

**BEFORE THE HON'BLE  
TAMIL NADU ELECTRICITY REGULATORY  
COMMISSION, CHENNAI**



**FILING OF THE PETITION FOR TRUE-UP OF FY 2021-22**

**UNDER TNERC (TERMS AND CONDITIONS FOR DETERMINATION  
OF TARIFF) REGULATIONS, 2005 AND TNERC (MULTI YEAR  
TARIFF FRAMEWORK) REGULATIONS, 2009 AMENDED FROM  
TIME TO TIME**

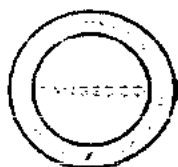
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**UNDER PART VII (SECTION 61 TO SECTION 64) OF THE  
ELECTRICITY ACT, 2003 READ WITH THE RELEVANT  
GUIDELINES**



**TAMILNADU GENERATION AND DISTRIBUTION  
CORPORATION LIMITED (TANGEDCO)  
CHENNAI**

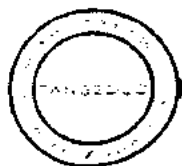
**MARCH 2023**



Details for True-up for FY 2021-22

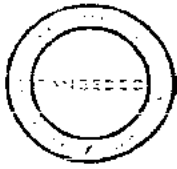
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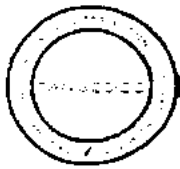
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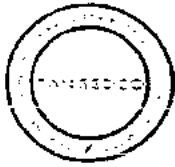
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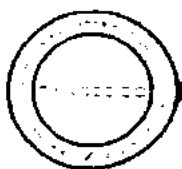
### *List of Abbreviations*

Sr. No	Abbreviations	Descriptions
1.	A&G	Administrative and General
2.	ARR	Aggregate Revenue Requirement
3.	APR	Annual Performance Review
4.	BBGTPS	Basin Bridge Gas Turbine Power Station
5.	CAPEX	Capital Expenditure
6.	CERC	Central Electricity Regulatory Commission
7.	CGS	Central Generating Stations
8.	COS	Cost of Supply
9.	CPPs	Captive Power Plants
10.	Crs	Crore
11.	CSD	Consumer Security Deposit
12.	Discom	Distribution Companies
13.	ECL	Eastern Coal Fields Ltd
14.	ETPS	Ennore Thermal Power Station
15.	FY	Financial Year
16.	GFA	Gross Fixed Assets
17.	G.O.	Government Order
18.	GoTN	Government of Tamil Nadu
19.	HT	High Tension
20.	HEP	Hydro Electric Power
21.	IPP	Independent Power Producers
22.	KGTPS	Kuttalam Gas Turbine Power Station
23.	kVAh	Kilo Volt Ampere Hour
24.	kW	Kilo Watt
25.	kWh	Kilo Watt Hour
26.	LT	Low Tension
27.	LTOA	Long Term Open Access
28.	MCL	Mahanadhi Coal Fields Ltd
29.	MOD	Merit Order Despatch
30.	MOU	Memorandum of Understanding
31.	MTPS I/Mettur TPS I	Mettur Thermal Power Station I
32.	MTPS II	Mettur Thermal Power Station II
33.	MTOA	Medium Term Open Access
34.	MU	Million Units (Million kWh)
35.	MVA	Mega Volt Ampere
36.	MW	Mega Watt
37.	MYT	Multi Year Tariff
38.	NCTPS I	North Chennai Thermal Power Station I
39.	NCTPS II	North Chennai Thermal Power Station II
40.	NCTPS III	North Chennai Thermal Power Station III
41.	NTP	National Tariff Policy
42.	NTPC	National Thermal Power Corporation
43.	O&M	Operation & Maintenance
44.	PAF	Plant Availability Factor



Details for True-up for FY 2021-22

Sr. No	Abbreviations	Descriptions
45.	PFC	Power finance Corporation
46.	PLF	Plant Load Factor
47.	R&M	Repair and Maintenance
48.	ROE	Return on Equity
49.	RPO	Renewable Purchase Obligation
50.	Rs	Rupees
51.	SBI	State Bank of India
52.	SECL	South-eastern Coalfields Limited
53.	SHR	Station Heat Rate
54.	SLDC	State Load Despatch Centre
55.	STOA	Short Term Open Access
56.	TANGEDCO	Tamil Nadu Generation and Distribution Corporation Limited
57.	TANTRANSCO	Tamil Nadu Transmission Corporation Limited
58.	TOD	Time of Day
59.	TKGTPS	Tirumakottai Gas Turbine Power Station
60.	TNEB	Tamil Nadu Electricity Board
61.	TNERC	Tamil Nadu Electricity Regulatory Commission
62.	TTPS	Tuticorin Thermal Power Station
63.	T&D	Transmission and Distribution
64.	VGTPS	Valuthur Gas Turbine Power Station
65.	WCL	Western Coalfields Limited



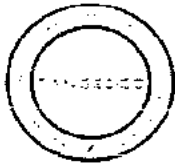
## **1. OVERVIEW OF TANGEDCO**

### **1.1 Preamble**

This section presents the background and reasons for filing of this Petition.

### **1.2 Background**

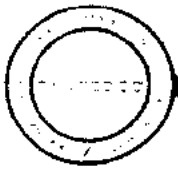
- 1.2.1 Tamil Nadu Electricity Board (TNEB) came into existence on 1<sup>st</sup> July 1957 under the repealed Act of Electricity (Supply) Act 1948 and has been in the business of generation, transmission and distribution of electricity in the state of Tamil Nadu.
- 1.2.2 Over the last few decades, there has been significant interest in opening the Electricity sector to competition and, by extension, interest in designing electricity markets to push the sector towards more efficient outcomes. Accordingly, the Electricity Act, 2003 ("the Act" or "EA 2003") was enacted with effect from 10<sup>th</sup> June, 2003 which requires the State Governments to initiate major changes in the Industry Structure and Operations of the state power sector.
- 1.2.3 In line with the Electricity Act 2003, Sections 131 to 134 mandates reorganisation of the State Electricity Boards into functional entities and corporatisation of the same. Therefore, in order to meet the requirements under the Act, the Government of Tamil Nadu (GoTN) and the Tamil Nadu Electricity Board (TNEB) proposed to restructure the state power sector.
- 1.2.4 In accordance with the above mandate the Government of Tamil Nadu (GoTN) had given in- principle approval for the re-organization of TNEB by establishing a holding company, named TNEB Ltd and two subsidiary companies, namely Tamil Nadu Transmission Corporation Limited (TANTRANSCO) and Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO) vide G.O.Ms.No.114 Energy (B2) Department dated 8<sup>th</sup> October 2008 with the stipulation that the aforementioned companies shall be fully owned by Government.
- 1.2.5 Based on the approval of Memorandum of Association and Articles of Association of TANGEDCO and TNEB Limited by the Government of Tamil Nadu vide G.O.Ms.No.94 Energy (B2) Department dated 16<sup>th</sup> Nov 2009, Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO) and TNEB Limited was incorporated on 1<sup>st</sup> Dec 2009 with an authorized share capital of Rs. 5.00 Crore and paid up capital of Rs. 5.00 Lakhs each for TANGEDCO and TNEB Limited. The Certificates of commencement of business have been obtained for the TANGEDCO on 16<sup>th</sup> March, 2010 and for TNEB Ltd on 12<sup>th</sup> March, 2010 respectively.
- 1.2.6 The proposal for Assets Transfer and Employee transfer called as Tamil Nadu Electricity Board (Reorganization and Reforms) Transfer Scheme 2010 has been notified by Government of Tamil Nadu vide G.O. (Ms).No.100 Energy (B2) Department dated 19<sup>th</sup> October, 2010 with the effective date of implementation as 1<sup>st</sup> November, 2010. Based on the above notification TNEB has been re-organized from 1<sup>st</sup> November, 2010.



## Details for True-up for FY 2021-22

- 1.2.7 As per the Transfer Scheme the provisional period for transfer of Assets is 1 year and for transfer of employees is 3 years. From 1<sup>st</sup> November, 2010 onwards all the employees of the erstwhile TNEB shall stand transferred to and absorbed in TANGEDCO on a provisional basis and assigned to the services of the relevant transferee.
- 1.2.8 Subsequently, as per the request of TNEB Limited, the second provisional transfer scheme was notified by the State Government vide G.O. (Ms.) No.2, Energy (B2) department, dated 2<sup>nd</sup> January, 2012 with amendment in the restructuring of Balance Sheet of TNEB for the successor entities, i.e., TANGEDCO and TANTRANSCO, considering the audited balance sheet of TNEB for FY 2009-10 and it had extended the provisional time for final transfer of assets and liabilities to the successor entities of erstwhile TNEB up to 31<sup>st</sup> October, 2012.
- 1.2.9 Subsequently, the audited balance sheet as on 31<sup>st</sup> October, 2010 was ready and as a result the final transfer scheme was notified by the Government of Tamil Nadu vide G.O.Ms No.49, Energy (B1) department, dated 13<sup>th</sup> August, 2015, which is the final amendment to the earlier transfer scheme (G.O. (Ms.) No.100 Energy (B2) Department dated 19<sup>th</sup> Oct 2010 and G.O. (Ms.) No.2, Energy (B2) department, dated 2<sup>nd</sup> January, 2012) which gave effect to the transfer of assets and liabilities to successor entities of erstwhile TNEB as on 1<sup>st</sup> November, 2010.
- 1.2.10 Post restructuring, TANGEDCO as per the notification, was provided with the functions of generation and distribution of electricity in the State of Tamil Nadu.
- 1.2.11 TANGEDCO as the State Generation and Distribution Utility is entrusted with the duty of generating power and distribution of the same to the end consumers through its generating stations and vast distribution network.
- 1.2.12 Starting with a modest installed capacity of 156 MW on 1<sup>st</sup> July, 1957, the Board's own generating capacity in its command has grown to 33877.31 MW. The installed capacity of conventional energy sources of Tamil Nadu Generation and Distribution Corporation Limited is 18974.10 MW as on 1<sup>st</sup> April 2022 which includes TANGEDCO's Hydro (2321.90 MW), Thermal (4320 MW), Gas Stations (516.08 MW), share from Central Generating Stations (6972 MW), Captive Power Plants (508.62 MW), Independent Power Project (1105.50 MW), LTOA (2830 MW) & MTOA (400 MW). The installed capacity of non-conventional energy sources as on 1<sup>st</sup> April 2022 (infirm power) is 14903.21 MW which includes generation from wind (8615.22 MW), Solar (5303.50 MW), Biomass (262.59 MW) and Co-generation plants (721.90 MW).
- 1.2.13 Tamil Nadu met an all-time peak demand of 18,053 MW as on 16.03.2023 and all-time high-energy consumption of 388.08 MU on 29<sup>th</sup> April, 2022 making it one of the highest energy consumption state in India. The present demand of power in the State is around 17,000 - 18,000 MW. This demand will be met by generation from existing power stations, power from projects to be commissioned in the





coming years and also through power purchase.

### 1.3 Final Transfer Scheme

1.3.1 The accumulated losses of erstwhile TNEB to an extent of Rs. 34,741.35 Crore has been adjusted in the Final Transfer Scheme notified vide G.O. M.S No. 49 dated 13<sup>th</sup> August 2015, by revaluation of assets to an extent of Rs. 54,658.71 Crore and the excess revaluation reserve of Rs. 12,265.99 Crore, Rs. 7,163.58 Crore and Rs. 487.79 Crore transferred to TANGEDCO, TANTRANSCO and TNEB Ltd., respectively. Through the notification of final transfer scheme, the Government of Tamil Nadu has assigned the Assets and Liabilities (as on 31<sup>st</sup> October, 2010) to TANGEDCO on final basis.

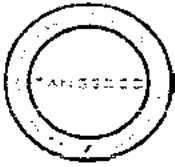
#### 1.3.2 Impact of Final Balance Sheet:

The transfer value of the Fixed Assets forming part of Schedules A, B and C of the respective Transferees have been done at book values excluding the land, buildings, plant and machineries, lines, cables, and network, which are revalued based on the guideline value resulting into Revaluation Reserve of Rs.12,265.99 Crore for TANGEDCO.

- i. For the purpose of Return on Equity, Equity Capital of Rs. 2,290.72 Crore has been considered as per the final transfer scheme.
- ii. Long Term Loan has been considered as Rs. 19,307.65 Crore in line with the notified balance sheet and interest is calculated on the actual basis which was accrued from 1<sup>st</sup> November, 2010 to 31<sup>st</sup> March, 2011 and the differential treatment between provisional and final transfer scheme has been adjusted in the FY 2015-16. Some of the generic loans such as bonds, loan from HUDCO, LIC, Tamil Nadu Power finance and medium-term Loan availed by erstwhile TNEB and has been considered as the long-term loan of TANGEDCO.
- iii. The allocation of fixed assets and loans are similar and has been transferred under the Final transfer scheme resulting in additional debt burden of the debt obligation on TANGEDCO.
- iv. The transfer value of the fixed assets is determined based on revenue potentials of the asset and in line with the provisions of the Act.  
TANGEDCO submits that the opening balance sheet as per final transfer scheme has been considered for the calculation of ARR in the subsequent Petitions filed by TANGEDCO including present petition.
- v. TANGEDCO requests the Hon'ble Commission to allow the variation in expenses with respect to Final transfer scheme and allow the same to adjust in the ARR in the current petition.

### 1.4 UjwalDiscom Assurance Yojana (UDAY)

- 1.4.1 On 9<sup>th</sup> January, 2017 the Ministry of Power, Government of India entered into a Memorandum of Understanding (MoU) with the Government of Tamil Nadu and TANGEDCO under the UjwalDiscom Assurance Yojana (UDAY) Scheme for the operational and financial turnaround of the DISCOM.



1.4.2 The salient features of the scheme are as follows:

- i. Under the scheme, the Government of Tamil Nadu is taking over 75% of the outstanding distribution function debt of Rs. 30,420 Crore of TANGEDCO as on 30<sup>th</sup> September, 2015 during FY 2016-17 itself.
- ii. The balance 25% outstanding debt to be re-priced or re-issued as State guaranteed Discom bonds at coupon rates 3-4% lower than the average existing interest rate.
- iii. Under Uday Scheme the State Government has taken the losses of TANGEDCO to the tune of 50% for the year FY 2020-21 during FY 2021-22 as per the UDAY MoU.

**1.5 Atmanirbhar Scheme:**

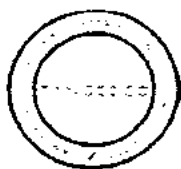
- 1.5.1 The Government of India announced a Liquidity Infusion Scheme (LIS) through Power Finance Corporation (PFC) Ltd. and Rural Electrification Corporation (REC) Ltd. as a part of Atmanirbhar Bharat abhiyan. Under this scheme TANGEDCO submits that new loan of Rs. 30,230.29 Crore has been sanctioned for TANGEDCO's distribution function during the FY 2020-21 at an interest rate of 9.50% by REC and PFC. The new loan is to be available to TANGEDCO in two tranches, Tranche I by REC amounting to Rs. 8699.14 Crore and PFC amounting to Rs. 6001.36 Crore. Further in Tranche II amount of Rs. 8358.77 Crore and Rs. 3736.04 Crore was released by REC and PFC respectively. Further a sum of Rs. 3434.99 Crore is yet to be released by REC and PFC.

**1.6 RDSS Scheme:**

- 1.6.1 TANGEDCO submits that it has participated in the RDSS Scheme and the DPR and Action Plan for the revamped scheme is under approval and shall be approved shortly. Post that the Capitalization under RDSS scheme shall be considered for the purpose of Tariff.

**1.7 100% Loss Funding:**

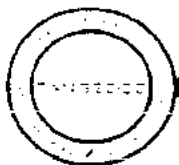
- 1.7.1 Further, it is submitted that 100% loss during the year FY 2021-22 to be taken by the Government of Tamil Nadu.



## 2. OVERALL APPROACH FOR PRESENT FILING

### 2.1 Present Approach

- 2.1.1 The Hon'ble Commission on 03<sup>rd</sup> August 2005 notified the TNERC (Terms and Conditions for Determination of Tariff) Regulations, 2005. In the said Regulation, the Commission specified that the licensee has to file the Aggregate Revenue Requirement (ARR) for each year in the format prescribed, containing the details of the expected aggregate revenue that the licensee is permitted to recover at the prevailing tariff and the estimated expenditure. In line with the same, TANGEDCO is filing its ARR for consideration of the Hon'ble Commission in the formats laid down for providing information relating to past, current and future performance.
- 2.1.2 Further, as per TNERC (Terms and Conditions for Determination of Tariff) Regulations, 2005 the application for determination of tariff for the existing Generating Stations shall be accompanied by information in the formats provided by the Hon'ble Commission for the previous years, current year and ensuing years which are part of the control period as specified in the MYT Regulations. Thus, TANGEDCO is filing the petition for True-up for both the generation and distribution businesses.
- 2.1.3 As per the Amendment to Tamil Nadu Electricity Regulatory Commission Terms and conditions for determination of tariff for intra state transmission / Distribution of Electricity under MYT framework Regulations 2009 dated 28th November, 2012, the control period is defined as:
- "(i) Control Period: The control period under the MYT framework shall be for duration of 3 years. The year preceeding the first year of the control period shall be the base year."*
- 2.1.4 Further the Commission vide its Notification dated 5.9.2022 for Tamil Nadu Electricity Regulatory Commission (Terms and conditions for determination of tariff for Transmission / Distribution of Electricity under MYT framework) Regulations 2009 has again amended the Control Period and the same shall be defined as shown under:
- "Control Period  
The control period under the MYT framework shall be for a duration of 5 years, and as may be extended by the commission. The year preceding the first year of the control period shall be base year. Where the Commission desires to fix multiyeartariff, a formula based on consumers' Price Index (or) wholesale Price Index (or) a quantum (Percentage / value) required to meet the Aggregate Revenue*



## Details for True-up for FY 2021-22

*Requirement of the licensee shall be prescribed. During the control period, if required the Commission shall undertake Mid-term Review for modification in the approval for remaining Control period based on True-up and/or actual Performance"*

2.1.5 Further based on the above amendment to the existing Regulations, the control period for TANGEDCO was from FY 2013-14 to FY 2015-16 , FY 2016-17 to FY 2018-19, FY 2019-20 to 2021-22 and the Tariff Petition for the next control period i.e. for 5 yearfrom FY 2022-23 to FY 2026-27 has been filed by the TANGEDCO.

2.1.6 TANGEDCO has now filed the petition for provisional True-up of FY 2021-22 based on the Audited accounts for FY 2021-22. However, the Audited Balance sheet is under the purview of NCLT andtherefore TANGEDCO has requested for provisional True-Up and final True-Up shall be filed after NCLT proceedings and after the finalization of the accounts. TANGEDCO also submits that they are in process of moving out from IGAAP accounting system to IND AS accounting system and therefore there is a delay in finalizing the Audited Accounts. TANGEDCO requests the Hon'ble Commission to approve the provisional True-up filed by TANGEDCO.

### 2.2 Data/Information for True-Up

2.2.1 This petition contains the truing-up of the ARR of FY 2021-22 figures which are based upon the audited annual accounts submitted to the Hon'ble Commission.

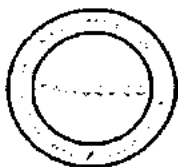
2.2.2 The ARR indicated in the given petition, is exclusive of Foreign Exchange Rate Variation (if applicable), any statutory taxes, levies, duties, cess, filing fees or any other kind of imposition(s) and/ or other surcharges etc. whatsoever imposed/ charged by any Government (Central/State) and/ or any other local bodies/authorities/regulatory authorities in relation to generation and distribution of electricity, environmental protection, and/ or in respect of any of its installation associated with theGeneration and Distribution system and the same shall be allowed to be claimed by the Applicant in future as and when such claims are made.

### 2.3 Regulatory Framework

2.3.1 TANGEDCO has considered the norms as specified by TNERC Tariff Regulations 2005, TNERC MYT Regulations, 2009 and its subsequent amendment. However, certain deviations have been considered with justifications for the purpose of this petition and it is requestedto approve the same.

### 2.4 Summary of Assumptions

- a. The figures mentioned in each of the Tables are the amount in **Rs. Crore** unless otherwise specified.
- b. TANGECO submits that there has been no cost of generation (variable as well as fixed) considered for own wind generating stations, i.e., Tirunelveli Wind and Udumaipet. However, the net-generation due to these windmills has been considered in Energy Availability.
- c. The T&D loss, sales, Power purchase are calculated for the entire control period is



without consideration of wheeling units during the respective years.

### **3. TRUING UP OF FY 2021-22**

#### **3.1 Preamble**

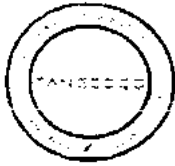
- 3.1.1 This section outlines the performance of TANGEDCO for FY 2021-22. TANGEDCO hereby submits truing up of FY 2021-22 based on audited accounts for FY 2021-22.

#### **3.2 Principles for Truing Up of FY 2021-22**

- 3.2.1 A comparison of figures approved by the Hon'ble Commission vide Tariff Order No. 7 of 2022 dated 9<sup>th</sup> September 2022 and actual expenditure based on audited accounts for FY 2021-22 is shown in the Table under relevant sections discussed herein.

#### **3.3 Operational Performance Parameters – Generation**

- 3.3.1 This section outlines actual operational performance parameters of generation function of TANGEDCO in order to derive variable cost of own generation, as compared to that approved by the Hon'ble Commission in tariff order dated 9<sup>th</sup> September, 2022.
- 3.3.2 The operational parameters like Plant Availability Factor (PAF), Plant Load Factor (PLF) Station Heat Rate (SHR), Auxiliary Consumption (AC), Specific Oil Consumption, etc. achieved during FY 2021-22 have been discussed in detail in subsequent section. For the purpose of examination of performance of TANGEDCO, comparison has been made between values approved by the Hon'ble Commission with the actual values achieved. The reasons for deviations for operational parameters, if any, have been discussed in the respective section.
- 3.3.3 The actual operating parameters derived during the respective years are dependent of present condition of the machine. The present operating conditions of the machine is a function of following factors.
- ✓ Operation and Maintenance carried out in the plant since commissioning
  - ✓ Degradation due to ageing
  - ✓ Water Chemistry
  - ✓ Conditions of the Auxiliaries
  - ✓ Overloading and Partial Loading of machines
  - ✓ Number of Start/Stop
  - ✓ Temperatures and Pressures Stress-Machines have been subjected to
  - ✓ Automation of C&I
  - ✓ Condenser Vacuum
- 3.3.4 Reasons for deviation of Actual Operational Parameters from Norms:



**a) Ageing**

- ✓ It is to be submitted that most of the existing generating station of TANGEDCO are very old and also of old technology. There are frequent boiler tube failures due to erosion in the old, aged machines, which may be caused due to degradation of boiler water walls or by poor quality of coal and other constraints. The degradation of machines due to ageing induces high vibrations, high bearing temperature and also affects the heat transfer capacity due to various reasons. This results in failure of the respective auxiliaries and causes deterioration in the actual performance. It thus increases the SIFR of plant. Further, due to low load/partial load operation on account of technical constraints which are beyond the control of TANGEDCO the Auxiliary Consumption & Specific Oil Consumption are abnormally affected. The above constraints are generally observed in older machines mainly, and newer machine minimally get affected by such reasons. Hence, their performance is found near to or at par with the normative values.

**b) Design Constraints**

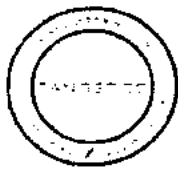
- ✓ It is submitted that the operational performance parameters for generating stations defined by the Hon'ble Commission in TNERC (Terms and Conditions of Tariff) Regulations, 2005 are based on the norms specified in CERC Tariff Regulations, which in turn are based on design specifications of NTPC Power Plants. Most of the NTPC power plants has a bigger unit size of 500 MW due to which they probably achieve target performance parameters as specified in the CERC Tariff Regulations.
- ✓ However, most of the existing plants of TANGEDCO has smaller unit size, as compared to NTPC plants. Due to this, their performance cannot be comparable to 500 MW unit size plants of NTPC. The units being old and smaller in size vis-à-vis NTPC plants, it becomes very difficult to achieve the target performance parameters as specified in the TNERC Tariff Regulations, 2005. It is therefore submitted that the actual performance parameters as submitted in the present petition may kindly be approved.

**c) Operational Constraints**

- ✓ There has been a significant amount of backing down in the recent past years. Due to this the generating stations of TANGEDCO were unable to achieve the Target PLF as specified in TNERC Tariff Regulations, 2005. The following Table summarises the unit wise actual PLF vis-à-vis deemed PLF worked out incorporating the outages/backing downs as instructed by LDC.

**Table 1: Unit wise Actual PLF vs Deemed PLF for TANGEDCO (%)**

Power Station	Approved	FY2021-22	
		Deemed	Actual
MTPS-I	80%	82.63%	65.18%
MTPS-II	80%	65.98%	52.58%
NCTPS-I	80%	68.04%	60.82%



Power Station	Approved	FY2021-22	
		Deemed	Actual
NCTPS – II	80%	45.03%	42.93%
TTPS	80%	71.56%	53.95%

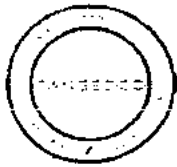
- ✓ It can be seen from the Table above, the actual PLF of all thermal generating stations of TANGEDCO were below the Target PLF over the approved values which is mainly on account of backing down instructions received from SLDC/System. However, based on deemed PLF (arrived after considered backing down units), some of the generating stations were available at a level above the normative. Further, it is to be submitted that the backing down instructions from SLDC/System are beyond the control of TANGEDCO. It is therefore requested to consider the actual PLF achieved by TANGEDCO plants over the respective period.
- ✓ Also, with the increase in frequency of backing down, number of start and stop operation also increases proportionately, which not only results in abnormally higher the consumption of fuels but also affects the operational efficiency of plants.
- ✓ Further, even under the backed down mode, there are certain auxiliaries which are required to run at part load as well as full load, this leads to higher auxiliary consumption for the reduced generation or no generation for which no variable cost is being recovered from the beneficiaries.
- ✓ The efficiency of boiler as well as turbine deteriorates with the decrease in loading of the plant, thus results in higher SHR leading to overall inefficiency.
- ✓ Backing down not only affects the operational life of plants, but also increases the repair and maintenance expenses.
- ✓ Apart from above, many of TANGEDCO plants utilise domestic coal which has high ash content and low GCV. This causes abrasion of boiler and affects operational performance of TANGEDCO plants.

### 3.4 Plant Load Factor (PLF)

- 3.4.1 The following Table shows the Plant Load Factor (PLF) as approved by the Hon'ble Commission vis-à-vis the actual Plant Load Factor achieved by TANGEDCO generating stations during FY 2021-22.

Table 2: Plant Load Factor for FY 2021-22

S. No.	Power Station	FY 2021 – 22	
		Approved	Actuals
Thermal Power Generating Stations			
1	Tuticorin TPS	53.93%	53.95%
2	Mettur TPS I	65.17%	65.18%
3	North Chennai TPS I	60.82%	60.82%



## Details for True-up for FY 2021-22

S. No.	Power Station	FY 2021 – 22	
		Approved	Actuals
4	NCTPS II	42.92%	42.93%
5	MetturTPS II	52.58%	52.58%
GasPower Generating Stations			
6	Tirumakottai GTPS	16.42%	16.45%
7	Kuttalam GTPS	40.90%	40.90%
8	Basin Bridge GTPS	0.60%	0.60%
9	Valuthur GTPS	57.53%	57.55%
HydroPower Generating Stations			
10	Erode HEP	25.46%	25.46%
11	Kadamparai HEP	16.46%	16.46%
12	Kundah HEP	30.56%	28.11%
13	Tirunelveli HEP	35.00%	30.00%

### 3.4.2 Reasons for low PLF:

#### 3.4.2.1 Shortage of Coal:

TANGEDCO procures coal from various Coal Companies including CIL, MCL, SECL, etc. It is to be submitted that the Coal Companies generally have erratic coal supply schedules, due to factors not attributable to TANGEDCO. Further, during the above period there was a shortage of coal on account of non-availability of coal. The coal supplied by the coal companies, i.e., the percentage materialization is generally lesser than the Annual Contracted Quantity due to various factors beyond the scope of the petitioner. The less coal supply by the coal companies is primarily due to less production at the domestic coal mines. Also, in the South-East monsoon season, Coal could not be excavated due to water logging in coal mines. There have also been constraints faced by TANGEDCO in transportation of the coal to its stations due to rail congestion and placement of coal rakes at the mines. Due to this seasonal unavailability of coal, TANGEDCO's plants were unable to operate at full load resulting in lower PLF of plants.

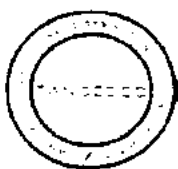
#### 3.4.2.2 Backing down of own generating stations to accommodate solar and wind power:

Tamil Nadu State has highest capacity of renewable energy in India. The state has more than 17,225.11 MW of Renewable Energy installed generation capacity. In order to accommodate renewable energy from these plants, which have must run status, TANGEDCO's own thermal plants are being backed down. This frequent cycle loading induces fatigue and results in low PLF. This also affects the useful life of the plants.

#### 3.4.2.3 Shortage of gas:

Due to the inadequate supply of gas, most of the gas power generating stations of TANGEDCO were either under shut down mode or operated under part load. Due to this none of TANGEDCO gas power stations were able to achieve target PLF.



**3.4.2.4 Hydro Power PLF:**

TANGEDCO wishes to submit that out of total 47 Hydro Power Houses (PHs) of TANGEDCO, 29 PHs are irrigation-based Hydro PHs and remaining 18 PHs are non-irrigation based PHs. Generally, all the hydro stations are operated based on the instructions of Load Dispatch Centre to meet out peak demand & according to the requirement to maintain grid stability and balancing Power to integrate other renewable sources, viz., Solar and wind power.

Irrigation Based Hydro Stations are operated based on PWD Demand and non-irrigation-based Hydro Stations are operated based on Grid Demand and reservoir level which in turn depends on monsoon rains.

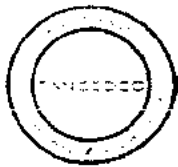
**3.5 Auxiliary Consumption**

- 3.5.1 The following Table shows the actual auxiliary energy consumption (AEC) for various generating stations of TANGEDCO vis-à-vis normative auxiliary energy consumption as approved by the Hon'ble Commission vide its Tariff Order No.7 of 2022 dated 09 September, 2022 for FY 2021-22.

**Table 3: Auxiliary Consumption(%) for FY 2021-22**

S. No.	Power Station	FY 2021-22	
		Approved	Actuals
Thermal Generating Stations:			
1	Tuticorin TPS	8.50%	8.83%
2	Mettur TPS I	8.50%	8.53%
3	North Chennai TPS I	8.50%	10.61%
4	NCTPS II	7.00%	8.52%
5	Mettur II	7.00%	7.60%
Gas Power Generating Stations:			
6	Tirumakottai GTPS	6.00%	24.54%
7	Kuttalam GTPS	6.00%	9.76%
8	Basin Bridge GTPS	0.99%	0.99%
9	Valuthur GTPS	6.00%	6.88%
Hydro Power Generating Stations:			
10	Erode HEP	0.50%	1.30%
11	Kadamparai HEP	0.50%	0.35%
12	Kundah HEP	0.50%	0.31%
13	Tirunelveli HEP	0.50%	0.63%

- 3.5.2 During FY 2021-22, despite frequent backing downs/reserved outages and low load operations, the actual AEC of TTPS, MTPS Stage I & II are marginally higher than the approved norms. Further, with respect to NCTPS I & II due to low PLF, AEC has increased significantly
- 3.5.3 With respect to Gas Power Stations, the actual AEC of all Stations are higher than the approved norms mainly on account of part load operation of stations due to inadequate supply of gas during the respective period. As already mentioned,



that even though the plants are backed down or operated in part load, there are certain auxiliaries that are required to be run at part load or full load in order to bring the Units back as per system demand. This results in increased auxiliary consumption for lower generation. Further, with regard to Basin Bridge, the Units are run as synchronous condenser to supply reactive power to the Grid for better Voltage profile and system stability. Therefore, its auxiliary consumptions vary as per system demand.

- 3.5.4 The Hon'ble Commission is requested to consider the actual auxiliary energy consumption as provided in the Table above.

### 3.6 Station Heat Rate (SHR)

- 3.6.1 The following table provides the actual SHR of various generating stations of TANGEDCO vis-à-vis SHR approved by the Hon'ble Commission in its previous Tariff Order for FY 2021-22.

Table 4: Station Heat Rate (kCal/kWh) for FY2021-22

S. No.	Power Station	FY 2021-22	
		Approved	Actuals
Thermal Power Generating Stations			
1	Tuticorin TPS	2,600	2,814
2	Mettur TPS I	2,600	2,484
3	North Chennai TPS I	2,537	2,740
4	NCTPS II	2,597	2,541
5	MTPS II	2,597	2,661
Gas Power Generating Stations			
6	Tirumakottai GTPS	1,850	4,348
7	Kuttalam GTPS	1,850	2,745
8	Basin Bridge GTPS	4,399	4,399
9	Valuthur GTPS	1,850	2,114

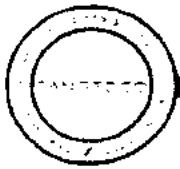
#### 3.6.2 Reasons for deviation:

The major factors contributing to higher SHRs are frequent part load operations and variation in quality of fuel.

##### Thermal Power Stations:

##### ✓ Tuticorin TPS:

- The generating units of TTPS are in operation for more than 30 years, i.e., exceeding their useful life.
- High ash content and inferior quality of domestic coal impacts thermal efficiency of boiler. It deteriorates the operational performance of TTPS.
- The various operational constraints along with the part load operation as per SLDC



instructions have resulted in the increased SHR.

- It is submitted that TANGEDCO has implemented various standard O&M practices considering the older technology of TTPS and has made best efforts to maintain the SHR of plants within the normative level prescribed by the Hon'ble Commission. Despite above, SHR remains slightly higher than the regulatory norms due to reasons beyond the control of TANGEDCO.
- ✓ **MTPS I & II and NCPTS Stage II:** TANGEDCO has managed to achieve the SHR of MTPS and NCPTS II within the norms.
- ✓ **North Chennai TPS(NCTPS) I:** The variation in SHR with respect to TNERC Norms is due to lower/part loading of the plants, variation in coal quality and wet coal.
- ✓ The PLF of NCTPS-I was low during the FY 2021-22 due to backing down instructions. Low PLF, frequent start and stop operations and lower calorific value of fuel resulted in higher SHR.
- ✓ TANGEDCO is requesting to the Hon'ble Commission to consider the actual SHR as claimed considering the ageing factor and the calorific value of coal received.

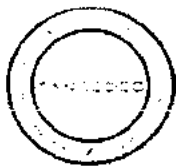
#### **Gas Power Stations:**

- ✓ **Kuttalam GTPS (KGTPS):** The SHR of KGTPS was higher due to part load operations.
- ✓ **Tirumakottai GTPS:** Due to low availability of gas, the Plant was operated at part load. This has resulted into SHR significantly higher than the approved.
- ✓ **Basin Bridge GTPS:** Basin Bridge gas station uses Naphtha as primary fuel. HSD is being used for starting and stopping purposes to avoid accident due to presence of unburnt Naphtha, if any. The Units are generally operated intermittently based on grid demand and also run as synchronous condenser to supply reactive power to the grid for better voltage profile and system stability. Due to frequent start and stop operations and part loading of stations, the SHR remains higher.
- ✓ **Valuthur Unit I and II GTPS:** The SHR of Valuthur GTPS has increased due to operation at part load. Units were operated at part load due to non-availability of gas.

3.6.3 TANGEDCO submits that due to operational constraints as described above, there is a significant deterioration of operational parameters of TANGEDCO Generating Stations. TNERC Tariff Regulations, 2005 and TNERC Electricity Grid Code (EGC) Regulations, 2005 and amendments thereof do not have any provision for compensation in SHR due to lower loading of generating plants on account of backing down.

### **3.7 Specific Oil Consumption**

- 3.7.1 The Table given below shows the approved vis-à-vis actual specific oil consumption achieved by TANGEDCO's generating stations during FY 2021-22



**Table 5: Specific Oil Consumption (ml/kWh) for FY 2021-22**

S. No.	Power Station	FY 2021-22	
		Approved	Actuals
1	Tuticorin TPS	1.67	1.85
2	Mettur TPS I	0.69	0.69
3	North Chennai TPS I	1.79	1.72
4	NCTPS II	1.10	0.68
5	MTPS II	0.88	0.61

3.7.2 As seen from the above Table, the actual specific oil consumption is well within the limits approved by the Hon'ble Commission in previous Tariff Order for FY 2021-22 for all TANGEDCO Generating Station except Tuticorin TPS which is slightly higher than the approved due to ageing and degradation of unit and also small unit size

3.7.3 It may be noted that the specific oil consumption is calculated in terms of percentage of total calorific requirement of the power generating unit and has relation with the size of the generating unit. For the lower size units, the specific oil consumption remains higher as compared to larger size power generating units, because certain amount of specific oil consumption remains fixed irrespective of the size of the generating unit.

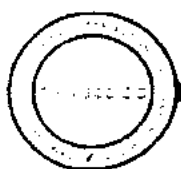
### 3.8 Fuel Related Parameters

3.8.1 The Table below summaries actual value of weighted average Gross Calorific Value (GCV) of primary fuels recorded by TANGEDCO during FY 2021-22 along with approved GCV for primary fuel as per previous Tariff Order.

**Table 6: Gross Calorific Value-Thermal and Gas Stations for FY 2021-22**

Table 6: Gross Calorific Value (kCal)			
S. No.	Power Station	FY 2021-22	
		Approved	Actuals
Thermal Power Generating Stations (kCal/kg):			
1	Tuticorin TPS	3,123.69	3,123.69
2	Mettur TPS I	3,162.28	3,085.00
3	North Chennai TPS I	3,252.52	3,038.00
4	NCTPS II	3,227.94	3,109.51
5	Mettur II	3,202.78	3,096.85
Gas Power Generating Stations (kCal/scm):			
6	Tirumakottai GTPS	10,538.36	10,568.00
7	Kuttalam GTPS	10,416.58	10,422.00
8	Basin Bridge GTPS	10,572.00	10,572.00
9	Valuthur GTPS	9,718.96	9,697.00

3.8.2 It is submitted that due to the unplanned backing down, the coal consumption reduces significantly which leads to piling up of coal stock at the coal yards. The piling of coal stock/ non-movement of coal stock not only creates the operational issues for stacking of coal but also increases the risk of smouldering and loss in the



gross calorific value of the coal stored.

- 3.8.3 Further, TANGEDCO receives coal from different collieries of different coal companies including CIL, MCL, SECL etc. TANGEDCO also procures imported coal in the event of shortfall in domestic coal supply and to enhance the heat content of coal by blending.
- 3.8.4 The Generating Stations of TANGEDCO are located far away from coal mines, due to which higher freight cost is required to be paid. Therefore, the landed cost of coal is higher on account of higher railways freight, ocean freight and other coal handling charges which are beyond the control of TANGEDCO.
- 3.8.5 TANGEDCO also utilises domestic natural gas, naphtha and HSD for its gas based generating stations.
- 3.8.6 The following Table summarises the actual prices of primary fuels for FY 2021-22 along with values as approved by the Hon'ble Commission in its previous Tariff Order.

**Table 7: Price of Primary Fuel-Thermal Stations for FY 2021-22**

S. No.	Power Station	FY 2021-22	
		Approved	Actuals
Thermal Power Generating Stations (Rs. /MT)			
1	Tuticorin TPS	3900	3,736.12
2	Mettur TPS I	5000	4,475.24
3	North Chennai TPS I	3800	3,418.02
4	NCTPS II	3800	3,519.10
5	MTPS II	5000	4,529.48
Gas Power Generating Stations (Rs. /SCM)			
6	Tirumakottai GTPS	8.79	8.82
7	Kuttalam GTPS	9.36	9.47
8	Basin Bridge GTPS*	53.75	0.14
9	Valuthur GTPS	8.52	8.49

\*Total Cost in Rs. Crore

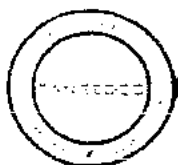
- 3.8.7 The Hon'ble Commission is kindly requested to approve any deviation with respect to fuel related cost as the same is Uncontrollable and need to be entirely pass through to the consumers.

### 3.9 Net Generation

- 3.9.1 Based on Plant Load Factor and Auxiliary Energy Consumption as discussed in aforesaid sections, the net generation for TANGEDCO's Generating Stations for FY 2021-22 has been worked out as shown below.

**Table 8: Net Generation (in MU)**

S. No.	Power Station	FY 2021-22	
		Approved	Actuals
1	Tuticorin TPS	4,539	4,524.36



# Details for True-up for FY 2021-22

S. No.	Power Station	FY 2021-22	
		Approved	Actuals
2	Mettur TPS I	4,388	4,386.84
3	North Chennai TPS I	3,071	3,000.51
4	NCTPS II	4,196	4,128.48
5	MTPS II	2,570	2,553.86
<b>Total Thermal</b>		<b>18,764</b>	<b>18,594.05</b>
6	Tirumakottai GTPS	146	117.31
7	Kuttalam GTPS	340	326.57
8	Basin Bridge GTPS	6	0.02
9	Valuthur GTPS	886	877.97
<b>Total Gas</b>		<b>1,378</b>	<b>1,321.86</b>
10	Erode HEP	1,117	1,115.89
11	Kadamparai HEP	864	858.39
12	Kundah HEP	2,221	2,119.77
13	Tirunelveli HEP	1,145	1,399.43
<b>Total Hydro</b>		<b>5,347</b>	<b>5,493.48</b>
<b>Wind</b>		<b>4</b>	<b>-</b>
<b>Total TANGEDCO</b>		<b>25,494</b>	<b>25,409.40</b>

3.9.2 The Net generation for all TANGEDCO power stations is less than generation approved by the Hon'ble Commission vide last tariff order dated 9<sup>th</sup> September 2022 mainly on account of lower PLF for reasons already specified above.

