellant's contention.

15) The rule of natural justice requires the Commission to issue a public notice about the ARR and Tariff petition of the licensee and to allow the public to make its submissions on the ARR and Tariff proposals. The Commission has, thereafter, to design the scheme for recovery of the ARR keeping in view various relevant factors. If the classification of the consumers can be supported on any of the grounds mentioned in section 62(3) it would not be proper to say that the tariff fixing was violative of principles of natural justice because the Commission did not issue a public notice of the tariff categories which the Commission had intended to create.”

7.5.4 Considering the above judgement, the Commission is proceeding with its analysis of the existing tariff structure and considering changes as deemed appropriate by the Commission.

7.5.5 The subsequent paragraphs deal with the submissions of TSECL regarding the Tariff Philosophy and the changes approved by the Commission in the existing tariff structure.

(a) Power Factor Rebate and Penalty

TSECL's Submission

7.5.6 TSECL submitted that, at present, all the consumer categories are charged based on

the electricity consumption in kWh and as such there is no incentive for improvement in power factor. Most of the other States in India have an incentive-penalty provision in tariff for the big consumers like the industrial consumers to keep the power factor within the acceptable limits and to reduce the losses in the system. Based on the similar provisions prevalent in other States, TSECL proposes to introduce the following power factor rebate and penalty provision for HT/EHT Industrial Category consumers initially. The same shall be presently applicable only for all industrial category consumers but may be extended for other categories in future.

(a) Power Factor Rebate:

- i. In case, the average PF (leading or lagging) maintained by the consumer is more than 0.85 and upto 0.95, a rebate of 1% on the Energy Charges on unit consumption shall be applicable;
- ii. For PF (leading or lagging) of 0.95 and above upto 0.97, a rebate of 2% on the Energy Charges on unit consumption shall be applicable;
- iii. For PF (leading or lagging) of 0.97 and above upto Unity PF, a rebate of 3% on the Energy Charges on unit consumption shall be applicable.

(b) Power Factor Penalty:

- i. In case average PF (leading or lagging) in a month for a consumer falls below 0.85, a penalty @1% for every 1% fall in PF (leading or lagging) from 0.85 to 0.60; plus 2% for every 1% fall below 0.60 to 0.30 upto and including 0.30 shall be levied on total unit consumption

Commission's Analysis and Ruling

- 7.5.7 The Commission in the last tariff order had TSECL to start awareness program among the HT Consumers informing them about the impact of having low PF and also inform the Commission of the availability of metering infrastructure to introduce the said mechanism of PF Incentive/Penalty. The Commission was of the view that it is advisable that consumers get sufficient lead time to take corrective action to improve the PF to avoid penalty of maintaining low PF when it is approved by the Commission in the next tariff Order. TSECL was also directed to do sample study of HT Consumers of different category and submit the impact of the same on tariff of the consumers in the next tariff Petition.
- 7.5.8 However, TSECL has not submitted any such details as directed by the Commission. Accordingly, the Commission is not inclined to introduce the PF Incentive/Penalty in the present Order. It will be considered once all the details are submitted by TSECL as mentioned herein above in the next tariff Petition.

(b) Limit for Single Phase/Three Phase Consumers***TSECL's Submission***

- 7.5.9 TSECL submitted that, at present, the limit for connected load in single phase connections in LT categories of domestic and commercial is 3 kW. As against this, most of the States in India have a limit of 5 kW for single phase connections. The single phase meters available now are also capable of supporting load upto 5 kW. With the increasing use of appliances like AC, geysers etc. it is felt that the limit for single phase connections may be increased up to 5 kW to avoid unnecessary inconvenience to the consumers for change of meters etc. TSECL requested the Commission to change the limit of connected load in LT domestic and commercial consumers from 3 kW to 5 kW.

Commission's Analysis and Ruling

- 7.5.10 The Commission in the last tariff order has already allowed the prayer of TSECL and approved the change in limit of connected load for single phase connections for LT Domestic and Commercial consumers from 3kW to 5kW.

(c) Separate Tariff Category for Electric Vehicles***TSECL's Submission***

- 7.5.11 As per the guidelines issues by Ministry of Power, a separate tariff category is proposed for commercially operating electric vehicle charging stations (not for own use) at 15% discounted rate (in fixed and energy charges) than the applicable rate for LT commercial or HT commercial as applicable

Commission's Analysis and Ruling

- 7.5.12 The Commission is aware about initiatives taken by the Government to encourage use of Electric Vehicles (EVs). One of the key challenges identified in this regard is lack of EV charging infrastructure. To address this challenge, number of steps is being taken up by the Central Government including plan for setting up charging stations for electric vehicles. One of the strategic drivers for the Policy is promotion of creation of dedicated infrastructure for charging of EVs through subsidization of investment.
- 7.5.13 The Commission has specified separate tariff for electric vehicle charging stations (not for own use) in the tariff schedule and the said tariff is fixed at Average Cost of Supply.

