

GUJARAT ELECTRICITY REGULATORY COMMISSION



Tariff Order

Truing up for FY 2018-19

and

Determination of Tariff for FY 2020-21

For

**Gujarat State Electricity Corporation Limited
(GSECL)**

Case No. 1836 of 2019

26th March, 2020

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**GUJARAT ELECTRICITY REGULATORY COMMISSION
(GERC)**

GANDHINAGAR

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CONTENTS

| | | |
|----------|---|-----------|
| 1 | Background and Brief History..... | 2 |
| 1.1 | Background..... | 2 |
| 1.2 | Gujarat State Electricity Corporation Limited (GSECL)..... | 2 |
| 1.3 | Commission's Order for Approval of final ARR FY 2016-17 and Approval of Multi-Year ARR for FY 2016-17 to FY 2020-21 | 3 |
| 1.4 | Commission's order for approval of True up of FY 2016-17 and Determination of Tariff for FY 2018-19..... | 3 |
| 1.5 | Commission's order for approval of True up of FY 2017-18 and Determination of Tariff for FY 2019-20..... | 3 |
| 1.6 | Background of the present Petition | 4 |
| 1.7 | Registration of the Current Petition and Public Hearing Process..... | 4 |
| 1.8 | Contents of this Order..... | 6 |
| 1.9 | Approach of this Order | 6 |
| 2 | Summary of GSECL Tariff Petition | 8 |
| 2.1 | Summary of GSECL's Petition | 8 |
| 2.2 | True-Up of FY 2018-19 | 8 |
| 2.3 | Unabsorbed Depreciation for Sikka TPS Units 1 & 2..... | 14 |
| 2.4 | Tariff Determination of BLTPS Units 1 and 2..... | 14 |
| 2.5 | Request of GSECL | 15 |
| 3 | Brief outline of objections raised, response from GSECL and Commission's View | 17 |
| 3.1 | Objections related to Performance of the Plants | 17 |
| 3.1.1 | Retirement of Old Coal Based Plants..... | 17 |
| 3.1.2 | Poor Performance of Lignite based power plants..... | 18 |
| 3.1.3 | Poor Performance of Plants during FY 2018-19..... | 20 |
| 3.2 | Objections on Fuel..... | 21 |
| 3.2.1 | Benefits of coal given to GMR Chhattisgarh Energy Ltd..... | 21 |
| 3.2.2 | DSM Charges | 22 |
| 3.2.3 | Justification of Fuel Charges..... | 23 |
| 3.3 | Objections related to the information provided in the Petition and Accounting Statement..... | 23 |
| 3.3.1 | Verification of Generation and Information on Coal..... | 23 |
| 3.3.2 | Cost Records..... | 24 |
| 3.3.3 | Verification of Assets and ROE | 24 |
| 3.3.4 | Recovery of Fixed Cost..... | 25 |



| | | |
|----------|--|-----------|
| 3.3.5 | Details of PLF not provided in truing-up | 26 |
| 3.3.6 | Filing of data in Forms | 26 |
| 3.3.7 | Mismatch in Figure of AFR and ARR | 26 |
| 3.3.8 | In ARR true up a single exercise of total units generated is required to be carried out..... | 27 |
| 3.3.9 | SLDC Charges..... | 27 |
| 3.3.10 | Tariff for FY 2020-21 | 27 |
| 4 | Truing up of FY 2018-19..... | 29 |
| 4.1 | Generating Stations of GSECL | 29 |
| 4.2 | Operating Performance Parameters..... | 30 |
| 4.2.1 | Plant Availability Factor (PAF) | 31 |
| 4.2.2 | Plant Load Factor (PLF)..... | 33 |
| 4.2.3 | Auxiliary Consumption | 35 |
| 4.2.4 | Station Heat Rate (SHR)..... | 37 |
| 4.2.5 | Secondary Fuel Oil Consumption (Specific Oil Consumption) | 38 |
| 4.2.6 | Transit Loss | 40 |
| 4.2.7 | Summary of Performance Parameters Approved for FY 2018-19 | 41 |
| 4.3 | Gross and Net Generation | 42 |
| 4.4 | Cost Parameters | 44 |
| 4.4.1 | Wt. Avg. Gross Calorific Value (GCV) of fuels..... | 44 |
| 4.4.2 | Wt. Avg. Prices of Fuel | 45 |
| 4.5 | Fuel Costs..... | 46 |
| 4.5.1 | Variation between Actual Costs and Approved Costs | 48 |
| 4.5.2 | Gains and Losses in fuel costs due to controllable factors | 48 |
| 4.6 | Capital Expenditure and Capitalisation..... | 49 |
| 4.7 | Fixed Charges | 50 |
| 4.7.1 | Impact of Capital Cost approval for Sikka Extension (3-4) and Dhuvaran CCPP-3 51 | |
| 4.7.2 | Depreciation for FY 2018-19 | 54 |
| 4.7.3 | Interest and Finance charges for FY 2018-19 | 58 |
| 4.7.4 | Return on Equity for FY 2018-19..... | 61 |
| 4.7.5 | O&M Expenses for FY 2018-19 | 64 |
| 4.7.6 | Interest on Working Capital for FY 2018-19 | 68 |
| 4.7.7 | SLDC Charges for FY 2018-19 | 70 |
| 4.7.8 | Water Charges for FY 2018-19 | 72 |
| 4.7.9 | Income Tax for FY 2018-19 | 74 |



| | |
|--|------------|
| 4.7.10 Non-Tariff Income for FY 2018-19..... | 76 |
| 4.8 Approved Fixed Charges | 79 |
| 5 Unabsorbed Depreciation for Sikka TPS Unit 1 & 2 | 87 |
| 6 Determination of Tariff for FY 2020-21 | 90 |
| 7 Determination of Tariff of BLTPS for Units 1 & 2 for FY 2020-21 | 92 |
| 7.1 Background..... | 92 |
| 7.2 Determination of Fixed Charges..... | 92 |
| 7.3 Determination of Energy Charges | 96 |
| 8 Compliance of Directives..... | 97 |
| 8.1 Compliance of Directives issued by the Commission | 97 |
| 8.2 Compliance of Earlier Directives | 97 |
| 8.3 Directives Issues vide Order dated April 24, 2019..... | 99 |
| 8.4 Fresh Directives | 101 |
| COMMISSION'S ORDER | 102 |
| Annexure A | 103 |
| Annexure B | 114 |
| Annexure C | 126 |



LIST OF TABLES

| | |
|---|----|
| Table 1.1: List of Newspapers in which Public Notice was published by the Petitioner | 4 |
| Table 1.2: List of Newspapers in which Public Notice was published by the Commission | 5 |
| Table 1.3: List of Stakeholders | 5 |
| Table 2.1: Actual Fixed Cost for FY 2018-19..... | 9 |
| Table 2.2: Energy Charges for GSECL's Plants for FY 2018-19..... | 10 |
| Table 2.3: Gain/Loss on account of Controllable factors for FY 2018-19..... | 10 |
| Table 2.4: Gains/(Losses) on account of Uncontrollable Factors for FY 2018-19..... | 12 |
| Table 2.5: Net Entitlement calculated by GSECL for FY 2018-19..... | 13 |
| Table 2.6: Proposed Fixed Cost of GSECL plants for FY 2020-21 | 13 |
| Table 2.7: Proposed Energy Charges of GSECL plants for FY 2020-21 | 14 |
| Table 2.8: Proposed Tariff for BLTPS Units 1 & 2 for FY 2020-21 | 15 |
| Table 4.1: Capacity and COD of GSECL generating stations as on 1 st April, 2018 | 29 |
| Table 4.2: Plant Availability Factors for FY 2018-19..... | 31 |
| Table 4.3: Plant Availability Factors approved for truing up for FY 2018-19 | 32 |
| Table 4.4: Plant Load Factors for FY 2018-19..... | 33 |
| Table 4.5: PLF Approved for FY 2018-19 for truing up purpose..... | 34 |
| Table 4.6: Auxiliary consumption for FY 2018-19 | 35 |
| Table 4.7: Auxiliary consumption (%) approved for FY 2018-19 for truing up | 36 |
| Table 4.8: Station Heat Rate for FY 2018-19..... | 37 |
| Table 4.9: Station Heat Rate approved for FY 2018-19 for truing up | 38 |
| Table 4.10: Secondary Fuel Oil Consumption for FY 2018-19 | 39 |
| Table 4.11: Secondary Fuel Oil Consumption approved for FY 2018-19 for Truing up | 40 |
| Table 4.12: Transit Loss for FY 2018-19 | 40 |
| Table 4.13: Transit Loss approved for FY 2018-19 for truing up | 41 |
| Table 4.14: Performance parameters approved for truing up purpose for FY 2018-19 | 41 |
| Table 4.15: Gross and net generation for FY 2018-19 for truing up purpose..... | 43 |
| Table 4.16: Wt. Avg. Gross Calorific Value (GCV) of fuels for different stations for FY 2018-19..... | 44 |
| Table 4.17: The Mix of Different Types of Coal for FY 2018-19 | 44 |
| Table 4.18: Wt. Avg. Price / Unit of Fuels for FY 2018-19 (Actual) | 45 |
| Table 4.19: Fuel Cost of different stations for FY 2018-19 Truing up..... | 47 |
| Table 4.20: Cost of different fuels as per audited annual accounts and as approved for Truing up for FY 2018-19 | 48 |
| Table 4.21: Approved Gains / (losses) from Fuel Expenses for FY 2018-19 | 49 |



| | |
|--|----|
| Table 4.22: Actual Capitalisation for FY 2018-19 as submitted by GSECL..... | 50 |
| Table 4.23: Approved Capital Cost | 52 |
| Table 4.24: GFA Details as submitted by GSECL | 52 |
| Table 4.25: GFA Details for Sikka(3-4) approved by the Commission | 53 |
| Table 4.26: GFA, Loan and Equity for Sikka(3-4) approved by the Commission | 53 |
| Table 4.27: GFA Details for Dhuvaran CCPP3 approved by the Commission | 54 |
| Table 4.28: GFA, Loan and Equity for Dhuvaran CCPP3 approved by the Commission | 54 |
| Table 4.29: Depreciation for FY 2018-19 | 55 |
| Table 4.30: Gains / Losses from Depreciation claimed for FY 2018-19 | 55 |
| Table 4.31: Approved Gross Fixed Assets | 56 |
| Table 4.32: Approved station-wise depreciation charges and gains/(losses) from Depreciation for FY 2018-19 | 58 |
| Table 4.33: Interest and Finance Charges claimed in truing up for FY 2018-19 | 58 |
| Table 4.34: Gains / Losses from Interest & Finance charges claimed for FY 2018-19 | 59 |
| Table 4.35: Details of Approved Loan for FY 2018-19 | 60 |
| Table 4.36: Approved Interest and Finance charges and gain/ (loss) for FY 2018-19 | 61 |
| Table 4.37: Return on Equity for FY 2018-19 | 61 |
| Table 4.38: Gains / Losses from Return on equity claimed for FY 2018-19 | 62 |
| Table 4.39: Approved Equity for FY 2018-19 | 63 |
| Table 4.40: Approved Return on Equity and gain/ (loss) for FY 2018-19 | 64 |
| Table 4.41: O&M expenses for FY 2018-19 | 64 |
| Table 4.42: Gains / Losses from O&M expenses for FY 2018-19 | 65 |
| Table 4.43: Approved O&M expenses gains/losses for FY 2018-19 | 67 |
| Table 4.44: Interest on Working Capital Claimed by GSECL in Truing up for FY 2018-19 | 68 |
| Table 4.45: Gains / Losses from Interest on working capital claimed for FY 2018-19 | 68 |
| Table 4.46: Approved Gains/ (Losses) from Interest on Working Capital for FY 2018-19 | 70 |
| Table 4.47: SLDC charges for FY 2018-19 | 70 |
| Table 4.48: Gain/ (loss) for SLDC charges claimed for FY 2018-19 | 71 |
| Table 4.49: Approved SLDC charges gains/ (losses) for FY 2018-19 | 72 |
| Table 4.50: Water Charges for FY 2018-19 | 72 |
| Table 4.51: Gain/ (loss) for Water charges claimed for FY 2018-19 | 73 |
| Table 4.52: Approved Water charges gain/ (loss) for FY 2018-19 | 74 |
| Table 4.53: Income Tax for FY 2018-19 | 74 |
| Table 4.54: Gain/ (loss) for Income Tax claimed for FY 2018-19 | 75 |
| Table 4.55: Approved Income Tax and gains/ (losses) for FY 2018-19 | 76 |



| | |
|--|----|
| Table 4.56: Non-Tariff Income claimed for FY 2018-19..... | 77 |
| Table 4.57: Gain/ (loss) for Non-Tariff Income claimed for FY 2018-19..... | 77 |
| Table 4.58: Approved Non-Tariff Income and gain/ (loss) for FY 2018-19..... | 78 |
| Table 4.59: Fixed Charges Approved in the Truing up for FY 2018-19..... | 79 |
| Table 4.60: Approved Station-wise Fixed Charges for FY 2018-19 | 80 |
| Table 4.61: Approved Gains / (Losses) due to controllable factors for FY 2018-19..... | 82 |
| Table 4.62: Approved Gains / (Losses) due to Uncontrollable Factors for FY 2018-19..... | 84 |
| Table 4.63: Total Consolidated Gains / (Losses) Approved for FY 2018-19 | 85 |
| Table 4.64: Total Consolidated (Fixed and Fuel Cost) Gains / (Losses) Approved for FY 2018-19 | 86 |
| Table 5.1: Unabsorbed Depreciation claimed for Sikka TPS Unit No. 1 & 2 | 87 |
| Table 5.2: Unabsorbed Depreciation claimed for Sikka TPS Unit No. 1 & 2 | 87 |
| Table 5.3: Unabsorbed Depreciation for STPS Units 1 & 2 Approved by the Commission | 88 |
| Table 6.1: Energy Charges Approved for FY 2020-21 | 90 |
| Table 6.2: Net Fixed Charges approved for FY 2020-21 | 91 |
| Table 7.1: Depreciation claimed for FY 2020-21 | 93 |
| Table 7.2: Interest & Finance Charges claimed for FY 2020-21..... | 93 |
| Table 7.3: Return on Equity claimed for FY 2020-21..... | 93 |
| Table 7.4: Interest on Working Capital claimed for FY 2020-21 | 94 |
| Table 7.5: O&M Expenses claimed for FY 2020-21 | 94 |
| Table 7.6: SLDC Fees & Charges claimed for FY 2020-21 | 94 |
| Table 7.7: Income Tax claimed for FY 2020-21 | 94 |
| Table 7.8: Fixed Cost claimed for FY 2020-21 | 95 |
| Table 7.9: Approved Interest on Working Capital approved for FY 2020-21 | 95 |
| Table 7.10: Approved Fixed Cost for FY 2020-21 (Provisional) | 96 |



LIST OF ANNEXURES

| | |
|---|-----|
| A-1: Ukai TPS 3 to 5 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2018-19..... | 103 |
| A-2: Ukai Extension 6 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2018-19..... | 104 |
| A-3: Gandhinagar 3 & 4 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2018-19..... | 105 |
| A-4: Gandhinagar 5 - Approved Fuel Costs (Coal, Lignite & Secondary Oil) for FY 2018-19..... | 106 |
| A-5: Wanakbori 1-6 - Approved Fuel Costs (Coal, Lignite & Secondary Oil) for FY 2018-19 | 107 |
| A-6: Wanakbori 7 - Approved Fuel Costs (Coal, Lignite & Secondary Oil) for FY 2018-19 | 108 |
| A-7: Sikka Extension 3 & 4 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2018-19..... | 109 |
| A-8: KLTPS 1-3 - Approved Fuel Costs (Coal, Lignite & SFO for FY 2018-19..... | 110 |
| A-9: KLTPS 4 - Approved Fuel Costs (Coal, Lignite & SFO for FY 2018-19..... | 111 |
| A-10: Utran Extension - Approved Fuel Costs (Gas) for FY 2018-19..... | 112 |
| A-11: Dhuvaran CCPP 1 - Approved Fuel Costs (Gas) for FY 2018-19..... | 112 |
| A-12: Dhuvaran CCPP 2 - Approved Fuel Costs (Gas) for FY 2018-19..... | 113 |
| A-13: Dhuvaran CCPP 3 - Approved Fuel Costs (Gas) for FY 2018-19..... | 113 |
| B-1: Ukai 3-5 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2020-21..... | 114 |
| B-2: Ukai Extension 6 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2020-21 | 115 |
| B-3: Gandhinagar 3 & 4 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2020-21 | 116 |
| B-4: Gandhinagar 5 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2020-21 | 117 |
| B-5: Wanakbori 1-6 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2020-21..... | 118 |
| B-6: Wanakbori 7 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2020-21 | 119 |
| B-7: Wanakbori 8 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2020-21 | 120 |
| B-8: Sikka Extension 3 & 4 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2020-21 | 121 |
| B-9: KLTPS 1-3 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2020-21 | 122 |
| B-10: KLTPS 4 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2020-21..... | 123 |
| B-11: Utran Extension - Approved Fuel Costs (Gas) for FY 2020-21..... | 124 |
| B-12: Dhuvaran CCPP 1 - Approved Fuel Costs (Gas) for FY 2020-21..... | 124 |
| B-13: Dhuvaran CCPP 2 - Approved Fuel Costs (Gas) for FY 2020-21..... | 125 |
| B-14: Dhuvaran CCPP 3 - Approved Fuel Costs (Gas) for FY 2020-21..... | 125 |
| C-1: BLTPS (erstwhile BECL) - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2020-21 | 126 |



ABBREVIATIONS

| | |
|----------|---|
| ABT | Availability Based Tariff |
| Act | Electricity Act, 2003 |
| AOH | Annual Overhauling |
| ARR | Aggregate Revenue Requirement |
| CEA | Central Electricity Authority |
| CERC | Central Electricity Regulatory Commission |
| CoD | Commercial Operation Date |
| COH | Capital Overhauling |
| CV | Calorific Value |
| DISCOMs | Distribution Companies |
| FPPPA | Fuel and Power Purchase Price Adjustment |
| FY | Financial Year |
| GCV | Gross Calorific Value |
| GEB | Gujarat Electricity Board |
| GERC | Gujarat Electricity Regulatory Commission |
| GETCO | Gujarat Energy Transmission Corporation Limited |
| GFA | Gross Fixed Assets |
| GoG | Government of Gujarat |
| GoI | Government of India |
| GSECL | Gujarat State Electricity Corporation Limited |
| GUVNL | Gujarat Urja Vikas Nigam Limited |
| IPP | Independent Power Producer |
| kCal | Kilo Calorie |
| KV | Kilo Volt |
| kWh | Kilo Watt Hour |
| MW | Mega Watt |
| MYT | Multi-Year Tariff |
| NCV | Net Calorific Value |
| O&M | Operations & Maintenance |
| OEM | Original Equipment Manufacturer |
| PAF | Plant Availability Factor |
| PLF | Plant Load Factor |
| PPA | Power Purchase Agreement |
| R&M | Renovation & Modernization |
| RE | Renewable Energy |
| ROE | Return on Equity |
| RSD | Reserve Shut Down |
| Scm | Standard cubic meter |
| SHR | Station Heat Rate |
| SLDC | State Load Despatch Centre |
| Wt. Avg. | Weighted Average |





**Before the Gujarat Electricity Regulatory Commission at
Gandhinagar**

Case No. 1836 of 2019

Date of the Order: 26th March, 2020

CORAM

Shri Anand Kumar, Chairman

Shri P. J. Thakkar, Member

ORDER



1 Background and Brief History

1.1 Background

Gujarat State Electricity Corporation Limited (hereinafter referred to as “GSECL” or the “Petitioner”) has on 29th November, 2019 filed a Petition under Section 62 of the Electricity Act, 2003, read with Gujarat Electricity Regulatory Commission (Multi-Year Tariff) Regulations, 2016, for the Truing up for FY 2018-19 and determination of Tariff for FY 2020-21 under the GERC (MYT) Regulations, 2016.

Gujarat Electricity Regulatory Commission (hereinafter referred to as the ‘Commission’) notified the GERC (Multi Year Tariff) Regulations, 2016 on 29th March, 2016 which is applicable for determination of tariff in all cases covered under the Regulations from 1st April, 2016 onwards.

Regulation 17.2 (b) of the GERC (MYT) Regulations, 2016 provides for submission of detailed application comprising of Truing up for FY 2018-19, Revenue from the sale of power at existing tariffs and charges for the ensuing year (FY 2020-21), Revenue Gap or Revenue Surplus for the ensuing year calculated based on Aggregate Revenue Requirement approved in the MYT Order and truing up for the previous year (FY 2018-19), application for determination of tariff for the ensuing year (FY 2020-21) to be carried out under the GERC (MYT) Regulations, 2016 and amendments thereof from time to time.

After technical validation of the Petition, it was registered on 4th December, 2019 and as provided under Regulation 29.1 of the GERC (MYT) Regulations, 2016, the Commission has proceeded with this Tariff Order.

1.2 Gujarat State Electricity Corporation Limited (GSECL)

Government of Gujarat unbundled and restructured Gujarat Electricity Board with effect from 1st April, 2005. The Generation, Transmission and Distribution businesses of the erstwhile Gujarat Electricity Board were transferred to seven successor companies as listed below:

- Gujarat State Electricity Corporation Limited (GSECL) – A Generation Company
- Gujarat Energy Transmission Corporation Limited (GETCO) – A Transmission Company

Four (4) Distribution Companies:

- Dakshin Gujarat Vij Company Limited (DGVCL)
- Madhya Gujarat Vij Company Limited (MGVCL)



- Paschim Gujarat Vij Company Limited (PGVCL)
- Uttar Gujarat Vij Company Limited (UGVCL); and
- Gujarat Urja Vikas Nigam Limited (GUVNL) – A Holding Company and also responsible for purchase of electricity from various sources and Bulk supply to Distribution Companies.

The Government of Gujarat vide Notification dated 3rd October, 2006 notified the final opening balance sheets of the transferee companies as on 1st April, 2005, containing the value of assets and liabilities, which stand transferred from the erstwhile Gujarat Electricity Board to the transferee companies including Gujarat State Electricity Corporation Limited (GSECL). Assets and liabilities (gross block, loans and equity) as on the date mentioned in the notification have been considered by the Commission in line with the Financial Restructuring Plan (FRP) as approved by Government of Gujarat.

1.3 Commission's Order for Approval of final ARR FY 2016-17 and Approval of Multi-Year ARR for FY 2016-17 to FY 2020-21

The Petitioner filed its Petition for Truing up for FY 2015-16, Approval of Final ARR for FY 2016-17, Approval of Multi-Year ARR for FY 2016-17 to FY 2020-21 and Determination of tariff for FY 2018-19 on 30th November, 2016. The Petition was registered on 3rd December, 2016 (Case No. 1619 of 2016). The Commission vide order dated 31st March, 2017 approved the Truing up for FY 2015-16, Final ARR for FY 2016-17, Multi-Year ARR for FY 2016-17 to FY 2020-21 and determined the tariff for FY 2018-19.

1.4 Commission's order for approval of True up of FY 2016-17 and Determination of Tariff for FY 2018-19

The Petitioner filed its Petition for Truing up for FY 2016-17 and determination of tariff for FY 2018-19 on 29th November, 2017. The Petition was registered on 11th December, 2017 (Case No. 1693 of 2017). The Commission vide order dated 31st March, 2018 approved the Truing up for FY 2016-17 and determined the Tariff for FY 2018-19.

1.5 Commission's order for approval of True up of FY 2017-18 and Determination of Tariff for FY 2019-20

The Petitioner filed its Petition for Truing up for FY 2017-18 and determination of tariff for FY 2019-20 on 29th November, 2018. The Petition was registered on 4th December, 2018 (Case No. 1756 of 2018). The Commission vide order dated 24th April, 2019 approved the Truing up for FY 2017-18 and determined the Tariff for FY 2019-20.



1.6 Background of the present Petition

The Commission has notified the GERC (MYT) Regulations, 2016 for the control period of FY 2016-17 to FY 2020-21. Regulation 16.2 (iii) of the GERC (MYT) Regulations, 2016 provides for the truing up of previous year's expenses and revenue based on audited accounts vis-à-vis the approved forecast and categorization of variation in performance as those caused by factors within the control of the applicant (controllable factors) and those caused by factors beyond the control of the applicant (uncontrollable factors).

Regulation 16.2 (vi) of the GERC (MYT) Regulations, 2016 provides for annual determination of tariff for the Generating Company, Transmission Licensee, SLDC, Distribution Wires Business and Retail Supply Business, for each financial year, within the Control Period, based on the approved forecast and results of the truing up exercise.

1.7 Registration of the Current Petition and Public Hearing Process

The Petitioner submitted the Current Petition for Truing up for FY 2018-19 and Determination of Tariff for FY 2020-21 on 29th November, 2019. After technical validation of the Petition, it was registered on 4th December, 2019 (Case No. 1836 of 2019) and as provided under Regulation 29.1 of the GERC (MYT) Regulations, 2016, the Commission has proceeded with the tariff order.

In accordance with Section 64 of the Electricity Act, 2003, GSECL was directed to publish its application in an abridged form in the newspapers to ensure due public participation.

The Public Notice, inviting objections / suggestions from its stakeholders Petition filed by it, was published in the following newspapers:

Table 1.1: List of Newspapers in which Public Notice was published by the Petitioner

| Sr. No. | Name of the Newspaper | Language | Date of publication |
|----------------|------------------------------|-----------------|----------------------------|
| 1. | The Indian Express | English | 08/12/2018 |
| 2. | Divya Bhaskar | Gujarati | 08/12/2018 |

The Petitioner also placed the public notice and the Petition on its website (www.gsecl.in) for inviting objections and suggestions. The interested parties / stakeholders were asked to file their objections / suggestions on the Petition on or before 8th January, 2019.

The Commission also placed the Petition and additional details received subsequently from the Petitioner on its website (www.gercin.org) for information and study of all the stakeholders.



The Commission also issued a notice for public hearing in the following newspapers in order to solicit wider participation by the stakeholders:

Table 1.2: List of Newspapers in which Public Notice was published by the Commission

| Sr. No. | Name of the Newspaper | Language | Date of publication |
|---------|-----------------------|----------|---------------------|
| 1. | Indian Express | English | 04/02/2019 |
| 2. | Divya Bhaskar | Gujarati | 05/02/2019 |
| 3. | Sandesh | Gujarati | 05/02/2019 |

The Commission received objections / suggestions from the consumers / consumer organizations as shown in the Table below. The Commission examined the objections / suggestions received from the stakeholders and fixed the date for public hearing for the Petition on 12th February, 2020 at the Commission's Office, Gandhinagar, 15th February, 2020 at GNFC Training Centre, Bharuch and 18th February, 2020 at PGVCL Corporate Office, Rajkot and subsequently a communication was sent to the objectors to take part in the public hearing process for presenting their views in person before the Commission.

The status of stakeholders who submitted their written suggestion / objections, those who remained present in public hearing, those who could not attend the public hearings and those who made oral submissions is given in the Table below:

Table 1.3: List of Stakeholders

| Sr. No. | Name of Stakeholders | Written Submission | Oral Submission | Present on the day of Public Hearing |
|---------|---|--------------------|-----------------|--------------------------------------|
| 1. | Shri K.K. Bajaj | Yes | Yes | Yes |
| 2. | Laghu Udyog Bharati - Gujarat | Yes | Yes | Yes |
| 3. | Jamnagar Factory Owner's Association | Yes | No | No |
| 4. | Utility Users' Welfare Association (UUWA) | Yes | Yes | Yes |

A short note on the main issues raised by the objectors in the submission in respect of the Petition, along with the response of GSECL and the Commission's views on the response, are given in Chapter 3 of this Order.



1.8 Contents of this Order

This order is divided into **Eight Chapters** as under:

- (1) The **First Chapter** provides a background of the Petitioner, the Petition and details of the Public hearing process and the approach adopted for this Order.
- (2) The **Second Chapter** outlines the summary of GSECL's Petition.
- (3) The **Third Chapter** deals with the Objections raised by various Stakeholders, GSECL's response and the Commission's views on the response.
- (4) The **Fourth Chapter** deals with the Truing up for FY 2018-19.
- (5) The **Fifth Chapter** deals with Unabsorbed depreciation for Sikka TPS Units 1 & 2.
- (6) The **Sixth Chapter** deals with Tariff Determination for FY 2020-21.
- (7) The **Seventh Chapter** deals with tariff of BLTPS – GSECL (erstwhile BECL)
- (8) The **Eighth Chapter** deals with the Compliance of directives.

1.9 Approach of this Order

The GERC (MYT) Regulations, 2016 provides for Truing up of the previous year and determination of Tariff for ensuing year for the third Control Period i.e. FY 2016-17 to FY 2020-21.

GSECL has approached the Commission with the present Petition for Truing up of FY 2018-19 and determination of tariff for the FY 2020-21.

GSECL has also claimed unabsorbed depreciation for Sikka TPS Units 1 & 2 which are decommissioned on 1st April, 2017.

GSECL has also requested to determine the tariff for BLTPS Units 1 & 2 (erstwhile BECL) for FY 2020-21 which are merged with GSECL from 1st April, 2018 vide GoG Notification dated 27th August, 2008.

The Commission has dealt with above in the subsequent chapters.

The Commission has undertaken Truing up for FY 2018-19 based on the submissions of the Petitioner. The Commission has undertaken the computation of gains and losses for FY 2018-19, based on the audited annual accounts.

While Truing up of FY 2018-19, the Commission has been primarily guided by the following principles:



- Controllable parameters have been considered at the level approved under the MYT Order, unless the Commission considers that there are valid reasons for revision of the same.
- Uncontrollable parameters have been revised based on the actual performance observed.
- The Truing up for FY 2018-19 has been considered based on the GERC (MYT) Regulations, 2016.

The Commission has undertaken Determination of Tariff for FY 2020-21 as per the GERC (MYT) Regulations, 2016 and its amendment as the base.



2 Summary of GSECL Tariff Petition

2.1 Summary of GSECL's Petition

This Chapter highlights the summary of the Petition for True-Up for FY 2018-19 and Determination of Tariff for FY 2020-21.

2.2 True-Up of FY 2018-19

GSECL has worked out its Aggregate Revenue Requirement (ARR) for FY 2018-19 as a part of the True-Up for FY 2018-19. GSECL has presented the actual cost components based on the audited annual accounts for FY 2018-19.

Tables below summarize the results of the True-up of FY 2018-19 of GSECL Stations. For the purpose of True-Up, GSECL has compared the actual cost for FY 2018-19 with the cost approved by the Commission in the MYT Order dated 31st March, 2017.

The fixed cost of GSECL as submitted in the Petition is shown in Table below:



Gujarat State Electricity Corporation Limited
Truing Up for FY 2018-19 and Determination of Tariff for FY 2020-21

Table 2.1: Actual Fixed Cost for FY 2018-19

(Rs. Crore)

| Sr. No. | Power Station | Depreciation | Interest & Finance Charges | Return on Equity | Interest on Working Capital | O&M Expenses | Water Charges | SLDC Charges | Income Tax | Total Fixed Cost | Less: Non-Tariff Income | Net Fixed Charges |
|---------|------------------------|---------------|----------------------------|------------------|-----------------------------|-----------------|---------------|--------------|--------------|------------------|-------------------------|-------------------|
| 1 | Ukai (3-5) | 40.88 | - | 20.96 | 39.10 | 214.10 | - | 0.11 | 2.68 | 317.84 | 26.39 | 291.45 |
| 2 | Gandhinagar (3-4) | 30.12 | - | 21.95 | 29.51 | 135.24 | 44.88 | 0.11 | 1.85 | 263.66 | 25.99 | 237.67 |
| 3 | Gandhinagr 5* | - | - | 28.67 | 14.23 | 33.15 | 29.55 | - | 0.92 | 106.53 | 13.59 | 92.93 |
| 4 | Wanakbori 1-6 TPS | 83.94 | 23.83 | 83.52 | 87.76 | 235.58 | 56.57 | 0.22 | 5.54 | 576.96 | 40.42 | 536.55 |
| 5 | Wanakbori 7* | - | - | 26.16 | 13.97 | 19.37 | 11.26 | 0.04 | 0.92 | 71.71 | 7.59 | 64.13 |
| 6 | Sikka Extension (3-4)* | 179.03 | 148.76 | 139.57 | 42.09 | 115.50 | 4.60 | 0.09 | 2.20 | 631.85 | 4.89 | 626.96 |
| 7 | KLTPS 1-3 | 32.20 | 1.76 | 51.10 | 10.30 | 132.26 | 0.27 | 0.04 | 0.94 | 228.88 | 3.44 | 225.43 |
| 8 | KLTPS 4 | 35.88 | 13.08 | 29.18 | 3.92 | 15.45 | 0.10 | 0.01 | 0.33 | 97.95 | - | 97.95 |
| 9 | Dhuvaran CCPP 1* | 9.70 | - | 10.45 | 4.93 | 35.10 | 0.00 | 0.02 | 0.47 | 60.67 | 0.62 | 60.05 |
| 10 | Dhuvaran CCPP 2 | 22.26 | 5.02 | 14.19 | 5.88 | 35.10 | - | 0.02 | 0.49 | 82.95 | 0.62 | 82.33 |
| 11 | Dhuvaran CCPP 3* | 78.77 | 71.16 | 67.01 | 34.78 | 2.26 | - | 0.07 | 1.65 | 255.70 | 0.19 | 255.51 |
| 12 | Utran Extension* | 68.21 | 37.26 | 57.43 | 37.54 | 41.21 | 2.20 | 0.07 | 1.65 | 245.56 | 0.96 | 244.60 |
| 13 | Ukai 6* | 153.96 | 105.95 | 124.33 | 35.96 | 47.70 | - | 0.10 | 2.20 | 470.19 | 5.02 | 465.18 |
| 14 | Ukai Hydro | 2.24 | 2.15 | 10.56 | 0.67 | 10.60 | - | 0.05 | 1.34 | 27.62 | 0.01 | 27.61 |
| 15 | Kadana Hydro | 5.34 | - | 28.67 | 1.20 | 23.03 | - | 0.04 | 1.06 | 59.35 | 0.47 | 58.87 |
| | Total | 742.52 | 408.97 | 713.77 | 361.86 | 1,095.65 | 149.42 | 0.99 | 24.24 | 3,497.42 | 130.20 | 3,367.22 |

* PPA based stations



Based on actual operating and fuel related parameters during FY 2018-19, table below indicates actual audited energy charges for GSECL's stations for FY 2018-19 along with the approved ones:

Table 2.2: Energy Charges for GSECL's Plants for FY 2018-19

| Sr. No. | Power Station | Approved in MYT Order (Rs./kWh) | Actual claimed (Rs./kWh) |
|---------|------------------------|---------------------------------|--------------------------|
| 1 | Ukai (3-5) | 3.80 | 3.67 |
| 2 | Gandhinagar (3-4) | 4.04 | 3.95 |
| 3 | Gandhinagr 5* | 3.92 | 3.91 |
| 4 | Wanakbori 1-6 TPS | 4.04 | 3.90 |
| 5 | Wanakbori 7* | 3.87 | 3.75 |
| 6 | Sikka Extension (3-4)* | 4.16 | 4.45 |
| 7 | KLTPS 1-3 | 2.46 | 3.15 |
| 8 | KLTPS 4 | 2.50 | 2.79 |
| 9 | Dhuvaran CCPP 1* | 2.61 | 2.90 |
| 10 | Dhuvaran CCPP 2 | 3.00 | 3.44 |
| 11 | Dhuvaran CCPP 3* | 6.11 | 6.31 |
| 12 | Utran Extension* | 6.83 | 6.63 |
| 13 | Ukai 6* | 3.41 | 3.30 |

* PPA based stations

Table below summarizes plant wise gains/ (losses) calculated by GSECL on account of controllable/ uncontrollable factors, which are proposed to be shared with the consumers as per the mechanism prescribed by the Commission in the GERC (MYT) Regulations, 2016:

Table 2.3: Gain/Loss on account of Controllable factors for FY 2018-19

| Sr. No. | Power Station | Gain/(Loss) due to Controllable Factors | | Total Gains/ (Losses) due to Controllable factors | Total Gains/ (Losses) to be passed through (1/3 rd of gains/ losses) |
|---------|------------------------|---|-----------|---|---|
| | | O&M Expenses | Fuel Cost | | |
| 1 | Ukai (3-5) | (37.67) | 45.19 | 7.53 | 2.51 |
| 2 | Gandhinagar (3-4) | (29.78) | 17.01 | (12.77) | (4.26) |
| 3 | Gandhinagr 5* | - | - | - | - |
| 4 | Wanakbori 1-6 TPS | 24.74 | 87.56 | 112.30 | 37.43 |
| 5 | Wanakbori 7* | - | - | - | - |
| 6 | Sikka Extension (3-4)* | - | - | - | - |
| 7 | KLTPS 1-3 | (12.33) | (51.66) | (63.99) | (21.33) |
| 8 | KLTPS 4 | 6.01 | (7.19) | (1.18) | (0.39) |
| 9 | Dhuvaran CCPP 1* | - | - | - | - |



Gujarat State Electricity Corporation Limited
Truing Up for FY 2018-19 and Determination of Tariff for FY 2020-21

| Sr. No. | Power Station | Gain/(Loss) due to Controllable Factors | | Total Gains/ (Losses) due to Controllable factors | Total Gains/ (Losses) to be passed through (1/3 rd of gains/ losses) |
|---------|------------------|---|--------------|---|---|
| | | O&M Expenses | Fuel Cost | | |
| 10 | Dhuvaran CCPP 2 | 1.48 | (11.40) | (9.92) | (3.31) |
| 11 | Dhuvaran CCPP 3* | - | - | - | - |
| 12 | Utran Extension* | - | - | - | - |
| 13 | Ukai 6* | - | - | - | - |
| 14 | Ukai Hydro | 11.23 | - | 11.23 | 3.74 |
| 15 | Kadana Hydro | 3.77 | - | 3.77 | 1.26 |
| | Total | (32.53) | 79.51 | 46.98 | 15.66 |

* PPA based stations

Further, GSECL submitted the Gain/(Loss) on account of uncontrollable factors as shown in the following Table:



Table 2.4: Gains/(Losses) on account of Uncontrollable Factors for FY 2018-19

(Rs. Crore)

| Sr. No | Power Station | Gain/(Loss) due to Uncontrollable Factors | | | | | | | | | Total Gains/ (Losses) due to Uncontrollable factors | Total Gains/ (Losses) to be passed through |
|--------|------------------------|---|---------------|----------------------------|---------------|-----------------------------|----------------|--------------|-------------|-------------------|---|--|
| | | O&M | Depreciation | Interest & Finance Charges | ROE | Interest on Working Capital | Water Charges | SLDC Charges | Tax | Non-Tariff Income | | |
| 1 | Ukai (3-5) | (11.73) | 22.13 | 28.08 | (2.64) | (9.07) | 0.10 | 0.49 | 0.79 | 10.52 | 39.67 | 38.67 |
| 2 | Gandhinagar (3-4) | (13.85) | 25.86 | 6.67 | (4.51) | (7.15) | (37.87) | 0.39 | 0.54 | 13.49 | (16.44) | (16.43) |
| 3 | Gandhinagr 5* | (6.92) | - | - | - | - | - | - | 0.27 | - | (6.66) | (6.66) |
| 4 | Wanakbori 1-6 TPS | (20.62) | 27.94 | (2.91) | (0.76) | (20.90) | (20.81) | 0.59 | 1.63 | (5.87) | (41.71) | (41.71) |
| 5 | Wanakbori 7* | (3.44) | - | - | - | - | - | - | 0.27 | - | (3.17) | (3.17) |
| 6 | Sikka Extension (3-4)* | (8.74) | - | - | - | - | - | - | 0.64 | - | (8.09) | (8.09) |
| 7 | KLTPS 1-3 | (5.13) | 33.98 | (1.75) | (2.34) | (1.65) | 0.16 | 0.13 | 0.28 | (1.40) | 22.28 | 22.28 |
| 8 | KLTPS 4 | (1.79) | 0.30 | 2.77 | 0.14 | (0.56) | 0.03 | 0.01 | 0.10 | (1.65) | (0.65) | (0.65) |
| 9 | Dhuvaran CCPP 1* | (3.04) | - | - | - | - | - | - | 0.14 | - | (2.90) | (2.90) |
| 10 | Dhuvaran CCPP 2 | (3.04) | (0.31) | 3.44 | 1.68 | (0.07) | 0.76 | 0.03 | 0.15 | (1.19) | 1.45 | 1.45 |
| 11 | Dhuvaran CCPP 3* | - | - | - | - | - | - | - | 0.49 | - | 0.49 | 0.49 |
| 12 | Utran Extension* | (4.05) | - | - | - | - | - | - | 0.48 | - | (3.57) | (3.57) |
| 13 | Ukai 6* | (9.61) | - | - | - | - | - | - | 0.64 | - | (8.97) | (8.97) |
| 14 | Ukai Hydro | (1.63) | (2.24) | 0.40 | (0.14) | 0.05 | - | 0.12 | 0.39 | (3.50) | (6.56) | (6.56) |
| 15 | Kadana Hydro | (2.46) | 10.39 | - | 0.02 | 0.09 | - | 0.11 | 0.32 | (2.59) | 5.87 | 5.87 |
| | Total | (96.04) | 118.06 | 36.71 | (8.56) | (39.27) | (57.62) | 1.86 | 7.13 | 7.81 | (29.94) | (29.94) |

* PPA based stations



Based on the above estimated gains / (losses) on account of controllable and uncontrollable factors, GSECL has worked out gap/surplus of FY 2018-19 as given below:

Table 2.5: Net Entitlement calculated by GSECL for FY 2018-19

(Rs. Crore)

| Sr. No. | Power Station | Gains/(Losses) due to controllable factor | Gains/(Losses) due to uncontrollable factor | Total Gains/(Losses) to be passed through |
|---------|------------------------|---|---|---|
| a | b | c | d | e = (c/3) + d |
| 1. | Ukai (3-5) | 7.53 | 38.67 | 41.18 |
| 2. | Gandhinagar (3-4) | (12.77) | (16.43) | (20.69) |
| 3. | Gandhinagar 5* | - | (6.66) | (6.66) |
| 4. | Wanakbori 1-6 TPS | 112.30 | (41.71) | (4.28) |
| 5. | Wanakbori 7* | - | (3.17) | (3.17) |
| 6. | Sikka Extension (3-4)* | - | (8.09) | (8.09) |
| 7. | KLTPS 1-3 | (63.99) | 22.28 | 0.95 |
| 8. | KLTPS 4 | (1.18) | (0.65) | (1.04) |
| 9. | Dhuvaran CCPP 1* | - | (2.90) | (2.90) |
| 10. | Dhuvaran CCPP 2 | (9.92) | 1.45 | (1.85) |
| 11. | Dhuvaran CCPP 3* | - | 0.49 | 0.49 |
| 12. | Utran Extension* | - | (3.57) | (3.57) |
| 13. | Ukai 6* | - | (8.97) | (8.97) |
| 14. | Ukai Hydro | 11.23 | (6.56) | (2.81) |
| 15. | Kadana Hydro | 3.77 | 5.87 | 7.13 |
| | Total | 46.98 | (29.94) | (14.28) |

* PPA based stations

Further, GSECL has proposed Fixed Cost for its Generating Stations for FY 2020-21 as shown in the following Table:

Table 2.6: Proposed Fixed Cost of GSECL plants for FY 2020-21

(Rs. Crore)

| Sr. No. | Power Station | Fixed Charges for FY 2020-21 | Total Gains/(Losses) to be passed through | Net Fixed Charges for FY 2020-21 |
|---------|-------------------|------------------------------|---|----------------------------------|
| 1 | Ukai (3-5) | 357.81 | 41.18 | 316.63 |
| 2 | Gandhinagar (3-4) | 196.33 | (20.69) | 217.02 |
| 3 | Gandhinagr 5* | 72.86 | (6.66) | 79.52 |
| 4 | Wanakbori 1-6 TPS | 573.49 | (4.28) | 577.77 |
| 5 | Wanakbori 7* | 63.85 | (3.17) | 67.02 |
| 6 | KLTPS 1-3 | 250.32 | 0.95 | 249.37 |
| 7 | KLTPS 4 | 99.38 | (1.04) | 100.42 |
| 8 | Dhuvaran CCPP 1* | 74.10 | (2.90) | 77.00 |
| 9 | Dhuvaran CCPP 2 | 94.65 | (1.85) | 96.50 |
| 10 | Utran Extension* | 236.81 | (3.57) | 240.38 |
| 11 | Ukai Hydro | 34.69 | (2.81) | 37.50 |



| Sr. No. | Power Station | Fixed Charges for FY 2020-21 | Total Gains/(Losses) to be passed through | Net Fixed Charges for FY 2020-21 |
|---------|------------------|------------------------------|---|----------------------------------|
| 12 | Kadana Hydro | 71.76 | 7.13 | 64.63 |
| 13 | Ukai 6* | 495.54 | (8.97) | 504.51 |
| 14 | Dhuvaran CCPP 3* | 295.11 | 0.49 | 294.62 |
| 15 | Sikka 3&4* | 591.84 | (8.09) | 599.93 |
| 16 | Wanakbori 8 TPS* | 884.72 | - | 884.72 |
| | Total | 4,393.24 | (14.28) | 4,407.54 |

* PPA based stations

GSECL proposed Energy Charges for FY 2020-21 as shown in the following Table:

Table 2.7: Proposed Energy Charges of GSECL plants for FY 2020-21

| Sr. No. | Power Station | 2020-21 (Rs/kWh) |
|---------|------------------------|------------------|
| 1 | Ukai (3-5) | 2.768 |
| 2 | Gandhinagar (3-4) | 3.308 |
| 3 | Gandhinagr 5* | 3.912 |
| 4 | Wanakbori 1-6 TPS | 3.238 |
| 5 | Wanakbori 7* | 3.093 |
| 6 | Sikka Extension (3-4)* | 2.425 |
| 7 | KLTPS 1-3 | 1.496 |
| 8 | KLTPS 4 | 1.469 |
| 9 | Dhuvaran CCPP 1* | 3.899 |
| 10 | Dhuvaran CCPP 2 | 4.066 |
| 11 | Dhuvaran CCPP 3* | 2.256 |
| 12 | Utran Extension* | 4.345 |
| 13 | Ukai 6* | 2.516 |
| 14 | Wanakbori 8* | 2.941 |

* PPA based stations

2.3 Unabsorbed Depreciation for Sikka TPS Units 1 & 2

GSECL submitted that its generating station Sikka Units 1 and 2 have completed its useful life and has been decommissioned on 1st April, 2017. Accordingly, there was a depreciation amounting to Rs. 170.12 Crore that has not been claimed/charged by GSECL and the same was not approved by the Commission in the Tariff. GSECL requested to approve the aforesaid unabsorbed depreciation in FY 2020-21.