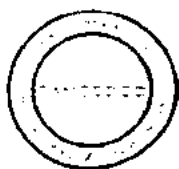
## 3.10 Computation of Fuel Expenses/Variable Cost for FY 2021-22

3.10.1 The total actual fuel expenses (including Coal, Gas, Oil & Naptha) as per Note 27 of Audited Accounts for FY 2021-22 is Rs. 7252.44 Crore.

3.10.2 The Table below provides the actual plant wise variable cost during FY 2021-22:

Table 9: Variable Cost for FY 2021-22 (Rs. Crore)

S. No.	Power Station	FY 2021-22	
		Approved	Actuals
Thermal Power Generating Stations			
1	Tuticorin TPS	1,634	1,733.97
2	Mettur TPS I	2,000	1,741.65
3	North Chennai TPS I	1,022	1,060.02
4	NCTPS II	1,407	1,312.25
5	Mettur TPS II	1,150	1,083.22
Gas Power Generating Stations			
6	Tirumakottai GTPS	24	56.41
7	Kuttalam GTPS	60	90.27
8	Basin Bridge GTPS	54	0.14



## Details for True up for FY 2021-22

S. No.	Power Station	FY 2021-22	
		Approved	Actuals
9	Valuthur GTPS	153	174.51
	<b>Total</b>	<b>7,505</b>	<b>7,252.44</b>

3.10.3 Based on operating parameters and actual fuel cost, energy charges for FY 2021-22 for TANGEDCO's power stations are indicated below.

Table 10: Variable Cost per Unit (Rs. /kWh) for FY 2021-22

S. No.	Power Station	FY 2021-22	
		Approved	Actuals
Thermal Generating Stations:			
1	Tuticorin TPS	3.60	3.83
2	Mettur TPS I	4.56	3.97
3	North Chennai TPS I	3.33	3.53
4	NCTPS II	3.35	3.18
5	Mettur TPS II	4.48	4.24
Gas Power Generating Stations:			
6	Tirumakottai GTPS	1.64	4.81
7	Kuttalam GTPS	1.77	2.76
8	Basin Bridge GTPS	86.08	86.08
9	Valuthur GTPS	1.73	1.99

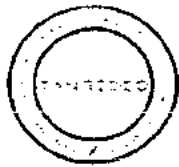
3.10.4 TANGEDCO submits that due to various operational constraints, higher SHR, poor fuel parameters etc. as already explained in paras above, the variable cost for some of the Generating Stations is slightly higher compared to the cost approved by the Commission in its previous Tariff Order. Accordingly, TANGEDCO request the Hon'ble Commission to approve the actual variable cost as shown in Table above.

### 3.11 Summary of variable cost for FY 2021-22

3.11.1 The following Tables show the summary of variable cost for FY 2021-22

Table 11: Summary of variable cost for FY 2021-22

Sr. No.	Power Station	FY 2021-22				
		Gross Generation (in MUs)	Auxiliary Consumption (in MUs)	Net Generation (in MUs)	Variable Cost (Rs. Crores)	Variable Cost (Rs./kWh)
1	Tuticorin TPS	4962.32	437.96	4,524.36	1,733.97	3.83
2	Mettur TPS I	4795.93	409.09	4,386.84	1,741.65	3.97
3	North Chennai TPS I	3356.53	356.02	3,000.51	1,060.02	3.53
4	Mettur TPS II	4512.80	384.33	4,128.48	1,312.25	3.18
5	NCTPS II	2763.78	209.92	2,553.86	1,083.22	4.24
6	Tirumakottai GTPS	155.46	38.15	117.31	56.41	4.81



Sr. No.	Power Station	FY 2021-22				
		Gross Generation (in MUs)	Auxiliary Consumption (in MUs)	Net Generation (in MUs)	Variable Cost (Rs. Crores)	Variable Cost (Rs./kWh)
7	Kuttalam GTPS	361.90	35.33	326.57	90.27	2.76
8	Basin Bridge GTPS	0.02	0.00	0.02	0.14	86.08
9	Valuthur GTPS	942.86	64.89	877.97	174.51	1.99
10	Erode HEP	1122.79	6.90	1,115.89		
11	Kadamparai HEP	878.72	20.33	858.39		
12	Kundah HEP	2126.44	6.67	2,119.77		
13	Tirunelveli HEP	1408.34	8.91	1,399.43		
	<b>Total</b>	<b>27387.88</b>	<b>1978.48</b>	<b>25,409.40</b>	<b>7,252.44</b>	

3.11.2 TANGEDCO requests the Hon'ble Commission to approve variable cost of Generating stations for FY 2021-22 as shown in above Table.

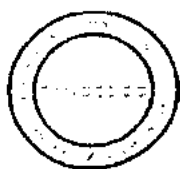
### 3.12 Capital Expenditure and Capitalization

- 3.12.1 TANGEDCO submits that the expenditure incurred in each of the power station is on account of regular works like replacement of worn-out machinery, damaged equipment, transformers, boilers, generators, stators, auxiliary equipment, etc. which are legitimate and necessary to be carried out for effective and efficient working of the power station.
- 3.12.2 TANGEDCO also submits that the expenditure incurred for the distribution function during the respective years is on account of regular works carried out during the year which were necessary for efficient working of the distribution system.
- 3.12.3 The works carried out for the distribution function are mainly on account of addition of LT and HT lines, distribution transformers, services rendered during the year and works carried out under RAPDRP/IPDS scheme.
- 3.12.4 TANGEDCO submits that the additional capitalization incurred by TANGEDCO during the years being Trued-up is in line with the clause 19 of the TNERC Tariff Regulations 2005. This capital expenditure has been incurred for efficient and successful operation of the generating stations and distribution network and is based on actual numbers in audited accounts. Therefore, TANGEDCO requests the Hon'ble Commission to approve capitalisation as per Audited Accounts for FY 2021-22 as shown in table below.

Table 12: Net addition in GFA for FY 2021-22 (in Rs. Crore)

Sr. No	Particular	Approved		Actuals	
		Capital Expenditure	Net Capitalization	Capital Expenditure	Net Capitalization
1	Total Generation	1432	903	796.49	199.62
2	Total Distribution	2351	2443	1440.20	264.60





3	Total TANGEDCO	3783	3346	2236.68	464.22
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3.12.5 The actual capital expenditure towards generation projects such as Udangudi, Ennore SEZ, NCTPS Stage III, Kundah Pumped storage etc. and Distribution projects such as R-APDRP, IPDS, DDUGJY etc incurred more than estimated in Capital Investment Plan approved by Commission, now submitted for true up. The generation projects are expected to be commissioned in 4 to 5 years' time and hence the capitalisation will be accounted in the ensuing years as and when projects are commissioned.

### 3.13 Fixed Cost for FY 2021-22

3.13.1 TANGEDCO has determined actual fixed cost for its generating station and Distribution business on the basis of TNERC (Terms & Conditions of Tariff) Regulation, 2005 and annual audited accounts for FY 2021-22

3.13.2 The fixed cost for Generating plants and Distribution business for FY 2021-22 categorized under the following heads may kindly be allowed.

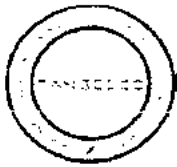
- ✓ Depreciation
- ✓ Interest and Finance Charges
- ✓ Return on Equity
- ✓ Operation and Maintenance Expenses
- ✓ Interest on Working Capital
- ✓ Other Debits
- ✓ Net Prior Period Expenses
- ✓ Extra Ordinary Items
- ✓ Other Income

### 3.14 Depreciation

3.14.1 For working out depreciation, the opening GFA for each of the generating stations and for distribution business for FY 2021-22 is considered same as the closing GFA for FY 2020-21.

3.14.2 The asset additions during the year have been considered as per audited figures during the respective period. The closing GFA for FY 2021-22 has been arrived by adding the asset capitalised and by deducting the asset de-capitalised, if any, during the respective year.

3.14.3 The actual depreciation for generating and distribution function of TANGEDCO as



## Details for True-up for FY 2021-22

per Note30 of Audited Accounts is Rs. 2858.76 Crore for FY 2021-22. It is to be submitted that aforesaid depreciation is excluding the impact of revaluation in line with the approach adopted by the Hon'ble Commission in its previous Tariff Order. TANGEDCO has arrived at these figures based on the asset-wise depreciation rates as approved by TNERC. The depreciation has been computed on the opening GFA of respective years in line with the Regulation 24 of the TNERC Tariff Regulations.

3.14.4 The Table below shows the comparison of actual plant wise depreciation for FY 2021-22 with that of approved in Tariff Order dated 9<sup>th</sup> September, 2022.

**Table 13: Depreciation for FY 2021-22 (in Rs. Crore)**

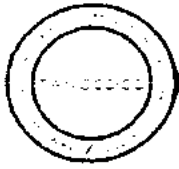
S. No.	Power Station	FY 2021-22	
		Approved	Actual
1	Tuticorin TPS	151.11	87.44
2	Mettur TPS I	83.52	38.08
3	North Chennai TPS I	154.98	85.00
4	Mettur TPS II	275.9	243.28
5	NCTPS II	388.22	459.76
6	Tirumakottai GTPS	29.16	20.26
7	Kuttalam GTPS	34.57	26.87
8	Basin Bridge GTPS	34.46	11.66
9	Valuthur GTPS	39.82	49.50
10	Erode HEP	182.79	112.26
11	Kadamparai HEP	27.55	18.91
12	Kundah HEP	63.94	46.75
13	Tirunelveli HEP	45.62	42.50
<b>Total Generation</b>		<b>1,511.65</b>	<b>1,242.27</b>
<b>Distribution</b>		<b>1,456.65</b>	<b>1,616.49</b>
<b>Total TANGEDCO</b>		<b>2,968.30</b>	<b>2,858.76</b>

3.14.5 The Hon'ble Commission is requested to approve total depreciation for FY 2021-22 as shown in the Table above.

### 3.15 Interest and Finance charges

3.15.1 TANGEDCO submits that it has a basket of loans which are very difficult to identify separately for each of the capital work in a distribution and generation segment. In such case no separate loans can be identified for separate projects distribution function/power plants except in few cases.

3.15.2 Further, TANGEDCO wishes to submit that new loan of Rs. 30,230.29 Crore has been sanctioned for TANGEDCO's distribution function during the FY 2020-21 as per Liquidity Infusion package announced by GoI under AtmaNirbhar Bharath Scheme at an interest rate of 9.50% by REC and PFC. The new loan is to be available to TANGEDCO in two tranches, Tranche I by REC amounting to Rs.



8699.14 Crore and PFC amounting to Rs. 6001.36 Crore. Further in Tranche II amount of Rs. 8358.77 Crore and Rs. 3736.04 Crore was released by REC and PFC respectively. Further a sum of Rs. 3434.99 Crore is yet to be released by REC and PFC. Accordingly, while calculating the interest on loan during FY 2020-21 for distribution function.

3.15.3 TANGEDCO has taken closing loan balance of FY 2020-21 to be opening balance of FY 2021-22 for each generating station and for Distribution business.

3.15.4 As per Clause 23(a) of TNERC Regulations 2005

*"Interest on loan Capital shall be computed loan-wise on the loan arrived at in the manner set out in Regulation 21".*

*"Regulation 21*

*For the purpose of determination of tariff, debt-equity ratio as on the date of commercial operation of Generating Station and transmission projects, sub-station, distribution lines or capacity expanded after the notification of these Regulations shall be 70:30. Where equity employed is more than 30% the amount of equity shall be limited to 30% and the balance amount shall be considered as loans, advanced at the weighted average rate of interest and for weighted average tenor of the long term debt component of the investment.*

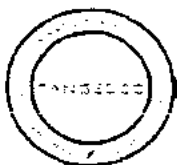
*Provided that in case of a Generating Company or other licensees, where actual equity employed is less than 30%, the actual debt and equity shall be considered for determination of return on equity in tariff computation.*

3.15.5 Other finance charges which comprise of interest on consumers' security deposit and other charges such as cost of raising finance, bank charges, etc. are included in total interest and Finance Charges for FY 2021-22 as provided in the Table below.

3.15.6 The following Table shows Interest and Finance Charges for the FY 2021-22 for TANGEDCO.

Table 14: Interest & Finance Charges for FY 2021-22 (Rs. Crore)

S. No.	Power Station	FY 2021-22	
		Approved	Actual
Thermal Power Generating Stations:			
1	Tuticorin TPS	679.78	708.56
2	Mettur TPS I	405.61	394.93
3	North Chennai TPS I	727.08	744.07
4	Mettur TPS II	395.85	388.15
5	NCTPS II	479.20	359.92
Gas Power Generating Stations:			
6	Tirumakottai GTPS	161.86	158.17
7	Kuttalam GTPS	140.65	137.92
8	Basin Bridge GTPS	304.44	302.59
9	Valuthur GTPS	228.82	221.88



## Details for True-up for FY 2021-22

S. No.	Power Station	FY 2021-22	
		Approved	Actual
Hydro Power Generating Stations:			
10	Erode HEP	352.27	347.78
11	Kadamparai HEP	142.17	138.27
12	Kundah HEP	335.81	353.25
13	Tirunelveli HEP	214.12	209.04
14	Total Generation	4,567.67	4,472.74
Distribution.			
15	Interest and finance charges	4,191.66	3,087.51
16	Interest on security deposit	524.04	-
17	Other finance charges	1,176.70	862.78
18	TANGEDCO	10,460.07	8,423.03

### 3.16 Other interest and finance charges:

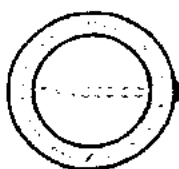
- 3.16.1 Other Finance Charges comprise interest on consumers' security deposit and other charges such as cost of raising finance, bank charges, etc. TANGEDCO has considered other interest and finance charges for FY 2021-22 as per audited Accounts of the respective year.
- 3.16.2 TANGEDCO has included the above charges in total interest and finance charges, hence, not claimed separately.

### 3.17 Return on Equity

- 3.17.1 The total additional equity is bifurcated into generation and distribution function based on the opening balance of Gross Block allotted to generation and distribution function of TANGEDCO.
- 3.17.2 Equity for generation function is further sub-allocated into plant wise based on opening gross block for each of the plant. The additions and deductions during the year are considered as per actual for FY 2021-22.
- 3.17.3 The rate of return on equity has been considered at 14% as specified in TNERC (Terms and Conditions of Tariff) Regulations, 2005 and has been applied on the average equity balance of each power station and distribution function.
- 3.17.4 TANGEDCO would like to submit that a utility is entitled for Return on Equity as the RoE earned is invested every year to carry out future capacity additions. The relevant extracts of TNERC (Terms & Conditions of Tariff) Regulation 2005 is reproduced herein:

#### **"21. Debt-Equity Ratio**

For the purpose of determination of tariff, debt-equity ratio as on the date of commercial operation of Generating Station and transmission projects, sub-station, distribution lines or capacity expanded after the notification of these Regulations



*shall be 70:30. Where equity employed is more than 30% the amount of equity shall be limited to 30% and the balance amount shall be considered as loans, advanced at the weighted average rate of interest and for weighted average tenor of the long term debt component of the investment"*

*"Provided that in case of a Generating Company or other licensees, where actual equity employed is less than 30%, the actual debt and equity shall be considered for determination of return on equity in tariff computation." (Emphasis Added)*

- 3.17.5 The infusion of equity can also be validated from UDAY MoU, wherein the GoTN will convert a loan of Rs. 3,352 Crore into equity share capital. This equity has been used towards Capitalisation of assets and conversion of loan availed for Capital Expenditure into Equity.
- 3.17.6 It is submitted that RoE earned is invested every year to carry out future capacity additions and is essential for sustainable operations. The return on equity claimed by TANGEDCO is as shown in below table

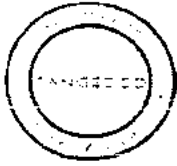
**Table 15: Return on Equity for FY 2021-22 (Rs. Crore)**

S. No.	Power Station	FY 2021-22	
		Approved	Actual
1	Tuticorin TPS	-	50.41
2	Mettur TPS I	-	31.84
3	North Chennai TPS I	-	64.35
4	Mettur TPS II	-	62.20
5	NCTPS II	-	121.62
6	Tirumakottai GTPS	-	12.41
7	Kuttalam GTPS	-	12.80
8	Basin Bridge GTPS	-	40.75
9	Valuthur GTPS	-	24.01
10	Erode HEP	-	56.38
11	Kadamparai HEP	-	12.91
12	Kundah HEP	-	39.41
13	Tirunelveli HEP	-	18.65
14	<b>Total Generation</b>	-	<b>547.74</b>
15	<b>Distribution</b>	-	<b>728.82</b>
16	<b>Total TANGEDCO</b>	-	<b>1,276.56</b>

\*No approved figures as the Hon'ble Commission disallowed the return on equity in line with its earlier Orders.

### **3.18 Operation and Maintenance Expenses**

- 3.18.1 The Operation and Maintenance expense includes actual expenses incurred by TANGEDCO towards Employee Expenses, Administrative and General Expenses (A&G) and Repair and Maintenance Expenses (R&M).

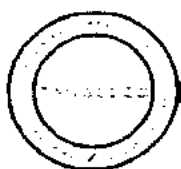


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- 3.18.2 The Employee expenses includes salaries, overtime, DA, medical expenses, headquarter expense and other terminal benefits. The minor increase in employee expenses is mainly on account of wage revisions, inflations, etc. which are beyond the control of TANGEDCO and the same has also been considered by Hon'ble Commission as pass through in its previous Orders.
- 3.18.3 The net employee expenses incurred by TANGEDCO for both of its business (i.e., Generation and Distribution business) as per Audited Accounts is Rs. 9,296.75 Crore for FY 2021-22.
- 3.18.4 The Administrative and General (A&G) expenses include rent/rate & taxes, insurance, legal/technical/consultancy charges and other similar nature miscellaneous expenses. The net A&G expenses incurred for FY 2021-22 as per Audited Accounts stands at Rs. 701.27 Crore. TANGEDCO has claimed A&G expense after netting off the capitalised expenses, fabrication charges and expenses towards TANGEDCO's windfarms.
- 3.18.5 The R&M expenses are the expense incurred towards repairs and maintenance in order to keep the asset quality maintained given the ageing of equipment. It is to be submitted that the assets of TANGEDCO are old and require regular maintenance in order to ensure smooth and reliable operation. However, TANGEDCO has tried its best to minimize the R&M expenses. The actual R&M expenses as per Audited Account after netting off expenses capitalised and TANGEDCO's wind farms, have been worked out as Rs. 387.07 Crore for FY 2021-22.
- 3.18.6 Based on above, the total O&M expenses during FY 2021-22 has been worked out at Rs. 10,442.88 Crore.
- 3.18.7 The Table below shows the actual operation and maintenance expenses for FY 2021-22 for generation and distribution business vis-à-vis normative O&M expense as approved in the previous Tariff Order.

Table 16: O&M Expenses for FY 2021-22 (Rs. Crore)

S. No.	Power Station	FY 2021-22	
		Approved	Actual
1	Tuticorin TPS	361.99	407.10
2	Mettur TPS I	292.30	249.92
3	North Chennai TPS I	263.86	319.93
4	Mettur TPS II	259.20	133.96
5	NCTPS II	156.07	370.26
6	Tirumakottai GTPS	15.27	36.62
7	Kuttalam GTPS	25.07	27.45
8	Basin Bridge GTPS	12.66	66.91
9	Valuthur GTPS	27.16	73.72
10	Erode HEP	90.40	148.42
11	Kadamparai HEP	47.73	81.82



S. No.	Power Station	FY 2021-22	
		Approved	Actual
12	Kundah HEP	81.93	130.62
13	Iirunelveli HEP	74.18	131.30
14	<b>Total Generation</b>	<b>1,707.80</b>	<b>2,178.03</b>
15	<b>Distribution</b>	<b>8,936.81</b>	<b>8,264.85</b>
16	<b>Total TANGEDCO</b>	<b>10,644.61</b>	<b>10,442.88</b>

3.18.8 The above actual operation and maintenance expenses claimed for FY 2021-22 is legitimate and are necessary as TANGEDCO has to undertake independently number of activities such as planning, safety, quality assurance, human resources, IT, corporate office, regulatory affairs, legal, accounts, finances, auditing etc. and various miscellaneous activities.

3.18.9 It is therefore requested to the Hon'ble Commission to approve the actual O&M expenses as shown in Table above.

### 3.19 Interest on Working Capital

3.19.1 TANGEDCO has claimed the interest on working capital for FY 2021-22 on normative basis as specified in Regulation 26 of TNERC (Terms and Conditions of Tariff) Regulations, 2005.

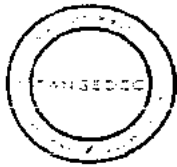
3.19.2 As per Tariff Regulations 2005, maintenance spares for all types of generating stations and transmission systems are considered at 1% of the historic cost after escalating 6% p.a. However, such escalation is not specified by the Tariff Regulations 2005 for distribution system. Therefore, TANGEDCO requests the Commission to maintain uniform approach across generation, transmission and distribution and allow 6% p.a. escalation on maintenance spares.

3.19.3 As per Regulation 27 of Tariff Regulations, rate of interest for working capital shall be equivalent to the short-term primary lending rate of State Bank of India as on 1st April of the relevant year. Accordingly, the rate of interest for FY 2021-22 has been arrived at 12.15 %.

3.19.4 The interest on working capital computed for generation and distribution business is given in the table below:

Table 17: Interest on Working Capital for FY 2021-22 (Rs. Crore)

S. No.	Power Station	FY 2021-22	
		Approved	Actual
Thermal Power Generating Stations:			
1	Tuticorin TPS	98.73	109.43
2	Mettur TPS I	62.39	90.20
3	North Chennai TPS	72.20	77.75
4	Mettur TPS II	93.13	69.35
5	NCTPS II	72.39	95.49



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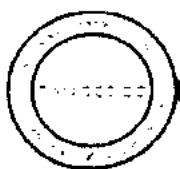
S. No.	Power Station	FY 2021-22	
		Approved	Actual
Gas Power Generating Stations:			
6	Tirumakottai GTPS	5.85	7.56
7	Kuttalam GTPS	11.10	8.20
8	Basin Bridge GTPS	9.87	8.84
9	Valuthur GTPS	12.06	15.07
Hydro Power Generating Stations:			
10	Erode HEP	18.16	19.84
11	Kadamparai HEP	5.60	6.72
12	Kundah HEP	12.28	12.14
13	Tirunelveli HEP	8.72	10.67
14	Total Generation	482.48	531.26
15	Distribution	-	55.03
16	Total TANGEDCO	482.48	586.29

3.19.5 It is submitted that while calculating the interest on working capital for distribution function, the amount estimated as security deposit has been deducted by the Hon'ble Commission from the working capital requirement in the past Tariff Order. It may be noted that deduction of security deposit from working capital is not specified in TNERC (Terms and Conditions of Tariff) Regulations, 2005. However, in line with the approach adopted by the Hon'ble Commission, TANGEDCO has deducted security deposit while calculating the Working Capital requirement.

### 3.20 Other Debits

- 3.20.1 Otherdebits for Generation and Distribution business includes material cost variance, R&D expenses, bad and doubtful debts, miscellaneous losses, other expenses written off and other extra ordinary debits.
- 3.20.2 The above expenses are not approved by the Hon'ble Commission stating that such expenses are part of normative O&M expenses and should be recovered from normative O&M expenses.
- 3.20.3 However, TANGEDCO reiterates that such expenses were not considered while arriving at normative O&M expenses and hence, does not constitute a part of normative O&M. Further, the same were separately approved by the Hon'ble Commission till FY 2013-14. Many SERCs approve such expenses in ARR taking cognizance of ground realities. The Hon'ble Commission has also approved these expenses until amendment was done in Tariff Regulations, 2005.
- 3.20.4 Further, the other debit for distribution function also includes bad and doubtful debts write off. TANGEDCO submits that after amendment of Tariff Regulations, 2005 the provision for bad and doubtful debts was omitted by the Hon'ble Commission. However, TANGEDCO cannot restrict power supply in areas with poor





collection efficiency, because it has to fulfil Universal Service Obligation.

3.20.5 Further, the other actual expense claimed under Other Debits includes compensation for injuries, death to staff and others, under valuations of scraps, loss on sale of scraps and other related expenses. These expenses are legitimate and are not covered under other ARR heads. Hence, TANGEDCO is entitled to claim the same.

3.20.6 Further, it is to be noted that the Hon'ble Commission in its previous Tariff Order has not approved any expenses towards Other Debits for FY 2021-22 to FY 2026-27 but has agreed to allow the same at the time of true-up after prudence check. The relevant extract from the previous Tariff order is reproduced below;

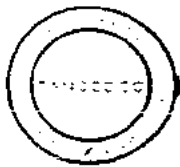
*"4.14.2 At present, the Commission has not approved Other Debits for the Control Period on projection basis. The Commission shall allow Other Debits after scrutiny at the time of true-up based on prudence check of the audited accounts."*

3.20.7 TANGEDCO has considered expense towards other debits for generation and distribution business as per audited Accounts of FY 2021-22.

3.20.8 Therefore, TANGEDCO requests the Hon'ble Commission to allow the actual Other Debits as claimed in the below table for FY 2021-22 for generation and distribution function.

Table 18: Other debits for FY 2021-22 (Rs. Crore)

S. No.	Power Station	FY 2021-22	
		Approved	Actual
Thermal Power Generating Stations:			
1	Tuticorin TPS	-	-
2	Mettur TPS I	-	-
3	North Chennai TPS I	-	-
4	Mettur TPS II	-	-
5	NCTPS II	-	-
Gas Power Generating Stations:			
6	Tirumakottai GTPS	-	-
7	Kuttalam GTPS	-	-
8	Basin Bridge GTPS	-	-
9	Valuthur GTPS	-	-
Hydro Power Generating Stations:			
10	Erode HEP	-	-
11	Kadamparai HEP	-	-
12	Kundah HEP	-	0.11
13	Tirunelveli HEP	-	-
14	Total Generation	-	0.11
15	Distribution	-	24.88
16	Total TANGEDCO	-	24.99



### 3.21 Operating Charges and Extra-Ordinary Items

3.21.1 TANGEDCO wishes to submit that in order to run a plant in an effective and efficient manner, there are certain O&M nature costs which are necessary to be incurred by the power stations. With regard to thermal and gas generating stations, these costs include fuel related cost other than those used for generation of electricity, cost of water, lubricant and consumables. For hydro generating stations, these costs are related to station supplies and cost of water for hydel power. TANGEDCO has categorized such cost under the head operating charges and extra-ordinary item.

3.21.2 Although, these costs are minimal but are necessary in order to run a plant at its optimum level. TANGEDCO has sought such costs separately through its ARR, as the same has not been defined under O&M expense as per TNERC Tariff Regulations, 2005.

3.21.3 TNERC Tariff Regulations, 2005 defines Operation and Maintenance expense as below;

*"(bb) 'Operation and Maintenance Expenses' or 'O and M Expenses' means the expenditure incurred in operation and maintenance of the generating station, or part thereof / transmission system / distribution system, including the expenditure on employee cost, repair and maintenance and administration and general expenses."*

3.21.4 From above it can be seen that the O&M expenses as per TNERC Regulations includes expenses towards employee, repair and maintenance and administration and general purpose only. Further, it is to be noted that TNERC Tariff Regulations, 2005 do recognise the above cost and have also exclusively specified the same for Hydro Generating Station under the Regulations 53(2). The relevant extract of the Regulation is as reproduced below:

*53. Computation of Annual Energy Charges*

*(2) The annual capacity (fixed) charges shall consist of the following and shall be computed as per the principles in Chapter III.*

*...*

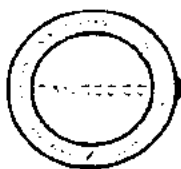
*...*

*(d) Operation and Maintenance expenses excluding operating expenses like water charges, lubricants, consumables and station supplies.*

*...*

*(3) Primary Energy Charges shall be the operating expenses like cost of water, lubricants, consumables and station supplies.*

3.21.5 Although TNERC Regulations do explicitly define the operating expenses in case of Hydro Power Generating Stations, but in case of Thermal Generating Stations the existing Regulations are silent. Under such a circumstance the existing Regulations in accordance with Regulation 4 of TNERC Tariff Regulations, 2005 shall be guided by principles and methodologies specified by the Central Commission. TANGEDCO



further wishes to submit that the O&M expense under CERC Tariff Regulations clearly specifies the other operating charges such as consumables, insurance and overheads and other fuel related cost apart from the expenditure on manpower, maintenance, repairs and maintenance spares. The relevant extract from CERC Tariff Regulations is as reproduced below.

3.21.6 CERC Terms and Condition of Tariff Regulations, 2019 defines O&M expenses as below;

*"(45) 'Operation and Maintenance Expenses' or 'O&M expenses' means the expenditure incurred for operation and maintenance of the project, or part thereof, and includes the expenditure on manpower, maintenance, repairs and maintenance spares, consumables, insurance and overheads and fuel other than used for generation of electricity. {emphasis added}"*

3.21.7 Based on above it can be clearly inferred that apart from the expenditure on employee cost, repair and maintenance and administration and general expenses, there are certain other costs are incurred by the power station. TANGEDCO has categorized the same under operating charges and extra ordinary items.

3.21.8 However, the Hon'ble Commission has disallowed the above cost in its previous Tariff Order stating that these costs are actually a part of the normative O&M expenses and have been considered there. The relevant extract from the Tariff Order is reproduced below;

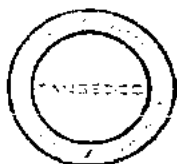
*"4.15.3 The Commission is of the view that the Operating Charges and Extra-Ordinary Items claimed by TANGEDCO separately, are actually a part of the normative O&M expenses and cannot be separately allowed."*

3.21.9 In this regards TANGEDCO wishes to submit that the normative O&M expenses so derived by the Hon'ble Commission in accordance with Regulation 25 of TNERC Tariff Regulations, 2005 does not include the operating charges and extra-ordinary items.

3.21.10 The actual Operating Charges and Extra Ordinary items as per Audited Accounts is Rs. 99.26 Crore for FY 2021-22 as shown in Table below.

Table 19: Operating Charges and Extra-Ordinary Item for FY 2021-22 (Rs. Crore)

S. No.	Power Station	FY 2021-22	
		Approved	Actual
1	Tuticorin TPS	-	220.09
2	Mettur TPS I	-	4.90
3	North Chennai TPS I	-	103.03
4	Mettur TPS II	-	15.09
5	NCTPS II	-	41.08
6	Tirumakottai GTPS	-	0.25
7	Kuttalam GTPS	-	-
8	Basin Bridge GTPS	-	0.24



## Details for True-up for FY 2021-22

S. No.	Power Station	FY 2021-22	
		Approved	Actual
9	Valuthur GTPS	-	6.51
10	Erode HEP	-	3.00
11	Kadamparai HEP	-	2.62
12	Kundah HEP	-	72.21
13	Tirunelveli HEP	-	2.19
14	<b>Total Generation</b>	-	<b>471.21</b>
15	<b>Distribution</b>	-	-
16	<b>Total TANGEDCO</b>	-	<b>471.21</b>

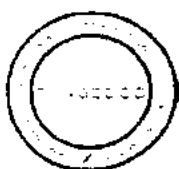
3.21.11 TANGEDCO requests the Hon'ble Commission to approve the actual plant wise Operating Charges and Extra-Ordinary Items for FY 2021-22 as shown in above table.

### 3.22 Other Income and Non-Tariff Income

- 3.22.1 The Regulation 40 of TNERC Tariff Regulations, 2005 defines Other Income as income other than sale of electricity. Further, the Regulation 41(2) specifies that the capacity charge for Generating Company shall be arrived at after deducting Other Income from the total annual expenses.
- 3.22.2 In case of Distribution function, the treatment of Other Income and Non-Tariff is provided under Regulation 80 of TNERC Tariff Regulations, 2015. The said Regulation specifies that the ARR for Distribution Licensee shall be arrived at after deducting Other Income including Non-Tariff related charges, income from surcharge and additional surcharge from open access, etc. from total expenses.
- 3.22.3 Further, the Non-Tariff related charges as stated above has been defined under Regulation 68 (2) as *-rent for meter provided by the licensee and other charges as per the provision of Tamil Nadu Electricity Supply Code and Tamil Nadu Electricity Distribution Code.*
- 3.22.4 The various component of Other Income for TANGEDCO includes interest on staff loan and advances, income from investment, interest on loan advances and advances to licensee, delayed payment surcharge, rebate on power purchase bills, interest from bank/trading, miscellaneous receipt, etc. The total Other Income as per Note 25 of Audited Accounts stands at Rs. 12256.97 Crore (including 11,281.68 Crore as grants and Subsidies received from Government) Crore for FY 2021-22.
- 3.22.5 Based on above, TANGEDCO has computed Other Income for FY 2021-22 pertaining to Generation and Distribution business of TANGEDCO, as shown in the Table below:

Table 20: Other Income for FY 2021-22 (Rs. Crore)

S. No.	Power Station	FY 2021-22	
		Approved	Actual



# Details for True up for FY 2021-22

S. No.	Power Station	FY 2021-22	
		Approved	Actual
1	Tuticorin TPS	36.98	32.49
2	Mettur TPS I	37.69	65.78
3	North Chennai TPS I	4.20	22.80
4	Mettur TPS II	17.84	53.33
5	NCTPS II	6.42	9.85
6	Tirumakottai GTPS	0.15	0.06
7	Kuttalam GTPS	0.15	0.00
8	Basin Bridge GTPS	0.03	0.03
9	Valuthur GTPS	0.29	0.40
10	Erode HEP	(0.10)	3.14
11	Kadamparai HEP	1.57	(2.01)
12	Kundah HEP	0.94	0.53
13	Tirunelveli HEP	1.03	8.01
14	<b>Total Generation</b>	<b>107.19</b>	<b>194.38</b>
15	<b>Distribution</b>	<b>1,755.73</b>	<b>780.91</b>
16	<b>Total TANGEDCO</b>	<b>1,862.92</b>	<b>975.28</b>

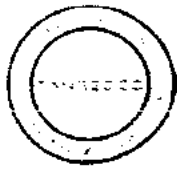
3.22.6 TANGEDCO requests the Hon'ble Commission to approve the Other Income as per Audited Accounts as claimed in above table.

3.22.7 Further, the various component of Non-Tariff Income pertaining to Distribution function of TANGEDCO as per Regulations 68(2) of TNERC Tariff Regulations, 2005 includes meter rent/service line rental, recoveries for theft of power/malpractices, wheeling charges recoveries and other miscellaneous charges recovered from consumers. The total Non-Tariff Income as per Note 24 of Audited Accounts is Rs. 1941.57 Crore for FY 2021-22.

3.22.8 The Table below shows the element wise breakup of Non-Tariff Income for FY 2021-22:

**Table 21: Non-Tariff Income for FY 2021-22 (Rs. Crore)**

Power Station	FY 2021-22	
	Approved	Actual
Meter rent/service line rentals	1,730.51	37.14
Recoveries for theft of power/malpractice		71.12
Wheeling charges recoveries		211.21
Misc. charges from consumers		804.16
Cross Subsidy Surcharge		565.22
Additional Surcharge from open Access Consumers		252.72
<b>Total TANGEDCO (Distribution)</b>	<b>1,730.51</b>	<b>1,941.57</b>



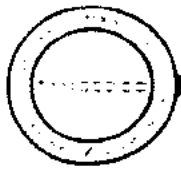
3.22.9 TANGEDCO requests the Hon'ble Commission to approve the Other Income and Non-Tariff Income, as shown in Table above.

### 3.23 Prior Period Items

- 3.23.1 TANGEDCO submits that the Prior Period items are the expenses or income which are of routine nature in the business of TANGEDCO. These items arise in the current period mainly on account of short provisions, errors/omissions in the preparation of financial accounts, procedural delay in payments/receipts and due to various other administrative reasons pertaining to past period. TANGEDCO submits that even the cut-off for an accounting year is 31<sup>st</sup> March of every year, the above expenses could not be cut-off and carried out as a live business process. Therefore, the same is booked and accounted in a subsequent year as the audited accounts of previous year have already been finalised.
- 3.23.2 The Prior Period Items in case of TANGEDCO are mainly on account of payments made relating to power purchase, revision in tariff payments and fuel price adjustment to central generating stations. It also includes employee cost interest and other administrative expenses relating to prior period.
- 3.23.3 The net Prior Period Items for Generation and Distribution function of TANGEDCO as per Audited Accounts stands at Rs. 176.21 Crore for FY 2021-22.
- 3.23.4 The Table below shows the plant wise net Prior Period Items for Generation and Distribution function of TANGEDCO for FY 2021-22.

Table 22: Prior Period Expenses for FY 2021-22 (Rs. Crore)

S. No.	Power Station	FY 2021-22	
		Approved	Actual
1	Tuticorin TPS	-	-
2	Mettur TPS I	-	-
3	North Chennai TPS I	-	-
4	Mettur TPS II	-	-
5	NCTPS II	-	-
6	Tirumakottai GTPS	-	-
7	Kuttalam GTPS	-	-
8	Basin Bridge GTPS	-	-
9	Valuthur GTPS	-	-
10	Erode HEP	-	-
11	Kadamparai HEP	-	-
12	Kundah HEP	-	-
13	Tirunelveli HEP	-	-
14	Total Generation	-	-
15	Distribution	-	3,565.05
16	Total TANGEDCO	-	3,565.05

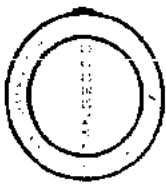


Details for True up for FY 2021-22

3.23.5 TANGEDCO requests the Hon'ble Commission to approve the net prior period expense as shown in above table.

**3.24 Summary of Fixed Cost of TANGEDCO for FY 2021-22**

3.24.1 The Table below shows the summary of fixed cost for FY 2021-22 for Generation and Distribution function of TANGEDCO.

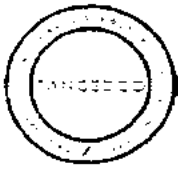


Details for True-up for FY 2021-22

Table 23: Summary of Fixed Cost for FY 2021-22 (Rs. Crore)

S no.	Name of the plant	Depreciat ion	Interest & finance charges	Interest on Working Capital	Return on Equity	Operation and Maintenance Expenses	Other Debits	Prior period credits/c harges	Extra Ordinary Charges	Other Income	Non-Tariff Income	Total Annual Fixed Cost
<b>Thermal Power Generating Stations:</b>												
1	TTPS	87.44	708.56	109.43	50.41	407.10	-	-	220.09	32.49	-	1,550.54
2	MTPS I	38.08	394.93	90.20	31.84	249.92	-	-	4.50	65.78	-	744.09
3	NCTPS I	85.00	744.07	77.75	64.35	319.93	-	-	103.03	22.80	-	1,371.33
4	MTPS-II	243.28	388.15	69.35	62.20	133.96	-	-	15.09	53.33	-	858.70
5	NCTPS-II	459.76	359.92	95.49	121.62	370.26	-	-	41.08	9.85	-	1,438.28
<b>Gas Power Generating Stations:</b>												
6	Tirumakottai GTPS	20.26	158.17	7.56	12.41	36.62	-	-	0.25	0.06	-	235.21
7	Kuttalam-GTPS	26.87	137.92	8.20	12.80	27.45	-	-	-	0.00	-	213.24
8	Basin Bridge-GTPS	11.66	302.59	8.84	40.75	66.91	-	-	0.24	0.03	-	430.96
9	Valuthur-GTPS	49.50	221.88	15.07	24.01	73.72	-	-	6.51	0.40	-	390.29
<b>Hydro Power Generating Stations:</b>												
10	Erode-HPS	112.26	347.78	19.84	56.38	148.42	-	-	3.00	3.14	-	684.54
11	Kadamparai-HPS	18.91	138.27	6.72	12.91	81.82	-	-	2.52	(2.01)	-	259.24
12	Kundah-HPS	46.75	353.25	12.14	39.41	130.62	0.11	-	72.21	0.53	-	653.96
13	Tirunelveli-HPS	42.50	209.04	10.67	18.65	131.30	-	-	2.19	8.01	-	406.34
14	Total Generation	1,242.27	4,464.53	531.26	547.74	2,178.03	0.11	0.00	471.21	194.41	0.00	9,236.72
15	Distribution	1,616.49	3,950.29	55.03	728.82	8,264.85	24.88	3,565.05	-	780.91	1,941.57	15,482.93
16	Total TANGEDCO	2,858.76	8,414.82	586.29	1,276.56	10,442.88	24.99	3,565.05	471.21	975.32	1,941.57	24,723.56





### 3.25 Total Cost for FY 2021-22

3.25.1 The following Table shows total cost of generation and distribution function of TANGEDCO for FY 2021-22.

**Table 24: Total Cost for Generation & Distribution Function for FY 2021-22 (Rs. Crore)**

Year	FY 2021-22		
Power Station	Fixed Cost	Variable Cost	Total Cost
Tuticorin TPS	1,550.54	1,733.97	3,284.50
Mettur TPS I	744.07	1,741.65	2,485.72
North Chennai TPS I	1,371.32	1,060.02	2,431.34
MTPS II	1,438.28	1,312.25	2,750.53
NCTPS II	858.69	1,083.22	1,941.92
<b>Coal based Stations</b>	<b>5,962.90</b>	<b>6,931.11</b>	<b>12,894.01</b>
Tirumakottai GTPS	235.27	56.41	291.68
Kuttalam GTPS	213.24	90.27	303.50
Basin Bridge GTPS	430.96	0.14	431.10
Valuthur Unit-I	390.29	174.51	564.80
<b>Gas based Stations</b>	<b>1,269.75</b>	<b>321.33</b>	<b>1,591.08</b>
Erode HEP	684.54	-	684.54
Kadamparai HEP	259.25	-	259.25
Kundah HEP	653.95	-	653.95
Tirunelveli HEP	406.34	-	406.34
<b>Hydro Stations</b>	<b>2,004.09</b>	<b>0.00</b>	<b>2,004.09</b>
<b>Total Generation</b>	<b>9,236.72</b>	<b>7,252.44</b>	<b>16,489.18</b>
<b>Distribution</b>	<b>15,482.93</b>	<b>38,556.43</b>	<b>54,039.37</b>
<b>Total TANGEDCO</b>	<b>24,719.65</b>	<b>45,808.87</b>	<b>70,528.55</b>

3.25.2 TANGEDCO requests the Hon'ble Commission to approve total cost for generation and distribution function of TANGEDCO for FY 2021-22 as shown in table above.

