

GUJARAT ELECTRICITY REGULATORY COMMISSION



Tariff Order

Truing up for FY 2017-18

and

Determination of Tariff for FY 2019-20

For

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

Case No. 1756 of 2018

24th April, 2019

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**GUJARAT ELECTRICITY REGULATORY COMMISSION
(GERC)**

GANDHINAGAR

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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	Re-start Duration
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. 1756 of 2018

Date of the Order: 24th April, 2019

CORAM

Shri Anand Kumar, Chairman

Shri K. M. Shringarpure, Member

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, 2018 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 of FY 2017-18 and determination of tariff for FY 2019-20 under the GERC (MYT) Regulations, 2016.

Gujarat Electricity Regulatory Commission (hereinafter referred to as the ‘Commission’) notified the GERC (MYT) 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 2017-18, Revenue from the sale of power at existing tariffs and charges for the ensuing year (FY 2019-20), 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, application for determination of tariff for the ensuing year (FY 2019-20) 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, 2018 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 Distribution Companies:

- Dakshin Gujarat Vij Company Limited (DGVCL)
- Madhya Gujarat Vij Company Limited (MGVCL)
- Uttar Gujarat Vij Company Limited (UGVCL)
- Paschim Gujarat Vij Company Limited (PGVCL) 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 2017-18 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 2017-18.

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 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.

1.6 Registration of the Current Petition and Public Hearing Process

The Petitioner submitted the current Petition for Truing up of FY 2017-18 and Determination of Tariff for FY 2019-20 on 29th November, 2018. After technical validation of the petition, it was registered on 4th December, 2018 (Case No. 1756 of 2018) 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 the newspapers to ensure public participation.

The Public Notice, inviting objections / suggestions from its stakeholders on the truing up and tariff determination petition filed by it, was published in the following newspapers:

Table 1.1: List of Newspapers (Petitioner)

Sr. No.	Name of the Newspaper	Language	Date of publication
1.	The Indian Express	English	06/12/2018
2.	Divya Bhaskar	Gujarati	06/12/2018

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 6th January, 2019.

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

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 6th February, 2019 at the Commission's office at Gandhinagar 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 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 (Commission)

Sr. No.	Name of the Newspaper	Language	Date of publication
1.	DNA	English	01/02/2019
2.	Gujarat Samachar	Gujarati	01/02/2019
3.	Sandesh	Gujarati	01/02/2019



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	Present on 06.02.2019	Oral Submission
1.	Gondal Chamber of Commerce & Industry	Yes	No	No
2.	Shri K.K. Bajaj	Yes	Yes	Yes
3.	Laghu Udyog Bharati – Gujarat	Yes	Yes	Yes
4.	Utility Users' Welfare Association	Yes	Yes	Yes
5.	The Gujarat Dyestuff Manufacturers Association	Yes	No	No
6.	Shri R.G. Tillan	No	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.

1.7 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 2017-18.
5. The **Fifth Chapter** deals with Unabsorbed depreciation for GTPS 1 & 2.
6. The **Sixth Chapter** deals with Tariff Determination for FY 2019-20.
7. The **Seventh Chapter** deals with tariff of BLTPS – GSECL (erstwhile BECL)
8. The **Eighth Chapter** deals with the compliance of directives.

1.8 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 2017-18 and determination of tariff for the FY 2019-20.

GSECL has also claimed unabsorbed depreciation for GTPS Units 1 & 2 which are decommissioned on 3rd September, 2016.

GSECL has also requested to determine the tariff for BLTPS Units 1 & 2 (erstwhile BECL) for FY 2019-20 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 2017-18 based on the submissions of the Petitioner. The Commission has undertaken the computation of gains and losses for FY 2017-18, based on the audited annual accounts.

While Truing up of FY 2017-18, 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 2017-18 has been considered based on the GERC (MYT) Regulations, 2016.

GSECL has submitted additionally to review the performance parameter of SHR due to completion of R&M in Wanakbori 1-6.

The Commission has undertaken Determination of Tariff for FY 2019-20 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 2017-18 and Determination of Tariff for FY 2019-20.

2.2 True-Up of FY 2017-18

GSECL has worked out its Aggregate Revenue Requirement (ARR) for FY 2017-18 as a part of the True-Up for FY 2017-18. GSECL has presented the actual cost components based on the audited annual accounts for FY 2017-18.

Tables below summarize the results of the True-up of FY 2017-18 of GSECL Stations. For the purpose of True-Up, GSECL has compared the actual cost for FY 2017-18 with the cost approved by the Commission in the MYT Order dated 31st March, 2017.

GSECL vide e-mail dated 11th January, 2019, informed that it has inadvertently claimed lower employee cost of Rs. 33.75 Crore. The Petitioner submitted that *"It is humbly submitted that GSECL has inadvertently considered lower employee cost of Rs. 673.48 Crore as against Rs. 707.23 Crore. Inclusion of the above changes will require change in certain parts of the petition"*. Subsequently, due to aforesaid revision on account of employee cost, the revised addendum is submitted by GSECL.

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

Gujarat State Electricity Corporation Limited
Truing Up for FY 2017-18 and Determination of Tariff for FY 2019-20

Table 2.1: Actual Fixed Cost for FY 2017-18 before Revision

(Rs. Crore)