2.4 Tariff Determination of BLTPS Units 1 and 2

Bhavnagar Energy Company Ltd. (BECL) Vide the GoG notification dated 27th August, 2018 is merged with GSECL. Accordingly, the assets and liabilities are transferred to GSECL. The



effective date of transfer is 1st April, 2018 as per the notification. GSECL requested to determine the Tariff for Bhavnagar Lignite Thermal Power Station (erstwhile BECL) Units 1 and 2 for FY 2020-21. The proposed tariff for FY 2020-21 is shown in the following Table:

Table 2.8: Proposed Tariff for BLTPS Units 1 & 2 for FY 2020-21

| Sr. No. | Power Station | FY 2020-21 |
|----------|--------------------------------------|---------------|
| A | Annual Fixed Cost (Rs. Crore) | |
| 1 | Depreciation | 190.87 |
| 2 | Interest on Loan | 142.08 |
| 3 | Return on Equity | 151.83 |
| 4 | Interest on Working Capital | 33.00 |
| 5 | O&M Cost | 168.60 |
| 6 | SLDC Charges | 0.24 |
| 7 | Income Tax | 32.72 |
| 8 | Total | 719.34 |
| | | |
| B | Energy Charges (Rs./kWh) | 2.957 |

2.5 Request of GSECL

Petitioner's Prayer:

1. To admit this petition for True Up of FY 2018-19 and Determination of Tariff for FY 2020-21.
2. To approve the gains/ losses for the True Up of FY 2018-19 and allow sharing of such gains/ losses as prescribed in the MYT Regulations, 2016.
3. To approve the operational and financial parameters of GSECL for FY 2018-19 considering the vintage and constraints of the old machines, and consider the same for recovery of full fixed cost.
4. To approve the Station operating parameters viz. PAF, Auxiliary Consumption, Station Heat Rate, Transit Loss, Specific Oil Consumption and actual fuel rate for each of the station of GSECL for FY 2018-19 for recovery of variable cost considering the vintage and constraints of the old machines as well as site specific constraints.
5. To approve Fixed Cost and Tariff for FY 2020-21.
6. To approve unabsorbed depreciation for Sikka Units 1 and 2.
7. To approved fixed cost and determine tariff for BLTPS Units 1 & 2 for FY 2020-21.
8. To grant any other relief as the Hon'ble Commission may consider appropriate.



9. The Petitioner craves leave of the Hon'ble Commission to allow further submissions, addition and alteration to this Petition as may be necessary from time to time.
10. 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 Brief outline of objections raised, response from GSECL and Commission's View

In response to the public notice inviting objections / suggestions on the Petition filed by GSECL for Truing up of FY 2018-19 and determination of ARR for FY 2020-21 under the GERC (MYT) Regulations, 2016 from the stakeholders, some consumers / consumer organizations filed their objections / suggestions in writing. Some of these objectors participated in the public hearing also. The Commission has considered objections connected with this Petition in this Chapter. The objections / suggestions by the consumers / consumers organizations, the response from the Petitioner and the views of the Commission are given below:

3.1 Objections related to Performance of the Plants

3.1.1 Retirement of Old Coal Based Plants

The Objector submitted that Petitioner had been operating its old plants at very low capacity or are kept under reserve shutdown which cause additional burden on consumers of Gujarat. In addition, with the commissioning of new coal based 800 MW plant at Wanakbori will further reduce utilization of these plants which shall be kept under RSD with extra manpower sitting idle. Hence, it is suggested to retire plants viz. Gandhinagar 3-4 and Wanakbori 1-6 in phase manner to avoid unwarranted burden on consumers of Gujarat. The Objector also requested the Commission to direct GSECL to submit the Action Plan within six months and ensure to operate its plants in most efficient and economical manner.

Response of GSECL

The Gandhinagar TPS Unit No 3 - 4 and Wanakbori TPS Unit No. 1 - 6 of GSECL were willing to supply power to GUVNL. These plants are having PAF of 87.39% and 89.26% respectively. These power plants were available and taken into operation as per Grid requirement. Moreover, despite of being older plants, these units are running at rated load whenever scheduled by SLDC as per system demand. The coal based plants are observed to be used as balancing power and these units undergo frequent start/stops due to uncertainty of wind energy where the variations of 2500-3000 MW have been observed within short span of time. This happened due to limited hydro potential and less availability of domestic cheaper gas which are the better options for using as balancing power.

As a part of efficiency improvement, GSECL had already implemented Turbine retrofitting in Wanakbori TPS Unit No 3 which resulted in reduction in cost of generation by Rs 0.48/kWh.



Moreover, the units of Wanakbori and Gandhinagar have locational disadvantages of being very far from coal source which results in higher transportation charges/landed cost of fuel.

Commission's View

The Commission well noted the suggestions of Stakeholder and response of the Petitioner. The Commission directs GSECL to submit its Action Plan on Capacity retirement/Addition/Utilisation for next ten (10) years during the next Tariff Petition for Control Period commencing from April 1, 2021. This Action Plan shall include plan for capacity retirement of existing unit/stations, generation capacity availability and capacity addition from Conventional Generating station and Renewable Energy, plan for optimum utilisation of existing generating stations and plan for achieving operational efficiency in economical manner.

3.1.2 Poor Performance of Lignite based power plants

The Objector submitted that power generated from lignite based power plants is cheapest in Gujarat. KLTPS plants are operating at less than 40% Plant load factor and BLTPS plants have teething problems since last one year. The cost of power generated by GSECL plants (Rs. 2.57 – 2.75 /kWh) is almost double compared to plants operated by GOVT -IPPs who are operating their plants efficiently and at higher Plant Load factor. The lignite based plants has been deteriorating during last 18 months and generation has dropped from 861 MU in Q1-2018 to 201 MU in Q2 2019. The Objector requested Commission to direct the Petitioner to operate plants in economical and efficient manner.

Response of GSECL

GSECL observed discrepancy in data provided by objector. GSECL submitted the reconciled data. The reasons for lower generation from Lignite based Power Plants of GSECL is as under:

KLTPS Unit No. 1- 4

The source of lignite had been shifted from Panandhro to Mata-na-madh mines from August 2016 due to unavailability of lignite from Panandhro mines. The lignite available from Mata-na-madh mines is very poor in quality and the quantity is inadequate which is sufficient for running two units only. During FY 2017-18 and FY 2018-19, even though there was shortage of lignite, GSECL had operated all four machines and generated 1298 MU with 51.09% PLF and 1205 MU with 47.45% PLF respectively. Due to poor quality and inadequate quantity of



lignite, consistent partial load of units due to frequent outages/maintenance and economic unviability, GSECL has decommissioned the Unit No. 1 and 2 of KLTPS w.e.f 01.01.2020. Hence, these units are kept under shutdown mostly for past few months as the receipt of lignite was hardly sufficient to run even two units at rated load.

Bhavnagar Lignite TPS Unit No. 1 - 2

The BECL TPS 1 & 2 were taken over by GSECL from dated 01.09.2018. The generation from these units during September 2018 to March 28, 2019 was 459.25 MU and the Unit No. 1 was consistently run during the above said period. The major fire broken out on 29.03.2019 at the bunker floor of BLTPS Unit No 1 and 2, which led to substantial/heavy damage to majority of supporting structures of bunker floor as well as drive mechanism of coal feeding belts. Because of this, GSECL had taken both the units under forced outage. However, GSECL has undertaken necessary steps on war footing basis and the coal feeding system has been restored in last week May, 2019.

Meantime during inspection of boiler of Unit No. 1, major crack to main supporting ceiling beam (fabricated beam of size 14 mtr x 4.2 mtr) in pent house zone of 2nd pass of boiler was observed. Looking to the major damage & risk of failure of associated load bearing beams, M/s BHEL has advised not to take unit under operation without replacement of the damaged beam since it may lead to total 2nd pass of boiler & may create boiler tube leakages and related issues during running of unit. Also considering lacuna on the part of M/s BHEL during erection of unit, M/s BHEL agreed to carry out replacement of the damaged beam free of cost. Being very crucial to safety of boiler at large, M/s BHEL have completed the replacement of beam and unit is commissioned on 12.01.2020. To avoid similar failure in Unit No 2, M/s BHEL suggested to provide additional insulation in the pent house area of 2nd pass of boiler and the same was completed by GSECL on 20.06.2019 and the unit is commissioned on 20.06.2019.

Moreover, after taking the unit into service, frequent boiler tube leakages from dissimilar metal joints have been observed in Convective SH tubes in Unit No. 2 (total 7 nos forced outages on account of convective SH occurred during July -Oct 2019). The matter was also referred to BHEL. However, to minimize the same, radiography of all 300 joints was carried out as and when opportunity arises and the defective weld joints were attended. Since then, no boiler tube leakages have been observed in convective SH zone & the Unit No. 2 is running successfully. Thus, the reasons for major problem faced for sustained generation from both units were attributed to design deficiencies.

Moreover, GSECL is taking adequate steps to enhance reliability of different sub systems in which chronic issues have been observed so as to attain sustainable generation.



Commission's View

The Commission has noted detailed reasons provided by the Petitioner for poor performance of KLTPS (1-4) and BLTPS. The response of the Petitioner is self-explanatory. Regarding the KLTPS (1-4), the analysis of Performance has been discussed in Truing up Chapter of this Order. The Commission directs GSECL to submit roadmap for improvement the performance of Lignite based power stations, in economical manner.

3.1.3 Poor Performance of Plants during FY 2018-19

The Objector submitted that the technical performance and Plant load factor of Petitioner's power plant has been deteriorating year after year putting burden on consumers. Sikka TPS was commissioned in December 2015 performed poorly in all parameters. The performance of lignite based plant at KLTPS was major concern as operated at less than 50% PLF and in most uneconomical and inefficient manner. The gas-based plants at Dhuvaran and Utran were also operated at very low PLF due to non-availability of gas. The Petitioner has been facing problem due to closing down of lignite mines at Lakhtar which used to supply lignite to KLTPS plants. The Objector requested the Commission to direct Petitioner to opt for some another source for getting lignite as generation from this fuel is cheapest in Gujarat.

The Objector further added that Ukai 6 has been performing poorly since the date of commissioning dated 23.06.2013 and has never been operated above 70% PLF.

Response of GSECL

The Petitioner submitted the detailed reasons for poor performance of plants as under:

Sikka TPS Unit No. 3 and 4: The PAF of 90.19% was achieved by Sikka TPS Unit No. 3 and 4. However, the PLF of units was lower due to backing down as well Reserve Shut down. Their performance of units was deteriorated due to partial operation of unit on account of backing down (61.96%).

Dhuvaran and Utran: The PLF of Dhuvaran CCPP 3 and Utran CCPP 2 was lower due to very less availability of cheaper domestic gas. The PLF of Dhuvaran CCPP 1 was lower due to limited availability of cheaper domestic gas as well as due to prolonged outage of unit from 25.09.18 on account of damage to GT rotor due to lub oil system problem. GSECL submitted that it had achieved generation of 25161 MU during FY 2018-19 which was highest during last 7 years.



Ukai Unit No. 6: The achieved PLF of 76.86% in FY 2018-19 was lower due to problem of generator rotor earth fault and 400 KV power cable failure which were totally unforeseen. However, all efforts had been put to minimize loss of availability. The generator rotor was collected from NTPC Vellore and the joints for power cable (which are designed for service life equal to major equipment of unit) were imported from Switzerland for restoration of units as early as possible. However, during the available period the capacity utilization of unit was 89.86%. The other performance parameters viz SHR and SOC were within normative values whereas the AFC was marginally higher by 0.04% due to partial operation of unit backing down.

Commission's View

The Commission has noted detailed reasons provided by the Petitioner for poor performance of KLTPS (1-4) and BLTPS. The Commission has undertaken truing up as per GERC (MYT) Regulations, 2016. The sharing of efficiency gains and losses are being undertaken for controllable parameters, including all performance parameters. However, the Commission is in the process of seeking details of such plants by issuing directive in this regard.

3.2 Objections on Fuel

3.2.1 Benefits of coal given to GMR Chhattisgarh Energy Ltd.

The Objector submitted that GUVNL vide Petition No.1683 of 2017 Order dated 13/10/2017 got sanction/approval to award 174 Lakh tonnes of coal to M/S GMR Chhattisgarh Energy Ltd. (GCEL) to avoid penalty on GSECL for non-lifting the coal from South Eastern Coal Field and West Coalfield Ltd. As per Coal (Fuel) Supply Agreement) with these mines with GSECL which is 164.4 Lakh M.T. and 9.30 Lakh M.T. respectively. GUVNL, on behalf of GSECL, under affidavit submitted that GMR Chhattisgarh Energy Ltd. will supply electricity from the coal given to them at the rate of Rs.2.81 per Unit for contracted of 500 MW and the SHR agreed is 2206 kcal/Unit. However, GSECL had not specified anywhere regarding the quantum of electricity received from GMR Chhattisgarh Energy Ltd and saving achieved by selling of Coal to them and if any passed to consumers. As the same had been submitted by GUVNL/GSECL under affidavit that consumers are going to be benefited by Rs.200 Crore or more.

Further, GSECL had not specified quantity of coal diverted to GMR Chhattisgarh Energy Ltd. and generation received from them in Petition No.1837/2019 of GSECL and its Accounting Statement.

Response of GSECL



In accordance to the office memorandum dated 20.02.2017 issued by the Ministry of Power for utilization of domestic coal by IPP under case-4 to reduce the cost of Generation, GUVNL had invited the competitive bidding to supply the power under case-4 linkage coal of GSECL as per the methodology issued by the Ministry of Power, GSECL had to only transfer the linkage coal to selected bidder (M/s. GMR) against the amount received for cost of coal. Further, GSECL had not submitted any affidavit in this regard.

The Annual Accounts had been prepared as per the requirement of Companies Act, 2013 and applicability of IND AS. Further, the company has not received any power and GMR Chhatisgadh Energy Ltd has directly sold power to GUVNL. Therefore, this transaction not required to be shown in books of Accounts of GSECL as per applicable Indian Accounting Standard.

Commission's View

The agreement between GUVNL and GMR is based on the policy / methodology of Ministry of Power (GoI) for supply of coal, which was available to any generator. The necessary details with respect to the cost of coal supply has been submitted by the Petitioner in its Annual Accounts. As per the agreement the energy was to be supplied to GUVNL and not to GSECL. In the present Order, the Commission has not considered the cost as well as revenue of Rs. 241.57 Crore booked in audited accounts of GSECL towards this transaction.

3.2.2 DSM Charges

The Objector asked for clarification regarding reduction of DSM charges of Rs. 17.34 Crore being a generation company. The revenue from sale of electricity mentioned as Rs. 9194.9 Crore (Refer Note 28 and 29 of AFR).

Response of GSECL

The amount mentioned by the objector was not correct. However, the correct amount of the revenue from sale of power was Rs. 11,238.30 Crore and DSM charges was (-) 22.34 Crore. Therefore, the net income from sale of power was Rs. 11,215.96 Crore. Further, the company had paid net DSM charges of Rs. 22.34 Crore to SLDC for over drawn/under injection of power as per DSM regulation issued by the Commission. The Generation company also has to follow DSM Regulations, where the GSECL had paid Rs. 22.34 Crore against DSM charges for not maintaining schedule given by SLDC.

Commission's View

The Commission has noted the information submitted by the Petitioner, which is self-explanatory.



3.2.3 Justification of Fuel Charges

In ARR True up proposals net overall fix charges and running charges are given. From the running charges quantum of fuel charges as part of FPPPA charges is required to justify FPPPA charges.

Response of GSECL

The Petitioner respectfully submitted that he was not able to understand the question of Objector.

Commission's View

The Commission noted the response of the Petitioner. GSECL submits the information of cost and quantity of fuel consumption to the Commission and prudent check is being carried out by the Commission.

3.3 Objections related to the information provided in the Petition and Accounting Statement

3.3.1 Verification of Generation and Information on Coal

The Objector submitted that Annual Reports-Accounting Statement by the Statutory Auditor had not specified verification of quantitative information regarding generation of energy by GSECL units. It is also further submitted that, Accounting Statement had not specified regarding quantitative information of coal in reference with the cost of the fuel to arrive at the variable cost of the fuel.

Response of GSECL

As per schedule III, Division II of Companies Act 2013 for preparation of Annual Report-Accounting Statement, there is no specific requirement to disclose quantitative information of Generation of energy.

Commission's View

The accounting statements are required to be prepared as per the provisions of the Companies Act, 2013 and the Petitioner has complied the same. Regarding the verification of Generation, the Commission has relied on Certificate of SLDC, which is statutory body for operation of power system.



3.3.2 Cost Records

The Objector submitted that there are no cost records prescribed by Central Govt. under Section 209(1)(d) of the Companies Act, 1956 and as contemplated in clause 17.3 of the MYT Regulations, 2016.

Response of GSECL

The Section 148 of Companies Act 2013 reads with Rule 3 of the Companies (Cost Records and Audit) Rules, 2014 depict that Cost records need to be prepared & kept by the companies being engaged in the production of goods or provision of service as covered under the Table A or Table B and the total turnover from all its production or service in more than INR 35 Crores during the preceding financial year.

GSECL engaged in Generation of power and falls under the table A, accordingly company has maintained cost records and submits the cost audit report also to the MCA regularly in specified time limit. A cost audit report in XBRL format has been uploaded on the website of Ministry of Corporate Affairs, Govt. of India.

Commission's View

The Commission noted the submission of the Petitioner.

3.3.3 Verification of Assets and ROE

The Objector submitted that Statutory Auditor had stated that the Assets has not been verified after restructuring erstwhile GEB. The Assets have not been verified by any authentic agency and still the same methodology has been in practice. Under Regulatory regime licensees /generators are entitled to get 14% Return on Equity plus Income tax paid. Since, Assets has not been assessed with correct methodology, the equity deployed is doubtful. The Objector requested the Commission to assess GSECL assets and arrived at the actual equity deployed.

Response of GSECL

The Petitioner submitted that point 1(b) of Annexure A to independent Auditors Report which is reproduced below:

"The Company has a policy for regular physical verification of its fixed assets by which fixed assets are verified on every three years. During the year under audit, the company has carried out physical verification of fixed assets through firms of chartered accounts and discrepancies noticed during physical verification were properly dealt with in the books of account. In our opinion, this periodicity of physical verification is reasonable having regard to the size of the Company and the nature of its assets".



Thus, Assets of the company had been physically verified by various Chartered Accountant firms. Hence, Assets have been assessed in correct way and Petitioner is entitled to get 14% return on equity as per MYT Regulation.

Commission's View

The Commission noted the response of the Petitioner. The concerned of the Stakeholder is also well noted.

3.3.4 Recovery of Fixed Cost

The Objector requested for clarity regarding recovery of fixed charges either by PPA allocation or otherwise, on assets which are far older than sustained and technical life of 20/25 years. The fixed charge has been many times more than the cost of assets after revalued book value that too after yielding depreciation twice. The Objector requested the Commission to review recovery of fixed cost in light of Asset life (25 years) and Asset value (Rs. 100 Crore) as after restructuring done by government the Fixed cost of Assets, which again assumed a value of Rs. 100 Crore and starts earning depreciating, interest return on capital, return on equity and Fixed Charge (FC) may work out to Rs. 25 Crore.

Response of GSECL

As a result of unbundling of GEB, 07 new entity emerged, GSECL is one of them. GSECL came into existence w.e.f. 01.04.2005 being separate and legal entity and has taken opening balance of Fixed Assets as transferred by GEB vide notification no. GHU-2006-S3-GUV-1106-590-K in pursuant to the Gujarat Electricity Industry Reorganization and Comprehensive Transfer Scheme 2003. GSECL has shown balance in its books as received vide this notification. Being separate entity the recorded cost in book of accounts shall be the base of all subsequent event viz., charging of depreciation, profit and loss to be booked or sale of assets etc. which is as per accounting standard, accounts convention & concept. As no entity can deviate from its recorded cost, GSECL has charged depreciation as per books cost which is in order. Further, it would be noted that the old machines are running with its rated capacity and of the same time, the fixed cost per unit is very low.

Commission's View

The Commission has noted the response of the Petitioner. The approval and recovery of fixed cost is allowed as per the present GERC (MYT) Regulations, 2016. However, the Commission has noted the objection and shall examine it in detail and take appropriate action, if required.



3.3.5 Details of PLF not provided in truing-up

The Objector has submitted that there is no mention of PLF in the truing up of each generating unit. The Commission is requested to direct GSECL to provide the same.

Response of GSECL

Table No. 11 of petition shows PLF for each generating stations

Commission's View

The Commission has noted the response of the Petitioner.

3.3.6 Filing of data in Forms

The Objector submitted that GSECL had not filled data and details in the Forms as specified under MYT Regulations, 2016.

Response of GSECL

The Tariff filling forms had been filled with data which were applicable. Further GSECL had submitted petition to the Commission with noting in Section 10, Page No: 72 that

"The forms which are not applicable are excluded".

Commission's View

The Commission has noted the response of the Petitioner.

3.3.7 Mismatch in Figure of AFR and ARR

The Objector submitted that the total sum of Rs. 2787.14 Crore, in AFR Note 5 to 14, remained to be account in ARR True up by GSECL.

Response of GSECL

The Company has filled true-up petition as per MYT Regulation, 2016 issued by the Commission. The reason of mismatch of figures of ARR and Annual Financial reports are non claim of the expenses of other activities such as O&M contract of SSNNL, SPS and Renewable powers.

Commission's View

The mismatch in the figures is discussed in analysis Chapter of this Order and the Commission has considered the appropriate adjustments in the truing up of ARR.



3.3.8 In ARR true up a single exercise of total units generated is required to be carried out.

The Objector submitted that table 23 & 24 shows net Fixed Charges. In ARR 2018-19 true up submission the basic per unit generation cost and number of unit generated is not shown and submission is too much complicated.

Response of GSECL

The actual fixed charges are shown in table 23 and approved fixed charges shown in table 24 for FY 2018-19. The station wise net generation, actual fuel cost and approved fuel cost Also per unit generation cost is given in table no.20.

Commission's View

The Commission has noted the response of the Petitioner.

3.3.9 SLDC Charges

The Objector asked to provide a calculative note regarding SLDC charges before the Commission and to the stakeholders, in order to ensure that the consumer are paying SLDC charges for same units one time.

Response of GSECL

SLDC charges are being paid to SLDC as per order issued by the Commission on monthly basis for capacity of the Power Plant. As per IEGC (Indian Electricity Grid Code) and PPA and the company is not liable to pay transmission charges.

Commission's View

The Commission noted the Petitioner's response.

3.3.10 Tariff for FY 2020-21

The Objector submitted that GSECL had not submitted supporting documents to substantiate its tariff claim. The Objector requested the Commission to direct GSECL to comply with the provisions specified in MYT Regulations, 2016.

Response of GSECL

GSECL claimed tariff for FY 2020-21 as approved by the Commission vide MYT Order and the provisions of GERC (MYT) Regulations, 2016.

Commission's View



The Commission has approved the Tariff for FY 2020-21 based on MYT Order and subsequent changes made in Energy Charges in Tariff Order dated April 24, 2019. The details of proposed Tariff for FY 2020-21 is given in relevant Chapter of this Order.



4 Truing up of FY 2018-19

4.1 Generating Stations of GSECL

This chapter deals with the truing up of FY 2018-19.

GSECL owns and operates the following generating stations as on 1st April, 2018.

- Coal based thermal generating stations at Ukai, Gandhinagar, Wanakbori and Sikka;
- Lignite fired thermal station at Panandhro, Kutch;
- Gas fired stations at Utran and Dhuvaran;
- Major hydel stations at Ukai and Kadana and mini hydel stations at Panam, solar power plants at Gandhinagar, Sanand canal, Charanka, KLTPS, Dhuvaran and Sikka TPS and windmills at Layza.

The details of the stations existing as on 1st April, 2018 along with their capacities and date of commissioning are given in the Table below:

Table 4.1: Capacity and COD of GSECL generating stations as on 1st April, 2018

| Name of Station | Unit No. | Capacity of the Unit (MW) | Date of Commissioning |
|-----------------|------------------|---------------------------|-----------------------|
| Ukai | 3 | 200 | 21/01/1979 |
| | 4 | 200 | 11/09/1979 |
| | 5 | 210 | 30/01/1985 |
| | Sub Total | 610 | |
| Gandhinagar | 3 | 210 | 20/03/1990 |
| | 4 | 210 | 20/07/1991 |
| | 5 | 210 | 17/03/1998 |
| | Sub Total | 630 | |
| Wanakbori | 1 | 210 | 23/03/1982 |
| | 2 | 210 | 15/01/1983 |
| | 3 | 210 | 15/03/1984 |
| | 4 | 210 | 09/03/1986 |
| | 5 | 210 | 23/09/1986 |
| | 6 | 210 | 18/11/1987 |
| | 7 | 210 | 31/12/1998 |
| | Sub Total | 1,470 | |
| KLTPS | 1 | 70 | 29/03/1990 |
| | 2 | 70 | 25/03/1991 |
| | 3 | 75 | 31/03/1997 |
| | 4 | 75 | 20/12/2009 |
| | Sub Total | 290 | |
| Dhuvaran | 7 – Gas | 106.617 | 28/01/2004 |
| | 8 – Gas | 112.45 | 01/11/2007 |
| | Sub Total | 219.067 | |
| Utran Extension | GT -1 | 375 | 08-11-2009 |
| Sikka TPS 3&4 | 3 | 250 | 14/09/2015 |
| | 4 | 250 | 28/12/2015 |



| Name of Station | Unit No. | Capacity of the Unit (MW) | Date of Commissioning |
|---|---------------------------|---------------------------|-----------------------|
| | Sub Total | 500 | |
| Ukai TPS | 6 | 500 | 08/06/2013 |
| Dhuvaran (Gas) | 3 | 376 | 21/05/2014 |
| BLTPS | 1 | 250 | 16/05/2016 |
| | 2 | 250 | 27/03/2017 |
| | Sub Total | 500 | |
| SUB TOTAL GSECL (Coal + Lignite) | | 4,500 | |
| SUB TOTAL GSECL (Gas) | | 969.74 | |
| TOTAL GSECL (Thermal) | | 5,469.74 | |
| Ukai Hydro | 1 | 75 | 08/07/1974 |
| | 2 | 75 | 13/12/1974 |
| | 3 | 75 | 22/4/1975 |
| | 4 | 75 | 04/03/1976 |
| | Sub Total | 300 | |
| Ukai LBC | 1 | 2.5 | 08/12/1987 |
| | 2 | 2.5 | 19/02/1988 |
| | Sub Total | 5 | |
| Kadana Hydro | 1 | 60 | 31/03/1990 |
| | 2 | 60 | 02/09/1990 |
| | 3 | 60 | 03/01/1998 |
| | 4 | 60 | 27/05/1998 |
| | Sub Total | 240 | |
| Panam | 1 | 1 | 24/03/1994 |
| | 2 | 1 | 31/03/1994 |
| | Sub Total | 2 | |
| SUB TOTAL GSECL (Hydro) | | 547.00 | |
| Wind Mills | | 10.00 | 04/01/2009 |
| Solar | Plant at GTPS Yard | 1 | 27/03/2012 |
| | Plant at Sanand Br. Canal | 1 | 29/03/2012 |
| | Charanka | 10 | 23/03/2015 |
| | KLTPS | 1 | 02/05/2016 |
| | Sikka TPS | 1 | 02/05/2016 |
| | Dhuvaran | 75 | 05/02/2019 |
| TOTAL GSECL as a Whole | | 6,115.74 | |

4.2 Operating Performance Parameters

The fuel cost of a generation station depends on:

- the performance parameters, such as Plant Availability Factor (PAF), Plant Load Factor (PLF), Station Heat Rate, Auxiliary Consumption, Specific Fuel Oil Consumption and Transit Loss of Coal (in case of Coal stations), which are controllable and;
- cost parameters such as Gross Calorific Value of fuel, type of fuel and price of fuel, which are uncontrollable.

GSECL has submitted the actual operating performance on these parameters for FY 2018-19 for individual stations. GSECL submitted that operating parameters are dependent on various



technical factors like design, level of operation (low/partial load operation), ageing, water chemistry, number of start or stop, etc.

The Commission has taken up the truing up of the annual performance parameters for FY 2018-19, which is discussed in the following sections.

4.2.1 Plant Availability Factor (PAF)

Petitioner's Submission

GSECL has submitted the actual plant availability of different stations for FY 2018-19. The PAF (i) approved in the MYT Order dated March 31, 2017; and (ii) the actuals as furnished by GSECL in the Petition are given in the Table below:

Table 4.2: Plant Availability Factors for FY 2018-19

| Sr. No. | Power Station | Approved as per MYT Order | Actual |
|----------------|------------------------|----------------------------------|---------------|
| 1. | Ukai (3-5) | 80% | 82.69% |
| 2. | Gandhinagar (3-4) | 84% | 87.59% |
| 3. | Gandhinagar 5* | 85% | 89.94% |
| 4. | Wanakbori 1-6 TPS | 85% | 89.26% |
| 5. | Wanakbori 7* | 85% | 90.05% |
| 6. | Sikka Extension (3-4)* | 85% | 90.19% |
| 7. | KLTPS 1-3 | 75% | 46.01% |
| 8. | KLTPS 4 | 80% | 44.47% |
| 9. | Dhuvaran CCPP 1* | 85% | 35.91% |
| 10. | Dhuvaran CCPP 2 | 85% | 76.37% |
| 11. | Dhuvaran CCPP 3* | 85% | 95.79% |
| 12. | Utran Extension* | 85% | 95.94% |
| 13. | Ukai 6* | 85% | 76.86% |
| 14. | Ukai Hydro | 80% | 97.92% |
| 15. | Kadana Hydro | 80% | 92.56% |

* PPA based stations

It is observed from the above Table that KLTPS 1-3, KLTPS 4, Dhuvaran CCPP 1, Dhuvaran CCPP 2 and Ukai 6 have achieved lower PAF than approved by the Commission in the MYT Order for FY 2018-19.

GSECL has submitted the reasons for deviation, in respect of the stations where the actual PAF was low as compared to approved PAF for FY 2018-19, as given below:

- Ukai 6: Generator Rotor Earth Fault & 400 KV Cable Fault of Unit 6 resulted in reduced availability.
- KLTPS (1 -3): Non availability of coal mills due to poor lignite quality impacted the availability of Plant.



- KLTPS 4: Boiler tube leakages, seal pot to combustor expansion joint leakage caused forced outages and partial outages.
- Dhuvaran CCPP 1: Turbine Bearing Vibration - replacement of both bearings of Gas Turbine.
- Dhuvaran CCPP 2: Forced outages due to Gas Turbine Start up problem (SFC) & loss of availability due to Vacuum.

GSECL has requested the Commission to approve plant availability as proposed by them.

Commission's Analysis

The Commission notes that the actual PAF is less than the approved one in case of Ukai 6, KLTPS (1-3), KLTPS 4, Dhuvaran CCPP1 and CCPP2. The Petitioner has explained the reasons for low PAF of these plants. The submissions have been noted.

The Commission notes that generator rotor earth fault and 400 kV cable fault of Unit 6 has resulted into lower availability of Ukai 6. The shut down period was from March 19, 2018 to May 7, 2018 on account of generator rotor fault and May 31, 2018 to July 14, 2018 on account of 400 kV cable fault. Regarding the failure analysis, GSECL submitted that failure of joint was on account of break down from inside rubber sleeve to outer sleeve due to separation of the corona shield followed by lack of cable straightness during installation work. Rotor earth fault occurred due to rotor field lead bar melting seems to be due to arcing current at the fault location. Arcing could have happened due to a crack in the field lead bar. The crack could have developed most probably due to mis-handling or faulty operation. However, exact reason cannot be pin-pointed since BHEL has never faced this type of failure in any of our generators. These faults led to loss of generation of 913.71 MU during FY 2018-19.

However, as the Plant Availability Factor is controllable, for truing up purpose the PAF as approved in the MYT Order dated 31st March, 2017 for FY 2018-19 is considered.

The PAF approved for truing up purpose for FY 2018-19 for each station is given in the Table below:

Table 4.3: Plant Availability Factors approved for truing up for FY 2018-19

| Sr. No. | Particulars | Approved as per MYT Order | Actual | Approved in truing up |
|----------------|------------------------|----------------------------------|---------------|------------------------------|
| 1. | Ukai (3-5) | 80.00% | 82.69% | 80.00% |
| 2. | Gandhinagar (3-4) | 84.00% | 87.59% | 84.00% |
| 3. | Gandhinagar 5* | 85.00% | 89.94% | 85.00% |
| 4. | Wanakbori 1-6 TPS | 85.00% | 89.26% | 85.00% |
| 5. | Wanakbori 7* | 85.00% | 90.05% | 85.00% |
| 6. | Sikka Extension (3-4)* | 85.00% | 90.19% | 85.00% |



| Sr. No. | Particulars | Approved as per MYT Order | Actual | Approved in truing up |
|---------|------------------|---------------------------|--------|-----------------------|
| 7. | KLTPS 1-3 | 75.00% | 46.01% | 75.00% |
| 8. | KLTPS 4 | 80.00% | 44.47% | 80.00% |
| 9. | Dhuvaran CCPP 1* | 85.00% | 35.91% | 85.00% |
| 10. | Dhuvaran CCPP 2 | 85.00% | 76.37% | 85.00% |
| 11. | Dhuvaran CCPP 3* | 85.00% | 95.79% | 85.00% |
| 12. | Utran Extension* | 85.00% | 95.94% | 85.00% |
| 13. | Ukai 6* | 85.00% | 76.86% | 85.00% |
| 14. | Ukai Hydro | 80.00% | 97.92% | 80.00% |
| 15. | Kadana Hydro | 80.00% | 92.56% | 80.00% |

* PPA based stations

4.2.2 Plant Load Factor (PLF)

Petitioner's Submission

GSECL has submitted the actual Plant Load Factor of different stations for FY 2018-19. The PLF (i) approved in the MYT Order dated 31st March, 2017 and (ii) the actuals as furnished by GSECL in the Petition are given in the Table below:

Table 4.4: Plant Load Factors for FY 2018-19

| Sr. No. | Power Station | Approved as per MYT Order | Actual |
|---------|------------------------|---------------------------|--------|
| 1. | Ukai (3-5) | 60% | 73.20% |
| 2. | Gandhinagar (3-4) | 45% | 60.71% |
| 3. | Gandhinagar 5* | 77% | 79.93% |
| 4. | Wanakbori 1-6 TPS | 52% | 61.95% |
| 5. | Wanakbori 7* | 70% | 81.83% |
| 6. | Sikka Extension (3-4)* | 70% | 62.24% |
| 7. | KLTPS 1-3 | 75% | 47.04% |
| 8. | KLTPS 4 | 75% | 48.62% |
| 9. | Dhuvaran CCPP 1* | 25% | 14.89% |
| 10. | Dhuvaran CCPP 2 | 25% | 28.65% |
| 11. | Dhuvaran CCPP 3* | 25% | 8.52% |
| 12. | Utran Extension* | 25% | 12.75% |
| 13. | Ukai 6* | 77% | 69.07% |
| 14. | Ukai Hydro | 13% | 8.29% |
| 15. | Kadana Hydro | 6% | 11.39% |

* PPA based stations

Petitioner has submitted following reasons for plants that have achieved low PLF:

- Ukai 6: Generator Rotor Earth Fault & 400 KV Cable Fault.
- Sikka (3-4): Backing down and Reserve shut down as per SLDC instructions
- KLTPS 1-3: Non availability of coal mills due to change in source of coal affected plant load factor.