### 3.26 Energy Balance and T&D loss(%) for FY 2021-22

3.26.1 The actual Transmission Loss for FY 2021-22 is 3.90%, same as 3.90% as approved by the Hon'ble Commission in its previous Tariff Order for FY 2021-22.

3.26.2 The total sales as per Statement 9 of Audited Accounts stands at 80,612.98 MUs for FY 2021-22. TANGEDCO has worked out Distribution Losses considering the energy at distribution periphery and total sales at consumer end as mentioned above.

3.26.3 Accordingly, the Energy Balance for FY 2021-22 in line with the same approach as adopted by the Hon'ble Commission in its previous Tariff Order is as shown in

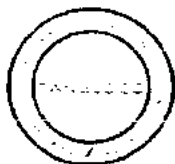


Table below.

Table 25: Energy Balance Statement for FY 2021-22

S.No.	Particulars	Unit	FY 2021-22	
			Approved	Actual
1	Total Energy Required	MUs	96,373	98,286.27
2	PGCIL Losses	MUs	1,721	2,065.47
3	Total Energy Available at State Boundary	MUs	94,652	96,220.80
4	Intra State Transmission losses	MUs	3,691	3,627.51
5	Intra State Transmission losses	%	3.90%	3.77%
6	HT Sales 110 kV & 230 kV Sales (MU)	MUs	2,253	3,730.35
7	Energy Available at Distribution Network	MUs	88,707	88,862.94
8	Total LT Sales (MU)	MUs	63,601	64,918.14
9	Total HT Sales (MU)	MUs	17,158	17,157.84
10	Total Sales	MUs	80,759	82,075.98
11	Sales at Distribution Network	MUs	78,506	78,345.63
12	Distribution Losses	MUs	10201	10,517.31
13	Distribution Losses	%	11.50%	11.84%

3.26.4 TANGEDCO requests the Hon'ble Commission to approve the Transmission Loss & Distribution Loss as shown in table above.

### 3.27 Transmission Charges

3.27.1 The Transmission charge considered in ARR for Distribution function for FY 2021-22 is actual charge as per the Audited accounts, as under:

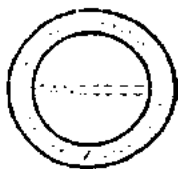
Table 26: Transmission charges for FY 2021-22 (Rs. Crore)

Sr. No	Particulars	FY 2021-22
1	TANTRANSCO Charges	2,272.15
2	PGCIL, POSOCO, UI Charges	3,067.44
3	Total	5,339.58

3.27.2 The Hon'ble Commission is requested to approve Transmission Charges as shown in the Table above.

### 3.28 Power Purchase Expenses from external sources for FY 2021-22

3.28.1 TANGEDCO submits that the power purchase cost available in Audited Accounts for FY 2021-22 is inclusive of Wheeling Charges and Wheeling adjustments. However, while considering the power purchase quantum and cost in this present petition, Wheeling



Charges and Wheeling adjustments have been excluded, in line with the approach adopted by the Hon'ble Commission's in its previous Tariff Order.

3.28.2 Belowtable shows the Wheeling adjustment in Power Purchase cost and quantum for FY 2021-22.

**Table 27: Wheeling Adjustment for FY 2021-22**

Sr No	Particular	FY 2021-22	
		Purchase (Mus)	PP (Rs. Cr)
1	Values as per Audited Accounts	89,892	49,829.35
2	Wheeling units/charges adjustments	17,016	9,076.48
3	Net Power Purchase	72,876	40,752.87

3.28.3 Further, apart from utilization of own generated power, TANGEDCO procures power from various sources including central generating stations (CGS), IPPs, as well as renewables. In addition to the above sources, in case of any shortfall of power when demand exceeds availability or for cost optimization, TANGEDCO also sources power from Exchange/Traders or other sources at the market price.

3.28.4 The detailed break-up of power purchase from CGS, IPP, Co-Generation, Biomass and Captive Generation for FY 2021-22 is given in Annexure I enclosed with the Petition. Details of Open Access transactions during the respective year (LTOA, MTOA and STOA) have also been provided in Annexure I.

3.28.5 Regarding purchase of energy from Renewable Sources (RE), TANGEDCO submits that the total RPO requirement obligated to it was 21.00% for FY 2021-22 (i.e., 10.5% from non-Solar sources and 10.5% from Solar sources). In order to meet its RPO requirement, TANGEDCO has executed long-term Energy Purchase Agreements (EPAs) with RE Generators. TANGEDCO has fulfilled its Non- Solar RPO completely however, it lacks in fulfilling its Solar RPO. Further, TANGEDCO submits that it has approximately fulfilled its overall RPO.

3.28.6 The Table below shows the RPO compliance status of TANGEDCO for FY 2021-22.

**Table 28: Status of RPO Compliance for FY 2021-22**

Particulars	FY 2021-22	
	Target	Achieved
RPO – Non-Solar [A]	10.50%	13.39%
RPO -Solar [B]	10.50%	7.49%
Total RPO [A]+[B]	21.00%	20.88%

3.28.7 Following Table shows the power purchase quantum and expenses from outside/other sources for FY 2021-22 after excluding wheeling units and wheeling cost.

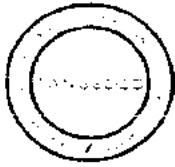


Table 29: Power Purchase Expenses for FY 2021-22

Year	FY 2021-22	
Power Sources	Units (MUs)	PP Cost (Rs Crore)
<b>Central Generating Stations</b>		
Neyveli TS-I	3,821.68	1,550.50
Neyveli TS-II Stage I	2,734.44	936.42
Neyveli TS-II Expansion		
Neyveli TS-I Expansion	1,591.99	538.62
Neyveli Expansion Unit II	955.49	471.64
NTPL JV with NLC	1,723.84	902.56
Ramagundam I&II	3,221.60	1,163.67
Ramagundam III	896.25	316.03
Simhadri Stage II	1,209.02	577.73
NTPC_TNEB JV Vallur	6,044.14	3,348.97
Talcher	3,508.33	887.73
Madras APS	627.57	158.24
Kaiga APS	1,719.75	599.35
Kudankulam	7,781.81	3,186.85
NTPC ER	240.59	86.06
Kudgi	905.22	737.92
<b>Total CGS (i)</b>	<b>37004.65</b>	<b>15,462.52</b>
<b>IPPs</b>		
SEPC	90	13.10
Pillaiperumalnallur	-4.87	-
TAQA (STCMS)	1,415.28	736.30
LANCO Power (Aban co)	-	-
PIONEER Power co. (Penna)	66.32	12.52
<b>Total IPPs (ii)</b>	<b>1,566.72</b>	<b>761.93</b>
<b>Renewables</b>		
Windmill	3,538.10	1,052.10
Co-generation	347.07	175.87
Biomass	2.10	1.36
Captive generation	15.18	2.94
Solar	7,202.73	3,403.20
<b>Total Renewables (iii)</b>	<b>11,105.19</b>	<b>4,635.46</b>
<b>Short Term and Others</b>		
UI Power	54.78	258.64
Traders-MTOA	722.27	51.87
Traders-LTOA	14,388.37	6,885.58
Traders-STOA	1,727.62	638.43
Power Exchanges	6,329.93	4,096.74
Swap	-22.65	352.21



Year	FY 2021-22	
Power Sources	Units (MUs)	PP Cost (Rs Crore)
Total Short Term and Others (iv)	23,200.31	12,283.46
STOA charges		73.48
Total	72876.87	33,216.85
Transmission Charges TANTRANSCO/PGCIL/POSOCO	-	5,339.58
Total Power Purchase Cost	-	38,556.43
Less Hydro Utilization fund	-	-
Total Power Purchase Cost	-	38,556.43

3.28.8 The Table below shows the source wise comparison of actual power purchase cost and quantum vis-à-vis approved power purchase cost and quantum for FY 2021-22.

Table 30: Source wise Power Purchase Cost for FY 2021-22

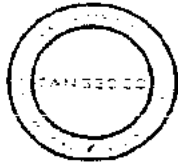
S. No.	Source	FY 2021-22					
		Approved			Actual		
		Quantum (MU)	Total Cost (Rs. Cr)	Rate (Rs. /kWh)	Quantum (MU)	Total Cost (Rs. Cr)	Rate (Rs. /kWh)
1	CGS	37,053.61	15,508.45	4.19	37004.65	15,462.52	4.18
2	IPPs	1,568.26	753.88	4.81	1,566.72	761.93	5.10
3	RE	10,120.84	4,216.06	4.17	11,105.19	4635.46	4.09
4	Traders*	25,988.29	13,833.58	5.32	23,200.31	12,283.46	5.17
5	STOA charges		74.85			73.48	
5	Total	74,731.00	34,386.82	4.60	72,876.87	33,216.85	4.56

\*Inclusive of UI/Swap

3.28.9 The source wise reasons for deviation in power purchase quantum as compared to that of approved in previous Order is as below:

**Central Generating Stations:** TANGEDCO procures power from various Central Generating Stations (CGS) such as NTPC, NLCL, NPCIL etc. as per its allocated share. TANGEDCO submits that energy bills from these stations are subjected to Tariff revisions, annual adjustments to AFC (Annual Fixed Cost) and SFC (Specific Fuel Cost) as per PPAs and relevant CERC Regulations. Therefore, the actual power purchase cost varies as compared to approved power purchase cost.

**IPPs:** The sources of IPPs for FY 2021-22 includes TAQA SEPC and Pioneer Power.



## Details for True-up for FY 2021-22

**RE:** TANGEDCO procures RE power from various sources like wind, small hydro, solar, co-generation etc. The variation in power purchase from RE sources is mainly on account of variation in actual generation from these intermittent sources.

**Traders:** TANGEDCO procures power from various traders under STOA, MTOA and LTOA. It also procures power from power exchange. The power from Traders is procured when demand exceeds availability or for cost optimisation. The energy price from traders are market driven prices, therefore, there is variation in actual cost incurred as compared to approved one.

3.28.10 As directed by Commission in its 2017 order TANGEDCO has strictly been following the MoD stack for purchase of power i.e., scheduling from own stations and as well as from CGS/IPPs so as to optimize the cost of power purchase.

3.28.11 It is to be submitted that the above variations are beyond the reasonable control of TANGEDCO but well within the regulatory provisions for consideration in True-up. Therefore, TANGEDCO requests the Hon'ble Commission to approve the power purchase cost and quantum as shown in above table.

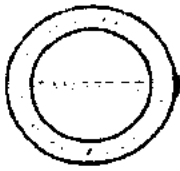
### 3.29 Revenue from sale of power

3.29.1 TANGEDCO submits that the total revenue shown in Audited Accounts for FY 2021-22 is inclusive of Wheeling Units and Revenue. However, while considering total revenue in this present petition, Wheeling Units and Wheeling Revenue have been excluded in line with the approach adopted by the Hon'ble Commission's in its previous Tariff Order. The Table below shows the total revenue for FY 2021-22 after removing wheeling units and revenue adjustment:

**Table 31: Wheeling adjustment for Sales and Revenue for FY 2021-22**

Sr No	Particular	FY 2021-22	
		Sales (MUs)	Revenue (Rs. Crore)
1	Values as per Audited Accounts	98,286	55029.04
2	Wheeling units/Revenue adjustments	16210	9076.48
3	Net Sales and Revenue	82,076	45,952.56
4	Subsidy & Grants	-	
5	<b>Total Sales &amp; Revenues</b>	<b>82,076</b>	<b>45,952.56</b>

3.29.2 The following Table shows the category wise sales in MU (excluding wheeling units) and revenue earned by TANGEDCO (excluding wheeling revenue and subsidy from State Government) as per Audited Accounts of FY 2021-22. Further while calculating



the Agricultural consumption for FY 2021-22, the total connected load in HP for the middle of the year was considered for calculating the AT&C loss of TANGEDCO, as directed by the Hon'ble Commission vide SMT- Order No. 9 of 2014 dated 11.12.2014. As per the policy announcement by the newly formed Government, TANGEDCO effected one Lakh new agriculture service during FY 2020-21. The Month wise details of number of services effected and their corresponding load are furnished below:

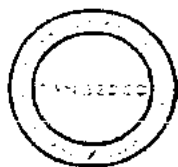
Table 32: Agriculture services affected during FY 2021-22

<b>Agricultural SC affected during 1.4.2021 to 31.3.2022</b>		
<b>Month / Year</b>	<b>Total SC effected</b>	<b>Total Load in HP</b>
Upto Aug -2021	10494	75500
Sept 2021	1322	9488
Oct 2021	2065	13820
Nov 2021	2123	13565
Dec 2021	3708	23650
Jan 2022	11181	66012
Feb 2022	26668	162348
Mar 2022	42439	266247
<b>Total</b>	<b>100000</b>	<b>630630</b>

There was increase in load of about 5.55 lakh HP after the middle of the year and the same has not been accounted while calculating the Agricultural consumption during FY 2021-22. Now after accounting the load and increased agricultural activity due to good monsoon, the agricultural consumption of TANGEDCO increased from 13967.09 MU to 15430 MU.

Table 33: Sales and Revenue from sale of power for FY 2021-22

<b>S. No.</b>	<b>Year</b>	<b>Tariff</b>	<b>FY 2021-22</b>	
	<b>Consumer Category</b>		<b>Sales (MUs)</b>	<b>Revenue* (Rs. Crores)</b>
<b>I</b>	<b>I High Tension Supply</b>			
1	Registered factories, Textiles, Tea Estate, Software Industries etc.	IA	12,561.99	11,039.99
2	Railway Traction	IB	1,037.66	805.69
3	Govt. Educational Institutions, Govt. Hospitals, Water supply etc.	IIA	1,548.20	1,167.30
4	Private Educational Institutions	IIB	224.30	199.86



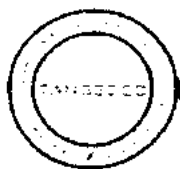
S. No.	Year	Tariff	FY 2021-22	
	Consumer Category		Sales (MUs)	Revenue* (Rs. Crores)
5	Commercial and all categories not covered in other HT categories	III	1703.29	1896.77
6	Lift Irrigation and Co-operative Soc. for Agriculture	IV	45.21	28.71
7	HT Temporary Supply for construction & other purpose		37.19	49.35
8	Supply to Pondicherry plus Other States		-	-
9	<b>Sub Total HT(A)</b>		<b>17,157.84</b>	<b>15,187.67</b>
II	<b>II. Low Tension Supply</b>			
10	Domestic, Hand Loom etc.	IA	30,256.57	10,404.80
11	Huts in Village panchayats, TAHDCO etc.	IB	389.92	169.60
12	LT Bulk supply for railway, defence colonies etc.	IC	9.74	4.64
13	Public Lighting and Public Water Supply & Sewerage	IIA	2,383.44	1,704.61
14	Government and aided Educational Institution., Government Hospitals etc.	IIB (1)	151.74	107.51
15	Private Educational Institutions	IIB (2)	156.75	137.69
16	Actual Place of Public Worships, Mutts and Religious institutions	IIC	119.40	91.85
17	Cottage and Tiny Industries	IIIA (1)	318.33	164.30
18	Power loom etc.	IIIA (2)	911.77	567.11
19	Industries not covered under L.T.Tariff IIIA (1), IIIA (2) incl. IT	IIIB	7,550.31	5,128.67
20	Agriculture and Govt. seed farm etc.	IV	15,430.09	5,125.92
21	Commercial and all categories not covered in other LT categories	V	6,954.59	6,432.92
22	Temp. supply other than Domestic and Lavish illuminations	VI	285.50	725.26
23	<b>Sub Total LT (B)</b>		<b>64,918.14</b>	<b>30,764.89</b>
24	<b>Total HT and LT {A+B} (C)</b>		<b>82,075.98</b>	<b>45,952.56</b>

\*Revenue is excluding wheeling charges and grants

3.29.3 Further, sale to Puducherry is considered as inter-state sale of energy and not as sale to HT consumer in line with the Order of the Hon'ble Madras High Court dated April 2018.

3.29.4 Revenue at existing Tariff and other government subsidy of FY 2021-22 is taken as per audited annual accounts of FY 2021-22 attached as Annexure II.



**3.30 Summarized ARR and Revenue Gap for FY 2021-22**

- 3.30.1 Based on the above discussion on variable and fixed cost component for Generation function and Fixed Cost related to distribution function, following Table shows the ARR and Revenue Gap summary for FY 2021-22.

**Table 34: Annual Revenue Requirement of TANGEDCO for FY 2021-22**

Year Particulars	FY 2021-22	
	Approved	Actual
Power Purchase Cost	34,387	33,216.85
TANTRANSCO, PGCIL & SLDC charges	6,581	5,339.58
Generation cost (Own Generation Plants)	15,667	16,489.18
Return on Equity	-	728.82
Interest on Loan Capital	4,192	3,950.29
Depreciation	1,457	1,616.49
Interest on Working Capital	-	55.03
Operation and Maintenance Expenses	8,937	8,264.85
Other Debits	-	24.88
Prior Period Credits / Charges	-	3,565.05
Extra Ordinary Items	-	-
<b>Total Revenue Requirement</b>	<b>71,220</b>	<b>73,251.03</b>
Less: (i) Revenue at Existing tariff	46,803	45,952.56
(iii) Non-tariff revenue	1,731	1,941.57
(iv) Other income	1,756	780.91
(v) Loss Funding by GoTN <sup>^</sup>	-	6718.67
<b>Gap to be borne by GoTN</b>	<b>20,931</b>	<b>17,857.31</b>

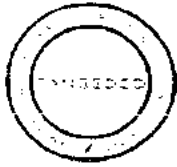
\*Revenue inclusive of Subsidy & Grants but exclusive of wheeling charges

<sup>^</sup>Loss Funding as per UDAY MoU

- 3.30.2 TANGEDCO requests the Hon'ble Commission to approve ARR and revenue gap as shown in Table above for FY 2021-22

**3.31 Regulatory Assets at the end of FY 2021-22:**

- 3.31.1 The Hon'ble Commission in its previous Order i.e., in T.O 7 of 2022 dated 09 September 2022 has determined the cumulative Revenue Gap of Rs. 82,320.25 Crore after undertaking final True up for FY 2016-17 to FY 2020-21.
- 3.31.2 Even though there is a revenue deficit in FY 2021-22, the same is not being added to the regulatory asset as Govt. of Tamil Nadu, vide GO (Ms.) No. 38 dated 18 August 2021 has agreed to take over 100% financial losses of TANGEDCO from FY 2021-22 onwards. Therefore, need for passing on the revenue deficit to consumers does not arise.



Details for True-up for FY 2021-22

**3.32 TANGEDCO respectfully prays to the Hon'ble Commission**

- 3.32.1 To condone the delay of 121 days in filing of ARR due to AG certification of accounts, the implementation of new tariff order and its related works.
- 3.32.2 To admit the petition seeking True up of FY 2021-22 as per the provisions of TNERC (Terms and Conditions of Tariff) Regulations, 2005 and MYT Regulations, 2009;
- 3.32.3 To approve the actual revenue gap/surplus arising on account of truing-up for FY 2021-22 without creating any regulatory asset for uncovered gap of FY 2021-22 as GOTT has given commitment to take over 100% losses as per RDSS scheme;
- 3.32.4 To pass any other order as the Hon'ble Commission may deem fit and appropriate, under the circumstances of the case and in the interest of justice;
- 3.32.5 To condone any error/omission and to give opportunity to rectify the same;
- 3.32.6 To permit the Petitioner to make further submissions, addition and alteration to this. Petition as may be necessary from time to time.

*B. Rajeswar*  
Chief Executive Officer  
TANGEDCO  
Chennai  
20/07/2022

**FORM-2**  
**BEFORE THE**  
**HON'BLE TAMIL NADU ELECTRICITY REGULATORY COMMISSION**  
**AT CHENNAI**

**Filing No.** :  
**Case No.** : M.P.No. of 2023  
**In the matter of** : Filing of the petition for true up of ARR for  
FY 2021-22

Tamil Nadu Generation and Distribution Corporation Ltd.,  
(TANGEDCO),  
N.P.K.R.R Malaigai,  
144, Anna Salai,  
Chennai -2.

..... Petitioner

Versus

NIL


----- Respondent

**Affidavit verifying the Petition**

I, B.Rajeswari, D/o R.Balasubramanian, aged about 48 years, serving as the Chief Financial Controller/ Regulatory Cell, Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO) having office at No.144, Anna Salai, Chennai-600002, do hereby solemnly affirm and sincerely state as follows:

2. I am the Chief Financial Controller, Regulatory Cell of the petitioner herein, as such I am well acquainted with the facts of the case and authorized to file the present petition.

3. I solemnly affirm at 31<sup>st</sup> March on this day of 2023 that the contents of the above petition are true to my knowledge and I believe that no part of it is false and no material has been concealed there from.

  
Deponent  
Chief Financial Controller/  
Regulatory Cell  
TANGEDCO  
144, ANNA SALAI, CHENNAI - 600002

**BEFORE THE**  
**HON'BLE TAMIL NADU ELECTRICITY REGULATORY COMMISSION**  
**AT CHENNAI**

**Filing No.** : I.A.No. of 2023  
in  
**Case No.** : M.P.No. of 2023  
**In the matter of** : Condonation of delay in filing of the Miscellaneous  
petition for true up of ARR for FY 2021-22

Tamil Nadu Generation and Distribution Corporation Ltd.,  
(TANGEDCO),  
N.P.K.R.R Malaigai,  
144, Anna Salai,  
Chennai -2.

..... Petitioner

Versus

NIL

----- Respondent

**Petition for condonation of delay**

**The petitioner named above respectfully sheweth under:**

1. The petitioner respectfully submit that a Miscellaneous Petition for true up of ARR for FY 2021-22 is to be filed before the Hon'ble TNERC. This petition has to be filed on or before 30.11.2022. However the petition could not be filed before 30.11.2022.
2. The petitioner prays to the Hon'ble TNERC for condonation of delay by 121 days in filing the miscellaneous petition.
3. The petitioner humbly submits that the delay in filing the present petition is due to AG certification of accounts, the implementation of new tariff order and its related works.

*B. Rajeswar*  
.....  
.....

4. That in these facts and circumstances, the petitioner would most humbly pray that this Hon'ble Commission may graciously be pleased to
- Condone the delay of 121 days in filing the true-up petition praying for approval of ARR.
  - Pass such other/further order as this Hon'ble Commission may deem fit and proper in the facts and circumstances of the present case.

*B. Rajeswar*  
Petitioner

*[Faint, illegible text]*

**BEFORE THE**  
**HON'BLE TAMIL NADU ELECTRICITY REGULATORY COMMISSION**  
**AT CHENNAI**

**Filing No.** : I.A.No. of 2023  
in  
**Case No.** : M.P.No. of 2023  
**In the matter of** : Condonation of delay in filing of the Miscellaneous  
petition for true up of ARR for FY 2021-22

Tamil Nadu Generation and Distribution Corporation Ltd.,  
(TANGEDCO),  
N.P.K.R.R Malaigai,  
144, Anna Salai,  
Chennai -2.

..... Petitioner

Versus

NIL

----- Respondent

**Affidavit verifying the Petition**

I, B.Rajeswari, D/o R.Balasubramanian, aged about 48 years, serving as the Chief Financial Controller/ Regulatory Cell, Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO) having office at No.144, Anna Salai, Chennai-600002, do hereby solemnly affirm and sincerely state as follows:

2. I am the Chief Financial Controller, Regulatory Cell of the petitioner herein, as such I am well acquainted with the facts of the case and authorized to file the present petition.

3. I solemnly affirm at 31<sup>st</sup> March on this day of 2023 that the contents of the above petition are true to my knowledge and I believe that no part of it is false and no material has been concealed there from.

*B. Rajeswari*  
Deponent

[Stamp and signature area]

**BEFORE THE**  
**HON'BLE TAMIL NADU ELECTRICITY REGULATORY COMMISSION**  
**AT CHENNAI**

**Filing No.**

:

**Case No.**

: M.P.No. of 2023

**In the matter of**

: Filing of the petition for true up of ARR for  
FY 2021-22

Tamil Nadu Generation and Distribution Corporation Ltd.,  
(TANGEDCO),  
N.P.K.R.R Malaigai,  
144, Anna Salai,  
Chennai -2.

..... Petitioner

Versus

NIL

----- Respondent

**INDEX TO THE TYPED SETS**

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4	Annexure-IV (Gas Power Station Forms)	449 - 617

Dated at Chennai on this the 31<sup>st</sup> day of March, 2023

*B. Jayeswari*  
Petitioner  
Chief Financial Controller/  
Regulatory Cell  
TANGEDCO  
144, ANNA SALAI, CHENNAI-2

ANNEXURE - I

# **DISTRIBUTION**



## **ANNEXURE II**

### **ARR FORMATS**

### **TARIFF FILING FORMS (DISTRIBUTION)**

Summary of Aggregate Revenue Requirement				
Name of the Company / Licensee		TANGEDCO		
				Rs. in Crs.
Sl. No.	Particulars	Reference to Form	Approved by the Commission	FY 2021-22 (Actual)
1	Power Purchase Cost	7	34,387.00	33,216.85
1-A	TANTRANSCO, PGCIL & SLDC charges		6,581.00	5,339.58
2	Generation cost (Own Generation Plants)	9	15,667.00	16,489.18
3	Return on Equity	10	-	728.82
4	Interest on Loan Capital	11	4,192.00	3,950.29
5	Depreciation	15 B	1,457.00	1,616.49
6	Interest on Working Capital	16	-	55.03
7	Operation and Maintenance Expenses	18 D	8,937.00	8,264.85
8	Other Debits	19		24.88
9	Prior Period Credits / Charges	20		3,565.05
12	<b>Total Revenue Requirement</b>		<b>71,221.00</b>	<b>73,251.03</b>
	Less: (i) Revenue at Existing tariff (including Subsidy)	25	46,803.00	45,952.56
	(ii) Non-tariff revenue	21	1,731.00	1,941.57
	(iii) Other income	22	1,756.00	780.91
	(iv) Other Govt Support		-	6718.67
13	<b>Loss to be borne by GoTN</b>		<b>20,931.00</b>	<b>17,857.31</b>

Sales				
Name of the Company / Licensee			TANGEDCO	
Sl. No.	Category of Consumer	Tariff	FY 22 (ACTUAL)	
			No. of consumers	Sales in MU
1	2	3	4	5
I	<b>HIGH TENSION</b>			
a	Registered factories, Textiles, Tea Estate, Software Industries etc.	IA	7,056	12,561.99
b	Railway Traction	IB	40	1,037.66
c	Govt. Educational Institutions, Govt. Hospitals, Water supply etc.	IIA	930	1,548.20
d	Private Educational Institutions, Cinema Theaters & Studios	IIB	300	224.30
f	Commercial and all categories not covered in other HT categories	III	2,066	1,703.29
g	Lift Irrigation and Co-operative Soc. for Agriculture	IV	44	45.21
h	HT Temporary Supply for construction & other purpose	V	40	37.19
i	Supply to Pondicherry plus wheeling charges		-	-
j	Supply to Other States		-	-
	<b>Total HT</b>		10,476	17,157.84
II	<b>LOW TENSION</b>			
a	Domestic, Hand Loom etc.	IA	22,953,918	30,256.57
b	Huts in Village panchayats, TAHDCO etc.	IB	974,712	389.92
c	LT Bulk supply for railway, defence colonies etc.	IC	2,301	9.74
	Domestic Common supply	ID		
d	Public Lighting and Public Water Supply & Sewerage	IIA	761,759	2,383.44
e	Government and aided Educational Instn., Government Hospitals etc.	IIB (1)	77,843	151.74
f	Private Educational Instn.,	IIB (2)	16,077	156.75
g	Actual place of public worship, Mutts and Religious Institutions	IIC	150,195	119.40
h	Cottage and Tiny Industries	IIIA (1)	234,817	318.33
i	Powerloom etc.	IIIA (2)	161,573	911.77
j	Industries not covered under L.T. Tariff IIIA(1), IIIA(2) incl. IT	III b	307,431	7,550.31
k	Agriculture and Govt. seed farm etc.	IV	2,284,587	15,430.09
l	Commercial and all categories not covered in other LT categories	V	3,430,743	6,954.59
m	Temp. supply other than Domestic and Lavish illuminations	VI	381,069	285.50
	<b>Total HT+ LT</b>		<b>31,747,501</b>	<b>82,075.98</b>

## Statement showing Consumer Category-wise demand/ Sales projection

5

Name of the Company / Licensee

Sl. No.	Category of Consumer	Tariff	FY 2021-22 (Actual)		
			No. of consumers	CL in KVA/KW	Sales in MU
(1)	1	2	3	4	5
I	<b>HIGH TENSION</b>				
a	Registered factories, Textiles, Tea Estate, Software Industries etc.	IA	7,056	8,103,520	12,562
b	Railway Traction	IB	40	453,000	1,038
c	Govt. Educational Institutions, Govt. Hospitals, Water supply etc.	IIA	930	487,270	1,548
d	Private Educational Institutions, Cinema Theaters & Studios	IIB	300	151,940	224
e	Actual places of public worship, Mutts and Religious Instn.				
f	Commercial and all categories not covered in other HT categories	III	2,066	1,413,060	1,703
g	Lift Irrigation and Co-operative Soc. for Agriculture	IV	44	25,410	45
h	HT Temporary Supply for construction & other purpose	V	40	22,340	37
i	Supply to Pondicherry plus wheeling charges		-	-	-
j	Supply to Other States		0	-	-
	<b>Total HT</b>		<b>10,476</b>	<b>10,656,540</b>	<b>17,158</b>
II	<b>LOW TENSION</b>				
a	Domestic, Hand Loom etc.	IA	22,953,918	36,028,020	30,257
b	Huts in Village panchayats, TAHDCO etc.	IB*	974,712	-	390
c	LT Bulk supply for railway, defence colonies etc.	IC	2,301	12,989	10
	Domestic Common supply	ID	-	-	-
d	Public Lighting and Public Water Supply & Sewerage	IIA	761,759	2,654,487	2,383
e	Government and aided Educational Instn., Government Hospitals etc.	IIB (1)	77,843	281,479	152
f	Private Educational Instn.,	IIB (2)	16,077	279,514	157
g	Actual place of public worship, Mutts and Religious Institutions	IIC	150,787	322,104	119
h	Cottage and Tiny Industries	IIIA (1)	234,817	1,054,449	318
i	Powerloom etc.	IIIA (2)	161,573	687,053	912
j	Industries not covered under L.T. Tariff IIIA(1), IIIA(2) incl. IT	III B	307,431	7,957,761	7,550
k	Agriculture and Govt. seed farm etc.	LT IV	2,284,587	17,829,296	15,430
l	Commercial and all categories not covered in other LT categories	LT V	3,430,743	11,175,151	6,955
m	Temp. supply other than Domestic and Lavish illuminations	LT VI	381,069	924,319	285
	<b>Total LT</b>		<b>31,737,617</b>	<b>79,206,621</b>	<b>64,918</b>
	<b>Grand Total</b>		<b>31,748,093</b>	<b>89,863,161</b>	<b>82,076</b>

Name of the Company / Licensee		TANGEDCO	
S.No.	Particulars	Unit	FY 21-22 (True-Up)
1	Total Energy Required	MUs	98,286.27
2	PGCIL Losses	MUs	2,065.47
3	Total Energy Available at State Boundary	MUs	96,220.80
4	Intra State Transmission losses	MUs	3,627.51
5	<b>Intra State Transmission losses</b>	%	<b>3.77%</b>
6	HT Sales 110 kV & 230 kV Sales (MU)	MUs	3,730.35
7	Energy Available at Distribution Network	MUs	88,862.94
8	Total LT Sales (MU)	MUs	64,918.14
9	Total HT Sales (MU)	MUs	17,157.84
10	<b>Total Sales</b>	<b>MUs</b>	<b>82,075.98</b>
11	Sales at Distribution Network	MUs	78,345.63
12	<b>Distribution Losses</b>	<b>MUs</b>	<b>10,517.31</b>
13	<b>Distribution Losses</b>	%	<b>11.84%</b>

Allocation Statement (TANGEDCO)					
Sr No.	Source of Power Purchase	Firm share (in MW)	Allocated Capacity (MW)	FY 2021-22	
				Purchase in MU	PLF (%)
I	<b>NLC and Central Generating Stations</b>				
1	New Neyveli TS	1,000	654	3,821.68	65%
2	Neyveli TS-II Stage I	1,470	626	2,734.44	75%
3	NLC TPS-II Second Expansion	1,320	1,320	-	25%
4	Neyveli TS-I Expansion	226	226	1,591.99	89%
5	Neyveli Expansion Unit II	162	269	955.49	47%
6	NTPC (NLC With Tangedco)		418	1,720.16	55%
7	NTPC SR (Ramagundan I & II)	552	538	3,221.60	77%
8	NTPC SR -III (Ramagundan III)	138	135	968.26	77%
9	Simhadri Stage II -Unit I	112.4	224	1,209.04	66%
10	Simhadri Stage II -Unit II	112.4			0%
10	NTPC_TNEB JV Vallur Unit 1	1056.5	1,065	6,044.14	60%
12	NTPC_TNEB JV Vallur Unit 2				
11	Talcher	499	510	3,508.33	84%
12	Madras APS	333	332	628.03	28%
13	Kaiga APS	236	230	1,676.53	97%
14	Kudankulam	563	1,152	7,779.16	83%
17	Kudankulam II	563	563		0%
18	PFBR Kalpakkam	167	-	-	85%
19	NTPC ER				0%
15	Kudgi Unit I	100	346	905.22	32%
21	Kudgi Unit II				0%
22	khalagaon STPS Stage I		6		0%
23	NNTPL		327		85%
16	NTPC ER (FARAKKA STPS)		21	229.80	68%
25			270		85%
26	NTPC Bongaigaun		140	-	64%
27	NTPC/Barh-1	660	94	2.56	64%
28	NTPC/Barh-2	1320	111	4.37	64%
29	NTPC/KBUN		97	3.86	57%
31	NLC Talabira	1500	1500		
	<b>Total CGS</b>	<b>8,610.63</b>	<b>11,173.07</b>	<b>37,004.65</b>	
II	<b>IPPS</b>				
1	SEPC	525	525	90.00	15%
2	Samalpatti				
3	Madurai Power Corpn	330.5			
4	Pillaiperumalnallur	106		-4.874	
5	TAAQ (STCMS)	250	250	1,415.28	60%
6	LANCO Power (Aban co)	113.2	113.2	-	85%
7	PIONEER Power co. (Penna)	52.8	52.8	66.32	25%
III	<b>Renewables</b>				
1	Windmill			3,538.10	
2	Co-generation			347.07	
2	Cogeneration new			-	
3	Biomass			2.10	
4	Captive generation			15.18	
5	Solar			7,202.73	
6	Co-Gen in Co-op Sugar Mills			-	
6	UI Power			54.78	
7	Traders-MTOA		750	722.27	
8	Traders-LTOA		2830	14388.37	
9	Traders-STOA			1727.62	
11	CPP_Traders				
10	Power Exchanges			6,329.93	
	TANTRANSCO charges				
11	Swap			-22.65416	
	ABT PGCIL				
	PGCIL Reactive				
	Hydro Utilization fund				
IV	<b>Total</b>			<b>72,876.87</b>	

## Abstract of Power Purchase Cost

S. No.	Source of Power Purchase	FY 2021-22 (True-Up)					
		Units in MU	VC Rs/kwh	Total Variable Cost Rs. Crores	Total Fixed Cost Rs. Crores	Total Cost Rs Crores (5+6)	Cost Rs./kwh
	<b>Central Generating Stations</b>						
	New Neyveli TS	3,821.68	2.19	838.32	712.18	1,550.50	4.06
	Neyveli TS-II Stage I	2,734.44	2.66	726.57	209.85	936.42	3.42
	NLC TPS-II Second Expansion	-	-	-	-	-	-
	Neyveli TS-I Expansion	1,591.99	2.42	385.53	153.09	538.62	3.38
	Neyveli Expansion Unit II	955.49	2.56	244.84	226.99	471.84	4.94
	NTPL JV with NLC	1,720.16	3.21	551.53	351.03	902.56	5.25
	NTPC SR (Ramagundam I & II)	3,221.60	2.80	902.56	261.12	1,163.67	3.61
	NTPC SR -III (Ramagundam III)	968.26	2.54	245.89	70.15	316.03	3.26
	Simhadri Stage II -Unit III	1,209.04	2.90	350.54	227.19	577.73	4.78
	Simhadri Stage II -Unit IV	-	-	-	-	-	-
	NTPC_TNEB JV Vallur Unit 1	6,044.14	3.37	2,034.82	1,314.16	3,348.97	5.54
	NTPC_TNEB JV Vallur Unit 2	-	-	-	-	-	-
	Talcher	3,508.33	1.78	623.12	264.61	887.73	2.53
	Madras APS	628.03	2.52	158.24	-	158.24	2.52
	Kaiga APS	1,676.53	3.57	599.35	-	599.35	3.57
	Kudankulam	7,779.16	4.10	3,186.85	-	3,186.85	4.10
	Kudankulam II	-	-	-	-	-	-
	PFBR Kalpakkam	-	-	-	-	-	-
	NTPC ER (FARAKKA STPS)	229.80	2.55	58.63	22.13	80.76	3.51
	Kudgi Unit I	905.22	3.93	356.12	381.81	737.92	8.15
	Kudgi Unit II	-	-	-	-	-	-
	Talcher I	-	-	-	-	-	-
	NTPC Kayamkulam	-	-	-	-	-	-
	NTPC Bongaigaun	-	-	-	-	-	-
	NTPC/Barh-1	2.56	2.65	0.68	0.56	1.24	4.85
	NTPC/Barh-2	4.37	3.02	1.32	0.76	2.08	4.75
	NTPC/KBUN	3.86	2.66	1.03	0.96	1.98	5.14
	NLC Talabira	-	-	-	-	-	-
	<b>Total CGS</b>	<b>37,004.65</b>	<b>304.45</b>	<b>11,265.94</b>	<b>4,196.58</b>	<b>15,462.52</b>	<b>4.18</b>
	<b>IPPS</b>						
	SEPC	90.00	1.46	13.10	-	13.10	1.46
	Samalpatti	-	-	-	-	-	-
	Madurai Power Corpn	-	-	-	-	-	-
	Pillalperumalnallur	-4.87	-	-	-	-	-
	TAQA (STCMS)	1,415.28	3.42	484.34	251.96	736.30	5.20
	LANCO Power (Aban co)	-	-	-	-	-	-
	PIONEER Power co. (Penna)	66.32	1.15	7.59	4.93	12.52	1.89
	<b>Renewables</b>						
	Windmill	3,538.10	2.97	1,052.10	-	1,052.10	2.97
	Co-generation	347.07	3.27	113.49	62.37	175.87	5.07
	Cogeneration new	-	-	-	-	-	-
	Biomass	2.10	5.08	1.07	0.29	1.36	6.47
	Captive generation	15.18	1.94	2.94	-	2.94	1.94
	Solar	7,202.73	4.72	3,403.20	-	3,403.20	4.72
	Co-Gen in Co-op Sugar Mills	-	-	-	-	-	-
	UI Power	54.78	-	258.64	-	258.64	-
	Traders-MTOA	722.27	0.39	27.82	24.05	51.87	0.72
	Traders-LTOA	14,388.37	2.60	3,738.83	3,146.75	6,885.58	4.79
	Traders -STOA	1,727.62	3.70	638.43	-	638.43	3.70
	CPP_Traders	-	-	-	-	-	-
	Power Exchanges	6,329.93	6.47	4,096.74	-	4,096.74	6.47
	TANTRANSCO charges	-	-	-	-	-	-
	Swap	-22.65	-	352.21	-	352.21	-
	ABT PGCIL	-	-	-	-	-	-
	PGCIL Reactive	-	-	-	-	-	-
	Hydro Utilization fund	-	-	-	-	-	-
	STOA Charges	-	-	-	73.48	73.48	-
	<b>Total</b>	<b>72,876.87</b>	<b>3.46</b>	<b>25,456.44</b>	<b>7,760.41</b>	<b>33,216.85</b>	<b>4.56</b>

## ENERGY AVAILABILITY FROM OWN GENERATING STATIONS

NAME OF THE COMPANY

TANGEDCO

31-Mar-22

I	Generating Station	Installed Capacity (in MW)	PLF (in %)	Aux. Consu. (in %)	Projected	
					FY 2021-22	
					Gross (in MU)	Net (in MU)
<b>I</b>	<b>Coal Based Thermal Stations</b>					
1	ETPS	340				
2	TTPS	1,050	53.95%	8.83%	4962.32	4524.36
3	MTPS	840	65.17%	8.53%	4795.93	4386.84
4	NCTPS	630	60.82%	10.61%	3356.53	3000.51
5	NCTPS Stage II	1,200	42.93%	8.52%	4512.80	4128.48
6	MTPS II	600	52.58%	7.60%	2763.78	2553.86
7	NCTPS Stage-III	800	42.93%	8.52%	-	-
8	Udangudi Stage I	1,320				
9	Ennore SEZ	1,320				
	<b>Total</b>	<b>8,661</b>			<b>20,391.36</b>	<b>18,594.05</b>
<b>II</b>	<b>Gas based Thermal Stations</b>					
1	TGTPS	107.88	16.45%	24.54%	155.46	117.31
2	KGTPS	101	40.90%	9.76%	361.90	326.57
3	BBGTPS	120	0.60%	0.99%	0.02	0.02
4	VGTPS-1	187	57.55%	6.88%	942.86	877.97
5	VGTPS-2					
	<b>Total</b>	<b>516</b>			<b>1460.23</b>	<b>1321.86</b>
<b>III</b>	<b>Hydro Stations</b>					
1	Erode HEP	454	25.46%	1.30%	1122.79	1115.89
2	Kadamparai HEP	595	16.46%	0.35%	878.72	858.39
3	Kundah HEP	834	28.11%	0.31%	2126.44	2119.77
4	Tirunelveli HEP	355	30.00%	0.63%	1408.34	1399.43
	<b>Total</b>	<b>2,238</b>			<b>5536.29</b>	<b>5493.48</b>
<b>IV</b>	<b>Wind mills</b>					
<b>3</b>						
<b>V</b>	<b>Grand Total</b>	<b>11,414</b>			<b>27387.88</b>	<b>25409.40</b>
	Less Kadamparai Pump Mode					<b>0.00</b>
<b>VI</b>	<b>Total Net Generation</b>					<b>25409.40</b>