(d) Rebates

TSECL's Submission

- 7.5.14 TSECL has proposed various rebates for incremental consumption, Greenfield Industries, Load Factor Rebate etc.

Commission's Analysis and Ruling

- 7.5.15 The Commission is of the view that TSECL has only proposed the rebates without giving any details of the impact on the revenue. The Commission directs TSECL to propose such changes in tariff along with its impact on revenue in the next tariff Petition.

(e) Net Metering for grid interactive Solar Roof-top

- 7.5.16 As per TERC Net metering for grid interactive rooftop solar system Regulations, net metering is permissible for Eligible Consumer having a capacity not exceeding 1 MW. The Commission in exercise of its power under Regulation 19 has amended the Capacity up to 500 kW, which will be eligible for net metering. Any existing or future solar rooftop system having capacity of 500kW or above shall not be eligible for net metering and TSECL should adopt the gross metering for such consumers. To give effect to the gross metering, Meter shall be installed to record the generation and the said units shall be billed at tariff approved by the Commission and the credit for said units to be given at the tariff discovered by SECI in the recent solar bid.

(f) Levy of Fuel and Power Purchase Price Adjustment

- 7.5.17 TERC has notified TERC (Fuel and Power Purchase Price Adjustment Formula) Regulations, 2011 wherein TSECL is expected to levy/refund FPPPA Charge for every quarter. It is observed that TSECL is not following the Regulations diligently and has approached the Commission by way of Petition for prior approval for levying FPPPA Charge on piecemeal basis. It is expected that TSECL should levy/refund FPPPA Charge and levy the same at the end of every quarter for next three months as per relevant provisions of the Regulations.

7.6 Approved Tariff for FY 2022-23

The category-wise tariffs approved by the Commission for FY 2022-23 are as follows:

A. Kutir Jyoti

Applicability

Kutir-Jyoti connection is covered under scheme of the State Government or Central Government. Maximum connected load of 120 Watt (60 watt x 2 points) and maximum

monthly consumption of 15 kWh is allowed for this category. If consumption of a Kutuir Jyoti Consumer in a month increases beyond 15 kWh, then such consumer will be charged as per tariff rates applicable to normal Domestic Category for that month.

Tariff:

Particulars	Fixed Charge
For consumption upto 15 kWh/month	Rs. 62 / connection / month

- If, during any billing period, the consumption exceeds the stipulated 30 kWh/month, the consumers will be considered as if they are shifted to the next appropriate Domestic category on telescopic tariff structure.
- Rebate:** A rebate of 5% on the total billing amount will be allowed to the consumer for prompt payment made on or before the due date.
- Surcharge for delayed payment:** Surcharge @ 2% per month or part thereof at simple interest shall be levied, if payment is made after the due date.
- Fuel and Power Purchase Cost Adjustment (FPPCA) charges as applicable will be charged extra.
- The Tariff does not include any tax or duty levied by the Government, which will be charged at actual as and when applicable.

B. Domestic

Applicability

Electric service connection related to consumption of electricity for lights, all types of fans, heating devices, television, radio, refrigerator, air conditioner and all other appliances for consumers' own domestic use but not for commercial purpose, educational institutions owned or aided by State/Central Government and all Government hospitals and all hospitals owned by charitable institutions (not maintained for commercial purposes), as approved and notified by the State Government.

Tariff:

Sub-Category/Slab	Energy Charge – Rs/kWh	Fixed Charge
Domestic (rural): 0-50 units	4.03	Rs. 15/Connection/Month
Slab 1: Up to 50 Units	4.84	Rs. 25/Connection/Month
Slab 2: 51 – 150 units	5.98	Rs. 40/Connection/Month
Slab 3: 151 – 300 units	6.16	Rs. 50/Connection/Month
Slab 4: 301 units onwards	7.20	Rs. 50/Connection/Month

Sub-Category/Slab	Energy Charge – Rs/kWh	Fixed Charge
Three phase (Compulsory above 5 kW): All units	7.20	Rs. 50/kW/Month

Consumers in Domestic (Rural) and Slab 1 to Slab 4 will be billed as per telescopic tariff structure, as explained below.