- KLTPS 4: Combustor inspection, Cyclone vortex and Seal pot issue caused forced/partial outages thus reduced plant load factor.
- Dhuvaran CCPP1: Turbine Bearing Vibration and Reserve shutdown of plant.
- Dhuvaran CCPP3: Reserve shut down
- Utran Extension: Reserve shut down

Commission's Analysis

The Commission has analyzed the submissions made by the Petitioner in the Table above. It is observed that all the stations except Ukai 6, Sikka Extn. (3-4), KLTPS (1-3), KLTPS 4, Dhuvaran CCPP 1, Dhuvaran CCPP 3 and Utran Extension stations have achieved higher PLF for FY 2018-19 than approved in the MYT Order. The Commission has taken note of the above submissions made by the Petitioner and approved the PLF for FY 2018-19 for various stations at actuals for truing up purpose being uncontrollable factor, as given in the Table below:

Table 4.5: PLF Approved for FY 2018-19 for truing up purpose

| Sr. No. | Power Station | Approved as per MYT Order | Actual | Approved in truing up |
|---------|------------------------|---------------------------|--------|-----------------------|
| 1. | Ukai (3-5) | 60% | 73.20% | 73.20% |
| 2. | Gandhinagar (3-4) | 45% | 60.71% | 60.71% |
| 3. | Gandhinagar 5* | 77% | 79.93% | 79.93% |
| 4. | Wanakbori 1-6 TPS | 52% | 61.95% | 61.95% |
| 5. | Wanakbori 7* | 70% | 81.83% | 81.83% |
| 6. | Sikka Extension (3-4)* | 70% | 62.24% | 62.24% |
| 7. | KLTPS 1-3 | 75% | 47.04% | 47.04% |
| 8. | KLTPS 4 | 75% | 48.62% | 48.62% |
| 9. | Dhuvaran CCPP 1* | 25% | 14.89% | 14.89% |
| 10. | Dhuvaran CCPP 2 | 25% | 28.65% | 28.65% |
| 11. | Dhuvaran CCPP 3* | 25% | 8.52% | 8.52% |
| 12. | Utran Extension* | 25% | 12.75% | 12.75% |
| 13. | Ukai 6* | 77% | 69.07% | 69.07% |
| 14. | Ukai Hydro | 13% | 8.29% | 8.29% |
| 15. | Kadana Hydro | 6% | 11.39% | 11.39% |

* PPA based stations



4.2.3 Auxiliary Consumption

Petitioner's Submission

GSECL has submitted the actual auxiliary consumption of different stations for FY 2018-19. The auxiliary consumption (i) approved in the MYT Order dated 31st March, 2017 and (ii) the actuals as furnished by GSECL in the Petition are given in the Table below:

Table 4.6: Auxiliary consumption for FY 2018-19

| Sr. No. | Power Station | Approved as per MYT Order | Actual |
|---------|------------------------|---------------------------|--------|
| 1. | Ukai (3-5) | 9.00% | 9.55% |
| 2. | Gandhinagar (3-4) | 9.00% | 10.56% |
| 3. | Gandhinagar 5* | 9.50% | 9.64% |
| 4. | Wanakbori 1-6 TPS | 9.00% | 9.11% |
| 5. | Wanakbori 7* | 9.50% | 9.17% |
| 6. | Sikka Extension (3-4)* | 9.00% | 9.49% |
| 7. | KLTPS 1-3 | 12.00% | 15.47% |
| 8. | KLTPS 4 | 12.00% | 22.74% |
| 9. | Dhuvaran CCPP 1* | 4.00% | 7.35% |
| 10. | Dhuvaran CCPP 2 | 3.00% | 6.85% |
| 11. | Dhuvaran CCPP 3* | 3.00% | 6.04% |
| 12. | Utran Extension* | 3.00% | 4.24% |
| 13. | Ukai 6* | 6.00% | 6.05% |
| 14. | Ukai Hydro | 0.60% | 1.19% |
| 15. | Kadana Hydro | 1.00% | 0.76% |

* PPA based stations

GSECL stated that the old stations, when operated at part load capacities under the constraints as explained below, consume more auxiliary power, resulting in higher auxiliary consumption:

Ukai 3-5, Gandhinagar 3-4, Gandhinagar 5, Wanakbori 1-6 and Sikka 3-4: Partial operation due to backing down & Auxiliary Power consumption during Reserve Shutdown

KLTPS 1-3: Partial Operation due to poor lignite quality & Unit constrains

KLTPS 4: Partial Operation due to unit constrains (Partial Operation)

Dhuvaran CCPP1: Auxiliary Power consumption during Reserve Shutdown & Forced Shutdown.

Dhuvaran CCPP2 & CCPP3 and Utran Extension: Auxiliary Power consumption during Reserve Shutdown.

Ukai Hydro: Low reservoir level due to Irrigation dependency

The Petitioner also submitted that over and above backing down, the units frequently had to undergo reserve shut down and during such time, minimum auxiliaries are required to be run



to keep the units available so that the same can be taken on grid as and when required by SLDC / system.

Commission's Analysis

The Commission has taken note of the submissions made by the Petitioner regarding the actual auxiliary consumption. The Commission observed that in respect of PPA governed stations, the auxiliary consumption is based on the respective PPAs and accordingly, the auxiliary consumption is considered in the MYT Order dated 31st March, 2017 for FY 2018-19. The actual auxiliary consumption in all plants is higher than approved in the MYT Order dated 31st March, 2017 for FY 2018-19 except, Wanakbori 7 and Kadana hydro stations where the actual auxiliary consumption is less than what was approved in the MYT Order.

GSECL for many plants have submitted the reasons for higher Auxiliary consumption as partial operation due to backing down and reserved shutdown of plants. Though GSECL has indicated the reasons for higher auxiliary consumption, the Commission is of the view that the reasons are not acceptable as the Commission had taken all the factors into consideration while approving the auxiliary consumption in the MYT Order dated 31st March, 2017 for FY 2018-19, and the auxiliary consumption is also a controllable parameter as described in the GERC (MYT) Regulations, 2016.

The Commission approves the auxiliary consumption for various stations as approved in the MYT Order dated 31st March, 2017 for FY 2018-19, for truing up purpose as it is a controllable parameter.

The auxiliary consumption approved for different stations for the purpose of truing up for FY 2018-19 is given in the Table below:

Table 4.7: Auxiliary consumption (%) approved for FY 2018-19 for truing up

| Sr. No. | Power Station | Approved as per MYT Order | Actual | Approved in truing up |
|----------------|------------------------|----------------------------------|---------------|------------------------------|
| 1. | Ukai (3-5) | 9.00% | 9.55% | 9.00% |
| 2. | Gandhinagar (3-4) | 9.00% | 10.56% | 9.00% |
| 3. | Gandhinagar 5* | 9.50% | 9.64% | 9.50% |
| 4. | Wanakbori 1-6 TPS | 9.00% | 9.11% | 9.00% |
| 5. | Wanakbori 7* | 9.50% | 9.17% | 9.50% |
| 6. | Sikka Extension (3-4)* | 9.00% | 9.49% | 9.00% |
| 7. | KLTPS 1-3 | 12.00% | 15.47% | 12.00% |
| 8. | KLTPS 4 | 12.00% | 22.74% | 12.00% |
| 9. | Dhuvaran CCPP 1* | 4.00% | 7.35% | 4.00% |
| 10. | Dhuvaran CCPP 2 | 3.00% | 6.85% | 3.00% |
| 11. | Dhuvaran CCPP 3* | 3.00% | 6.04% | 3.00% |
| 12. | Utran Extension* | 3.00% | 4.24% | 3.00% |



| Sr. No. | Power Station | Approved as per MYT Order | Actual | Approved in truing up |
|---------|---------------|---------------------------|--------|-----------------------|
| 13. | Ukai 6* | 6.00% | 6.05% | 6.00% |
| 14. | Ukai Hydro | 0.60% | 1.19% | 0.60% |
| 15. | Kadana Hydro | 1.00% | 0.76% | 1.00% |

* PPA based stations

4.2.4 Station Heat Rate (SHR)

Petitioner's Submission

GSECL has furnished the actual SHR attained for different stations during FY 2018-19. The station heat rates (i) approved by the Commission in the MYT Order dated 31st March, 2017 and (ii) the actuals as furnished by GSECL in the Petition are given in the Table below:

Table 4.8: Station Heat Rate for FY 2018-19

| (kcal/kWh) | | | |
|------------|------------------------|---------------------------|--------|
| Sr. No. | Power Station | Approved as per MYT Order | Actual |
| 1. | Ukai (3-5) | 2,625 | 2,529 |
| 2. | Gandhinagar (3-4) | 2,625 | 2,537 |
| 3. | Gandhinagar 5* | 2,460 | 2,504 |
| 4. | Wanakbori 1-6 TPS | 2,625 | 2,539 |
| 5. | Wanakbori 7* | 2,460 | 2,454 |
| 6. | Sikka Extension (3-4)* | 2,398 | 2,552 |
| 7. | KLTPS 1-3 | 3,231 | 3,320 |
| 8. | KLTPS 4 | 3,000 | 3,015 |
| 9. | Dhuvaran CCPP 1* | 1,950 | 2,091 |
| 10. | Dhuvaran CCPP 2 | 1,950 | 2,143 |
| 11. | Dhuvaran CCPP 3* | 1,850 | 1,849 |
| 12. | Utran Extension* | 1,850 | 1,771 |
| 13. | Ukai 6* | 2,385 | 2,323 |

* PPA based stations

GSECL has stated that for any generation plant, the SHR always deteriorates with the time. Hence, the old stations were not able to achieve the SHR comparable to the norms of the Commission. Further, as and when any unit operates on partial load, SHR increases drastically. GSECL has taken measures to improve SHR due to which some stations have shown considerable improvement.

GSECL has stated following reasons for higher Station Heat Rate during FY 2018-19:

- Gandhinagar 5: Partial load operation due to backing down
- Sikka 3-4: Partial Operation due to backing down & Frequent start stop due to Reserve Shutdown and Forced Outages.
- KLTPS 1-3: Partial Operation due to change in source of lignite and Outages



- KLTPS 4: Partial Operation due to unit constrains (Combustor and Seal pot leakage) & Forced Outages
- Dhuvaran CCPP1: Partial Operation due to backing down, Condenser problem & Frequent Start-Stop
- Dhuvaran CCPP2: Partial Operation due to backing down, Condenser problem & Frequent Start-Stop.

Commission's Analysis

The Commission observed that for PPA governed stations, the SHR is approved as per the respective PPA terms. However, Generation Stations viz. Gandhinagar 5, Sikka Extn 3-4, KLTPS 1-3, KLTPS 4, Dhuvaran CCPP 1 and Dhuvaran CCPP 2 have Station Heat Rate higher than normative SHR for FY 2018-19. The Commission has analyzed the reasons submitted by the Petitioner for these stations and is of the view that the reasons put forward are not acceptable because SHR is considered as a controllable parameter for Truing up as prescribed in the GERC (MYT) Regulations, 2016.

For the purpose of truing up for FY 2018-19, the Commission approves the SHR as considered in the MYT Order for FY 2018-19 as given in the Table below:

Table 4.9: Station Heat Rate approved for FY 2018-19 for truing up

(kcal/kWh)

| Sr. No. | Power Station | Approved as per MYT Order | Actual | Approved in truing up |
|---------|------------------------|---------------------------|--------|-----------------------|
| 1. | Ukai (3-5) | 2,625 | 2,529 | 2,625 |
| 2. | Gandhinagar (3-4) | 2,625 | 2,537 | 2,625 |
| 3. | Gandhinagar 5* | 2,460 | 2,504 | 2,460 |
| 4. | Wanakbori 1-6 TPS | 2,625 | 2,539 | 2,625 |
| 5. | Wanakbori 7* | 2,460 | 2,454 | 2,460 |
| 6. | Sikka Extension (3-4)* | 2,398 | 2,552 | 2,398 |
| 7. | KLTPS 1-3 | 3,231 | 3,320 | 3,231 |
| 8. | KLTPS 4 | 3,000 | 3,015 | 3,000 |
| 9. | Dhuvaran CCPP 1* | 1,950 | 2,091 | 1,950 |
| 10. | Dhuvaran CCPP 2 | 1,950 | 2,143 | 1,950 |
| 11. | Dhuvaran CCPP 3* | 1,850 | 1,849 | 1,850 |
| 12. | Utran Extension* | 1,850 | 1,771 | 1,850 |
| 13. | Ukai 6* | 2,385 | 2,323 | 2,385 |

* PPA based stations

4.2.5 Secondary Fuel Oil Consumption (Specific Oil Consumption)

Petitioner's Submission



GSECL has furnished the actual secondary fuel oil consumption for different stations during FY 2018-19. The secondary fuel oil consumption (i) approved by the Commission in the MYT Order dated 31st March, 2017 and (ii) the actuals as furnished by GSECL in the Petition are given in the Table below:

Table 4.10: Secondary Fuel Oil Consumption for FY 2018-19

| (ml/kWh) | | | |
|----------|------------------------|---------------------------|--------|
| Sr. No. | Power Station | Approved as per MYT Order | Actual |
| 1. | Ukai (3-5) | 1.00 | 1.01 |
| 2. | Gandhinagar (3-4) | 1.00 | 0.84 |
| 3. | Gandhinagar 5* | 3.50 | 0.46 |
| 4. | Wanakbori 1-6 TPS | 1.00 | 0.87 |
| 5. | Wanakbori 7* | 3.50 | 0.17 |
| 6. | Sikka Extension (3-4)* | 1.00 | 1.13 |
| 7. | KLTPS 1-3 | 3.00 | 14.02 |
| 8. | KLTPS 4 | 3.00 | 1.63 |
| 9. | Ukai 6* | 1.00 | 0.26 |

* PPA based stations

GSECL has submitted that the Specific Oil Consumption is calculated in terms of percentage of total calorific value 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 in comparison to the larger size units, because certain amount of Specific Oil consumption remains fixed irrespective of the size of the generating unit. As most of the units of GSECL power stations are smaller in size, Specific Oil Consumption of these plants is generally high.

GSECL has submitted following reasons for higher specific oil consumption in respective stations for FY 2018-19:

- Ukai (3-5) and Sikka (3-4): Start-Stop due to Reserved Shutdown
- KLTPS 1-3: Higher forced outages and Non availability of coal mills due to poor lignite quality

Commission's Analysis

For PPA governed stations, the secondary fuel oil consumption is approved as per the terms of the respective PPAs.

The Commission has analyzed and noted the reasons submitted by GSECL for higher secondary oil consumption for such stations. However, as SFO consumption is a controllable parameter, for all non-PPA stations and for the purpose of truing up for FY 2018-19, the Commission approves the specific oil consumption as considered in the MYT Order for FY 2018-19.



Accordingly, the secondary fuel oil consumption approved for FY 2018-19 for various stations is given in the Table below:

Table 4.11: Secondary Fuel Oil Consumption approved for FY 2018-19 for Truing up

| (ml/kWh) | | | | |
|----------|------------------------|---------------------------|--------|-----------------------|
| Sr. No. | Power Station | Approved as per MYT Order | Actual | Approved in truing up |
| 1. | Ukai (3-5) | 1.00 | 1.01 | 1.00 |
| 2. | Gandhinagar (3-4) | 1.00 | 0.84 | 1.00 |
| 3. | Gandhinagar 5* | 3.50 | 0.46 | 3.50 |
| 4. | Wanakbori 1-6 TPS | 1.00 | 0.87 | 1.00 |
| 5. | Wanakbori 7* | 3.50 | 0.17 | 3.50 |
| 6. | Sikka Extension (3-4)* | 1.00 | 1.13 | 1.00 |
| 7. | KLTPS 1-3 | 3.00 | 14.02 | 3.00 |
| 8. | KLTPS 4 | 3.00 | 1.63 | 3.00 |
| 9. | Ukai 6* | 1.00 | 0.26 | 1.00 |

* PPA based stations

4.2.6 Transit Loss

Petitioner's Submission

GSECL has furnished the actual transit loss of coal for different stations for FY 2018-19. The transit loss (i) approved by the Commission in the MYT Order dated 31st March, 2017 and (ii) the actuals as furnished by GSECL in the Petition are given in the Table below:

Table 4.12: Transit Loss for FY 2018-19

| Sr. No. | Power Station | Approved as per MYT Order | Actual |
|---------|------------------------|---------------------------|--------|
| 1. | Ukai (3-5) | 0.80% | 0.36% |
| 2. | Gandhinagar (3-4) | 0.80% | 0.32% |
| 3. | Gandhinagar 5* | 0.80% | 0.32% |
| 4. | Wanakbori 1-6 TPS | 0.80% | 0.41% |
| 5. | Wanakbori 7* | 0.80% | 0.41% |
| 6. | Sikka Extension (3-4)* | 0.00% | 0.00% |
| 7. | KLTPS 1-3 | 0.20% | 0.18% |
| 8. | KLTPS 4 | 0.20% | 0.18% |
| 9. | Ukai 6* | 0.80% | 0.36% |

* PPA based stations

Commission's Analysis

The transit loss as per actuals is less than that approved in the MYT Order dated 31st March, 2017 for FY 2018-19. For the PPA governed stations, the transit loss is approved as per PPA terms.

The Commission approves the transit loss for all stations for truing up purpose for FY 2018-19 as given in the Table below:



Table 4.13: Transit Loss approved for FY 2018-19 for truing up

| Sr. No. | Power Stations | Approved as per MYT Order | Actual | Approved in truing up (%) |
|---------|------------------------|---------------------------|--------|---------------------------|
| 1. | Ukai (3-5) | 0.80% | 0.36% | 0.80% |
| 2. | Gandhinagar (3-4) | 0.80% | 0.32% | 0.80% |
| 3. | Gandhinagar 5* | 0.80% | 0.32% | 0.80% |
| 4. | Wanakbori 1-6 TPS | 0.80% | 0.41% | 0.80% |
| 5. | Wanakbori 7* | 0.80% | 0.41% | 0.80% |
| 6. | Sikka Extension (3-4)* | 0.00% | 0.00% | 0.00% |
| 7. | KLTPS 1-3 | 0.20% | 0.18% | 0.20% |
| 8. | KLTPS 4 | 0.20% | 0.18% | 0.20% |
| 9. | Ukai 6* | 0.80% | 0.36% | 0.80% |

* PPA based stations

The transit loss is considered only for indigenous coal, washed coal and lignite, but not for imported coal as mentioned in the GERC (MYT) Regulations, 2016.

4.2.7 Summary of Performance Parameters Approved for FY 2018-19

The performance parameters, approved for different stations for FY 2018-19 after the analysis in the preceding paras for the purpose of truing up of FY 2018-19, are listed in the Table below:

Table 4.14: Performance parameters approved for truing up purpose for FY 2018-19

| Sr. No. | Power Stations | PAF (%) | PLF (%) | Auxiliary consumption (%) | SHR (kcal / kWh) | SFO consumption (ml / kWh) | Transit Loss (%) |
|---------|------------------------|---------|---------|---------------------------|------------------|----------------------------|------------------|
| 1. | Ukai (3-5) | 80.00% | 73.20% | 9.00% | 2,625 | 1.00 | 0.80% |
| 2. | Gandhinagar (3-4) | 84.00% | 60.71% | 9.00% | 2,625 | 1.00 | 0.80% |
| 3. | Gandhinagar 5* | 85.00% | 79.93% | 9.50% | 2,460 | 3.50 | 0.80% |
| 4. | Wanakbori 1-6 TPS | 85.00% | 61.95% | 9.00% | 2,625 | 1.00 | 0.80% |
| 5. | Wanakbori 7* | 85.00% | 81.83% | 9.50% | 2,460 | 3.50 | 0.80% |
| 6. | Sikka Extension (3-4)* | 85.00% | 62.24% | 9.00% | 2,398 | 1.00 | 0.00% |
| 7. | KLTPS 1-3 | 75.00% | 47.04% | 12.00% | 3,231 | 3.00 | 0.20% |
| 8. | KLTPS 4 | 80.00% | 48.62% | 12.00% | 3,000 | 3.00 | 0.20% |
| 9. | Dhuvaran CCPP 1* | 85.00% | 14.89% | 4.00% | 1,950 | - | - |
| 10. | Dhuvaran CCPP 2 | 85.00% | 28.65% | 3.00% | 1,950 | - | - |
| 11. | Dhuvaran CCPP 3* | 85.00% | 8.52% | 3.00% | 1,850 | - | - |
| 12. | Utran Extension* | 85.00% | 12.75% | 3.00% | 1,850 | - | - |
| 13. | Ukai 6* | 85.00% | 69.07% | 6.00% | 2,385 | 1.00 | 0.80% |
| 14. | Ukai Hydro | 80.00% | 8.29% | 0.60% | - | - | - |
| 15. | Kadana Hydro | 80.00% | 11.39% | 1.00% | - | - | - |

* PPA based stations



4.3 Gross and Net Generation

The gross and net generation of different stations, as per actual, as furnished by GSECL and as approved for truing up purpose for the FY 2018-19, are given in the Table below:



Gujarat State Electricity Corporation Limited
Truing Up for FY 2018-19 and Determination of Tariff for FY 2020-21

Table 4.15: Gross and net generation for FY 2018-19 for truing up purpose

| Sr. No. | Power Stations | As per actuals submitted by GSECL | | | | As approved by the Commission | | | |
|---------|------------------------|-----------------------------------|----------------|-----------------|---------------------|-------------------------------|----------------|-----------------|---------------------|
| | | Gross Generation (MU) | Aux. Cons. (%) | Aux. Cons. (MU) | Net Generation (MU) | Gross Generation (MU) | Aux. Cons. (%) | Aux. Cons. (MU) | Net Generation (MU) |
| 1. | Ukai (3-5) | 3,911.68 | 9.55% | 373.39 | 3,538.29 | 3,911.68 | 9.00% | 352.05 | 3,559.63 |
| 2. | Gandhinagar (3-4) | 2,233.59 | 10.56% | 235.85 | 1,997.74 | 2,233.59 | 9.00% | 201.02 | 2,032.57 |
| 3. | Gandhinagar 5* | 1,470.40 | 9.64% | 141.78 | 1,328.62 | 1,470.40 | 9.50% | 139.69 | 1,330.71 |
| 4. | Wanakbori 1-6 TPS | 6,837.79 | 9.11% | 622.79 | 6,215.00 | 6,837.79 | 9.00% | 615.40 | 6,222.39 |
| 5. | Wanakbori 7* | 1,505.34 | 9.17% | 138.04 | 1,367.30 | 1,505.34 | 9.50% | 143.01 | 1,362.33 |
| 6. | Sikka Extension (3-4)* | 2,725.91 | 9.49% | 258.66 | 2,467.25 | 2,725.91 | 9.00% | 245.33 | 2,480.58 |
| 7. | KLTPS 1-3 | 885.92 | 15.47% | 137.09 | 748.83 | 885.92 | 12.00% | 106.31 | 779.61 |
| 8. | KLTPS 4 | 319.45 | 22.74% | 72.64 | 246.81 | 319.45 | 12.00% | 38.33 | 281.12 |
| 9. | Dhuvaran CCPP 1* | 139.09 | 7.35% | 10.23 | 128.86 | 139.09 | 4.00% | 5.56 | 133.53 |
| 10. | Dhuvaran CCPP 2 | 282.25 | 6.85% | 19.33 | 262.92 | 282.25 | 3.00% | 8.47 | 273.78 |
| 11. | Dhuvaran CCPP 3* | 280.65 | 6.04% | 16.95 | 263.70 | 280.65 | 3.00% | 8.42 | 272.23 |
| 12. | Utran Extension* | 418.21 | 4.24% | 17.73 | 400.48 | 418.21 | 3.00% | 12.55 | 405.66 |
| 13. | Ukai 6* | 3,025.29 | 6.05% | 182.88 | 2,842.41 | 3,025.29 | 6.00% | 181.52 | 2,843.77 |
| 14. | Ukai Hydro | 221.55 | 1.19% | 2.64 | 218.91 | 221.55 | 0.60% | 1.33 | 220.22 |
| 15. | Kadana Hydro | 241.38 | 0.76% | 1.83 | 239.55 | 241.38 | 1.00% | 2.41 | 238.97 |
| | Total | 24,498.50 | | 2,231.83 | 22,266.67 | 24,498.50 | | 2,061.40 | 22,437.10 |

* PPA based stations



4.4 Cost Parameters

The cost parameters include GCV of fuel, mix of fuel and price of fuel. GSECL's generating stations operate on coal, lignite, oil and gas as base fuel. For some coal-based stations, a mix of indigenous, washed and imported coal is used.

GSECL has submitted the details of actual weighted average GCV, mix of coal and weighted average price of fuel for different stations as discussed below:

4.4.1 Wt. Avg. Gross Calorific Value (GCV) of fuels

GSECL has furnished the actual Wt. Avg. Gross Calorific Value of different fuels (as fed into the boiler in the case of usage of mix of coal) for FY 2018-19 as given in the Table below:

Table 4.16: Wt. Avg. Gross Calorific Value (GCV) of fuels for different stations for FY 2018-19

| Sr. No. | Power Stations | Wt. Avg. GCV of Coal (kcal/kg) | Wt. Avg. GCV of Lignite (kcal/kg) | Wt. Avg. GCV of Gas (kcal/SCM) | Wt. Avg. GCV of Oil (kcal/kl) |
|---------|------------------------|--------------------------------|-----------------------------------|--------------------------------|-------------------------------|
| 1. | Ukai (3-5) | 4,003 | | | 10,461 |
| 2. | Gandhinagar (3-4) | 3,960 | | | 10,438 |
| 3. | Gandhinagar 5* | 4,014 | | | 10,452 |
| 4. | Wanakbori 1-6 TPS | 4,010 | | | 10,356 |
| 5. | Wanakbori 7 TPS* | 4,074 | | | 10,353 |
| 6. | Sikka Extension (3-4)* | 5,105 | | | 10,314 |
| 7. | KLTPS 1-3 | | 2,308 | | 10,220 |
| 8. | KLTPS 4 | | 2,300 | | 10,644 |
| 9. | Dhuvaran CCPP 1* | | | 9,586 | |
| 10. | Dhuvaran CCPP 2 | | | 9,539 | |
| 11. | Dhuvaran CCPP 3* | | | 9,329 | |
| 12. | Utran Extension* | | | 9,330 | |
| 13. | Ukai 6* | 4,117 | | | 10,440 |

* PPA based stations

Mix of Coal

GSECL has furnished the actual percentage of the mix of different types of coal used for the stations during the FY 2018-19 as given in the Table below:

Table 4.17: The Mix of Different Types of Coal for FY 2018-19

| Sr. No. | Power Station | Mix of coal (%) | | |
|---------|-------------------|-----------------|--------|----------|
| | | Indigenous | Washed | Imported |
| 1. | Ukai (3-5) | 27.17% | 56.24% | 16.60% |
| 2. | Gandhinagar (3-4) | 27.80% | 57.37% | 14.83% |
| 3. | Gandhinagar 5* | 25.44% | 58.49% | 16.07% |
| 4. | Wanakbori 1-6 TPS | 25.94% | 53.81% | 20.25% |
| 5. | Wanakbori 7* | 24.81% | 55.01% | 20.18% |



| Sr. No. | Power Station | Mix of coal (%) | | |
|---------|------------------------|-----------------|--------|----------|
| | | Indigenous | Washed | Imported |
| 6. | Sikka Extension (3-4)* | 0.00% | 0.77% | 99.23% |
| 7. | Ukai 6* | 12.89% | 67.63% | 19.48% |

* PPA based stations

4.4.2 Wt. Avg. Prices of Fuel

GSECL has furnished the actual Wt. Avg. price per unit of different fuels for different stations, for FY 2018-19, as given in the Table below:

Table 4.18: Wt. Avg. Price / Unit of Fuels for FY 2018-19 (Actual)

| Sr. No. | Station | Wt. Avg. Cost of Indigenous Coal (Rs./MT) | Wt. Avg. Cost of Washed Coal (Rs./MT) | Wt. Avg. Cost of Imported Coal (Rs./MT) | Wt. Avg. Cost of Lignite (Rs./MT) | Wt. Avg. Cost of Gas (Rs./SCM) | Wt. Avg. Cost of Oil (Rs./KI) |
|---------|------------------------|---|---------------------------------------|---|-----------------------------------|--------------------------------|-------------------------------|
| 1. | Ukai (3-5) | 4,272 | 4,809 | 8,093 | | | 35,823 |
| 2. | Gandhinagar (3-4) | 4,670 | 5,239 | 7,891 | | | 35,293 |
| 3. | Gandhinagar 5* | 4,756 | 5,382 | 7,968 | | | 35,293 |
| 4. | Wanakbori 1-6 TPS | 4,427 | 5,191 | 7,921 | | | 37,330 |
| 5. | Wanakbori 7* | 4,558 | 5,272 | 7,947 | | | 37,330 |
| 6. | Sikka Extension (3-4)* | - | 5,264 | 8,025 | | | 40,820 |
| 7. | KLTPS 1-3 | | | | 1,460 | | 46,507 |
| 8. | KLTPS 4 | | | | 1,592 | | 46,507 |
| 9. | Dhuvaran CCPP 1* | | | | | 12.32 | |
| 10. | Dhuvaran CCPP 2 | | | | | 14.26 | |
| 11. | Dhuvaran CCPP 3* | | | | | 29.90 | |
| 12. | Utran Extension* | | | | | 33.43 | |
| 13. | Ukai 6* | 4,217 | 4,926 | 8,224 | | | 32,181 |

* PPA based stations

Commission's Analysis

The Commission sought the details of month-wise fuel stock position along with landed price and Gross Calorific Value of fuel. In reply to this query, GESECL submitted the requisite month wise details for Coal, Lignite, Gas and Oil. From the analysis of the data, it has been observed that per unit price of fuel is different from the submission made in the Petition. This leads to difference in fuel cost. In response to the query, GSECL clarified that fuel cost and fuel prices submitted in the Petition are based on audited accounts. The difference is on account of the following:



- (a) Cost of Station Supply, Lubricants and Chemicals of Rs. 22.82 Crores is included in the Balance Sheet Note No-32. However, the same has not been included in the monthly coal rate.
- (b) Up to the FY 2017-18, revenue from sale of reject coal was considered in the cost of fuel consumed and coal rate was reduced accordingly by netting to the tune of amount received from Sale of Reject coal. Further, because of adoption of Indian Accounting Standards (IND AS) and as suggested by Statutory Auditors, the income from sale of Reject Coal is shown under the head of Income from Other Activity Note No-30 in FY 2018-19. Accordingly, income from sale of reject coal of Rs. 30.48 Crore is utilized for reduction of monthly coal rate as per old practice by netting of income with coal expenditure, but not considered/accounted in Cost of Fuel Consumed, so the rate as per petition is increased to that extent as compared to FPPPA monthly data.
- (c) GST department had issued the notice/summons for depositing the GST on ocean freight in the month of Sept-2018, and GSECL has approached for Opinion from renowned consultant for applicability of GST on ocean freight. According to the opinion of consultant and notice from GST Department, GSECL has paid Rs. 19.12 Crores towards GST on ocean freight in the month of Oct-2018. The same was claimed in FPPPA of 4th Quarter of 2018-19 based on consumption of imported coal. The rate of imported coal due to GST on ocean freight was not taken in the monthly average of Imported Coal rate.

After perusal of the replies of the GSECL, the Commission has verified the reconciliation of Fuel cost submitted in the Petition vis-à-vis audited accounts. The Commission finds the submission of GSECL as appropriate.

The Commission, after due verification, approved the Wt. Avg. GCVs of fuels, percentage of mix of coal and prices of fuel (actuals), as furnished by GSECL for truing up purpose for FY 2018-19 as they are uncontrollable items.

4.5 Fuel Costs

Based on the performance and cost parameters, the approved fuel costs for each of the stations for FY 2018-19 for truing up purpose, along with the actuals furnished by GSECL, are given in the Table below:



Table 4.19: Fuel Cost of different stations for FY 2018-19 Truing up

| Sr. No. | Power Stations | As per actuals submitted by GSECL | | | | As approved by the Commission | | | |
|---------|------------------------|-----------------------------------|---------------------|-----------------------|------------------------------|-------------------------------|---------------------|-----------------------|------------------------------|
| | | Gross Generation (MU) | Net Generation (MU) | Fuel Cost (Rs. Crore) | Fuel Cost per unit (Rs./kWh) | Gross Generation (MU) | Net Generation (MU) | Fuel Cost (Rs. Crore) | Fuel Cost per unit (Rs./kWh) |
| 1 | 2 | 3 | 4 | 5 | 6=5/4 | 7 | 8 | 9 | 10=9/8 |
| 1. | Ukai (3-5) | 3,911.68 | 3,538.29 | 1,299.39 | 3.67 | 3,911.68 | 3,559.63 | 1,352.69 | 3.80 |
| 2. | Gandhinagar (3-4) | 2,233.59 | 1,997.74 | 789.26 | 3.95 | 2,233.59 | 2,032.57 | 820.32 | 4.04 |
| 3. | Gandhinagar 5* | 1,470.40 | 1,328.62 | 519.86 | 3.91 | 1,470.40 | 1,330.71 | 521.82 | 3.92 |
| 4. | Wanakbori 1-6 TPS | 6,837.79 | 6,215.00 | 2,421.73 | 3.90 | 6,837.79 | 6,222.39 | 2,512.28 | 4.04 |
| 5. | Wanakbori 7* | 1,505.34 | 1,367.30 | 513.03 | 3.75 | 1,505.34 | 1,362.33 | 527.22 | 3.87 |
| 6. | Sikka Extension (3-4)* | 2,725.91 | 2,467.25 | 1,098.27 | 4.45 | 2,725.91 | 2,480.58 | 1,031.58 | 4.16 |
| 7. | KLTPS 1-3 | 885.92 | 748.83 | 236.15 | 3.15 | 885.92 | 779.61 | 192.07 | 2.46 |
| 8. | KLTPS 4 | 319.45 | 246.81 | 68.84 | 2.79 | 319.45 | 281.12 | 70.22 | 2.50 |
| 9. | Dhuvaran CCPP 1* | 139.09 | 128.86 | 37.39 | 2.90 | 139.09 | 133.53 | 34.87 | 2.61 |
| 10. | Dhuvaran CCPP 2 | 282.25 | 262.92 | 90.39 | 3.44 | 282.25 | 273.78 | 82.25 | 3.00 |
| 11. | Dhuvaran CCPP 3* | 280.65 | 263.70 | 166.32 | 6.31 | 280.65 | 272.23 | 166.41 | 6.11 |
| 12. | Utran Extension* | 418.21 | 400.48 | 265.39 | 6.63 | 418.21 | 405.66 | 277.23 | 6.83 |
| 13. | Ukai 6* | 3,025.29 | 2,842.41 | 938.76 | 3.30 | 3,025.29 | 2,843.77 | 970.87 | 3.41 |
| 14. | Grand Total | 24,035.57 | 21,808.21 | 8,444.74 | 3.87 | 24,035.57 | 21,977.51 | 8,559.85 | 3.89 |

* PPA based stations



The detailed calculations for each station for arriving at the above costs are given in Annexure A-1 to A-13.

4.5.1 Variation between Actual Costs and Approved Costs

The comparison between the fuel costs of all stations put together as per audited annual accounts for FY 2018-19 and the cost approved for truing up purpose is given in the Table below:

Table 4.20: Cost of different fuels as per audited annual accounts and as approved for Truing up for FY 2018-19

| (Rs. Crore) | | | |
|-------------|---------------------------------|-----------------------------|------------------|
| Sr. No. | Particulars | Cost as per Annual Accounts | Cost as approved |
| 1. | Fuel Cost | 8,444.74 | 8,500.41 |
| 2. | Water Charges | 158.75 | |
| 3. | Cost of Trading Activity | 329.29 | |
| 4. | Coal Provision | (167.54) | |
| 5. | BECL | 161.88 | |
| 6. | Total Fuel Cost as per Accounts | 8,927.37 | |

Total fuel cost as per annual accounts is Rs. 8,927.37 Crore. While, the Commission has dealt with the Water Charges separately, the other elements are not considered in the Truing up exercise.

The station-wise fuel costs are not provided in the audited annual accounts. The Commission has taken note of the submission made by GSECL, but for truing up purpose, the Commission has considered the fuel cost as computed, based on the approved performance parameters.

4.5.2 Gains and Losses in fuel costs due to controllable factors

Petitioner's Submission

GSECL has submitted that it has derived fuel expenses, considering performance parameters, such as auxiliary consumption, station heat rate, specific oil consumption and transit loss, as approved in the MYT Order dated 31st March, 2017 for truing up of FY 2018-19 and considering the actual fuel-related parameters, such as GCV of fuel and price of fuels, etc.

The fuel expenses so derived have been compared with the fuel expenses actually incurred with actual performance parameters of GSECL for identification of the gain/ (loss) on account of efficiency of these performance parameters.



GSECL submitted a net gain of Rs. 79.51 Crore due to controllable factors on account of operational efficiencies during FY 2018-19. The same is to be treated appropriately in line with the provisions of the GERC (MYT) Regulations, 2016.

Commission's Analysis

The Commission has compared the fuel expenses so derived by GSECL with the fuel expenses arrived at considering the now approved operational performance parameters for identification of gains / (losses) on account of variation in these parameters. The Commission accordingly approves the station-wise gains / losses for non-PPA stations as given in the Table below:

Table 4.21: Approved Gains / (losses) from Fuel Expenses for FY 2018-19

| (Rs. Crore) | | | | |
|-------------|------------------------|--|------------------------------------|--|
| Sr. No. | Power Station | Fuel cost arrived with approved parameters for Actual Net generation for 2018-19 | Actual Fuel cost incurred by GSECL | Gain /(Loss) due to Controllable Factors |
| 1. | Ukai (3-5) | 1,344.58 | 1,299.39 | 45.19 |
| 2. | Gandhinagar (3-4) | 806.27 | 789.26 | 17.01 |
| 3. | Wanakbori 1-6 TPS | 2,509.29 | 2,421.73 | 87.56 |
| 4. | KLTPS 1-3 | 184.49 | 236.12 | (51.63) |
| 5. | KLTPS 4 | 61.65 | 68.82 | (7.18) |
| 6. | Dhuvaran CCPP 2 | 78.99 | 90.39 | (11.40) |
| 7. | Ukai Hydro | 0.00 | 0.00 | - |
| 8. | Kadana Hydro | 0.00 | 0.00 | - |
| 9. | Ukai 6* | 970.40 | 938.76 | |
| 10. | Gandhinagar 5* | 521.00 | 519.86 | |
| 11. | Wanakbori 7* | 529.14 | 513.03 | |
| 12. | Sikka Extension (3-4)* | 1,026.04 | 1,098.27 | |
| 13. | Dhuvaran CCPP 1* | 33.65 | 37.39 | |
| 14. | Dhuvaran CCPP 3* | 161.20 | 166.32 | |
| 15. | Utran Extension* | 273.69 | 265.39 | |
| | Total | 8,500.41 | 8,444.74 | 79.56 |

* PPA based stations

4.6 Capital Expenditure and Capitalisation

Petitioner's Submission

GSECL submitted the actual Capitalisation of Rs. 361.79 Crore for FY 2018-19. The funding of capitalisation has been considered as per normative debt:equity ratio of 70:30. The actual capitalisation submitted by GSECL is shown in the following Table:



Table 4.22: Actual Capitalisation for FY 2018-19 as submitted by GSECL

| Sr. No. | Power Station | Actual Capitalisation | Funding of Capitalisation | |
|---------|------------------------|-----------------------|---------------------------|---------------|
| | | | Debt amount | Equity amount |
| 1. | Ukai (3-5) | 34.39 | 24.07 | 10.32 |
| 2. | Gandhinagar (3-4) | 26.12 | 18.29 | 7.84 |
| 3. | Wanakbori 1-6 TPS | 185.47 | 129.83 | 55.64 |
| 4. | KLTPS 1-3 | 38.26 | 26.78 | 11.48 |
| 5. | KLTPS 4 | 20.18 | 14.13 | 6.06 |
| 6. | Dhuvaran CCPP 2 | 1.44 | 1.01 | 0.43 |
| 7. | Ukai Hydro | 1.81 | 1.27 | 0.54 |
| 8. | Kadana Hydro | 4.77 | 3.34 | 1.43 |
| 9. | Ukai 6* | 24.20 | 16.94 | 7.26 |
| 10. | Gandhinagar 5* | - | - | - |
| 11. | Wanakbori 7* | - | - | - |
| 12. | Sikka Extension (3-4)* | 22.64 | 15.85 | 6.79 |
| 13. | Dhuvaran CCPP 1* | - | - | - |
| 14. | Dhuvaran CCPP 3* | - | - | - |
| 15. | Utran Extension* | - | - | - |
| | Total | 361.79 | 253.25 | 108.54 |

* PPA based stations

Commission's Analysis

The Commission notes that, GSECL has submitted the actual capitalisation of Rs. 361.79 Crore as against the approved capitalisation of Rs. 587.94 Crore. The Commission has analysed the details of works completed by GSECL during FY 2018-19. The majority of capitalisation is undertaken in Wanakbori 1-6 TPS. This includes completion of works related to turbine retrofitting (Rs. 93.30 Crore), ESP retrofitting (Rs. 29.78 Crore), land payment (Rs. 42 Crore) and Raising of ash dyke (Rs. 5 Crore). Further, the Commission has verified Supply and Service Orders dated April 29, 2015 given to M/s. NTPC Alstom Power Services Pvt. Ltd. As per Orders, the hard cost for supply of Turbine retrofitting is Rs. 77.47 Crore (Euro 12.67 Lakh) and service cost of Rs. 6.81 Crore.