Name of the Company		TANGEDCO					Form 9	
Sl. No	Power Station	Net Gen (MU)	AFC (Rs.in Crs)	FY 2021-22 (Actuals)		Total (Rs.in Crs)	Cost per unit (in RS)	
				VC (Rs.in Crs)				
1	Ennore TPS							
2	Tuticorin TPS	4,524.36	1,550.54	1,733.97		3,284.50	7.26	
3	Mettur TPS	4,386.84	744.07	1,741.65		2,485.72	5.67	
4	North Chennai TPS	3,000.51	1,371.32	1,060.02		2,431.34	8.10	
5	NCTPS Stage-II	4,128.48	1,438.28	1,312.25		2,750.53	6.66	
6	MTPS Stage-III	2,553.86	858.69	1,083.22		1,941.92	7.60	
I	Coal based Stations [A]	18,594.05	5,962.90	6,931.11		12,894.01	6.93	
7	Tirumakottai GTPS	117.31	235.27	56.41		291.68	2.49	
8	Kuttalam GTPS	326.57	213.24	90.27		303.50	9.29	
9	Basin Bridge GTPS	0.02	430.96	0.14		431.10		
10	Valuthur Unit-I	877.97	390.29	174.51		564.80	6.43	
II	Gas based Stations [B]	1,321.86	1269.75	321.33		1591.08	12.04	
13	Erode HEP	1,115.89	684.54	-		684.54	6.13	
14	Kadamparai HEP	858.39	259.25	-		259.25	3.02	
15	Kundah HEP	2,119.77	653.95	-		653.95	3.09	
16	Tirunelveli HEP	1,399.43	406.34	-		406.34	2.90	
III	Hydro Stations [C]	5,493.48	2004.09	0.00		2004.09	3.65	
IV	Wind Stations							
V	Total	25,409.40	9236.74	7252.44		16489.18	6.49	

<b>Computation of Return on Equity</b>		<b>Form 10</b>
<b>Name of the Company / Licensee</b>		<b>TANGEDCO</b>
		<b>Rs. Crs</b>
<b>Sl. No</b>	<b>Particulars</b>	<b>FY 2021-22</b>
		<b>Actuals</b>
<b>1</b>	Equity at the beginning	5,166.19
	% Equity Addition	30%
<b>2</b>	Addition during the year	79.38
<b>3</b>	Total Equity	5,245.57
<b>4</b>	Return on Equity (in %)	14.00%
<b>5</b>	Return on Equity	<b>728.82</b>

Name of the Company

TANGEDCO  
(Rs. in Crore)

Sl No.	Particulars	FY 2021-22
		True-Up
1	Opening Loan Balance (Rs. Crores)	54,676.19
2	Loan Addition (Rs. Crores)	13,441.06
3	Repayments (Rs. Crores)	12,330.06
4	Closing Loan Balance (Rs. Crores)	55,787.19
5	Average Loan Balance (Rs. Crores)	55,231.69
6	Average Loan Interest Rate (%)	9.69%
7	Gross Interest Charges (Rs. Crs)	5,354.57
8	Less: Interest Capitalised (Rs. Crs)	2,267.06
9	Interest Charges (Rs. Crores)	3,087.51
10	Other finance charges (Rs. Crore)	862.78
11	<b>Total Finance Charges (Rs. Crore)</b>	<b>3,950.29</b>

Form 12

**CAPITALISATION for Distribution Company****Name of the Company****TANGEDCO****Rs. In Crore**

<b>Sl. No.</b>	<b>Name of Works</b>	<b>FY 2021-22</b>
		<b>True-up</b>
<b>1</b>	<b>Capitalisation</b>	<b>264.60</b>

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Depreciation		Form 15 B
Name of the Company		TANGEDCO
		Rs. Crs
Particulars	FY 2021-22	
	True-Up	
Opening GFA (Rs. Crores)	27,588.06	
Addition to GFA (Rs. Crores)	264.60	
Closing GFA (Rs. Crores)	27,852.66	
Average Rate of Depreciation (%)	5.80%	
<b>Depreciation (Rs. Crores)</b>	<b>1,616.49</b>	
<i>Depreciation above is net depreciation after deducting expenses if any capitalised</i>		

Form 16		
Interest on Working Capital		
Name of the Company		TANGEDCO
		Rs Crs
Sl. No.	Particulars	FY 2021-22 Projected
1	O & M expenses	688.74
2	Maintenance Spares	295.08
3	Recievables	12,041.26
4	Total Working Capital	13,025.08
5	Less: Consumer Security Deposit	12,572.17
6	Net Working Capital	452.91
7	Rate of Interest	12.15%
8	Interest on Working Capital	55.03

## Details of Revenue Expenses Capitalised

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Name of the Company

TANGEDCO

(Rs. In Crore)

Sl.No	Particulars	FY 2021-22
		(True-Up)
	<b>Other Expenditure</b>	
1	Repairs and Maintenance	-
2	Employee Cost	10.54
3	Administrative and General Expenditure	-
4	Fabrication Charges	-
5	Depreciation and other related costs	-
6	Other Debits	-
	<b>Total</b>	<b>10.54</b>

**Operation and Maintenance expenses - Repairs and Maintenance Expenses**

NAME OF THE COMPANY

TANGEDCO

Rs in Crs

S. No.	Details	FY 2021-22
		(Actuals)
1	Plant & Machinery	24.49
2	Building	0.80
3	Civil Works	3.58
4	Hydraulic work	0.00
5	Lines & Cable network	5.15
6	Vehicles	1.57
7	Furniture & Fixtures	0.15
8	Office equipments	2.43
9	Allocation of Head Quarters Expenses	11.17
10	Other Expenses	31.79
<b>10</b>	<b>Total Expenses</b>	<b>81.14</b>
11	Less: Capitalisation	-
<b>12</b>	<b>Net Repair &amp; Maintenance expenses</b>	<b>81.14</b>



## Operation and Maintenance Expenses - Employee Cost

NAME OF THE COMPANY / Licensee

**TANGEDCO**

Rs. Crs

S. No.	Details	FY 2021-22
		(Actuals)
1	Salary	4157.00
2	Overtime wages	33.15
3	Dearness Allowance	751.98
4	Other Allowances	303.94
5	Bonus & Exgratia	71.83
	<b>Total 1 - 5</b>	<b>5,317.89</b>
6	Medical expenses reimbursement	0.56
7	Leave Travel concession	0.23
8	Earned Leave encashment	34.46
9	Terminal benefits	2045.93
10	Staff welfare expenses	9.93
11	Board's Contribution to CPS	12.55
12	Payment Under Workmen's Compensation Act	0.29
	Allocation to HQ Expense	609.18
	<b>Grand Total</b>	<b>8031.03</b>
13	Less: Capitalisation	10.54
	<b>Net Expenses</b>	<b>8020.49</b>

Form 18 C

## Operation and Maintenance Expenses - Administration and General Expenses

NAME OF THE COMPANY / Licensee

TANGEDCO

Rs. Crs

S. No.	Details	FY 2021-22
		(Actuals)
1	Rent/Rates and Taxes	15.23
2	Insurance	0.35
3	Telephone/Postage/Telegram/Telex charges	11.17
4	Legal Charges	1.75
5	Statutory Audit Fees	0.02
6	Consultancy Charges	1.95
7	Technical Fees	-
8	Other Professional Charges	-
9	Conveyance & Travel	9.99
10	Fuel for operating machines	-
11	Fees & Subscription	0.80
12	Books & Periodicals	0.13
13	Printing & Stationery	3.27
14	Training Expenses	1.26
15	Advertisement Expenses	0.06
16	Subscriptions/Contributions to Books & Periodicals	0.00
17	Electricity Charges	28.23
18	Water Charges	-
19	Entertainment/Recreations for employees	0.00
20	Watch and Ward Expenses.	10.33
21	Petty Office Maintenance Expenses.	19.44
22	Miscellaneous Expenses	2.71
23	Freight	30.48
24	Other Purchase related Expenses.	0.06
25	Honorarium (Food Allow.) for SO in Chennai	-
26	Reward for theft of energy/Spl reward vigilance	4.45
27	Licence fee and ROC fee	2.47
28	Head Quarter	19.32
29	<b>TOTAL A&amp;G Expenses</b>	<b>163.48</b>
30	Less Expenses Capitalized	0.00
31	Less Fabrication charges	0.27
	<b>Net A&amp;G Expenses</b>	<b>163.22</b>

## Total Operation and Maintenance Expenses

NAME OF THE COMPANY / Licensee

**TANGEDCO**

Rs in Crs

S. No.	Details	FY 2021-22
		(Actuals)
1	Net Repair & Maintenance Expenses	81.14
2	Net Employees Cost	8,020.49
3	Net Admn. & General Expnses	163.22
4	<b>Total Operation and Maintenance Expenses</b>	<b>8,264.85</b>

OTHER DEBITS			Form 19
NAME OF THE COMPANY		TANGEDCO	
		Rs in Crs	
Sl.No.	Details of Expenses	FY 2021-22	
		(Actuals)	
1	Material Cost Variance	(15.74)	
2	R&D Expenses	0.10	
3	Bad & Doubtful Debts	0.00	
4	Miscellaneous losses	0.01	
5	Compensation for injuries/death to staff and outsiders	14.12	
6	Other expenses written off	26.40	
7	Provision for Hydro Balancing Fund	-	
8	Allocation of Head Quarters Expenses	-	
9	<b>Total</b>	<b>24.88</b>	
10	Less: Capitalization	-	
11	<b>Net expenses</b>	<b>24.88</b>	

**PRIOR PERIOD CREDITS / CHARGES**

NAME OF THE COMPANY / Licensee

TANGEDCO

Rs Crs

Sl.No.	Details of Expenses	FY 2021-22
		True-Up
<b>I</b>	<b>Income relating to previous year</b>	
1	Fuel related gains	
2	Receipts from consumers	
3	Interest Income	
4	Excess provision for I.T.	
5	Excess provision for Depreciation	
6	Excess provn. for Int.& Fin.charges	
7	Other excess provision	
8	Other income	
	<b>Total</b>	-
<b>II</b>	<b>Expenses / Losses relating to previous period</b>	
1	Short provision for power purchase	3565.05
2	Fuel related losses and expenses	
3	Operating expenses	
4	Material related expenses	
5	Employees cost	
6	Depreciation under provided	
7	Interest & Finance charges	
8	Other charges	
	<b>Total</b>	<b>3,565.05</b>
	<b>Net Prior Period Expenses</b>	<b>3,565.05</b>

## Statement showing other Income

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Name of the Company

TANGEDCO

Rs. Crore

Sl.No	Particulars	FY 2021-22
		(True-Up)
1	Interest on Staff Loans & Advances	3.19
2	Income from Investment	0.11
3	Interest on Loans & Advances to Licensees	0.00
4	Delayed Payment Surcharges Collected from Consumers	6.07
5	Interest on Advances to Suppliers / Contractors	0.00
6	Interest from Banks	198.22
7	Income from Trading	0.12
8	Rebate on power purchase bills	0.01
9	Gain on Sale of Fixed assets	4.02
10	Income from Staff Welfare	0.00
11	Miscellaneous Receipts	569.17
	<b>Total Other Income</b>	<b>780.91</b>

# Non-Tariff Revenue

Form 22

Name of the Company

TANGEDCO

Rs in Crs

Sl.No	Particulars	FY 2021-22
		(True-Up)
1	Meter Rent / Service line Rentals	37.14
2	Recoveries of Theft of Power / Malpractices	71.12
3	Wheeling Charges Recoveries	211.21
4	Miscellaneous Charges collected from Consumers	804.16
5	Cross Subsidy Surcharge	565.22
6	Additional Surcharge from open Access Consumers	252.72
	<b>Total Non Tariff Income</b>	<b>1,941.57</b>

## Revenue at Existing Tariff

S. No.	Consumer category	Slabs	Telescopic slab	No. of consumers	Connected		Consumption	Existing Tariff		Energy Charges Rs./in Crores	Fixed Charges Rs./in Crores	Total Revenue Rs./Crore	Rate of Realisation Rs./kwh
					Load	Demand		Charges Rs./kwh	Fixed Charges Rs.				
	LOW TENSION												
	LT - IA	Domestic, Hand Loom etc.					30,256.57						
		0-100kWh		8,348,127			1,943.19	2.50	15.00 /connet/month	485.80	150.27	636.06	3.27
		101-200kWh		6,310,373			3,462.56	2.50	15.00 /connet/month	865.64	113.59	979.23	2.83
							1,884.27	2.50	15.00	471.07		471.07	2.50
		201-500kWh		7,263,652			4,609.70	2.50	20.00 /connet/month	1,152.42	174.33	1,326.75	2.88
							4,609.70	2.50	20.00	1,152.42		1,152.42	2.50
		101-200 kWh					5,258.19	3.00	20.00	1,577.46		1,577.46	3.00
		201-500 kWh					1,039.29	2.50	25.00 /connet/month	259.82	30.95	290.77	2.80
		Above 500kWh		1,031,766			1,039.29	3.50	25.00	363.75		363.75	3.50
							3,117.86	4.60	25.00	1,434.21		1,434.21	4.60
		201-500 kWh					3,292.53	6.60	25.00	2,173.07		2,173.07	6.60
		above 500 kWh											
							36,028,020.11						
	LT - IB	Huts in Village panchayats, TAHDCO etc.											
		Single Slab Tariff		974,712			389.92	4.95	145.00 /connet/month	-	169.60	169.60	4.35
	LT - IC	LT Bulk supply for railway, defence colonies etc.											
		Single Slab Tariff		2,301			9.74	4.60	60.00 /connet/month	4.48	0.17	4.64	4.77
	LT - IIA	Public Lighting and Public Water Supply & Sewerage											
		Single Slab Tariff		761,759			2,383.44	6.35	60.00 /kW	1,513.48	191.12	1,704.61	7.15
	LT - IIB (1)	Government and aided Educational Instn., Government Hospitals etc.											
		Single Slab Tariff		77,843			151.74	5.75	60.00 /kW	87.25	20.27	107.51	7.09
	LT - IIB (2)	Private Educational Instn.,											
		Single Slab Tariff		16,077			156.75	7.50	60.00 /kW	117.56	20.12	137.69	8.78
	LT - IIC	Actual place of public worship, Mutts and Religious Institutions											
		0-120kWh		112,484			23.40	5.75	60.00 /kW	13.46	17.30	30.76	13.14
		Above 120kWh		38,303			96.00	5.75	60.00 /kW	55.20	5.89	61.09	6.36
	LT - IIIA(1)	Cottage and Tiny Industries											
		0-500kWh					318.33	4.00	20.00 /kW	49.58	9.85	59.44	4.79
		Above 500kWh					123.96	4.60	20.00 /kW	89.41	15.45	104.86	5.39
	LT - IIIB(2)	Powerlooms											
		0-500 kWh		83,545			120.41	5.20	60.00 /kW	62.62	21.59	84.20	6.99
		501-750 kWh		24,260			85.93	5.75	60.00 /kW	49.41	6.76	56.17	6.54
		751-1000 kWh		11,178			53.78	5.75	60.00 /kW	30.93	3.78	34.71	6.45
		1001-1500 kWh		11,130			76.59	5.75	60.00 /kW	44.04	4.56	48.60	6.35
		1501 and above		31,460			177,496.00	5.75	60.00 /kW	330.65	12.78	343.43	5.97





ANNEXURE - II

# **THERMAL POWER STATION**

## **ANNEXURE I**

### **ARR FORMATS**

#### **TUTICORIN THERMAL POWER STATION (TTPS)**

## Summary of Tariff Proposal for Coal based Thermal Station

Name of the Company

TANGEDCO

Name of the Station

Tuticorin Thermal Power Station (TTPS)

(Rs in Crs.)

S. No.	Particulars	Reference to Form	Approved	(True-Up)
			FY 2021-22	FY 2021-22
I	<b>Annual Fixed Cost</b>			
1	Return on Equity	5	-	50.41
2	Interest on loan capital	6 C	679.78	708.56
3	Depreciation	10 B	151.11	87.44
4	Interest on Working Capital	11	98.73	109.43
5	Operation and Maintenance Expenses	13 E	361.99	407.10
6	Pension expenses			
7	HeadQuarter Expense			-
8	Cost of Secondary fuel oil	14		-
9	Special allowance in lieu of Renovation and Modernisation / Separate compensatory allowance	15		
10	Other Debits	16		-
11	Prior period credits / charges	17		-
12	Operating expenses	13D		220.09
13	<b>Total Annual Fixed Cost</b>		<b>1,291.61</b>	<b>1,583.03</b>
14	Less: Other Income	18	36.98	32.49
15	<b>Net Annual Fixed Cost</b>		<b>1,254.63</b>	<b>1,550.54</b>
II				
1	<b>Annual Variable Cost</b>			
2	Primary Fuel Cost	22		1,659.42
3	Secondary Fuel Cost	14		74.55
	<b>Total Annual Variable Cost</b>			<b>1,733.97</b>
III				
	<b>Total Cost</b>			<b>3,284.50</b>

## Normative parameters considered for tariff computations

Name of the Company

TANGEDCO

Name of the Power Station

TTPS

Particulars	Unit	(True-Up)
		FY 2021-22
Rate of Return on Equity	%	14.00%
Target PLF	%	53.95%
Auxiliary Energy Consumption	%	8.83%
Gross Station Heat Rate	kCal/kWh	2814
Specific Fuel Oil Consumption	ml/kWh	1.85
O&M Cost		407
Cost of Fuel for WC	in Months	2.00
O & M Expenses for WC	in Months	1.00
Primary Fuel Stock for WC	in Months	2.00
Secondary Fuel Oil or Secondary/Alternate liquid fuel stock for WC	in Months	2.00
Spares stock as % of Plant & Equipment Cost on 1.4.2004 for WC	%	1%
Receivables for WC	in Months	2.00
Prime lending Rate of SBI as on _____	%	12.15%
Incentive Rate	Paise.kWh	25

## Statement showing the performance of Stations during the previous five years

Name of the Company

TANGEDCO

Tuticorin Thermal Power Station (TTPS)

Name of the Station

Rs. Crores

S.No	Norms of Operation	True-Up
		FY 2021-22
1	PLF / PAF (in %)	53.95%
2	Auxiliary consumption (in %)	8.83%
3	Average Gross Station Heat Rate (Kcal / kWhr)	2813.57
4	Average Gross Calorific value of Coal (Kcal / Kg)	3,123.69
5	Specific consumption of Coal (Kg / kWhr)	0.90
6	Specific consumption of Secondary fuel oil (MT / kWhr)	1.85
7	Operating Expenses (Rs in Lakhs)	
8	Operation and Maintenance expenses (Rs in lakhs / MW)	38.77
9	Average cost of Coal (Rs / MT)	3,736.12
10	Average cost of Secondary fuel oil (Rs / Kl)	81,202

## Computation of Return on Equity

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

TTPS

Rs. In Crores

S. No	Particulars	True-Up
		FY 2021-22
1	Equity at the beginning	360.06
2	% of equity addition	30%
3	Addition during the year	0.00
4	Total Equity	360.06
5	Return on Equity (in %)	14.00%
6	Return on Equity	50.41

## Statement showing other Interest

Name of the Company TANGEDCO

Name of the Station TTPS

Rs in Crs

S No.	Particulars	FY 2021-22 (True-Up)		
		Outstanding at the beginning	Net additions	Interest
1	2	27	28	29
1	Interest on security deposit			
2	Interest on meter caution deposit			
3	Interest on GPF / CPF			7.30
4	Interest on deposit from employees			
5	Interest on Family Benefit Fund contribution			
6	Interest on TNEB Spl. PF cum Gratuity Scheme			
7	Cost of raising finance			
8	Bank charges			
9	Penal interest on E-Tax			
10	Guarantee Commission to Govt.			
11	Other Interest			
12	Interest			
	<b>Total</b>			<b>9.11</b>



**FORM-6 C**  
**Abstract of Interest**

**Name of the Company**                      **TANGEDCO**

**Name of the Station**                      **TTPS**

**Rs in Crs**

<b>S.No.</b>	<b>Particulars</b>	<b>True up</b>
		<b>FY 2021-22</b>
1	Net Interest on Existing Loan	699.45
2	Interest on Project borrowings	
3	Other Interest	9.11
4	<b>Total Interest</b>	<b>708.56</b>

## ESTIMATE OF CAPITALIZATION

Name of the Company

TANGEDCO

Name of the Project

TTPS

S.No.	Name of Works	(Rs.in Crores)
		(True-Up) FY 2021-22
1	(a) Plant and machinery in generating Stations including plant foundations	
	(a) Boilers/Plants	
	(b) Cooling towers and circulating water system	
2	Buildings and civil Engineering works of a permanent character, not mentioned above	
	(a) Offices and show rooms	
	(b) Containing thermo electric plants	
	(c) Temporary erections such as wooden structures	
	(d) Roads other than kacha roads	
	(e) Others	
3	Transformers, transformer (kiosk) sub station equipmernt and other fixed aparatus (including plant foundations)	
	(a) Transformers (including foundation) having a rating of 100 kVA and over.	
	(b) Others	
4	Switch gear, including cable connections	
5	Lightening arresters	
	(a) Station type	
	(b) Pole type	
	(c) Synchronous condensers	
6	Batteries	
7	(a) Underground cables including joint boxes and disconnected boxes	
	(b) Cable duct systems	
8	Meters	
9	Self propelled vehicles	
10	Air-conditioning plants	
	(a) Static	
	(b) Portable	
11	(a) Office furniture and fittings	
	(b) Office equipments	
	(c) Internal wirings including fittings and apparatus	
	(d) Street light fittings	
12	Motors	
13	Communication equipments	
	(a) Radio and higher frequency carrier system	
	(b) Telephone lines and telephones	
	Capitalization as per plan	0.01
	<b>TOTAL</b>	<b>0.01</b>

**Depreciation****Name of the Company**

TANGEDCO

**Name of the Power Station**

Power Station (TTPS)

Particulars	(True-Up)
	FY 2021-22
Opening GFA (Rs. Crores)	2,861.84
Addition to GFA (Rs. Crores)	0.01
Closing GFA (Rs. Crores)	2,861.85
Average Rate of Depreciation (%)	5.28%
<b>Depreciation (Rs. Crores)</b>	<b>87.44</b>

**Computation of Interest on Working****Name of the Company**

TANGEDCO

**Name of the Power Station**

Tuticorin Thermal Power Station (TTPS)

**(Rs Crores)**

Sl. No.	Particulars	(True-Up)
		FY 2021-22
1	Fuel Cost	276.57
2	Fuel Stock	
3	Oil stock	12.42
4	O & M expenses	33.92
5	Maintenance Spares	30.34
6	Receivables	547.42
	<b>Total Working Capital</b>	<b>900.67</b>
	Rate of Interest	12.15%
	<b>Interest on Working Capital</b>	<b>109.43</b>

## Details of Revenue Expenses Capitalised

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

TTPS

Rs.in Crores

Sl.No	Particulars	(True-Up)
		FY 2021-22
	<b>Interest Expenditure</b>	
1	Normal Interest Expenditure	
2	Interest during construction	
	<b>Other Expenditure</b>	
3	Repairs and Maintenance	0.00
4	Employee Cost	0.01
5	Administrative and General Expenditure	-
6	Fabrication Charges	-
7	Depreciation and other related costs	-
8	Other Debits	-
9	HQ Expense Capitalized	0.00
	<b>Total</b>	<b>0.01</b>

## Operation and Maintenance Expenses - Repairs and Maintenance

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

TTPS

Rs. In Crores

S.No.	Details	(True-Up)
		FY 2021-22
1	Plant & Machinery	23.39
2	Building	0.00
3	Civil Works	5.23
4	Hydraulic work	
5	Lines & Cable network	0.01
6	Vehicles	0.26
7	Furniture & Fixtures	0.03
8	Office equipments	
9	Other Expense	2.31
10	Allocation of Head Quarters Expenses	1.23
	<b>Total Expenses</b>	<b>32.47</b>
11	Less: Capitalisation	-
12	Net Repair & Maintenance expenses	<b>32.47</b>

## Operation and Maintenance expenses - Employee Cost

75

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

TTPS

Rs. in Crores

S. No.	Details	(True-Up)
		FY 2021-22
1	Salary	130.71
2	Overtime wages	3.54
3	Dearness Allowance	26.87
4	Other Allowances	1.58
5	Bonus & Exgratia	3.01
	<b>Total 1 - 5</b>	<b>165.71</b>
6	Medical expenses reimbursement	0.00
7	Leave Travel concession	
8	Earned leave encashment	2.06
9	Terminal benefits	2.15
10	Staff welfare expenses	
11	Allocation of Head Quarters Expenses/ Other Cost	65.05
12	other costs	2.97
13	<b>Pension &amp; Gratuity</b>	<b>103.92</b>
	<b>Grand Total</b>	<b>341.86</b>
	<b>Less: Capitalisation</b>	<b>0.01</b>
14	<b>Net Expenses</b>	<b>341.86</b>
13	Employee cost per unit of energy generated	
14	Employee cost per unit of energy generated (Paise/ unit)	0.69

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## Operation and Maintenance Expenses - Administration and General

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

TTPS

Rs. In Crores

S.No.	Details	(True-Up)
		FY 2021-22
1	Rent, Rate & Taxes	0.97
2	Insurance	0.14
3	Telephone / Postage / Telex	1.58
4	Legal / Audit / Consultancy / Tech. fee / consultancy charges	0.05
5	Conveyance & Travel	0.19
6	Miscellaneous Expenses	
7	Freight	
8	Other purchases related expenses	27.70
9	Allocation of Head Quarters Expenses/ Other Cost	2.13
	<b>Total expenses</b>	<b>32.77</b>
10	<b>Less: Capitalisation</b>	-
11	<b>Net Expenses</b>	<b>32.77</b>



## Operation and Maintenance Expenses -

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

TTPS

Rs. Crores

S.No.	Details	(True-Up)
		FY 2021-22
1	Water Charges	5.34
2	Lubricants and Consumables	0.70
3	Station Auxiliaries	205.66
4	Other Fuel Related Cost	8.39
5	Shortage	
	<b>Total expenses</b>	<b>220.09</b>

**Total Operation and Maintenance Expenses****NAME OF THE COMPANY**

TANGEDCO

**NAME OF THE STATION**

TTPS

**Rs. in Crores**

<b>S.No.</b>	<b>Details</b>	<b>(True-Up)</b>
		<b>FY 2021-22</b>
1	Net Repair & Maintenance Expenses	32.47
2	Net Employees Cost	341.86
3	Net Admn. & General Expnses	32.77
4	Operating Expenses	
5	<b>Total Operation and Maintenance Expenses</b>	<b>407.10</b>

## Cost of Secondary Fuel Oil for Coal based Thermal Station

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

TTPS

S.No	Details	(True-Up)
		FY 2021-22
1	Capacity (in MW)	1,050
2	PLF (in %)	53.95%
3	Gross Generation (in MU)	4,962
4	Specific consumption of secondary fuel oil (ML / kWhr)	1.85
5	Quantum of secondary fuel oil required (in KI)	9,180
6	Weighted average rate of oil (Rs / KI)	81,202
7	Total cost of Secondary fuel (Rs.in Crores)	74.55

## OTHER DEBITS

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

TTPS

Rs. in crores

S.No.	Details of Expenses	(True-Up)
		FY 2021-22
1	Research & Development expenses	
2	Bad & Doubtful debts written off	
3	Miscellaneous losses and written off/provided for	
4	Material cost variance	
5	Sundry expenses	
6	Extra ordinary debits	
7	Allocation of Head Quarters Expenses	
	<b>Total</b>	
8	Less: Capitalization	
9	<b>Net expenses</b>	-

## PRIOR PERIOD CREDITS / CHARGES

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Tuticorin Thermal

Rs.in Crores

Sl.No.	Details of Expenses	(True-Up)
		FY 2021-22
I	Income relating to previous year	-
1	Fuel related gains	-
2	Interest income	-
3	Excess Provisions for revenue expenses	-
4	Other income	-
5	Total	-
II	Expenses / Losses relating to previous period	-
1	Fuel related losses and expenses	-
2	Operating expenses	-
3	Employee cost and other revenue expenditures under provided	-
4	Other charges	-
5	Total	-
III	Net prior period credits / charges	-

## Statement showing other Income

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Name of the Company

TANGEDCO

Tuticorin Thermal Power Station (TTPS)

Name of the Station

Rs. Crores

S.No	Particulars	(True-Up)
		FY 2021-22
1	Interest on loan and advance to employees	0.56
2	Interest on Investments	
3	Interest on Advance to suppliers / Contractors	
4	Interest from Banks	
5	Income from sale of tender forms, stores, scraps, etc.,	
6	Income from hiring vehicles to employees and other welfare activities	
7	Miscellaneous Receipts	1.89
8	Allocation from Head Quarters	-
9	Delayed Payment Surcharges Collected from Consumers	
10	Income from Trading	
11	Income from Staff Welfare	
12	Income from other sources	30.04
	<b>Total</b>	<b>32.49</b>

## CALCULATION OF WEIGHTED AVERAGE CALORIFIC VALUE OF COAL

NAME OF THE COMPANY

TANGEDCO

91

NAME OF THE STATION

Tuticorin Thermal Power Station (TTPS)

Sl.No	Month / Area of sampling / testing	Type of Coal	average UHV	Moisture content (in %)	Ash content (in %)	Grade of coal	Calculation of corresponding Gross Calorific Value	Weighted average GCV with reference to blending
	FY 2021-22	Indian						3123.69
		Imported						

## CALCULATION OF AVERAGE LANDED COST OF COAL

Name of the Company

TANGEDCO

Name of the Project

Tuticorin Thermal Power Station (TTPS)

Sl.No	Details	(True-Up)
		FY 2021-22
I	<b>Indegenious coal</b>	
1	Cost of coal (Rs / MT)	
2	Ocean frieght (Rs / MT)	
3	Railway frieght (Rs / MT)	
4	Handling charges (Rs / MT)	
5	Total Cost (Rs / MT)	3736.12
6	Total quantity of coal (in MT)	45,99,156.00
7	Average landed cost (Rs / MT)	
II	<b>Imported Coal</b>	
1	Cost of coal (Rs / MT)	
2	Railway frieght (Rs / MT)	
3	Handling charges (Rs / MT)	
4	Total Cost (Rs / MT)	0.00
5	Total quantity of coal (in MT)	0.00
6	Average landed cost (Rs / MT)	
III	<b>TNPL/SNC Coal</b>	
1	Cost of coal (Rs / MT)	
2	Railway frieght (Rs / MT)	
3	Handling charges (Rs / MT)	
4	Total Cost (Rs / MT)	
	Total Coal	
1	Total quantity of coal (in MT)	
2	Average landed cost (Rs / MT)	
	<b>Weighted average landed coal cost (Rs / MT)</b>	<b>3,736.12</b>



## Estimated Generation of Power

NAME OF THE COMPANY TANGEDCO

NAME OF THE STATION Tuticorin Thermal Power Station (TTPS)

Sl.No	Installed Capacity (in MW)	PLF (in %)	Aux. Consu. (in %)	FY 2021-22 (True-Up)	
				Gross (in MU)	Net (in MU)
1	1,050	54%	8.83%	4,962	4,524.364

## Computation of Energy (Variable) Charges

Name of the Company

TANGEDCO

Name of the Power Station

Tuticorin Thermal Power Station (TTPS)

Sl. No	Description	Unit	(True-Up)
			FY 2021-22
1	Capacity	MW	1,050.00
3	Gross generation	MU	4,962.32
14	Net Generation	MU	4,524.36
5	Auxiliary Consumption	%	8.83%
	PLF	%	53.95%
2	Gross Station Heat Rate	Kcal / kWhr	2,813.57
6	Average calorific value of oil	kcal / Kl	9,560.70
7	Average calorific value of Coal	kcal / Kg	3,123.69
8	Average landed cost of coal	Rs / MT	3,736.12
	Average landed cost of Oil	Rs./KL	81,202.14
9	Heat contributed from Oil	Kcal / kWhr	87,770.01
10	Heat contributed from Coal	Kcal / kWhr	1,38,74,067.49
11	Specific consumption of coal	Kg / kWhr	0.90
4	Specific fuel oil consumption	MI / kWh	1.85
12	Rate of energy from Coal	Rs / kWhr	3.37
13	Rate of energy ex-bus	Rs / kWhr	3.67
15	Total energy cost of coal	Rs. Crores	1,659.42
	Total energy cost of Oil	Rs. Crores	74.55
	Total Variable Cost	Rs. Crores	1,733.97
	Fuel Cost per Net Generation	Rs./Unit	3.83

## Computation of Generation Cost

Name of the TANGEDCO

Name of the Power Tuticorin Thermal Power Station

Sl. No	Station	FY 2021-22(True-Up)				
		Net Gen (MU)	AFC (Rs.in Crs)	VC (Rs.in Crs)	Total (Rs.in Crs)	Cost per unit (in RS)
1	TTPS	4524.36	1550.54	1733.97	3284.50	7.26

# **ANNEXURE I**

## **ARR FORMATS**

### **METTUR THERMAL POWER STATION (MTPS)**

## Summary of Tariff Proposal for Coal based Thermal Station

Name of the Company

TANGEDCO

Name of the Station

Mettur Thermal Power Station (MTPS)-I

Rs in Crs.

Sl. No.	Particulars	Reference to Form	Approved FY 2021-22	(True up) FY 2021-22
I	<b>Annual Fixed Cost</b>			
1	Return on Equity	5	-	31.84
2	Interest on loan capital	6 C	405.61	394.93
3	Depreciation	10 B	83.52	38.08
4	Interest on Working Capital	11	62.39	90.20
5	Operation and Maintenance Expenses	13 E	292.30	249.92
6	Pension & Gratuity			-
7	HeadQuarter Expenses			-
8	Cost of Secondary fuel oil	14		-
9	Special allowance in lieu of Renovation and Modernisation / Separate compensatory allowance	15		
10	Other Debits	16	0.13	-
11	Prior period credits / charges	17		-
12	Operating Expense	13D		4.90
13	<b>Total Annual Fixed Cost</b>		<b>843.95</b>	<b>809.85</b>
14	Less: Other Income	18	37.69	65.78
15	<b>Net Annual Fixed Cost</b>		<b>806.26</b>	<b>744.07</b>
II	<b>Total Variable Cost</b>			
	<b>Primary Fuel cost</b>	22		1,723.14
	<b>Secondary fuel cost</b>	14		18.51
	<b>Total Variable Cost</b>			<b>1,741.65</b>
III	<b>Total Cost</b>			<b>2,485.72</b>

## Form 3

## Normative parameters considered for tariff computations

Name of the Company

TANGEDCO

Name of the Power Station

Mettur Thermal Power Station (MTPS)

Particulars	Unit	(True up)
		FY 2021-22
(1)	(2)	
Rate of Return on Equity	%	14.00%
Target Availability	%	71.42%
Target PLF	%	65.18%
Auxiliary Energy Consumption	%	8.53%
Gross Station Heat Rate	kCal/kWh	2483.63
Specific Fuel Oil Consumption	ml/kWh	0.69
O&M Cost		249.92
Cost of Fuel for WC	in Months	2.00
O & M Expenses for WC	in Months	1.00
Primary Fuel Stock for WC	in Months	2.00
Secondary Fuel Oil or Secondary/ Alternate liquid fuel stock for WC	in Months	2.00
Spares stock as % of Plant & Equipment Cost on 1.4.2004 for WC	%	1.00%
Receivables for WC	in Months	2.00
Prime lending Rate of SBI	%	12.15%
Incentive Rate	Paise/kWh	25.00

Form 4

**Statement showing the performance of Stations**

Name of the Company

TANGEDCO

Name of the Station

Mettur Thermal Power Station (MTPS)

Sl.No	Norms of Operation	(True up)
		FY 2021-22
1	PLF / PAF (in %)	65.18%
2	Auxiliary consumption (in %)	8.53%
3	Average Gross Station Heat Rate (Kcal / kWhr)	2,484
4	Average Gross Calorific value of Coal (Kcal / Kg)	3,085.18
5	Specific consumption of Coal (Kg / kWhr)	0.80
6	Specific consumption of Secondary fuel oil (MI / kWhr)	0.69
7	Operating Expenses (Rs in Lakhs)	
8	Operation and Maintenance expenses (Rs in lakhs / MW)	29.75
9	Average cost of Coal (Rs / MT)	4,475.24
10	Average cost of Secondary fuel oil (Rs / Kl)	55,933.72

## Computation of Return on Equity

NAME OF THE COMPANY TANGEDCO

NAME OF THE STATION Mettur Thermal Power Station (MTPS)

Rs. Crores		
Sl. No	Particulars	(True up)
		FY 2021-22
1	Equity at the beginning	224.24
2	% of equity addition	30%
3	Addition during the year	6.33
4	Total Equity	230.57
5	Return on Equity (in %)	14.00%
6	Return on Equity	31.84



Form 6

## Statement showing other Interest

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Mettur Thermal Power Station (MTPS)

Sl. no.	Particulars	FY 2021-22 (True up)		
		Outstanding at the beginning	Net additions	Interest
1	Interest on security deposit			
2	Interest on meter caution deposit			
3	Interest on GPF / CPF			8.54
4	Interest on deposit from			
5	Interest on Family Benefit Fund contribution			
6	Interest on TNEB Spl. PF cum Gratuity Scheme			
7	Cost of raising finance			
8	Bank charges			
9	Penal interest on E-Tax			
10	Guarantee Commission to Govt.			
11	Other Interest			
	Interest			
	<b>Total</b>			<b>8.54</b>

## Abstract of Interest

Name of the Company

TANGEDCO

Name of the Station

Mettur Thermal Power Station (MTPS)

Rs. Crores

Sl. no.	Particulars	(True up)
		FY 2021-22
1	Net Interest on Existing Loan	386.39
2	Interest on Project borrowings	
3	Other Interest	8.54
4	Total Interest	394.93

## Form 7

## ESTIMATE OF CAPITALIZATION

Name of the Company

TANGEDCO

Name of the Project

Mettur Thermal Power Station (MTPS)

Rs. in Crores

Sl. No.	Name of Works	(True up)
		FY 2021-22
1	(a) Plant and machinery in generating Stations including plant foundations	
	(a) Boilers/Plants	
	(b) Cooling towers and circulating water system	
2	Buildings and civil Engineering works of a permanent character, not mentioned above	
	(a) Offices and show rooms	
	(b) Containing thermo electric plants	
	(c) Temporary erections such as wooden structures	
	(d) Roads other than kacha roads	
	(e) Others	
3	Transformers, transformer (kiosk) sub station equipment and other fixed apparatus (including plant foundations)	
	(a) Transformers (including foundation) having a rating of 100 kVA and over.	
	(b) Others	
4	Switch gear, including cable connections	
5	Lightening arresters	
	(a) Station type	
	(b) Pole type	
	(c) Synchronous condensers	
6	Batteries	
7	(a) Underground cables including joint boxes and disconnected boxes	
	(b) Cable duct systems	
8	Meters	
9	Self propelled vehicles	
10	Air-conditioning plants	
	(a) Static	
	(b) Portable	
11	(a) Office furniture and fittings	
	(b) Office equipments	
	(c) Internal wirings including fittings and apparatus	
	(d) Street light fittings	
12	Motors	
13	Communication equipments	
	(a) Radio and higher frequency carrier system	
	(b) Telephone lines and telephones	
	Capitalization	21.10
	Capitalization as per plan	
	<b>TOTAL</b>	<b>21.10</b>

**Depreciation****Name of the Company**

TANGEDCO

**Name of the Power Station**

Mettur Thermal Power Station (MTPS)

**Rs. Crores**

<b>Particulars</b>	<b>(True up)</b>
	<b>FY 2021-22</b>
Opening GFA (Rs. Crores)	1,581.86
Addition to GFA (Rs. Crores)	21.10
Closing GFA (Rs. Crores)	1,602.96
Average Rate of Depreciation (%)	2.41%
<b>Depreciation (Rs. Crores)</b>	<b>38.08</b>

## Computation of Interest on Working Capital

Name of the Company

TANGEDCO

Name of the Power Station

Mettur Thermal Power Station (MTPS)

(Rs in Crores)

Sl. No.	Particulars	(True up)
		FY 2021-22
1	Fuel Cost	287.19
2	Fuel Stock	
3	Oil stock	3.09
4	O & M expenses	20.83
5	Maintenance Spares	16.98
6	Recievables	414.29
	<b>Total Working Capital</b>	<b>742.37</b>
	Rate of Interest	12.15%
	<b>Interest on Working Capital</b>	<b>90.20</b>

## Details of Revenue Expenses Capitalised

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Mettur Thermal Power Station (MTPS)

Rs.in Crores

Sl.No	Particulars	(True up)
		FY 2021-22
	<b>Interest Expenditure</b>	
1	Normal Interest Expenditure	
2	Interest during construction	
	<b>Other Expenditure</b>	
1	Repairs and Maintenance	0
2	Employee Cost	0.86
3	Administrative and General Expenditure	-
4	Fabrication Charges	
5	Depreciation and other related costs	
6	Other Debits	
7	HQ Expense Capitalized	-
	<b>Total</b>	<b>0.86</b>

## Operation and Maintenance Expenses - Repairs and Maintenance

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Mettur Thermal Power Station (MTPS)

Rs. In Crores

S.No.	Details	(True up)
		FY 2021-22
1	Plant & Machinery	2.55
2	Building	0.00
3	Civil Works	0.19
4	Hydraulic work	
5	Lines & Cable network	
6	Vehicles	0.03
7	Furniture & Fixtures	0.00
8	Office equipments	
	Other	10.68
9	Allocation of Head Quarters Expenses	0.74
	<b>Total Expenses</b>	<b>14.20</b>
10	Less: Capitalisation	-
11	<b>Net Repair &amp; Maintenance expenses</b>	<b>14.20</b>