If an urban domestic consumer consumes 330 units in a month, his/her applicable Fixed Charge would be Rs. 50 for the month and applicable energy charge will be as shown in the following Table:

Slabs	Units Consumed	Energy Charge – Rs/kWh	Total Amount Rs.
Upto 50 Units	50	4.84	242.00
Next 100 Units	100	5.98	598.00
Next 150 Units	150	6.16	924.00
301 Unit onwards	30	7.20	216.40
Total	330		1980.40

- Rebate:** A rebate of 5% on the total billing amount will be allowed to the consumer for prompt payment made on or before the due date.
- Surcharge for delayed payment:** Surcharge @ 2% per month or part thereof at simple interest shall be levied, if payment is made after the due date.
- Fuel and Power Purchase Cost Adjustment (FPPCA) charges as applicable will be charged extra.
- The Tariff does not include any tax or duty levied by the Government, which will be charged at actual as and when applicable.

Note:

If a portion of the household is used for the conduct of any purpose other than those specified above, the entire consumption shall be billed under the Commercial/Industrial category as applicable.

C. Commercial

Applicability

Electric service connection related to consumption of electricity for lights, all types of fans, heating devices, television, radio, refrigerator, air conditioner, lift motors, pumps and all other appliances used for commercial purposes maintained for private gain including other small power, supply of power to Cinema Hall, Auditorium, Stadium, Nursing Home, Pathological & Clinical Laboratories, Chamber of Medical Practitioners,

Advocates/Consultant Engineers/Chartered Accountants and similar others, Private Educational Institutions, Hospitals, etc.

Tariff:

Sub-Category/Slab	Energy Charge – Rs/kWh	Fixed Charge
Small Commercial / Pan shop: 0-50 unit*	5.93	Rs. 25/Connection/Month
Slab 1: Up to 150 units	6.69	Rs. 45/Connection/Month
Slab 2: 151 units onwards	7.25	Rs. 60/Connection/Month
Semi Commercial: All units	7.25	Rs. 50/kW/Month
Three Phase (Compulsory above 5 kW): All units	7.45	Rs. 50/kW/Month
Three Phase – Group Consumer: All units	7.53	Rs. 50/kW/Month

* if consumption exceeds beyond 50 unit in any month, the consumer will be treated as consumer of next slab for that month.

Consumers in Slab 1 and Slab 2 will be charged as per telescopic tariff structure as explained below.

If, a commercial consumer consumes 330 unit in a month, his/her applicable fixed charge shall be Rs. 60 for the month and energy charge shall be as shown in the following Table:

Slabs	Units Consumed	Energy Charge – Rs/kWh	Total Amount Rs.
Upto 150 Units	150	6.69	1003.50
151 Units Onwards	180	7.25	1305.00
Total	330		2308.50

- Rebate:** A rebate of 5% on the total billing amount will be allowed to the consumer for prompt payment made on or before the due date.
- Surcharge for delayed payment:** Surcharge @ 2% per month or part thereof at simple interest shall be levied, if payment is made after the due date.
- Fuel and Power Purchase Cost Adjustment (FPPCA) charges as applicable will be charged extra.
- The Tariff does not include any tax or duty levied by the Government, which will be charged at actual as and when applicable.

D. Mobile Towers

Applicability

Electric service connection related to consumption of electricity in Mobile Tower and metered on HT supply end or on L.T. supply plus 3% transformer loss.

Tariff:

Category	Energy Charge – Rs/kWh	Fixed Charge
Mobile Tower – All Units	7.34	Rs. 125/kW/Month

- Rebate:** A rebate of 5% on the total billing amount will be allowed to the consumer for prompt payment made on or before the due date.
- Surcharge for delayed payment:** Surcharge @ 2% per month or part thereof at simple interest shall be levied, if payment is made after the due date.
- Fuel and Power Purchase Cost Adjustment (FPPCA) charges as applicable will be charged extra.
- The Tariff does not include any tax or duty levied by the Government, which will be charged at actual as and when applicable.

E. Irrigation

Applicability

Applicable for motive power for irrigation including the power consumed for light and fans in pump house for irrigation.

Tariff:

Sub-Category	Energy Charge – Rs/kWh	Fixed Charge
Up to 5 H.P: All units	4.95	Rs.30/KW/Month
Above 5 H.P.: All units	5.95	Rs.60/KW/Month

- Rebate:** A rebate of 5% on the total billing amount will be allowed to the consumer for prompt payment made on or before the due date.
- Surcharge for delayed payment:** Surcharge @ 2% per month or part thereof at simple interest shall be levied, if payment is made after the due date.
- Fuel and Power Purchase Cost Adjustment (FPPCA) charges as applicable will be charged extra.
- The Tariff does not include any tax or duty levied by the Government, which will be charged at actual as and when applicable.

F. Water Works

Applicability

Applicable for motive power for Water Works including the power consumed for light and fans in pump house for Water Works for all units consumed.