Similarly, for Ukai 3-5, expenditure of Rs. 34.39 Crore capitalised towards capital spares and construction of new quarters for employee and staff, for Ukai 6, amount of Rs. 24.20 Crore capitalised towards protection wall, ash dyke construction and capital spares.

For the purpose of Truing up, the Commission approves the Capitalisation of Rs. 361.79 Crore as submitted by GSECL.

4.7 Fixed Charges

As per GERC (MYT) Regulations, 2016, the Annual Fixed Charges of Generating Stations include the Depreciation, Interest and Finance Charges, Return on Equity, Operation and



Maintenance Expenses, Interest on Working Capital, Water Charges, SLDC Charges, Income Tax and Non-tariff Income. The analysis of each component of Annual Fixed Charges is discussed in subsequent Sections of this Order.

4.7.1 Impact of Capital Cost approval for Sikka Extension (3-4) and Dhuvaran CCPP-3

Petitioner's Submission

GSECL submitted that the Commission in its Tariff Order in Case No. 1460 of 2014 dated 31st March, 2015 had provisionally approved the GFA for Sikka 3-4 and Dhuvaran CCPP 3 for FY 2015-16 as the actual Capital Cost of the said units were not approved at that time. Thereafter in the subsequent Tariff Orders, the GFA of aforesaid plants has been worked out and approved by the Commission considering the provisional approved capital cost.

Further, the Commission in its Order dated 21st August, 2018 in Petition No. 1597 of 2016 and Order dated 19th August, 2019 in Petition No. 1602 of 2016 has approved the actual Capital Cost for Sikka Units 3-4 and Dhuvaran CCPP 3 respectively. Further, in the said Order the Commission also directed GSECL to consider the approved cost in the Tariff petition accordingly.

Considering the above, GSECL has revised the opening GFA of FY 2018-19 based on the approved Capital Cost as against the provisional Capital Cost considered as initially considered in Tariff determination for FY 2015-16. The opening GFA of FY 2018-19 has been worked out by considering the approved capital cost and then adjusting the capital addition or deletion as approved by the Commission in the subsequent True-up years. The detailed working of GFA of aforesaid plants have been shown in the Tables below:



Table 4.23: Approved Capital Cost

| (Rs. Crore) | | | |
|--------------|-----|-----------------|----------------|
| Particulars | % | Sikka Units 3-4 | Dhuvaran CCPP3 |
| Debt | 70% | 2256.18 | 1126.03 |
| Equity | 30% | 966.93 | 482.58 |
| Total | | 3223.11 | 1608.61 |

Table 4.24: GFA Details as submitted by GSECL

| (Rs. Crore) | | | | | |
|-------------|----------------------------------|-----------|-----------|-----------|-----------|
| Sr. No. | Particular | FY2015-16 | FY2016-17 | FY2017-18 | FY2018-19 |
| | Sikka Extension Units 3-4 | | | | |
| 1 | GFA at the Beginning of Year | - | 3223.11 | 3255.60 | 3311.70 |
| 2 | Approved Capital Addition | 3223.11 | 32.49 | 56.20 | - |
| 3 | Approved Deletion | - | - | 0.10 | - |
| 4 | Closing GFA | 3223.11 | 3255.60 | 3311.70 | 3311.70 |
| | Dhuvaran CCPP3 | | | | |
| 1 | GFA at the Beginning of Year | - | 1608.61 | 1594.71 | 1595.56 |
| 2 | Approved Capital Addition | 1608.61 | - | 0.85 | - |
| 3 | Approved Deletion | - | 13.90 | - | - |
| 4 | Closing GFA | 1608.61 | 1594.71 | 1595.56 | 1595.56 |

Commission's Analysis

The Commission notes that, in the past tariff orders, it has considered the Gross Fixed Assets, Loan and Equity balances for Sikka (3-4) and Dhuvaran CCPP3 based on provisional tariff Order. Subsequently, the Commission has issued approval of final project cost of these two Stations. Hence, the Commission, in the present Order, has re-stated Gross Fixed Assets, Normative Loan and Regulatory Equity as on 1st April, 2018 as discussed in subsequent paragraphs.

It is noted that Sikka Extension Unit 3 and Unit 4 has achieved COD on 14th September, 2015 and 28th December, 2015 respectively. The Commission vide its Order dated 21st August, 2018 in Petition No. 1597 of 2016 has approved the Capital cost for Sikka (3-4). In the said Order, the Commission has approved Capital cost of Rs. 3,223.11 Crore. The Commission has also approved the financing of above capital cost with debt of Rs. 2256.18 Crore (70%) and equity of Rs. 966.93 Crore (30%) considering normative Debt Equity Ratio of 70:30. Further, the Commission notes that approved capital cost also included the capitalisation of Rs. 132.41 Crore made after COD. The relevant para of Order is as under:

“5.15. We note that the respondent, GUVNL, in its submission, had stated that the Petitioner has claimed Rs. 3223.11 Crore as Capital Cost in which they have included



an amount of Rs. 132.41 Crore for the work of Effluent Treatment Plant, Ash Slurrification System, Ventilation system, SCADA System of Switchyard etc. which are under progress and invoices are also yet to be raised by M/s BHEL. GUVNL has submitted that the amount of Rs. 132.41 Crore may not be considered in the Capital Cost at present, as invoices for the said work have not been raised by M/s BHEL and work is still under progress and hence the assets are not yet put to use.

The petitioner has informed that the capitalisation of balance work of Rs. 132.41 Crore is now completed in first quarter of FY 2018-19. We, therefore, decide that the amount of Rs. 132.41 Crore shall be considered in the tariff of the station, as per the relevant Regulations.” (emphasis added)

In view of the above, it is noted that the capital cost of Rs. 3,223.11 Crore is cost approved as on 31st March, 2019. After considering the capitalisation approved in past Tariff Orders, the Commission has approved the Gross Fixed Assets as shown in the following Table:

Table 4.25: GFA Details for Sikka(3-4) approved by the Commission

| (Rs. Crore) | | | | | |
|-------------|---|-----------|-----------|-----------|-----------|
| Sr. No. | Particular | FY2015-16 | FY2016-17 | FY2017-18 | FY2018-19 |
| 1 | Gross Fixed Asset -Addition during the year | 3,111.87 | 32.49 | 56.10 | 22.65 |
| 2 | Closing GFA | 3,111.87 | 3,144.36 | 3,200.46 | 3,223.11 |

Further, for the purpose of Truing up for FY 2018-19, the Commission has computed the Gross Fixed Assets, Net Normative Loan and Equity as on 1st April, 2018 as shown in the following Table:

Table 4.26: GFA, Loan and Equity for Sikka(3-4) approved by the Commission

| (Rs. Crore) | | |
|--|-----------|-----------------|
| Particulars | | Sikka Units 3-4 |
| Gross Fixed Assets as on April 1, 2018 | A | 3,200.46 |
| Regulatory Equity as on April 1, 2018 | B=30% * A | 960.14 |
| Gross Normative Loan as on April 1, 2018 | C=A-B | 2,240.32 |
| Depreciation for FY 2015-16 | D | 63.71 |
| Depreciation for FY 2016-17 | E | 162.86 |
| Depreciation for FY 2017-18 | F | 167.60 |
| Accumulated Depreciation as on April 1, 2018 | G=D+E+F | 394.16 |
| Net Normative Loan as on April 1, 2018 | H=C-G | 1,846.17 |

Further, it is noted that Dhuvaran CCPP3 has achieved COD on 1st February, 2016. The Commission vide its Order dated 19th August, 2019 in Petition No. 1602 of 2016 has approved



Capital cost of Dhuvaran CCPP3. In the said Order, the Commission has approved Capital cost of Rs. 1,608.61 Crore. The Commission has also approved the financing of above capital cost with debt of Rs. 1126.03 Crore (70%) and equity of Rs. 482.58 Crore (30%) considering normative Debt Equity Ratio of 70:30.

After considering the capitalisation approved in past Tariff Orders, the Commission has approved the Gross Fixed Assets as shown in the following Table:

Table 4.27: GFA Details for Dhuvaran CCPP3 approved by the Commission

(Rs. Crore)

| Sr. No. | Particular | FY 2015-16 | FY 2016-17 | FY 2017-18 |
|---------|---|------------|------------|------------|
| 1 | Gross Fixed Asset -Addition during the year | 1,608.61 | (13.90) | 0.85 |
| 2 | Closing GFA | 1,608.61 | 1,594.71 | 1,595.56 |

Further, for the purpose of Truing up for FY 2018-19, the Commission has computed the Gross Fixed Assets, Net Normative Loan and Equity as on 1st April, 2018 as shown in the following Table:

Table 4.28: GFA, Loan and Equity for Dhuvaran CCPP3 approved by the Commission

(Rs. Crore)

| Particulars | | Dhuvaran CCPP3 |
|--|-----------|----------------|
| Gross Fixed Assets as on April 1, 2018 | A | 1,595.56 |
| Regulatory Equity as on April 1, 2018 | B=30% * A | 478.67 |
| Gross Normative Loan as on April 1, 2018 | C=A-B | 1,116.89 |
| Depreciation for FY 2015-16 | D | 41.98 |
| Depreciation for FY 2016-17 | E | 81.38 |
| Depreciation for FY 2017-18 | F | 81.44 |
| Accumulated Depreciation as on April 1, 2018 | G=D+E+F | 204.80 |
| Net Normative Loan as on April 1, 2018 | H=C-G | 912.09 |

In view of the above, the Commission has approved the Gross Fixed Assets, Equity and Normative Net Loan as on 1st April, 2018 for Sikka (3-4) and Dhuvaran CCPP3 for the purpose of truing up in subsequent sections of this Order.

4.7.2 Depreciation for FY 2018-19

Petitioner's Submission

GSECL has claimed Rs. 742.52 Crore towards depreciation charges in the Truing up for FY 2018-19. The depreciation approved for FY 2018-19 by the Commission in the MYT Order dated 31st March, 2017 and now claimed by GSECL are as given in the Table below:



Table 4.29: Depreciation for FY 2018-19

| (Rs. Crore) | | |
|--------------|---------------------------|----------------|
| Particulars | Approved as per MYT Order | Actual claimed |
| Depreciation | 849.15 | 742.52 |

The closing GFA for all generating stations during FY 2018-19 has been worked out by adding the assets capitalized during the FY 2018-19 and deducting the assets retired or transferred from the opening balance of GFA.

GSECL has not considered the depreciation pertaining to Gandhinagar-5 and Wanakbori 7 as these two stations have been depreciated up to 90% of its GFA value, in line with the approach adopted by the Commission in its previous true-up Order of FY 2017-18 dated 24th April, 2019. The actual depreciation claim by GSECL is excluding RE depreciation. Further, as per the audited annual accounts (Note. 2.1) the depreciation for the FY 2018-19 is Rs. 989.87 Crore which is inclusive of total RE depreciation amounting Rs. 9.58 Crore, depreciation associated with Gandhinagar-5 and Wanakbori 7 amounting together to Rs. 4.30 and depreciation of BLTPS amounting to Rs. 233.47 Crore.

GSECL has calculated the Depreciation for FY 2018-19 in accordance with the provisions of the GERC (MYT) Regulations, 2016 and as per the directives of the Commission.

The station-wise depreciation approved as per the MYT Order dated 31st March, 2017 for FY 2018-19, claimed by GSECL as actual and the computation of gains/ (losses) on account of controllable and uncontrollable factors are given in the Table below:

Table 4.30: Gains / Losses from Depreciation claimed for FY 2018-19

| (Rs. Crore) | | | | | |
|-------------|------------------------|---------------------------|----------------|---|---|
| Sr. No. | Power Station | Approved as per MYT Order | Actual claimed | Gain/(Loss) Due To Controllable Factors | Gain/(Loss) Due To Uncontrollable Factors |
| 1. | Ukai (3-5) | 63.01 | 40.88 | | 22.13 |
| 2. | Gandhinagar (3-4) | 55.98 | 30.12 | | 25.86 |
| 3. | Gandhinagr 5* | - | - | | |
| 4. | Wanakbori 1-6 TPS | 111.88 | 83.94 | | 27.94 |
| 5. | Wanakbori 7* | - | - | | |
| 6. | Sikka Extension (3-4)* | 172.90 | 179.03 | | |
| 7. | KLTPS 1-3 | 66.18 | 32.20 | | 33.98 |
| 8. | KLTPS 4 | 36.18 | 35.88 | | 0.30 |
| 9. | Dhuvaran CCPP 1* | 21.24 | 9.70 | | |
| 10. | Dhuvaran CCPP 2 | 21.95 | 22.26 | | (0.31) |
| 11. | Dhuvaran CCPP 3* | 76.43 | 78.77 | | |
| 12. | Utran Extension* | 66.54 | 68.21 | | |



| Sr. No. | Power Station | Approved as per MYT Order | Actual claimed | Gain/(Loss) Due To Controllable Factors | Gain/(Loss) Due To Uncontrollable Factors |
|---------|---------------|---------------------------|----------------|---|---|
| 13. | Ukai 6* | 141.13 | 153.96 | | |
| 14. | Ukai Hydro | - | 2.24 | | (2.24) |
| 15. | Kadana Hydro | 15.73 | 5.34 | | 10.39 |
| 16. | Total | 849.15 | 742.52 | - | 118.06 |

* PPA based stations

Commission's Analysis

The Commission notes that, in line with the approach adopted in true-up for FY 2017-18, GSECL has not considered the depreciation towards RE asset and depreciation for Gandhinagar-5 and Wanakbori 7.

The Commission notes that Further, as per the audited annual accounts (Note. 2.1) the depreciation for the FY 2018-19 is Rs. 989.87 Crore. The depreciation towards RE assets (Rs. 9.58 Crore), BLTPS (Rs. 233.47 Crore), Gandhinagar 5 (Rs. 2.16 Crore) and Wanakbori 7 (Rs. 2.15 Crore) has not been included in the Petition.

The Commission has computed the depreciation for all the stations, taking into consideration the closing GFA of FY 2017-18 as the opening GFA for FY 2018-19, and adding the assets capitalized and deduction during FY 2018-19. The Commission in earlier Section of this Order has approved capitalisation of Rs. 361.79 Crore. In addition to this, additional capitalisation of Rs. 0.87 Crore towards HO has been considered and allocated to each plant based on actual capitalisation for a year. Further, retirement of assets of Rs. 0.39 Crore has also be considered. The Gross Fixed assets approved is given in the Table below:

Table 4.31: Approved Gross Fixed Assets

| | | | | | | (Rs. Crore) |
|---------|------------------------|-------------|-----------|------------|-------------|-------------|
| Sr. No. | Particulars | Opening GFA | Additions | Deductions | Closing GFA | |
| 1. | Ukai (3-5) | 1,269.22 | 34.40 | 0.02 | 1,303.61 | |
| 2. | Gandhinagar (3-4) | 1,181.37 | 26.13 | 0.00 | 1,207.49 | |
| 3. | Gandhinagar 5* | 657.84 | - | - | 657.84 | |
| 4. | Wanakbori 1-6 TPS | 2,145.33 | 185.51 | 0.04 | 2,330.80 | |
| 5. | Wanakbori 7* | 638.97 | - | - | 638.97 | |
| 6. | Sikka TPS | - | - | - | - | |
| 7. | Sikka Extension (3-4)* | 3,200.46 | 22.65 | 0.01 | 3,223.10 | |
| 8. | KLTPS 1-3 | 1,336.81 | 38.27 | 0.01 | 1,375.07 | |
| 9. | KLTPS 4 | 686.70 | 20.19 | 0.00 | 706.88 | |
| 10. | Dhuvaran CCPP 1* | 406.82 | - | - | 406.82 | |
| 11. | Dhuvaran CCPP 2 | 422.19 | 1.58 | 0.13 | 423.63 | |
| 12. | Dhuvaran CCPP 3* | 1,595.56 | - | - | 1,595.56 | |



| Sr. No. | Particulars | Opening GFA | Additions | Deductions | Closing GFA |
|---------|------------------|------------------|---------------|-------------|------------------|
| 13. | Utran Extension* | 1,356.45 | 2.60 | 0.10 | 1,358.95 |
| 14. | Ukai 6* | 2,948.23 | 24.20 | 0.00 | 2,972.43 |
| 15. | Ukai Hydro | 177.56 | 1.89 | 0.08 | 179.37 |
| 16. | Kadana Hydro | 326.15 | 4.77 | 0.00 | 330.92 |
| | Total | 18,349.66 | 362.18 | 0.39 | 18,711.45 |

* PPA based stations

Gains / Losses

As per the GERC (MYT) Regulations, 2016, depreciation is a controllable expense. However, the Commission is of the view that the amount of depreciation is dependent on the quantum of capitalization, rate of depreciation, and disposal of existing assets, if any. The Commission is, therefore, of the view that the parameters that impact depreciation should be treated as uncontrollable. The gain is calculated for Non-PPA plants. GSECL has not claimed any gain / (loss) in respect of PPA governed stations.

The Commission has computed the depreciation by applying actual weighted average rate of depreciation based on audited accounts on GFA for each Stations approved in above Table.

The Commission, accordingly approves the station-wise depreciation charges and the gain / (loss) on account of depreciation in the Truing up for FY 2018-19 as detailed in the Table below:



Table 4.32: Approved station-wise depreciation charges and gains/(losses) from Depreciation for FY 2018-19

(Rs. Crore)

| Sr. No. | Power Station | Approved as per MYT Order | Actual as per audited accounts | Approved in truing up | Gain / (Loss) due to controllable factor | Gain / (Loss) due to uncontrollable factor |
|---------|--------------------|---------------------------|--------------------------------|-----------------------|--|--|
| 1. | Ukai (3-5) | 63.01 | 40.88 | 40.76 | | 22.25 |
| 2. | Gandhinagar (3-4) | 55.98 | 30.12 | 32.50 | | 23.48 |
| 3. | Wanakbori 1-6 TPS | 111.88 | 83.94 | 83.67 | | 28.21 |
| 4. | KLTPS 1-3 | 66.18 | 32.20 | 33.70 | | 32.48 |
| 5. | KLTPS 4 | 36.18 | 35.88 | 35.89 | | 0.29 |
| 6. | Dhuvaran CCPP 2 | 21.95 | 22.26 | 22.48 | | (0.53) |
| 7. | Ukai Hydro | - | 2.24 | 2.24 | | (2.24) |
| 8. | Kadana Hydro | 15.73 | 5.34 | 5.33 | | 10.40 |
| | Sub Total A | 370.91 | 252.85 | 256.56 | | 114.35 |
| 9. | Ukai Extn. * | 141.13 | 153.96 | 147.32 | | |
| 10. | Gandhinagar 5* | - | - | - | | |
| 11. | Wanakbori 7* TPS | - | - | - | | |
| 12. | Sikka Extn.(3-4)* | 172.90 | 179.90 | 173.04 | | |
| 13. | Dhuvaran CCPP 1* | 21.24 | 9.70 | 10.66 | | |
| 14. | Dhuvaran CCPP 3* | 76.43 | 78.77 | 78.77 | | |
| 15. | Utran Extn.* | 66.54 | 68.21 | 65.95 | | |
| | Sub Total B | 478.24 | | 475.73 | | |
| | Total (A+B) | 849.15 | 742.52 | 732.29 | | 114.35 |

* PPA based stations

4.7.3 Interest and Finance charges for FY 2018-19

Petitioner's Submission

GSECL has claimed Rs. 408.97 Crore towards interest and finance charges in the Truing up for FY 2018-19. In case of Sikka Units 3-4 and Dhuvaran CCPP 3, GSECL has worked out the revised opening loan balance of aforesaid units. The repayment has been considered as minimum of depreciation computed or opening loan plus addition in loan for the FY 2018-19 in line with the approach as adopted by the Commission. The interest and finance charges, approved for FY 2018-19 by the Commission in the MYT Order, and now claimed by GSECL as actual, are given in the Table below:

Table 4.33: Interest and Finance Charges claimed in truing up for FY 2018-19

(Rs. Crore)

| Particulars | Approved as per MYT Order | Actual claimed |
|------------------------------|---------------------------|----------------|
| Interest and Finance charges | 512.34 | 408.97 |



GSECL has claimed Rs. 36.71 Crore towards gain attributed to uncontrollable factors due to difference in the actual capitalization. The station-wise interest and finance charges claimed by GSECL in the truing for FY 2018-19 and the gains / losses are given in the Table below:

Table 4.34: Gains / Losses from Interest & Finance charges claimed for FY 2018-19

| (Rs. Crore) | | | | | |
|-------------|------------------------|---------------------------|----------------|--|--|
| Sr. No. | Power Station | Approved as per MYT Order | Actual claimed | Gain / (Loss) due to controllable factor | Gain / (Loss) due to uncontrollable factor |
| 1. | Ukai (3-5) | 28.08 | - | - | 28.08 |
| 2. | Gandhinagar (3-4) | 6.67 | - | - | 6.67 |
| 3. | Gandhinagr 5* | - | - | | |
| 4. | Wanakbori 1-6 TPS | 20.92 | 23.83 | - | (2.91) |
| 5. | Wanakbori 7* | - | - | | |
| 6. | Sikka Extension (3-4)* | 179.22 | 148.76 | | |
| 7. | KLTPS 1-3 | 0.01 | 1.76 | - | (1.75) |
| 8. | KLTPS 4 | 15.85 | 13.08 | - | 2.77 |
| 9. | Dhuvaran CCPP 1* | - | - | | |
| 10. | Dhuvaran CCPP 2 | 8.46 | 5.02 | - | 3.44 |
| 11. | Dhuvaran CCPP 3* | 79.65 | 71.16 | | |
| 12. | Utran Extension* | 44.32 | 37.26 | | |
| 13. | Ukai 6* | 126.61 | 105.95 | - | |
| 14. | Ukai Hydro | 2.55 | 2.15 | - | 0.40 |
| 15. | Kadana Hydro | - | - | - | - |
| | Total | 512.34 | 408.97 | - | 36.71 |

* PPA based stations

Commission's Analysis

The Commission has analyzed the audited annual accounts of GSECL for FY 2018-19 and obtained the details of loans outstanding and the rate of interest for different stations. The Commission has considered the Closing Loans of FY 2017-18 as approved in FY 2017-18 true-up order as Opening Loans for FY 2018-19 and repayment is considered equal to the depreciation approved by Commission. The Commission has considered the Opening Net Normative Loan as on 1st April, 2018 for Sikka (3-4) and Dhuvaran CCPP3 as discussed in earlier Section of this Order.

For the stations for which depreciation allowed is lower than the Opening Loan plus addition in Loan during FY 2018-19 and for the stations for which depreciation is higher than the Opening Loan plus addition in Loan for FY 2018-19, lower amount of these two is considered as repayment since depreciation of asset cannot be more than the Closing Loan making Closing Loan a negative figure.



Table 4.35: Details of Approved Loan for FY 2018-19

| (Rs. Crore) | | | | | |
|-------------|------------------------|-----------------|---------------|---------------|-----------------|
| Sr. No. | Power Station | Opening Loan | Additions | Repayment | Closing Loan |
| 1. | Ukai (3-5) | - | 24.08 | 24.08 | - |
| 2. | Gandhinagar (3-4) | - | 18.29 | 18.29 | - |
| 3. | Gandhinagar 5* | - | - | - | - |
| 4. | Wanakbori 1-6 TPS | 269.71 | 129.86 | 83.67 | 315.90 |
| 5. | Wanakbori 7* | - | - | - | - |
| 6. | Sikka Extension (3-4)* | 1,846.17 | 15.85 | 173.04 | 1,688.98 |
| 7. | KLTPS 1-3 | 24.31 | 26.79 | 33.70 | 17.39 |
| 8. | KLTPS 4 | 171.47 | 14.13 | 35.89 | 149.71 |
| 9. | Dhuvaran CCPP 1* | - | - | - | - |
| 10. | Dhuvaran CCPP 2 | 72.28 | 1.11 | 22.48 | 50.91 |
| 11. | Dhuvaran CCPP 3* | 912.09 | - | 78.77 | 833.33 |
| 12. | Utran Extension* | 490.84 | 1.82 | 65.95 | 426.71 |
| 13. | Ukai 6* | 1,369.80 | 16.94 | 147.32 | 1,239.43 |
| 14. | Ukai Hydro | 26.87 | 1.32 | 2.24 | 25.96 |
| 15. | Kadana Hydro | - | 3.34 | 3.34 | - |
| | Total | 5,183.54 | 253.53 | 688.75 | 4,748.31 |

* PPA based stations

The Commission notes that GSECL has submitted the weighted average rate of interest of 8.14%. The Commission has analysed the reconciliation of actual interest charges considered for computation of this rate of interest vis-à-vis audited accounts. The Commission also confirms that GSECL has not considered the loan amount and interest charges for BLTPS, Wanakbori TPS 8 and RE Assets for computation rate of interest.

Accordingly, the weighted average rate of interest of 8.14% is worked out by the Commission as per the details submitted by the Petitioner.

Gains / Losses

The GERC (MYT) Regulations, 2016 consider variation in the interest rates as an uncontrollable parameter but variation in Interest and Finance charges as controllable. However, the Commission is of the view that the amount of interest and finance charges are dependent on the quantum of capitalization, and the extent of borrowing considered during the financial year. The Commission is, therefore, of the view that the parameters which impact interest and finance charges should be treated as uncontrollable.

GSECL has not claimed any gain / (loss) in respect of PPA governed stations.



The Commission, accordingly approves the station-wise interest and finance charges and the gain / (loss) on account of interest and finance charges in the Truing up for FY 2018-19 as detailed in the Table below:

Table 4.36: Approved Interest and Finance charges and gain/ (loss) for FY 2018-19
(Rs. Crore)

| Sr. No. | Power Station | Approved as per MYT Order | Actual claimed | Approved in truing up | Gain/(Loss) due to Controllable Factors | Gain/(Loss) due to Uncontrollable Factors |
|---------|--------------------|---------------------------|----------------|-----------------------|---|---|
| 1. | Ukai (3-5) | 28.08 | - | - | | 28.08 |
| 2. | Gandhinagar (3-4) | 6.67 | - | - | | 6.67 |
| 3. | Wanakbori 1-6 TPS | 20.92 | 23.83 | 23.83 | | (2.92) |
| 4. | KLTPS 1-3 | 0.01 | 1.76 | 1.70 | | (1.69) |
| 5. | KLTPS 4 | 15.85 | 13.08 | 13.08 | | 2.77 |
| 6. | Dhuvaran CCPP 2 | 8.46 | 5.02 | 5.01 | | 3.45 |
| 7. | Ukai Hydro | 2.55 | 2.15 | 2.15 | | 0.40 |
| 8. | Kadana Hydro | - | - | - | | - |
| | Sub Total A | 82.54 | 45.83 | 45.78 | | 36.76 |
| 9. | Ukai 6 Extn. * | 126.61 | 105.95 | 106.22 | | |
| 10. | Gandhinagar 5* | - | - | - | | |
| 11. | Wanakbori 7* TPS | - | - | - | | |
| 12. | Sikka Extn.(3-4)* | 179.22 | 148.76 | 143.92 | | |
| 13. | Dhuvaran CCPP 1* | - | - | - | | |
| 14. | Dhuvaran CCPP 3* | 79.65 | 71.16 | 71.06 | | |
| 15. | Utran Extn.* | 44.32 | 37.26 | 37.35 | | |
| | Sub Total B | 429.80 | 363.14 | 358.55 | | |
| | Total (A+B) | 512.34 | 408.97 | 404.33 | | 36.76 |

* PPA based stations

4.7.4 Return on Equity for FY 2018-19

Petitioner's Submission

GSECL has claimed Rs. 713.73 Crore towards RoE in the Truing up for FY 2018-19. The RoE approved for FY 2018-19 by the Commission in the MYT Order 31st March, 2017 for FY 2018-19, and now claimed by GSECL as actual are given in the Table below:

Table 4.37: Return on Equity for FY 2018-19
(Rs. Crore)

| Particulars | Approved as per MYT Order | Actual claimed |
|------------------|---------------------------|----------------|
| Return on Equity | 704.51 | 713.73 |



GSECL has submitted that the comparison of actual value for Return on Equity computed based on Opening Equity for FY 2018-19 and addition to Equity during the year on account of funding of capital expenditure against the Return on Equity approved in the MYT Order for FY 2018-19 resulted in a loss of Rs. 8.56 Crore attributed to uncontrollable factors. The station-wise RoE claimed by GSECL in the truing for FY 2018-19 and the gains/ (losses) are given in the Table below:

Table 4.38: Gains / Losses from Return on equity claimed for FY 2018-19

| (Rs. Crore) | | | | | |
|-------------|------------------------|---------------------------|----------------|---|---|
| Sr. No. | Power Station | Approved as per MYT Order | Actual claimed | Gain/(Loss) due to Controllable Factors | Gain/(Loss) due to Uncontrollable Factors |
| 1. | Ukai (3-5) | 18.32 | 20.96 | - | (2.64) |
| 2. | Gandhinagar (3-4) | 17.44 | 21.95 | - | (4.51) |
| 3. | Gandhinagr 5* | 30.88 | 28.67 | | |
| 4. | Wanakbori 1-6 TPS | 82.76 | 83.52 | - | (0.76) |
| 5. | Wanakbori 7* | 28.03 | 26.16 | | |
| 6. | Sikka Extension (3-4)* | 137.53 | 141.73 | | |
| 7. | KLTPS 1-3 | 48.76 | 51.10 | - | (2.34) |
| 8. | KLTPS 4 | 29.32 | 29.18 | - | 0.14 |
| 9. | Dhuvaran CCPP 1* | 11.07 | 10.45 | | |
| 10. | Dhuvaran CCPP 2 | 15.87 | 14.19 | - | 1.68 |
| 11. | Dhuvaran CCPP 3* | 65.36 | 64.81 | | |
| 12. | Utran Extension* | 57.60 | 57.43 | | |
| 13. | Ukai 6* | 122.46 | 124.33 | - | |
| 14. | Ukai Hydro | 10.42 | 10.56 | - | (0.14) |
| 15. | Kadana Hydro | 28.69 | 28.67 | - | 0.02 |
| 16. | Total | 704.51 | 713.73 | - | (8.56) |

* PPA based stations

Commission's Analysis

The Commission has observed that GSECL has compared the actual RoE of Rs. 713.73 Crore for FY 2018-19 with the RoE of Rs. 704.51 Crore approved in the MYT Order dated 31st March, 2017 and arrived at a loss of Rs. 8.56 Crore.

The Commissions has considered RoE of 13% for Gandhinagar-5, Wanakbori-7 and Dhuvaran CCPP 1, as per their PPA, and RoE of 14% for all other stations.

The Commission has considered Equity as on 1st April, 2018 for Sikka (3-4) and Dhuvaran CCPP3 as discussed in earlier Section of this Order. The Commission has taken the closing



equity of FY 2017-18 as the opening equity of FY 2018-19, further 30% of net addition has been considered as equity addition during the year as given in the Table below:

Table 4.39: Approved Equity for FY 2018-19

| | | | | (Rs. Crore) |
|---------|------------------------|-----------------|---------------|-----------------|
| Sr. No. | Power Station | Opening Equity | Addition | Closing Equity |
| 1. | Ukai (3-5) | 144.59 | 10.32 | 154.91 |
| 2. | Gandhinagar (3-4) | 152.86 | 7.84 | 160.70 |
| 3. | Gandhinagar 5* | 220.57 | - | 220.57 |
| 4. | Wanakbori 1-6 TPS | 568.74 | 55.65 | 624.39 |
| 5. | Wanakbori 7* | 201.22 | - | 201.22 |
| 6. | Sikka Extension (3-4)* | 960.14 | 6.79 | 966.94 |
| 7. | KLTPS 1-3 | 359.28 | 11.48 | 370.76 |
| 8. | KLTPS 4 | 205.43 | 6.06 | 211.49 |
| 9. | Dhuvaran CCPP 1* | 80.41 | - | 80.41 |
| 10. | Dhuvaran CCPP 2 | 101.11 | 0.47 | 101.58 |
| 11. | Dhuvaran CCPP 3* | 478.67 | - | 478.67 |
| 12. | Utran Extension* | 409.82 | 0.78 | 410.60 |
| 13. | Ukai 6* | 884.47 | 7.26 | 891.73 |
| 14. | Ukai Hydro | 75.19 | 0.57 | 75.76 |
| 15. | Kadana Hydro | 204.06 | 1.43 | 205.49 |
| | Total | 5,046.56 | 108.65 | 5,155.22 |

* PPA based stations

Gains / (Losses)

The GERC (MYT) Regulations, 2016 consider the parameters impacting the variance in the Return on Equity as controllable. However, the Commission is of the view that the Return on Equity depends on the amount of capitalization and the debt equity ratio considered during the financial year, and these parameters are uncontrollable in nature. The variance in the amount of Return on Equity is therefore treated as uncontrollable.

The Commission, accordingly approves the station-wise return on equity and gain / (loss) on account of variation in Return on Equity in the truing up for FY 2018-19 as detailed in the Table below:



Table 4.40: Approved Return on Equity and gain/ (loss) for FY 2018-19

| (Rs. Crore) | | | | | | |
|-------------|--------------------|---------------------------|----------------|-----------------------|---|---|
| Sr. No. | Power Station | Approved as per MYT Order | Actual claimed | Approved in truing up | Gain/(Loss) due to Controllable Factors | Gain/(Loss) due to Uncontrollable Factors |
| 1. | Ukai (1-5) | 18.32 | 20.96 | 20.97 | | (2.65) |
| 2. | Gandhinagar (1-4) | 17.44 | 21.95 | 21.95 | | (4.51) |
| 3. | Wanakbori 1-6 TPS | 82.76 | 83.52 | 83.52 | | (0.76) |
| 4. | KLTPS 1-3 | 48.76 | 51.10 | 51.10 | | (2.34) |
| 5. | KLTPS 4 | 29.32 | 29.18 | 29.18 | | 0.14 |
| 6. | Dhuvaran CCPP 2 | 15.87 | 14.19 | 14.19 | | 1.68 |
| 7. | Ukai Hydro | 10.42 | 10.56 | 10.57 | | (0.15) |
| 8. | Kadana Hydro | 28.69 | 28.67 | 28.67 | | 0.02 |
| | Subtotal A | 251.58 | 260.14 | 260.14 | | (8.56) |
| 9. | Ukai Extn. 6* | 122.46 | 124.33 | 124.33 | | |
| 10. | Gandhinagar 5* | 30.88 | 28.67 | 28.67 | | |
| 11. | Wanakbori 7* TPS | 28.03 | 26.16 | 26.16 | | |
| 12. | Sikka Extn.(3-4)* | 137.53 | 141.73 | 134.90 | | |
| 13. | Dhuvaran CCPP 1* | 11.07 | 10.45 | 10.45 | | |
| 14. | Dhuvaran CCPP 3* | 65.36 | 64.81 | 67.01 | | |
| 15. | Utran Extn.* | 57.60 | 57.43 | 57.43 | | |
| | Subtotal B | 452.93 | 453.59 | 448.96 | | |
| | Total (A+B) | 704.51 | 713.73 | 709.10 | | (8.56) |

* PPA based stations

4.7.5 O&M Expenses for FY 2018-19

Petitioner's Submission

GSECL has claimed Rs. 1,095.65 Crore towards actual O&M expenses in the truing up for FY 2018-19. The O&M charges approved for FY 2018-19 by the Commission in the MYT Order, and now claimed by GSECL are given in the Table below:

Table 4.41: O&M expenses for FY 2018-19

(Rs. Crore)

| Particulars | Approved as per MYT Order | Actual claimed |
|-------------------------|---------------------------|----------------|
| O&M Expenses | 1,112.00 | 1,095.65 |

Further, the Commission in the MYT Order dated 31st March, 2017 and in the Order dated 31st March, 2018 for true-up of FY 2016-17 had not approved the provisions towards the impact of 7th Pay Commission on the ground that no actual payment was made to the employees and that the actual impact of 7th Pay Commission shall be allowed as “uncontrollable” in the true-



up of that year in which the actual payment is made. During the year, GSECL made payment of Rs. 96.04 Crore towards the 7th Pay Commission for all of its Stations. GSECL has also negated the provision of Rs. 50.54 Crore in line with the Commission's approach, which was made towards 7th Pay. Accordingly, the net total employee expenses have been claimed as Rs. 658.37 Crore (i.e., Rs. 736.88 Crore – Rs. 4.85 Crore – Rs. 22.44 Crore – Rs. 0.69 Crore – Rs. 50.54 Crore).

As the O&M expenses have been classified as "Controllable", GSECL has worked out a loss of Rs. 32.53 Crore. Overall GSECL has claimed a loss of Rs. 32.53 Crore due to controllable factors and a loss of Rs. 96.04 Crore Uncontrollable by comparing the actual amount with the O&M expenses approved by the Commission in the MYT Order. The station-wise O&M expenses approved by the Commission in the MYT Order dated 31st March, 2017 and now claimed by GSECL after revision in the truing for FY 2018-19 are given in the Table below:

Table 4.42: Gains / Losses from O&M expenses for FY 2018-19

(Rs. Crore)

| Sr. No. | Power Station | Approved as per MYT Order | Actual claimed | Gain/(Loss) due to Controllable Factors | Gain/(Loss) due to Uncontrollable Factors |
|---------|------------------------|---------------------------|-----------------|---|---|
| 1. | Ukai (3-5) | 164.71 | 214.10 | (37.67) | (11.73) |
| 2. | Gandhinagar (3-4) | 91.61 | 135.24 | (29.78) | (13.85) |
| 3. | Gandhinagr 5* | 23.34 | 33.15 | | (6.92) |
| 4. | Wanakbori 1-6 TPS | 239.70 | 235.58 | 24.74 | (20.62) |
| 5. | Wanakbori 7* | 19.37 | 19.37 | | (3.44) |
| 6. | Sikka Extension (3-4)* | 101.05 | 115.50 | | (8.74) |
| 7. | KLTPS 1-3 | 114.81 | 132.26 | (12.33) | (5.13) |
| 8. | KLTPS 4 | 19.67 | 15.45 | 6.01 | (1.79) |
| 9. | Dhuvaran CCPP 1* | 33.45 | 35.10 | | (3.04) |
| 10. | Dhuvaran CCPP 2 | 33.54 | 35.10 | 1.48 | (3.04) |
| 11. | Dhuvaran CCPP 3* | 69.65 | 2.26 | | - |
| 12. | Utran Extension* | 55.50 | 41.21 | | (4.05) |
| 13. | Ukai 6* | 101.05 | 47.70 | | (9.61) |
| 14. | Ukai Hydro | 20.21 | 10.60 | 11.23 | (1.63) |
| 15. | Kadana Hydro | 24.34 | 23.03 | 3.77 | (2.46) |
| 16. | Total | 1,112.00 | 1,095.65 | (32.53) | (96.04) |

* PPA based stations

Commission's Analysis

The O&M expenses consist of following elements:

- (i) Employees expenses



- (ii) Repairs & Maintenance expenses
- (iii) Administration & General expenses

These elements are discussed hereunder:

(i) Employees expenses

The Employees expenses as per the audited Annual Accounts (Note No. 31) is Rs. 698.36 Crore net off expenses capitalised. In addition, expenses on account of Remeasurement of Defined Benefit Plans in respect of employees of Rs. 38.52 Crore is reflected in the Statement of Profit & Loss for the year ended 31st March, 2018. Thus, the total Employees expenses, as per the audited accounts, works out to Rs. 736.88 Crore. It is further observed that these expenses include provision of Rs. 50.54 Crore towards impact of 7th Pay Commission, Rs. 22.44 Crore towards SSNNL and SPS, Rs. 4.85 Crore towards BLTPS and Rs. 0.69 Crore towards RE.

As the Commission had decided to consider only the actual expenses towards the impact of 7th Pay Commission, the Commission decides to exclude the provision of Rs. 50.54 Crore on this account from the Employees expenses. Further, the Commission also decides to exclude Employees cost towards SSNNL and SPS, BLTPS and RE, the net actual Employees cost works out to Rs. 658.37 Crore, including HO Expenses of Rs. 85.37 Crore.