## Operation and Maintenance expenses - Employee Cost

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Mettur Thermal Power Station (MTPS)

Rs. In Crores

S. No.	Details	(True up)
		FY 2021-22
1	Salary	110.13
2	Overtime wages	1.65
3	Dearness Allowance	22.49
4	Other Allowances	3.47
5	Bonus & Exgratia	0.94
	<b>Total 1 - 5</b>	<b>138.67</b>
6	Medical expenses reimbursement	0.01
7	Leave Travel concession	
8	Earned Leave encashment	2.15
9	Terminal benefits	5.28
10	Staff welfare expenses	0.00
11	Board's Contribution to CPS	
12	Others	8.12
13	Pension & Gratuity	67.29
14	Allocation of Head Quarters Expenses	
	<b>Grand Total</b>	<b>221.53</b>
	<b>Less: Capitalisation</b>	<b>0.86</b>
15	<b>Net Expenses</b>	<b>222.39</b>
16	Employee cost per unit of energy generated	0.51



## Operation and Maintenance Expenses - Administration and General Expenses

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Mettur Thermal Power Station (MTPS)

Rs. in Crores

S. No.	Details	(True up)
		FY 2021-22
1	Rent, Rate & Taxes	1.03
2	Insurance	4.52
3	Telephone / Postage / Telex	0.07
4	Legal / Audit / Consultancy / Tech. fee / consultancy charges	0.08
5	Conveyance & Travel	0.07
6	Fees, Training and Stationery	0.44
7	Electricity Charges	2.65
8	Water Charges	
9	Watch and Ward Expenses	0.77
6	Miscellaneous Expenses	
7	Freight	
8	Other purchases related expenses	2.41
9	Allocation of Head Quarters Expenses	1.27
	<b>Total expenses</b>	<b>13.33</b>
10	<b>Less: Capitalisation</b>	-
	<b>Net Expenses</b>	<b>13.33</b>

## Operation and Maintenance Expenses - Operating Expenses

NAME OF THE COMPANY TANGEDCO

NAME OF THE STATION Mettur Thermal Power Station (MTPS)  
Rs in Crores

S. No.	Details	(True up)
		FY 2021-22
1	Water Charges	3.91
2	Lubricants and Consumables	0.06
3	Station Auxiliaries	0.92
4	Other Fuel Related Expenses	
	<b>Total expenses</b>	<b>4.90</b>

## Total Operation and Maintenance Expenses

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Mettur Thermal Power Station (MTPS)

Rs in Crores

S.No.	Details	(True up)
		FY 2021-22
1	Net Repair & Maintenance Expenses	14.20
2	Net Employees Cost	222.39
3	Net Admn. & General Expnses	13.33
4	Operating Expenses	
5	<b>Total Operation and Maintenance Expenses</b>	<b>249.92</b>

## Cost of Secondary Fuel Oil for Coal based Thermal Station

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Mettur Thermal Power Station (MTPS)

Sl.No	Details	(True up)
		FY 2021-22
1	Capacity (in MW)	840.00
2	PLF (in %)	65.18%
3	Gross Generation (in MU)	4,796.21
4	Specific consumption of secondary fuel oil (MI / kWhr)	0.69
5	Quantum of secondary fuel oil required (in KI)	3,309.38
6	Weighted average rate of oil (Rs / KI)	55,933.72
7	Total cost of Secondary fuel (Rs.in Crs)	18.51

## OTHER DEBITS

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Mettur Thermal Power Station (MTPS)  
Rs.in Crores

S.No.	Details of Expenses	(True up)
		FY 2021-22
1	Research & Development expenses	
2	Bad & Doubtful debts written off	
3	Miscellaneous losses and written off/provided for	
4	Material cost variance	
5	Sundry expenses	
6	Extra ordinary debits	
7	Allocation of Head Quarters Expenses	
8	Hydro Balancing Fund	
	<b>Total</b>	
8	Less: Capitalization	0.00
9	<b>Net expenses</b>	0.00

## PRIOR PERIOD CREDITS / CHARGES

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Mettur Thermal Power Station (MTPS)

Rs.in Crores

S.No.	Details of Expenses	(True up)
		FY 2021-22
I	Income relating to previous year	
1	Fuel related gains	
2	Interest income	
3	Excess Provisions for revenue expenses	
4	Other income	
5	Total	-
II	Expenses / Losses relating to previous period	
1	Fuel related losses and expenses	
2	Operating expenses	
3	Employee cost and other revenue expenditures under provided	
4	Other charges	
5	Total	
III	Net prior period credits / charges	-

## Statement showing other Income

Name of the Company

TANGEDCO

Name of the Station

Mettur Thermal Power Station (MTPS)

Rs.in Crores

S.No	Particulars	(True up)
		FY 2021-22
1	Interest on loan and advance to employees	53.57
2	Interest on Investments	
3	Interest on Advance to suppliers / Contractors	
4	Interest from Banks	
5	Income from sale of tender forms, stores, scraps, etc.,	
6	Income from hiring vehicles to employees and other welfare activities	
7	Miscellaneous Receipts	12.21
8	Allocation from Head Quarters	
9	Income from Trading	
10	Income from Staff Welfare	
	<b>Total</b>	<b>65.78</b>

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## CALCULATION OF WEIGHTED AVERAGE CALORIFIC VALUE OF COAL

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Mettur Thermal Power Station (MTPS)

Sl.No	Month / Area of sampling / testing	average UHV	Moisture content (in %)	Ash content (in %)	Grade of coal	Calculation of corresponding Gross Calorific Value	Weighted average GCV with reference to blending
1	FY 2021-22						3085.00



## CALCULATION OF AVERAGE LANDED COST OF COAL

Name of the Company

TANGEDCO

Name of the Project

Mettur Thermal Power Station (MTPS)

Sl.No	Details	(True up)
		FY 2021-22
(1)	(2)	
I	<b>Indegenious coal</b>	
1	Cost of coal (Rs / MT)	
2	Ocean frieght (Rs / MT)	
3	Railway frieght (Rs / MT)	
4	Handling charges (Rs / MT)	
5	Total Cost (Rs / MT)	4468
6	Total quantity of coal (in MT)	3842661
II	<b>Imported Coal</b>	
1	Cost of coal (Rs / MT)	
2	Railway frieght (Rs / MT)	
3	Handling charges (Rs / MT)	
4	Total Cost (Rs / MT)	
5	Total quantity of coal (in MT)	19415
6	Average landed cost (Rs / MT)	5909
III	<b>Singareni Coal</b>	
1	Cost of coal (Rs / MT)	
2	Railway frieght (Rs / MT)	
3	Handling charges (Rs / MT)	
4	Total Cost (Rs / MT)	
5	Total quantity of coal (in MT)	
6	Average landed cost (Rs / MT)	
IV	<b>MCL Coal/WCL/SNCL Other Coal</b>	
1	Cost of coal (Rs / MT)	
2	Railway frieght (Rs / MT)	
3	Handling charges (Rs / MT)	
4	Total Cost (Rs / MT)	
5	Total quantity of coal (in MT)	
6	Average landed cost (Rs / MT)	
III	<b>Weighted average landed coal cost (Rs / MT)</b>	<b>4,475.24</b>

## Estimated Generation of Power

NAME OF THE COMPANY TANGEDCO

NAME OF THE STATION Mettur Thermal Power Station (MTPS)

S.No	Installed Capacity (in MW)	PLF (in %)	Aux. Consu. (in %)	FY 2021-22 (True up)	
				Gross (in MU)	Net (in MU)
1	840.00	65.17%	8.53%	4795.93	4386.84

## Computation of Energy (Variable) Charges

Name of the Company

TANGEDCO

Name of the Power Station

Mettur Thermal Power Station (MTPS)

Sl. No	Description	Unit	(True up)
			FY 2021-22
1	Capacity	MW	840
2	Gross Station Heat Rate	Kcal / kWhr	2483.63
3	Gross Generation	MU	4795.93
4	Specific fuel oil consumption	MI / kWh	0.69
5	Auxiliary Consumption	%	8.53%
6	Average calorific value of oil	kcal / KI	9940.0
7	Average calorific value of Coal	kcal / Kg	3085.00
8	Average landed cost of coal	Rs / MT	4,475.24
9	Heat contributed from Oil	Kcal / kWhr	32,893.35
10	Heat contributed from Coal	Kcal / kWhr	1,18,78,417.31
11	Specific consumption of coal	Kg / kWhr	0.80
12	Rate of energy from Coal	Ps / kWhr	3.66
13	Rate of energy ex-bus	Ps / kWhr	3.97
14	Net Generation	MU	4387.10
15	Total coal cost	Rs / Crores	1,723.14
	Total Variable Cost including oil cost		1,741.65

## Computation of Generation Cost

Name of the Company TANGEDCO

Name of the Station Mettur Thermal Power Station (MTPS)

Rs in Crs.

S. No	Station	FY 2021-22(True up)				
		Net Gen (MU)	AFC (Rs.in Crs)	VC (Rs.in Crs)	Total (Rs.in Crs)	Cost per unit (in RS)
1	MTPS	4386.84	744.07	1741.65	2,485.72	5.67

## **ANNEXURE I**

### **ARR FORMATS**

#### **NORTH CHENNAI THERMAL POWER STATION (NCTPS)**

## Summary of Tariff Proposal for Coal based Thermal Station

Name of the Company

TANGEDCO

Name of the Station			North Chennai Thermal Power Station (NCTPS)	
S.No.	Particulars	Reference to Form	Approved FY 2021-22	True-Up FY 2021-22
I	Annual Fixed Cost			
1	Return on Equity	5	-	64.35
2	Interest on loan capital	6 C	727.08	744.07
3	Depreciation	10 B	154.98	85.00
4	Interest on Working Capital	11	72.20	77.75
5	Operation and Maintenance Expenses	13 E	263.86	319.93
6	Pension and Gratuity			
7	Head Quarter Expense			-
8	Cost of Secondary fuel oil	14		
9	Special allowance in lieu of Renovation and	15		
10	Other Debits	16	-	-
11	Prior period credits / charges	17	-	-
12	Operating Expenses	13D	-	103.03
13	Total Annual Fixed Cost		1,218.12	1,394.12
14	Less: Other Income	18	4.20	22.80
15	Net Annual Fixed Cost		1,213.92	1,371.32
II	Annual Variable Cost			
12	Primary Fuel Cost	22		1,028.00
13	Secondary Fuel Cost	14		32.02
14	Total Variable Cost			1,060.02
III	Total Cost			2,431.34

## Normative parameters considered for tariff computations

NAME OF THE COMPANY

TANGEDCO

NAME OF THE POWER STATION

North Chennai Thermal Power Station (NCTPS)

Particulars	Unit	True-Up
		FY 2021-22
Rate of Return on Equity	%	14.00%
Target Availability	%	81.23%
Target PLF	%	60.82%
Auxiliary Energy Consumption	%	10.61%
Gross Station Heat Rate	kCal/kWh	2,740
Specific Fuel Oil Consumption	ml/kWh	1.72
O&M Cost		320
Cost of Fuel for WC	in Months	2.00
O & M Expenses for WC	in Months	1.00
Primary Fuel Stock for WC	in Months	2.00
Secondary Fuel Oil or Secondary/Alternate liquid fuel stock for WC	in Months	2.00
Spares stock as % of Plant & Equipment Cost on 1.4.2004 for WC	%	1%
Receivables for WC	in Months	2.00
Prime lending Rate of SBI as on _____	%	12.15%
Incentive Rate	Paise.kWh	25

## Statement showing the performance of Stations during the previous five years

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

North Chennai Thermal Power Station (NCTPS)

S.No	Norms of Operation	(True up)
		FY 2021-22
1	PLF / PAF (in %)	60.82%
2	Auxiliary consumption (in %)	10.61%
3	Average Gross Station Heat Rate (Kcal / kWhr)	2740.00
4	Average Gross Calorific value of Coal (Kcal / Kg)	3038.00
5	Specific consumption of Coal (Kg / kWhr)	0.90
6	Specific consumption of Secondary fuel oil (ML / kWhr)	1.72
7	Operating Expenses (Rs in Lakhs)	
8	Operation and Maintenance expenses (Rs in lakhs / MW)	50.78
9	Average cost of Coal (Rs / MT)	3418.02
10	Average cost of Secondary fuel oil (Rs / Kl)	55471.13



## Computation of Return on Equity

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

North Chennai Thermal Power Station (NCTPS)

Rs. In Crores

S. No	Particulars	(True-Up)
		FY 2021-22
1	Equity at the beginning	455.80
2	% of equity addition	30%
3	Addition during the year	7.64
4	Total Equity	463.43
5	Return on Equity (in %)	14.00%
6	Return on Equity	64.35

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

North Chennai Thermal Power Station (NCTPS)

S. No.	Particulars	FY 2021-22(True up)		
		Outstanding at the beginning	Net additions	Interest
1	Interest on security deposit			
2	Interest on meter caution deposit			
3	Interest on GPF / CPF			3.80
4	Interest on deposit from employees			
5	Interest on Family Benefit Fund contribution			
6	Interest on TNEB Spl. PF cum Gratuity Scheme			
7	Cost of raising finance			
8	Bank charges			
9	Penal interest on E-Tax			
10	Guarantee Commission to Govt.			
11	Other Interest			1.47
	Interest			
	<b>Total</b>			<b>5.27</b>

## Abstract of Interest

NAME OF THE COMPANY

TANGEDCO

Form 6C

NAME OF THE STATION

North Chennai Thermal Power Station (NCTPS)

Sl. no.	Particulars	True-Up
		FY 2021-22
1	Net Interest on Existing Loan	738.80
2	Interest on Project borrowings	
3	Other Interest	5.27
4	Total Interest	744.07

## ESTIMATE OF CAPITALIZATION

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

North Chennai Thermal Power Station (NCTPS)

		Rs. In Crore
S. No.	Name of Works	(True-Up) FY 2021-22
1	(a) Plant and machinery in generating Stations including plant foundations	
	(a) Boilers/Plants	
	(b) Cooling towers and circulating water system	
2	Buildings and civil Engineering works of a permanent character, not mentioned above	
	(a) Offices and show rooms	
	(b) Containing thermo electric plants	
	(c) Temporary erections such as wooden structures	
	(d) Roads other than kacha roads	
	(e) Others	
3	Transformers, transformer (kiosk) sub station equipment and other fixed apparatus (including plant foundations)	
	(a) Transformers (including foundation) having a rating of 100 kVA and over.	
	(b) Others	
4	Switch gear, including cable connections	
5	Lightening arresters	
	(a) Station type	
	(b) Pole type	
	(c) Synchronous condensers	
6	Batteries	
7	(a) Underground cables including joint boxes and disconnected boxes	
	(b) Cable duct systems	
8	Meters	
9	Self propelled vehicles	
10	Air-conditioning plants	
	(a) Static	
	(b) Portable	
11	(a) Office furniture and fittings	
	(b) Office equipments	
	(c) Internal wirings including fittings and apparatus	
	(d) Street light fittings	
12	Motors	
13	Communication equipments	
	(a) Radio and higher frequency carrier system	
	(b) Telephone lines and telephones	
	Capitalization	
	Capitalization planned	25.45
	<b>TOTAL</b>	<b>25.45</b>

**Depreciation****Name of the Company** TANGEDCO**Name of the Power Station** North Chennai Thermal Power Station**Rs. In Crores**

<b>Particulars</b>	<b>(True-Up)</b>
	<b>FY 2021-22</b>
Opening GFA (Rs. Crores)	2,935.32
Addition to GFA (Rs. Crores)	25.45
Closing GFA (Rs. Crores)	2,960.77
Average Rate of Depreciation (%)	2.90%
<b>Depreciation (Rs. Crores)</b>	<b>85.00</b>

## Computation of Interest on Working Capital

Name of the Company

TANGEDCO

Name of the Power Station

North Chennai Thermal Power Station (NCTPS)

(Amount in Crores)

Sl. No.	Particulars	{True up}
		FY 2021-22
1	Fuel Cost	171.33
2	Fuel Stock	
3	Oil stock	5.34
4	O & M expenses	26.66
5	Maintenance Spares	31.37
6	Receivables	405.22
	Total Working Capital	<b>639.92</b>
	Rate of Interest	12.15%
	<b>Interest on Working Capital</b>	<b>77.75</b>

## Details of Revenue Expenses Capitalised

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

North Chennai Thermal Power Station (NCTPS)

Rs.in Crores

Sl.No	Particulars	(True-Up)
		FY 2021-22
	<b>Other Expenditure</b>	
1	Repairs and Maintenance	-
2	Employee Cost	-
3	Administrative and General Expenditure	-
4	Fabrication Charges	-
5	Depreciation and other related costs	-
6	Other Debits	-
7	HQ Expense Capitalized	0.00
	<b>Total</b>	-

## Operation and Maintenance Expenses - Repairs and Maintenance

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

North Chennai Thermal Power Station (NCTPS)

Rs. In Crores

S.No.	Details	(True up)
		FY 2021-22
1	Plant & Machinery	3.30
2	Building	0.00
3	Civil Works	0.74
4	Hydraulic work	-
5	Lines & Cable network	0.00
6	Vehicles	0.01
7	Furniture & Fixtures	0.00
8	Office equipments	0.01
9	Allocation of Head Quarters Expenses	1.44
10	Other	0.68
	<b>Total Expenses</b>	<b>6.19</b>
10	Less: Capitalisation	-
11	<b>Net Repair &amp; Maintenance expenses</b>	<b>6.19</b>



## Operation and Maintenance expenses - Employee Cost

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

North Chennai Thermal Power Station (NCTPS)

Rs. In Crores

S. No.	Details	(True-Up)
		FY 2021-22
1	Salary	81.00
2	Overtime wages	0.00
3	Dearness Allowance	16.97
4	Other Allowances	8.21
5	Bonus & Exgratia	0.62
	<b>Total 1 - 5</b>	<b>106.81</b>
6	Medical expenses reimbursement	30.50
7	Leave Travel concession	0.00
8	Earned Leave encashment	0.00
9	Terminal benefits	3.50
10	Staff welfare expenses	0.00
11	Other	0.00
12	Board's Contribution to CPS	1.59
13	Allocation of Head Quarters Expenses	76.14
14	Pension and Gratuity	67.29
	<b>Grand Total</b>	<b>285.83</b>
15	Less: Capitalisation	-
<b>16</b>	<b>Net Expenses</b>	<b>285.83</b>
17	Employee cost per unit of energy generated	0.46

## Operation and Maintenance

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

North Chennai Thermal Power Station (NCTPS)

Rs. In Crores

S. No.	Details	(True-Up)
		FY 2021-22
1	Rent, Rate & Taxes	0.25
2	Insurance	-
3	Telephone / Postage / Telex	1.19
4	Legal / Audit / Consultancy / Tech. fee / consultancy charges	0.20
5	Conveyance & Travel	0.04
6	Fees, books Printing and Stationery and Training	0.74
7	Water Charges	-
8	Electricity Charges	-
9	Watch and Ward and Petty Office Expenses	5.56
10	Miscellaneous Expenses	17.44
11	Freight	-
12	Other purchases related expenses	-
13	Reward for theft of energy/Spl reward vigilance	
14	Allocation of HeadQuarter Expense	2.50
	<b>Total expenses</b>	<b>27.91</b>
10	<b>Less: Capitalisation</b>	-
11	<b>Net Expenses</b>	<b>27.91</b>

## Operation and Maintenance Expenses - Operating Expenses

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

North Chennai Thermal Power Station (NCTPS)

Rs. in Crores

S.No.	Details	(True-Up)
		FY 2021-22
1	Water Charges	35.95
2	Lubricants and Consumables	0.05
3	Station Auxiliaries	67.03
4	Other fuel Cost	0.00
5	Shortages	0.00
4	<b>Total expenses</b>	<b>103.03</b>

## Total Operation and Maintenance Expenses

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

North Chennai Thermal Power Station (NCTPS)

Rs. Crores

S.No.	Details	(True-Up)
		FY 2021-22
1	Net Repair & Maintenance Expenses	6.19
2	Net Employees Cost	285.83
3	Net Admn. & General Expnses	27.91
4	Operating Expenses	
5	<b>Total Operation and Maintenance Expenses</b>	<b>319.93</b>

Cost of Secondary Fuel Oil for Coal based Thermal Station

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

North Chennai Thermal Power Station (NCTPS)

S.No	Details	(True up)
		FY 2021-22
(1)	(2)	
1	Capacity (in MW)	630.00
2	PLF (in %)	60.82%
3	Gross Generation (in MU)	3356.53
4	Specific consumption of secondary fuel oil (MI / kWhr)	1.72
5	Quantum of secondary fuel oil required (in KI)	5773.24
6	Weighted average rate of oil (Rs / KI)	55471.13
7	Total cost of Secondary fuel (Rs.Cr)	32.02

## OTHER DEBITS

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

North Chennai Thermal Power Station (NCTPS)

Rs.in Crores

S.No.	Details of Expenses	(True up)
		FY 2021-22
1	Research & Development expenses	
2	Bad & Doubtful debts written off	
3	Miscellaneous losses and written off/provided for	-
4	Material cost variance	
5	Sundry expenses	
6	Extra ordinary debits	
7	Allocation of Head Quarters Expenses	
	<b>Total</b>	-
8	Less: Capitalization	-
9	<b>Net expenses</b>	-

## PRIOR PERIOD CREDITS / CHARGES

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

North Chennai Thermal Power Station (NCTPS)

Rs.in Crores

S.No.	Details of Expenses	(True-Up) FY 2021-22
I	Income relating to previous year	
1	Fuel related gains	
2	Interest income	
3	Receipt from Consumer	
4	Excess Provisions for revenue expenses	
5	Other income	
	<b>Total</b>	
II	Expenses / Losses relating to previous period	
1	Fuel related losses and expenses	
2	Operating expenses	
3	Employee cost and other revenue expenditures under provided	
4	Interest and finance charges	
5	Other charges	
	<b>Total</b>	
III	Net prior period credits / charges	0

## Statement showing other Income

Name of the Company

TANGEDCO

Name of the Station

North Chennai Thermal Power Station (NCTPS)

Rs.in Crores

S.No	Particulars	(True up)
		FY 2021-22
1	Interest on loan and advance to employees	2.41
2	Interest on Investments	
3	Interest on Advance to suppliers / Contractors	
4	Interest from Banks	
5	Income from sale of tender forms, stores, scraps, etc.,	
6	Income from hiring vehicles to employees and other welfare activities	
7	Miscellaneous Receipts	20.39
8	Allocation from Head Quarters	
9	Income from Trading	0
10	Income from Staff Welfare	
	<b>Total</b>	<b>22.80</b>



## CALCULATION OF WEIGHTED AVERAGE CALORIFIC VALUE OF COAL

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

North Chennai Thermal Power Station (NCTPS)

Sl.No	Month / Area of sampling / testing	Type of coal	Moisture content (in %)	Ash content (in %)	average UHV	Calculation of corresponding Gross Calorific Value	Blending Ratio	Weighted average GCV with reference to blending (As fired)	Weighted average GCV with reference to blending (ADB)
1	FY 2021-22								3045.09

**CALCULATION OF AVERAGE LANDED COST OF COAL**

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Form 20

Name of the Company

TANGEDCO

Name of the Project

North Chennai Thermal Power Station (NCTPS)

Sl.No	Details	(True up)
		FY 2021-22
(1)	(2)	
I	<b>Indegenious coal</b>	
1	Cost of coal (Rs / MT)	
2	Ocean frieght (Rs / MT)	
3	Railway frieght (Rs / MT)	
4	Handling charges (Rs / MT)	
5	Total Cost (Rs / MT)	3418.02
6	Total quantity of coal (in MT)	2936358
II	<b>Imported Coal</b>	
1	Cost of coal (Rs / MT)	
2	Railway frieght (Rs / MT)	
3	Handling charges (Rs / MT)	
4	<b>Total Cost (Rs / MT)</b>	
5	Total quantity of coal (in MT)	
6	Average landed cost (Rs / MT)	
III	Weighted average landed coal cost (Rs / MW)	3,418.02

## Estimated Generation of Power

NAME OF THE COM TANGEDCO

NAME OF THE STAT North Chennai Thermal Power Station (NCTPS)

S.No	Installed Capacity (in MW)	PLF (in %)	Aux. Consu. (in %)	FY 2021-22 (True up)	
				Gross (in MU)	Net (in MU)
1	630	60.82%	10.61%	3,356.5	3,000.51

## Computation of Energy (Variable) Charges

Name of the Company

TANGEDCO

Name of the Power Station

North Chennai Thermal Power Station (NCTPS)

Sl. No	Description	Unit	(True up)
			FY 2021-22
(1)	(2)	(3)	
1	Capacity	MW	630.00
2	Gross Station Heat Rate	Kcal / kWhr	2740.00
3	Gross Generation		3356.53
4	Specific fuel oil consumption	MI / kWh	1.72
5	Auxiliary Consumption	%	10.61%
6	Average calorific value of oil	kcal / KI	10373.46
8	Average calorific value of Coal	kcal / Kg	3038.00
10	Average landed cost of coal	Rs / MT	3418.02
11	Heat contributed from Oil	G Kcal	59888.47
12	Heat contributed from Coal	G Kcal	9137015.13
13	Specific consumption of coal	Kg / kWhr	0.90
15	Rate of energy ex-bus	Ps / kWhr	3.53
16	Net Generation	MU	3000.41
17	Total energy cost from coal	Rs / Crores	1028.00
18	Total variable cost	Rs / Crores	1060.02

## Computation of Generation Cost

Name of the Company

TANGEDCO

Name of the Power Station

North Chennai Thermal Power Station (NCTPS)

S. No	Station	FY 2021-22 (True up)				
		Net Gen (MU)	AFC (Rs.in Crs)	VC (Rs.in Crs)	Total (Rs.in Crs)	Cost per unit (in RS)
1	NCTPS	3000.51	1371.32	1060.02	2431.34	8.10

## **ANNEXURE I**

### **ARR FORMATS**

#### **NORTH CHENNAI THERMAL POWER STATION (NCTPS) Stage II**

## Summary of ARR Proposal for Coal based Thermal Station

Name of the Company

TANGEDCO

Name of the Station

North Chennai Thermal Power Station (NCTPS) Stage II

Rs in Crs.

S. No.	Particulars	Reference to Form	Approved	(True-Up)
			FY 2021-22	FY 2021-22
I	<b>Annual Fixed Cost</b>			
1	Return on Equity	5		121.62
2	Interest on loan capital	6 C	479.20	359.92
3	Depreciation	10 B	275.90	459.76
4	Interest on Working Capital	11	72.39	95.49
5	Operation and Maintenance Expenses	13 E	156.07	370.26
6	Pension and Gratuity			0.00
7	HeadQuarter Expense			0.00
8	Cost of Secondary fuel oil	14		
9	Special allowance in lieu of Renovation and Modernisation / Separate compensatory allowance	15		
10	Other Debits	16		0.00
11	Prior period credits / charges	17		0.00
12	Operating Expense	13 D		41.08
13	<b>Total Annual Fixed Cost</b>		<b>983.56</b>	<b>1448.13</b>
14	Less: Other Income	18	6.42	9.85
15	<b>Net Annual Fixed Cost</b>		<b>977.14</b>	<b>1438.28</b>
II	<b>Annual Variable Cost</b>			
	Primary Fuel Cost	22		1294.46
	Secondary Fuel Cost	14		17.80
	<b>Total Variable Cost</b>			<b>1312.25</b>
III	<b>Total Cost</b>			<b>2750.53</b>

## Normative parameters considered for tariff computations

Name of the Company

TANGEDCO

Name of the Power Station

North Chennai Thermal Power Station (NCTPS) Stage II

Particulars	Unit	(True-Up)
		FY 2021-22
Rate of Return on Equity	%	14.00%
Target Availability	%	68.96%
Target PLF	%	42.93%
Auxiliary Energy Consumption	%	8.52%
Gross Station Heat Rate	kCal/kWh	2,541
Specific Fuel Oil Consumption	ml/kWh	0.68
O&M Cost		370.26
Cost of Fuel for WC	in Months	2.00
O & M Expenses for WC	in Months	1.00
Primary Fuel Stock for WC	in Months	2.00
Secondary Fuel Oil or Secondary/Alternate liquid fuel stock for WC	in Months	2.00
Spares stock as % of Plant & Equipment Cost on 1.4.2004 for WC	%	1%
Receivables for WC	in Months	2.00
Prime lending Rate of SBI.	%	12.15%
Incentive Rate	Paise.kWh	25



## Statement showing the performance of Stations

Name of the Company

TANGEDCO

Name of the Station

North Chennai Thermal Power Station (NCTPS) Stage II

S. No	Norms of Operation	(True-Up)
		FY 2021-22
1	PLF / PAF (in %)	42.93%
2	Auxiliary consumption (in %)	8.52%
3	Average Gross Station Heat Rate (Kcal / kWhr)	2541.48
4	Average Gross Calorific value of Coal (Kcal / Kg)	3110
5	Specific consumption of Coal (Kg / kWhr)	0.82
6	Specific consumption of Secondary fuel oil (MI / kWhr)	0.68
7	Operating Expenses (Rs in Lakhs)	
8	Operation and Maintenance expenses (Rs in lakhs / MW)	30.86
9	Average cost of Coal (Rs / MT)	3519.10
10	Average cost of Secondary fuel oil (Rs / Kl)	58420.35

## Computation of Return on Equity

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

North Chennai Thermal Power Station (NCTPS) Stage II

Rs. In Crores

S. No	Particulars	(True-Up)
		FY 2021-22
1	Equity at the beginning	868.68
2	% of equity addition	30%
3	Addition during the year	-
4	Total Equity	868.68
5	Return on Equity (in %)	14.00%
6	Return on Equity	121.62

## Statement showing other Interest

Name of the Company

TANGEDCO

Name of the Station

North Chennai Thermal Power Station (NCTPS) Stage I  
(Rs in Crs.)

S.No.	Particulars	FY 2021-22 (True-Up)		
		Outstanding at the beginning	Net additions	Interest
1	Interest on security deposit			
2	Interest on meter caution deposit			
3	Interest on GPF / CPF			1.34
4	Interest on deposit from employees			
5	Interest on Family Benefit Fund contribution			
6	Interest on TNEB Spl. PF cum Gratuity Scheme			
7	Cost of raising finance			
8	Bank charges			
9	Penal interest on E-Tax			
10	Guarantee Commission to Govt.			
11	Other Interest			0.17
	Interest			
	<b>Total</b>	-	-	<b>1.51</b>

## Form 6 C

Name of the Company

TANGEDCO

Name of the Station

North Chennai Thermal Power Station (NCTPS) Stage I

S. No.	Particulars	True-Up
		FY 2021-22
1	Net Interest on Existing Loan	358.41
2	Interest on Project borrowings	
3	Other Interest	1.51
4	Total Interest	359.92

## ESTIMATE OF CAPITALIZATION

Name of the Company

TANGEDCO

Name of the Project

North Chennai Thermal Power Station (NCTPS) Stage II  
(Rs.in Crores)

Sl. No.	Name of Works	(True-Up)
		FY 2021-22
1	(a) Plant and machinery in generating Stations including plant foundations	
	(a) Boilers/Plants	
	(b) Cooling towers and circulating water system	
2	Buildings and civil Engineering works of a permanent character, not mentioned above	
	(a) Offices and show rooms	
	(b) Containing thermo electric plants	
	(c) Temporary erections such as wooden structures	
	(d) Roads other than kacha roads	
	(e) Others	
3	Transformers, transformer (kiosk) sub station equipment and other fixed apparatus (including plant foundations)	
	(a) Transformers (including foundation) having a rating of 100 kVA and over.	
	(b) Others	
4	Switch gear, including cable connections	
5	Lightening arresters	
	(a) Station type	
	(b) Pole type	
	(c) Synchronous condensers	
6	Batteries	
7	(a) Underground cables including joint boxes and disconnected boxes	
	(b) Cable duct systems	
8	Meters	
9	Self propelled vehicles	
10	Air-conditioning plants	
	(a) Static	
	(b) Portable	
11	(a) Office furniture and fittings	
	(b) Office equipments	
	(c) Internal wirings including fittings and apparatus	
	(d) Street light fittings	
12	Motors	
13	Communication equipments	
	(a) Radio and higher frequency carrier system	
	(b) Telephone lines and telephones	
	Capitalization	0.00
	Capitalization planned	
	TOTAL	0.00

**Depreciation****Name of the Company** TANGEDCO**Name of the Power Station** North Chennai Thermal Power Station Stage II (NCTPS II)

(Rs.in Crores)

Particulars	(True-Up)
	FY 2021-22
Opening GFA (Rs. Crores)	7,352.69
Addition to GFA (Rs. Crores)	-
Closing GFA (Rs. Crores)	7,352.69
Average Rate of Depreciation (%)	6.25%
<b>Depreciation (Rs. Crores)</b>	<b>459.76</b>

## Operation and Maintenance expenses - Employee Cost

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

North Chennai Thermal Power Station (NCTPS) Stage I

Rs. In Crores

S.No.	Details	(True up)
		FY 2021-22
1	Salary	36.72
2	Overtime wages	0.19
3	Dearness Allowance	7.58
4	Other Allowances	2.49
5	Bonus & Exgratia	0.01
	<b>Total 1 - 5</b>	<b>47.00</b>
6	Medical expenses reimbursement	0.00
7	Leave Travel concession	0.00
8	Earned Leave encashment	0.32
9	Terminal benefits	0.43
10	Staff welfare expenses	0.00
11	Thermal/Performance/Commissioning / Golden Jubilee Incentive	
12	Other Cost	1.53
13	Allocation to HQ Employees	141.02
	<b>Grand Total</b>	<b>203.77</b>
13	Less: Capitalisation	1.36
<b>14</b>	<b>Net Expenses</b>	<b>232.03</b>
15	Employee cost per unit of energy generated (paise/unit)	0.56
16	Pension & Gratuity	29.62

## Computation of Interest on Working Capital

Name of the Company

TANGEDCO

Name of the Power Station

North Chennai Thermal Power Station (NCTPS) Stage II

(Amount in Crores)

S. No.	Particulars	(True-Up)
1	2	FY 2021-22
1	Fuel Cost	215.74
2	Fuel Stock	
3	Oil stock	2.97
4	O & M expenses	30.86
5	Maintenance Spares	77.94
6	Receivables	458.42
	Total Working Capital	785.92
	Rate of Interest	12.15%
	Interest on Working Capital	95.49



## Details of Revenue Expenses Capitalised

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

North Chennai Thermal Power Station (NCTPS) Stage II

Rs.in Crores

Sl.No	Particulars	(True-Up)
		FY 2021-22
	<b>Other Expenditure</b>	
1	Repairs and Maintenance	-
2	Employee Cost	1.36
3	Administrative and General Expenditure	-
4	Fabrication Charges	-
5	Depreciation and other related costs	-
6	Other Debits	-
7	HQ Expense capitalized	-
	<b>Total</b>	<b>1.36</b>

## Operation and Maintenance Expenses - Repairs and Maintenance

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

North Chennai Thermal Power Station (NCTPS) Stage II

Rs. In Crores

S.No.	Details	(True-Up)
		FY 2021-22
1	Plant & Machinery	13.68
2	Building	-
3	Civil Works	1.96
4	Hydraulic work	-
5	Lines & Cable network	-
6	Vehicles	0.00
7	Furniture & Fixtures	0.01
8	Office equipments	0.00
9	Other Cost	20.02
10	Allocation to HQ	2.67
	<b>Total Expenses</b>	<b>38.34</b>
11	Less: Capitalisation	-
12	<b>Net Repair &amp; Maintenance expenses</b>	<b>38.34</b>

## Operation and Maintenance Expenses - Administration and General Expenses

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

North Chennai Thermal Power Station (NCTPS) Stage II

Rs. In Crores

S.No.	Details	(True-Up)
		FY 2021-22
1	Rent, Rate & Taxes	0.06
2	Insurance	85.28
3	Telephone / Postage / Telex	1.01
4	Legal / Audit / Consultancy / Tech. fee / consultancy charges	0.00
5	Conveyance & Travel	0.03
6	Fees, books Printing and Stationery and Training	0.02
7	Water Charges	-
8	Electricity Charges	-
9	Watch and Ward and Petty Office Expenses	5.34
10	Miscellaneous Expenses	5.48
11	Freight	-
12	Other purchases related expenses	-
13	Allocation of Head Quarters Expenses	2.67
14	<b>Total expenses</b>	<b>99.88</b>
15	<b>Less: Capitalisation</b>	<b>-</b>
16	<b>Net Expenses</b>	<b>99.88</b>

**Operation and Maintenance Expenses - Operating Expenses****NAME OF THE COMPANY**

TANGEDCO

**NAME OF THE STATION**

North Chennai Thermal Power Station (NCTPS) Stage II

**Rs. In Crores**

S.No.	Details	(True up)
		FY 2021-22
(1)	(2)	
1	Water Charges	40.39
2	Other Fuel Cost	-
3	Lubricants and Consumables	0.02
4	Station Auxiliaries	0.67
5	<b>Total expenses</b>	<b>41.08</b>

## Total Operation and Maintenance Expenses

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

North Chennai Thermal Power Station (NCTPS) Stage II

Rs. in Crores

S.No.	Details	(True up)
		FY 2021-22
1	Net Repair & Maintenance Expenses	38.34
2	Net Employees Cost	232.03
3	Net Admn. & General Expnses	99.88
4	Operating Expenses	
5	<b>Total Operation and Maintenance Expenses</b>	<b>370.26</b>

## Cost of Secondary Fuel Oil for Coal based Thermal Station

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

North Chennai Thermal Power Station (NCTPS) Stage II

S.No	Details	(True up)
		FY 2021-22
1	Capacity (in MW)	1,200
2	PLF (in %)	42.93%
3	Gross Generation (in MU)	4,512.80
4	kWhr)	0.68
5	Quantum of secondary fuel oil required (in Kl)	3,046
6	Weighted average rate of oil (Rs / Kl)	58,420
7	Total cost of Secondary fuel (Rs.in Crores)	17.80

## OTHER DEBITS

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

North Chennai Thermal Power Station

Rs.in Crores

Sl.No.	Details of Expenses	(True up)
		FY 2021-22
1	Research & Development expenses	
2	Bad & Doubtful debts written off	
3	Miscellaneous losses and written off/provided for	
4	Material cost variance	
5	Sundry expenses	
6	Extra ordinary debits	
7	Allocation of Head Quarters Expenses	
	<b>Total</b>	-
8	Less: Capitalization	
9	<b>Net expenses</b>	-

Form 17

**PRIOR PERIOD CREDITS / CHARGES****NAME OF THE COMPANY**

TANGEDCO

**NAME OF THE STATION**

North Chennai Thermal Power Station (NCTPS) Stage II

**Rs.in Crores**

Sl.No.	Details of Expenses	(True-Up)
		FY 2021-22
<b>I</b>	<b>Income relating to previous year</b>	
1	Fuel related gains	
2	Interest income	
3	Reciept from Consumer	
4	Excess Provisions for revenue expenses	
5	Other income	
	<b>Total</b>	<b>0.00</b>
<b>II</b>	<b>Expenses / Losses relating to previous period</b>	
1	Fuel related losses and expenses	
2	Operating expenses	
3	Employee cost and other revenue expenditures under provided	
4	Interest and finance charges	
5	Other charges	0.00
	<b>Total</b>	<b>0.00</b>
<b>III</b>	<b>Net prior period credits / charges</b>	<b>0.00</b>



## Statement showing other Income

Name of the Company

TANGEDCO

Name of the Station

North Chennai Thermal Power Station (NCTPS) Stage I

Rs.in Crores

S.No	Particulars	(True up)
		FY 2021-22
1	Interest on loan and advance to employees	0.14
2	Interest on Investments	
3	Interest on Advance to suppliers / Contractors	
4	Interest from Banks	
5	Income from sale of tender forms, stores, scraps,	
6	Income from hiring vehicles to employees and other welfare activities	
7	Miscellaneous Receipts	9.71
8	Allocation from Head Quarters	
9	Income from Trading	0.00
10	Income from Staff Welfare	
	<b>Total</b>	<b>9.85</b>

## CALCULATION OF WEIGHTED AVERAGE CALORIFIC VALUE OF COAL

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

North Chennai Thermal Power Station (NCTPS) Stage II

Sl.No	Month / Area of sampling / testing	Type of coal	Moisture content (in %)	Ash content (in %)	average UHV	Calculation of corresponding Gross Calorific Value	Blending Ratio	Weighted average GCV with reference to blending (As fired)	Weighted average GCV with reference to blending (ADB)
6	FY 2021-22	Indian							3,109.51
		Imported							

## CALCULATION OF AVERAGE LANDED COST OF COAL

Form 20

Name of the Company

TANGEDCO

Name of the Project

North Chennai Thermal Power Station (NCTPS)- I

Sl.No	Details	(True up)
		FY 2021-22
I	<b>Indegenious coal</b>	
1	Cost of coal (Rs / MT)	
2	Ocean frieght (Rs / MT)	
3	Railway frieght (Rs / MT)	
4	Handling charges (Rs / MT)	
5	Total Cost (Rs / MT)	
6	Total quantity of coal (in MT)	3623345
		3496.84
II	<b>Imported Coal</b>	
1	Cost of coal (Rs / MT)	
2	Railway frieght (Rs / MT)	
3	Handling charges (Rs / MT)	
4	<b>Total Cost (Rs / MT)</b>	
5	Total quantity of coal (in MT)	60718
6	Average landed cost (Rs / MT)	4847.29
III	Weighted average landed coal cost (Rs / MW)	3,519.10

## Estimated Generation of Power

NAME OF THE COMPANY TANGEDCO

NAME OF THE STATION North Chennai Thermal Power Station (NCTPS) Stage II

S.No	Installed Capacity (in MW)	PLF (in %)	Aux. Consu. (in %)	FY 2021-22(True up)	
				Gross (in MU)	Net (in MU)
1	1200	42.93%	8.52%	4512.80	4128.48

## Computation of Energy (Variable) Charges

Name of the Company

TANGEDCO

Name of the Power Station

North Chennai Thermal Power Station (NCTPS) Stage II

Sl. No	Description	Unit	(True up)
			FY 2021-22
1	Capacity	MW	1200
2	Gross Station Heat Rate	Kcal / kWhr	2,541.48
3	Gross generation	MU	4,512.80
4	Specific fuel oil consumption	MI / kWh	0.68
5	Auxiliary Consumption	%	8.52%
6	Average calorific value of oil	kcal / KI	10,263
8	Average calorific value of Coal	kcal / Kg	3,109.51
10	Average landed cost of coal	Rs / MT	3,519.10
11	Heat contributed from Oil	Kcal / kWhr	31,261.85
12	Heat contributed from Coal	Kcal / kWhr	1,14,37,933.16
13	Specific consumption of coal	Kg / kWhr	0.82
14	Rate of energy from Coal	Ps / kWhr	2.93
15	Rate of energy ex-bus	Ps / kWhr	3.18
16	Net Generation	MU	4,128.48
17	Total energy cost from coal	Rs / Crores	1,294.46
18	Total Variable cost	Rs / Crores	1312.25

## Computation of Generation Cost

Name of the Company TANGEDCO

Name of the Power Station North Chennai Thermal Power Station (NCTPS) Stage II

S. No	Station	FY 2021-22(True up)				
		Net Gen (MU)	AFC (Rs.in Crs)	VC (Rs.in Crs)	Total (Rs.in Crs)	Cost per unit (in RS)
1	NCTPS	4128.48	1438.28	1312.25	2750.53	6.66

## **ANNEXURE I**

### **ARR FORMATS**

#### **METTUR THERMAL POWER STATION (MTPS) STAGE II**

## Summary of Tariff Proposal for Coal based Thermal Station

Name of the Company

TANGEDCO

Mettur Thermal Power Station (MTPS) Stage II

Name of the Station

Rs in Crores

Sl. No.	Particulars	Reference to Form	Approved	(APR) FY 2021-22
I	<b>Annual Fixed Cost</b>			
1	Return on Equity	5		62.20
2	Interest on loan capital	6 C	395.85	388.15
3	Depreciation	10 B	388.22	243.28
4	Interest on Working Capital	11	93.13	69.35
5	Operation and Maintenance Expenses	13 E	259.20	133.96
6	Pension & Gratuity			-
7	HeadQuarter Expense			-
8	Cost of Secondary fuel oil	14		
9	Special allowance in lieu of Renovation and Modernisation / Separate compensatory allowance	15		
10	Other Debits	16		-
11	Prior period credits / charges	17		
12	Operating Expenses	13D		15.09
13	<b>Total Annual Fixed Cost</b>		<b>1,136.40</b>	<b>912.02</b>
14	Less: Other Income	18	17.84	53.33
15	<b>Net Annual Fixed Cost</b>		<b>1,136.40</b>	<b>858.69</b>
II	<b>Total Variable Cost</b>			
	Primary Fuel cost	22		1,073.23
	Secondary fuel cost	14		10.00
	<b>Total Variable Cost</b>			<b>1,083.22</b>
III	<b>Total Cost</b>			<b>1,941.92</b>



## Form 3

## Normative parameters considered for tariff computations

Name of the Power Station

Mettur Thermal Power Station (MTPS)  
Stage II

Particulars	Unit	(True-Up)
		FY 2021-22
Rate of Return on Equity	%	14.00%
Target PLF	%	52.58%
Auxiliary Energy Consumption		7.60%
Gross Station Heat Rate	kCal/kWh	2,661
Specific Fuel Oil Consumption	ml/kWh	0.61
O&M Cost		133.96
Cost of Fuel for WC	in Months	2.00
O & M Expenses for WC	in Months	1.00
Primary Fuel Stock for WC	in Months	2.00
SecondaryFuel Oil or Secondary/Alternate liquid fuel stock for WC	in Months	2.00
Spares stock as % of Plant & Equipment Cost on 1.4.2004 for WC	%	1%
Receivables for WC	in Months	2.00
Prime lending Rate of SBI	%	12.15%
Incentive Rate	Paise.kWh	25.00

## Statement showing the performance of Station during the year

Name of the Station		Mettur Thermal Power Station (MTPS) Stage II
S.No	Norms of Operation	(True-Up)
		FY 2021-22
1	PLF / PAF (in %)	52.58%
2	Auxiliary consumption (in %)	7.60%
3	Average Gross Station Heat Rate (Kcal / kWhr)	2661
4	Average Gross Calorific value of Coal (Kcal / Kg)	3097
5	Specific consumption of Coal (Kg / kWhr)	0.86
6	Specific consumption of Secondary fuel oil (MI / kWhr)	0.61
7	Operating Expenses (Rs in Lakhs)	
8	Operation and Maintenance expenses (Rs in lakhs / MW)	22.33
9	Average cost of Coal (Rs / MT)	4,529.48
10	Average cost of Secondary fuel oil (Rs / Kl)	59,194

## Computation of Return on Equity

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Mettur Thermal Power Station (MTPS) Stage II

Rs. In Crores

S. No	Particulars	(True-Up)
		FY 2021-22
1	Equity at the beginning	443.70
2	% of equity addition	30%
3	Addition during the year	1.16
4	Total Equity	444.86
5	Return on Equity (in %)	14.00%
6	Return on Equity	62.20

## Statement showing other Interest

Name of Company

TANGEDCO

Name of Plant

Mettur Thermal Power Station (MTPS) Stage II  
Rs. in Crs.