Sr. No.	Power Station	Depreciation (Actual)	Interest & Finance Charges (Actual)	Return on Equity (Actual)	Interest on Working Capital (Actual)	O&M Expenses (Actual)	Water Charges (Actual)	SLDC Charges (Actual)	Income Tax (Actual)	Total Fixed Cost (Actual)	Non-Tariff Income (Actual)	Net Fixed Charges
1.	Ukai (3-5)	33.46	5.82	24.89	34.11	196.25	0.22	0.50	11.85	307.09	12.28	294.81
2.	Gandhinagar (3-4)	31.96	-	20.89	26.17	115.77	43.05	0.49	8.16	246.49	20.43	226.06
3.	Gandhinagar 5*	2.16	-	28.67	13.08	57.57	21.53	-	4.08	127.08	9.50	117.58
4.	Wanakbori 1-6 TPS	67.60	16.79	73.52	68.43	213.95	47.97	0.91	24.48	513.65	24.74	488.91
5.	Wanakbori 7*	2.13	-	26.17	10.91	16.59	10.43	0.15	4.08	70.47	4.02	66.45
6.	Sikka Extension (3-4)*	179.68	178.37	142.59	38.75	103.53	3.80	0.42	9.71	656.86	10.63	646.22
7.	KLTPS 1-3	33.13	2.80	49.82	9.59	110.75	0.53	0.16	4.18	210.95	3.48	207.48
8.	KLTPS 4	35.65	16.01	28.76	3.45	14.79	0.01	0.05	1.46	100.19	0.01	100.18
9.	Dhuvaran CCPP 1*	8.83	-	10.45	4.21	35.66	-	0.09	2.07	61.32	0.87	60.44
10.	Dhuvaran CCPP 2	22.32	7.05	14.14	4.61	37.61	-	0.10	2.18	88.01	0.87	87.14
11.	Dhuvaran CCPP 3*	78.77	75.41	64.80	48.97	3.28	-	0.27	7.31	278.80	-	278.80
12.	Utran Extension*	68.06	44.33	57.36	28.40	44.71	1.43	0.27	7.28	251.83	0.61	251.21
13.	Ukai 6*	152.88	121.51	123.40	30.92	51.97	-	0.36	9.71	490.76	28.03	462.73
14.	Ukai Hydro	2.15	2.29	10.48	0.59	12.22	0.07	0.22	5.92	33.94	0.02	33.93
15.	Kadana Hydro	5.14	-	28.55	1.82	29.90	-	0.18	4.70	70.29	0.82	69.46
	Total	723.94	470.37	704.48	324.00	1,044.54	129.04	4.18	107.17	3,507.72	116.30	3,391.42

* PPA based stations



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Table 2.2: Revised Actual Fixed Cost for GSECL for FY 2017-18

(Rs. Crore)

Sr. No.	Station	Depreciation (Actual)	Interest & Finance Charges (Actual)	Return on Equity (Actual)	Interest on Working Capital (Actual)	O&M Expenses (Actual)	Water Charges (Actual)	Income Tax (Actual)	SLDC Fees & Charges (Actual)	Non-Tariff Income (Actual)	Total Fixed Cost
1.	Ukai (3-5)	33.46	5.82	24.89	34.23	203.28	0.22	11.85	0.50	12.28	301.97
2.	Gandhinagar (3-4)	31.96	-	20.89	26.25	120.19	43.05	8.16	0.49	20.43	230.56
3.	Gandhinagar 5*	2.16	-	28.67	13.12	59.78	21.53	4.08	-	9.50	119.83
4.	Wanakbori 1-6 TPS	67.60	16.79	73.52	68.56	221.40	47.97	24.48	0.91	24.74	496.49
5.	Wanakbori 7*	2.13	-	26.17	10.92	17.13	10.43	4.08	0.15	4.02	66.99
6.	Sikka Extension (3-4)*	179.68	178.37	142.59	38.81	106.88	3.80	9.71	0.42	10.63	649.62
7.	KLTPS 1-3	33.13	2.80	49.82	9.65	113.91	0.53	4.18	0.16	3.48	210.69
8.	KLTPS 4	35.65	16.01	28.76	3.46	15.14	0.01	1.46	0.05	0.01	100.53
9.	Dhuvaran CCPP 1*	8.83	-	10.45	4.23	36.58	-	2.07	0.09	0.87	61.39
10.	Dhuvaran CCPP 2	22.32	7.05	14.14	4.63	38.58	-	2.18	0.10	0.87	88.14
11.	Dhuvaran CCPP 3*	78.77	75.41	64.80	48.97	3.34	-	7.31	0.27	-	278.86
12.	Utran Extension*	68.06	44.33	57.36	28.42	45.90	1.43	7.28	0.27	0.61	252.43
13.	Ukai 6*	152.88	121.51	123.40	30.94	52.81	-	9.71	0.36	28.03	463.59
14.	Ukai Hydro	2.15	2.29	10.48	0.60	12.70	0.07	5.92	0.22	0.02	34.42
15.	Kadana Hydro	5.14	-	28.55	1.84	30.67	-	4.70	0.18	0.82	70.25
	Total	723.94	470.37	704.48	324.61	1,078.29	129.04	107.17	4.18	116.30	3,425.77

* PPA based stations



Based on actual operating and fuel related parameters during FY 2017-18, table below indicates actual audited energy charges for GSECL's stations for FY 2017-18 along with the approved ones:

Table 2.3: Energy Charges For GSECL's Plants for FY 2017-18

Sr. No.	Power Station	Approved in MYT Order (Rs./kWh)	Actual claimed (Rs./kWh)
1.	Ukai (3-5)	3.42	3.30
2.	Gandhinagar (3-4)	3.69	3.62
3.	Gandhinagar 5*	3.49	3.52
4.	Wanakbori 1-6 TPS	3.26	3.21
5.	Wanakbori 7*	3.14	3.06
6.	Sikka Extension (3-4)*	3.67	3.87
7.	KLTPS 1-3	2.16	2.39
8.	KLTPS 4	2.03	2.30
9.	Dhuvaran CCPP 1*	2.03	2.29
10.	Dhuvaran CCPP 2	2.05	2.22
11.	Dhuvaran CCPP 3*	4.80	12.38
12.	Utran Extension*	5.16	5.32
13.	Ukai 6*	3.06	3.02

* 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 2.4: Gain/Loss on account of Controllable factors for FY 2017-18

(Rs. Crore)