(ii) Repairs & Maintenance expenses

As per the audited Annual Accounts (Note No. 33), the R&M expenses are to the tune of Rs. 389.06 Crore. The Commission decides to exclude R&M expenses of Rs. 50.39 Crore towards BLTPS, Rs. 15.07 Crore towards SSNNL & SPS and Rs. 2.39 Crore towards RE. The net R&M expenses works out to Rs. 321.22 Crore, including HO Expenses of Rs. 1.77 Crore.

(iii) Administration & General expenses

As per the audited Annual Accounts, the A&G expenses are Rs. 138.53 Crore net of capitalised expenses of Rs. 4.82 Crore. It is observed that these A&G expenses include expenses of Rs. 6.11 Crore towards Corporate Social Responsibility, Rs. 1.11 Crore towards provision on Loan to joint Venture, Rs. 2.08 Crore towards O&M contract of SSNNL & SPS, Rs. 12.95 Crore towards BLTPS and Rs. 0.53 Crore towards RE assets. The other expenses as mentioned above are excluded from A&G expenses being not admissible. The A&G Expenses works out to Rs. 115.75 Crore, including HO Expenses of Rs. 13.19 Crore.



(iv) Allocation of HO expenses

The Commission notes that GSECL has incurred actual O&M Expenses of Rs. 100.31 Crore towards Head Office, including Employee Cost of Rs. 85.35 Crore, A&G Expenses of Rs. 13.19 Crore and R&M Expenses of Rs. 1.77 Crore. GSECL has allocated these expenses amongst the Stations in proportion to their actual expenses. However, the Commission notes that GSECL has allocated these expenses towards Generating Stations, which are submitted in the present Petition. The said expenses are not allocated to BLTPS, SSNNL & SPS and RE Assets, as part of expenses of Head Office are also incurred for activities of these plants. Hence, for the purpose of truing up, the Commission has allocated the HO Expenses amongst Generating Stations, including BLTPS, SSNNL & SPS and RE, as per the methodology adopted by GSECL.

In view of the above, the total actual O&M Expenses approved by the Commission for FY 2018-19 are Rs. 1,088.67 Crore, including Employee Cost of Rs. 654.40 Crore, A&G Expenses of Rs. 113.36 Crore and R&M Expenses of Rs. 320.91 Crore.

Gains / (Loss)

The Commission observed that there is a loss of Rs. 27.67 Crore due to controllable factors and a loss of Rs. 96.04 Crore due to uncontrollable factor by comparing the actual amount with the O&M expenses approved by the Commission in the MYT Order.

The Commission, approves the station-wise O&M expenses and the gain / (loss) on account of O&M expenses in the truing up for FY 2018-19 as detailed in the Table below:

Table 4.43: Approved O&M expenses gains/losses for FY 2018-19

| (Rs. Crore) | | | | | | |
|-------------|-------------------|---------------------------|----------------|-----------------------|---|---|
| Sr. No. | Power Station | Approved as per MYT Order | Actual claimed | Approved in truing up | Gain/(Loss) due to Controllable Factors | Gain/(Loss) due to Uncontrollable Factors |
| 1. | Ukai (3-5) | 164.71 | 214.10 | 212.50 | (36.06) | (11.73) |
| 2. | Gandhinagar (3-4) | 91.61 | 135.24 | 134.40 | (28.94) | (13.85) |
| 3. | Wanakbori 1-6 TPS | 239.70 | 235.58 | 234.25 | 26.07 | (20.62) |
| 4. | KLTPS 1-3 | 114.81 | 132.26 | 131.66 | (11.72) | (5.13) |
| 5. | KLTPS 4 | 19.67 | 15.45 | 15.35 | 6.10 | (1.79) |
| 6. | Dhuvaran CCPP 2 | 33.54 | 35.10 | 34.90 | 1.68 | (3.04) |
| 7. | Ukai Hydro | 20.21 | 10.60 | 10.54 | 11.30 | (1.63) |
| 8. | Kadana Hydro | 24.34 | 23.03 | 22.90 | 3.91 | (2.46) |



| Sr. No. | Power Station | Approved as per MYT Order | Actual claimed | Approved in truing up | Gain/(Loss) due to Controllable Factors | Gain/(Loss) due to Uncontrollable Factors |
|---------|--------------------|---------------------------|-----------------|-----------------------|---|---|
| | Subtotal A | 708.59 | 801.36 | 796.50 | (27.67) | (60.24) |
| 9. | Ukai Extn. 6* | 101.05 | 47.70 | 47.41 | | |
| 10. | Gandhinagar 5* | 23.34 | 33.15 | 32.94 | | |
| 11. | Wanakbori 7* TPS | 19.37 | 19.37 | 19.27 | | |
| 12. | Sikka Extn.(3-4)* | 101.05 | 115.50 | 114.45 | | |
| 13. | Dhuvaran CCPP 1* | 33.45 | 35.10 | 34.90 | | |
| 14. | Dhuvaran CCPP 3* | 69.65 | 2.26 | 2.22 | | |
| 15. | Utran Extn.* | 55.50 | 41.21 | 40.98 | | |
| | Subtotal B | 403.41 | 294.28 | 292.17 | | |
| | Total (A+B) | 1,112.00 | 1,095.65 | 1,088.67 | (27.67) | (60.24) |

* PPA based stations

4.7.6 Interest on Working Capital for FY 2018-19

Petitioner's Submission

GSECL has claimed Rs. 361.86 Crore towards interest on working capital in the Truing up for FY 2018-19. The interest on working capital approved for FY 2018-19 in the MYT Order and as claimed in the Truing up are given in the Table below:

Table 4.44: Interest on Working Capital Claimed by GSECL in Truing up for FY 2018-19

(Rs. Crore)

| Particulars | Approved as per MYT Order | Actual claimed |
|------------------------------------|---------------------------|----------------|
| Interest on Working Capital | 261.85 | 361.86 |

GSECL has submitted that they have taken 10.89% (weighted average of 1-year SBI MCLR for FY 2018-19 plus 2.50%) as the interest rate for calculating interest on Working Capital. GSECL has further submitted that the Interest on Working Capital computed in the Truing up for FY 2018-19 indicates a loss of Rs. 39.27 Crore as shown in the Table below:

Table 4.45: Gains / Losses from Interest on working capital claimed for FY 2018-19

(Rs. Crore)

| Sr. No. | Power Station | Approved as per MYT Order | Actual claimed | Gain/(Loss) due to Controllable Factors | Gain/(Loss) due to Uncontrollable Factors |
|---------|-------------------|---------------------------|----------------|---|---|
| 1. | Ukai (3-5) | 30.03 | 39.10 | | (9.07) |
| 2. | Gandhinagar (3-4) | 22.36 | 29.51 | | (7.15) |
| 3. | Gandhinagr 5* | 14.64 | 14.23 | | |
| 4. | Wanakbori 1-6 TPS | 66.86 | 87.76 | | (20.90) |



| Sr. No. | Power Station | Approved as per MYT Order | Actual claimed | Gain/(Loss) due to Controllable Factors | Gain/(Loss) due to Uncontrollable Factors |
|---------|------------------------|---------------------------|----------------|---|---|
| 5. | Wanakbori 7* | 11.44 | 13.97 | | |
| 6. | Sikka Extension (3-4)* | 29.30 | 42.09 | | |
| 7. | KLTPS 1-3 | 8.65 | 10.30 | | (1.65) |
| 8. | KLTPS 4 | 3.36 | 3.92 | | (0.56) |
| 9. | Dhuvaran CCPP 1* | 5.19 | 4.93 | | |
| 10. | Dhuvaran CCPP 2 | 5.81 | 5.88 | | (0.07) |
| 11. | Dhuvaran CCPP 3* | 13.10 | 34.78 | | |
| 12. | Utran Extension* | 19.18 | 37.54 | | |
| 13. | Ukai 6* | 29.92 | 35.96 | | |
| 14. | Ukai Hydro | 0.72 | 0.67 | | 0.05 |
| 15. | Kadana Hydro | 1.29 | 1.20 | | 0.09 |
| 16. | Total | 261.85 | 361.86 | - | (39.27) |

* PPA based stations

Commission's Analysis

The working capital and the interest on working capital have been worked out as per the GERC (MYT) Regulations, 2016 including maintenance spares, but since approved O&M costs, fuel costs, ARR and SFO cost in truing up of FY 2018-19 are different than those claimed by GSECL, the Commission has calculated working capital based on approved values. Further, the Commission has considered the interest rate on working capital as 10.89% as per the GERC (MYT) Regulations, 2016.

The interest on working capital is calculated at Rs 361.74 Crore based on the expenses approved in the truing up for FY 2018-19.

Gain / (Loss)

Regarding GSECL's submission that interest on working capital should be considered as uncontrollable, the Commission is also of the view that interest on working capital, being normative, should be considered as uncontrollable.

The Commission accordingly approves the station-wise Interest on Working Capital and the gains / (losses) on account of Interest on Working Capital in the truing up for FY 2018-19 as detailed in the Table below:



Table 4.46: Approved Gains/ (Losses) from Interest on Working Capital for FY 2018-19

(Rs. Crore)

| Sr. No. | Power Station | Approved as per MYT order | Actual claimed | Approved in truing up | Gain/(Loss) due to Controllable Factors | Gain/(Loss) due to Uncontrollable Factors |
|---------|--------------------|---------------------------|----------------|-----------------------|---|---|
| 1 | Ukai (3-5) | 30.03 | 39.10 | 39.10 | | (9.07) |
| 2 | Gandhinagar (3-4) | 22.36 | 29.51 | 29.51 | | (7.15) |
| 3 | Wanakbori 1-6 TPS | 66.86 | 87.76 | 87.76 | | (20.90) |
| 5 | KLTPS 1-3 | 8.65 | 10.30 | 10.30 | | (1.65) |
| 6 | KLTPS 4 | 3.36 | 3.92 | 3.92 | | (0.56) |
| 7 | Dhuvaran CCPP 2 | 5.81 | 5.88 | 5.88 | | (0.07) |
| 8 | Ukai Hydro | 0.72 | 0.67 | 0.67 | | 0.05 |
| 9 | Kadana Hydro | 1.29 | 1.20 | 1.20 | | 0.09 |
| | Subtotal A | 139.08 | 178.35 | 178.35 | | (39.27) |
| 10 | Ukai Extn. 6* | 29.92 | 35.96 | 35.96 | | |
| 11 | Gandhinagar 5* | 14.64 | 14.23 | 14.23 | | |
| 12 | Wanakbori 7* TPS | 11.44 | 13.97 | 13.97 | | |
| 13 | Sikka Extn.(3-4)* | 29.30 | 42.09 | 41.97 | | |
| 14 | Dhuvaran CCPP 1* | 5.19 | 4.93 | 4.93 | | |
| 15 | Dhuvaran CCPP 3* | 13.10 | 34.78 | 34.78 | | |
| 16 | Utran Extn.* | 19.18 | 37.54 | 37.54 | | |
| | Subtotal B | 122.77 | 183.51 | 183.38 | | |
| | Total (A+B) | 261.85 | 361.86 | 361.74 | | (39.27) |

* PPA based stations

4.7.7 SLDC Charges for FY 2018-19

Petitioner's Submission

GSECL has claimed Rs. 0.99 Crore towards SLDC charges in the Truing up for FY 2018-19. SLDC charges approved by the Commission in the MYT Order for FY 2018-19, and now claimed by GSECL as actual are tabulated below:

Table 4.47: SLDC charges for FY 2018-19

(Rs. Crore)

| Particulars | Approved as per MYT Order | Actual claimed |
|---------------------|---------------------------|----------------|
| SLDC charges | 3.50 | 0.99 |

GSECL has submitted that it has considered the Gains/ (Losses) on account of SLDC charges as "uncontrollable". The station wise SLDC charges approved by the Commission in the MYT Order dated 31st March, 2017, as claimed by GSECL in the Truing up for FY 2018-19 and Gains/(Losses) on account of uncontrollable factors are given in the Table below:



Table 4.48: Gain/ (loss) for SLDC charges claimed for FY 2018-19

(Rs. Crore)

| Sr. No. | Power Station | Approved as per MYT Order | Actual claimed | Gain / (Loss) due to controllable factor | Gain / (Loss) due to uncontrollable factor |
|---------|------------------------|---------------------------|----------------|--|--|
| 1. | Ukai (3-5) | 0.60 | 0.11 | - | 0.49 |
| 2. | Gandhinagar (3-4) | 0.50 | 0.11 | - | 0.39 |
| 3. | Gandhinagr 5* | 0.05 | - | | |
| 4. | Wanakbori 1-6 TPS | 0.81 | 0.22 | - | 0.59 |
| 5. | Wanakbori 7* | 0.05 | 0.04 | | |
| 6. | Sikka Extension (3-4)* | 0.23 | 0.09 | | |
| 7. | KLTPS 1-3 | 0.17 | 0.04 | - | 0.13 |
| 8. | KLTPS 4 | 0.02 | 0.01 | - | 0.01 |
| 9. | Dhuvaran CCPP 1* | 0.05 | 0.02 | | |
| 10. | Dhuvaran CCPP 2 | 0.05 | 0.02 | - | 0.03 |
| 11. | Dhuvaran CCPP 3* | 0.17 | 0.07 | | |
| 12. | Utran Extension* | 0.14 | 0.07 | | |
| 13. | Ukai 6* | 0.34 | 0.10 | - | |
| 14. | Ukai Hydro | 0.17 | 0.05 | - | 0.12 |
| 15. | Kadana Hydro | 0.15 | 0.04 | - | 0.11 |
| 16. | Total | 3.50 | 0.99 | - | 1.86 |

* PPA based stations

Commission's Analysis

SLDC charges are not reflected separately in the annual accounts but are included in Other Expenses (Note 35). The Commission has reconciled the SLDC Charges with Other expenses submitted in the Petition vis-à-vis audited accounts. The Commission approves Rs. 0.99 Crore towards SLDC charges in the truing up for FY 2018-19 as claimed by GSECL against Rs. 3.50 Crore approved in the MYT Order dated 31st March, 2017.

Gains / (Losses):

The parameters, which impact SLDC charges are uncontrollable. The Commission accordingly approves the Gains/(Losses) on account of SLDC charges in the Truing up as detailed in the Table below:



Table 4.49: Approved SLDC charges gains/ (losses) for FY 2018-19

(Rs. Crore)

| Sr. No. | Power Station | Approved as per MYT Order | Actual claimed | Approved in truing up | Gain / (Loss) due to controllable factor | Gain / (Loss) due to uncontrollable factor |
|---------|--------------------|---------------------------|----------------|-----------------------|--|--|
| 1. | Ukai (1-5) | 0.60 | 0.11 | 0.11 | | 0.49 |
| 2. | Gandhinagar (1-4) | 0.50 | 0.11 | 0.11 | | 0.39 |
| 3. | Wanakbori 1-6 TPS | 0.81 | 0.22 | 0.22 | | 0.59 |
| 4. | KLTPS 1-3 | 0.17 | 0.04 | 0.04 | | 0.13 |
| 5. | KLTPS 4 | 0.02 | 0.01 | 0.01 | | 0.01 |
| 6. | Dhuvaran CCPP 2 | 0.05 | 0.02 | 0.02 | | 0.03 |
| 7. | Ukai Hydro | 0.17 | 0.05 | 0.05 | | 0.12 |
| 8. | Kadana Hydro | 0.15 | 0.04 | 0.04 | | 0.11 |
| | Subtotal A | 2.47 | 0.61 | 0.61 | | 1.86 |
| 9. | Ukai Extn. 6* | 0.34 | 0.10 | 0.10 | | |
| 10. | Gandhinagar 5* | 0.05 | - | - | | |
| 11. | Wanakbori 7* TPS | 0.05 | 0.04 | 0.04 | | |
| 12. | Sikka Extn.(3-4)* | 0.23 | 0.09 | 0.09 | | |
| 13. | Dhuvaran CCPP 1* | 0.05 | 0.02 | 0.02 | | |
| 14. | Dhuvaran CCPP 3* | 0.17 | 0.07 | 0.07 | | |
| 15. | Utran Extn.* | 0.14 | 0.07 | 0.07 | | |
| | Subtotal B | 1.03 | 0.38 | 0.38 | | |
| | Total (A+B) | 3.50 | 0.99 | 0.99 | | 1.86 |

* PPA based stations

4.7.8 Water Charges for FY 2018-19

GSECL has claimed Rs. 149.42 Crore towards water charges in the Truing up for FY 2018-19 against Rs. 69.38 Crore approved in the MYT Order as given in the Table below:

Table 4.50: Water Charges for FY 2018-19

(Rs. Crore)

| Particulars | Approved as per MYT Order | Actual claimed |
|----------------------|---------------------------|----------------|
| Water Charges | 69.38 | 149.42 |

Petitioner's Submission

The station wise water charges approved by the Commission in the MYT Order dated 31st March, 2017, claimed by GSECL in the Truing up for FY 2018-19 and Gains/(Losses) on account of uncontrollable factors are given in the Table below:



Table 4.51: Gain/ (loss) for Water charges claimed for FY 2018-19

(Rs. Crore)

| Sr. No. | Power Station | Approved as per MYT Order | Actual claimed | Gain / (Loss) due to controllable factor | Gain / (Loss) due to uncontrollable factor |
|---------|------------------------|---------------------------|----------------|--|--|
| 1. | Ukai (3-5) | 0.10 | - | - | 0.10 |
| 2. | Gandhinagar (3-4) | 7.01 | 44.88 | - | (37.87) |
| 3. | Gandhinagr 5* | 11.87 | 29.55 | | |
| 4. | Wanakbori 1-6 TPS | 35.76 | 56.57 | - | (20.81) |
| 5. | Wanakbori 7* | 8.18 | 11.26 | | |
| 6. | Sikka Extension (3-4)* | 1.19 | 4.60 | | |
| 7. | KLTPS 1-3 | 0.43 | 0.27 | - | 0.16 |
| 8. | KLTPS 4 | 0.13 | 0.10 | - | 0.03 |
| 9. | Dhuvaran CCPP 1* | 0.21 | 0.00 | | |
| 10. | Dhuvaran CCPP 2 | 0.76 | - | - | 0.76 |
| 11. | Dhuvaran CCPP 3* | - | - | | |
| 12. | Utran Extension* | 3.64 | 2.20 | | |
| 13. | Ukai 6* | 0.10 | - | - | |
| 14. | Ukai Hydro | - | - | - | - |
| 15. | Kadana Hydro | - | - | - | - |
| 16. | Total | 69.38 | 149.42 | - | (57.62) |

* PPA based stations

Commission's Analysis

The Commission has reconciled Water Charges submitted in the Petition vis-à-vis audited accounts. It is noted that, as per audited accounts the total water charges are Rs. 158.75 Crore, which includes charges of Rs. 8.93 Crore towards BLTPS and Rs. 0.41 Crore towards HO Expenses. In the Petition, GSECL has submitted the water charges of Rs. 149.42 Crore after excluding charges towards BLTPS and HO. The Commission accepted the same and approves Water charges accordingly.

Gains / (Losses):

As provided in the GERC (MYT) Regulations, 2016, as well as in the MYT Order for FY 2018-19, the Commission is of the opinion that the water charges should be considered as per actuals. Accordingly, the Commission approves the Gains/(Losses) on account of water charges as uncontrollable in the Truing up as detailed in the Table below:



Table 4.52: Approved Water charges gain/ (loss) for FY 2018-19

(Rs. Crore)

| Sr. No. | Power Station | Approved as per MYT Order | Actual claimed | Approved in truing up | Deviation +/- | Gain / (Loss) due to controllable factor | Gain / (Loss) due to uncontrollable factor |
|---------|--------------------|---------------------------|----------------|-----------------------|----------------|--|--|
| 1. | Ukai (1-5) | 0.10 | - | - | 0.10 | | 0.10 |
| 2. | Gandhinagar (1-4) | 7.01 | 44.88 | 44.88 | (37.87) | | (37.87) |
| 3. | Wanakbori 1-6 TPS | 35.76 | 56.57 | 56.57 | (20.81) | | (20.81) |
| 4. | KLTPS 1-3 | 0.43 | 0.27 | 0.27 | 0.16 | | 0.16 |
| 5. | KLTPS 4 | 0.13 | 0.10 | 0.10 | 0.03 | | 0.03 |
| 6. | Dhuvaran CCPP 2 | 0.76 | - | - | 0.76 | | 0.76 |
| 7. | Ukai Hydro | - | - | - | - | | - |
| 8. | Kadana Hydro | - | - | - | - | | - |
| | Subtotal A | 44.19 | 101.81 | 101.81 | (57.62) | | (57.62) |
| 9. | Ukai Extn. 6* | 0.10 | - | - | | | |
| 10. | Gandhinagar 5* | 11.87 | 29.55 | 29.55 | | | |
| 11. | Wanakbori 7* TPS | 8.18 | 11.26 | 11.26 | | | |
| 12. | Sikka Extn.(3-4)* | 1.19 | 4.60 | 4.60 | | | |
| 13. | Dhuvaran CCPP 1* | 0.21 | 0.00 | 0.00 | | | |
| 14. | Dhuvaran CCPP 3* | - | - | - | | | |
| 15. | Utran Extn.* | 3.64 | 2.20 | 2.20 | | | |
| | Subtotal B | 25.19 | 47.61 | 47.61 | | | |
| | Total (A+B) | 69.38 | 149.42 | 149.42 | (57.62) | | (57.62) |

* PPA based stations

4.7.9 Income Tax for FY 2018-19

Petitioner's Submission

GSECL has claimed Rs. 24.24 Crore towards Income Tax in the Truing up for FY 2018-19. The Income Tax approved for FY 2018-19 by the Commission in the MYT Order dated 31st March, 2017 and now claimed by GSECL as actual is given in the Table below:

Table 4.53: Income Tax for FY 2018-19

(Rs. Crore)

| Particulars | Approved as per MYT Order | Actual claimed |
|-------------------|---------------------------|----------------|
| Income Tax | 31.37 | 24.24 |

GSECL submitted that it has paid additional tax of Rs. 138.75 Crore during last year pertaining to period FY 2012-13 and FY 2013-14 as per the demand of the Commissioner of Income Tax. However, GSECL has challenged this demand for Tax with the Income Tax Appellate Tribunal. Accordingly, this additional tax will be claimed by GSECL based on Judgment of Tribunal in the matter.



The station wise Income Tax approved by the Commission in the MYT Order dated 31st March, 2017, claimed by GSECL in the Truing up for FY 2018-19 and Gains/(Losses) on account of uncontrollable factors are given in the Table below:

Table 4.54: Gain/ (loss) for Income Tax claimed for FY 2018-19

(Rs. Crore)

| Sr. No. | Power Station | Approved as per MYT Order | Actual claimed | Gain / (Loss) due to controllable factor | Gain / (Loss) due to uncontrollable factor |
|---------|------------------------|---------------------------|----------------|--|--|
| 1. | Ukai (3-5) | 3.47 | 2.68 | - | 0.79 |
| 2. | Gandhinagar (3-4) | 2.39 | 1.85 | - | 0.54 |
| 3. | Gandhinagr 5* | 1.19 | 0.92 | - | 0.27 |
| 4. | Wanakbori 1-6 TPS | 7.17 | 5.54 | - | 1.63 |
| 5. | Wanakbori 7* | 1.19 | 0.92 | - | 0.27 |
| 6. | Sikka Extension (3-4)* | 2.84 | 2.20 | - | 0.64 |
| 7. | KLTPS 1-3 | 1.22 | 0.94 | - | 0.28 |
| 8. | KLTPS 4 | 0.43 | 0.33 | - | 0.10 |
| 9. | Dhuvaran CCPP 1* | 0.61 | 0.47 | - | 0.14 |
| 10. | Dhuvaran CCPP 2 | 0.64 | 0.49 | - | 0.15 |
| 11. | Dhuvaran CCPP 3* | 2.14 | 1.65 | - | 0.49 |
| 12. | Utran Extension* | 2.13 | 1.65 | - | 0.48 |
| 13. | Ukai 6* | 2.84 | 2.20 | - | 0.64 |
| 14. | Ukai Hydro | 1.73 | 1.34 | - | 0.39 |
| 15. | Kadana Hydro | 1.38 | 1.06 | - | 0.32 |
| | Total | 31.37 | 24.24 | - | 7.13 |

* PPA based stations

Commission's Analysis

The Commission sought copies of challans and tax paid by GSECL during FY 2018-19. It has been observed that GSECL has submitted Income Tax based on advance tax paid as Rs. 24.24 Crore. However, the Commission has observed that the actual Income Tax as per the audited annual accounts for FY 2018-19 is Rs. 3.60 Crore. The Commission has also verified the computation of Income tax of Rs. 3.60 Crore shown in the audited accounts. As per the principle adopted in the previous Orders, the Commission has considered the Income Tax as per audited account for the purpose of truing up.

Further, the Commission notes that audited accounts reported total revenue from operation of Rs. 11,662.59 Crore. This includes revenue from operation of Rs. 342.73 Crore for BLTPS, Rs. 31.43 Crore for SSNNL, Rs. 20.68 Crore for RE Solar. It is observed that the Income Tax paid is also on total income of Rs. 394.84 Crore from SSNNL, BLTPS and RE assets. Hence,



the Commission decides to reduce the income tax on income pertaining to SSNNL, BLTPS and RE assets.

It is further noted that the Income tax is paid by company as whole. However, separate station-wise details of income, expenditure and income tax payable are not available. In light of foregoing, it would be appropriate to consider the income tax in proportion to the revenue from stations. Accordingly, the Commission has computed income tax of Rs. 0.12 Crore towards income of SSNNL, BLTPS and RE Assets and; the same has been reduced from current year Income tax of Rs. 3.60 Crore.

The Commission accordingly approves Income Tax of Rs. 3.49 Crore for FY 2018-19. The station-wise approved Income Tax and gains/(losses) are given in the Table below:

Table 4.55: Approved Income Tax and gains/ (losses) for FY 2018-19

(Rs. Crore)

| Sr. No. | Power Station | Approved as per MYT Order | Actual claimed | Approved in truing up | Deviation +/- | Gain / (Loss) due to controllable factor | Gain / (Loss) due to uncontrollable factor |
|---------|--------------------|---------------------------|----------------|-----------------------|---------------|--|--|
| 1. | Ukai (1-5) | 3.47 | 2.68 | 0.39 | 3.08 | | 3.08 |
| 2. | Gandhinagar (1-4) | 2.39 | 1.85 | 0.27 | 2.12 | | 2.12 |
| 3. | Wanakbori 1-6 TPS | 7.17 | 5.54 | 0.80 | 6.37 | | 6.37 |
| 4. | KLTPS 1-3 | 1.22 | 0.94 | 0.14 | 1.08 | | 1.08 |
| 5. | KLTPS 4 | 0.43 | 0.33 | 0.05 | 0.38 | | 0.38 |
| 6. | Dhuvaran CCPP 2 | 0.64 | 0.49 | 0.07 | 0.57 | | 0.57 |
| 7. | Ukai Hydro | 1.73 | 1.34 | 0.19 | 1.54 | | 1.54 |
| 8. | Kadana Hydro | 1.38 | 1.06 | 0.15 | 1.23 | | 1.23 |
| | Subtotal A | 18.43 | 14.24 | 2.05 | 16.38 | | 16.38 |
| 9. | Ukai Extn. 6* | 2.84 | 2.20 | 0.32 | | | |
| 10. | Gandhinagar 5* | 1.19 | 0.92 | 0.13 | | | |
| 11. | Wanakbori 7* TPS | 1.19 | 0.92 | 0.13 | | | |
| 12. | Sikka Extn.(3-4)* | 2.84 | 2.20 | 0.32 | | | |
| 13. | Dhuvaran CCPP 1* | 0.61 | 0.47 | 0.07 | | | |
| 14. | Dhuvaran CCPP 3* | 2.14 | 1.65 | 0.24 | | | |
| 15. | Utran Extn.* | 2.13 | 1.65 | 0.24 | | | |
| | Subtotal B | 12.94 | 10.01 | 1.44 | | | |
| | Total (A+B) | 31.37 | 24.24 | 3.49 | 16.38 | | 16.38 |

* PPA based stations

4.7.10 Non-Tariff Income for FY 2018-19



Petitioner's Submission

GSECL has claimed Rs. 130.20 Crore towards Non-Tariff Income in the Truing up FY 2018-19 as against Rs. 142.27 Crore approved in the MYT Order dated 31st March, 2017, as given in the Table below:

Table 4.56: Non-Tariff Income claimed for FY 2018-19

| (Rs. Crore) | | |
|--------------------------|---------------------------|----------------|
| Particulars | Approved as per MYT Order | Actual claimed |
| Non-Tariff Income | 142.27 | 130.20 |

The Petitioner has submitted the station wise Non-Tariff Income approved in the MYT Order, claimed in the Truing up for FY 2018-19 and the Gains/(Losses) as given in the Table below:

Table 4.57: Gain/ (loss) for Non-Tariff Income claimed for FY 2018-19

| (Rs. Crore) | | | | | |
|-------------|------------------------|---------------------------|----------------|--|--|
| Sr. No. | Power Station | Approved as per MYT Order | Actual Claimed | Gain / (Loss) due to controllable factor | Gain / (Loss) due to uncontrollable factor |
| 1. | Ukai (3-5) | 15.87 | 26.39 | - | 10.52 |
| 2. | Gandhinagar (3-4) | 12.50 | 25.99 | - | 13.49 |
| 3. | Gandhinagr 5* | 11.93 | 13.59 | | |
| 4. | Wanakbori 1-6 TPS | 46.29 | 40.42 | - | (5.87) |
| 5. | Wanakbori 7* | 6.75 | 7.59 | | |
| 6. | Sikka Extension (3-4)* | 9.60 | 4.89 | | |
| 7. | KLTPS 1-3 | 4.84 | 3.44 | - | (1.40) |
| 8. | KLTPS 4 | 1.65 | - | - | (1.65) |
| 9. | Dhuvaran CCPP 1* | 1.74 | 0.62 | | |
| 10. | Dhuvaran CCPP 2 | 1.81 | 0.62 | - | (1.19) |
| 11. | Dhuvaran CCPP 3* | 4.32 | 0.19 | | |
| 12. | Utran Extension* | 5.69 | 0.96 | | |
| 13. | Ukai 6* | 12.71 | 5.02 | - | |
| 14. | Ukai Hydro | 3.51 | 0.01 | - | (3.50) |
| 15. | Kadana Hydro | 3.06 | 0.47 | - | (2.59) |
| | Total | 142.27 | 130.20 | - | 7.81 |

* PPA based stations

Commission's Analysis

It is observed that Non-Tariff Income as per audited annual accounts is Rs.635.51 Crore including income shown under Note 31 as Rs. 188.88 Crore and under Note 30(a) as Rs. 446.63 Crore. This income includes income from trading of Rs. 329.49 Crore, income for



BLTPS as Rs. 2.71 Crore, income for SSNNL as Rs. 50 Crore and expenses of Rs. 29.83 Crore fly Ash Utilisation reserve. These incomes are not considered by the Commission for the purpose of truing up. Further, the Commission notes that GSECL has not considered income of Rs. 152.94 Crore towards Liability written back. Since, the provision of expenses are not allowed by the Commission, it has not considered the income towards reversal of provision.

After excluding these elements, the net non-tariff income works out to Rs. 130.20 Crore and accordingly, the Commission approves the Non-Tariff Income of Rs.130.20 Crore.

Gains / (Losses):

The parameters, which impact Non-Tariff Income, are considered uncontrollable. The Commission accordingly approves the Gains/(Losses) on account of non-tariff income in the Truing up as detailed in the Table below:

Table 4.58: Approved Non-Tariff Income and gain/ (loss) for FY 2018-19

| (Rs. Crore) | | | | | | | |
|-------------|--------------------|---------------------------|----------------|-----------------------|---------------|--|--|
| Sr. No. | Power Station | Approved as per MYT Order | Actual claimed | Approved in truing up | Deviation +/- | Gain / (Loss) due to controllable factor | Gain / (Loss) due to uncontrollable factor |
| 1. | Ukai (1-5) | 15.87 | 26.39 | 26.39 | 10.52 | | 10.52 |
| 2. | Gandhinagar (1-4) | 12.50 | 25.99 | 25.99 | 13.49 | | 13.49 |
| 3. | Wanakbori 1-6 TPS | 46.29 | 40.42 | 40.42 | (5.87) | | (5.87) |
| 4. | KLTPS 1-3 | 4.84 | 3.44 | 3.44 | (1.40) | | (1.40) |
| 5. | KLTPS 4 | 1.65 | - | - | (1.65) | | (1.65) |
| 6. | Dhuvaran CCPP 2 | 1.81 | 0.62 | 0.62 | (1.19) | | (1.19) |
| 7. | Ukai Hydro | 3.51 | 0.01 | 0.01 | (3.50) | | (3.50) |
| 8. | Kadana Hydro | 3.06 | 0.47 | 0.47 | (2.59) | | (2.59) |
| | Subtotal A | 89.53 | 97.34 | 97.34 | 7.81 | | 7.81 |
| 9. | Ukai Extn. 6* | 12.71 | 5.02 | 5.02 | | | |
| 10. | Gandhinagar 5* | 11.93 | 13.59 | 13.59 | | | |
| 11. | Wanakbori 7* TPS | 6.75 | 7.59 | 7.59 | | | |
| 12. | Sikka Extn.(3-4)* | 9.60 | 4.89 | 4.89 | | | |
| 13. | Dhuvaran CCPP 1* | 1.74 | 0.62 | 0.62 | | | |
| 14. | Dhuvaran CCPP 3* | 4.32 | 0.19 | 0.19 | | | |
| 15. | Utran Extn.* | 5.69 | 0.96 | 0.96 | | | |
| | Subtotal B | 52.74 | 32.86 | 32.86 | | | |
| | Total (A+B) | 142.27 | 130.20 | 130.20 | 7.81 | | 7.81 |

* PPA based stations



4.8 Approved Fixed Charges

The performance of GSECL has been reviewed under Regulation 21 of the GERC (MYT) Regulations, 2016 with reference to audited annual accounts for FY 2018-19. Accordingly, the Commission has discussed and approved various components of fixed charges for approval of trued up ARR in the above paragraphs.

The fixed charges approved for FY 2018-19 in the MYT Order dated 31st March, 2017, charges now approved by the Commission, and deviation (gain/ (loss)) with reference to approved values are given in the Table below:

Table 4.59: Fixed Charges Approved in the Truing up for FY 2018-19

| (Rs. Crore) | | | | | |
|-----------------------------------|--------------------------------------|---------------------------|-----------------|-----------------------|-----------------|
| Sr. No. | Fixed Charges | Approved as per MYT Order | Actual claimed | Approved in truing up | Deviation + (-) |
| 1 | 2 | 3 | 4 | 5 | 6=3-5 |
| (A) Non-PPA based Stations | | | | | |
| 1. | Depreciation | 370.91 | 252.85 | 256.56 | 114.35 |
| 2. | Interest and Finance Charges | 82.54 | 45.83 | 45.78 | 36.76 |
| 3. | Return on Equity | 251.58 | 260.14 | 260.14 | (8.56) |
| 4. | Interest on Working Capital | 139.08 | 178.35 | 178.35 | (39.27) |
| 5. | O&M Expenses | 708.59 | 801.36 | 796.50 | (87.91) |
| 6. | Water Charges | 44.19 | 101.81 | 101.81 | (57.62) |
| 7. | SLDC Charges | 2.47 | 0.61 | 0.61 | 1.86 |
| 8. | Income Tax | 18.43 | 14.24 | 2.05 | 16.38 |
| 9. | Total Fixed Charges | 1,617.79 | 1,655.20 | 1,641.82 | (24.03) |
| 10. | Less: Non- Tariff Income | 89.53 | 97.34 | 97.34 | (7.81) |
| 11. | Net Fixed Charges | 1,528.26 | 1,557.86 | 1,544.47 | (16.21) |
| (B) PPA Based Stations | | | | | |
| 1. | Depreciation | 478.24 | 489.67 | 475.73 | 2.51 |
| 2. | Interest and Finance Charges | 429.8 | 363.14 | 358.55 | 71.25 |
| 3. | Return on Equity | 452.93 | 453.63 | 448.96 | 3.97 |
| 4. | Interest on Working Capital | 122.77 | 183.51 | 183.38 | (60.61) |
| 5. | O&M Expenses | 403.41 | 294.28 | 292.17 | 111.24 |
| 6. | Water Charges | 25.19 | 47.61 | 47.61 | (22.42) |
| 7. | SLDC Charges | 1.03 | 0.38 | 0.38 | 0.65 |
| 8. | Income Tax | 12.94 | 10.01 | 1.44 | 11.50 |
| 9. | Total Fixed Charges | 1926.31 | 1,842.21 | 1,808.22 | 118.09 |
| 10. | Less: Non- Tariff Income | 52.74 | 32.86 | 32.86 | 19.88 |
| 11. | Net Fixed Charges | 1873.57 | 1,809.35 | 1,775.36 | 98.21 |
| | Total Net Fixed Charges (A+B) | 3,401.83 | 3,367.22 | 3,319.83 | 82.00 |

The station wise approved fixed charges are given in the Table below:



Table 4.60: Approved Station-wise Fixed Charges for FY 2018-19

| (Rs. Crore) | | | | | | | | | | | | |
|-------------|------------------------|------------------|---------------------------------------|------------------------|--------------------------------------|-----------------|------------------|-----------------|---------------|------------------------|-----------------------------------|-------------------------|
| Sr. No. | Power Station | Deprecia tion | Interest and Finance Charges | Return on Equity | Interest on Working Capital | O&M Expenses | Water Charges | SLDC Charges | Income Tax | Total Fixed Cost | Less: Non- Tariff Income | Net Fixed Charges |
| 1. | Ukai (3-5) | 40.76 | - | 20.97 | 39.10 | 212.50 | - | 0.11 | 0.39 | 313.81 | 26.39 | 287.42 |
| 2. | Gandhinagar (3-4) | 32.50 | - | 21.95 | 29.51 | 134.40 | 44.88 | 0.11 | 0.27 | 263.62 | 25.99 | 237.63 |
| 3. | Wanakbori 1-6 TPS | 83.67 | 23.84 | 83.52 | 87.76 | 234.25 | 56.57 | 0.22 | 0.80 | 570.63 | 40.42 | 530.21 |
| 4. | KLTPS 1-3 | 33.70 | 1.70 | 51.10 | 10.30 | 131.66 | 0.27 | 0.04 | 0.14 | 228.91 | 3.44 | 225.46 |
| 5. | KLTPS 4 | 35.89 | 13.08 | 29.18 | 3.92 | 15.35 | 0.10 | 0.01 | 0.05 | 97.58 | - | 97.58 |
| 6. | Dhuvaran CCPP 2 | 22.48 | 5.01 | 14.19 | 5.88 | 34.90 | - | 0.02 | 0.07 | 82.56 | 0.62 | 81.93 |
| 7. | Ukai Hydro | 2.24 | 2.15 | 10.57 | 0.67 | 10.54 | - | 0.05 | 0.19 | 26.41 | 0.01 | 26.40 |
| 8. | Kadana Hydro | 5.33 | - | 28.67 | 1.20 | 22.90 | - | 0.04 | 0.15 | 58.30 | 0.47 | 57.82 |
| 9. | Ukai Extn 6* | 147.32 | 106.22 | 124.33 | 35.96 | 47.41 | - | 0.10 | 0.32 | 461.65 | 5.02 | 456.64 |
| 10. | Gandhinagar 5* | - | - | 28.67 | 14.23 | 32.94 | 29.55 | - | 0.13 | 105.53 | 13.59 | 91.93 |
| 11. | Wanakbori 7* | - | - | 26.16 | 13.97 | 19.27 | 11.26 | 0.04 | 0.13 | 70.83 | 7.59 | 63.24 |
| 12. | Sikka Extension (3-4)* | 173.04 | 143.92 | 134.90 | 41.97 | 114.45 | 4.60 | 0.09 | 0.32 | 613.28 | 4.89 | 608.39 |
| 13. | Dhuvaran CCPP 1* | 10.66 | - | 10.45 | 4.93 | 34.90 | - | 0.02 | 0.07 | 61.04 | 0.62 | 60.42 |
| 14. | Dhuvaran CCPP 3* | 78.77 | 71.06 | 67.01 | 34.78 | 2.22 | - | 0.07 | 0.24 | 254.14 | 0.19 | 253.96 |
| 15. | Utran Extension* | 65.95 | 37.35 | 57.43 | 37.54 | 40.98 | 2.20 | 0.07 | 0.24 | 241.75 | 0.96 | 240.79 |
| | Total | 732.29 | 404.33 | 709.10 | 361.74 | 1,088.67 | 149.42 | 0.99 | 3.49 | 3,450.03 | 130.20 | 3,319.83 |

* PPA based stations



Sharing of Gains or Losses for FY 2018-19

The Commission has analyzed the gains / losses on account of controllable and uncontrollable factors.