Tariff:

Category	Energy Charge – Rs/kWh	Fixed Charge
Water Works – All Units	6.65	Rs. 40/kW/Month

- Rebate:** A rebate of 5% on the total billing amount will be allowed to the consumer for prompt payment made on or before the due date.
- Surcharge for delayed payment:** Surcharge @ 2% per month or part thereof at simple interest shall be levied, if payment is made after the due date.
- Fuel and Power Purchase Cost Adjustment (FPPCA) charges as applicable will be charged extra.
- The Tariff does not include any tax or duty levied by the Government, which will be charged at actual as and when applicable.

G. Industrial

Applicability

Electric service connection related to supply/consumption of electricity for industrial purpose, each installation having motor and other industrial appliances, Battery Charger, Welding Transformer, etc., including the power consumed for light & fan in an industry

Tariff:

Sub-Category	Energy Charge – Rs/kWh	Fixed Charge
Up to 5 HP (E-R/5): All units	5.93	Rs.25/KW/Month
Up to 5 HP (E-U/5): All units	6.36	Rs.30/KW/Month
Above 5 to 20 HP: All units	7.10	Rs.45/KW/Month
Above 20 to 100 HP: All units	7.24	Rs.60/KW/Month
Above 100 HP: All units	7.25	Rs.75/KW/Month

- Rebate:** A rebate of 5% on the total billing amount will be allowed to the consumer for prompt payment made on or before the due date.
- Surcharge for delayed payment:** Surcharge @ 2% per month or part thereof at simple interest shall be levied, if payment is made after the due date.

- c. Fuel and Power Purchase Cost Adjustment (FPPCA) charges as applicable will be charged extra.
- d. The Tariff does not include any tax or duty levied by the Government, which will be charged at actual as and when applicable.

H. Tea, Coffee and Rubber Garden

Applicability

Electric service connection related to consumption of electricity for Tea, Coffee and Rubber Plantation/Garden for utilisation of electric power for factory and irrigation in the estate including the power consumed for lights and fans, in and around the factory premises for all units.

Tariff:

Sub-Category	Energy Charge – Rs/kWh	Fixed Charge
Tea, Coffee and Rubber Gardens: All units	7.50	Rs.100/KW/Month

- a. **Rebate:** A rebate of 15% on the total billing amount will be allowed to the consumer for prompt payment made on or before the due date.
- b. **Surcharge for delayed payment:** Surcharge @ 2% per month or part thereof at simple interest shall be levied, if payment is made after the due date.
- c. Fuel and Power Purchase Cost Adjustment (FPPCA) charges as applicable will be charged extra.
- d. The Tariff does not include any tax or duty levied by the Government, which will be charged at actual as and when applicable.

I. Bulk Supply

Applicability

Electric service connection related to consumption of electricity to the organizations and establishments having total connected load of 25 kVA or above, such Institutions, School, College, University, Defence installations, Railways, All India Radio, Office complex Departmental, Colony, Dairy with Chilling Plant, Doordarshan, Cold storage, who are maintaining LT distribution system and having mixed load but desirous to be bulk power supply consumers based on bulk power supply contract agreement and metered on HT supply end or on L.T. supply plus 3% transformer loss.

Tariff:

Sub-Category	Energy Charge – Rs/kWh	Fixed Charge
Bulk Supply: All units	7.33	Rs.75/KW/Month

- a. **Rebate:** A rebate of 5% on the total billing amount will be allowed to the consumer for prompt payment made on or before the due date.
- b. **Surcharge for delayed payment:** Surcharge @ 2% per month or part thereof at simple interest shall be levied, if payment is made after the due date.
- c. Fuel and Power Purchase Cost Adjustment (FPPCA) charges as applicable will be charged extra.
- d. The Tariff does not include any tax or duty levied by the Government, which will be charged at actual as and when applicable.

J. Public Lighting

Applicability

Electric service connection related to consumption of electricity for Public Lighting for Panchayat and Nagar Panchayat /Municipal area.

Tariff:

Sub-Category	Energy Charge – Rs/kWh	Fixed Charge
Public Lighting (Panchayat)	5.55	Rs.30/KW/Month
Public Utility (Nagar Panchayat / Municipality)	6.63	Rs.60/KW/Month

- a. **Rebate:** A rebate of 5% on the total billing amount will be allowed to the consumer for prompt payment made on or before the due date.
- b. **Surcharge for delayed payment:** Surcharge @ 2% per month or part thereof at simple interest shall be levied, if payment is made after the due date.
- c. Fuel and Power Purchase Cost Adjustment (FPPCA) charges as applicable will be charged extra.
- d. The Tariff does not include any tax or duty levied by the Government, which will be charged at actual as and when applicable.

K. Special Public Utility

Applicability

Special public utility for crematorium, emergency water pumping, drainage, dewatering, etc., for all units consumed.