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)	27.88	44.20	72.09	24.03
2.	Gandhinagar (3-4)	(24.70)	13.78	(10.92)	(3.64)
3.	Gandhinagar 5*	-	-	-	-
4.	Wanakbori 1-6 TPS	20.23	28.79	49.02	16.34
5.	Wanakbori 7*	-	-	-	-
6.	Sikka Extension (3-4)*	-	-	-	-
7.	KLTPS 1-3	1.00	(19.62)	(18.62)	(6.21)
8.	KLTPS 4	4.16	(6.38)	(2.22)	(0.74)
9.	Dhuvaran CCPP 1*	-	-	-	-
10.	Dhuvaran CCPP 2	(4.91)	(5.82)	(10.73)	(3.58)
11.	Dhuvaran CCPP 3*	-	-	-	-
12.	Utran Extension*	-	-	-	-



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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		
13.	Ukai 6*	-	-	-	-
14.	Ukai Hydro	7.39	-	7.39	2.46
15.	Kadana Hydro	(6.11)	-	(6.11)	(2.04)
	Total	24.95	54.95	79.90	26.63

* PPA based stations

Due to revised claim of O&M Expenses, the Petitioner has also filed the revised Gains/(losses) on account of Controllable factors as under:

Table 2.5: Revised Gains / (Losses) on account of Controllable Factors for FY 2017-18

(Rs. Crore)

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)	20.84	44.20	65.05	21.68
2.	Gandhinagar (3-4)	(29.12)	13.78	(15.34)	(5.11)
3.	Gandhinagar 5*	-	-	-	-
4.	Wanakbori 1-6 TPS	12.78	28.79	41.57	13.86
5.	Wanakbori 7*	-	-	-	-
6.	Sikka Extension (3-4)*	-	-	-	-
7.	KLTPS 1-3	(2.15)	(19.62)	(21.77)	(7.26)
8.	KLTPS 4	3.81	(6.38)	(2.57)	(0.86)
9.	Dhuvaran CCPP 1*	-	-	-	-
10.	Dhuvaran CCPP 2	(5.89)	(5.82)	(11.71)	(3.90)
11.	Dhuvaran CCPP 3*	-	-	-	-
12.	Utran Extension*	-	-	-	-
13.	Ukai 6*	-	-	-	-
14.	Ukai Hydro	6.90	-	6.90	2.30
15.	Kadana Hydro	(6.88)	-	(6.88)	(2.29)
	Total	0.30	54.95	55.25	18.42

* PPA based stations



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Table 2.6: Gains/(Losses) on account of Uncontrollable Factors for FY 2017-18

Sr. No.	Power Station	Gain/(Loss) due to Uncontrollable Factors									(Rs. Crore)	
		O&M	Depreciation	Interest & Finance Charges	ROE	Interest on Working Capital	Water Charges	SLDC Charges	Income Tax	Non-Tariff Income	Total Gains/(Losses) due to Uncontrollable factors	Total Gains/(Losses) to be passed through
1.	Ukai (3-5)	(7.04)	38.60	18.91	0.81	7.23	(0.09)	0.10	(7.02)	(9.83)	41.67	41.67
2.	Gandhinagar (3-4)	(4.42)	23.85	11.90	(3.59)	(3.84)	(36.04)	0.01	(5.77)	4.96	(12.95)	(12.95)
3.	Gandhinagar 5*	(2.21)	-	-	-	-	-	-	(2.89)	-	(5.10)	(5.10)
4.	Wanakbori 1-6 TPS	(7.45)	33.76	0.46	0.46	(1.33)	(12.21)	(0.10)	(17.31)	(21.55)	(25.27)	(25.27)
5.	Wanakbori 7*	(0.53)	-	-	-	-	-	-	(2.89)	-	(3.42)	(3.42)
6.	Sikka Extension (3-4)*	(3.34)	-	-	-	-	-	-	(6.87)	-	(10.21)	(10.21)
7.	KLTPS 1-3	(3.16)	32.70	(1.72)	(1.35)	(1.07)	(0.10)	0.01	(2.96)	(1.36)	21.00	21.00
8.	KLTPS 4	(0.35)	0.38	3.25	0.44	(0.09)	0.12	(0.03)	(1.03)	(1.64)	1.04	1.04
9.	Dhuvaran CCPP 1*	(0.92)	-	-	-	-	-	-	(1.46)	-	(2.39)	(2.39)
10.	Dhuvaran CCPP 2	(0.98)	(1.65)	1.70	0.60	1.11	0.76	(0.05)	(1.54)	(0.94)	(0.99)	(0.99)
11.	Dhuvaran CCPP 3*	(0.06)	-	-	-	-	-	-	(5.17)	-	(5.22)	(5.22)
12.	Utran Extension*	(1.19)	-	-	-	-	-	-	(5.15)	-	(6.34)	(6.34)
13.	Ukai 6*	(0.84)	-	-	-	-	-	-	(6.87)	-	(7.71)	(7.71)
14.	Ukai Hydro	(0.49)	(2.15)	0.28	(0.06)	0.11	(0.07)	(0.05)	(4.19)	(3.49)	(10.12)	(10.12)
15.	Kadana Hydro	(0.77)	10.49	-	0.05	(0.56)	-	(0.03)	(3.32)	(2.24)	3.63	3.63
	Total	(33.75)	135.96	34.79	(2.64)	1.57	(47.63)	(0.14)	(74.44)	(36.10)	(22.38)	(22.38)

* PPA based stations



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Table 2.7: Revised Gains/(Losses) on account of Uncontrollable Factors for FY 2017-18