The relevant Regulations of the GERC (MYT) Regulations, 2016 are extracted below:

Regulation 23. Mechanism for pass through of gains or losses on account of uncontrollable factors

23.1 The approved aggregate gain or loss to the Generating Company or Transmission Licensee or Distribution Licensee on account of uncontrollable factors shall be passed through as an adjustment in the Tariff of the Generating Company or Transmission Licensee or Distribution Licensee over such period as may be specified in the Order of the Commission passed under these Regulations.

23.2 The Generating Company or Transmission Licensee or Distribution Licensee shall submit such details of the variation between expenses incurred and revenue earned and figures approved by the Commission, in the prescribed format to the Commission, along with detailed computations and supporting documents as may be required for verification by the Commission.

23.3 Nothing contained in this Regulation 24 shall apply in respect of any gain or loss arising out of variations in the price of fuel and power purchase which shall be dealt with as specified by the Commission from time to time.

Regulation 24. Mechanism for sharing of gains or losses on account of controllable factors

24.1 The approved aggregate gain to the Generating Company or Transmission Licensee or Distribution Licensee on account of controllable factors shall be dealt with in the following manner:

- (a) One-third of the amount of such gain shall be passed on as a rebate in Tariffs over such period as may be specified in the Order of the Commission under Regulation 21.6;*
- (b) The balance amount, which will amount to two-thirds of such gain, may be utilized at the discretion of the Generating Company or Transmission Licensee or Distribution Licensee.*



24.2 The approved aggregate loss to the Generating Company or Transmission Licensee or Distribution Licensee on account of controllable factors shall be dealt with in the following manner:

- (a) *One-third of the amount of such loss may be passed on as an additional charge in Tariffs over such period as may be specified in the Order of the Commission under Regulation 21.6; and*
- (b) *The balance amount, which will amount to two-thirds of such loss, shall be absorbed by the Generating Company or Transmission Licensee or Distribution Licensee.”*

The Gains / (Losses) due to controllable factors in respect of O&M charges and fuel charges approved to be passed through to the beneficiaries are given in the Table below:

Table 4.61: Approved Gains / (Losses) due to controllable factors for FY 2018-19
(Rs. Crore)

| Sr. No. | Power Station | Approved for FY 2018-19 | | | Total Gains / (Losses) to be passed through(1/3 rd of gains / losses) |
|---------|--------------------|-------------------------|--------------|--|---|
| | | O&M Expenses | Fuel Charges | Total Gains / (Losses) Due to Controllable factors | |
| 1. | Ukai (3-5) | (36.06) | 45.19 | 9.13 | 3.04 |
| 2. | Gandhinagar (3-4) | (28.94) | 17.01 | (11.93) | (3.98) |
| 3. | Wanakbori 1-6 TPS | 26.07 | 87.56 | 113.63 | 37.88 |
| 4. | KLTPS 1-3 | (11.72) | (51.63) | (63.35) | (21.12) |
| 5. | KLTPS 4 | 6.10 | (7.18) | (1.07) | (0.36) |
| 6. | Dhuvaran CCPP 2 | 1.68 | (11.40) | (9.72) | (3.24) |
| 7. | Ukai Hydro | 11.30 | - | 11.30 | 3.77 |
| 8. | Kadana Hydro | 3.91 | - | 3.91 | 1.30 |
| | Subtotal A | (27.67) | 79.56 | 51.89 | 17.30 |
| 9. | Ukai Extn. 6* | | | | |
| 10. | Gandhinagar 5* | | | | |
| 11. | Wanakbori 7* TPS | | | | |
| 12. | Sikka Extn.(3-4)* | | | | |
| 13. | Dhuvaran CCPP 1* | | | | |
| 14. | Dhuvaran CCPP 3* | | | | |
| 15. | Utran Extn.* | | | | |
| | Subtotal B | - | - | - | - |
| | Total (A+B) | (27.67) | 79.56 | 51.89 | 17.30 |

* PPA based stations



The Gains / (Losses) due to uncontrollable factors in respect of depreciation, interest & finance charges, return on equity, interest on working capital, SLDC, water charges, income tax and non-tariff income approved to be passed through to the beneficiaries are given in the Table below:



Table 4.62: Approved Gains / (Losses) due to Uncontrollable Factors for FY 2018-19

(Rs. Crore)

| Sr. No. | Power Station | Depreciation | Interest and Finance Charges | Return on Equity | Interest on Working Capital | Water Charges | SLDC Charges | Income Tax | Non-Tariff Income | O&M Cost (Impact of 7 th Pay) | Total Gains / (Losses) to be passed through |
|---------|--------------------|---------------|------------------------------|------------------|-----------------------------|----------------|--------------|--------------|-------------------|--|---|
| 1. | Ukai (3-5) | 22.25 | 28.08 | (2.65) | (9.07) | 0.10 | 0.49 | 3.08 | 10.52 | (11.73) | 41.09 |
| 2. | Gandhinagar (3-4) | 23.48 | 6.67 | (4.51) | (7.15) | (37.87) | 0.39 | 2.12 | 13.49 | (13.85) | (17.23) |
| 3. | Wanakbori 1-6 TPS | 28.21 | (2.92) | (0.76) | (20.90) | (20.81) | 0.59 | 6.37 | (5.87) | (20.62) | (36.71) |
| 4. | KLTPS 1-3 | 32.48 | (1.69) | (2.34) | (1.65) | 0.16 | 0.13 | 1.08 | (1.40) | (5.13) | 21.65 |
| 5. | KLTPS 4 | 0.29 | 2.77 | 0.14 | (0.56) | 0.03 | 0.01 | 0.38 | (1.65) | (1.79) | (0.37) |
| 6. | Dhuvaran CCPP 2 | (0.53) | 3.45 | 1.68 | (0.07) | 0.76 | 0.03 | 0.57 | (1.19) | (3.04) | 1.66 |
| 7. | Ukai Hydro | (2.24) | 0.40 | (0.15) | 0.05 | - | 0.12 | 1.54 | (3.50) | (1.63) | (5.41) |
| 8. | Kadana Hydro | 10.40 | - | 0.02 | 0.09 | - | 0.11 | 1.23 | (2.59) | (2.46) | 6.79 |
| | Sub Total A | 114.35 | 36.76 | (8.56) | (39.27) | (57.62) | 1.86 | 16.38 | 7.81 | (60.24) | 11.46 |
| 9. | Ukai Extn. 6* | | | | | | | | | | |
| 10. | Gandhinagar 5* | | | | | | | | | | |
| 11. | Wanakbori 7* TPS | | | | | | | | | | |
| 12. | Sikka Extn.(3-4)* | | | | | | | | | | |
| 13. | Dhuvaran CCPP 1* | | | | | | | | | | |
| 14. | Dhuvaran CCPP 3* | | | | | | | | | | |
| 15. | Utran Extn.* | | | | | | | | | | |
| | Sub Total B | | | | | | | | | | |
| | Total (A+B) | 114.35 | 36.76 | (8.56) | (39.27) | (57.62) | 1.86 | 16.38 | 7.81 | (60.24) | 11.46 |

* PPA based stations



The Consolidated Gains / (Losses) approved in the Truing up for FY 2018-19 are given in the Table below:

Table 4.63: Total Consolidated Gains / (Losses) Approved for FY 2018-19

(Rs. Crore)

| Sr. No. | Power Station | Gains / (Losses) of controllable factors | Gains / (Losses) of Uncontrollable factors to be passed through | Total Gains / (Losses) |
|----------|-------------------------------|--|---|------------------------|
| | | a | b | c = (a/3)+b |
| A | Non PPA Based Stations | | | |
| 1. | Ukai (3-5) | 9.13 | 41.09 | 44.13 |
| 2. | Gandhinagar (3-4) | (11.93) | (17.23) | (21.21) |
| 3. | Wanakbori 1-6 TPS | 113.63 | (36.71) | 1.16 |
| 4. | KLTPS 1-3 | (63.35) | 21.65 | 0.53 |
| 5. | KLTPS 4 | (1.07) | (0.37) | (0.73) |
| 6. | Dhuvaran CCPP 2 | (9.72) | 1.66 | (1.59) |
| 7. | Ukai Hydro | 11.30 | (5.41) | (1.65) |
| 8. | Kadana Hydro | 3.91 | 6.79 | 8.09 |
| | Sub Total A | 51.89 | 11.46 | 28.75 |
| B | PPA Based Stations | | | |
| 1. | Ukai Extn. 6* | | | |
| 2. | Gandhinagar 5* | | | |
| 3. | Wanakbori 7* TPS | | | |
| 4. | Sikka Extn.(3-4)* | | | |
| 5. | Dhuvaran CCPP 1* | | | |
| 6. | Dhuvaran CCPP 3* | | | |
| 7. | Utran Extn.* | | | |
| | Sub Total B | | | |
| | Total (A+B) | 51.89 | 11.46 | 28.75 |

* PPA based stations

Further, reduction in gains and losses for Fixed Charges has been considered in accordance with the provisions of GERC (MYT) Regulations, 2016. The presentation of the aforesaid loss and gain under fixed and fuel cost is given in the Table below:



Table 4.64: Total Consolidated (Fixed and Fuel Cost) Gains / (Losses) Approved for FY 2018-19

(Rs. Crore)

| Sr · N o. | Power Station | Gains / (Losses) of controlla ble factors (a) | Gains / (Losses) of Uncontrolla ble factors to be passed through (b) | Total Gains / (Losse s) c = a/3+b | Total Gains/(loss es) to be passed through at actual PAF | Gains / (Losses) of controlla ble factors (d) | Total Gains / (Losse s) d/3 | Total Gains / (Losse s) |
|--------------------|-----------------------------|---|---|---|---|---|--------------------------------------|----------------------------------|
| | | Fixed charges | Fixed charges | Fixed charge s | Fixed charges | Fuel cost | Fuel cost | Fixed & Fuel cost |
| A | Non-PPA Stations | | | | | | | |
| 1. | Ukai (3-5) | (36.06) | 41.09 | 29.07 | 29.07 | 45.19 | 15.06 | 44.13 |
| 2. | Gandhinagar (3-4) | (28.94) | (17.23) | (26.88) | (26.88) | 17.01 | 5.67 | (21.21) |
| 3. | Wanakbori 1-6 TPS | 26.07 | (36.71) | (28.02) | (28.02) | 87.56 | 29.19 | 1.16 |
| 4. | KLTPS 1-3 | (11.72) | 21.65 | 17.74 | 10.88 | (51.63) | (17.21) | (6.33) |
| 5. | KLTPS 4 | 6.10 | (0.37) | 1.66 | 0.92 | (7.18) | (2.39) | (1.47) |
| 6. | Dhuvaran CCPP 2 | 1.68 | 1.66 | 2.22 | 1.99 | (11.40) | (3.80) | (1.81) |
| 7. | Ukai Hydro | 11.30 | (5.41) | (1.65) | (1.65) | - | - | (1.65) |
| 8. | Kadana Hydro | 3.91 | 6.79 | 8.09 | 8.09 | - | - | 8.09 |
| | Sub Total A | (27.67) | 11.46 | 2.23 | (5.59) | 79.56 | 26.52 | 20.93 |
| B | PPA Stations | | | | | | | |
| 1. | Ukai Extn. 6* | | | | | | | |
| 2. | Gandhinagar 5* | | | | | | | |
| 3. | Wanakbori 7* TPS | | | | | | | |
| 4. | Sikka Extn.(3- 4)* | | | | | | | |
| 5. | Dhuvaran CCPP 1* | | | | | | | |
| 6. | Dhuvaran CCPP 3* | | | | | | | |
| 7. | Utran Extn.* | | | | | | | |
| | Sub Total B | | | | | | | |
| | Total (A+B) | (27.67) | 11.46 | 2.23 | (5.59) | 79.56 | 26.52 | 20.93 |

* PPA based stations

The Commission thus approves the net gain of Rs. 20.93 Crore in the Truing up for FY 2018-19. The net gain of Rs. 20.93 Crore approved in the truing up for FY 2018-19 is to be passed on to four DISCOMs through GUVNL in Twelve (12) equal monthly instalments during FY 2020-21.



5 Unabsorbed Depreciation for Sikka TPS Unit 1 & 2

Petitioner's Submission

GSECL submitted that the Units 1 and 2 of Sikka TPS have been decommissioned on 1st April, 2017. The accumulated depreciation charged by GSECL as on 1st April, 2017 stands at Rs. 424.18 Crore. The salvage value of the plant has been assessed at 10% of capital cost in line with GERC (MYT) Regulations, 2016. Based on above, there is a depreciation amounting to Rs. 206.80 Crore that has not been charged/claimed by GSECL as shown in the following Table:

Table 5.1: Unabsorbed Depreciation claimed for Sikka TPS Unit No. 1 & 2

(Rs. Crore)

| Particulars | Gross Fixed Assets as on April 1, 2017 | Accumulated Depreciation as on April 1, 2017 | Net Block as on April 1, 2017 | 10% of Gross Fixed Assets | Remaining value of Depreciation to be Charged |
|--------------------------------|--|--|-------------------------------|---------------------------|---|
| Fixed Assets, excluding spares | 460.76 | 328.92 | 131.84 | 46.08 | 85.77 |
| Spares | 216.29 | 95.26 | 121.03 | - | 121.03 |
| Total | 677.05 | 424.18 | 252.88 | 46.08 | 206.80 |

Further, GSECL submitted that it has received an amount of Rs. 82.76 Crore as total sales proceeds. Hence, there is an excess recovery or profit amounting to Rs. 36.68 Crore (i.e., Rs. 82.76 Crore - Rs. 46.08 Crore) on account of sales proceed, after adjustment with salvage value. GSECL has adjusted this excess recovery from the remaining depreciation to be charged and accordingly, has claimed an unabsorbed depreciation of Rs. 170.12 Crore as shown in the following Table:

Table 5.2: Unabsorbed Depreciation claimed for Sikka TPS Unit No. 1 & 2

(Rs. Crore)

| Particulars | Legend | Amount |
|--|--------------|---------------|
| Deprecation yet to be claimed from GERC | A | 206.80 |
| Total Sale proceeds | B | 82.76 |
| Salvage Value | C | 46.08 |
| Excess recovery (Profit) | D=B-C | 36.68 |
| Net Unabsorbed Depreciation to be claimed in FY 2020-21 | E=A-D | 170.12 |



Commission's Analysis

As per GSECL's submission, the Commission has noted that Unit No. 1 & 2 of Sikka TPS have been decommissioned on April 1, 2017 and the sale process of the assets have been completed.

The Commission verified the documentary evidences of the sale proceeds of the assets and found that it has received total amount of Rs. 97.66 Crore, including sale proceeds amount of Rs. 82.76 Crore and GST amount of Rs. 14.90 Crore. The Commission has considered the sale proceeds amount of Rs. 82.76 Crore.

The Commission notes that Tariff Order dated March 31, 2018 in True-up for FY 2016-17, indicated a Gross Fixed Asset of Rs. 677.05 Crore of Sikka 1& 2 units. However, in the said order it was also mentioned that the assets of decommissioned Sikka (1-2) units of Rs 119.52 Crore were transferred to Sikka extension (3-4).

The Commission notes that GSECL has submitted the Gross Fixed Assets as on April 1, 2017 of Rs. 677.05 Crore, including Initial Spares of Rs. 216.29 Crore. While considering the salvage value of total assets, GSECL has not considered the salvage value of spares. Further, the Commission observes that Gross Fixed Assets submitted by GSECL includes the initial spares of Rs. 216.29 Crore, which is 32% of total Gross Fixed Assets of Rs. 677.05 Crore as against 4% set in the Regulations. The cost of initial spares is too high compared to total cost of the plant. This higher cost of Initial Spares is not justified for Sikka TPS Unit 1 & 2. Therefore, keeping regulations in mind, the Commission has not considered the cost of initial spares as submitted by GSECL for allowing un-absorbed depreciation.

Accordingly, the Commission allows the accumulated depreciation of Fixed Assets excluding spares only and approves the unabsorbed depreciation for Sikka TPS Unit 1 & 2 as mentioned below:

Table 5.3: Unabsorbed Depreciation for STPS Units 1 & 2 Approved by the Commission
(Rs. Crore)

| Particulars | Legend | Approved by the Commission |
|--|--------------|----------------------------|
| Gross Fixed Asses as on April 1, 2017(Excluding spares) | A | 460.76 |
| Accumulated Depreciation as on April 1, 2017(Excluding spares) | B | 328.92 |
| Net Block Assets as on April 1, 2017 | C=A-B | 131.84 |
| Residual Value of Gross Fixed Assets | D=10%A | 46.08 |
| Balance Depreciable Amount | E=C-D | 85.77 |
| Receipt of amount through Sale Proceeds | F | 82.76 |
| Excess Recovery | G=F-D | 36.68 |
| Net Unabsorbed Depreciation | H=E-G | 49.08 |



Based on the above Table, the unabsorbed depreciation of Rs. 49.08 Crore as approved above is to be recovered from four DISCOMs through GUVNL in Twelve (12) equal monthly instalments.



6 Determination of Tariff for FY 2020-21

The Commission in Tariff Order for FY 2019-20 has re-computed the Energy Charges at Rs. 3.207 / Unit as against the MYT approved Rs. 3.238 / Unit for Wanakbori TPS (1-6) and thus passing on the benefit to the beneficiaries for improvement of Station Heat Rate. The approved Energy Charges for FY 2020-21 are given in Annexure B of this Order.

Accordingly, the Commission approves the station-wise energy charges for the FY 2020-21 as outlined in the Table below:

Table 6.1: Energy Charges Approved for FY 2020-21
(Rs./kWh)

| Sr. No. | Power Station | Energy Charges |
|---------|------------------------|----------------|
| 1. | Ukai (3-5) | 2.768 |
| 2. | Gandhinagar (3-4) | 3.308 |
| 3. | Gandhinagar 5* | 3.117 |
| 4. | Wanakbori 1-6 | 3.207 |
| 5. | Wanakbori 7* | 3.093 |
| 6. | Sikka Extension (3-4)* | 2.425 |
| 7. | KLTPS 1-3 | 1.496 |
| 8. | KLTPS 4 | 1.469 |
| 9. | Dhuvaran CCPP 1* | 3.899 |
| 10. | Dhuvaran CCPP 2 | 4.066 |
| 11. | Dhuvaran CCPP 3* | 2.256 |
| 12. | Utran Extension* | 4.345 |
| 13. | Ukai 6* | 2.516 |
| 14. | Wanakbori 8* | 2.941 |

* PPA based stations

The Commission approves the station-wise fixed charges for the FY 2020-21 as approved in MYT Order dated 31st March, 2017, as mentioned in the Table below:



Table 6.2: Net Fixed Charges approved for FY 2020-21

(Rs. Crore)

| Sr. No. | Power Station | Depreciation | Interest & Finance Charges | Return on Equity | Interest on Working Capital | O&M Expenses | Water Charges | Tax | SLDC Fees & Charges | Total Fixed Cost | Less: Non-Tariff Income | Net Fixed Charges |
|---------|-----------------------|-----------------|----------------------------|------------------|-----------------------------|-----------------|---------------|--------------|---------------------|------------------|-------------------------|-------------------|
| 1 | Ukai (3-5) | 80.83 | 36.94 | 32.86 | 30.30 | 184.09 | 0.10 | 3.47 | 0.60 | 369.19 | 11.39 | 357.81 |
| 2 | Gandhinagar (3-4) | 56.27 | 0.08 | 17.67 | 22.52 | 102.39 | 7.01 | 2.39 | 0.50 | 208.83 | 12.50 | 196.33 |
| 3 | Gandhinagar 5* | - | - | 30.88 | 14.70 | 26.09 | 11.87 | 1.19 | 0.05 | 84.78 | 11.93 | 72.86 |
| 4 | Wanakbori 1-6 TPS | 127.36 | 18.12 | 95.65 | 66.99 | 267.91 | 35.76 | 7.17 | 0.81 | 619.77 | 46.29 | 573.49 |
| 5 | Wanakbori 7* | - | - | 28.03 | 11.49 | 21.65 | 8.18 | 1.19 | 0.05 | 70.59 | 6.75 | 63.85 |
| 6 | Sikka Extension (3-4) | 172.90 | 144.66 | 137.53 | 29.20 | 112.90 | 1.19 | 2.84 | 0.23 | 601.45 | 9.60 | 591.84 |
| 7 | KLTPS 1-3 | 66.80 | 0.01 | 49.27 | 8.94 | 128.32 | 0.43 | 1.22 | 0.17 | 255.16 | 4.84 | 250.32 |
| 8 | KLTPS 4 | 36.44 | 9.13 | 29.53 | 3.35 | 21.98 | 0.13 | 0.43 | 0.02 | 101.01 | 1.65 | 99.38 |
| 9 | Dhuvaran CCPP 1* | 21.24 | - | 11.07 | 5.27 | 37.39 | 0.21 | 0.61 | 0.05 | 75.84 | 1.74 | 74.10 |
| 10 | Dhuvaran CCPP 2 | 24.92 | 8.11 | 18.49 | 6.00 | 37.48 | 0.76 | 0.64 | 0.05 | 96.45 | 1.81 | 94.65 |
| 11 | Dhuvaran CCPP 3* | 76.43 | 64.37 | 65.36 | 13.11 | 77.85 | - | 2.14 | 0.17 | 299.43 | 4.32 | 295.11 |
| 12 | Utran Extension* | 66.54 | 31.25 | 57.60 | 19.18 | 62.03 | 3.64 | 2.13 | 0.14 | 242.51 | 5.69 | 236.81 |
| 13 | Ukai 6* | 141.13 | 98.59 | 122.46 | 29.88 | 112.90 | 0.10 | 2.84 | 0.34 | 508.24 | 12.71 | 495.54 |
| 14 | Ukai Hydro | - | 2.53 | 10.42 | 0.76 | 22.59 | - | 1.73 | 0.17 | 38.20 | 3.51 | 34.69 |
| 15 | Kadana Hydro | 15.90 | - | 28.84 | 1.35 | 27.20 | - | 1.38 | 0.15 | 74.82 | 3.06 | 71.76 |
| 16 | Wanakbori 8 TPS* | 235.75 | 252.40 | 187.53 | 55.51 | 153.54 | - | - | - | 884.73 | - | 884.72 |
| | Total | 1,122.50 | 666.20 | 923.20 | 318.54 | 1,396.32 | 69.39 | 31.37 | 3.50 | 4,531.02 | 137.78 | 4,393.24 |

* PPA based stations

Further, it is noted that KLTPS Unit 1 & 2 has been de-commissioned from January 1, 2020. Hence, for FY 2020-21, the approved fixed cost for KLTPS (1-3) shall be billed in the proportion to the available installed capacity.



7 Determination of Tariff of BLTPS for Units 1 & 2 for FY 2020-21

7.1 Background

Bhavnagar Energy Company Ltd. (BECL) vide the Government of Gujarat Notification dated 27th August, 2018 is merged with GSECL. Accordingly, the Assets and Liabilities is transferred to GSECL. The effective date of transfer is 1st April, 2018 as per the notification. The date of commissioning for Unit 1 is 16th May, 2016 and Unit 2 is 27th March, 2017.

In the present Petition, GSECL has computed the fixed cost and variable charges for Bhavnagar Lignite Thermal Power station (BLTPS) for FY 2020-21 based on the PPA for BLTPS between GUVNL and GSECL approved by the Commission.

The Commission in its Tariff Order dated 24th April, 2019 in Case No. 1756 of 2018 in line with the Regulation 46.2 (a) of the GERC (MYT) Regulations, 2016 has approved the provisional tariff for Bhavnagar Lignite Thermal Power station (BLTPS) (erstwhile BECL) for FY 2019-20.

The determination of Fixed Charges and variable charges for BLTPS for FY 2020-21 is discussed in subsequent Sections of this Order.

7.2 Determination of Fixed Charges

Petitioner Submission

Based on the Capital Cost as per the approved PPA and the consequent Capitalized Expenditure the funding of the capital expenditure through debt & equity at 70:30 ratio, etc. the fixed costs of BLTPS for FY 2019-20 have been outlined hereunder. As provided under the Regulations, the fixed cost has been categorized under the following heads:

1. Depreciation
2. Interest & Finance Charges
3. Return on Equity
4. Interest on Working Capital
5. Operations & Maintenance Expenses
6. SLDC Charges
7. Income Tax

1. **Depreciation:** Depreciation is computed on the PPA approved GFA at 5.28% as under:



Table 7.1: Depreciation claimed for FY 2020-21

(Rs. Crore)

| Particulars | Actual claimed |
|----------------------------------|----------------|
| GFA at the Beginning of the Year | 3,615.00 |
| Additions during the year | - |
| Deductions during the year | - |
| Closing GFA | 3,615.00 |
| Avg. GFA | 3,615.00 |
| Rate of Depreciation | 5.28% |
| Depreciation | 190.87 |

- 2. Interest & Finance Charges:** The normative Opening Loan for FY 2020-21 is considered as closing loan of FY 2019-20 as approved by the Commission in Tariff Order dated April 24, 2019. The interest rate of 8.50% is considered for computing interest expenses as under:

Table 7.2: Interest & Finance Charges claimed for FY 2020-21

(Rs. Crore)

| Particulars | Actual claimed |
|-----------------------------------|----------------|
| Opening Loans | 1,767.01 |
| Loan Additions during the Year | - |
| Repayment during the Year | 190.87 |
| Closing Loans | 1,576.14 |
| Average Loans | 1,671.57 |
| Wt. Avg. Rate of Interest on Loan | 8.50% |
| Interest on Loan | 142.08 |

- 3. Return on Equity:** The Return on Equity is computed at a normative debt-equity ratio of 70:30 and applying rate of 14% as under:

Table 7.3: Return on Equity claimed for FY 2020-21

(Rs. Crore)

| Particulars | Actual claimed |
|---------------------------|----------------|
| Opening Equity | 1084.50 |
| Additions during the year | 0.00 |
| Closing Equity | 1084.50 |
| Average Equity | 1084.50 |
| Rate of Return on Equity | 14% |
| Return on Equity | 151.83 |

- 4. Interest on Working Capital:** The Interest on Working Capital is computed based on the norms specified in the GERC (MYT) Regulations, 2016 and considering the interest rate of 10.89% which is the 1-year SBI MCLR as on 1st April, 2019 i.e.



8.39% plus 250 basis points. This rate is computed as per the First Amendment to the GERC (MYT) Regulations, 2016 dated 2nd December, 2016. The Interest on Working Capital is computed as follows:

Table 7.4: Interest on Working Capital claimed for FY 2020-21
(Rs. Crore)

| Particulars | Actual claimed |
|------------------------------------|----------------|
| Lignite Cost (1 1/2 months) | 113.15 |
| Sec Fuel Cost (1 Months) | 2.85 |
| O&M Expenses (1 Month) | 14.05 |
| Maintenance Spares | 36.15 |
| Receivables (1 Months) | 136.80 |
| Total Working Capital | 303.00 |
| Rate of Interest | 10.89% |
| Interest on Working Capital | 33.00 |

- 5. O&M Expenses:** O&M expenses are computed as per the norms specified for new lignite based stations in the GERC (MYT) Regulations, 2016.

Table 7.5: O&M Expenses claimed for FY 2020-21
(Rs. Crore)

| Particulars | Actual claimed |
|-------------|----------------|
| O&M Cost | 168.60 |

- 6. SLDC Fees and Charges:** SLDC fees and charges are computed as follows:

Table 7.6: SLDC Fees & Charges claimed for FY 2020-21
(Rs. Crore)

| Particulars | Actual claimed |
|---------------------|----------------|
| SLDC Fees & Charges | 0.24 |

- 7. Income Tax:** Income Tax is computed by applying the MAT rate of 21.5488% on the Return on Equity as follows:

Table 7.7: Income Tax claimed for FY 2020-21
(Rs. Crore)

| Particulars | Actual claimed |
|-------------|----------------|
| Income Tax | 32.72 |

- 8. Fixed Cost for FY 2020-21:** Fixed Cost claimed by the Petitioner for BLTPS Units 1 & 2 is shown in Table below:

Table 7.8: Fixed Cost claimed for FY 2020-21

(Rs. Crore)

| Particulars | Claimed by GSECL |
|-----------------------------|------------------|
| Depreciation | 190.87 |
| Interest on Loan | 142.08 |
| Return on Equity | 151.83 |
| Interest on Working Capital | 33.00 |
| O&M Cost | 168.60 |
| SLDC Charges | 0.24 |
| Income Tax | 32.72 |
| Total Fixed Cost | 719.34 |

Commission's Analysis

As per the powers conferred under Regulation 46.2 (a), the Commission has determined the provisional tariff for Bhavnagar Lignite Thermal Power station (BLTPS) (erstwhile BECL) for FY 2019-20 in Tariff Order dated April 24, 2019.

In the said Order, fixed charges have been determined after considering Capital Cost of Rs. 3,615 Crore as per Schedule 5.2 of the PPA dated 17th November, 2010 executed between BECL and GUVNL wherein it is stated that Project Cost not to exceed Rs. 7.23 / MW.

The Commission observes that, in the present Petition, GSECL has considered the lignite price of Rs. 2,513/MT for computation of Energy Charges as per draft Fuel Supply Agreement (FSA) between BLTPS and GPCL. The Commission sought the copy of the draft FSA, however, the same has not been submitted. In absence of the draft FSA, it would not be appropriate to consider increase in lignite price, hence the Commission has considered the Lignite price Rs.2193.74/MT as approved in the tariff Ordered dated 24th April, 2019. The Commission has also continue the approach adopted for consideration of Income Tax as per last tariff Order and approve the Interest on Working Capital as shown in the Table below:

Table 7.9: Approved Interest on Working Capital approved for FY 2020-21

(Rs. Crore)

| Particulars | Actual claimed | Approved |
|------------------------------------|----------------|---------------|
| Lignite Cost (1 1/2 months) | 113.15 | 99.82 |
| Sec Fuel Cost (1 Months) | 2.85 | 2.17 |
| O&M Expenses (1 Month) | 14.05 | 14.05 |
| Maintenance Spares | 36.15 | 36.15 |
| Receivables (1 Months) | 136.80 | 124.61 |
| Total Working Capital | 303.00 | 276.81 |
| Rate of Interest | 10.89% | 10.89% |
| Interest on Working Capital | 33.00 | 30.14 |



Total Fixed Cost works out to be Rs 683.77 Crore based on above capital cost and as per the parameters in the PPA submitted by GSECL which is as mentioned below:

Table 7.10: Approved Fixed Cost for FY 2020-21 (Provisional)

| (Rs. Crore) | | |
|-----------------------------|------------------|----------------------------|
| Particulars | Claimed by GSECL | Approved by the Commission |
| Depreciation | 190.87 | 190.87 |
| Interest on Loan | 142.08 | 142.08 |
| Return on Equity | 151.83 | 151.83 |
| Interest on Working Capital | 33.00 | 30.14 |
| O&M Cost | 168.60 | 168.60 |
| SLDC Charges | 0.24 | 0.24 |
| Income Tax | 32.72 | - |
| Total Fixed Cost | 719.34 | 683.77 |

7.3 Determination of Energy Charges

Petitioner Submission

Based on the operating and fuel related parameters considered in the PPA approved by the Commission, GSECL submitted Energy Charges of Rs. 2.957/kWh.

Commission's Analysis

The Commission in Tariff Order dated April 24, 2019 has worked out the Variable Cost / Fuel Cost of Rs. 2.60 / kWh for BLTPS based on the fuel price of lignite as submitted by GSECL and the operating parameters such as SHR, Auxiliary Consumption, PAF, PLF, Transit loss submitted in the PPA.

The Commission observes that, in the present Petition, GSECL has considered the lignite price of Rs. 2,513/MT for computation of Energy Charges as per draft Fuel Supply Agreement (FSA) between BLTPS and GPCL. The Commission sought the copy of the draft FSA, however, the same has not been submitted. In absence of the draft FSA, it would not appropriate to consider increase in lignite price.

Hence, for the purpose of computation of Energy Charges, the Commission has approved Energy Charges of Rs. 2.60/kWh as approved in Tariff Order dated April 24, 2019.



8 Compliance of Directives

8.1 Compliance of Directives issued by the Commission

The Commission, in its MYT Order dated 31st March, 2017 and in subsequent years tariff Order, had issued certain directives to GSECL. The Commission also issued fresh directives in the Tariff Order dated 24th April, 2019. The Petitioner has submitted the status of compliance of directives issued by the Commission.

The compliance of directives issued by the Commission and issue of new directives are discussed below:

8.2 Compliance of Earlier Directives

Directive 1: Renovation and Modernization (R&M) of Thermal Plant

GSECL may submit its further plan for R&M of Ukai Unit 1 & 2. Further, GSECL may also submit a quarterly progress report of the R&M activities being undertaken for Wanakbori 1-6. Compliance as per current Petition:

- R&M work of Ukai Unit No.1 & 2 completed on 24.02.2010.
- C & I up-gradation work of Wanakbori TPS Unit No.6 is completed on 17.05.2015. So, Unit No.2, 3, 4, 5 & 6 are completed. Work of Unit No: 1 will be started as per the program of SLDC for Shut Down.

Compliance:

The report of R&M work of WTPS-1 will be submitted at the earliest.

Commission Comments:

GSECL is directed to submit the report within a month from the date of this Order.

Directive 2: Actual Performance Parameters

GSECL shall submit month wise, at quarterly intervals, the actual performance parameters like PAF, PLF, SHR, Aux. Consumption, SFC, Transit loss etc. actual gross generation, actual net generation and coal stock position (both imported and indigenous) for each station to the Commission and place the said information on its website.

Compliance:



Performance Parameter and Coal stock Position month wise at quarterly intervals are attached as Annexure II and Annexure III of the petition.

Commission Comments:

The Commission has noted the submission. GSECL shall continue to submit the report as per directive.

Further Compliance

Performance Parameter and Coal stock Position month wise at quarterly intervals for FY 2018-19 (Q1 to Q4) and FY 2019-20 (Q1) are submitted.

Commission Comments:

The Commission has noted the submission. GSECL shall continue to submit the report as per directive.

Directive 3: Deviation of Capital Expenditure

GSECL is directed to submit a prior intimation to the Commission with proper justification for any variation of more than 10% between approved and actual CAPEX.

Compliance:

As Directed, if there is any deviation in Capital Expenditure, GSECL will intimate to the Commission.

Commission Comments:

The Commission has noted the compliance and further direct that any investment / proposal / modification to be carried out for meeting the environmental guidelines of Govt shall be put up for approval of the Commission.

Further Compliance:

GSECL will put up the CAPEX proposal to the Commission for modification to mitigate the environment norms as per guideline issued by Government of India.

Commission Comments:

GSECL is directed to submit its Capex proposal in Tariff Petition for next Control Period commencing from April 1, 2021.

Directive 4: Fuel Supply Arrangements

GSECL is directed to initiate efforts for optimizing fuel supply arrangements and submit the detailed report related to existing FSA with details related to take or pay liabilities, practice for



procuring imported fuel, and present arrangement and action required for optimization of fuel supply arrangement by 30th June, 2017.

Compliance:

GSECL has initiated the actions for optimization of coal cost and transferred the domestic coal to the own cheaper power Generating station to reduce the cost of Generation as a part of implementation of flexibility as per guideline issued by CEA and Ministry of power.

Further, GSECL has signed the supplementary agreement on 13th April, 2017 for implementation of Flexibility in Utilization of Domestic Coal with SECL and WCL. So that the coal ACQ shall be considered company as a whole instead of power station wise. So, coal penalty/incentive shall be calculated GSECL as a whole instead of power station wise.

For supply of imported coal, GSECL has Long Term Supply Agreement with M/s APIL.

Commission Comments:

The Commission has noted the submission. However, it is directed to submit the copy of Long-Term Supply Agreement for imported coal between GSECL and APIL.

Further Compliance:

GSECL submitted the hard copy of Long Term Supply Agreement for Imported Coal between GSECL and APIL.

Commission Comments:

The Commission has noted the submission of the Petitioner.

8.3 Directives Issues vide Order dated April 24, 2019

Directive 1: Life Assessment & fulfilling Environment Norms of GSECL Plants

GSECL is directed to carry out detailed technical study on the aging of its different units at various stations for life assessment and requirement of any Renovation & Modernization with techno-commercial assessment keeping new environmental norms of MoEF for Thermal Power Plants. GSECL shall submit a comprehensive report at the earliest.

Compliance:

LoI is issued to M/s Datang Technologies & Engineering for Implementation FGD in 800 MW at the total price of Rs. 377 Crore with scheduled commissioning in Aug 2021.

Commission Comments:



The Commission noted the submission. GSECL is further directed to submit half yearly progress report for 800 MW plant and also submit the status with respect to above for other plants.

Directive 2: Separate Accounts for RE Assets

GSECL is directed to submit separate accounting statement for RE assets at its various locations during the submission of yearly true-up Petition.

Compliance:

GSECL submitted the separate accounting formats for RE assets for various locations.

Commission Comments:

The Commission noted the submission.

Directive 3: Study for Technical Minimum Operations of plants at 55% of MCR

To achieve the National RE capacity addition target of 175 GW by the year 2022, the existing coal based base load capacity has to be used as balancing power and anticipated to be more and more cycled with increase in variable RE generation in the State Grid. To absorb the highly intermittent and variable generation from RE sources, more flexible and cyclic operations with fast Ramp Up and Ramp Down from base load plants is need of the time. In order to meet this, GSECL is directed to submit a comprehensive report covering the present status of Technical minimum level operation of each thermal plant with Ramp Up and Ramp Down capability and action plan for implementing 55% Technical minimum criteria for all such efficient plants. The report may include cost of implementation including timeline and impact on machine's life and efficiency. This report should be submitted within 3 months to the Commission.

Compliance:

One 200/210 MW (Ukai TPS Unit 4) & one 500 MW Unit (Ukai TPS Unit 6) of GSECL are identified as the pilot coal flexing projects with USAID, to study & identify the capability of Units for low load operation. The study will identify the ramping capability, safe technical minimum load for sustained operation, retrofit/modifications required to achieve 3% ramp rate with 55% load. The estimated expenditure for the same will also be shared by USAID in the Report. The existing ramping capability of GSECL Coal based generating units is 1% - 1.5% MW per min.

The previous operational database of units as required by USAID has been shared with the concerned. The USAID Team has visited Ukai TPS during August 2018 in this regard & they have submitted the draft report.



As suggested by USAID team, the low load trial run (60%) with 1% ramp rate has been conducted by Ukai TPS during June 2019 & relevant database is submitted to the USAID team for comments & observations.

However, USAID has suggested to undertake 55% low load trial run of Ukai TPS 1 x 500 MW Unit with 1% ramp rate, with technical assistance of M/s BHEL being the OEM/designer of the unit. The tentative schedule for the trial is planned during Sept 19 – Oct 19 in consultation with SLDC. Based on the trial at Ukai TPS, the similar trial will be carried out in all the coal-based power stations & unit wise strategy for achieving 55 % load with 3% ramping capability shall be made in due course of time.

Commission Comments:

The Commission noted the submission of the Petitioner. However, GSECL is further directed to update the Commission for the progress made to achieve 55% technical minimum operation and 3% ramp rate for other generating plants.

8.4 Fresh Directives

Directive 1: Action Plan for Capacity Retirement/Addition/Utilisation

GSECL is directed to submit its Action Plan for next 10 (ten) years in next Tariff Petition for Control Period commencing from April 1, 2021. The Action Plan shall include the plan for retirement of existing Old Stations, plan for capacity addition of Conventional Generating Stations, plan for capacity addition of Renewable Energy Plants, plan for optimum utilisation of existing Generating Stations and plan for achieving operational and economic efficiency.

Directive 2: Roadmap for Improvement of Performance of Lignite Based Stations

The Commission directs GSECL to submit roadmap for improvement the performance of Lignite based power stations, in economical manner.



COMMISSION'S ORDER

The Commission has determined tariff of GSECL for FY 2020-21 in Chapter 6 of this Order. Accordingly, the approved energy charges and fixed charges are as mentioned in the Table Nos. 6.1 and 6.2, respectively. The Commission approves the station-wise fixed charges and energy charges for FY 2020-21 as outlined in the Table below:

| Sr. No. | Power Station | Annual Fixed Charges for FY 2020-21 (Rs. Crore) | Energy Charges for FY 2020-21 (Rs./kWh) |
|---------|-------------------|---|---|
| 1. | Ukai (3-5) | 357.81 | 2.768 |
| 2. | Gandhinagar (3-4) | 196.33 | 3.308 |
| 3. | Gandhinagar 5* | 72.86 | 3.117 |
| 4. | Wanakbori 1-6 | 573.49 | 3.207 |
| 5. | Wanakbori 7* | 63.85 | 3.093 |
| 6. | Sikka 3 & 4* | 591.84 | 2.425 |
| 7. | KLTPS 1-3 | 250.32 | 1.496 |
| 8. | KLTPS 4 | 99.38 | 1.469 |
| 9. | Dhuvaran CCPP 1* | 74.10 | 3.899 |
| 10. | Dhuvaran CCPP 2 | 94.65 | 4.066 |
| 11. | Dhuvaran CCPP 3* | 295.11 | 2.256 |
| 12. | Utran Extension* | 236.81 | 4.345 |
| 13. | Ukai 6* | 495.54 | 2.516 |
| 14. | Wanakbori 8* | 884.72 | 2.941 |
| 15. | Ukai Hydro | 34.69 | |
| 16. | Kadana Hydro | 71.76 | |
| | Total | 4,393.24 | |

* PPA based stations

The Annual Fixed Charges are inclusive of Consolidated (Fixed & Fuel Cost) Gains / (Losses) of Rs. 20.93 Crore. The Commission has approved unabsorbed depreciation of Rs. 49.08 Crore of STPS 1 & 2 on account of decommissioning of these units.