Tariff:

Sub-Category	Energy Charge – Rs/kWh	Fixed Charge
Special Public Utility (Crematorium)	5.80	Rs.45/KW/Month
Special Public Utility	5.80	Rs.45/KW/Month

Sub-Category	Energy Charge – Rs/kWh	Fixed Charge
(Emergency Water Pumping, Drainage, Dewatering, etc.)		

- Rebate:** A rebate of 5% on the total billing amount will be allowed to the consumer for prompt payment made on or before the due date.
- Surcharge for delayed payment:** Surcharge @ 2% per month or part thereof at simple interest shall be levied, if payment is made after the due date.
- Fuel and Power Purchase Cost Adjustment (FPPCA) charges as applicable will be charged extra.
- The Tariff does not include any tax or duty levied by the Government, which will be charged at actual as and when applicable.

L. Electric Vehicle Charging Station

Applicability

Electric Vehicle Charging Station (Not for Own Use) for all units consumed.

Tariff:

Sub-Category	Energy Charge – Rs/kWh	Fixed Charge
All Units	6.90	Rs.45/KW/Month

- Rebate:** A rebate of 5% on the total billing amount will be allowed to the consumer for prompt payment made on or before the due date.
- Surcharge for delayed payment:** Surcharge @ 2% per month or part thereof at simple interest shall be levied, if payment is made after the due date.
- Fuel and Power Purchase Cost Adjustment (FPPCA) charges as applicable will be charged extra.
- The Tariff does not include any tax or duty levied by the Government, which will be charged at actual as and when applicable.

TOD Tariff

Applicability

All consumers under Industrial, Tea/Coffee/Rubber Gardens, Bulk Supply, Water Works, and Irrigation categories would have the option of taking TOD tariff, wherein the following rates would be applicable.

Tariff:

From	To	Period	Energy Charge – Rs/kWh
5:00 AM	5:00 PM	Normal	Normal Rate
5:00 PM	11:00 PM	Peak	140% of the Normal Rate
11:00 PM	5:00 AM	Off-Peak	60% of the Normal Rate

N.B: Any error or required corrections noticed may be pointed out to the Commission within 15 days of issuance of the Tariff Order.

7.7 Approved Miscellaneous and Other Charges for FY 2022-23

The Commission approves the existing Miscellaneous and Other Charges applicable for FY 2022-23, as shown in the table below:

Table 143: Miscellaneous and Other Charges as approved by the Commission

Sl. No.	Charge	Approved for FY 2022-23
	Category-I:- MISCELLANEOUS CHARGES	
A	The tariff for temporary supply for lights and fans for festival, ceremonies, public meeting shall be charged at the following rate, namely :-	
I	Net	Rs. 6.00 / kWh
ii	Rebate	Rs. 0.10 / kWh
iii	Gross	Rs. 5.90 / kWh
	N.B: The minimum charge for each installation which shall be paid in advance shall be	Rs. 60/- per day per kW of contracted load or a fraction thereof
B	The tariff for temporary supply for lights & fans to commercial establishment which shall include temporary Cinema, Theater, Circus, Exhibition, Fare shall be charged at the following rate, namely:-	
i	Net	Rs. 7.00 / kWh
ii	Rebate	Rs. 0.10 / kWh
iii	Gross	Rs. 6.90 / kWh
	N.B: The minimum charge for each installation which shall be paid in advance shall be	Rs.60/- per day per KW of contracted load or a fraction thereof
	Category: Other Charges	
1	The monthly meter rent for different phases shall be at the following rate, namely:-	
i	For single phase meter not exceeding 10 Amp -	Rs. 10.00
ii	For three phase meter -	Rs. 20.00