Sr. No.	Power Station	Gain/(Loss) due to Uncontrollable Factors									(Rs. Crore)	
		O&M (Employee Cost 7 th Pay)	Depreciation	Interest & Finance Charges	ROE	Interest on Working Capital	Water Charges	SLDC Charges	Income Tax	Non-Tariff Income	Total Gains/(Losses) due to Uncontrollable factors	Total Gains/(Losses) to be passed through
1.	Ukai (3-5)	(7.04)	38.60	18.91	0.81	7.11	(0.09)	0.10	(7.02)	(9.83)	41.55	41.55
2.	Gandhinagar (3-4)	(4.42)	23.85	11.90	(3.59)	(3.92)	(36.04)	0.01	(5.77)	4.96	(13.03)	(13.03)
3.	Gandhinagar 5*	(2.21)	-	-	-	-	-	-	(2.89)	-	(5.10)	(5.10)
4.	Wanakbori 1-6 TPS	(7.45)	33.76	0.46	0.46	(1.46)	(12.21)	(0.10)	(17.31)	(21.55)	(25.40)	(25.40)
5.	Wanakbori 7*	(0.53)	-	-	-	-	-	-	(2.89)	-	(3.42)	(3.42)
6.	Sikka Extension (3-4)*	(3.34)	-	-	-	-	-	-	(6.87)	-	(10.21)	(10.21)
7.	KLTPS 1-3	(3.16)	32.70	(1.72)	(1.35)	(1.13)	(0.10)	0.01	(2.96)	(1.36)	20.94	20.94
8.	KLTPS 4	(0.35)	0.38	3.25	0.44	(0.10)	0.12	(0.03)	(1.03)	(1.64)	1.03	1.03
9.	Dhuvaran CCPP 1*	(0.92)	-	-	-	-	-	-	(1.46)	-	(2.39)	(2.39)
10.	Dhuvaran CCPP 2	(0.98)	(1.65)	1.70	0.60	1.09	0.76	(0.05)	(1.54)	(0.94)	(1.01)	(1.01)
11.	Dhuvaran CCPP 3*	(0.06)	-	-	-	-	-	-	(5.17)	-	(5.22)	(5.22)
12.	Utran Extension*	(1.19)	-	-	-	-	-	-	(5.15)	-	(6.34)	(6.34)
13.	Ukai 6*	(0.84)	-	-	-	-	-	-	(6.87)	-	(7.71)	(7.71)
14.	Ukai Hydro	(0.49)	(2.15)	0.28	(0.06)	0.10	(0.07)	(0.05)	(4.19)	(3.49)	(10.13)	(10.13)
15.	Kadana Hydro	(0.77)	10.49	-	0.05	(0.58)	-	(0.03)	(3.32)	(2.24)	3.61	3.61
	Total	(33.75)	135.96	34.79	(2.64)	1.13	(47.63)	(0.14)	(74.44)	(36.10)	(22.82)	(22.82)

* PPA based stations



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Based on the above estimated gains / (losses) on account of controllable and uncontrollable factors, GSECL has worked out gap/surplus of FY 2017-18 as given below:

Table 2.8: Net Entitlement calculated by GSECL before Revision of Employee Cost

(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)	72.09	41.67	65.70
2.	Gandhinagar (3-4)	(10.92)	(12.95)	(16.59)
3.	Gandhinagar 5*	-	(5.10)	(5.10)
4.	Wanakbori 1-6 TPS	49.02	(25.27)	(8.93)
5.	Wanakbori 7*	-	(3.42)	(3.42)
6.	Sikka Extension (3-4)*	-	(10.21)	(10.21)
7.	KLTPS 1-3	(18.62)	21.00	14.79
8.	KLTPS 4	(2.22)	1.04	0.30
9.	Dhuvaran CCPP 1*	-	(2.39)	(2.39)
10.	Dhuvaran CCPP 2	(10.73)	(0.99)	(4.57)
11.	Dhuvaran CCPP 3*	-	(5.22)	(5.22)
12.	Utran Extension*	-	(6.34)	(6.34)
13.	Ukai 6*	-	(7.71)	(7.71)
14.	Ukai Hydro	7.39	(10.12)	(7.65)
15.	Kadana Hydro	(6.11)	3.63	1.59
	Total	79.90	(22.38)	4.26

* PPA based stations

Table 2.9: Revised Net Entitlement calculated by GSECL after revision of Employee Cost for FY 2017-18

(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)	65.05	41.55	63.23
2.	Gandhinagar (3-4)	(15.34)	(13.03)	(18.14)
3.	Gandhinagar 5*	-	(5.10)	(5.10)
4.	Wanakbori 1-6 TPS	41.57	(25.40)	(11.54)
5.	Wanakbori 7*	-	(3.42)	(3.42)
6.	Sikka Extension (3-4)*	-	(10.21)	(10.21)
7.	KLTPS 1-3	(21.77)	20.94	13.68
8.	KLTPS 4	(2.57)	1.03	0.18
9.	Dhuvaran CCPP 1*	-	(2.39)	(2.39)
10.	Dhuvaran CCPP 2	(11.71)	(1.01)	(4.91)
11.	Dhuvaran CCPP 3*	-	(5.22)	(5.22)
12.	Utran Extension*	-	(6.34)	(6.34)



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Sr. No.	Power Station	Gains/(Losses) due to controllable factor	Gains/(Losses) due to uncontrollable factor	Total Gains/(Losses) to be passed through
13.	Ukai 6*	-	(7.71)	(7.71)
14.	Ukai Hydro	6.90	(10.13)	(7.83)
15.	Kadana Hydro	(6.88)	3.61	1.31
	Total	55.25	(22.82)	(4.40)

* PPA based stations

Table 2.10: Proposed Fixed Cost of GSECL plants for FY 2019-20

(Rs. Crore)

Sr. No.	Power Station	Fixed Charges for FY 2019-20	Total Gains/(Losses) to be passed through	Net Fixed Charges for FY 2019-20
1.	Ukai (3-5)	329.86	63.23	266.63
2.	Gandhinagar (3-4)	192.52	(18.14)	210.66
3.	Gandhinagar 5*	71.45	(5.10)	76.55
4.	Wanakbori 1-6 TPS	556.49	(11.54)	568.03
5.	Wanakbori 7*	62.68	(3.42)	66.10
6.	Sikka TPS	-	-	-
7.	KLTPS 1-3	242.70	13.68	229.02
8.	KLTPS 4	101.16	0.18	100.98
9.	Dhuvaran CCPP 1*	72.05	(2.39)	74.44
10.	Dhuvaran CCPP 2	88.96	(4.91)	93.87
11.	Utran Extension*	239.83	(6.34)	246.17
12.	Ukai Hydro	33.45	(7.83)	41.28
13.	Kadana Hydro	70.09	1.31	68.78
14.	Ukai 6*	502.94	(7.71)	510.65
15.	Dhuvaran CCPP 3*	298.18	(5.22)	303.40
16.	Sikka 3&4*	602.27	(10.21)	612.48
17.	Wanakbori 8 TPS*	899.02	-	899.02
	Total	4,363.64	(4.40)	4,368.05