The net losses of Rs. 28.15 is worked out after considering Consolidated (Fixed & Fuel Cost) Gains / (Losses) of Rs. 20.93 Crore and Net Unabsorbed Depreciation of Rs. 49.08 Crore (Rs. 49.08 Crore – Rs. 20.93 Crore = Rs. 28.15 Crore). This amount is to be recovered from four DISCOMs in Twelve (12) equal monthly instalments through GUVNL.

This order shall come into force with effect from 1st April, 2020.

Sd/-

P. J. THAKKAR
Member

Sd/-

ANAND KUMAR
Chairman

Place: Gandhinagar

Date: 26.03.2020



Annexure A

A-1: Ukai TPS 3 to 5 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2018-19

| SL. No. | ITEM | DERIVATION | UNIT | FY 2018-19 |
|---------|---|---------------------------------|-----------|------------|
| 1 | GROSS GENERATION | A | MUs | 3,911.68 |
| 2 | AUXILIARY CONSUMPTION | C | % | 9.00% |
| 3 | AUXILIARY CONSUMPTION | B | MUs | 352.05 |
| 4 | NET GENERATION | $Y=A-B$ | MUs | 3,559.63 |
| 5 | STATION HEAT RATE | D | KCAL/KWH | 2,625 |
| 6 | SP. OIL CONSUMPTION | E | ML/KWH | 1.00 |
| 7 | GROSS CALORIFIC VALUE OF COAL | F | KCAL/KG | 4,003 |
| 8 | CALORIFIC VALUE OF OIL | G | KCAL/L | 10,461 |
| 9 | OVERALL HEAT | $H= A \times D$ | GCAL | 10,268,160 |
| 10 | HEAT FROM OIL | $I= (A \times E \times G)/1000$ | GCAL | 40,921 |
| 11 | HEAT FROM COAL | $J = H-I$ | GCAL | 10,227,239 |
| 12 | TRANSIT LOSSES | K | % | 0.80% |
| 13 | COAL BLEND | | | |
| 14 | (A) INDIGENOUS COAL | X1 | % | 27.17% |
| 15 | (B) WASHED COAL | X2 | % | 56.24% |
| 16 | (C) IMPORTED COAL | X3 | % | 16.60% |
| 17 | ACTUAL OIL CONSUMPTION | $L= A \times E$ | KL | 3,912 |
| 18 | ACTUAL COAL CONSUMPTION | $M= (J \times 1000)/F$ | MT | 2,554,894 |
| 19 | (A) INDIGENOUS COAL | $Q1=M* \times X1/(1-K)$ | MT | 699,725 |
| 20 | (B) WASHED COAL | $Q2=M* \times X2 / (1-K)$ | MT | 1,448,365 |
| 21 | (C) IMPORTED COAL | $Q3=M* \times X3$ | MT | 423,988.65 |
| 22 | PRICE OF COAL | | | |
| 23 | (A) INDIGENOUS COAL | P1 | Rs./MT | 4,272 |
| 24 | (B) WASHED COAL | P2 | Rs./MT | 4,809 |
| 25 | (C) IMPORTED COAL | P3 | Rs./MT | 8,093 |
| 26 | PRICE OF OIL | P4 | Rs./KL | 35,823 |
| 27 | COAL COST | | | |
| 28 | (A) INDIGENOUS COAL | $N1=Q1 \times P1/10^7$ | Rs. CRORE | 298.95 |
| 29 | (B) WASHED COAL | $N2=Q2 \times P2/10^7$ | Rs. CRORE | 696.59 |
| 30 | (C) IMPORTED COAL | $N3=Q3 \times P3/10^7$ | Rs. CRORE | 343.13 |
| 31 | TOTAL COAL COST | $N4= N1+N2+N3$ | Rs. CRORE | 1,338.68 |
| 32 | OIL COST | $N5=P4 \times L/10^7$ | Rs. CRORE | 14.01 |
| 33 | TOTAL FUEL COST | $O= N4+N5$ | Rs. CRORE | 1,352.69 |
| 34 | FUEL COST/UNIT (GROSS) | $P= O/(A*10)$ | Rs./KWH | 3.46 |
| 35 | FUEL COST/UNIT (NET) | $Q=O/(Y*10)$ | Rs./KWH | 3.80 |
| 36 | COST OF FUEL/GCAL | $R=(O/H)*10^7$ | Rs./GCAL | 1336.17 |
| 37 | ACTUAL NET GENERATION | S | MUs | 3,538 |
| 38 | NORMATIVE FUEL COST FOR ACTUAL NET GENERATION | $T=S*Q/10$ | Rs. CRORE | 1,344.58 |



A-2: Ukai Extension 6 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2018-19

| SL. No. | ITEM | DERIVATION | UNIT | FY 2018-19 |
|---------|---|---------------------------------|-----------|-------------|
| 1 | GROSS GENERATION | A | MUS | 3,025 |
| 2 | AUXILIARY CONSUMPTION | C | % | 6.00% |
| 3 | AUXILIARY CONSUMPTION | B | MUS | 182 |
| 4 | NET GENERATION | $Y=A-B$ | MUS | 2,844 |
| 5 | STATION HEAT RATE | D | KCAL/KWH | 2,385 |
| 6 | SP. OIL CONSUMPTION | E | ML/KWH | 1.00 |
| 7 | GROSS CALORIFIC VALUE OF COAL | F | KCAL/KG | 4,117 |
| 8 | CALORIFIC VALUE OF OIL | G | KCAL/L | 10,440 |
| 9 | OVERALL HEAT | $H= A \times D$ | GCAL | 72,15,317 |
| 10 | HEAT FROM OIL | $I= (A \times E \times G)/1000$ | GCAL | 31,584 |
| 11 | HEAT FROM COAL | $J= H-I$ | GCAL | 71,83,732 |
| 12 | TRANSIT LOSSES | K | % | 0.80% |
| 13 | COAL BLEND | | | |
| 14 | (A) INDIGENOUS COAL | X1 | % | 12.89% |
| 15 | (B) WASHED COAL | X2 | % | 67.63% |
| 16 | (C) IMPORTED COAL | X3 | % | 19.48% |
| 17 | ACTUAL OIL CONSUMPTION | $L= A \times E$ | KL | 3,025 |
| 18 | ACTUAL COAL CONSUMPTION | $M= (J \times 1000)/F$ | MT | 17,44,895 |
| 19 | (A) INDIGENOUS COAL | $Q1=M^* \times X1/(1-K)$ | MT | 2,26,674 |
| 20 | (B) WASHED COAL | $Q2=M^* \times X2 / (1-K)$ | MT | 11,89,649 |
| 21 | (C) IMPORTED COAL | $Q3=M^* \times X3$ | MT | 339902.1385 |
| 22 | PRICE OF COAL | | | |
| 23 | (A) INDIGENOUS COAL | P1 | Rs./MT | 4,217 |
| 24 | (B) WASHED COAL | P2 | Rs./MT | 4,926 |
| 25 | (C) IMPORTED COAL | P3 | Rs./MT | 8,224 |
| 26 | PRICE OF OIL | P4 | Rs./KL | 32,181 |
| 27 | COAL COST | | | |
| 28 | (A) INDIGENOUS COAL | $N1=Q1 \times P1/10^7$ | RS CRORES | 95.5959 |
| 29 | (B) WASHED COAL | $N2=Q2 \times P2/10^7$ | RS CRORES | 586.01 |
| 30 | (C) IMPORTED COAL | $N3=Q3 \times P3/10^7$ | RS CRORES | 279.53 |
| 31 | TOTAL COAL COST | $N4= N1+N2+N3$ | RS CRORES | 961.13 |
| 32 | OIL COST | $N5=P4 \times L/10^7$ | RS CRORES | 9.74 |
| 33 | TOTAL FUEL COST | $O= N4+N5$ | RS CRORES | 970.87 |
| 34 | FUEL COST/UNIT (GROSS) | $P= O/(A^*10)$ | RS./KWH | 3.21 |
| 35 | FUEL COST/UNIT (NET) | $Q=O/(Y^*10)$ | RS./KWH | 3.41 |
| 36 | COST OF FUEL/GCAL | $R=(O/H)^*10^7$ | RS./GCAL | 1,345.57 |
| 37 | ACTUAL NET GENERATION | S | MUS | 2,842 |
| 38 | NORMATIVE FUEL COST FOR ACTUAL NET GENERATION | $T=S^*Q/10$ | RS. CRORE | 970.40 |



A-3: Gandhinagar 3 & 4 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2018-19

| SL. No. | ITEM | DERIVATION | UNIT | FY 2018-19 |
|---------|---|---------------------------------|-----------|------------|
| 1 | GROSS GENERATION | A | MUs | 2,233.59 |
| 2 | AUXILIARY CONSUMPTION | C | % | 9.00% |
| 3 | AUXILIARY CONSUMPTION | B | MUs | 206.26 |
| 4 | NET GENERATION | $Y=A-B$ | MUs | 2,032.57 |
| 5 | STATION HEAT RATE | D | KCAL/KWH | 2,625 |
| 6 | SP. OIL CONSUMPTION | E | ML/KWH | 1.00 |
| 7 | GROSS CALORIFIC VALUE OF COAL | F | KCAL/KG | 3,960 |
| 8 | CALORIFIC VALUE OF OIL | G | KCAL/L | 10,438 |
| 9 | OVERALL HEAT | $H= A \times D$ | GCal | 58,63,174 |
| 10 | HEAT FROM OIL | $I= (A \times E \times G)/1000$ | GCal | 23,314 |
| 11 | HEAT FROM COAL | $J = H-I$ | GCal | 58,39,860 |
| 12 | TRANSIT LOSSES | K | % | 0.80% |
| 13 | COAL BLEND | | | |
| 14 | (A) INDIGENOUS COAL | X1 | % | 27.80% |
| 15 | (B) WASHED COAL | X2 | % | 57.37% |
| 16 | (C) IMPORTED COAL | X3 | % | 14.83% |
| 17 | ACTUAL OIL CONSUMPTION | $L= A \times E$ | KL | 2,234 |
| 18 | ACTUAL COAL CONSUMPTION | $M= (J \times 1000)/F$ | MT | 14,74,712 |
| 19 | (A) INDIGENOUS COAL | $Q1=M \times X1/(1-K)$ | MT | 4,13,208 |
| 20 | (B) WASHED COAL | $Q2=M \times X2 / (1-K)$ | MT | 8,52,873 |
| 21 | (C) IMPORTED COAL | $Q3=M \times X3$ | MT | 2,18,759 |
| 22 | PRICE OF COAL | | | |
| 23 | (A) INDIGENOUS COAL | P1 | Rs./MT | 4,670 |
| 24 | (B) WASHED COAL | P2 | Rs./MT | 5,239 |
| 25 | (C) IMPORTED COAL | P3 | Rs./MT | 7,891 |
| 26 | PRICE OF OIL | P4 | Rs./KL | 35,293 |
| 27 | COAL COST | | | |
| 28 | (A) INDIGENOUS COAL | $N1=Q1 \times P1/10^7$ | Rs Crores | 192.99 |
| 29 | (B) WASHED COAL | $N2=Q2 \times P2/10^7$ | Rs Crores | 446.84 |
| 30 | (C) IMPORTED COAL | $N3=Q3 \times P3/10^7$ | Rs Crores | 172.61 |
| 31 | TOTAL COAL COST | $N4= N1+N2+N3$ | Rs Crores | 812.44 |
| 32 | OIL COST | $N5=P4 \times L/10^7$ | Rs Crores | 7.88 |
| 33 | TOTAL FUEL COST | $O= N4+N5$ | Rs Crores | 820.32 |
| 34 | FUEL COST/UNIT (GROSS) | $P= O/(A \times 10)$ | Rs./kWh | 3.67 |
| 35 | FUEL COST/UNIT (NET) | $Q=O/(Y \times 10)$ | Rs./kWh | 4.04 |
| 36 | COST OF FUEL/GCal | $R=(O/H) \times 10^7$ | Rs./GCal | 1,399.11 |
| 37 | ACTUAL NET GENERATION | S | MUs | 1,998 |
| 38 | NORMATIVE FUEL COST FOR ACTUAL NET GENERATION | $T=S \times Q/10$ | Rs. Crore | 806.27 |



A-4: Gandhinagar 5 - Approved Fuel Costs (Coal, Lignite & Secondary Oil) for FY 2018-19

| SL. No. | ITEM | DERIVATION | UNIT | FY 2018-19 |
|---------|---|---------------------------------|-----------|------------|
| 1 | GROSS GENERATION | A | MUS | 1,470.40 |
| 2 | AUXILIARY CONSUMPTION | C | % | 9.50% |
| 3 | AUXILIARY CONSUMPTION | B | MUS | 139.69 |
| 4 | NET GENERATION | $Y=A-B$ | MUS | 1,330.71 |
| 5 | STATION HEAT RATE | D | KCAL/KWH | 2,460 |
| 6 | SP. OIL CONSUMPTION | E | ML/KWH | 3.50 |
| 7 | GROSS CALORIFIC VALUE OF COAL | F | KCAL/KG | 4,014 |
| 8 | CALORIFIC VALUE OF OIL | G | KCAL/L | 10,452 |
| 9 | OVERALL HEAT | $H= A \times D$ | Gcal | 36,17,184 |
| 10 | HEAT FROM OIL | $I= (A \times E \times G)/1000$ | Gcal | 53,789 |
| 11 | HEAT FROM COAL | $J = H-I$ | Gcal | 35,63,395 |
| 12 | TRANSIT LOSSES | K | % | 0.80% |
| 13 | COAL BLEND | | | |
| 14 | (A) INDIGENOUS COAL | X1 | % | 25.44% |
| 15 | (B) WASHED COAL | X2 | % | 58.49% |
| 16 | (C) IMPORTED COAL | X3 | % | 16.07% |
| 17 | ACTUAL OIL CONSUMPTION | $L= A \times E$ | KL | 5,146 |
| 18 | ACTUAL COAL CONSUMPTION | $M= (J \times 1000)/F$ | MT | 8,87,742 |
| 19 | (A) INDIGENOUS COAL | $Q1=M^* \times X1/(1-K)$ | MT | 2,27,633 |
| 20 | (B) WASHED COAL | $Q2=M^* \times X2 / (1-K)$ | MT | 5,23,421 |
| 21 | (C) IMPORTED COAL | $Q3=M^* \times X3$ | MT | 1,42,696 |
| 22 | PRICE OF COAL | | | |
| 23 | (A) INDIGENOUS COAL | P1 | Rs./MT | 4,756 |
| 24 | (B) WASHED COAL | P2 | Rs./MT | 5,382 |
| 25 | (C) IMPORTED COAL | P3 | Rs./MT | 7,968 |
| 26 | PRICE OF OIL | P4 | Rs./KL | 35,293 |
| 27 | COAL COST | | | |
| 28 | (A) INDIGENOUS COAL | $N1=Q1 \times P1/10^7$ | Rs Crores | 108.26 |
| 29 | (B) WASHED COAL | $N2=Q2 \times P2/10^7$ | Rs Crores | 281.70 |
| 30 | (C) IMPORTED COAL | $N3=Q3 \times P3/10^7$ | Rs Crores | 113.70 |
| 31 | TOTAL COAL COST | $N4= N1+N2+N3$ | Rs Crores | 503.66 |
| 32 | OIL COST | $N5=P4 \times L/10^7$ | Rs Crores | 18.16 |
| 33 | TOTAL FUEL COST | $O= N4+N5$ | Rs Crores | 521.82 |
| 34 | FUEL COST/UNIT (GROSS) | $P= O/(A*10)$ | Rs./kWh | 3.55 |
| 35 | FUEL COST/UNIT (NET) | $Q=O/(Y*10)$ | Rs./kWh | 3.92 |
| 36 | COST OF FUEL/GCAL | $R=(O/H)*10^7$ | Rs./Gcal | 1,442.62 |
| 37 | ACTUAL NET GENERATION | S | MUS | 1,329 |
| 38 | NORMATIVE FUEL COST FOR ACTUAL NET GENERATION | $T=S*Q/10$ | Rs. Crore | 521.00 |



A-5: Wanakbori 1-6 - Approved Fuel Costs (Coal, Lignite & Secondary Oil) for FY 2018-19

| SL. No. | ITEM | DERIVATION | UNIT | FY 2018-19 |
|---------|---|---------------------------------|-----------|-------------|
| 1 | GROSS GENERATION | A | MUS | 6,838 |
| 2 | AUXILIARY CONSUMPTION | C | % | 9.00% |
| 3 | AUXILIARY CONSUMPTION | B | MUS | 615 |
| 4 | NET GENERATION | $Y=A-B$ | MUS | 6,222 |
| 5 | STATION HEAT RATE | D | KCAL/KWH | 2,625 |
| 6 | SP. OIL CONSUMPTION | E | ML/KWH | 1.00 |
| 7 | GROSS CALORIFIC VALUE OF COAL | F | KCAL/KG | 4,010 |
| 8 | CALORIFIC VALUE OF OIL | G | KCAL/L | 10,356 |
| 9 | OVERALL HEAT | $H= A \times D$ | GCAL | 1,79,49,199 |
| 10 | HEAT FROM OIL | $I= (A \times E \times G)/1000$ | GCAL | 70,813 |
| 11 | HEAT FROM COAL | $J = H-I$ | GCAL | 1,78,78,386 |
| 12 | TRANSIT LOSSES | K | % | 0.80% |
| 13 | COAL BLEND | | | |
| 14 | (A) INDIGENOUS COAL | X1 | % | 25.94% |
| 15 | (B) WASHED COAL | X2 | % | 53.81% |
| 16 | (C) IMPORTED COAL | X3 | % | 20.25% |
| 17 | ACTUAL OIL CONSUMPTION | $L= A \times E$ | KL | 6,838 |
| 18 | ACTUAL COAL CONSUMPTION | $M= (J \times 1000)/F$ | MT | 44,58,450 |
| 19 | (A) INDIGENOUS COAL | $Q1=M \times X1/(1-K)$ | MT | 11,65,656 |
| 20 | (B) WASHED COAL | $Q2=M \times X2 / (1-K)$ | MT | 24,18,486 |
| 21 | (C) IMPORTED COAL | $Q3=M \times X3$ | MT | 9,02,981 |
| 22 | PRICE OF COAL | | | |
| 23 | (A) INDIGENOUS COAL | P1 | Rs./MT | 4,427 |
| 24 | (B) WASHED COAL | P2 | Rs./MT | 5,191 |
| 25 | (C) IMPORTED COAL | P3 | Rs./MT | 7,921 |
| 26 | PRICE OF OIL | P4 | Rs./KL | 37,330 |
| 27 | COAL COST | | | |
| 28 | (A) INDIGENOUS COAL | $N1=Q1 \times P1/10^7$ | Rs CRORES | 516.09 |
| 29 | (B) WASHED COAL | $N2=Q2 \times P2/10^7$ | Rs CRORES | 1,255.41 |
| 30 | (C) IMPORTED COAL | $N3=Q3 \times P3/10^7$ | Rs CRORES | 715.25 |
| 31 | TOTAL COAL COST | $N4= N1+N2+N3$ | Rs CRORES | 2,486.75 |
| 32 | OIL COST | $N5=P4 \times L/10^7$ | Rs CRORES | 25.53 |
| 33 | TOTAL FUEL COST | $O= N4+N5$ | Rs CRORES | 2,512.28 |
| 34 | FUEL COST/UNIT (GROSS) | $P= O/(A \times 10)$ | Rs./KWH | 3.67 |
| 35 | FUEL COST/UNIT (NET) | $Q=O/(Y \times 10)$ | Rs./KWH | 4.04 |
| 36 | COST OF FUEL/GCAL | $R=(O/H) \times 10^7$ | Rs./GCAL | 1,399.66 |
| 37 | ACTUAL NET GENERATION | S | MUS | 6,215 |
| 38 | NORMATIVE FUEL COST FOR ACTUAL NET GENERATION | $T=S \times Q/10$ | Rs. CRORE | 2,509.29 |



A-6: Wanakbori 7 - Approved Fuel Costs (Coal, Lignite & Secondary Oil) for FY 2018-19

| SL. No. | ITEM | DERIVATION | UNIT | FY 2018-19 |
|---------|---|---------------------------------|-----------|------------|
| 1 | GROSS GENERATION | A | MUS | 1,505 |
| 2 | AUXILIARY CONSUMPTION | C | % | 9.50% |
| 3 | AUXILIARY CONSUMPTION | B | MUS | 143 |
| 4 | NET GENERATION | $Y=A-B$ | MUS | 1,362 |
| 5 | STATION HEAT RATE | D | KCAL/KWH | 2,460 |
| 6 | SP. OIL CONSUMPTION | E | ML/KWH | 3.50 |
| 7 | GROSS CALORIFIC VALUE OF COAL | F | KCAL/KG | 4,074 |
| 8 | CALORIFIC VALUE OF OIL | G | KCAL/L | 10,353 |
| 9 | OVERALL HEAT | $H= A \times D$ | Gcal | 37,03,136 |
| 10 | HEAT FROM OIL | $I= (A \times E \times G)/1000$ | Gcal | 54,549 |
| 11 | HEAT FROM COAL | $J = H-I$ | Gcal | 36,48,587 |
| 12 | TRANSIT LOSSES | K | % | 0.80% |
| 13 | COAL BLEND | | | |
| 14 | (A) INDIGENOUS COAL | X1 | % | 24.81% |
| 15 | (B) WASHED COAL | X2 | % | 55.01% |
| 16 | (C) IMPORTED COAL | X3 | % | 20.18% |
| 17 | ACTUAL OIL CONSUMPTION | $L= A \times E$ | KL | 5,269 |
| 18 | ACTUAL COAL CONSUMPTION | $M= (J \times 1000)/F$ | MT | 8,95,579 |
| 19 | (A) INDIGENOUS COAL | $Q1=M* \times X1/(1-K)$ | MT | 2,23,967 |
| 20 | (B) WASHED COAL | $Q2=M* \times X2 / (1-K)$ | MT | 4,96,632 |
| 21 | (C) IMPORTED COAL | $Q3=M* \times X3$ | MT | 1,80,745 |
| 22 | PRICE OF COAL | | | |
| 23 | (A) INDIGENOUS COAL | P1 | Rs./MT | 4,558 |
| 24 | (B) WASHED COAL | P2 | Rs./MT | 5,272 |
| 25 | (C) IMPORTED COAL | P3 | Rs./MT | 7,947 |
| 26 | PRICE OF OIL | P4 | Rs./KL | 37,330 |
| 27 | COAL COST | | | |
| 28 | (A) INDIGENOUS COAL | $N1=Q1 \times P1/10^7$ | Rs Crores | 102.09 |
| 29 | (B) WASHED COAL | $N2=Q2 \times P2/10^7$ | Rs Crores | 261.83 |
| 30 | (C) IMPORTED COAL | $N3=Q3 \times P3/10^7$ | Rs Crores | 143.64 |
| 31 | TOTAL COAL COST | $N4= N1+N2+N3$ | Rs Crores | 507.55 |
| 32 | OIL COST | $N5=P4 \times L/10^7$ | Rs Crores | 19.67 |
| 33 | TOTAL FUEL COST | $O= N4+N5$ | Rs Crores | 527.22 |
| 34 | FUEL COST/UNIT (GROSS) | $P= O/(A*10)$ | Rs./kWh | 3.50 |
| 35 | FUEL COST/UNIT (NET) | $Q=O/(Y*10)$ | Rs./kWh | 3.87 |
| 36 | COST OF FUEL/GCAL | $R=(O/H)*10^7$ | Rs./Gcal | 1,423.72 |
| 37 | ACTUAL NET GENERATION | S | MUS | 1,367 |
| 38 | NORMATIVE FUEL COST FOR ACTUAL NET GENERATION | $T=S*Q/10$ | Rs. Crore | 529.14 |



A-7: Sikka Extension 3 & 4 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2018-19

| SL. No. | ITEM | DERIVATION | UNIT | FY 2018-19 |
|---------|---|---------------------------------|-----------|------------|
| 1 | GROSS GENERATION | A | MUS | 2,726 |
| 2 | AUXILIARY CONSUMPTION | C | % | 9.00% |
| 3 | AUXILIARY CONSUMPTION | B | MUS | 245 |
| 4 | NET GENERATION | $Y=A-B$ | MUS | 2,481 |
| 5 | STATION HEAT RATE | D | KCAL/KWH | 2,398 |
| 6 | SP. OIL CONSUMPTION | E | ML/KWH | 1.00 |
| 7 | GROSS CALORIFIC VALUE OF COAL | F | KCAL/KG | 5,105 |
| 8 | CALORIFIC VALUE OF OIL | G | KCAL/L | 10,314 |
| 9 | OVERALL HEAT | $H= A \times D$ | GCAL | 65,36,732 |
| 10 | HEAT FROM OIL | $I= (A \times E \times G)/1000$ | GCAL | 28,116 |
| 11 | HEAT FROM COAL | $J = H-I$ | GCAL | 65,08,617 |
| 12 | TRANSIT LOSSES | K | % | 0.00% |
| 13 | COAL BLEND | | | |
| 14 | (A) INDIGENOUS COAL | X1 | % | 0.00% |
| 15 | (B) WASHED COAL | X2 | % | 0.77% |
| 16 | (C) IMPORTED COAL | X3 | % | 99.23% |
| 17 | ACTUAL OIL CONSUMPTION | $L= A \times E$ | KL | 2,726 |
| 18 | ACTUAL COAL CONSUMPTION | $M= (J \times 1000)/F$ | MT | 12,74,949 |
| 19 | (A) INDIGENOUS COAL | $Q1=M \times X1/(1-K)$ | MT | - |
| 20 | (B) WASHED COAL | $Q2=M \times X2 / (1-K)$ | MT | 9,758 |
| 21 | (C) IMPORTED COAL | $Q3=M \times X3$ | MT | 12,65,191 |
| 22 | PRICE OF COAL | | | |
| 23 | (A) INDIGENOUS COAL | P1 | Rs./MT | 0.00 |
| 24 | (B) WASHED COAL | P2 | Rs./MT | 5,264 |
| 25 | (C) IMPORTED COAL | P3 | Rs./MT | 8,025 |
| 26 | PRICE OF OIL | P4 | Rs./KL | 40,820 |
| 27 | COAL COST | | | |
| 28 | (A) INDIGENOUS COAL | $N1=Q1 \times P1/10^7$ | Rs CRORES | 0.00 |
| 29 | (B) WASHED COAL | $N2=Q2 \times P2/10^7$ | Rs CRORES | 5.14 |
| 30 | (C) IMPORTED COAL | $N3=Q3 \times P3/10^7$ | Rs CRORES | 1,015.32 |
| 31 | TOTAL COAL COST | $N4= N1+N2+N3$ | Rs CRORES | 1,020.46 |
| 32 | OIL COST | $N5=P4 \times L/10^7$ | Rs CRORES | 11.13 |
| 33 | TOTAL FUEL COST | $O= N4+N5$ | Rs CRORES | 1,031.58 |
| 34 | FUEL COST/UNIT (GROSS) | $P= O/(A \times 10)$ | Rs./kWh | 3.78 |
| 35 | FUEL COST/UNIT (NET) | $Q=O/(Y \times 10)$ | Rs./kWh | 4.16 |
| 36 | COST OF FUEL/GCAL | $R=(O/H) \times 10^7$ | Rs./GCAL | 1,578.13 |
| 37 | ACTUAL NET GENERATION | S | MUS | 2,467 |
| 38 | NORMATIVE FUEL COST FOR ACTUAL NET GENERATION | $T=S \times Q/10$ | Rs. CRORE | 1,026.04 |



A-8: KLTPS 1-3 - Approved Fuel Costs (Coal, Lignite & SFO for FY 2018-19

| SL. No. | ITEM | DERIVATION | UNIT | FY 2018-19 |
|---------|---|---------------------------------|-----------|--------------|
| 1 | GROSS GENERATION | A | MUS | 886 |
| 2 | AUXILIARY CONSUMPTION | C | % | 12.00% |
| 3 | AUXILIARY CONSUMPTION | B | MUS | 106 |
| 4 | NET GENERATION | $Y=A-B$ | MUS | 780 |
| 5 | STATION HEAT RATE | D | KCAL/KWH | 3,231 |
| 6 | SP. OIL CONSUMPTION | E | ML/KWH | 3.00 |
| 7 | GROSS CALORIFIC VALUE OF LIGNITE | F | KCAL/KG | 2,308 |
| 8 | CALORIFIC VALUE OF OIL | G | KCAL/L | 10,220 |
| 9 | OVERALL HEAT | $H= A \times D$ | GCAL | 28,62,408 |
| 10 | HEAT FROM OIL | $I= (A \times E \times G)/1000$ | GCAL | 27,161 |
| 11 | HEAT FROM LIGNITE | $J = H-I$ | GCAL | 28,35,247 |
| 12 | TRANSIT LOSSES | K | % | 0.20% |
| 13 | ACTUAL OIL CONSUMPTION | $L= A \times E$ | KL | 2,658 |
| 14 | ACTUAL LIGNITE CONSUMPTION | $M= (J \times 1000)/F$ | MT | 12,30,904.83 |
| 15 | LIGNITE CONSUMPTION INCL. TRANSIT LOSSES | $N=M/(1-K)$ | MT | 12,33,371.58 |
| 16 | PRICE OF LIGNITE | P1 | RS./MT | 1,460 |
| 17 | PRICE OF OIL | P2 | RS./KL | 46,507 |
| 18 | COST OF LIGNITE | $N1= M \times P1/10^7$ | RS CRORES | 179.71 |
| 19 | OIL COST | $N2=P2 \times L/10^7$ | RS CRORES | 12.36 |
| 20 | TOTAL FUEL COST | $O= N1 + N2$ | RS CRORES | 192.07 |
| 21 | FUEL COST/UNIT (GROSS) | $P=O/(A*10)$ | RS./KWH | 2.17 |
| 22 | FUEL COST/UNIT (NET) | $Q=O/(Y*10)$ | RS./KWH | 2.46 |
| 23 | COST OF FUEL/GCAL | $R=(O/H)*10^7$ | RS./GCAL | 671.03 |
| 24 | ACTUAL NET GENERATION | S | MUS | 749 |
| 25 | NORMATIVE FUEL COST FOR ACTUAL NET GENERATION | $T=S*Q/10$ | RS. CRORE | 184.49 |



A-9: KLTPS 4 - Approved Fuel Costs (Coal, Lignite & SFO for FY 2018-19

| SL. No. | ITEM | DERIVATION | UNIT | FY 2018-19 |
|---------|---|---------------------------------|-----------|-------------|
| 1 | GROSS GENERATION | A | MUS | 319 |
| 2 | AUXILIARY CONSUMPTION | C | % | 12.00% |
| 3 | AUXILIARY CONSUMPTION | B | MUS | 38 |
| 4 | NET GENERATION | $Y=A-B$ | MUS | 281 |
| 5 | STATION HEAT RATE | D | KCAL/KWH | 3,000 |
| 6 | SP. OIL CONSUMPTION | E | ML/KWH | 3.00 |
| 7 | GROSS CALORIFIC VALUE OF LIGNITE | F | KCAL/KG | 2,300 |
| 8 | CALORIFIC VALUE OF OIL | G | KCAL/L | 10,644 |
| 9 | OVERALL HEAT | $H= A \times D$ | GCAL | 9,58,350 |
| 10 | HEAT FROM OIL | $I= (A \times E \times G)/1000$ | GCAL | 10,201 |
| 11 | HEAT FROM LIGNITE | $J = H-I$ | GCAL | 9,48,149 |
| 12 | TRANSIT LOSSES | K | % | 0.20% |
| 13 | ACTUAL OIL CONSUMPTION | $L= A \times E$ | KL | 958 |
| 14 | ACTUAL LIGNITE CONSUMPTION | $M= (J \times 1000)/F$ | MT | 4,13,065 |
| 15 | LIGNITE CONSUMPTION INCL. TRANSIT LOSSES | $N=M/(1-K)$ | MT | 4,13,892.75 |
| 16 | PRICE OF LIGNITE | P1 | Rs./MT | 1,592 |
| 17 | PRICE OF OIL | P2 | Rs./KL | 46,507 |
| 18 | COST OF LIGNITE | $N1= M \times P1/10^7$ | Rs CRORES | 65.76 |
| 19 | OIL COST | $N2=P2 \times L/10^7$ | Rs CRORES | 4.46 |
| 20 | TOTAL FUEL COST | $O= N1 + N2$ | Rs CRORES | 70.22 |
| 21 | FUEL COST/UNIT (GROSS) | $P=O/(A*10)$ | Rs./KWH | 2.20 |
| 22 | FUEL COST/UNIT (NET) | $Q=O/(Y*10)$ | Rs./KWH | 2.50 |
| 23 | COST OF FUEL/GCAL | $R=(O/H)*10^7$ | Rs./GCAL | 732.69 |
| 24 | ACTUAL NET GENERATION | S | MUS | 247 |
| 25 | NORMATIVE FUEL COST FOR ACTUAL NET GENERATION | $T=S*Q/10$ | Rs. CRORE | 61.65 |



A-10: Utran Extension - Approved Fuel Costs (Gas) for FY 2018-19

| SL. No. | ITEM | DERIVATION | UNIT | FY 2018-19 |
|---------|---|------------------------|-----------|------------|
| 1 | GROSS GENERATION | A | MUS | 418 |
| 2 | AUXILIARY CONSUMPTION | C | % | 3.00% |
| 3 | AUXILIARY CONSUMPTION | B | MUS | 13 |
| 4 | NET GENERATION | $Y=A-B$ | MUS | 406 |
| 5 | STATION HEAT RATE | D | KCAL/KWH | 1,850 |
| 6 | CALORIFIC VALUE OF GAS | F | KCAL/SCM | 9,330 |
| 7 | OVERALL HEAT FROM GAS | $H= A \times D$ | GCAL | 7,73,689 |
| 8 | ACTUAL GAS CONSUMPTION | $M= (H \times 1000)/F$ | M. SCM | 83 |
| 9 | PRICE OF GAS | P1 | RS./SCM | 33.43 |
| 10 | COST OF GAS | $N5=P1 \times M$ | RS CRORES | 277.23 |
| 11 | TOTAL FUEL COST | N5 | RS CRORES | 277.23 |
| 12 | FUEL COST/UNIT (GROSS) | $P=N5/(A*10)$ | RS./KWH | 6.63 |
| 13 | FUEL COST/UNIT (NET) | $Q=N5/(Y*10)$ | RS./KWH | 6.83 |
| 14 | COST OF FUEL/GCAL | $R=(N5/H)*10^7$ | RS./GCAL | 3,583.25 |
| 15 | ACTUAL NET GENERATION | S | MUS | 400 |
| 16 | NORMATIVE FUEL COST FOR ACTUAL NET GENERATION | $T=S*Q/10$ | RS. CRORE | 273.69 |

A-11: Dhuvaran CCPP 1 - Approved Fuel Costs (Gas) for FY 2018-19

| SL. No. | ITEM | DERIVATION | UNIT | FY 2018-19 |
|---------|---|------------------------|-----------|------------|
| | GROSS GENERATION | A | MUS | 139 |
| | AUXILIARY CONSUMPTION | C | % | 4.00% |
| 1 | AUXILIARY CONSUMPTION | B | MUS | 6 |
| 2 | NET GENERATION | $Y=A-B$ | MUS | 134 |
| 3 | STATION HEAT RATE | D | KCAL/KWH | 1,950 |
| 4 | CALORIFIC VALUE OF GAS | F | KCAL/SCM | 9,586 |
| 5 | OVERALL HEAT FROM GAS | $H= A \times D$ | GCAL | 2,71,226 |
| 6 | ACTUAL GAS CONSUMPTION | $M= (H \times 1000)/F$ | M. SCM | 28 |
| 7 | PRICE OF GAS | P1 | RS./SCM | 12.32 |
| 8 | COST OF GAS | $N5=P1 \times M/10^7$ | RS CRORES | 34.87 |
| 9 | TOTAL FUEL COST | N5 | RS CRORES | 34.87 |
| 10 | FUEL COST/UNIT (GROSS) | $P=N5/(A*10)$ | RS./KWH | 2.51 |
| 11 | FUEL COST/UNIT (NET) | $Q=N5/(Y*10)$ | RS./KWH | 2.61 |
| 12 | COST OF FUEL/GCAL | $R=(N5/H)*10^7$ | RS./GCAL | 1,285.73 |
| 13 | ACTUAL NET GENERATION | S | MUS | 129 |
| 14 | NORMATIVE FUEL COST FOR ACTUAL NET GENERATION | $T=S*Q/10$ | RS. CRORE | 33.65 |



A-12: Dhuvaran CCPP 2 - Approved Fuel Costs (Gas) for FY 2018-19

| SL. No. | ITEM | DERIVATION | UNIT | FY 2018-19 |
|---------|---|------------------------|-----------|------------|
| 1. | GROSS GENERATION | A | MUs | 282 |
| 2. | AUXILIARY CONSUMPTION | C | % | 3.00% |
| 3. | AUXILIARY CONSUMPTION | B | MUs | 8 |
| 4. | NET GENERATION | $Y=A-B$ | MUs | 274 |
| 5. | STATION HEAT RATE | D | KCAL/KWH | 1,950 |
| 6. | CALORIFIC VALUE OF GAS | F | KCAL/SCM | 9,539 |
| 7. | OVERALL HEAT FROM GAS | $H= A \times D$ | GCal | 5,50,388 |
| 8. | ACTUAL GAS CONSUMPTION | $M= (H \times 1000)/F$ | M. SCM | 58 |
| 9. | PRICE OF GAS | P1 | Rs./SCM | 14.26 |
| 10. | COST OF GAS | $N5=P1 \times M/10^7$ | Rs Crores | 82 |
| 11. | TOTAL FUEL COST | N5 | Rs Crores | 82.25 |
| 12. | FUEL COST/UNIT (GROSS) | $P=N5/(A \times 10)$ | Rs./kWh | 2.91 |
| 13. | FUEL COST/UNIT (NET) | $Q=N5/(Y \times 10)$ | Rs./kWh | 3.00 |
| 14. | COST OF FUEL/GCal | $R=(N5/H) \times 10^7$ | Rs./GCal | 1,494.45 |
| 15. | ACTUAL NET GENERATION | S | MUS | 263 |
| 16. | NORMATIVE FUEL COST FOR ACTUAL NET GENERATION | $T=S \times Q/10$ | Rs. Crore | 78.99 |

A-13: Dhuvaran CCPP 3 - Approved Fuel Costs (Gas) for FY 2018-19

| SL. No. | ITEM | DERIVATION | UNIT | FY 2018-19 |
|---------|---|------------------------|-----------|------------|
| 1. | GROSS GENERATION | A | MUs | 281 |
| 2. | AUXILIARY CONSUMPTION | C | % | 3% |
| 3. | AUXILIARY CONSUMPTION | B | MUs | 8 |
| 4. | NET GENERATION | $Y=A-B$ | MUs | 272 |
| 5. | STATION HEAT RATE | D | KCAL/KWH | 1,850 |
| 6. | CALORIFIC VALUE OF GAS | F | KCAL/SCM | 9,329 |
| 7. | OVERALL HEAT FROM GAS | $H= A \times D$ | GCal | 5,19,203 |
| 8. | ACTUAL GAS CONSUMPTION | $M= (H \times 1000)/F$ | M. SCM | 56 |
| 9. | PRICE OF GAS | P1 | Rs./SCM | 29.90 |
| 10. | COST OF GAS | $N5=P1 \times M/10^7$ | Rs Crores | 166 |
| 11. | TOTAL FUEL COST | N5 | Rs Crores | 166.41 |
| 12. | FUEL COST/UNIT (GROSS) | $P=N5/(A \times 10)$ | Rs./kWh | 5.93 |
| 13. | FUEL COST/UNIT (NET) | $Q=N5/(Y \times 10)$ | Rs./kWh | 6.11 |
| 14. | COST OF FUEL/GCal | $R=(N5/H) \times 10^7$ | Rs./GCal | 3,205.19 |
| 15. | ACTUAL NET GENERATION | S | MUS | 264 |
| 16. | NORMATIVE FUEL COST FOR ACTUAL NET GENERATION | $T=S \times Q/10$ | Rs. Crore | 161.20 |