Sl. No.	Charge	Approved for FY 2022-23
iii	For three phase meter with C.T.	Rs. 40.00
iv	For HT metering equipment i.e. kWh meter with MDI & KVR supplied by the Deptt. -	Rs. 250.00
v	For Trivector meter-	Rs. 400.00
vi	For TOD meter	Rs. 400.00
2	The charges for testing of meter at the request of consumer for different phase shall be at the following rate, namely:-	
i	For each single phase meter-	Rs. 50.00
ii	For each three phase meter -	Rs. 100.00
iii	For each HT meter -	Rs. 250.00
	Provided that after testing it is found that the meter has no defect, and it is in order.	
3	The charges for replacement of meter owing to temporary increase of load which shall be paid in advance shall be at the following rates, namely:-	
i	For single phase	Rs. 100.00
ii	For three phase	Rs. 250.00
4	The charge for replacement of fuse at consumer premises.	Nil
5	The charges for installation of subtraction meter & additional meter at consumer's meter board shall be NOTE- Where two or more meters are installed against one connection instead of one meter to suit the convenience of the consumer, reading of the main meter will be taken and billed for.	Rs. 250.00
6	The monthly meter rent for an additional meter shall be at the following rates, namely:-	
i	For single phase	Rs. 15.00
ii	For three phase	Rs. 30.00
7	There shall be no charge for test, inspection and connection of a new installation. But for any further test or inspection which may be found necessary owing to any fault in the installation or due to non- compliance with the condition of supply the charge for each additional test shall be	Rs. 200.00
8	The charges for disconnection on consumers request shall be at the following rate, namely:-,	
i	For single phase	Rs. 100.00
ii	For three phase	Rs. 150.00
iii	For Bulk/HV/EHV	Rs. 200.00
9	The charges for reconnection on consumers request shall be at the following rates, namely:-	
i	For single phase	Rs. 150.00
ii	For three phase	Rs. 200.00
iii	For Bulk/HV/EHV	Rs. 250.00
10	The charges for temporary connection which shall be non-refundable for	

Sl. No.	Charge	Approved for FY 2022-23
	all categories of load through a meter within permissible distance from the electric supply main shall be at the following rates, namely:-	
i	For 220-230V(i.e. Single Phase connection)	Rs. 300.00 per installation
ii	For 380-400V (i.e. 3-phase, 4-wire connection).	Rs. 500.00 per installation
	N.B: (i) The consumer shall supply all materials required for service lines as may be approved by licensee, from the nearest pole of the supply point. There shall be no disconnection charge and meter rent for temporary connection. N.B: (ii) For temporary. Connection the consumer shall pay as security deposit of Rs.750.00 for single phase or Rs.1500.00 for three phase supply which is refundable after disconnection of the temporary connection and final payment of the energy bill by consumer. N.B: (iii) For the purpose of this clause, temporary connection means a connection for a continuous period not exceeding 15 days.	
11	The charge for changing of meter by a larger capacity at the request of consumer in respect of permanent connection shall be at the following rates, namely:-	
i	For 220-230V(Single phase)	Rs. 150.00
ii	For 380-400V (3-phase, 4-wire).	Rs. 400.00
	The charge for changing the position the meter & the board within the same building at the request of the consumer when no addition in the service line is required shall be at tile following rates, namely:-	
i	For 220-230V(Single phase)	Rs. 200.00
ii	For 380-400V (3-phase, 4-wire).	Rs. 400.00
13.	Charges for calibration of check meter upon request of consumer.	Rs. 200.00
14.	Charges for special meter reading on consumer request	Rs. 150.00

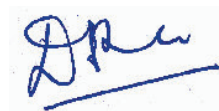
TSECL has submitted that Government of Tripura will be providing subsidy of Rs. 50 Crore to different categories. Accordingly, the Commission has indicated the category wise subsidised tariff as per Annexure 2 in the tariff order. If Government of Tripura decides to pay the subsidy for some categories of consumers for FY 2022-23, the subsidy shall be paid in advance on monthly basis to TSECL. The Commission directs TSECL to recover full tariff in case the Government of Tripura does not pay subsidy in advance for two consecutive months.

The approved retail supply tariff will be in accordance with the Tariff Schedule given in this Order. The Order shall come into force from 1 September, 2022 and shall remain valid till 31 March, 2023 or till further order/amendment by the Commission.



Jiban Krishna Sen

(Member, TERC)



D. Radhakrishna

(Chairman, TERC)

Place: Agartala

Date: 02 September, 2022

Annexure 1: Approved Tariff Schedule for FY 2022-23

Sl. No	Consumer Category/Slabs	Fixed Charge	Energy Charge (Rs./kWh)
A.	Kutir Jyoti	Rs.62/Connection/Month	
B.	Domestic		
	Domestic (rural): 0-50 units	Rs.15/Connection/Month	4.03
	Slab 1: Up to 50 Units	Rs.25/Connection/Month	4.84
	Slab 2: 51 – 150 units	Rs.40/Connection/Month	5.98
	Slab 3: 151 – 300 units	Rs.50/Connection/Month	6.16
	Slab 4: 301 units onwards	Rs.50/Connection/Month	7.20
	Three phase (Compulsory above 5 kW): All units	Rs.50/kW/Month	7.20
C.	Commercial		
	Small Commercial / Pan shop: 0-50 unit	Rs.25/Connection/Month	5.93
	Slab 1: Up to 150 units	Rs.45/Connection/Month	6.69
	Slab 2: 151 units onwards	Rs.60/Connection/Month	7.25
	Semi Commercial: All units	Rs.50/kW/Month	7.25
	Three Phase (Compulsory above 5 kW): All units	Rs.50/kW/Month	7.45
	Three Phase – Group Consumer: All units	Rs.50/kW/Month	7.53
D.	Mobile Tower: All units	Rs.125/kW/Month	7.34
E.	Irrigation		
	Up to 5 H.P: All units	Rs.30/kW/Month	4.95
	Above 5 H.P: All units	Rs.60/kW/Month	5.95
F.	Water works: All units	Rs.40/kW/Month	6.65
G.	Industrial		
	Up to 5 HP (E-R/5): All units	Rs.25/kW/Month	5.93
	Up to 5 HP (E-U/5): All units	Rs.30/kW/Month	6.36
	Above 5 to 20 HP: All units	Rs.45/kW/Month	7.10
	Above 20 to 100 HP: All	Rs.60/kW/Month	7.24