* PPA based stations

Table 2.11: Proposed Energy Charges of GSECL plants for FY 2019-20

Sr. No.	Power Station	2019-20 (Rs./kWh)
1.	Ukai (3-5)	2.821
2.	Gandhinagar (3-4)	3.308
3.	Gandhinagar 5*	3.912
4.	Wanakbori 1-6 TPS	3.269
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



Sr. No.	Power Station	2019-20 (Rs./kWh)
12.	Utran Extension*	4.345
13.	Ukai 6*	2.516
14.	Wanakbori 8*	2.941

* PPA based stations

2.3 Request of GSECL

Petitioner's Prayer:

1. To admit the petition for True Up of FY 2017-18 and Determination of Tariff for FY 2019-20.
2. To approve the gains/ losses for the True Up of FY 2017-18 and allow sharing of such gains/ losses as prescribed in the GERC (MYT) Regulations, 2016.
3. To approve the operational and financial parameters for FY 2017-18 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 for FY 2017-18 for recovery of variable cost considering the vintage and constraints of the old machines as well as site specific constraints.
5. To approve reimbursement of Tax on Income earned through the sale of power for all power stations including PPA governed stations.
6. To approve fixed cost and tariff for FY 2019-20.
7. To approve unabsorbed depreciation for Gandhinagar TPS Units 1 and 2.
8. To approve fixed cost and determine tariff for BLTPS Units 1 & 2 for FY 2019-20.
9. To grant any other relief as the Commission may consider appropriate.
10. To allow further submissions, addition and alteration to this Petition as may be necessary from time to time.
11. Pass any other order as the 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 2017-18 and determination of ARR for FY 2019-20 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 Poor Performance of Petitioner's Power Plants

3.1.1 Deterioration in Performance of Power Plants year after year

The Objector has stated that the performance of power plant has been deteriorating year after year. The poor performance of 30/35 years old power plants are understood but poor performance of the new plants especially 500 MW plant at Ukai Thermal Power Station cannot be digested. It is observed that PLF of power station remained around 47.6% during FY 2017-18 which is the lowest till date.

Response of GSECL

The poor performance of the GSECL plants as stated by the Objector is not correct. The PLF of UTPS Unit No 6 during the FY 2017-18 was 68.23%. The major reason attributable for the same was lower availability of unit due to major unforeseen forced outage on account of generator rotor failure from 05.06.17 to 18.08.18 (74 days) and unit was available for 291 days for generation. The PLF during the available period was 85.58%. The overall PLF of GSECL of 47.60% for the FY 2017-18 as given by the Objector is not correct, it was actually 57.20%. Also, the GSECL power stations were willing to supply power which is evident from the PAF of GSECL Power Stations.

GSECL Thermal Power Stations have achieved ever highest PAF of 85.26% for the FY 2017-18. Also, to improve the performance, the Company has decommissioned its 4x120 MW (480 MW) inefficient units, so the company is continuously monitoring efficiency of the power plant and according to the requirement of the Grid, future plan will be chalked out.



Commission's View

The overall PLF of GSECL has increased from 31% in previous year to 57.20% in FY 2017-18, which shows that there is an increase of 26% in the PLF and the supply of power to the DISCOMs.

The Commission has also noted that PLF or actual supply to the DISCOMs depends mainly on Merit Order Despatch which again depends on the cost of the fuel.

The Commission has noted that except specific technical problems the availability and PLF of GSECL stations has improved.

3.1.2 Poor Performance and increasing cost

The Objector has stated that many of power plants are worst performing in terms of PLF, SHR, Auxiliary Consumption and Sp. Oil consumption resulting into increase in power generation cost. The Petitioner is not serious about improvement in performance and blamed partial operation for these bad performances which cannot be accepted by the consumers.

Response of GSECL

The performance of the GSECL plants was good except for some issues. The partial operation of STPS Unit 3 & 4 due to backing down was 56.89% during the FY 2017-18 resulting into higher APC & SHR of units. Also, the additional oil consumption due to start up of units due to RSD was 0.76 ml/kWh out of total specific oil consumption of 1.27 ml/kWh.

In case of KLTPS Unit (1-3), the source of lignite has changed for last 1 - 1.5 years (from Umersar mines to Mata no madh mines). This lignite consists of pyrites which has resulted into faster deterioration of mill internals and increased maintenance of the same. This results into frequent oil support in boilers and increase in specific oil consumption. Also, part load operation of units due to frequent mill outages has resulted into higher APC. The Company is exploring the feasibility of installation of pyrite separator plant in consultation with GMDC.

The designed APC of KLTPS Unit 4 is 16% whereas the Commission has approved 12%. Dhuvaran Gas Unit 1 & 2 are used as peaking plants and due to daily start / stop, the gas consumption and SHR / APC has increased. The performance of Dhuvaran Gas Based Unit 3 was not up to the mark as unit was under stabilization during the FY



2017-18. The higher APC of Utran Unit 2 was attributable to very low PLF of 7.85% as compared to PAF of 90.18% and minimum auxiliaries were required to be run during RSD period to keep the unit available. Ukai TPS Unit 6 is having all the parameters within normative limits except PAF which is attributable to unforeseen forced outage on account of generator rotor failure.

Also, the Petitioner have achieved the SHR in all the power station as approved by the Commission except Dhuvaran Unit 3 & 4. Justification for increase in energy cost is that in case of Sikka 3 & 4 it was due to higher SHR on account of part load operation and frequent start/stop of the machine. In KLTPS (1-3) & 4, the energy charge increased due to inappropriate quality of lignite supplied by GMDC. The machines had undergone frequent forced outages due to failure of Lignite Mill and Lignite Handling system. In case of Dhuvaran Unit 3 and Utran Unit 2, the energy charge increased due to high heat rate and the burden is not being passed on to the consumers.