S.No.	Particulars	FY 2021-22		
		Outstanding at the beginning	Net additions	Interest
1	Interest on security deposit			
2	Interest on meter caution deposit			
3	Interest on GPF / CPF			1.85
4	Interest on deposit from employees			
5	Interest on Family Benefit Fund contribution			
6	Interest on TNEB Spl. PF cum Gratuity Scheme			
7	Cost of raising finance			
8	Bank charges			0.00
9	Penal interest on E-Tax			
10	Guarantee Commission to Govt.			
11	Other Interest			1.32
	Expenses Capitalised			(0.03)
	Interest			
	<b>Total</b>			<b>3.14</b>

Form - 6 C

## Abstract of Interest

Name of the Company

TANGEDCO

Name of the Station

Mettur Thermal Power Station (MTPS) Stage II  
Rs. in Crs.

S.No.	Particulars	(True up)
		FY 2021-22
1	Net Interest on Existing Loan	385.01
2	Interest on Project borrowings	
3	Other Interest	3.14
4	<b>Total Interest</b>	<b>388.15</b>

## ESTIMATE OF CAPITALIZATION

Name of the Company

TANGEDCO

Name of the Project

Mettur Thermal Power Station (MTPS) Stage II

(Rs.in Crores)

S. No.	Name of Works	(True-Up)
		FY 2021-22
1	(a) Plant and machinery in generating Stations including plant foundations	
	(a) Boilers/Plants	
	(b) Cooling towers and circulating water system	
2	Buildings and civil Engineering works of a permanent character, not mentioned above	
	(a) Offices and show rooms	
	(b) Containing thermo electric plants	
	(c) Temporary erections such as wooden structures	
	(d) Roads other than kacha roads	
	(e) Others	
3	Transformers, transformer (kiosk) sub station equipment and other fixed apparatus (including plant foundations)	
	(a) Transformers (including foundation) having a rating of 100 kVA and over.	
	(b) Others	
4	Switch gear, including cable connections	
5	Lightening arresters	
	(a) Station type	
	(b) Pole type	
	(c) Synchronous condensers	
6	Batteries	
7	(a) Underground cables including joint boxes and disconnected boxes	
	(b) Cable duct systems	
8	Meters	
9	Self propelled vehicles	
10	Air-conditioning plants	
	(a) Static	
	(b) Portable	
11	(a) Office furniture and fittings	
	(b) Office equipments	
	(c) Internal wirings including fittings and apparatus	
	(d) Street light fittings	
12	Motors	
13	Communication equipments	
	(a) Radio and higher frequency carrier system	
	(b) Telephone lines and telephones	
	Capitalization	
	Capitalization planned	3.85
	<b>TOTAL</b>	<b>3.85</b>

## Depreciation

Name of the Company

TANGEDCO

Name of the Power Station

Mettur Thermal Power Station (MTPS) Stage II

(Rs.in Crores)

Particulars	(True-Up)
	FY 2021-22
Opening GFA (Rs. Crores)	5,225.31
Addition to GFA (Rs. Crores)	3.85
Closing GFA (Rs. Crores)	5,229.16
Average Rate of Depreciation (%)	4.65%
<b>Depreciation (Rs. Crores)</b>	<b>243.28</b>

## Computation of Interest on Working Capital

Name of the Company

TANGEDCO

Name of the Power Station

Mettur Thermal Power Station (MTPS) Stage II

(Rs in Crores)

S.No.	Particulars	(True-Up)
		FY 2021-22
1	Fuel Cost	178.87
2	Fuel Stock	
3	Oil stock	1.67
4	O & M expenses	11.16
5	Maintenance Spares	55.43
6	Recievables	323.65
	Total Working Capital	570.78
	Rate of Interest	12.15%
	Interest on Working Capital	69.35

## Details of Revenue Expenses Capitalised

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Mettur Thermal Power Station (MTPS) Stage II

Rs.in Crores

Sl.No	Particulars	(True-Up)
		FY 2021-22
	<b>Interest Expenditure</b>	
1	Normal Interest Expenditure	
2	Interest during construction	
	<b>Other Expenditure</b>	
1	Repairs and Maintenance	0.74
2	Employee Cost	0.04
3	Administrative and General Expenditure	-
4	Fabrication Charges	-
5	Depreciation and other related costs	-
6	Other Debits	-
7	HQ Expense Capitalized	34.11
	<b>Total</b>	<b>34.88</b>



## Operation and Maintenance Expenses - Repairs and Maintenance

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Mettur Thermal Power Station (MTPS) Stage II

Rs. In Crores

S.No.	Details	(True-Up)
		FY 2021-22
1	Plant & Machinery	10.13
2	Building	
3	Civil Works	1.14
4	Hydraulic work	
5	Lines & Cable network	0.02
6	Vehicles	0.06
7	Furniture & Fixtures	0.00
8	Office equipments	0.02
9	Allocation of Head Quarters Expenses	1.54
	<b>Total Expenses</b>	<b>12.91</b>
10	Less: Capitalisation	0.74
11	Net Repair & Maintenance expenses	<b>12.17</b>

## Operation and Maintenance expenses - Employee Cost

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Mettur Thermal Power Station (MTPS) Stage II

Rs. In Crores

S.No.	Details	(True-Up)
		FY 2021-22
1	Salary	30.32
2	Overtime wages	0.08
3	Dearness Allowance	6.23
4	Other Allowances	2.75
5	Bonus & Exgratia	0.11
	<b>Total 1 - 5</b>	<b>39.49</b>
6	Medical expenses reimbursement	
7	Leave Travel concession	
8	Earned Leave encashment	0.20
9	Terminal benefits	0.76
10	Staff welfare expenses	
11	Board's Contribution to CPS	
12	Allocation of Head Quarters Expenses	81.35
13	Pension & Gratuity	24.29
	Thermal/Performance/Commissioning / Golden Jubilee Incentive	
	<b>Grand Total</b>	<b>121.80</b>
	<b>Less: Capitalisation</b>	<b>34.15</b>
14	<b>Net Expenses</b>	<b>111.94</b>
15	Employee cost per unit of energy generated	0.44

## Operation and Maintenance Expenses - Administration and General Expenses

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Mettur Thermal Power Station (MTPS) Stage II

Rs. In Crores

S.No.	Details	(True-Up)
		FY 2021-22
1	Rent, Rate & Taxes	0.26
2	Insurance	0.00
3	Telephone / Postage / Telex	0.02
4	Legal / Audit / Consultancy / Tech. fee / consultancy charges	0.01
5	Conveyance & Travel	0.06
6	Fees, Training and Stationery	0.97
7	Electricity Charges	1.34
8	Water Charges	
9	Watch and Ward Expenses	
6	Miscellaneous Expenses	4.52
7	Freight	
8	Other purchases related expenses	
9	Allocation of Head Quarters Expenses	2.67
	<b>Total expenses</b>	<b>9.85</b>
10	Less: Capitalisation	-
	<b>Net Expenses</b>	<b>9.85</b>

## Operation and Maintenance Expenses -

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Mettur Thermal Power Station (MTPS) Stage II

Rs. In Crores

S.No.	Details	(True-Up)
		FY 2021-22
1	Water Charges	5.81
2	Lubricants and Consumables	1.93
3	Station Auxiliaries	7.35
4	Other Fuel Related Expenses	
5	Shortage/Excess	
	<b>Total expenses</b>	<b>15.09</b>

## Total Operation and Maintenance Expenses

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Mettur Thermal Power Station (MTPS) Stage II

Rs. in Crs.

S.No.	Details	(True-Up)
		FY 2021-22
1	Net Repair & Maintenance Expenses	12.17
2	Net Employees Cost	111.94
3	Net Admn. & General Expnses	9.85
4	Operating Expenses	-
5	<b>Total Operation and Maintenance Expenses</b>	<b>133.96</b>

## Cost of Secondary Fuel Oil for Coal based Thermal Station

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Mettur Thermal Power Station (MTPS) Stage II

S.No	Details	(True-Up)
		FY 2021-22
1	Capacity (in MW)	600.00
2	PLF (in %)	53%
3	Gross Generation (in MU)	2763.78
4	Specific consumption of secondary fuel oil (MI / kWhr)	0.61
5	Quantum of secondary fuel oil required (in KI)	1,689
6	Weighted average rate of oil (Rs / KI)	59,194.07
7	Total cost of Secondary fuel (Rs. Cr)	10.00

## OTHER DEBITS

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Mettur Thermal Power Station (MTPS) Stage II

Rs.in Crores

S.No.	Details of Expenses	(True-Up)
		FY 2021-22
1	Research & Development expenses	
2	Bad & Doubtful debts written off	
3	Miscellaneous losses and written off/provided for	
4	Material cost variance	
5	Sundry expenses	
6	Extra ordinary debits	
7	Allocation of Head Quarters Expenses	
8	Hydro Balancing Fund	
	<b>Total</b>	0.00
8	Less: Capitalization	
9	<b>Net expenses</b>	<b>0.00</b>

## PRIOR PERIOD CREDITS / CHARGES

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Mettur Thermal Power Station (MTPS) Stage II

Rs.in Crores

Sl.No.	Details of Expenses	(True-Up)
		FY 2021-22
I	<b>Income relating to previous year</b>	
1	Fuel related gains	
2	Interest income	
3	Excess Provisions for revenue expenses	
4	Other income	
5	Total	-
II	<b>Expenses / Losses relating to previous period</b>	
1	Fuel related losses and expenses	
2	Operating expenses	
3	Employee cost and other revenue expenditures under provided	
4	Other charges	
5	Total	-
III	<b>Net prior period credits / charges</b>	-



## Statement showing other Income

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Name of the Company

TANGEDCO

Name of the Station

Mettur Thermal Power Station (MTPS) Stage II

Rs.in Crores

S.No.	Particulars	(True-Up)
		FY 2021-22
1	Interest on loan and advance to employees	
2	Interest on Investments	
3	Interest on Advance to suppliers / Contractors	
4	Interest from Banks	
5	Income from sale of tender forms, stores, scraps, etc.,	
6	Income from hiring vehicles to employees and other welfare activities	
7	Miscellaneous Receipts	53.29
8	Allocation from Head Quarters	
9	Income from Trading	
10	Income from Staff Welfare	0.04
	<b>Total</b>	<b>53.33</b>

## CALCULATION OF WEIGHTED AVERAGE CALORIFIC VALUE OF COAL

NAME OF THE COMPANY TANGEDCO

NAME OF THE STATION Mettur Thermal Power Station (MTPS) Stage II

Sl.No	Month / Area of sampling / testing	average UHV	Moisture content (in %)	Ash content (in %)	Grade of coal	Calculation of corresponding Gross Calorific Value	Weighted average GCV with reference to blending
6	FY 2021-22						3095.85

## CALCULATION OF AVERAGE LANDED COST OF COAL

Name of the Company

TANGEDCO

Name of the Project

Mettur Thermal Power Station (MTPS) Stage II

Sl.No	Details	(True-Up)
		FY 2021-22
I	<b>Indegenious coal</b>	
1	Cost of coal (Rs / MT)	
2	Ocean frieght (Rs / MT)	
3	Railway frieght (Rs / MT)	
4	Handling charges (Rs / MT)	
5	Cost of coal (Rs / MT)	
6	Total quantity of coal (in MT)	2095820.24
7	<b>Coal cost (Rs Cr)</b>	4485.19
II	<b>Imported Coal</b>	
1	Cost of coal (Rs / MT)	
2	Railway frieght (Rs / MT)	
3	Handling charges (Rs / MT)	
4	Total Cost (Rs / MT)	
5	Total quantity of coal (in MT)	67301.62
6	Average landed cost (Rs / MT)	5908.74
III	<b>Weighted average landed coal cost (Rs / MT)</b>	<b>4,529.48</b>

## Estimated Generation of Power

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Mettur Thermal Power Station (MTPS) Stage

Sl.No	Installed Capacity (in MW)	PLF (in %)	Aux. Consu. (in %)	FY 2021-22	
				Gross (in MU)	Net (in MU)
1.00	600.00	52.58%	7.60%	2763.78	2553.86

## Computation of Energy (Variable) Charges

Name of the Company

TANGEDCO

Name of the Power Station

Mettur Thermal Power Station (MTPS) Stage II

Sl. No	Description	Unit	(True-Up)
			FY 2021-22
1	Capacity	MW	600.00
2	Gross Station Heat Rate	Kcal / kWhr	2434.00
3	Gross Generation	MU	2763.78
4	Specific fuel oil consumption	MI / kWh	0.61
5	Auxiliary Consumption	%	0.08
6	Average calorific value of oil	kcal / KI	9367.28
8	Average calorific value of Coal	kcal / Kg	3096.85
10	Average landed cost of coal	Rs / MT	4529.48
11	Heat contributed from Oil	Kcal / kWhr	15818.25
12	Heat contributed from Coal	Kcal / kWhr	7337771.20
13	Specific consumption of coal	Kg / kWhr	0.86
14	Rate of energy from Coal	Ps / kWhr	3.94
15	Rate of energy ex-bus	Ps / kWhr	4.24
16	Net Generation	MU	2553.86
17	Total energy cost from coal	Rs / Crores	1073.23
18	Secondary fuel cost	Rs / Crores	10.00
19	Total Variable cost	Rs / Crores	1083.22

**Computation of Generation Cost****Name of the** TANGEDCO**Name of Plant** Mettur Thermal Power Station (MTPS) Stage II

S.No	Station	FY 2021-22 (True-Up)				
		Net Gen (MU)	AFC (Rs.in Crs)	VC (Rs.in Crs)	Total (Rs.in Crs)	Cost per unit (in RS)
1	MTPS - II	2553.86	858.69	1083.22	1941.92	7.60

ANNEXURE - III

# **HYDRO POWER STATION**

**ANNEXURE I**

**ARR FORMATS**

**ERODE HYDRO ELECTRIC POWER  
STATION**



## Summary of ARR Proposal

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Erode Hydro Electric Power

Rs in Crs.

Sl. No.	Particulars	Reference to Form	Approved	True-Up
			FY 2021-22	FY 2021-22
I	Annual Fixed Charges			
1	Return on Equity	4		56.38
2	Interest on loan capital	5 C	352.27	347.78
3	Depreciation	9 B	182.79	112.26
4	Interest on Working Capital	10	18.16	19.84
5	Operation and Maintenance Expenses	12 E	90.40	148.42
6	Pension & Gratuity			
7	Head Quarter Expense			
8	Cost of Secondary fuel Oil			
9	Special allowance in lieu of Renovation and Modernisation / Separate compensatory allowance	13		
10	Other Debits	14		-
11	Prior period Credits/ charges	15		-
12	Extra Ordinary/operating expenses	12 D		3.00
13	Total Annual Fixed charges		643.62	687.67
14	Less: Other Income	16	(0.10)	3.14
15	Net Annual Fixed Charges		643.72	684.54
II	Energy Charges			
	Total Energy Charges			
III	Total Cost			684.54

## Form 4

## Computation of Return on Equity

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Erode Hydro Electric Power

(Rs. Crores)

Sl. No	Particulars	(True-Up)
		FY 2021-22
1	Equity at the beginning	400.92
	Percentage of Equity Addition	<b>30%</b>
2	Addition during the year	3.57
3	Total Equity	404.49
4	Return on Equity (in %)	14.00%
5	Return on Equity	<b>56.38</b>

## Statement showing other Interest

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Erode Hydro Electric Power

Rs Crores

S.No.	Particulars	FY 2021-22 (True-Up)		
		Outstanding at the beginning	Net additions	Interest
1	2			
1	Interest on security deposit			
2	Interest on meter caution deposit			
3	Interest on GPF / CPF			
4	Interest on deposit from employees			
5	Interest on Family Benefit Fund contribution			
6	Interest on TNEB Spl. PF cum Gratuity Scheme			
7	Cost of raising finance			
8	Bank charges			
9	Penal interest on E-Tax			
10	Guarantee Commission to Govt.			
11	Other Interest			2.26
	<b>Total</b>			<b>2.62</b>

## Estimate of Capitalization

Name of the Company

TANGEDCO

Name of the Project

Erode Hydro Electric Power

Rs Crores

Sl. No.	Name of Works	(True-Up)
		FY 2021-22
1	Plant and machinery in generating Stations including plant foundations	
	(a) Boilers/Plants	
	(b) Cooling towers and circulating water system	
2	Buildings and civil Engineering works of a permanent character, not mentioned above	
	(a) Offices and show rooms	
	(b) Containing thermo electric plants	
	(c) Temporary erections such as wooden structures	
	(d) Roads other than kacha roads	
	(e) Others	
3	Transformers, transformer (kiosk) sub station equipment and other fixed apparatus (including plant foundations)	
	(a) Transformers (including foundation) having a rating of 100 kVA and over.	
	(b) Others	
4	Switch gear, including cable connections	
5	Lightening arresters	
	(a) Station type	
	(b) Pole type	
	(c) Synchronous condensers	
6	Batteries	
7	(a) Underground cables including joint boxes and disconnected boxes	
	(b) Cable duct systems	
8	Meters	
9	Self propelled vehicles	
10	Air-conditioning plants	
	(a) Static	
	(b) Portable	
11	(a) Office furniture and fittings	
	(b) Office equipments	
	(c) Internal wirings including fittings and apparatus	
	(d) Street light fittings	
12	Motors	
13	Communication equipments	
	(a) Radio and higher frequency carrier system	
	(b) Telephone lines and telephones	
	Capitalization	
	Capitalization planned	11.89
	<b>TOTAL</b>	<b>11.89</b>

## Form 9 B

## Depreciation

Name of the Company

TANGEDCO

Name of the Power Station

Erode Hydro Power Station

(Rs. In Crore)

Particulars	(True-Up)
	FY 2021-22
Opening GFA (Rs. Crores)	3,461.96
Addition to GFA (Rs. Crores)	11.89
Closing GFA (Rs. Crores)	3,473.85
Average Rate of Depreciation (%)	3.24%
<b>Depreciation (Rs. Crores)</b>	<b>112.26</b>

Form 10

## Computation of Interest on Working Capital

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Erode Hydro Electric Power

(Rs. in Crores)

Sl. No.	Particulars	True-Up
		FY 2021-22
1	O & M expenses	12.37
2	Maintenance Spares	36.82
3	Receivables	114.09
4	Total Working Capital	<b>163.27</b>
5	Rate of Interest	12.15%
6	Interest on Working Capital	<b>19.84</b>

## Details of Revenue Expenses Capitalised

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Erode Hydro Electric Power

(Rs.in Crores)

Sl.No	Particulars	(True-Up)
		FY 2021-22
	<b>Interest Expenditure</b>	
1	Normal Interest Expenditure	
2	Interest during construction	
	<b>Other Expenditure</b>	
3	Repairs and Maintenance	-
4	Employee Cost	
5	Administrative and General Expenditure	
6	Fabrication Charges	
7	Depreciation and other related costs	
8	Other Debits	
	<b>Total</b>	-

## Form 12 A

## Operation and Maintenance expenses - Repairs and Maintenance

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Erode Hydro Electric Power

(Rs.in Crores)

S. No.	Details	(True-Up)
		FY 2021-22
1	Plant & Machinery	2.80
2	Building	-
3	Civil Works	0.64
4	Hydraulic work	
5	Lines & Cable network	0.02
6	Vehicles	0.02
7	Furniture & Fixtures	0.00
8	Office equipments	0.03
9	Allocation of Head Quarters expenses	2.29
	<b>Total Expenses</b>	<b>4.69</b>
10	Less: Capitalisation	-
	<b>Net Repair &amp; Maintenance expenses</b>	<b>4.69</b>



**Form 12 B****Operation and Maintenance expenses - Employee Cost**

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Erode Hydro Electric Power

**(Rs. In Crore)**

S.No.	Details	(True-Up)
		FY 2021-22
1	Salary	32.31
2	Overtime wages	0.34
3	Dearness Allowance	6.63
4	Other Allowances	0.62
5	Bonus & Exgratia	0.25
	<b>Total 1 - 5</b>	<b>40.15</b>
6	Medical expenses reimbursement	
7	Leave Travel concession	
8	Earned Leave encashment	0.97
9	Terminal benefits	3.27
10	Staff welfare expenses	2.26
	Other Cost	
11	Board's Contribution to CPS	-
12	Thermal/Performance/Commissioning / Golden Jubilee Incentive	
	HQ Expense	58.31
13	Pension & Gratuity	28.05
	<b>Grand Total</b>	<b>133.01</b>
	<b>Less: Capitalisation</b>	
12	Net Expenses	<b>133.01</b>

## Form 12 C

## Operation and Maintenance Expenses - Administration and General Expenses

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Erode Hydro Electric Power

(Rs.in Crores)

S.No.	Details	(True-Up)
		FY 2021-22
1	Rent, Rate & Taxes	10.72
2	Insurance	
3	Telephone / Postage / Telex	
4	Legal / Audit / Consultancy / Tech. fee / consultancy charges	
5	Other professional fees	
6	Conveyance & Travel	
7	Fees & Subscription	
8	Books & Periodicals	
9	Printing & Stationery	
10	Training Expenses	
11	Electricity Charges	
12	Water Charges	
13	Watch and Ward Expenses.	
14	Petty Office Maintenance Expenses.	
7	Miscellaneous Expenses	
8	Freight	
9	Other purchases related expenses	
10	Allocation of Head Quarters Expenses	
	<b>Total expenses</b>	<b>10.72</b>
10	<b>Less: Capitalisation</b>	
11	<b>Net Expenses</b>	<b>10.72</b>

Form 12 D

## Operation and Maintenance Expenses - Operating Expenses

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Erode Hydro Electric Power

(Rs.in Crores)

S.No.	Details	(True-Up)
		FY 2021-22
1	Water Charges	
2	Lubricants and Consumables	0.55
3	Station Auxiliaries	2.45
4	<b>Total Expenses</b>	<b>3.00</b>

Form 12 E

**Total Operation and Maintenance Expenses****NAME OF THE COMPANY**

TANGEDCO

**NAME OF THE STATION**

Erode Hydro Electric Power

**(Rs. in Crores)**

<b>S. No.</b>	<b>Details</b>	<b>(True-Up)</b>
		<b>FY 2021-22</b>
1	Net Repair & Maintenance Expenses	4.69
2	Net Employees Cost	133.01
3	Net Admn. & General Expnses	10.72
4	Operating Expenses	0.00
5	<b>Total Operation and Maintenance Expenses</b>	<b>148.42</b>

**Form 14****OTHER DEBITS**

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Erode Hydro Electric Power

Sl.No.	Details of Expenses	(True-Up)
		FY 2021-22
1	Research & Development expenses	
2	Bad & Doubtful debts written off	
3	Miscellaneous losses and written off/provided for	
4	Material cost variance	
5	Sundry expenses	
6	Extra ordinary debits	
7	Allocation of Head Quarters Expenses	
	<b>Total</b>	-
8	Less: Capitalization	-
9	<b>Net expenses</b>	

Prior period credits / Charges

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Erode Hydro Electric Power

		(Rs.in Crores)
Sl.No.	Details of Expenses	(True-Up)
		FY 2021-22
I	Income relating to previous year	
1	Interest income	
2	Excess Provisions for revenue expenses	
3	Other income	
4	Total	-
II	Expenses / Losses relating to previous period	
1	Operating expenses	
2	Employee cost and other revenue expenditures under provided	
3	Other charges	
4	Total	-
III	Net prior period credits / charges	

## Statement showing other Income

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Erode Hydro Electric Power

(Rs. in Crores)

Sl.No	Particulars	(True-Up)
		FY 2021-22
1	Interest on loan and advance to employees	
2	Interest on Investments	
3	Interest on Advance to suppliers / Contractors	
4	Interest from Banks	
5	Income from sale of tender forms, stores, scraps, etc.,	
6	Income from hiring vehicles to employees and other welfare activities	
7	Income from Trading	
8	Income from Staff Welfare	
9	Miscellaneous Receipts	3.14
10	Allocation from Head Quarters	
	<b>Total</b>	<b>3.14</b>

Estimated Generation of Power							FORM 17
NAME OF THE COMPANY		TANGEDCO					
NAME OF THE STATION		Erode Hydro Electric Power					
Rs.in Crores							
Sl.No	Generating Station	Installed Capacity (in MW)	PLF (in %)	Aux. Consu. (in %)	FY 2021-22(True-Up)		
					Gross (in MU)	Net (in MU)	
1	Erode HEP	504	25.46%	1.30%	1122.79	1115.89	



Abstract of Station wise generation cost							Form 19
NAME OF THE COMPANY			TANGEDCO				
NAME OF THE STATION			Erode Hydro Electric Power				
FY 2021-22 (True-Up)							
Sl. No	Station	Net Gen (MU)	AFC (Rs.in Crs)	EC (Rs.in Crs)	Total (Rs.in Crs)	Cost per unit (in RS)	
1	Erode	1115.89	684.54	0.00	684.54	6.13	

## **ANNEXURE I**

### **ARR FORMATS**

#### **Kadamparai Hydro Electric Power Station**

Form 1

## Summary of Tariff Proposal

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Kadamparai Hydro Electric Power Station

Rs in Crs.

Sl. No.	Particulars	Reference to Form	Approved	(True-Up)
			FY 2021-22	FY 2021-22
I	<b>Annual Fixed Charges</b>			
1	Return on Equity	4	-	12.91
2	Interest on loan capital	5 C	142.17	138.27
3	Depreciation	9 B	27.55	18.91
4	Interest on Working Capital	10	5.60	6.72
5	Operation and Maintenance Expenses	12 E	47.73	81.83
6	Pension & Gratuity			0.00
7	HeadQuarter Expenses			0.00
8	Cost of Secondary fuel Oil			
9	Special allowance in lieu of Renovation and Modernisation / Separate compensatory allowance	13		
10	Other Debits	14	-	-
11	Prior period Credits/ charges	15		-
12	Extra Ordinary Exp		-	2.62
13	<b>Total Annual Fixed charges</b>		<b>223.05</b>	<b>261.26</b>
14	Less: Other Income	16	(1.57)	(2.01)
15	<b>Net Annual Fixed Charges</b>		<b>221.48</b>	<b>259.25</b>
II				
	<b>Energy Charges</b>			
	(as per formula for Energy charge Rate)			
	$ECR = AFC \times 0.5 \times 10 / (DE \times (100 - Aux))$			
	<b>Total Energy Charges</b>			
III				
	<b>Total Cost</b>			<b>259.25</b>

## Form 4

## Computation of Return on Equity

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Kadamparai Hydro Electric Power Station

(Rs. Crores)

Sl. No	Particulars	(True-Up)
		FY 2021-22
1	Equity at the beginning	92.16
	% of equity addition	30.00%
2	Addition during the year	0.12
3	Total Equity	92.28
4	Return on Equity (in %)	14.00%
5	Return on Equity	12.91

## Form 5

Name of the Company

TANGEDCO

Name of the Station

Kadamparai Hydro Electric Power Station

Rs Crores

Sl. no.	Particulars	True up
		FY 2021-22
1	Net Interest on Existing Loan	138.03
2	Interest on Project borrowings	
3	Other Interest	0.23
4	Total Interest	138.27

## Statement showing other Interest

Form 5

Name of the Company

TANGEDCO

Name of the Station

Kadamparai Hydro Electric Power Station

Rs Crores

Sl. no.	Particulars	FY 2021-22(True up)		
		Outstanding at the	Net additions	Interest
1	Interest on security deposit			
2	Interest on meter caution deposit			
3	Interest on GPF / CPF			
4	Interest on deposit from employees			
5	Interest on Family Benefit Fund contribution			
6	Interest on TNEB Spl. PF cum Gratuity Scheme			
7	Cost of raising finance			
8	Bank charges			
9	Penal interest on E-Tax			
10	Guarantee Commission to Govt.			
11	Other Interest			0.23
	<b>Total</b>			<b>0.23</b>

## Estimate of Capitalization

Name of the Company

TANGEDCO

Name of the Project

Kadamparai Hydro Electric Power Station

(Rs.in Crores)

Sl. No.	Name of Works	True up
		FY 2021-22
1	Plant and machinery in generating Stations including plant foundations	
	(a) Boilers/Plants	
	(b) Cooling towers and circulating water system	
2	Buildings and civil Engineering works of a permanent character, not mentioned above	
	(a) Offices and show rooms	
	(b) Containing thermo electric plants	
	(c) Temporary erections such as wooden structures	
	(d) Roads other than kacha roads	
	(e) Others	
3	Transformers, transformer (kiosk) sub station equipment and other fixed apparatus (including plant foundations)	
	(a) Transformers (including foundation) having a rating of 100 kVA and over.	
	(b) Others	
4	Switch gear, including cable connections	
5	Lightening arresters	
	(a) Station type	
	(b) Pole type	
	(c) Synchronous condensers	
6	Batteries	
7	(a) Underground cables including joint boxes and disconnected boxes	
	(b) Cable duct systems	
8	Meters	
9	Self propelled vehicles	
10	Air-conditioning plants	
	(a) Static	
	(b) Portable	
11	(a) Office furniture and fittings	
	(b) Office equipments	
	(c) Internal wirings including fittings and apparatus	
	(d) Street light fittings	
12	Motors	
13	Communication equipments	
	(a) Radio and higher frequency carrier system	
	(b) Telephone lines and telephones	
	Capitalization	0.41
	Capitalization planned	
	<b>TOTAL</b>	<b>0.41</b>

## Form 9 B

## Depreciation

Name of the Company

TANGEDCO

Name of the Power Station

Kadamparai Hydro Power Station

(Rs.in Crores)

Particulars	True up
	FY 2021-22
Opening GFA (Rs. Crores)	521.82
Addition to GFA (Rs. Crores)	0.41
Closing GFA (Rs. Crores)	522.23
Average Rate of Depreciation (%)	3.62%
Depreciation (Rs. Crores)	18.91



Form 10

## Computation of Interest on Working Capital

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Kadamparai Hydro Electric Power Station

(Rs.in Crores)

S.No.	Particulars	(True-Up)
		FY 2021-22
1	O & M expenses	6.60
2	Maintenance Spares	5.54
3	Receivables	43.21
4	Total Working Capital	55.34
5	Rate of Interest	12.15%
6	Interest on Working Capital	6.72

Form 11

## Details of Revenue Expenses Capitalised

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Kadamparai Hydro Electric Power Station

(Rs.in Crores)

Sl.No	Particulars	True up
		FY 2021-22
	<b>Interest Expenditure</b>	
1	Normal Interest Expenditure	
2	Interest during construction	
	<b>Other Expenditure</b>	
1	Repairs and Maintenance	
2	Employee Cost	
3	Administrative and General Expenditure	
4	Fabrication Charges	
5	Depreciation and other related costs	
6	Other Debits	
	<b>Total</b>	-

Form 12a

## Operation and Maintenance expenses - Repairs and Maintenance

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Kadamparai Hydro Electric Power Station

(Rs.in Crores)

S. No.	Details	True up
		FY 2021-22
1	Plant & Machinery	3.70
2	Building	0.00
3	Civil Works	0.07
4	Hydraulic work	
5	Lines & Cable network	
6	Vehicles	0.05
7	Furniture & Fixtures	0.20
8	Office equipments	0.02
9	Allocation of Head Quarters expenses	0.24
	<b>Total Expenses</b>	<b>8.49</b>
10	Less: Capitalisation	-
	<b>Net Repair &amp; Maintenance expenses</b>	<b>8.49</b>

**Form 12 B****Operation and Maintenance expenses - Employee Cost**

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Kadamparai Hydro Electric Power Station

(Rs.in Crores)

Sl. No.	Details	(True-Up)
		FY 2021-22
1	Salary	22.40
2	Overtime wages	0.34
3	Dearness Allowance	4.65
4	Other Allowances	2.18
5	Bonus & Exgratia	0.20
	<b>Total 1 - 5</b>	<b>29.77</b>
6	Medical expenses reimbursement	
7	Leave Travel concession	
8	Earned Leave encashment	
9	Terminal benefits	0.70
10	Staff welfare expenses	
	Other Cost	6.09
11	Board's Contribution to CPS	
12	Thermal/Performance/Commissioning / Golden Jubilee Incentive	
13	Headquarter Expenses	12.92
	<b>Grand Total</b>	<b>71.46</b>
	<b>Less: Capitalisation</b>	
12	Net Expenses	<b>71.46</b>
13	Pension & Gratuity	<b>21.98</b>

## Form 12 C

## Operation and Maintenance Expenses - Administration and General Expenses

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Kadamparai Hydro Electric Power Station

(Rs.in Crores)

S. No.	Details	True up
		FY 2021-22
1	Rent, Rate & Taxes	1.45
2	Insurance	
3	Telephone / Postage / Telex	
4	Legal / Audit / Consultancy / Tech. fee / consultancy charges	
5	Other professional fees	
6	Conveyance & Travel	
7	Fees & Subscription	
8	Books & Periodicals	
9	Printing & Stationery	
10	Training Expenses	
11	Electricity Charges	
12	Water Charges	
13	Watch and Ward Expenses.	
14	Petty Office Maintenance Expenses.	
7	Miscellaneous Expenses	
8	Freight	
9	Other purchases related expenses	
10	Allocation of Head Quarters Expenses	0.42
	<b>Total expenses</b>	<b>1.88</b>
10	<b>Less: Capitalisation</b>	
11	<b>Net Expenses</b>	<b>1.88</b>

**Form 12 C****Operation and Maintenance Expenses - Operating Expenses****NAME OF THE COMPANY**

TANGEDCO

**NAME OF THE STATION**

Kadamparai Hydro Electric Power Station

**(Rs.in Crores)**

<b>S. No.</b>	<b>Details</b>	<b>True up</b>
		<b>FY 2021-22</b>
1	Water Charges	-
2	Lubricants and Consumables	2.61
3	Station Auxiliaries	0.01
4	<b>Total Expenses</b>	<b>2.62</b>

## Form 12 E

## Total Operation and Maintenance Expenses

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Kadamparai Hydro Electric Power Station

(Rs.in Crores)

S. No.	Details	(True up)
		FY 2021-22
1	Net Repair & Maintenance Expenses	8.49
2	Net Employees Cost	71.46
3	Net Admn. & General Expnses	1.88
4	Operating Expenses	2.62
5	<b>Total Operation and Maintenance Expenses</b>	<b>81.83</b>

Form 14

**NAME OF THE COMPANY** **Other Debit**  
 TANGEDCO  
**NAME OF THE STATION** Kadamparai Hydro Electric Power Station

(Rs.Crores)

Sl.No.	Details of Expenses	(True Up)
		FY 2021-22
1	Research & Development expenses	
2	Bad & Doubtful debts written off	
3	Miscellaneous losses and written off/provided for	
4	Material cost variance	
5	Sundry expenses	
6	Extra ordinary debits	
7	Allocation of Head Quarters Expenses	
	<b>Total</b>	
8	Less: Capitalization	
9	<b>Net expenses</b>	-



## Prior Period Expenses / Charges

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Kadamparai Hydro Electric Power Station

(Rs.in Crores)

Sl.No.	Details of Expenses	(True up)
		FY 2021-22
I	Income relating to previous year	
1	Interest income	
2	Excess Provisions for revenue expenses	
3	Other income	
4	Total	
II	Expenses / Losses relating to previous period	
1	Operating expenses	
2	Employee cost and other revenue expenditures under	
3	Other charges	
4	Total	
III	Net prior period credits / charges	

## Statement showing other Income

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Kadamparai Hydro Electric Power Station

(Rs.in Crores)

Sl.No	Particulars	(True-Up)
		FY 2021-22
1	Interest on loan and advance to employees	2.01
2	Interest on Investments	
3	Interest on Advance to suppliers / Contractors	
4	Interest from Banks	
5	Income from sale of tender forms, stores, scraps, etc.,	
6	Income from hiring vehicles to employees and other welfare activities	
7	Income from Trading	
8	Income from Staff Welfare	
9	Miscellaneous Receipts	
10	Allocation from Head Quarters	
	<b>Total</b>	<b>2.01</b>

## Estimated Generation of Power

Form 17

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Kadamparai Hydro Electric Power Station

Sl.No	Generating Station	Capacity	PLF (in %)	Aux. Consu. (in %)	FY 2021-22(True up)	
					Gross (in MU)	Net (in MU)
1	Kadambari HEP	609.45	16.46%	0.35%	878.72	858.39

Abstract of Station wise Generation Cost						
NAME OF THE COMPANY		TANGEDCO				
NAME OF THE STATION		Kadamparai Hydro Electric Power Station				
S. No	Station	FY 2021-22(True up)				
		Net Gen (MU)	AFC (Rs.in Crs)	EC (Rs.in Crs)	Total (Rs.in Crs)	Cost per unit (in RS)
1	Kadamparai	858.39	259.25	0.00	259.25	3.02

# **ANNEXURE I**

## **ARR FORMATS**

### **Kundah Hydro Electric Power Station**

Form 1

## Summary of Tariff Proposal

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Kundah Hydro Electric PowerStation

(Rs. In Crores)