ANNEXURE B

B-1: Ukai 3-5 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2020-21

| SL. No. | ITEM | DERIVATION | UNIT | FY 2020-21 |
|---------|-------------------------------|---------------------------------|----------|------------|
| 1. | GROSS GENERATION | A | MUS | 3099 |
| 2. | AUXILIARY CONSUMPTION | C | % | 9.00% |
| 3. | AUXILIARY CONSUMPTION | B | MUS | 279 |
| 4. | NET GENERATION | $Y=A-B$ | MUS | 2820 |
| 5. | STATION HEAT RATE | D | KCAL/KWH | 2625 |
| 6. | SP. OIL CONSUMPTION | E | ML/KWH | 1 |
| 7. | GROSS CALORIFIC VALUE OF COAL | F | KCAL/KG | 3834.71 |
| 8. | CALORIFIC VALUE OF OIL | G | KCAL/L | 10441 |
| 9. | OVERALL HEAT | $H= A \times D$ | GCAL | 8135631 |
| 10. | HEAT FROM OIL | $I= (A \times E \times G)/1000$ | GCAL | 32359 |
| 11. | HEAT FROM COAL | $J = H-I$ | GCAL | 8103272 |
| 12. | TRANSIT LOSSES | K | % | 0.80% |
| 13. | COAL BLEND | | | |
| 14. | (A) INDIGENOUS COAL | X1 | % | 22% |
| 15. | (B) WASHED COAL | X2 | % | 78% |
| 16. | (C) IMPORTED COAL | X3 | % | 0% |
| 17. | ACTUAL OIL CONSUMPTION | $L= A \times E$ | KL | 3099 |
| 18. | ACTUAL COAL CONSUMPTION | $M= (J \times 1000)/F$ | MT | 2113139 |
| 19. | (A) INDIGENOUS COAL | $Q1=M* \times X1/(1-K)$ | MT | 468640 |
| 20. | (B) WASHED COAL | $Q2=M* \times X2 / (1-K)$ | MT | 1661540 |
| 21. | (C) IMPORTED COAL | $Q3=M* \times X3$ | MT | 0 |
| 22. | PRICE OF COAL | | | |
| 23. | (A) INDIGENOUS COAL | P1 | Rs./MT | 3396 |
| 24. | (B) WASHED COAL | P2 | Rs./MT | 3679 |
| 25. | (C) IMPORTED COAL | P3 | Rs./MT | 6227 |
| 26. | PRICE OF OIL | P4 | Rs./KL | 33170 |
| 27. | COAL COST | | | |
| 28. | (A) INDIGENOUS COAL | $N1=Q1 \times P1/10^5$ | Rs. LAKH | 15915 |
| 29. | (B) WASHED COAL | $N2=Q2 \times P2/10^5$ | Rs. LAKH | 61136 |
| 30. | (C) IMPORTED COAL | $N3=Q3 \times P3/10^5$ | Rs. LAKH | 0 |
| 31. | TOTAL COAL COST | $N4= N1+N2+N3$ | Rs. LAKH | 77051 |
| 32. | OIL COST | $N5=P4 \times L/10^5$ | Rs. LAKH | 1028 |
| 33. | TOTAL FUEL COST | $O= N4+N5$ | Rs. LAKH | 78079 |
| 34. | FUEL COST/UNIT (GROSS) | $P= O/(A*10)$ | Rs./KWH | 2.519 |
| 35. | FUEL COST/UNIT (NET) | $Q=O/(Y*10)$ | Rs./KWH | 2.768 |
| 36. | COST OF FUEL/GCAL | $R=(O/H)*10^5$ | Rs./GCAL | 959.7 |



B-2: Ukai Extension 6 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2020-21

| SL. No. | ITEM | DERIVATION | UNIT | FY 2020-21 |
|---------|-------------------------------|---------------------------------|----------|------------|
| 1. | GROSS GENERATION | A | MUS | 3373 |
| 2. | AUXILIARY CONSUMPTION | C | % | 6.00% |
| 3. | AUXILIARY CONSUMPTION | B | MUS | 202 |
| 4. | NET GENERATION | $Y=A-B$ | MUS | 3170 |
| 5. | STATION HEAT RATE | D | KCAL/KWH | 2385 |
| 6. | SP. OIL CONSUMPTION | E | ML/KWH | 1 |
| 7. | GROSS CALORIFIC VALUE OF COAL | F | KCAL/KG | 3821 |
| 8. | CALORIFIC VALUE OF OIL | G | KCAL/L | 10422 |
| 9. | OVERALL HEAT | $H= A \times D$ | GCAL | 8043651 |
| 10. | HEAT FROM OIL | $I= (A \times E \times G)/1000$ | GCAL | 35150 |
| 11. | HEAT FROM COAL | $J = H-I$ | GCAL | 8008501 |
| 12. | TRANSIT LOSSES | K | % | 0.80% |
| 13. | COAL BLEND | | | |
| 14. | (A) INDIGENOUS COAL | X1 | % | 21.62% |
| 15. | (B) WASHED COAL | X2 | % | 78.00% |
| 16. | (C) IMPORTED COAL | X3 | % | 0% |
| 17. | ACTUAL OIL CONSUMPTION | $L= A \times E$ | KL | 3373 |
| 18. | ACTUAL COAL CONSUMPTION | $M= (J \times 1000)/F$ | MT | 2095657 |
| 19. | (A) INDIGENOUS COAL | $Q1=M^* \times X1/(1-K)$ | MT | 456712 |
| 20. | (B) WASHED COAL | $Q2=M^* \times X2 / (1-K)$ | MT | 1647795 |
| 21. | (C) IMPORTED COAL | $Q3=M^* \times X3$ | MT | 0 |
| 22. | PRICE OF COAL | | | |
| 23. | (A) INDIGENOUS COAL | P1 | Rs./MT | 3516 |
| 24. | (B) WASHED COAL | P2 | Rs./MT | 3799 |
| 25. | (C) IMPORTED COAL | P3 | Rs./MT | 6222 |
| 26. | PRICE OF OIL | P4 | Rs./KL | 32950 |
| 27. | COAL COST | | | |
| 28. | (A) INDIGENOUS COAL | $N1=Q1 \times P1/10^5$ | Rs. LAKH | 16058 |
| 29. | (B) WASHED COAL | $N2=Q2 \times P2/10^5$ | Rs. LAKH | 62594 |
| 30. | (C) IMPORTED COAL | $N3=Q3 \times P3/10^5$ | Rs. LAKH | 0 |
| 31. | TOTAL COAL COST | $N4= N1+N2+N3$ | Rs. LAKH | 78652 |
| 32. | OIL COST | $N5=P4 \times L/10^5$ | Rs. LAKH | 1111 |
| 33. | TOTAL FUEL COST | $O= N4+N5$ | Rs. LAKH | 79763 |
| 34. | FUEL COST/UNIT (GROSS) | $P= O/(A^*10)$ | Rs./KWH | 2.365 |
| 35. | FUEL COST/UNIT (NET) | $Q=O/(Y^*10)$ | Rs./KWH | 2.516 |
| 36. | COST OF FUEL/GCAL | $R=(O/H)^*10^5$ | Rs./GCAL | 992 |



B-3: Gandhinagar 3 & 4 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2020-21

| SL. No. | ITEM | DERIVATION | UNIT | FY 2020-21 |
|---------|-------------------------------|---------------------------------|----------|------------|
| 1. | GROSS GENERATION | A | MUS | 1655.6 |
| 2. | AUXILIARY CONSUMPTION | C | % | 0.1 |
| 3. | AUXILIARY CONSUMPTION | B | MUS | 149.0 |
| 4. | NET GENERATION | $Y=A-B$ | MUS | 1506.6 |
| 5. | STATION HEAT RATE | D | KCAL/KWH | 2625.0 |
| 6. | SP. OIL CONSUMPTION | E | ML/KWH | 1.0 |
| 7. | GROSS CALORIFIC VALUE OF COAL | F | KCAL/KG | 3918.2 |
| 8. | CALORIFIC VALUE OF OIL | G | KCAL/L | 10367.6 |
| 9. | OVERALL HEAT | $H= A \times D$ | GCAL | 4346055.0 |
| 10. | HEAT FROM OIL | $I= (A \times E \times G)/1000$ | GCAL | 17165.1 |
| 11. | HEAT FROM COAL | $J = H-I$ | GCAL | 4328889.9 |
| 12. | TRANSIT LOSSES | K | % | 0.0 |
| 13. | COAL BLEND | | | |
| 14. | (A) INDIGENOUS COAL | X1 | % | 0.0 |
| 15. | (B) WASHED COAL | X2 | % | 1.0 |
| 16. | (C) IMPORTED COAL | X3 | % | 0.0 |
| 17. | ACTUAL OIL CONSUMPTION | $L= A \times E$ | KL | 1655.6 |
| 18. | ACTUAL COAL CONSUMPTION | $M= (J \times 1000)/F$ | MT | 1104809.5 |
| 19. | (A) INDIGENOUS COAL | $Q1=M^* \times X1/(1-K)$ | MT | 0.0 |
| 20. | (B) WASHED COAL | $Q2=M^* \times X2 / (1-K)$ | MT | 1113719.3 |
| 21. | (C) IMPORTED COAL | $Q3=M^* \times X3$ | MT | 0.0 |
| 22. | PRICE OF COAL | | | |
| 23. | (A) INDIGENOUS COAL | P1 | Rs./MT | 4931.8 |
| 24. | (B) WASHED COAL | P2 | Rs./MT | 4427.8 |
| 25. | (C) IMPORTED COAL | P3 | Rs./MT | 6817.3 |
| 26. | PRICE OF OIL | P4 | Rs./KL | 31792.7 |
| 27. | COAL COST | | | |
| 28. | (A) INDIGENOUS COAL | $N1=Q1 \times P1/10^5$ | Rs. LAKH | 0.0 |
| 29. | (B) WASHED COAL | $N2=Q2 \times P2/10^5$ | Rs. LAKH | 49313.5 |
| 30. | (C) IMPORTED COAL | $N3=Q3 \times P3/10^5$ | Rs. LAKH | 0.0 |
| 31. | TOTAL COAL COST | $N4= N1+N2+N3$ | Rs. LAKH | 49313.5 |
| 32. | OIL COST | $N5=P4 \times L/10^5$ | Rs. LAKH | 526.4 |
| 33. | TOTAL FUEL COST | $O= N4+N5$ | Rs. LAKH | 49839.9 |
| 34. | FUEL COST/UNIT (GROSS) | $P= O/(A \times 10)$ | Rs./KWH | 3.010 |
| 35. | FUEL COST/UNIT (NET) | $Q=O/(Y \times 10)$ | Rs./KWH | 3.308 |
| 36. | COST OF FUEL/GCAL | $R=(O/H) \times 10^5$ | Rs./GCAL | 1146.8 |



B-4: Gandhinagar 5 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2020-21

| SL. No. | ITEM | DERIVATION | UNIT | FY 2020-21 |
|---------|-------------------------------|---------------------------------|----------|------------|
| 1. | GROSS GENERATION | A | MUS | 1416.5 |
| 2. | AUXILIARY CONSUMPTION | C | % | 0.1 |
| 3. | AUXILIARY CONSUMPTION | B | MUS | 134.6 |
| 4. | NET GENERATION | $Y=A-B$ | MUS | 1281.9 |
| 5. | STATION HEAT RATE | D | KCAL/KWH | 2460.0 |
| 6. | SP. OIL CONSUMPTION | E | ML/KWH | 3.5 |
| 7. | GROSS CALORIFIC VALUE OF COAL | F | KCAL/KG | 3933.5 |
| 8. | CALORIFIC VALUE OF OIL | G | KCAL/L | 10440.0 |
| 9. | OVERALL HEAT | $H= A \times D$ | GCAL | 3484570.3 |
| 10. | HEAT FROM OIL | $I= (A \times E \times G)/1000$ | GCAL | 51758.6 |
| 11. | HEAT FROM COAL | $J = H-I$ | GCAL | 3432811.7 |
| 12. | TRANSIT LOSSES | K | % | 0.0 |
| 13. | COAL BLEND | | | |
| 14. | (A) INDIGENOUS COAL | X1 | % | 0.0 |
| 15. | (B) WASHED COAL | X2 | % | 1.0 |
| 16. | (C) IMPORTED COAL | X3 | % | 0.0 |
| 17. | ACTUAL OIL CONSUMPTION | $L= A \times E$ | KL | 4957.7 |
| 18. | ACTUAL COAL CONSUMPTION | $M= (J \times 1000)/F$ | MT | 872710.2 |
| 19. | (A) INDIGENOUS COAL | $Q1=M^* \times X1/(1-K)$ | MT | 0.0 |
| 20. | (B) WASHED COAL | $Q2=M^* \times X2 / (1-K)$ | MT | 879748.2 |
| 21. | (C) IMPORTED COAL | $Q3=M^* \times X3$ | MT | 0.0 |
| 22. | PRICE OF COAL | | | |
| 23. | (A) INDIGENOUS COAL | P1 | Rs./MT | 4823.8 |
| 24. | (B) WASHED COAL | P2 | Rs./MT | 4359.9 |
| 25. | (C) IMPORTED COAL | P3 | Rs./MT | 7186.9 |
| 26. | PRICE OF OIL | P4 | Rs./KL | 32220.9 |
| 27. | COAL COST | | | |
| 28. | (A) INDIGENOUS COAL | $N1=Q1 \times P1/10^5$ | Rs. LAKH | 0.0 |
| 29. | (B) WASHED COAL | $N2=Q2 \times P2/10^5$ | Rs. LAKH | 38356.1 |
| 30. | (C) IMPORTED COAL | $N3=Q3 \times P3/10^5$ | Rs. LAKH | 0.0 |
| 31. | TOTAL COAL COST | $N4= N1+N2+N3$ | Rs. LAKH | 38356.1 |
| 32. | OIL COST | $N5=P4 \times L/10^5$ | Rs. LAKH | 1597.4 |
| 33. | TOTAL FUEL COST | $O= N4+N5$ | Rs. LAKH | 39953.5 |
| 34. | FUEL COST/UNIT (GROSS) | $P= O/(A^*10)$ | Rs./KWH | 2.821 |
| 35. | FUEL COST/UNIT (NET) | $Q=O/(Y^*10)$ | Rs./KWH | 3.117 |
| 36. | COST OF FUEL/GCAL | $R=(O/H)^*10^5$ | Rs./GCAL | 1146.6 |



Gujarat State Electricity Corporation Limited
Truing Up for FY 2018-19 and Determination of Tariff for FY 2020-21

B-5: Wanakbori 1-6 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2020-21

| SL. No. | ITEM | DERIVATION | UNIT | FY 2020-21 |
|---------|-------------------------------|---------------------------------|----------|------------|
| 1. | GROSS GENERATION | A | MUS | 5518.8 |
| 2. | AUXILIARY CONSUMPTION | C | % | 0.1 |
| 3. | AUXILIARY CONSUMPTION | B | MUS | 496.7 |
| 4. | NET GENERATION | $Y=A-B$ | MUS | 5022.1 |
| 5. | STATION HEAT RATE | D | KCAL/KWH | 2575.0 |
| 6. | SP. OIL CONSUMPTION | E | ML/KWH | 1.0 |
| 7. | GROSS CALORIFIC VALUE OF COAL | F | KCAL/KG | 3879.9 |
| 8. | CALORIFIC VALUE OF OIL | G | KCAL/L | 10326.5 |
| 9. | OVERALL HEAT | $H= A \times D$ | GCAL | 14210910.0 |
| 10. | HEAT FROM OIL | $I= (A \times E \times G)/1000$ | GCAL | 56990.1 |
| 11. | HEAT FROM COAL | $J = H-I$ | GCAL | 14153919.9 |
| 12. | TRANSIT LOSSES | K | % | 0.0 |
| 13. | COAL BLEND | | | |
| 14. | (A) INDIGENOUS COAL | X1 | % | 0.0 |
| 15. | (B) WASHED COAL | X2 | % | 1.0 |
| 16. | (C) IMPORTED COAL | X3 | % | 0.0 |
| 17. | ACTUAL OIL CONSUMPTION | $L= A \times E$ | KL | 5518.8 |
| 18. | ACTUAL COAL CONSUMPTION | $M= (J \times 1000)/F$ | MT | 3648021.8 |
| 19. | (A) INDIGENOUS COAL | $Q1=M^* \times X1/(1-K)$ | MT | 0.0 |
| 20. | (B) WASHED COAL | $Q2=M^* \times X2 / (1-K)$ | MT | 3677441.3 |
| 21. | (C) IMPORTED COAL | $Q3=M^* \times X3$ | MT | 0.0 |
| 22. | PRICE OF COAL | | | |
| 23. | (A) INDIGENOUS COAL | P1 | Rs./MT | 5368.3 |
| 24. | (B) WASHED COAL | P2 | Rs./MT | 4333.5 |
| 25. | (C) IMPORTED COAL | P3 | Rs./MT | 6750.2 |
| 26. | PRICE OF OIL | P4 | Rs./KL | 31021.6 |
| 27. | COAL COST | | | |
| 28. | (A) INDIGENOUS COAL | $N1=Q1 \times P1$ | Rs. LAKH | 0.0 |
| 29. | (B) WASHED COAL | $N2=Q2 \times P2$ | Rs. LAKH | 159363.7 |
| 30. | (C) IMPORTED COAL | $N3=Q3 \times P3$ | Rs. LAKH | 0.0 |
| 31. | TOTAL COAL COST | $N4= N1+N2+N3$ | Rs. LAKH | 159363.7 |
| 32. | OIL COST | $N5=P4 \times L/10^5$ | Rs. LAKH | 1712.0 |
| 33. | TOTAL FUEL COST | $O= N4+N5$ | Rs. LAKH | 161075.7 |
| 34. | FUEL COST/UNIT (GROSS) | $P= O/(A^*10)$ | Rs./KWH | 2.919 |
| 35. | FUEL COST/UNIT (NET) | $Q=O/(Y^*10)$ | Rs./KWH | 3.207 |
| 36. | COST OF FUEL/GCAL | $R=(O/H)^*10^5$ | Rs./GCAL | 1133.5 |



B-6: Wanakbori 7 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2020-21

| SL. No. | ITEM | DERIVATION | UNIT | FY 2020-21 |
|---------|-------------------------------|---------------------------------|----------|------------|
| 1. | GROSS GENERATION | A | MUs | 1288 |
| 2. | AUXILIARY CONSUMPTION | C | % | 9.50% |
| 3. | AUXILIARY CONSUMPTION | B | MUs | 122 |
| 4. | NET GENERATION | $Y=A-B$ | MUs | 1165 |
| 5. | STATION HEAT RATE | D | KCAL/KWH | 2460 |
| 6. | SP. OIL CONSUMPTION | E | ML/KWH | 3.50 |
| 7. | GROSS CALORIFIC VALUE OF COAL | F | KCAL/KG | 3957 |
| 8. | CALORIFIC VALUE OF OIL | G | KCAL/L | 10293 |
| 9. | OVERALL HEAT | $H= A \times D$ | GCAL | 3167791 |
| 10. | HEAT FROM OIL | $I= (A \times E \times G)/1000$ | GCAL | 46391 |
| 11. | HEAT FROM COAL | $J = H-I$ | GCAL | 3121400 |
| 12. | TRANSIT LOSSES | K | % | 0.80% |
| 13. | COAL BLEND | | | |
| 14. | (A) INDIGENOUS COAL | X1 | % | 0.0% |
| 15. | (B) WASHED COAL | X2 | % | 100.0% |
| 16. | (C) IMPORTED COAL | X3 | % | 0.0% |
| 17. | ACTUAL OIL CONSUMPTION | $L= A \times E$ | KL | 4507 |
| 18. | ACTUAL COAL CONSUMPTION | $M= (J \times 1000)/F$ | MT | 788824 |
| 19. | (A) INDIGENOUS COAL | $Q1=M* \times X1/(1-K)$ | MT | 0 |
| 20. | (B) WASHED COAL | $Q2=M* \times X2 / (1-K)$ | MT | 795185 |
| 21. | (C) IMPORTED COAL | $Q3=M* \times X3$ | MT | 0 |
| 22. | PRICE OF COAL | | | |
| 23. | (A) INDIGENOUS COAL | P1 | Rs./MT | 5422 |
| 24. | (B) WASHED COAL | P2 | Rs./MT | 4355 |
| 25. | (C) IMPORTED COAL | P3 | Rs./MT | 6819 |
| 26. | PRICE OF OIL | P4 | Rs./KL | 31536 |
| 27. | COAL COST | | | |
| 28. | (A) INDIGENOUS COAL | $N1=Q1 \times P1$ | Rs. LAKH | 0 |
| 29. | (B) WASHED COAL | $N2=Q2 \times P2$ | Rs. LAKH | 34628 |
| 30. | (C) IMPORTED COAL | $N3=Q3 \times P3$ | Rs. LAKH | 0 |
| 31. | TOTAL COAL COST | $N4= N1+N2+N3$ | Rs. LAKH | 34628 |
| 32. | OIL COST | $N5=P4 \times L/10^5$ | Rs. LAKH | 1421 |
| 33. | TOTAL FUEL COST | $O= N4+N5$ | Rs. LAKH | 36049 |
| 34. | FUEL COST/UNIT (GROSS) | $P= O/(A*10)$ | Rs./KWH | 2.799 |
| 35. | FUEL COST/UNIT (NET) | $Q=O/(Y*10)$ | Rs./KWH | 3.093 |
| 36. | COST OF FUEL/GCAL | $R=(O/H)*10^5$ | Rs./GCAL | 1138 |



B-7: Wanakbori 8 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2020-21

| SL. No. | ITEM | DERIVATION | UNIT | FY 2020-21 |
|---------|-------------------------------|---------------------------------|----------|-------------|
| 1. | GROSS GENERATION | A | MUS | 5957 |
| 2. | AUXILIARY CONSUMPTION | C | % | 5.25% |
| 3. | AUXILIARY CONSUMPTION | B | MUS | 312.732 |
| 4. | NET GENERATION | $Y=A-B$ | MUS | 5644 |
| 5. | STATION HEAT RATE | D | KCAL/KWH | 2248 |
| 6. | SP. OIL CONSUMPTION | E | ML/KWH | 0.50 |
| 7. | GROSS CALORIFIC VALUE OF COAL | F | KCAL/KG | 4200 |
| 8. | CALORIFIC VALUE OF OIL | G | KCAL/L | 10327 |
| 9. | OVERALL HEAT | $H= A \times D$ | GCAL | 13390886.4 |
| 10. | HEAT FROM OIL | $I= (A \times E \times G)/1000$ | GCAL | 30758 |
| 11. | HEAT FROM COAL | $J = H-I$ | GCAL | 13360128.46 |
| 12. | TRANSIT LOSSES | K | % | 0.80% |
| 13. | COAL BLEND | | | |
| 14. | (A) INDIGENOUS COAL | X1 | % | 0% |
| 15. | (B) WASHED COAL | X2 | % | 100% |
| 16. | (C) IMPORTED COAL | X3 | % | 0% |
| 17. | ACTUAL OIL CONSUMPTION | $L= A \times E$ | KL | 2978 |
| 18. | ACTUAL COAL CONSUMPTION | $M= (J \times 1000)/F$ | MT | 3180983 |
| 19. | (A) INDIGENOUS COAL | $Q1=M^* \times X1/(1-K)$ | MT | 0 |
| 20. | (B) WASHED COAL | $Q2=M^* \times X2 / (1-K)$ | MT | 3206636 |
| 21. | (C) IMPORTED COAL | $Q3=M^* \times X3$ | MT | 0 |
| 22. | PRICE OF COAL | | | |
| 23. | (A) INDIGENOUS COAL | P1 | Rs./MT | 0 |
| 24. | (B) WASHED COAL | P2 | Rs./MT | 5157 |
| 25. | (C) IMPORTED COAL | P3 | Rs./MT | 0 |
| 26. | PRICE OF OIL | P4 | Rs./KL | 21464 |
| 27. | COAL COST | | | |
| 28. | (A) INDIGENOUS COAL | $N1=Q1 \times P1$ | Rs. LAKH | 0 |
| 29. | (B) WASHED COAL | $N2=Q2 \times P2$ | Rs. LAKH | 165366 |
| 30. | (C) IMPORTED COAL | $N3=Q3 \times P3$ | Rs. LAKH | 0 |
| 31. | TOTAL COAL COST | $N4= N1+N2+N3$ | Rs. LAKH | 165366 |
| 32. | OIL COST | $N5=P4 \times L/10^5$ | Rs. LAKH | 639 |
| 33. | TOTAL FUEL COST | $O= N4+N5$ | Rs. LAKH | 166006 |
| 34. | FUEL COST/UNIT (GROSS) | $P= O/(A^*10)$ | Rs./KWH | 2.787 |
| 35. | FUEL COST/UNIT (NET) | $Q=O/(Y^*10)$ | Rs./KWH | 2.941 |
| 36. | COST OF FUEL/GCAL | $R=(O/H)^*10^5$ | Rs./GCAL | 1240 |



B-8: Sikka Extension 3 & 4 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2020-21

| SL. No. | ITEM | DERIVATION | UNIT | FY 2020-21 |
|---------|-------------------------------|---------------------------------|----------|------------|
| 1. | GROSS GENERATION | A | MUs | 3066 |
| 2. | AUXILIARY CONSUMPTION | C | % | 9.00% |
| 3. | AUXILIARY CONSUMPTION | B | MUs | 276 |
| 4. | NET GENERATION | $Y=A-B$ | MUs | 2790 |
| 5. | STATION HEAT RATE | D | KCAL/KWH | 2398 |
| 6. | SP. OIL CONSUMPTION | E | ML/KWH | 1.00 |
| 7. | GROSS CALORIFIC VALUE OF COAL | F | KCAL/KG | 5270 |
| 8. | CALORIFIC VALUE OF OIL | G | KCAL/L | 10310 |
| 9. | OVERALL HEAT | $H= A \times D$ | GCAL | 7352268 |
| 10. | HEAT FROM OIL | $I= (A \times E \times G)/1000$ | GCAL | 31612 |
| 11. | HEAT FROM COAL | $J = H-I$ | GCAL | 7320656 |
| 12. | TRANSIT LOSSES | K | % | 0.00% |
| 13. | COAL BLEND | | | |
| 14. | (A) INDIGENOUS COAL | X1 | % | 0% |
| 15. | (B) WASHED COAL | X2 | % | 0% |
| 16. | (C) IMPORTED COAL | X3 | % | 100% |
| 17. | ACTUAL OIL CONSUMPTION | $L= A \times E$ | KL | 3066 |
| 18. | ACTUAL COAL CONSUMPTION | $M= (J \times 1000)/F$ | MT | 1389077 |
| 19. | (A) INDIGENOUS COAL | $Q1=M^* \times X1/(1-K)$ | MT | 0 |
| 20. | (B) WASHED COAL | $Q2=M^* \times X2 / (1-K)$ | MT | 0 |
| 21. | (C) IMPORTED COAL | $Q3=M^* \times X3$ | MT | 1389077 |
| 22. | PRICE OF COAL | | | |
| 23. | (A) INDIGENOUS COAL | P1 | Rs./MT | 0 |
| 24. | (B) WASHED COAL | P2 | Rs./MT | 0 |
| 25. | (C) IMPORTED COAL | P3 | Rs./MT | 4819 |
| 26. | PRICE OF OIL | P4 | Rs./KL | 23936 |
| 27. | COAL COST | | | |
| 28. | (A) INDIGENOUS COAL | $N1=Q1 \times P1$ | Rs. LAKH | 0 |
| 29. | (B) WASHED COAL | $N2=Q2 \times P2$ | Rs. LAKH | 0 |
| 30. | (C) IMPORTED COAL | $N3=Q3 \times P3$ | Rs. LAKH | 66936 |
| 31. | TOTAL COAL COST | $N4= N1+N2+N3$ | Rs. LAKH | 66936 |
| 32. | OIL COST | $N5=P4 \times L/10^5$ | Rs. LAKH | 734 |
| 33. | TOTAL FUEL COST | $O= N4+N5$ | Rs. LAKH | 67669 |
| 34. | FUEL COST/UNIT (GROSS) | $P= O/(A^*10)$ | Rs./KWH | 2.207 |
| 35. | FUEL COST/UNIT (NET) | $Q=O/(Y^*10)$ | Rs./KWH | 2.425 |
| 36. | COST OF FUEL/GCAL | $R=(O/H)^*10^5$ | Rs./GCAL | 920 |



B-9: KLTPS 1-3 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2020-21

| SL. No. | ITEM | DERIVATION | UNIT | FY 2020-21 |
|---------|--|---------------------------------|----------|------------|
| | GROSS GENERATION | A | MUs | 1413 |
| | AUXILIARY CONSUMPTION | C | % | 12.00% |
| | AUXILIARY CONSUMPTION | B | MUs | 170 |
| | NET GENERATION | $Y=A-B$ | MUs | 1243 |
| | STATION HEAT RATE | D | KCAL/KWH | 3231 |
| | SP. OIL CONSUMPTION | E | ML/KWH | 3 |
| | GROSS CALORIFIC VALUE OF LIGNITE | F | KCAL/KG | 2786 |
| | CALORIFIC VALUE OF OIL | G | KCAL/L | 10285 |
| | OVERALL HEAT | $H= A \times D$ | GCAL | 4563949 |
| | HEAT FROM OIL | $I= (A \times E \times G)/1000$ | GCAL | 43586 |
| | HEAT FROM LIGNITE | $J = H-I$ | GCAL | 4520363 |
| | TRANSIT LOSSES | K | % | 0.20% |
| | ACTUAL OIL CONSUMPTION | $L= A \times E$ | KL | 4238 |
| | ACTUAL LIGNITE CONSUMPTION | $M= (J \times 1000)/F$ | MT | 1622528 |
| | LIGNITE CONSUMPTION INCL. TRANSIT LOSSES | $N=M/(1-K)$ | MT | 1625779 |
| | PRICE OF LIGNITE | P1 | Rs./MT | 1072 |
| | PRICE OF OIL | P2 | Rs./KL | 28419 |
| | COST OF LIGNITE | $N1= M \times P1$ | Rs. LAKH | 17396 |
| | OIL COST | $N2=P2 \times L/10^5$ | Rs. LAKH | 1204 |
| | TOTAL FUEL COST | $O= N1 + N2$ | Rs. LAKH | 18600 |
| | FUEL COST/UNIT (GROSS) | $P=O/(A*10)$ | Rs./KWH | 1.317 |
| | FUEL COST/UNIT (NET) | $Q=O/(Y*10)$ | Rs./KWH | 1.496 |
| | COST OF FUEL/GCAL | $R=(O/H)*10^5$ | Rs./GCAL | 408 |



B-10: KLTPS 4 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2020-21

| SL. No. | ITEM | DERIVATION | UNIT | FY 2020-21 |
|---------|--|---------------------------------|----------|------------|
| | GROSS GENERATION | A | MUs | 492.75 |
| | AUXILIARY CONSUMPTION | C | % | 12.00% |
| | AUXILIARY CONSUMPTION | B | MUs | 59.13 |
| | NET GENERATION | $Y=A-B$ | MUs | 433.62 |
| | STATION HEAT RATE | D | KCAL/KWH | 3000 |
| | SP. OIL CONSUMPTION | E | ML/KWH | 3.00 |
| | GROSS CALORIFIC VALUE OF LIGNITE | F | KCAL/KG | 2786.00 |
| | CALORIFIC VALUE OF OIL | G | KCAL/L | 10285.47 |
| | OVERALL HEAT | $H= A \times D$ | GCAL | 1478250.00 |
| | HEAT FROM OIL | $I= (A \times E \times G)/1000$ | GCAL | 15204.50 |
| | HEAT FROM LIGNITE | $J = H-I$ | GCAL | 1463045.50 |
| | TRANSIT LOSSES | K | % | 0.20% |
| | ACTUAL OIL CONSUMPTION | $L= A \times E$ | KL | 1478.25 |
| | ACTUAL LIGNITE CONSUMPTION | $M= (J \times 1000)/F$ | MT | 525141.96 |
| | LIGNITE CONSUMPTION INCL. TRANSIT LOSSES | $N=M/(1-K)$ | MT | 526194.35 |
| | PRICE OF LIGNITE | P1 | Rs./MT | 1087.75 |
| | PRICE OF OIL | P2 | Rs./KL | 44458.81 |
| | COST OF LIGNITE | $N1= M \times P1$ | Rs. LAKH | 5712.22 |
| | OIL COST | $N2=P2 \times L/10^5$ | Rs. LAKH | 657.21 |
| | TOTAL FUEL COST | $O= N1 + N2$ | Rs. LAKH | 6369.44 |
| | FUEL COST/UNIT (GROSS) | $P=O/(A*10)$ | Rs./KWH | 1.293 |
| | FUEL COST/UNIT (NET) | $Q=O/(Y*10)$ | Rs./KWH | 1.469 |
| | COST OF FUEL/GCAL | $R=(O/H)*10^5$ | Rs./GCAL | 430.88 |



B-11: Utran Extension - Approved Fuel Costs (Gas) for FY 2020-21

| SL. No. | ITEM | DERIVATION | UNIT | FY 2020-21 |
|---------|------------------------|------------------------|----------|------------|
| | GROSS GENERATION | A | MUs | 820 |
| | AUXILIARY CONSUMPTION | C | % | 3.00% |
| | AUXILIARY CONSUMPTION | B | MUs | 25 |
| | NET GENERATION | $Y=A-B$ | MUs | 796 |
| | STATION HEAT RATE | D | KCAL/KWH | 1850 |
| | CALORIFIC VALUE OF GAS | F | KCAL/SCM | 9537 |
| | OVERALL HEAT FROM GAS | $H= A \times D$ | GCal | 1517574 |
| | ACTUAL GAS CONSUMPTION | $M= (H \times 1000)/F$ | M. SCM | 159 |
| | PRICE OF GAS | P1 | Rs./SCM | 22 |
| | COST OF GAS | $N5=P1 \times M$ | Rs.M | 3457 |
| | TOTAL FUEL COST | N5 | Rs.M | 3457 |
| | FUEL COST/UNIT (GROSS) | $P=N5/(A*10)$ | Rs./KWH | 4.215 |
| | FUEL COST/UNIT (NET) | $Q=N5/(Y*10)$ | Rs./KWH | 4.345 |
| | COST OF FUEL/GCal | $R=(N5/H)*10^5$ | Rs./GCal | 2278 |

B-12: Dhuvaran CCPP 1 - Approved Fuel Costs (Gas) for FY 2020-21

| SL. No. | ITEM | DERIVATION | UNIT | FY 2020-21 |
|---------|------------------------|------------------------|----------|------------|
| | GROSS GENERATION | A | MUs | 233 |
| | AUXILIARY CONSUMPTION | C | % | 4.00% |
| | AUXILIARY CONSUMPTION | B | MUs | 9 |
| | NET GENERATION | $Y=A-B$ | MUs | 224 |
| | STATION HEAT RATE | D | KCAL/KWH | 1950 |
| | CALORIFIC VALUE OF GAS | F | KCAL/SCM | 9509 |
| | OVERALL HEAT FROM GAS | $H= A \times D$ | GCal | 455308 |
| | ACTUAL GAS CONSUMPTION | $M= (H \times 1000)/F$ | M. SCM | 47.9 |
| | PRICE OF GAS | P1 | Rs./SCM | 18.3 |
| | COST OF GAS | $N5=P1 \times M$ | Rs.M | 874.1 |
| | TOTAL FUEL COST | N5 | Rs.M | 874.1 |
| | FUEL COST/UNIT (GROSS) | $P=N5/(A*10)$ | Rs./KWH | 3.743 |
| | FUEL COST/UNIT (NET) | $Q=N5/(Y*10)$ | Rs./KWH | 3.899 |
| | COST OF FUEL/GCal | $R=(N5/H)*10^5$ | Rs./GCal | 1919.7 |



B-13: Dhuvaran CCPP 2 - Approved Fuel Costs (Gas) for FY 2020-21

| SL. No. | ITEM | DERIVATION | UNIT | FY 2020-21 |
|---------|------------------------|------------------------|----------|------------|
| | GROSS GENERATION | A | MUS | 246 |
| | AUXILIARY CONSUMPTION | C | % | 3.00% |
| | AUXILIARY CONSUMPTION | B | MUS | 7 |
| | NET GENERATION | $Y=A-B$ | MUS | 239 |
| | STATION HEAT RATE | D | KCAL/KWH | 1950 |
| | CALORIFIC VALUE OF GAS | F | KCAL/SCM | 9519 |
| | OVERALL HEAT FROM GAS | $H= A \times D$ | GCAL | 480218 |
| | ACTUAL GAS CONSUMPTION | $M= (H \times 1000)/F$ | M. SCM | 50 |
| | PRICE OF GAS | P1 | Rs./SCM | 19 |
| | COST OF GAS | $N5=P1 \times M$ | Rs.M | 971 |
| | TOTAL FUEL COST | N5 | Rs.M | 971 |
| | FUEL COST/UNIT (GROSS) | $P=N5/(A*10)$ | Rs./KWH | 3.944 |
| | FUEL COST/UNIT (NET) | $Q=N5/(Y*10)$ | Rs./KWH | 4.066 |
| | COST OF FUEL/GCAL | $R=(N5/H)*10^5$ | Rs./GCAL | 2023 |

B-14: Dhuvaran CCPP 3 - Approved Fuel Costs (Gas) for FY 2020-21

| SL. No. | ITEM | DERIVATION | UNIT | FY 2020-21 |
|---------|------------------------|------------------------|----------|------------|
| | GROSS GENERATION | A | MUS | 824 |
| | AUXILIARY CONSUMPTION | C | % | 3.00% |
| | AUXILIARY CONSUMPTION | B | MUS | 25 |
| | NET GENERATION | $Y=A-B$ | MUS | 799 |
| | STATION HEAT RATE | D | KCAL/KWH | 1850 |
| | CALORIFIC VALUE OF GAS | F | KCAL/SCM | 9826 |
| | OVERALL HEAT FROM GAS | $H= A \times D$ | GCAL | 1523769 |
| | ACTUAL GAS CONSUMPTION | $M= (H \times 1000)/F$ | M. SCM | 155 |
| | PRICE OF GAS | P1 | Rs./SCM | 11.62 |
| | COST OF GAS | $N5=P1 \times M$ | Rs.M | 1802 |
| | TOTAL FUEL COST | N5 | Rs.M | 1802 |
| | FUEL COST/UNIT (GROSS) | $P=N5/(A*10)$ | Rs./KWH | 2.188 |
| | FUEL COST/UNIT (NET) | $Q=N5/(Y*10)$ | Rs./KWH | 2.256 |
| | COST OF FUEL/GCAL | $R=(N5/H)*10^5$ | Rs./GCAL | 1183 |



ANNEXURE C

C-1: BLTPS (erstwhile BECL) - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2020-21

| SL. No. | ITEM | UNITS | FY 2020-21 |
|---------|----------------------------------|-----------|------------|
| 1. | GROSS GENERATION | MUs | 3504.0 |
| 2. | AUXILIARY CONSUMPTION | MUs | 385.0 |
| 3. | NET GENERATION | MUs | 3119.0 |
| 4. | CAPACITY | MW | 500.0 |
| 5. | AVAILABILITY FACTOR | % | 80.0% |
| 6. | PLANT LOAD FACTOR | % | 80.0% |
| 7. | AUXILIARY CONSUMPTION | % | 11.0% |
| 8. | STATION HEAT RATE | KCAL/KWH | 2623.0 |
| 9. | SP. OIL CONSUMPTION | ML/KWH | 1.0 |
| 10. | SP. CONSUMPTION OF LIMESTONE | KG/KWH | 0.26 |
| 11. | GROSS CALORIFIC VALUE OF LIGNITE | KCAL/KG | 2900.0 |
| 12. | CALORIFIC VALUE OF OIL | KCAL/L | 10283.0 |
| 13. | OVERALL HEAT | GCAL | 9190992.0 |
| 14. | HEAT FROM OIL | GCAL | 36031.6 |
| 15. | HEAT FROM LIGNITE | GCAL | 9154960.4 |
| 16. | TRANSIT LOSSES | % | 0.80% |
| 17. | LIGNITE | % | 100% |
| 18. | ACTUAL LIME CONSUMPTION | MT | 911040.0 |
| 19. | ACTUAL OIL CONSUMPTION | KL | 3504.0 |
| 20. | ACTUAL LIGNITE CONSUMPTION | MT | 3156882.9 |
| 21. | A) INDIGENOUS LIGNITE | MT | 3182341.6 |
| 22. | SPECIFIC LIGNITE CONSUMPTION | KG/KWH | 0.9 |
| 23. | PRICE OF LIGNITE | RS./MT | 2193.7 |
| 24. | PRICE OF OIL | RS./KL | 37206.9 |
| 25. | PRICE OF LIME | RS./MT | 1102.5 |
| 26. | LIGNITE COST | RS. CRORE | 698.1 |
| 27. | OIL COST | RS. CRORE | 13.0 |
| 28. | LIME COST | RS. CRORE | 100.4 |
| 29. | TOTAL FUEL COST | RS. CRORE | 811.6 |
| 30. | FUEL COST/ GROSS GENERATION | RS./KWH | 2.316 |
| 31. | FUEL COST/ NET GENERATION | RS./KWH | 2.602 |