Commission's View

The Commission has noted the detailed reasons provided by the Petitioner for poor performance of STPS, KLTPS and Dhuvaran Gas units.

3.1.3 Shut down

The Objector has stated that nearly 51.50% plants are under shutdown due to various reasons. RSD of gas-based plants at Dhuvaran and Utran is understood but other coal and lignite-based plants needs clarification for their shutdown.

Response of GSECL

The Objector has submitted instantaneous details (14.12.2018 at 15:30 hrs.) of the units under shutdown. The annual performance of the Company cannot be adjudged from any one instantaneous data/snap shot. The units were available for generation and scheduled as per requirement of the grid. It is evident from daily generation of 107.71 MUs (with 4488 MW average load) on 05.10.2018 which was feasible only by ensuring maximum availability of its generating units and generation scheduled as per requirement of the grid.

Commission's View

The Commission has noted the details provided by the Petitioner for the units under shut down.



3.2 Objections on Fuel (Coal, Lignite & Oil)

3.2.1 Discrepancy in Coal, Lignite and Oil prices and GCV

The Objector has stated that he fails to understand the blending of three types of coal which includes indigenous coal, washed coal and imported coal at few power plants which is practically impossible. It is observed that there is a huge difference in the price of coal at various power stations as there may be some high cost due to distance otherwise quality of coal remains same. Similarly, there is difference in quality or heating value of coal used at various power stations. The Petitioner should explain the difference in Gross Calorific Value of coal used at same power station.

Response of GSECL

The difference in rate of indigenous coal is due to difference in freight charges on account of distance of power plant from coal mine. Average rate of freight for indigenous coal for Ukai TPS is Rs. 1641.41 / MT and for Gandhinagar TPS is Rs. 2067.39 / MT. The difference in rate of washed coal is again due to difference in freight charges and also due to utilization of Korea Rewa Coal after washing at Wanakbori. Average rate of freight of washed coal for Wanakbori TPS is Rs. 2487.55 / MT and for Sikka TPS is Rs. 2955.08 / MT.

Also, average rate of freight of Korea Rewa washed coal is Rs. 1989.68 / MT. The difference in rate of imported coal is due to difference in Freight charges on account of difference in distances of power plant from Port and due to fluctuations in CIF rate as per CERC index and Exchange rate prevailing at the time of purchase of vessel of Imported coal. The difference in rate of lignite procured for KLTPS is because GMDC charges the subsidized rate at cost plus 15% or market rate less 25% discount whichever is less. Whereas, in case of lignite for BLTPS, GMDC is billing as per the agreement where the cost of lignite is higher than KLTPS. The difference in rate of residual oil procured for Ukai TPS, KLTPS and BLTPS, is because the consumption of LDO is very much high at KLTPS compared to Ukai TPS. The cost of LDO is higher than FO and the freight charges is higher at KLTPS and BLTPS as compared to Ukai TPS as the transportation of FO is carried out through road at KLTPS and BLTPS.

Further, the GCV of the GTPS Unit 3 & 4 & GTPS Unit 5 and Ukai Unit 3-5 & Ukai Unit 6 is different on account of different blending ratio of indigenous, washed and imported coal.



Commission's View

The cost of different fuels such as coal, lignite & oil and their GCV depend on the source of the fuel for which the necessary information is provided by the Petitioner.

3.2.2 Actual value of Coal Transit Losses not provided

The Objector has stated that Petitioner has not provided the actual value of Transit Losses but taken advantage by considering maximum limit permitted by the Commission. The Commission is requested to direct the Petitioner to provide actual figure of Transit Losses for FY 2017-18.

Response of GSECL

As per standard norms, GSECL is not seeking any relaxation for these norms. However, if any benefit arrives due to lower transit loss, it is already passed on to the consumers by giving effect in the landed price of coal.

Commission's View

On scrutiny of the Petitioner's application, the Commission has sought the additional information about the actual transit losses, which have been provided by the Petitioner.

3.2.3 No quantitative information about the cost of the fuel

The Objector has stated that there is no quantitative information in terms of coal in reference with the cost of the fuel to arrive at the variable cost of the fuel in the Accounting Statement.

Response of GSECL

There is no specific requirement to disclose quantitative information in terms of coal as per Schedule III, Division II of the Companies Act, 2013 for preparation of Annual Report / Accounting Statement.

Commission's View

The quantitative information about the cost of the fuel is provided in the formats submitted by the Petitioner as per the requirement of the GERC (MYT) Regulations, 2016. However, accounting statement is prepared based on different set of regulations i.e. Companies Act, 2013 and the Petitioner has submitted the information accordingly.



3.2.4 Prudence of Agreement between GUVNL & GMR Chhattisgarh Energy Ltd. and Information of Coal supplied to & energy received from GMR Chhattisgarh Energy Ltd.

The Objector has requested to check the prudence of agreement between GUVNL and M/s GMR Chhattisgarh Energy Ltd. for supply of energy at certain benchmark. The Objector has requested to get the details about the coal supplied to GMR and generation received from GMR.

Response of GSECL

In accordance to the office memorandum dated 20th February, 2017 issued by the Ministry of Power for utilization of domestic coal by IPP under Case-4 to reduce the cost of generation, GUVNL has invited the competitive bidding by utilizing to supply the power under Case-4 linkage coal of GSECL. As per the methodology issued by the Ministry of Power, GSECL has to only transfer the linkage coal to the selected bidder (M/s. GMR) against the amount received for cost of coal. Further, GSECL has not submitted any affidavit in this regard.

The Annual Accounts are prepared as per the requirement of the Companies Act, 2013 and applicability of IND AS. Note 23 of Annual Accounts clearly states that Rs. 5722.50 Lakh is income from trading activity which is income from sale of coal to GMR. The purchase for such coal is shown in Note 30 "Cost of Trading Activity" which is Rs. 5722.50 Lakh. Further, the Company has not received any power and GMR Chhattisgarh Energy Ltd. has directly sold power to Gujarat Urja Vikas Nigam Ltd. and hence this transaction is not required to be shown in books of Accounts of GSECL.