Sl. No.	Particulars	Reference to Form	Approved	True-Up
			FY 2021-22	FY 2021-22
I	<b>Annual Fixed Charges</b>			
1	Return on Equity	4		39.41
2	Interest on loan capital	5 C	335.81	353.25
3	Depreciation	9 B	63.94	46.75
4	Interest on Working Capital	10	12.28	12.14
5	Operation and Maintenance Expenses	12 E	81.93	130.62
6	Pension & Gratuity			
7	Head Quarter Expense			
8	Cost of Secondary fuel			
9	Special allowance in lieu of Renovation and Modernisation / Separate compensatory allowance	13		
10	Other Debits	14	-	0.11
11	Prior period Credits/ charges	15	-	-
12	Extra Ordinary Charges		0.00	72.21
13	<b>Total Annual Fixed charges</b>		<b>493.96</b>	<b>654.48</b>
14	Less: Other Income	16	0.94	0.53
15	<b>Net Annual Fixed Charges</b>		<b>493.02</b>	<b>653.95</b>
II	<b>Energy Charges</b>			
	(as per formula for Energy charge Rate)			
	$ECR = AFC \times 0.5 \times 10 / (DE \times (100 - Aux))$			
	<b>Total Energy Charges</b>			
III	<b>Total Cost</b>		<b>493.02</b>	<b>653.95</b>

## Form 4

## Computation of Return on Equity

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Kundah Hydro Electric PowerStation

(Rs. In Crores)

Sl.No	Particulars	Approved
		FY 2021-22
1	Equity at the beginning	281.41
	%Equity Addition during year	30%
2	Addition during the year	0.12
3	Total Equity	281.54
4	Return on Equity (in %)	14.00%
5	Return on Equity	39.41

Form 5

## Statement showing other Interest

Name of the Company

TANGEDCO

Name of the Station

Kundah Hydro Electric Power Station

(Rs. Crore)

Sl. no.	Particulars	FY 2021-22 (APR)		
		Outstanding at the beginning	Net additions	Interest
1	Interest on security deposit			
2	Interest on meter caution deposit			
3	Interest on GPF / CPF			2.51
4	Interest on deposit from employees			
5	Interest on Family Benefit Fund contribution			
6	Interest on TNEB Spl. PF cum Gratuity Scheme			
7	Cost of raising finance			
8	Bank charges			
9	Penal interest on E-Tax			
10	Guarantee Commission to Govt.			
11	Other Interest			(0.36)
	<b>Total</b>			<b>1.92</b>



Name of the Company

Form 5C  
TANGEDCO

Name of the Station

Kundah Hydro Electric PowerStation

Sl. no.	Particulars	True-UP
		FY 2021-22
1	Net Interest on Existing Loan	351.33
2	Interest on Project borrowings	
3	Other Interest	1.92
4	Total Interest	353.25

## ESTIMATE OF CAPITALIZATION

Name of the Company

TANGEDCO

Name of the Project

Kundah Hydro Electric PowerStation

Sl. No.	Name of Works	(Rs. In Crores)
		(True-Up) FY 2021-22
1	Plant and machinery in generating Stations including plant foundations	
	(a) Boilers/Plants	
	(b) Cooling towers and circulating water system	
2	Buildings and civil Engineering works of a permanent character, not mentioned above	
	(a) Offices and show rooms	
	(b) Containing thermo electric plants	
	(c) Temporary erections such as wooden structures	
	(d) Roads other than kacha roads	
	(e) Others	
3	Transformers, transformer (kiosk) sub station equipment and other fixed apparatus (including plant foundations)	
	(a) Transformers (including foundation) having a rating of 100 kVA and over.	
	(b) Others	
4	Switch gear, including cable connections	
5	Lightening arresters	
	(a) Station type	
	(b) Pole type	
	(c) Synchronous condensers	
6	Batteries	
7	(a) Underground cables including joint boxes and disconnected boxes	
	(b) Cable duct systems	
8	Meters	
9	Self propelled vehicles	
10	Air-conditioning plants	
	(a) Static	
	(b) Portable	
11	(a) Office furniture and fittings	
	(b) Office equipments	
	(c) Internal wirings including fittings and apparatus	
	(d) Street light fittings	
12	Motors	
13	Communication equipments	
	(a) Radio and higher frequency carrier system	
	(b) Telephone lines and telephones	
	Capitalization	
	Capitalization planned	0.40
	<b>TOTAL</b>	<b>0.40</b>

## Form 9 B

## Depreciation

Name of the Company TANGEDCO

Name of the Power Station Kundah Hydro Power Station

Particulars	(Rs. In Crores)
	(True-Up) FY 2021-22
Opening GFA (Rs. Crores)	1,210.97
Addition to GFA (Rs. Crores)	0.40
Closing GFA (Rs. Crores)	1,211.37
Average Rate of Depreciation (%)	3.86%
Depreciation (Rs. Crores)	46.75

Form 10

## Computation of Interest on Working Capital

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Kundah Hydro Electric PowerStation

(Rs. In Crores)

Sl. No.	Particulars	(True-Up)
		FY 2021-22
1	O & M expenses	4.87
2	Maintenance Spares	12.84
3	Receivables	82.17
4	Total Working Capital	99.88
5	Rate of Interest	12.15%
6	Interest on Working Capital	12.14

## Form 11

## Details of Revenue Expenses Capitalised

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Kundah Hydro Electric PowerStation

(Rs.in Crores)		
Sl.No	Particulars	(True-Up)
		FY 2021-22
	<b>Other Expenditure</b>	
1	Repairs and Maintenance	-
2	Employee Cost	-
3	Administrative and General Expenditure	-
4	Fabrication Charges	
5	Depreciation and other related costs	-
6	Other Debits	
	<b>Total</b>	-

## Form 12 A

## Operation and Maintenance expenses - Repairs and Maintenance

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Kundah Hydro Electric PowerStation

Rs. In Crores

S.No.	Details	(True-Up)
		FY 2021-22
1	Plant & Machinery	2.63
2	Building	0.00
3	Civil Works	(1.92)
4	Hydraulic work	-
5	Lines & Cable network	0.01
6	Vehicles	0.05
7	Furniture & Fixtures	0.54
8	Office equipments	0.00
9	Allocation of Head Quarters expenses	0.64
10	Others	0.04
	<b>Total Expenses</b>	<b>1.99</b>
10	Less: Capitalisation	-
	<b>Net Repair &amp; Maintenance expenses</b>	<b>1.99</b>

## Form 12 B

## Operation and Maintenance expenses - Employee Cost

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Kundan Hydro Electric  
PowerStation

		(Rs. In Crores)
S.No.	Details	(True-Up) FY 2021-22
1	Salary	30.44
2	Overtime wages	0.00
3	Dearness Allowance	6.28
4	Other Allowances	10.34
5	Bonus & Exgratia	0.29
	<b>Total 1 - 5</b>	<b>47.35</b>
6	Medical expenses reimbursement	0.01
7	Leave Travel concession	0.00
8	Earned Leave encashment	0.00
9	Terminal benefits	1.45
10	Staff welfare expenses	0.01
	Other Cost	0.00
11	Board's Contribution to CPS	1.50
12	Thermal/Performance/Commissioning / Goldden Jubilee Incentive	
	Allocation to HQ Expense	33.77
	<b>Grand Total</b>	<b>114.25</b>
	<b>Less: Capitalisation</b>	<b>0.15</b>
12	<b>Net Expenses</b>	<b>114.10</b>

## Form 12 C

## Operation and Maintenance Expenses - Administration and General Expenses

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Kundah Hydro Electric PowerStation

(Rs. In Crores)

S.No.	Details	(True-Up)
		FY 2021-22
1	Rent, Rate & Taxes	0.22
2	Insurance	7.50
3	Telephone / Postage / Telex	0.02
4	Legal / Audit / Consultancy / Tech. fee / consultancy charges	0.02
5	Other professional fees	
6	Conveyance & Travel	1.18
7	Fees & Subscription	0.26
8	Books & Periodicals	0.00
9	Printing & Stationery	0.00
10	Training Expenses	-
11	Electricity Charges	-
12	Water Charges	-
13	Watch and Ward Expenses.	3.13
14	Petty Office Maintenance Expenses.	0.04
7	Miscellaneous Expenses	0.00
8	Freight	
9	Other purchases related expenses	1.04
10	Allocation of Head Quarters Expenses	1.107
	<b>Total expenses</b>	<b>14.52</b>
10	<b>Less: Capitalisation</b>	-
11	<b>Net Expenses</b>	<b>14.52</b>



## Form 12 D

## Operation and Maintenance Expenses - Operating Expenses

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Kundah Hydro Electric PowerStation

		Rs. Crores
S. No.	Details	(True-Up)
		FY 2021-22
1	Water Charges	0.00
2	Lubricants and Consumables	1.29
3	Station Auxiliaries	70.92
4	<b>Total Expenses</b>	<b>72.21</b>

## Form 12 E

## Total Operation and Maintenance Expenses

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Kundah Hydro Electric PowerStation

(Rs. Crores)		
Sl. No.	Details	(True-Up) FY 2021-22
1	Net Repair & Maintenance Expenses	1.99
2	Net Employees Cost	114.10
3	Net Admn. & General Expnses	14.52
4	Operating Expenses	72.21
5	<b>Total Operation and Maintenance Expenses</b>	<b>130.62</b>

Form 14

## OTHER DEBITS

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Kundah Hydro Electric PowerStation

(Rs.in Crores)		
Sl.No.	Details of Expenses	(True-Up)
		FY 2021-22
1	Research & Development	
2	Bad & Doubtful debts written off	
3	Miscellaneous losses and written off/provided for	
4	Material cost variance	0.11
5	Sundry expenses	
6	Extra ordinary debits	
7	Allocation of Head Quarters Expenses	
	<b>Total</b>	0.11
8	Less: Capitalization	-
9	<b>Net expenses</b>	0.11

Form 15

**PRIOR PERIOD CREDITS / CHARGES****NAME OF THE COMPANY**

TANGEDCO

**NAME OF THE STATION**

Kundah Hydro Electric PowerStation

		(Rs.in Crores)
Sl.No.	Details of Expenses	True-Up FY 2021-22
I	Income relating to previous year	
1	Interest income	
2	Excess Provisions for revenue expenses	
3	Other income	
4	Total	0.00
II	Expenses / Losses relating to previous period	
1	Operating expenses	
2	Employee cost and other revenue expenditures under provided	
3	Other charges	
4	Total	0.00
III	Net prior period credits / charges	0.00

Form 16

## Statement showing other Income

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Kundah Hydro Electric PowerStation

		(Rs. In Crores)
Sl.No	Particulars	(True-Up) FY 2021-22
1	Interest on loan and advance to employees	0.00
2	Interest on Investments	
3	Interest on Advance to suppliers / Contractors	
4	Interest from Banks	
5	Income from sale of tender forms, stores, scraps, etc.,	
6	Income from hiring vehicles to employees and other welfare activities	
7	Income from Trading	
8	Income from Staff Welfare	
9	Miscellaneous Receipts	0.53
10	Allocation from Head Quarters	
	Total	0.53

## Estimated Generation of Power

Form 17

NAME OF THE COMPANY

TANGEDCO

Name of the Generating station

Kundah HEP

Sl.No	Generating Station	Capaccity	PLF (in %)	Aux. Consu. (in %)	FY 2021-22(APR)	
					Gross (In MU)	Net (In MU)
1	Kundah HEP	833.65	28.11%	0.31%	2126.44	2119.77

## Abstract of Station wise generation cost

Name of the Company TANGEDCO

Name of the Generating station KUNDAH HEP

Sl. No	Station	FY 2021-22(APR)				
		Net Gen (MU)	AFC (Rs.in Crs)	EC (Rs.in Crs)	Total (Rs.in Crs)	Cost per unit (in RS)
1	Kundah HEP	2119.77	653.95	0.00	653.95	3.09

**ANNEXURE I****ARR FORMATS****Tirunelveli Hydro Electric Power Station**



## Summary of Tariff Proposal

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Tirunelveli Hydro Electric Power Station

(Rs. Crores)

Sl. No.	Particulars	Reference to Form	Approved FY 2021-22	(True-Up) FY 2021-22
I	<b>Annual Fixed Charges</b>			
1	Return on Equity	4	-	18.65
2	Interest on loan capital	5 C	214.12	209.04
3	Depreciation	9 B	45.61	42.50
4	Interest on Working Capital	10	8.72	10.67
5	Operation and Maintenance Expenses	12 E	74.18	131.30
6	Pension & Gratuity			
7	HeadQuarter Expense			
8	Cost of Secondary fuel Oil			
9	Special allowance in lieu of Renovation and Modernisation / Separate compensatory allowance	13		
10	Other Debits	14		-
11	Prior period Credits/ charges	15		-
12	Operating Expenses	12 D		2.19
13	<b>Total Annual Fixed charges</b>			<b>414.35</b>
14	Less: Other Income	16	1.03	8.01
15	<b>Net Annual Fixed Charges</b>		<b>343.66</b>	<b>406.34</b>
II	<b>Energy Charges</b> (as per formula for Energy charge Rate) $ECR = AFC \times 0.5 \times 10 / (DE \times (100 - Aux))$			
	<b>Total Energy Charges</b>			
III	<b>Total Cost</b>			<b>406.34</b>

## Computation of Return on Equity

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Tirunelveli Hydro Electric Power Station

(Rs. Crores)

Sl.No	Particulars	(True-Up)
		FY 2021-22
1	Equity at the beginning	132.76
	% Equity Addition	30%
2	Addition during the year	0.97
3	Total Equity	133.73
4	Return on Equity (in %)	14.00%
5	Return on Equity	18.65

## Statement showing other Interest

Name of the Company

TANGEDCO

Name of the Station

Tirunelveli Hydro Electric Power Station

Sl. no.	Particulars	APR		
		FY 2021-22		
		Outstanding at the beginning	Net additions	Interest
1	Interest on security deposit			
2	Interest on meter caution deposit			
3	Interest on GPF / CPF			
4	Interest on deposit from employees			
5	Interest on Family Benefit Fund contribution			
6	Interest on TNEB Spl. PF cum Gratuity Scheme			
7	Cost of raising finance			
8	Bank charges			
9	Penal interest on E-Tax			
10	Guarantee Commission to Govt.			
11	Other Interest			
	<b>Total</b>			<b>2.44</b>

## FORM-5 C

Name of the Company

TANGEDCO

Name of the Station

Tirunelveli Hydro Electric Power Station

Rs.in Crores

Sl. no.	Particulars	(True up)
		FY 2021-22
1	Net Interest on Existing Loan	206.60
2	Interest on Project borrowings	
3	Other Interest	2.44
<b>4</b>	<b>Total Interest</b>	<b>209.04</b>

## ESTIMATE OF CAPITALIZATION

Name of the Company

TANGEDCO

Name of the Project

Tirunelveli Hydro Electric Power Station

(Rs.in Crores)

Sl. No.	Name of Works	(True-Up)
		FY 2021-22
1	Plant and machinery in generating Stations including plant foundations	
	(a) Boilers/Plants	
	(b) Cooling towers and circulating water system	
2	Buildings and civil Engineering works of a permanent character, not mentioned above	
	(a) Offices and show rooms	
	(b) Containing thermo electric plants	
	(c) Temporary erections such as wooden structures	
	(d) Roads other than kacha roads	
	(e) Others	
3	Transformers, transformer (kiosk) sub station equipment and other fixed apparatus (including plant foundations)	
	(a) Transformers (including foundation) having a rating of 100 kVA and over.	
	(b) Others	
4	Switch gear, including cable connections	
5	Lightening arresters	
	(a) Station type	
	(b) Pole type	
	(c) Synchronous condensers	
6	Batteries	
7	(a) Underground cables including joint boxes and disconnected boxes	
	(b) Cable duct systems	
8	Meters	
9	Self propelled vehicles	
10	Air-conditioning plants	
	(a) Static	
	(b) Portable	
11	(a) Office furniture and fittings	
	(b) Office equipments	
	(c) Internal wirings including fittings and apparatus	
	(d) Street light fittings	
12	Motors	
13	Communication equipments	
	(a) Radio and higher frequency carrier system	
	(b) Telephone lines and telephones	
	Capitalization	
	Capitalization planned	3.24
	<b>TOTAL</b>	<b>3.24</b>

## Depreciation

Name of the Company

TANGEDCO

Name of the Power Station

Tirunelveli Hydro Power Station

(Rs. In Crores)

Particulars	(True-Up)
	FY 2021-22
Opening GFA (Rs. Crores)	863.92
Addition to GFA (Rs. Crores)	3.24
Closing GFA (Rs. Crores)	867.16
Average Rate of Depreciation (%)	4.92%
<b>Depreciation (Rs. Crores)</b>	<b>42.50</b>

### Computation of Interest on Working Capital

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Tirunelveli Hydro Electric Power Station

(Rs. In Crores)

Sl. No.	Particulars	(True-Up)
		FY 2021-22
1	O & M expenses	10.94
2	Maintenance Spares	9.19
3	Recievables	67.72
4	Total Working Capital	87.86
5	Rate of Interest	12.15%
6	<b>Interest on Working Capital</b>	10.67

## Details of Revenue Expenses Capitalised

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Tirunelveli Hydro Electric Power Station

(Rs.in Crores)

Sl.No	Particulars	(True-Up) FY 2021-22
	<b>Interest Expenditure</b>	
1	Normal Interest Expenditure	
2	Interest during construction	
	<b>Other Expenditure</b>	
3	Repairs and Maintenance	-
4	Employee Cost	-
5	Administrative and General Expenditure	-
6	Fabrication Charges	-
7	Depreciation and other related costs	-
8	Other Debits	-
	<b>Total</b>	-

## Operation and Maintenance expenses - Repairs and Maintenance

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Tirunelveli Hydro Electric Power Station

(Rs. in Crores)

S. No.	Details	(True-Up)
		FY 2021-22
1	Plant & Machinery	2.90
2	Building	0.00
3	Civil Works	0.82
4	Hydraulic work	
5	Lines & Cable network	0.08
6	Vehicles	0.07
7	Furniture & Fixtures	0.00
8	Office equipments	0.02
9	Allocation of Head Quarters expenses	0.37
	<b>Total Expenses</b>	<b>4.27</b>
10	Less: Capitalisation	-
	<b>Net Repair &amp; Maintenance expenses</b>	<b>4.27</b>



## Operation and Maintenance expenses - Employee Cost

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Tirunelveli Hydro Electric Power Station

(Rs. In Crores)

S. No.	Details	(True-Up)
		FY 2021-22
1	Salary	32.35
2	Overtime wages	0.26
3	Dearness Allowance	6.50
4	Other Allowances	2.97
5	Bonus & Exgratia	0.63
	<b>Total 1 - 5</b>	<b>42.71</b>
6	Medical expenses reimbursement	0.00
7	Leave Travel concession	
8	Earned Leave encashment	
9	Terminal benefits	2.87
10	Staff welfare expenses	
	Other Cost	6.64
11	Board's Contribution to CPS	
12	Thermal/Performance/Commissioning / Golden Jubilee Incentive	
	Allocation to HQ Expense	19.59
	<b>Grand Total</b>	<b>103.21</b>
	<b>Less: Capitalisation</b>	<b>0.00</b>
12	Net Expenses	<b>103.21</b>

## Form 12 C

## Operation and Maintenance Expenses - Administration and General Expenses

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Tirunelveli Hydro Electric Power Station

Rs. Crores

S. No.	Details	(True-Up)
		FY 2021-22
1	Rent, Rate & Taxes	23.18
2	Insurance	
3	Telephone / Postage / Telex	
4	Legal / Audit / Consultancy / Tech. fee / consultancy charges	
5	Other professional fees	
6	Conveyance & Travel	
7	Fees & Subscription	
8	Books & Periodicals	
9	Printing & Stationery	
10	Training Expenses	
11	Electricity Charges	
12	Water Charges	
13	Watch and Ward Expenses.	
14	Petty Office Maintenance Expenses.	
7	Miscellaneous Expenses	
8	Freight	
9	Other purchases related expenses	
10	Allocation of Head Quarters Expenses	0.64
	<b>Total expenses</b>	<b>23.82</b>
10	Less: Capitalisation	-
11	<b>Net Expenses</b>	<b>23.82</b>

## Form 12 D

## Operation and Maintenance Expenses - Operating Expenses

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Tirunelveli Hydro Electric Power  
Station

(Rs. In Crores)

S. No.	Details	(True-Up)
		FY 2021-22
1	Water Charges	
2	Lubricants and Consumables	0.00
3	Station Auxiliaries	2.19
4	<b>Total Expenses</b>	<b>2.19</b>

**Total Operation and Maintenance Expenses****NAME OF THE COMPANY**

TANGEDCO

**NAME OF THE STATION**

Tirunelveli Hydro Electric Power Station

**(Rs. In Crores)**

S. No.	Details	(True-Up)
		FY 2021-22
1	Net Repair & Maintenance Expenses	4.27
2	Net Employees Cost	103.21
3	Net Admn. & General Expnses	23.82
4	Operating Expenses	0.00
5	<b>Total Operation and Maintenance Expenses</b>	<b>131.30</b>

## OTHER DEBITS

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Tirunelveli Hydro Electric Power Station

(Rs.in Crores)

Sl.No.	Details of Expenses	(True-Up)
		FY 2021-22
1	Research & Development expenses	
2	Bad & Doubtful debts written off	
3	Miscellaneous losses and written off/provided for	
4	Material cost variance	
5	Sundry expenses	
6	Extra ordinary debits	
7	Allocation of Head Quarters Expenses	
	<b>Total</b>	
8	Less: Capitalization	-
9	<b>Net expenses</b>	-

## PRIOR PERIOD CREDITS / CHARGES

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Tirunelveli Hydro Electric Power Station

(Rs.in Crores)

Sl.No.	Details of Expenses	(True-Up)
		FY 2021-22
I	Income relating to previous year	
1	Interest income	
2	Excess Provisions for revenue expenses	
3	Other income	
4	Total	0.00
II	Expenses / Losses relating to previous period	
1	Operating expenses	
2	Employee cost and other revenue expenditures under provided	
3	Other charges	
4	Total	0.00
III	Net prior period credits / charges	0.00

## Statement showing other Income

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Tirunelveli Hydro Electric Power Station

(Rs. In Crores)

Sl.No	Particulars	(True-Up)
		FY 2021-22
1	Interest on loan and advance to employees	0.17
2	Interest on Investments	
3	Interest on Advance to suppliers / Contractors	
4	Interest from Banks	
5	Income from sale of tender forms, stores, scraps, etc.,	
6	Income from hiring vehicles to employees and other welfare activities	
7	Income from Trading	
8	Income from Staff Welfare	
9	Miscellaneous Receipts	7.84
10	Allocation from Head Quarters	
	<b>Total</b>	<b>8.01</b>

## Estimated Generation of Power

NAME OF THE COMPANY

TANGEDCO

NAME OF THE STATION

Tirunelveli Hydro Electric Power Station

Sl.No	Generating Station	Capacity	PLF (in %)	Aux. Consu. (in %)	FY 2021-22(True up)	
					Gross (in MU)	Net (in MU)
1	Tirunelveli HEP	375.30	30.00%	0.63%	1408.34	1399.43



## Abstract of Station wise generation cost

Form 19

Name of the Company TANGEDCO  
NAME OF THE STATION Tirunelveli Hydro Electric Power Station

Sl. No	Station	FY 2021-22 (True-Up)				
		Net Gen (MU)	AFC (Rs.in Crs)	EC (Rs.in Crs)	Total (Rs.in Crs)	Cost per unit (in RS)
1	Tirunelveli HEP	1399.43	406.34	0.00	406.34	2.90

ANNEXURE - IV.

# **GAS POWER STATION**

# **ANNEXURE I ARR FORMATS**

## **THIRUMAKOTTAI GAS TURBINE POWER STATION (TKGTPS)**

### Summary of Tariff Proposal for Gas based Thermal Station

Name of the Company

TANGEDCO

Name of the Project

Thirumakottai Gas Turbine Power Station (TKGTPS)

Rs. in crores

S. No.	Particulars	Reference to Form	Approved	(True Up)
			2021-22	FY 2021-22
I	<b>Annual Fixed Cost</b>			
1	Return on Equity	5	-	12.41
2	Interest on loan capital	6 C	161.86	158.17
3	Depreciation	10 B	29.16	20.26
4	Interest on Working Capital	11	5.85	7.56
5	Operation and Maintenance Expenses	13 E	15.27	36.62
6	Pension			-
7	Headquarter Expense			-
8	Cost of Secndary Fuel Oil			
9	Special allowance in lieu of Renovation and Modernisation / Separate compensatory allowance	14		
10	Other Debits	15		-
11	Prior period credits / charges	16		-
12	Operating Expenses	13 D		0.25
13	<b>Total Annual Fixed Cost</b>		<b>212.14</b>	<b>235.27</b>
14	Less: Other Income	17	0.15	0.06
15	<b>Net Annual Fixed Cost</b>		<b>211.99</b>	<b>235.21</b>
II				
	<b>Annual Variable Cost</b>			
	Primary Fuel Cost			
	Secondary Fuel Cost			
	<b>Total Variable Cost</b>	19 A / 19 B		<b>56.41</b>
III				
	<b>Total Cost</b>			<b>291.62</b>

Normative parameters considered for tariff computations

Name of the Company

TANGEDCO

Name of the Power Station

Thirumakottai Gas Turbine Power Station (TKGTPS)

Particulars	Unit	(True Up)
		FY 2021-22
Rate of Return on Equity	%	14.00%
Target Availability	%	89.28%
Target PLF	%	16.45%
Auxiliary Energy Consumption	%	24.54%
Gross Station Heat Rate	kCal/kWh	4348
Specific Fuel Oil Consumption	ml/kWh	0.41
O&M Cost		
Cost of Fuel for WC	in Months	1.00
O & M Expenses for WC	in Months	1.00
Primary Fuel Stock for WC	in Months	1.00
Secondary Fuel Oil or Secondary/Alternate liquid fuel stock for WC	in Months	NA
Spares stock as % of Plant & Equipment Cost on 1.4.2004 for WC	%	1.00%
Receivables for WC	in Months	2.00
Prime lending Rate of SBI	%	12.15%
Incentive Rate	Paise.kWh	25

## Statement showing the performance of Stations

Name of the Company

TANGEDCO

Name of the Station

Thirumakottai Gas Turbine Power Station (TKGTPS)

Sl.No	Norms of Operation	(True Up)
		FY 2021-22
1	PLF / PAF (in %)	16.45%
2	Auxiliary consumption (in %)	24.54%
3	Average Gross Station Heat Rate (Kcal / kWhr)	4,348
4	Average Gross Calorific value of Gas / Naphtha (Kcal / Scm / Kg)	10568.00
5	Specific consumption of Gas / Naphtha (Scm / Kg / kWhr)	0.41
6	Operating Expenses (Rs in Lakhs)	
7	Operation and Maintenance expenses (Rs in Crs. / MW)	33.91
8	Average cost of Gas / Naphtah (Rs // Scm / MT)	8.82

## Computation Return on Equity

Name of the Company

TANGEDCO

Name of the Project

Thirumakottai Gas Turbine Power Station (TKGTPS)

(Rs.in Crores)

S.No	Particulars	(True Up)
		FY 2021-22
1	Equity at the beginning	88.67
2		30%
3	Addition during the year	-
4	Total Equity	88.67
5	Return on Equity (in %)	14.00%
6	Return on Equity	12.41

## Statement showing other Interest

Name of the Company

TANGEDCO

Name of the Station

Thirumakottal Gas Turbine Power Station (TKGTPS)

Rs. In Crores

S.No.	Particulars	FY 2021-22 (True Up)		
		Outstanding at the beginning	Net additions	Interest
1	Interest on security deposit			
2	Interest on meter caution deposit			
3	Interest on GPF / CPF			
4	Interest on deposit from employees			
5	Interest on Family Benefit Fund contribution			
6	Interest on TNEB Spl. PF cum Gratuity Scheme			
7	Cost of raising finance			
8	Bank charges			0.01
9	Penal interest on E-Tax			
10	Guarantee Commission to Govt.			
11	Other Interest			
	Total			0.01

Form 6C

Name of the Company

TANGEDCO

Name of the Station

Thirumakottal Gas Turbine Power Station (TKGTPS)

S. No.	Particulars	(True Up)
		FY 2021-22
1	Net Interest on Existing Loan	158.16
2	Interest on Project borrowings	
3	Other Interest	0.01
4	Total Interest	158.17



## Form 7

## ESTIMATE OF CAPITAL EXPENDITURE

Name of the Company

TANGEDCO

Name of the Project

Thirumakottai Gas Turbine Power Station (TKGTPS)

(Rs. Crores)

Sl. No.	Name of Works	(True Up)
		FY 2021-22
1.00	Plant and machinery in generating Stations including plant foundations	
	(a) Boilers/Plants	
	(b) Cooling towers and circulating water system	
2.00	Buildings and civil Engineering works of a permanent character, not mentioned above	
	(a) Offices and show rooms	
	(b) Containing thermo electric plants	
	(c) Temporary erections such as wooden structures	
	(d) Roads other than kacha roads	
	(e) Others	
3.00	Transformers, transformer (kiosk) sub station equipment and other fixed apparatus (including plant foundations)	
	(a) Transformers (including foundation) having a rating of 100 kVA and over.	
	(b) Others	
4.00	Switch gear, including cable connections	
5.00	Lightening arresters	
	(a) Station type	
	(b) Pole type	
	(c) Synchronous condensers	
6.00	Batteries	
7.00	(a) Underground cables including joint boxes and disconnected boxes	
	(b) Cable duct systems	
8.00	Meters	
9.00	Self propelled vehicles	
10.00	Air-conditioning plants	
	(a) Static	
	(b) Portable	
11.00	(a) Office furniture and fittings	
	(b) Office equipments	
	(c) Internal wirings including fittings and apparatus	
	(d) Street light fittings	
12.00	Motors	
13.00	Communication equipments	
	(a) Radio and higher frequency carrier system	
	(b) Telephone lines and telephones	
	Capitalization	
	Capitalization planned	
	<b>TOTAL</b>	-

## Depreciation

TANGEDCO

Name of the Company

Thirumakottai Gas Power Station (TKGTPS)

Name of the Power Station

(Rs. Crores)

Particulars	(True Up)
	FY 2021-22
Opening GFA (Rs. Crores)	552.29
Addition to GFA (Rs. Crores)	-
Closing GFA (Rs. Crores)	552.29
Average Rate of Depreciation (%)	3.67%
<b>Depreciation (Rs. Crores)</b>	<b>20.26</b>

## Form 11

## Computation of Interest on Working Capital

Name of the Company TANGEDCO

Name of the Project Thirumakottai Gas Turbine Power Station (TKGTPS)

(Rs.in Crores)

S.No.	Particulars	(True Up)
		FY 2021-22
1	Fuel Cost	4.70
2	Fuel Stock	
3	O & M expenses	3.05
4	Maintenance Spares	5.85
5	Recievables	48.60
6	Total Working Capital	<b>62.21</b>
7	Rate of Interest	12.15%
8	<b>Interest on Working Capital</b>	7.56

**Details of Revenue Expenses Capitalised****Name of the Company**

TANGEDCO

**Name of the Project**

Thirumakottai Gas Turbine Power Station (TKGTPS)

**(Rs.in Crores)**

S.No	Particulars	(True Up)
		FY 2021-22
	<b>Other Expenditure</b>	
1	Repairs and Maintenance	0.00
2	Employee Cost	0.00
3	Administrative and General Expenditure	0.00
4	Fabrication Charges	0.00
5	Depreciation and other related costs	0.00
6	Other Debits	0.00
	<b>Total</b>	-

## Operation and Maintenance expenses - Repairs and Maintenance

Name of the Company

TANGEDCO

Name of the Project

Thirumakottai Gas Turbine Power Station (TKGTPS)

Rs. In Crores

S.No.	Details	(True Up)
		FY 2021-22
1	Plant & Machinery	2.06
2	Building	
3	Civil Works	0.00
4	Hydraulic work	
5	Lines & Cable network	0.02
6	Vehicles	
7	Furniture & Fixtures	0.01
8	Office equipments	0.05
9	Allocation of Head Quarters Expenses	0.29
10	Other	6.30
	<b>Total Expenses</b>	<b>8.75</b>
11	Less: Capitalisation	-
12	<b>Net Repair &amp; Maintenance expenses</b>	<b>8.75</b>

## Operation and Maintenance expenses - Employee Cost

Name of the Company TANGEDCO

Name of the Project Thirumakottai Gas Turbine Power Station (TKGTPS)

Rs. In Crores

S. No.	Details	(True Up) FY 2021-22
1	Salary	4.87
2	Overtime wages	
3	Dearness Allowance	1.02
4	Other Allowances	0.26
5	Bonus & Exgratia	0.02
	<b>Total 1 - 5</b>	<b>6.16</b>
6	Medical expenses reimbursement	
7	Leave Travel concession	
8	Earned Leave encashment	0.11
9	Terminal benefits	
10	Staff welfare expenses	0.00
12	Board's Contribution to CPS	
13	Other Cost	0.39
14	Allocation of Head Quarters Expenses	15.53
15	Pension & gratuity	4.00
	<b>Grand Total</b>	<b>26.19</b>
	<b>Less: Capitalisation</b>	<b>-</b>
	<b>Net Expenses</b>	<b>26.19</b>

## Operation and Maintenance Expenses - Administration and General Expenses

Name of the Company

TANGEDCO

Name of the Project

Thirumakottai Gas Turbine Power Station (TKGTPS)

Rs. In Crores

S. No.	Details	(True Up)
		FY 2021-22
1	Rent, Rate & Taxes	0.02
2	Insurance	0.18
3	Telephone / Postage / Telex	0.25
4	Legal / Audit / Consultancy / Tech. fee / consultancy charges	
5	Conveyance & Travel	0.01
6	Fees & Subscription	0.04
7	Books & Periodicals	0.00
8	Printing & Stationery	0.00
9	Watch and Ward Expenses.	0.52
10	Petty Office Maintenance Expenses.	0.01
11	Miscellaneous Expenses	0.03
12	Freight	0.51
13	Other Purchase related Expenses.	0.12
	<b>Total A&amp;G Expenses</b>	<b>1.68</b>
10	<b>Less: Capitalisation</b>	<b>0.00</b>
11	<b>Net Expenses</b>	<b>1.68</b>

**Operation and Maintenance Expenses - Operating Expenses****Name of the Company**

TANGEDCO

**Name of the Project**

Thirumakottai Gas Turbine Power Station (TKGTPS)

**Rs. In Crores**

S. No.	Details	(True Up)
		FY 2021-22
1	Water Charges	
2	Lubricants and Consumables	0.22
3	Station Auxiliaries	0.03
4	<b>Total expenses</b>	<b>0.25</b>



**Total Operation and Maintenance Expenses****Name of the Company**

TANGEDCO

**Name of the Project**

Thirumakottai Gas Turbine Power Station (TKGTPS)

**Rs. in Crores**

S.No.	Details	(True Up)
		FY 2021-22
1	Net Repair & Maintenance Expenses	8.75
2	Net Employees Cost	26.19
3	Net Admn. & General Expnses	1.68
4	Operating Expenses	-
5	<b>Total Operation and Maintenance expenses</b>	<b>36.62</b>

## OTHER DEBITS

Name of the Company

TANGEDCO

Name of the Project

Thirumakottai Gas Turbine Power Station (TKGTPS)

(Rs.in Crores)

S.No.	Details of Expenses	(True Up)
		FY 2021-22
1	Research & Development expenses	
2	Bad & Doubtful debts written off	
3	Miscellaneous losses and written off/provided for	
4	Material cost variance	
5	Sundry expenses	
6	Extra ordinary debits	
7	Allocation of Head Quarters Expenses	
	<b>Total</b>	-
8	Less: Capitalization	0
9	<b>Net expenses</b>	-

## PRIOR PERIOD CREDITS / CHARGES

Name of the Company

TANGEDCO

Name of the Project

Thirumakottai Gas Turbine Power Station (TKGTPS)

(Rs.Crores)

Sl.No.	Details of Expenses	True-Up
		<b>FY 2021-22</b>
I	<b>Income relating to previous year</b>	
1	Fuel related gains	
2	Interest income	
3	Excess Provisions for revenue expenses	
4	Other income	
5	Total	
II	<b>Expenses / Losses relating to previous period</b>	
1	Fuel related losses and expenses	
2	Operating expenses	
3	Employee cost and other revenue expenditures under provided	
4	Other charges	
5	Total	
III	<b>Net prior period credits / charges</b>	-

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Form 17

## Statement showing other Income

Name of the Company

TANGEDCO

Name of the Project

Thirumakottai Gas Turbine Power Station (TKGTPS)

Rs. in Crores

Sl.No	Particulars	(True Up)
		FY 2021-22
1	Interest on loan and advance to employees	0.00
2	Interest on Investments	0.01
3	Interest on Advance to suppliers /	
4	Interest from Banks	
5	Income from sale of tender forms, stores, scraps, etc.,	
6	Income from Trading	
7	Miscellaneous Receipts	0.05
8	Allocation from Head Quarters	
	<b>Total</b>	<b>0.06</b>

## Estimated Generation of Power

Name of the Company

TANGEDCO

Name of the Project

Thirumakottai Gas Turbine Power Station (TKGTPS)

S.No	Generating Station	Capacity	PLF (in %)	Aux. Consu. (in %)	FY 2021-22(True Up)	
					Gross (in MU)	Net (in MU)
1	TKGTPS	107.88	16.45%	24.54%	155.46	117.31

## Computation Energy (Variable) Charges - Gas Based

Name of the Company

TANGEDCO

Name of the Power Station

Thirumakottai Gas Turbine Power Station (TKGTPS)

Rs. in Crores

S. No	Description	Unit	(True Up)
			FY 2021-22
1	Capacity	MW	108
2	Gross Station Heat Rate	Kcal / kWhr	4,348
	Gross Generation		155
3	Auxiliary Consumption	%	24.54%
4	Sp gas consumption		0.41
5	Average calorific value of Gas	kcal/scm	10,568
6	Average cost of Gas	Rs / Scm	8.82
7	<b>Rate of energy from Gas</b>	<b>Ps / kWhr</b>	<b>4.81</b>
8	Net Generation	MU	117.31
9	Total energy cost	Rs / Crores	56.41
10	Fixed Annual Gas Transmission Charges	Rs / Crores	
11	<b>Total Variable Cost</b>	<b>Rs / Crores</b>	<b>56.41</b>
12	<b>Net Energy charges per unit</b>	<b>Ps / kWhr</b>	<b>4.81</b>

## Abstract of Station wise cost of generation

Form 20

Name of the Company

TANGEDCO

Name of the Power Station

Thirumakottai Gas Turbine Power Station (TKGTPS)

Sl. No	Station	FY 2021-22(True Up)				
		Net Gen (MU)	AFC (Rs.in Crs)	VC (Rs.in Crs)	Total (Rs.in Crs)	Cost per unit (in RS)
1	TKGTPS	117.31	235.27	56.41	291.68	2.49

**ANNEXURE I****ARR FORMATS****Kuttalam Gas Turbine Power Station  
(KGTPS)**



				Form 1
Summary of Tariff Proposal for Gas based Thermal Station				
Name of the Company		TANGEDCO		
Name of the Project		Kuttalam Gas Power Station (KGTPS)		
S. No.	Particulars	Reference to Form	Approved	(Rs. In Crores)
			FY 2021-22	(True-Up) FY 2021-22
I	Annual Fixed Cost			
1	Return on Equity	5	-	12.80
2	Interest on loan capital	6 C	140.65	137.92
3	Depreciation	10 B	34.57	26.87
4	Interest on Working Capital	11	11.10	8.20
5	Operation and Maintenance Expenses	13 E	25.07	27.45
6	Pension & gratuity			-
7	Head Quarter Expense			-
8	Cost of Secondary fuel Oil			
9	Special allowance in lieu of Renovation and Modernisation / Separate compensatory allowance	14		
10	Other Debits	15		-
11	Prior period credits / charges	16		-
12	Operating Expense	13 D		-
13	Total Annual Fixed Cost		211.39	213.24
14	Less: Other Income	17	0.15	0.00
15	Net Annual Fixed Cost		211.24	213.24
II	Annual Variable Cost			
	Primary Fuel Cost			
	Secondary Fuel Cost			
	Total Variable Cost	19 A / 19 B		90.27
III	Total Cost		211.24	303.50

		Form 3
Normative parameters considered for tariff computations		
Name of the Company		TANGEDCO
Name of the Power Station		Kuttalam Gas Power Station (KGTPS)
		(True-Up)
Particulars	Unit	FY 2021-22
Rate of Return on Equity	%	14%
Target Availability	%	
Target PLF	%	40.90%
Auxiliary Energy Consumption	%	9.76%
Gross Station Heat Rate	kCal/kWh	2745
Specific Fuel Oil Consumption	ml/kWh	0.26
O&M Cost		
Cost of Fuel for WC	in Months	1.00
O & M Expenses for WC	in Months	1.00
Primary Fuel Stock for WC	in Months	1.00
Secondary Fuel Oil or Secondary/Alternate liquid fuel stock for WC	in Months	
Spares stock as % of Plant & Equipment Cost on 1.4.2004 for WC	%	1.00%
Receivables for WC	in Months	2.00
Prime lending Rate of SBI	%	12.15%
Incentive Rate	Paise/kWh	25

## Statement showing the performance of Stations

Name of the Company

TANGEDCO

Name of the Station

Kuttalam Gas Power Station (KGTPS)

S.No	Norms of Operation	(True-Up)
		FY 2021-22
1	PLF / PAF (in %)	40.90%
2	Auxiliary consumption (in %)	9.76%
3	Average Gross Station Heat Rate (Kcal / kWhr)	2745
4	Average Gross Calorific value of Gas / Naphtha (Kcal / Scm / Kg)	10422
5	Specific consumption of Gas / Naphtha (Scm / Kg / kWhr)	0.26
6	Operating Expenses (Rs in Lakhs)	
7	Operation and Maintenance expenses (Rs in Crs. / MW)	27.18
8	Average cost of Gas / Naphtah (Rs // Scm / MT)	9.47

## Computation Return on Equity

Name of the Company TANGEDCO

Name of the Project Kuttalam Gas Turbine Power Station (KGTPS)

(Rs. In Crores)

S. No	Particulars	(True-Up)
		FY 2021-22
1	Equity at the beginning	89.13
2	% Equity Addition	30%
3	Addition during the year	4.61
4	Total Equity	93.74
5	Return on Equity (in %)	14.00%
6	Return on Equity	12.80

## Form 6

## Statement showing other Interest

Name of the Company

TANGEDCO

Name of the Project

Kuttalam Gas Turbine Power Station (KGTPS)

Rs in Crs.