Sl. No	Consumer Category/Slabs	Fixed Charge	Energy Charge (Rs./kWh)
	units		
	Above 100 HP: All units	Rs.75/kW/Month	7.25
H.	Tea, Coffee and Rubber Gardens: All units	Rs.100/kW/Month	7.50
I.	Bulk Supply: All units	Rs.75/kW/Month	7.33
J.	Public Lighting		
	Public Lighting (Panchayat)	Rs.30/kW/Month	5.55
	Public Utility (Nagar Panchayat / Municipality)	Rs.60/kW/Month	6.63
K.	Special Public Utility		
	Special Public Utility (Crematorium)	Rs.45/kW/Month	5.80
	Special Public Utility (Emergency Water Pumping, Drainage, Dewatering, etc.)	Rs.45/kW/Month	5.80
L.	Electric Vehicle Charging Station	Rs.45/kW/Month	6.90

Annexure 2: Tariff Schedule for FY 2022-23 after considering Government Subsidy

Sl. No	Consumer Category/Slabs	Approved Tariff for FY 2022-23		Energy Charge after considering Govt. Subsidy	
		Fixed Charge	Energy Charge (Rs./kWh)	Govt Subsidy (Rs/kWh)	Energy Rate after Govt. Subsidy (Rs/kWh)
A.	Kutir Jyoti	Rs.62/Connection/Month		Rs.4/Connec tion/Month	Rs.58/Connec tion/Month
B.	Domestic				
	Domestic (rural): 0-50 units	Rs.15/Connection/Month	4.03	0.69	3.34
	Slab 1: Up to 50 Units	Rs.25/Connection/Month	4.84	0.67	4.17
	Slab 2: 51 – 150 units	Rs.40/Connection/Month	5.98	0.52	5.46
	Slab 3: 151 – 300 units	Rs.50/Connection/Month	6.16	-	6.16
	Slab 4: 301 units onwards	Rs.50/Connection/Month	7.20	-	7.20
	Three phase (Compulsory above 5 kW): All units	Rs.50/kW/Month	7.20	0.15	7.05
C.	Commercial				
	Small Commercial / Pan shop: 0-50 unit	Rs.25/Connection/Month	5.93	0.62	5.31
	Slab 1: Up to 150 units	Rs.45/Connection/Month	6.69	0.51	6.18
	Slab 2: 151 units onwards	Rs.60/Connection/Month	7.25	-	7.25
	Semi Commercial: All units	Rs.50/kW/Month	7.25	0.10	7.15

Sl. No	Consumer Category/Slabs	Approved Tariff for FY 2022-23		Energy Charge after considering Govt. Subsidy	
		Fixed Charge	Energy Charge (Rs./kWh)	Govt Subsidy (Rs/kWh)	Energy Rate after Govt. Subsidy (Rs/kWh)
	Three Phase (Compulsory above 5 kW): All units	Rs.50/kW/Month	7.45	0.10	7.35
	Three Phase – Group Consumer: All units	Rs.50/kW/Month	7.53	0.15	7.38
D.	Mobile Tower: All units	Rs.125/kW/Month	7.34	-	7.34
E.	Irrigation				
	Up to 5 H.P: All units	Rs.30/kW/Month	4.95	1.40	3.55
	Above 5 H.P: All units	Rs.60/kW/Month	5.95	1.40	4.55
F.	Water works: All units	Rs.40/kW/Month	6.65	1.40	5.25
G.	Industrial				
	Up to 5 HP (E-R/5): All units	Rs.25/kW/Month	5.93	0.10	5.83
	Up to 5 HP (E-U/5): All units	Rs.30/kW/Month	6.36	0.10	6.26
	Above 5 to 20 HP: All units	Rs.45/kW/Month	7.10	-	7.10
	Above 20 to 100 HP: All units	Rs.60/kW/Month	7.24	-	7.24
	Above 100 HP: All units	Rs.75/kW/Month	7.25	-	7.25
H.	Tea, Coffee and Rubber Gardens: All units	Rs.100/kW/Month	7.50	0.30	7.20
I.	Bulk Supply: All units	Rs.75/kW/Month	7.33	-	7.33