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.

3.2.5 Submission of Regular Details of Fuel (Coal, Lignite & Gas)

The Objector has stated that Clause 58.6 of the GERC (MYT) Regulations, 2016 provides that copies of the bills and details of parameters of GCV and price of fuel, i.e. domestic coal, imported coal, e-auction coal, lignite, natural gas, RLNG, liquid fuel etc.,



details of blending ratio of the imported coal with domestic coal, proportion of e-auction coal shall also be displayed on the web site of the generating company. The details should be available on its website on monthly basis for a period of three months.

Response of GSECL

Monthly Stock position (MT) details of 1st Quarter of FY 2018-19 is available on the Company's website homepage. GSECL is regularly submitting details of coal purchase cost, GCV of coal, lignite, gas, LDO, FO to the Commission.

Commission's View

GSECL is submitting the details to the Commission. However, GSECL should adhere to updating of the details on its website as per the requirement.

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

3.3.1 No Verification of Quantitative Information of Generation of Energy

The objector has stated that there is no verification of quantitative information of generation of energy by GSECL units in the Annual Reports / Accounting Statement by the Statutory Auditor.

Response of GSECL

There is no specific requirement to disclose quantitative information of generation of energy as per Schedule III, Division II of the Companies Act, 2013 for preparation of Annual Report / Accounting Statement.

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 with same.

3.3.2 Mismatch of figures of ARR and AFR

The Objector has submitted that there is mismatch in the figures of ARR and Annual Financial Report.

Response of GSECL

The Company has filed true-up petition as per the GERC (MYT) Regulations, 2016 issued by the Commission.



Commission's View

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

3.3.3 Details of Fuel in the Accounting Statement

The details of fuel as contemplated in Clause 58.6 of the GERC (MYT) Regulations, 2016 is neither available on GSECL / Discoms / GUVNL website nor submitted in the petition or mentioned in the Accounting Statement.

Response of GSECL

There is no specific requirement to disclose details of fuel as per Schedule III, Division II of the Companies Act, 2013 for preparation of Annual Report / Accounting Statement.

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 with same.

3.3.4 Details of Cost Records not submitted in the Petition

The Objector has submitted that no cost records are submitted either in the tariff petition or in the Accounting Statement duly certified by the Cost Accountant / Auditor as prescribed by Central Govt. under Section 209(1)(d) of the Companies Act, 1956 and as contemplated in Clause 17.3 of the GERC (MYT) Regulations, 2016.

Response of GSECL

Section 148 of Companies Act, 2013 read with Rule 3 of the Companies (Cost Records and Audit) Rules, 2014 provide that Cost records need to be included in the books of Accounts of the companies being engaged in the production of goods or provision of service as covered under Table A or Table B and the total turnover from all its production or service is more than Rs. 35 Crore during the preceding final year.

GSECL falls under Table A and has accordingly maintained Cost records and also submits the cost audit report to the MCA regularly

Commission's View

The Statutory Auditors of the Company who are appointed by the C&AG have in their report certified that the Company is maintaining all the cost records and these have been audited by the independent Cost Auditors.



3.4 Objections related to providing Specific Information in the Petition

3.4.1 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 station. Petitioner has filed the petition on the basis of the MYT Order in Case No. 1619 of 2016 where the Petitioner had asked to approve station-wise and not unit-wise tariff. Hence, unit-wise data is not provided.

Commission's View

The Petitioner's response is in terms of the Commission's Order.

3.4.2 Variance of Information between Mid-term Review and MYT Approved values of GSECL

The Objector has submitted that the Mid-term Review proposed by GSECL differs from the MYT approved value. As per Clause 19 of the GERC (MYT) Regulations, 2016, for revised forecast and deviation in the forecast, the Petitioner is mandated to provide the sufficient evidence and proof for such revision. GSECL has not provided any evidence and proof to substantiate its review claim. The Commission is requested to direct GSECL to comply with the provisions of the GERC (MYT) Regulations, 2016.

Response of GSECL

GSECL has not proposed Mid-term Review as there is no major change in assumptions made during MYT Petition and current scenario, and there will be not much deviation in ARR for FY 2019-20 and FY 2020-21.

Commission's View

The variance is caused due to betterment of SHR of Ukai (3-5) and Wanakbori (1-6) stations on account of R&M activities and passing the benefit to the consumers.



3.4.3 Details regarding Tariff Filing Forms

The Objector has submitted that the tariff filing forms are also not filled in with the data and details as prescribed in the tariff filing forms as contemplated under the GERC (MYT) Regulations, 2016.

The summary page in the website is not legible, like last year.

The total installed capacity of generation of GSECL is 5540.74 MW and generation for the truing up year is only 23683.12 MUs.

Response of GSECL

Tariff filing forms are filled in with the applicable data. Further, GSECL has submitted the petition to the Commission with noting in section 10, page no. 70 that “the forms which are not applicable are excluded”.

Summary page is clear and visible on the website.

The total installed capacity of GSECL is 5540.74 MW and generation of 23683.12 MUs is correct.

Commission’s View

The Commission has noted the response of the Petitioner.

3.4.4 Per Unit Generation cost and No. of Units generated not shown

The Objector has stated that the basic per unit generation cost and number of units generated is not shown in the petition. The submission is very complicated to understand and reconcile.

Response of GSECL

Actual Fixed Charges for FY 2017-18 is shown in Table No. 23, while Table No. 24 shows the approved Fixed Charges for FY 2017-18. Further, station-wise Net Generation, Fuel Cost Approved and Actual Fuel Cost is shown in Table No. 19. Also, per unit Generation cost is given in Table No. 20.

Commission’s View

The Commission has noted the Petitioner’s response.



3.4.5 SLDC Charges

The Objector has stated that it should be ensured that the SLDC charges are not allowed twice for the same unit.

Response of GSECL

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

Commission's View

The Commission has noted the Petitioner's response.

3.5 Accounting Statement

3.5.1 Assets are not verified regularly

The Objector has stated that the assets are not verified since restructuring of the erstwhile GEB by any authentic agency. The Commission is requested to get the real assessment of GSECL assets done to come to the correct equity deployment.