S. no.	Particulars	FY 2021-22 (Actuals)		
		Outstanding at the beginning	Net additions	Interest
1	Interest on security deposit			
2	Interest on meter caution deposit			
3	Interest on GPF / CPF			
4	Interest on deposit from employees			
5	contribution			
6	Interest on TNEB Spl. PF cum Gratuity Scheme			
7	Cost of raising finance			
8	Bank charges			
9	Penal Interest on E-Tax			
10	Guarantee Commission to Govt.			
11	Other Interest			
	<b>Total</b>			-

FORM-6 C

Name of the Company

TANGEDCO

Name of the Station

Kuttalam Gas Turbine Power Station (KGTPS)

Rs in Crs.

S. no.	Particulars	(True-Up)
		FY 2021-22
1	Net Interest on Existing Loan	137.92
2	Interest on Project borrowings	
3	Other Interest	0.00
4	<b>Total Interest</b>	<b>137.92</b>

## ESTIMATE OF CAPITAL EXPENDITURE

Name of the Company

TANGEDCO

Name of the Project

Kuttalam Gas Power Station (KGTPS)

(Rs.Crores)

S.No.	Name of Works	(True-Up)
		FY 2021-22
1.00	Plant and machinery in generating Stations including plant	
	(a) Boilers/Plants	
	(b) Cooling towers and circulating water system	
2.00	Buildings and civil Engineering works of a permanent character, not mentioned above	
	(a) Offices and show rooms	
	(b) Containing thermo electric plants	
	(c) Temporary erections such as wooden structures	
	(d) Roads other than kacha roads	
	(e) Others	
3.00	Transformers, transformer (kiosk) sub station equipment and other fixed apparatus (including plant foundations)	
	(a) Transformers (including foundation) having a rating of 100 kVA and over.	
	(b) Others	
4.00	Switch gear, including cable connections	
5.00	Lightening arresters	
	(a) Station type	
	(b) Pole type	
	(c) Synchronous condensers	
6.00	Batteries	
7.00	(a) Underground cables including joint boxes and disconnected boxes	
	(b) Cable duct systems	
8.00	Meters	
9.00	Self propelled vehicles	
10.00	Air-conditioning plants	
	(a) Static	
	(b) Portable	
11.00	(a) Office furniture and fittings	
	(b) Office equipments	
	(c) Internal wirings including fittings and apparatus	
	(d) Street light fittings	
12.00	Motors	
13.00	Communication equipments	
	(a) Radio and higher frequency carrier system	
	(b) Telephone lines and telephones	
	Capitalization	
	Capitalization planned	15.38
	<b>TOTAL</b>	<b>15.38</b>

## Form 10 B

## Depreciation

Name of the Company

TANGEDCO

Name of the Power Station

Kuttalam Gas Power Station (KGTPS)  
(Rs. Crores)

Particulars	(True-Up)
	FY 2021-22
Opening GFA (Rs. Crores)	654.79
Addition to GFA (Rs. Crores)	15.38
Closing GFA (Rs. Crores)	670.17
Average Rate of Depreciation (%)	4.10%
Depreciation (Rs. Crores)	26.87

Form 11

## Computation of Interest on Working Capital

Name of the Company

TANGEDCO

Name of the Project

Kuttalam Gas Power Station (KGTPS)

(Rs. in Crores)

Sl. No.	Particulars	(True-Up)
		FY 2021-22
1	Fuel Cost	7.52
2	Fuel Stock	
3	O & M expenses	2.29
4	Maintenance Spares	7.09
5	Receivables	50.58
6	Total Working Capital	<b>67.49</b>
7	Rate of Interest	12.15%
8	Interest on Working Capital	<b>8.20</b>



## Details of Revenue Expenses Capitalised

Name of the Company

TANGEDCO

Name of the Project

Kuttalam Gas Turbine Power Station (KGTPS)

(Rs. Crores)

S.No	Particulars	(True-Up)
		FY 2021-22
	<b>Other Expenditure</b>	
1	Repairs and Maintenance	
2	Employee Cost	
3	Administrative and General Expenditure	
4	Fabrication Charges	
5	Depreciation and other related costs	
6	Other Debits	
7	HQ Expense Capitalize	0.00
	<b>Total</b>	<b>0.00</b>

Form 13 A

## Operation and Maintenance expenses - Repairs and Maintenance

Name of the Company

TANGEDCO

Name of the Project

Kuttalam Gas Power Station (KGTPS)

Rs. Crores

S. No.	Details	(True-Up)
		FY 2021-22
1	Plant & Machinery	0.08
2	Building	-
3	Civil Works	-
4	Hydraulic work	
5	Lines & Cable network	
6	Vehicles	
7	Furniture & Fixtures	
8	Office equipments	-
9	Allocation of Head Quarters Expenses	0.29
	<b>Total Expenses</b>	<b>0.37</b>
10	Less: Capitalisation	-
11	<b>Net Repair &amp; Maintenance expenses</b>	<b>0.37</b>

## Operation and Maintenance expenses - Employee Cost

Name of the Company

TANGEDCO

Name of the Project

Kuttalam Gas Turbine Power Station (KGTPS)

Rs. In Crores

S. No.	Details	(True-Up)
		FY 2021-22
1	Salary	5.69
2	Overtime wages	0.00
3	Dearness Allowance	1.17
4	Other Allowances	0.29
5	Bonus & Exgratia	
	<b>Total 1 - 5</b>	<b>7.15</b>
6	Medical expenses reimbursement	
7	Leave Travel concession	
8	Earned Leave encashment	
10	Staff welfare expenses	
11	Terminal Benefits	0.00
12	Other Cost	0.22
13	Thermal/Performance/Commissioning / Golden Jubilee Incentive	
14	Allocation of Head Quarters Expenses	15.28
15	Pension & Gratuity	4.43
	<b>Grand Total</b>	<b>27.08</b>
	<b>Less: Capitalisation</b>	
	<b>Net Expenses</b>	<b>27.08</b>

## Operation and Maintenance Expenses - Administration and General Expenses

Name of the Company

TANGEDCO

Name of the Project

Kuttalam Gas Turbine Power Station (KGTPS)

Rs. Crores

S. No.	Details	(True-Up)
		FY 2021-22
1	Rent, Rate & Taxes	
2	Insurance	
3	Telephone / Postage / Telex	
4	Legal / Audit / Consultancy / Tech. fee / consultancy charges	
5	Conveyance & Travel	
6	Fees & Subscription	
7	Books & Periodicals	
8	Printing & Stationery	
9	Watch and Ward Expenses.	
10	Petty Office Maintenance Expenses.	
11	Miscellaneous Expenses	
12	Freight	
13	Other HQ related Expenses.	0.00
14	<b>Total A&amp;G Expenses</b>	<b>0.00</b>
15	Less: Capitalisation	-
16	<b>Net Expenses</b>	<b>0.00</b>

Form 13 D

## Operation and Maintenance Expenses - Operating Expenses

Name of the Company

TANGEDCO

Name of the Project

Kuttalam Gas Turbine Power Station (KGTPS)

Rs. In Crores

S.No.	Details	(True-Up)
		FY 2021-22
1	Water Charges	-
2	Lubricants and Consumables	-
3	Station Auxiliaries	-
4	Total expenses	-

Form 13 E

## Total Operation and Maintenance Expenses

Name of the Company

TANGEDCO

Name of the Project

Kuttalam Gas Turbine Power Station (KGTPS)

Rs. in Crores

S.No.	Details	(True-Up)
		FY 2021-22
1	Net Repair & Maintenance Expenses	0.37
2	Net Employees Cost	27.08
3	Net Admn. & General Expenses	0.00
4	Operating Expenses	-
5	Total Operation and Maintenance expenses	27.45

Form 15

## OTHER DEBITS

Name of the Company

TANGEDCO

Name of the Project

Kuttalam Gas Turbine Power Station (KGTPS)

(Rs.Crores)

S.No.	Details of Expenses	(True-Up)
		FY 2021-22
1	Research & Development expenses	
2	Bad & Doubtful debts written off	
3	Miscellaneous losses and written off/provided for	
4	Material cost variance	
5	Sundry expenses	
6	Extra ordinary debits	
7	Allocation of Head Quarters Expenses	
	<b>Total</b>	
8	Less: Capitalization	
9	<b>Net expenses</b>	-

## PRIOR PERIOD CREDITS / CHARGES

Name of the Company

TANGEDCO

Name of the Project

Kuttalam Gas Turbine Power Station (KGTPS)

(Rs. In Crores)

Sl.No.	Details of Expenses	(True-Up)
		FY 2021-22
I	Income relating to previous year	
1	Fuel related gains	
2	Interest income	
3	Excess Provisions for revenue expenses	
4	Other income	
5	Total	-
II	Expenses / Losses relating to previous period	
1	Fuel related losses and expenses	
2	Operating expenses	
3	Employee cost and other revenue expenditures under provided	
4	Other charges	
5	Total	-
III	Net prior period credits / charges	-



## Statement showing other Income

Name of the Company

TANGEDCO

Name of the Project

Kuttalam Gas Turbine Power Station (KGTPS)

Rs. Crores

S.No	Particulars	(True-Up)
		FY 2021-22
1	Interest on loan and advance to employees	
2	Interest on Investments	
3	Interest on Advance to suppliers / Contractors	
4	Interest from Banks	
5	Income from sale of tender forms, stores, scraps, etc.,	
6	Income from Trading	
7	Miscellaneous Receipts	0.00
8	Allocation from Head Quarters	
	<b>Total</b>	<b>0.00</b>

## Estimated Generation of Power

Name of the Company

TANGEDCO

Name of the Project

Kuttalam Gas Turbine Power Station (KGTPS)

Sl.No	Generating Station	Installed Capacity (in MW)	PAF (in %)	Aux. Consu. (in %)	FY 2021-22 (True-Up)	
					Gross (in MU)	Net (in MU)
1	KGTPS	101	40.90%	9.76%	361.90	326.57

## Computation Energy (Variable) Charges - Gas Based

Name of the Company

TANGEDCO

Name of the Power Station

Kuttalam Gas Turbine Power Station (KGTPS)

S. No	Description	Unit	(True-Up)
			FY 2021-22
1	Capaci	MW	101
2	Gross Station Heat Rate	Kcal / kWhr	2,745
3	Gross Generation		361.8980
4	Auxiliary Consumption	%	9.76%
5	Average calorific value of Gas	Scm	10422.00
6	Average cost of Gas	Rs / Scm	9.47
7	Sp consumption		0.26
8	<b>Rate of energy from Gas</b>	<b>Ps / kWhr</b>	<b>2.76</b>
9	Net Generation	MU	326.57
10	Total energy cost	Rs / Crores	90.27
11	Fixed Annual Gas Transmission Charges	Rs / Crores	
12	<b>Total Variable Cost</b>	<b>Rs / Crores</b>	<b>90.27</b>
13	<b>Net Energy charges per unit</b>	<b>Ps / kWhr</b>	<b>2.76</b>

## Abstract of Station wise cost of generation

Name of the Company TANGEDCO

Name of the Power Station Kuttalam Gas Turbine Power Station (KGTPS)

S. No	Station	FY 2021-22 (True-Up)				
		Net Gen (MU)	AFC (Rs.in Crs)	VC (Rs.in Crs)	Total (Rs.in Crs)	Cost per unit (in RS)
	KGTPS	326.57	213.24	90.27	303.50	9.29

## **ANNEXURE I ARR FORMATS**

### **Basin Bridge Gas Turbine Power Station (BBGTPS)**

## Summary of Tariff Proposal for Gas based Thermal Station

Name of the Company

TANGEDCO

Name of the Project

Basin Bridge Gas Turbine Power Station (BBGTPS)

(Rs.in Crores)

Sl. No.	Particulars	Reference to Form	Approved	(True Up)
			FY 2021-22	FY 2021-22
I	<b>Annual Fixed Cost</b>			
1	Return on Equity	5	-	40.75
2	Interest on loan capital	6 C	304.44	302.59
3	Depreciation	10 B	34.46	11.66
4	Interest on Working Capital	11	9.87	8.84
5	Operation and Maintenance Expenses	13 E	12.66	66.91
6	Pension & Gratuity			-
7	HeadQuarter Expense			-
8	Cost of Secondary fuel oil			-
9	Special allowance in lieu of Renovation and Modernisation / Separate compensatory allowance	14		
10	Other Debits	15		-
11	Prior period credits / charges	16		0.00
12	Operating Expense	13 D		0.24
13	<b>Total Annual Fixed Cost</b>		<b>361.43</b>	<b>430.99</b>
14	Less: Other Income	17	0.03	0.03
15	<b>Net Annual Fixed Cost</b>		<b>361.40</b>	<b>430.96</b>
II	<b>Annual Variable Cost</b>			
	<b>Primary Fuel cost</b>	22		
	<b>Secondary fuel cost</b>	14		
	<b>Total Variable Cost</b>	19 A / 19 B		0.14
III	<b>Total Cost</b>		<b>361.40</b>	<b>431.10</b>

## Form 3

## Normative parameters considered for tariff computations

Name of the Company TANGEDCO

Name of the Power Station Basin Bridge Gas Turbine Power Station (BBGTPS)

Particulars	Unit	(True Up)
		FY 2021-22
(1)		
Rate of Return on Equity	%	14%
Target Availability	%	
Target PLF	%	0.60%
Auxiliary Energy Consumption	%	0.99%
Gross Station Heat Rate	kCal/kWh	4399
Specific Fuel Oil Consumption	ml/kWh	
O&M Cost		66.91
Cost of Fuel for WC	in Months	1.00
O & M Expenses for WC	in Months	1.00
Primary Fuel Stock for WC	in Months	1.00
Secondary Fuel Oil or Secondary/Alternate liquid fuel stock for WC	in Months	NA
Spares stock as % of Plant & Equipment Cost on 1.4.2004 for WC	%	1.00%
Receivables for WC	in Months	2.00
Prime lending Rate of SBI	%	12.15%
Incentive Rate	Paise./kWh	25

## Statement showing the performance of Stations during the previous five years

Name of the Company

TANGEDCO

Name of the Station

Basin Bridge Gas Turbine Power Station (BBGTPS)

S.No	Norms of Operation	(True Up)
		FY 2021-22
1	PLF / PAF (in %)	0.60%
2	Auxiliary consumption (in %)	0.99%
3	Average Gross Station Heat Rate (Kcal / kWhr)	4,399
4	Average Gross Calorific value of Gas / Naphtha (Kcal / Scm / Kg)	10572.00
5	Specific consumption of Gas / Naphtha (Scm / Kg / kWhr)	0.42
6	Operating Expenses (Rs in Lakhs)	
7	Operation and Maintenance expenses (Rs in Crs. / MW)	55.76
8	Wt. Average cost of Gas + Naphtah Rs./KL	35,462.22



## Computation Return on Equity

Name of the Company

TANGEDCO

Name of the Project

Basin Bridge Gas Turbine Power Station (BBGTPS)

(Rs in Crores)

S.No	Particulars	(True Up)
		FY 2021-22
1	Equity at the beginning	291.05
2	% of equity addition	30%
3	Addition during the year	-
4	Total Equity	291.05
5	Return on Equity (in %)	14.00%
6	Return on Equity	40.75

## Statement showing other Interest

Name of the Company

TANGEDCO

Name of the Project

Basin Bridge Gas Turbine Power Station (BBGTPS)

Rs in Crs.

Sl. no.	Particulars	FY 2021-22 (True Up)		
		Outstanding at the beginning	Net additions	Interest
1	Interest on security deposit			
2	Interest on meter caution deposit			
3	Interest on GPF / CPF			
4	Interest on deposit from employees			
5	Interest on Family Benefit Fund contribution			
6	Interest on TNEB Spl. PF cum Gratuity Scheme			
7	Cost of raising finance			
8	Bank charges			
9	Penal interest on E-Tax			
10	Guarantee Commission to Govt.			0.28
11	Other Interest			0.28
	<b>Total</b>			<b>0.28</b>

## FORM-6 C

## Abstract of Interest

Name of the Company

TANGEDCO

Name of the Station

Basin Bridge Gas Turbine Power Station (BBGTPS)

Rs in Crs.

S. No.	Particulars	(True Up)
		FY 2021-22
1	Net Interest on Existing Loan	302.30
2	Interest on Project borrowings	
3	Other Interest	0.28
4	<b>Total Interest</b>	<b>302.59</b>

## ESTIMATE OF CAPITAL EXPENDITURE

Name of the Company

TANGEDCO

Name of the Project

Basin Bridge Gas Turbine Power Station (BBGTPS)

Rs in Crs.

S. No.	Name of Works	(True Up)
		FY 2021-22
1.00	Plant and machinery in generating Stations including plant foundations	0.00
	(a) Boilers/Plants	
	(b) Cooling towers and circulating water system	
2.00	Buildings and civil Engineering works of a permanent character, not mentioned above	0.00
	(a) Offices and show rooms	
	(b) Containing thermo electric plants	
	(c) Temporary erections such as wooden structures	
	(d) Roads other than kacha roads	
	(e) Others	
3.00	Transformers, transformer (kiosk) sub station equipment and other fixed apparatus (including plant foundations)	0.00
	(a) Transformers (including foundation) having a rating of 100 kVA and over.	
	(b) Others	
4.00	Switch gear, including cable connections	0.00
5.00	Lightening arresters	0.00
	(a) Station type	
	(b) Pole type	
	(c) Synchronous condensers	
6.00	Batteries	0.00
7.00	(a) Underground cables including joint boxes and disconnected boxes	0.00
	(b) Cable duct systems	
8.00	Meters	0.00
9.00	Self propelled vehicles	0.00
10.00	Air-conditioning plants	0.00
	(a) Static	
	(b) Portable	
11.00	(a) Office furniture and fittings	0.00
	(b) Office equipments	
	(c) Internal wirings including fittings and apparatus	
	(d) Street light fittings	
12.00	Motors	0.00
13.00	Communication equipments	0.00
	(a) Radio and higher frequency carrier system	
	(b) Telephone lines and telephones	
	Capitalization	
	Capitalization planned	0.00
	<b>TOTAL</b>	<b>0.00</b>

Form 10 B

**Depreciation****Name of the Company** TANGEDCO**Name of the Power Station** Basin Bridge Gas Power Station (BBGTPS)

Rs in Crs.

	(True Up)
Particulars	FY 2021-22
Opening GFA (Rs. Crores)	652.73
Addition to GFA (Rs. Crores)	-
Closing GFA (Rs. Crores)	652.73
Average Rate of Depreciation (%)	1.79%
<b>Depreciation (Rs. Crores)</b>	<b>11.66</b>

## Computation of Interest on Working Capital

Name of the Company

TANGEDCO

Name of the Project

Basin Bridge Gas Turbine Power Station (BBGTPS)

(Rs.in Crores)

S.No.	Particulars	(True Up)
		FY 2021-22
1	Fuel Cost	0.01
2	Fuel Stock	
3	O & M expenses	5.58
4	Maintenance Spares	6.92
5	Recievables	60.23
6	Total Working Capital	<b>72.74</b>
7	Rate of Interest	12.15%
8	Interest on Working Capital	<b>8.84</b>

## Details of Revenue Expenses Capitalised

Name of the Company

TANGEDCO

Name of the Project

Basin Bridge Gas Turbine Power Station (BBGTPS)

(Rs.in Crores)

S. No	Particulars	(True Up)
		FY 2021-22
	<b>Interest Expenditure</b>	
1	Normal Interest Expenditure	
2	Interest during construction	
	<b>Other Expenditure</b>	
3	Repairs and Maintenance	0.00
4	Employee Cost	0.00
5	Administrative and General Expenditure	(0.04)
6	Fabrication Charges	
7	Depreciation and other related costs	
8	Other Debits	
9	HQ Expense Capitalize	-
	<b>Total</b>	<b>(0.04)</b>

## Operation and Maintenance expenses - Repairs and Maintenance

Name of the Company

TANGEDCO

Name of the Project

Basin Bridge Gas Turbine Power Station (BBGTPS)

Rs. in Crores

S.No.	Details	(True Up)
		FY 2021-22
1	Plant & Machinery	1.83
2	Building	
3	Civil Works	0.51
4	Hydraulic work	
5	Lines & Cable network	
6	Vehicles	
7	Furniture & Fixtures	0.02
8	Office equipments	0.00
9	Allocation of Head Quarters Expenses	0.96
	<b>Total Expenses</b>	<b>3.33</b>
10	Less: Capitalisation	-
11	Net Repair & Maintenance expenses	<b>3.33</b>

## Operation and Maintenance expenses - Employee Cost

Name of the Company

TANGEDCO

Name of the Project

Basin Bridge Gas Turbine Power Station (BBGTPS)

Rs. In Crores

S.No.	Details	(True Up)
		FY 2021-22
1	Salary	3.84
2	Overtime wages	
3	Dearness Allowance	0.81
4	Other Allowances	0.38
5	Bonus & Exgratia	0.03
	<b>Total 1 - 5</b>	<b>5.06</b>
6	Medical expenses reimbursement	
7	Leave Travel concession	
8	Earned Leave encashment	
9	Staff welfare expenses	
10	Terminal Benefits	0.20
11	Board's Contribution to CPS	
12	Other Cost	0.48
13	Allocation of Head Quarters Expenses	50.72
	<b>Grand Total</b>	<b>56.46</b>
	Less: Capitalisation	-
	<b>Net Expenses</b>	<b>59.91</b>



## Operation and Maintenance Expenses - Administration and General Expenses

Name of the Company

TANGEDCO

Name of the Project

Basin Bridge Gas Turbine Power Station (BBGTPS)

Rs. In Crores

S.No.	Details	(True Up)
		FY 2021-22
1	Rent, Rate & Taxes	0.04
2	Insurance	-0.03
3	Telephone / Postage / Telex	0.04
4	Legal / Audit / Consultancy / Tech. fee / consultancy charges	0.00
5	Conveyance & Travel	0.07
6	Fees & Subscription	0.00
7	Books & Periodicals	
8	Printing & Stationery	0.00
9	Watch and Ward Expenses.	1.93
10	Petty Office Maintenance Expenses.	0.00
11	Miscellaneous Expenses	-0.01
12	Freight	
13	Other HQ related Expenses.	1.66
	Other Cost	0.00
	<b>Total A&amp;G Expenses</b>	<b>3.71</b>
10	<b>Less: Capitalisation</b>	<b>(0.04)</b>
11	<b>Net Expenses</b>	<b>3.67</b>

**Operation and Maintenance Expenses - Operating Expenses****Name of the Company**

TANGEDCO

**Name of the Project**

Basin Bridge Gas Turbine Power Station (BBGTPS)

**Rs. In Crores**

S.No.	Details	(True Up)
		FY 2021-22
1	Water Charges	
2	Lubricants and Consumables	0.24
3	Station Auxiliaries	
4	<b>Total expenses</b>	<b>0.24</b>

**Total Operation and Maintenance Expenses****Name of the Company**

TANGEDCO

**Name of the Project**

Basin Bridge Gas Turbine Power Station (BBGTPS)

**Rs. In Crores**

S.No.	Details	(True Up)
		FY 2021-22
1	Net Repair & Maintenance Expenses	3.33
2	Net Employees Cost	59.91
3	Net Admn. & General Expenses	3.67
4	Operating Expenses	0.24
5	<b>Total Operation and Maintenance expenses</b>	<b>67.16</b>

## OTHER DEBITS

Name of the Company

TANGEDCO

Name of the Project

Basin Bridge Gas Turbine Power Station (BBGTPS)

(Rs.in Crores)

Sl.No.	Details of Expenses	(True Up)
		FY 2021-22
1	Research & Development expenses	
2	Bad & Doubtful debts written off	
3	Miscellaneous losses and written off/provided for	
4	Material cost variance	
5	Sundry expenses	
6	Extra ordinary debits	
7	Allocation of Head Quarters Expenses	
	<b>Total</b>	-
8	Less: Capitalization	-
9	<b>Net expenses</b>	-

**PRIOR PERIOD CREDITS / CHARGES****Name of the Company**

TANGEDCO

**Name of the Project**

Basin Bridge Gas Turbine Power Station (BBGTPS)

**(Rs.in Crores)**

S.No.	Details of Expenses	(True-Up)
		FY 2021-22
<b>I</b>	<b>Income relating to previous year</b>	
1	Fuel related gains	
2	Interest income	
3	Excess Provisions for revenue expenses	
4	Other income	
5	Total	0.00
<b>II</b>	<b>Expenses / Losses relating to previous period</b>	
1	Fuel related losses and expenses	
2	Operating expenses	
3	Employee cost and other revenue expenditures under provided	
4	Other charges	
5	Total	
<b>III</b>	<b>Net prior period credits / charges</b>	-

## Statement showing other Income

Name of the Company

TANGEDCO

Name of the Project

Basin Bridge Gas Turbine Power Station (BBGTPS)

Rs. In Crores		
S.No	Particulars	(True Up)
		FY 2021-22
1	Interest on loan and advance to employees	
2	Interest on Investments	
3	Interest on Advance to suppliers / Contractors	
4	Interest from Banks	
5	Income from sale of tender forms, stores, scraps, etc.,	
6	Income from Trading	
7	Miscellaneous Receipts	0.03
8	Allocation from Head Quarters	
	<b>Total</b>	<b>0.03</b>

## Estimated Generation of Power

Name of the Company TANGEDCO

Name of the Project Basin Bridge Gas Turbine Power Station (BBGTPS)

Sl.No	Generating Station	Capacity	PLF (in %)	Aux. Consu. (in %)	FY 2021-22(True Up)	
		MW			Gross (in MU)	Net (in MU)
1	BBGTPS	120	0.60%	0.99%	0.02	0.02

## Computation Energy (Variable) Charges - Gas Based

Name of the Company

TANGEDCO

Name of the Power Station

Basin Bridge Gas Turbine Power Station (BBGTPS)

Rs. In Crores

S. No	Description	Unit	(True Up)
			FY 2021-22
1	Capacity	MW	120
2	Gross Station Heat Rate	Kcal / kWhr	4399.00
3	Gross Generation	MU	0.02
4	Spcefic gas consumption	kWh/KL	0.42
5	Auxiliary Consumption	%	0.99%
6	Average calorific value of Gas	Scm	10572.00
7	Average cost of Gas	Rs / KL	35462.22
8	Rate of energy from Gas	Rs / kWhr	86.08
9	Net Generation	MU	0.02
10	Total energy cost	Rs / Crores	0.14
11	Fixed Annual Gas Transmission Charges	Rs / Crores	
12	Total Variable Cost	Rs / Crores	0.14
13	Net Energy charges per unit	Rs / kWhr	



## Abstract of Station wise cost of generation

Name of the  
Company  
Name of the

TANGEDCO

Basin Bridge Gas Turbine Power Station (BBGTPS)

Sl. No	Station	FY 2021-22 (True Up)				
		Net Gen (MU)	AFC (Rs.in Crs)	VC (Rs.in Crs)	Total (Rs.in Crs)	Cost per unit (in RS)
1	BBGTPS	0.02	419.30	0.14	419.44	

# **ANNEXURE I**

## **ARR FORMATS**

### **Valuthur Gas Turbine Power Station (VGTPS)**

## Summary of Tariff Proposal for Gas based Thermal Station

Name of the Company

TANGEDCO

Name of the Project

Valuthur Gas Turbine Power Station (VGTPS)

Rs. Crores

S. No.	Particulars	Reference to Form	Approved	(True-Up)
			FY 2021-22	FY 2021-22
I	Annual Fixed Cost			
1	Return on Equity	5	-	24.01
2	Interest on loan capital	6 C	228.82	221.88
3	Depreciation	10 B	39.82	49.50
4	Interest on Working Capital	11	12.06	15.07
5	Operation and Maintenance Expenses	13 E	27.16	73.72
6	Pension & gratuity			0.00
7	Headquarter Expense			-
8	Cost of Secondary Fuel Oil			
9	Special allowance in lieu of Renovation and Modernisation / Separate compensatory allowance	14		
10	Other Debits	15		-
11	Prior period credits / charges	16		-
12	Operating expenses	13 D		6.51
13	<b>Total Annual Fixed Cost</b>		<b>307.86</b>	<b>390.68</b>
14	Less: Other Income	17	0.29	0.40
15	<b>Net Annual Fixed Cost</b>		<b>307.57</b>	<b>390.29</b>
II	Annual Variable cost			
	Primary Fuel			
	Secondary fuel			
	<b>Total Variable Cost</b>	19 A / 19 B		174.51
III	<b>Total Cost</b>			<b>564.80</b>

## Normative parameters considered for tariff computations

Name of the Company

TANGEDCO

Name of the Power Station

Valuthur Gas Turbine Power Station  
(VGTPS)

Particulars	Unit	(True-Up)
		FY 2021-22
Rate of Return on Equity	%	14%
Target Availability	%	
Target PLF	%	57.55%
Auxiliary Energy Consumption	%	6.88%
Gross Station Heat Rate	kCal/kWh	2114
Specific Fuel Oil Consumption	ml/kWh	
O&M Cost		
Cost of Fuel for WC	in Months	1.00
O & M Expenses for WC	in Months	1.00
Primary Fuel Stock for WC	in Months	1.00
Secondary Fuel Oil or Secondary/Alternate liquid fuel stock for WC	in Months	NA
Spares stock as % of Plant & Equipment Cost on 1.4.2004 for WC	%	1.00%
Receivables for WC	in Months	2.00
Prime lending Rate of SBI	%	12.15%
Incentive Rate	Paise.kWh	25

## Statement showing the performance of Stations

Form 4

Name of the Company

TANGEDCO

Name of the Station

Valuthur Gas Turbine Power Station

S.No	Norms of Operation	(True-Up)
		FY 2021-22
1	PLF / PAF (in %)	57.55%
2	Auxiliary consumption (in %)	6.88%
3	Average Gross Station Heat Rate (Kcal / kWhr)	2,114
4	Average Gross Calorific value of Gas / Naphtha (Kcal / Scm / Kg)	9,697.00
5	Specific consumption of Gas / Naphtha (Scm / Kg / kWhr)	0.22
6	Operating Expenses (Rs in Lakhs)	
7	Operation and Maintenance expenses (Rs in Crs. / MW)	39.42
8	Average cost of Gas / Naphtah (Rs // Scm / MT)	8.49

Form 5

## Computation Return on Equity

Name of the Company

TANGEDCO

Name of the Station

Valuthur Gas Turbine Power Station

(Rs. in Crores)

S.No	Particulars	(True-Up)
		FY 2021-22
1	Equity at the beginning	153.79
2	% Equity Addition	30%
3	Addition during the year	35.36
4	Total Equity	189.15
5	Return on Equity (in %)	14.00%
6	Return on Equity	24.01

## Statement showing other Interest

Name of the Company

TANGEDCO

Name of the Station

Valuthur Gas Turbine Power Station

S. no.	Particulars	FY 2020-21 (True-Up)		
		Outstanding at the beginning	Net additions	Interest
1	Interest on security deposit			
2	Interest on meter caution deposit			
3	Interest on GPF / CPF			0.31
4	Interest on deposit from employees			
5	Interest on Family Benefit Fund contribution			
6	Interest on TNEB Spl. PF cum Gratuity Scheme			
7	Cost of raising finance			
8	Bank charges			
9	Penal interest on E-Tax			
10	Guarantee Commission to Govt.			
11	Other Interest			0.38
	<b>Total</b>			<b>0.69</b>

FORM-6 C

Name of the Company

TANGEDCO

Name of the Station

Valuthur Gas Turbine Power Station

(Rs. In Crore)

S.No.	Particulars	(True up)
		FY 2021-22
1	Net Interest on Existing Loan	221.15
2	Interest on Project borrowings	
3	Other Interest	0.73
4	<b>Total Interest</b>	<b>221.88</b>

## ESTIMATE OF CAPITAL EXPENDITURE

Form 7

Name of the Company

TANGEDCO

Name of the Project

Valuthur Gas Turbine Power Station

(Rs.Crores)

S. No.	Name of Works	(True-Up)
		FY 2021-22
1.00	Plant and machinery in generating Stations including plant foundations	
	(a) Boilers/Plants	
	(b) Cooling towers and circulating water system	
2.00	Buildings and civil Engineering works of a permanent character, not mentioned above	
	(a) Offices and show rooms	
	(b) Containing thermo electric plants	
	(c) Temporary erections such as wooden structures	
	(d) Roads other than kacha roads	
	(e) Others	
3.00	Transformers, transformer (kiosk) sub station equipment and other fixed apparatus (including plant foundations)	
	(a) Transformers (including foundation) having a rating of 100 kVA and over.	
	(b) Others	
4.00	Switch gear, including cable connections	
5.00	Lightening arresters	
	(a) Station type	
	(b) Pole type	
	(c) Synchronous condensers	
6.00	Batteries	
7.00	(a) Underground cables including joint boxes and disconnected boxes	
	(b) Cable duct systems	
8.00	Meters	
9.00	Self propelled vehicles	
10.0	Air-conditioning plants	
	(a) Static	
	(b) Portable	
11.00	(a) Office furniture and fittings	
	(b) Office equipments	
	(c) Internal wirings including fittings and apparatus	
	(d) Street light fittings	
12.0	Motors	
13.0	Communication equipments	
	(a) Radio and higher frequency carrier system	
	(b) Telephone lines and telephones	
	Capitalization	
	Capitalization planned	117.88
	<b>TOTAL</b>	<b>117.88</b>



Form 10 B

**Depreciation****Name of the Company** TANGEDCO**Name of the Power Station** Valuthur Gas Power Station  
(Rs.Crores)

Particulars	(True-Up)
	FY 2021-22
Opening GFA (Rs. Crores)	754.18
Addition to GFA (Rs. Crores)	117.88
Closing GFA (Rs. Crores)	872.06
Average Rate of Depreciation (%)	5.28%
<b>Depreciation (Rs. Crores)</b>	<b>49.50</b>

Form 11

## Computation of Interest on Working Capital

Name of the Company

TANGEDCO

Name of the Project

Valuthur Gas Turbine Power Station

(Rs.in Crores)

S.No.	Particulars	(True-Up)
		FY 2021-22
1	Fuel Cost	14.54
2	Fuel Stock	
3	O & M expenses	6.14
4	Maintenance Spares	9.17
5	Recievables	94.13
6	Total Working Capital	<b>123.99</b>
7	Rate of Interest	12.15%
8	Interest on Working Capital	<b>15.07</b>

## Details of Revenue Expenses Capitalised

Form 12

Name of the Company

TANGEDCO

Name of the Project

Valuthur Gas Turbine Power Station

(Rs.Crores)

S.No	Particulars	(True up)
		FY 2021-22
	<b>Interest Expenditure</b>	
1	Normal Interest Expenditure	
2	Interest during construction	
	<b>Other Expenditure</b>	
3	Repairs and Maintenance	
4	Employee Cost	
5	Administrative and General Expenditure	
6	Fabrication Charges	
7	Depreciation and other related costs	
8	Other Debits	
	<b>Total</b>	-

## Operation and Maintenance expenses - Repairs and Maintenance

Name of the Company

TANGEDCO

Name of the Project

Valuthur Gas Turbine Power Station

Rs. Crores

S. No.	Details	(True-Up)
		FY 2021-22
1	Plant & Machinery	19.73
2	Building	0.00
3	Civil Works	
4	Hydraulic work	
5	Lines & Cable network	
6	Vehicles	
7	Furniture & Fixtures	
8	Office equipments	
9	Allocation of Head Quarters Expenses	0.55
	<b>Total Expenses</b>	<b>20.29</b>
10	Less: Capitalisation	0
11	Net Repair & Maintenance expenses	<b>20.29</b>

## Form 13 B

## Operation and Maintenance expenses - Employee Cost

Name of the Company

TANGEDCO

Name of the Project

Valuthur Gas Turbine Power Station

Rs. in Crores

S. No.	Details	(True-Up)
		FY 2021-22
1	Salary	9.94
2	Overtime wages	
3	Dearness Allowance	2.05
4	Other Allowances	0.34
5	Bonus & Exgratia	0.03
	<b>Total 1 - 5</b>	<b>12.37</b>
6	Medical expenses reimbursement	0.00
7	Leave Travel concession	
8	Earned Leave encashment	0.00
10	Staff welfare expenses	
11	Terminal Benefits	0.30
12	Board's Contribution to CPS	
13	Thermal/Performance/Commissioning / Golden Jubilee Incentive	
14	Allocation of Head Quarters Expenses	28.97
	<b>Grand Total</b>	<b>51.21</b>
	Less: Capitalisation	0.00
	<b>Net Expenses</b>	<b>51.21</b>

## Form 13 C

## Operation and Maintenance Expenses - Administration and General

Name of the Company

TANGEDCO

Name of the Project

Valuthur Gas Turbine Power Station

Rs. in Crores

S.No.	Details	(True-Up)
		FY 2021-22
1	Rent, Rate & Taxes	0.21
2	Insurance	0.41
3	Telephone / Postage / Telex	0.00
4	Legal / Audit / Consultancy / Tech. fee / consultancy charges	0.00
5	Conveyance & Travel	
6	Fees & Subscription	0.27
7	Books & Periodicals	
8	Printing & Stationery	0.01
9	Watch and Ward Expenses.	0.69
10	Petty Office Maintenance Expenses.	
11	Miscellaneous Expenses	
12	Freight	
13	Other Purchase related Expenses.	
	Other cost	0.95
	<b>Total A&amp;G Expenses</b>	<b>2.61</b>
10	<b>Less: Capitalisation</b>	-0.39
11	<b>Net Expenses</b>	<b>2.22</b>

## Form 13 D

## Operation and Maintenance Expenses - Operating Expenses

Name of the Company TANGEDCO

Name of the Project Valuthur Gas Turbine Power Station

Rs. Crores

S.No.	Details	(True-Up)
		FY 2021-22
1	Water Charges	
2	Lubricants and Consumables	0.10
3	Station Auxiliaries	6.41
4	Total expenses	6.51

**Total Operation and Maintenance Expenses****Name of the Company**

TANGEDCO

**Name of the Project**

Valuthur Gas Turbine Power Station

**Rs. in Crores**

S.No.	Details	(True-Up)
		FY 2021-22
1	Net Repair & Maintenance Expenses	20.29
2	Net Employees Cost	51.21
3	Net Admn. & General Expnses	2.22
4	Operating Expenses	-
5	<b>Total Operation and Maintenance expenses</b>	<b>73.72</b>



## OTHER DEBITS

Name of the Company

TANGEDCO

Name of the Project

Valuthur Gas Turbine Power Station

(Rs.in Crores)

S.No.	Details of Expenses	(True-Up)
		FY 2021-22
1	Research & Development expenses	
2	Bad & Doubtful debts written off	
3	Miscellaneous losses and written off/provided for	
4	Material cost variance	
5	Sundry expenses	
6	Extra ordinary debits	
7	Allocation of Head Quarters Expenses	
	<b>Total</b>	-
8	Less: Capitalization	-
9	<b>Net expenses</b>	-

## PRIOR PERIOD CREDITS / CHARGES

Name of the Company

TANGEDCO

Name of the Project

Valuthur Gas Turbine Power Station

(Rs.Crores)

Sl.No.	Details of Expenses	(True-Up)
		FY 2021-22
I	Income relating to previous year	
1	Fuel related gains	
2	Interest income	
3	Excess Provisions for revenue expenses	
4	Other income	
5	Total	0.00
II	Expenses / Losses relating to previous period	
1	Fuel related losses and expenses	
2	Operating expenses	
3	Employee cost and other revenue expenditures under provided	
4	Other charges	
5	Total	
III	Net prior period credits / charges	0.00

## Statement showing other Income

Name of the Company

TANGEDCO

Name of the Project

Valuthur Gas Turbine Power Station

Rs. in Crores

S.No	Particulars	(True-Up)
		FY 2021-22
1	Interest on loan and advance to employees	
2	Interest on Staff Welfare	
3	Interest on Advance to suppliers / Contractors	
4	Interest from Banks	
5	Income from sale of tender forms, stores, scraps, etc.,	
6	Income from Trading	
7	Miscellaneous Receipts	0.40
8	Allocation from Head Quarters	
	<b>Total</b>	<b>0.40</b>

## Estimated Generation of Power

Name of the Company TANGEDCO

Name of the Project Valuthur Gas Turbine Power Station

S.No	Generating Station	Installed Capacity (in MW)	PLF (in %)	Aux. Consu. (in %)	FY 2021-22 (True up)	
					Gross (in MU)	Net (in MU)
1	VGTPS	187	57.55%	6.88%	942.86	877.97

## Computation Energy (Variable) Charges - Gas Based

Name of the Company

TANGEDCO

Name of the Power Station

Valuthur Gas Turbine Power Station

Rs. in Crores

Sl. No	Description	Unit	(True up)
			FY 2021-22
1	Capacity	MW	187
2	Gross Station Heat Rate	Kcal / kWhr	2,114
3	Gross Generation	MU	943
4	Auxiliary Consumption	%	6.88%
5	Average calorific value of Gas	Scm	9,697
6	Average cost of Gas	Rs / Scm	8.49
7	Specific Gas Consumption		0.22
8	Rate of energy from Gas	Ps / kWhr	1.99
9	Net Generation	MU	877.97
10	Total energy cost	Rs / Crores	174.51
11	Fixed Annual Gas Transmission Charges	Rs / Crores	-
12	<b>Total Variable Cost</b>	<b>Rs / Crores</b>	<b>174.51</b>
13	<b>Net Energy charges per unit</b>	<b>Ps / kWhr</b>	<b>1.99</b>

## Abstract of Station wise cost of generation

Name of the Company TANGEDCO  
Name of the Power Station Valuthur Gas Turbine Power Station

S.No	Station	FY 2021-22(True up)				
		Net Gen (MU)	AFC (Rs.in Crs)	VC (Rs.in Crs)	Total (Rs.in Crs)	Cost per unit (in RS)
1	VGTPS-1	877.97	390.29	174.51	564.80	6.43