Sl. No	Consumer Category/Slabs	Approved Tariff for FY 2022-23		Energy Charge after considering Govt. Subsidy	
		Fixed Charge	Energy Charge (Rs./kWh)	Govt Subsidy (Rs/kWh)	Energy Rate after Govt. Subsidy (Rs/kWh)
J.	Public Lighting				
	Public Lighting (Panchayat)	Rs.30/kW/Month	5.55	0.57	4.98
	Public Utility (Nagar Panchayat / Municipality)	Rs.60/kW/Month	6.63	0.57	6.06
K.	Special Public Utility				
	Special Public Utility (Crematorium)	Rs.45/kW/Month	5.80	1.10	4.70
	Special Public Utility (Emergency Water Pumping, Drainage, Dewatering, etc.)	Rs.45/kW/Month	5.80	1.10	4.70
L.	Electric Vehicle Charging Station	Rs.45/kW/Month	6.90	-	6.90

Appendix 1: Number of Consumers from FY 2017-18 to FY 2022-23(P)

Sl. No.	Category	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23
1.	Domestic including Kutir Jyoti	641,502	692,386	714,509	832,221	821,975	894,670
2.	Commercial	58,933	59,897	60,131	74,568	80,892	87,890
3.	Industrial			-	-		
	a. Low & Medium Voltage	4,345	4,193	4,466	4,676	4,902	5,186
	b. High Voltage with demand less than 1 MW	990	955	676	965	965	965
	c. HV/EHV with demand of 1 MW & above	73	70	120	175	234	313
4.	Railways			-	-	-	-
5.	Irrigation	5,943	6,328	6,576	7,268	7,784	8,343
6.	Public Lighting	2,018	2,094	2,108	2,674	3,295	3,853
7.	Public Water Works & Sewage disposal	5,810	6,195	6,439	7,271	7,836	8,444
8.	Tea, Coffee & Rubber Garden	39	41	45	48	51	55
9.	Bulk Supply	905	963	1,008	1,268	1,419	1,588
10.	Mobile Tower	1,302	1,350	1,390	1,581	1,687	1,800
11.	Total	7,21,860	7,74,472	7,97,468	9,32,715	10,11,247	10,98,177

Appendix 2: Connected Load from FY 2017-18 to FY 2022-23(P)

Sl. No.	Category	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23
1.	Domestic including Kutir Jyoti	150,296	162,216	160,451	205,325	230,051	258,845
2.	Commercial	37,993	38,616	37,866	54,220	61,377	69,670
3.	Industrial	-	-	-	-	-	-
	a. Low & Medium Voltage	34,195	33,002	34,435	35,004	35,559	36,253
	b. High Voltage with demand less than 1 MW	47,520	45,840	32,448	46,320	46,562	46,805
	c. HV/EHV with demand of 1 MW & above	11,680	11,200	19,200	28,000	37,474	50,154
4.	Railways	-	-	-	-	-	-
5.	Irrigation	20,756	22,103	22,080	26,636	28,987	31,569
6.	Public Lighting	9,264	9,612	9,403	12,058	14,201	17,207
7.	Public Water Works & Sewage disposal	46,480	49,560	51,512	58,168	62,684	67,551
8.	Tea, Coffee & Rubber Garden & Bulk Supply	31,398	31,603	33,120	41,498	46,401	51,885
9.	Mobile Tower	14,843	15,390	13,344	15,178	15,291	15,405
10.	Total	404,426	419,143	413,858	522,406	578,589	645,344

Appendix 3: Sales (MU) from FY 2017-18 to FY 2022-23(P)

Sl. No.	Category	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23
1.	Domestic including Kutir Jyoti	538.66	486.93	531.08	588.22	622.20	658.30
2.	Commercial	75.40	57.20	71.83	72.00	72.17	72.34
3.	Irrigation	32.69	31.67	34.38	38.00	39.95	42.00
4.	Public water works	65.08	62.03	66.48	75.95	79.96	84.18
5.	Industries	46.71	40.10	40.12	43.44	45.22	47.07
6.	Tea, Coffee & Rubber Garden	1.29	1.45	2.35	2.80	3.69	4.85
7.	Bulk supply	90.92	102.09	90.81	87.54	88.04	88.55
8.	Public Lighting	47.85	53.73	47.79	46.07	46.33	46.60
9.	Mobile Towers	29.42	33.03	29.38	28.32	28.49	28.65
10.	Total	928.03	868.23	914.22	982.33	1,026.05	1,072.55