Response of GSECL

The Petitioner draws attention to 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, it is very much clear that assets of the company are physically verified and its periodicity is reasonable having regard to the size of the Company and the nature of business. Hence, the assets are assessed in a correct way and the Petitioner is entitled to get 14% return on equity.

Commission's View

The Commission has noted the Petitioner's response.



3.5.2 DSM Charges Revenue should not be reduced from revenue from sale of electricity

The Objector has referred to Note 28 and 29 of AFR and stated that in net receipts the revenue from sale of electricity is shown as Rs. 9914.93 Crore. Why DSM charges revenue Rs. 17.34 Crore shall be reduced when it is generating company?

Response of GSECL

The revenue from sale of power is Rs. 9932.28 Crore and DSM charges is Rs. (-) 17.34 Crore. So the net income from sale of power is Rs. 9914.93 Crore. Further, the company has paid net DSM charges of Rs. 17.34 Crore to SLDC for over drawn / under injection of power as per DSM Regulations issued by the Commission. The Generation Company also has to follow DSM Regulations and accordingly, GSECL has paid Rs. 17.34 Crore towards DSM charges for not maintaining schedule given by SLDC.

Commission's View

The Commission has noted the information submitted by the Petitioner.

3.6 True-up of FY 2017-18

3.6.1 Fixed Cost and Energy Charges of GSECL for Truing up of FY 2017-18

The Objector has submitted that the average fixed cost (Rs. 3391.42 Crore) is Rs. 1.43 / kWh and energy charge is Rs. 2.98 / kWh (Rs. 6877.28 Crore) totalling to Rs. 4.41 / kWh for truing up of FY 2017-18. The fixed cost per unit is increasing every year and generation is getting reduced every year. This is the worst scenario and not at all consistent with the purpose of the Electricity Act, 2003.

Response of GSECL

The Petitioner is entitled to recover the Fixed Costs based on the PAF achieved by the stations. Accordingly, it has recovered fixed cost as approved by the Commission.

Commission's View

The Commission allows the recovery as per the GERC (MYT) Regulations, 2016 and after carrying out prudence checks.



3.6.2 Capital Investment in RE Projects by GSECL

The Objector has submitted that it is found that GSECL is making capital investment in Solar, Wind and other generating units. These generating units are kept as spare generating units when private generators like MUPL, Gujarat Coastal Power Ltd, Essar, etc. who fail to supply power as per terms of PPA, are being used as stop gap. Such huge investment and its cost is passed on to the consumers of Gujarat ultimately has increased the overall cost of power resisting the industrial and commercial growth in the State and as a result of high tariff, the textile industries from Surat have shifted to Maharashtra is sufficient to prove the contention.

Response of GSECL

GSECL is investing in RE Projects such as solar and wind and the expenditure of these RE project is not considered for true-up exercise.

Commission's View

The Commission determines tariff and undertakes true-up exercise as per the provisions of the GERC (MYT) Regulations, 2016. The fixed cost and the variable cost are worked out as per the parameters approved by the Commission for the MYT period.

The capital investment and expenses for any RE projects by GSECL does not form part of the petition and such expense if claimed is not allowed and dealt with in accordance with provisions of the GERC (MYT) Regulations, 2016.

3.7 Mid-term Review

3.7.1 Reasonable Tariff Hike

The Objector has stated that the Commission shall provide reasonable hike in tariff duly looking into the consumer interest.

Response of GSECL

It is fact that any increase in energy cost (price hike) will impose economic burden on energy users of all category, will also effect the trade and industrial product cost. The product sale and supply of trade and industry will become victim of price hike in energy cost. The energy users will have to bear more economic burden on their daily business.



Commission's View

The Commission has passed on the gain / loss based on the relevant parameters and costs and arising out of any variation in the price of fuel, which is dealt with in the subsequent chapters.

3.8 Proceedings for True-up / ARR Petitions as per Conduct of Business Regulations, 2004 and the GERC (MYT) Regulations, 2016

The Objector has contemplated that the proceedings are not conducted as per the certain provisions (Clause 38, 39 & 40) of the GERC (Conduct of Business) Regulations, 2004 and in line with the provisions of the GERC (MYT) Regulations, 2016.

Response of GSECL

No comment.

Commission's View

All the true-up / ARR petitions are to be submitted to the Commission as per the GERC (MYT) Regulations, 2016 with the necessary formats. Any data gaps in the information / details, if found, is asked from the Petitioner. The compliance of the data gaps by the Petitioner is also made available to all the stakeholders as the information is placed on the Commission's website for the knowledge of the stakeholders. Subsequently, the process of hearing is carried out where all the stakeholders / objectors can submit their written or oral comments / arguments. Hence, it is not true that the due process and provisions of the GERC (MYT) Regulations, 2016 or GERC (Conduct of Business) Regulations, 2004 are not followed at any stage. The final order is also prepared in line with the said Regulations.



4. Truing up of FY 2017-18

4.1 Generating Stations of GSECL

This chapter deals with the truing up of FY 2017-18.

GSECL owns and operates the following generating stations as on 1st April, 2017.

- 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 and Sikka TPS and windmills at Layza.

The details of the stations existing as on 1st April, 2017 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, 2017

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	1470	
Panandhro, Kutch (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 Gas	CCPP-1	106.617	28/01/2004
	CCPP-2	112.45	01/11/2007



Name of Station	Unit No.	Capacity of the Unit (MW)	Date of Commissioning
	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
	Sub Total	500	
Ukai TPS	6	500	08/06/2013
Dhuvaran (Gas)	3	376	21/05/2014
SUB TOTAL GSECL (Coal + Lignite)		4000	
SUB TOTAL GSECL (Gas)		970.067	
TOTAL GSECL (Thermal)		4970.067	
Ukai Hydro	1	75	07/08/1974
	2	75	13/12/1974
	3	75	22/04/1975
	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	01/04/2009
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
	Sub Total	14.00	
TOTAL (Renewable)		571.00	
TOTAL GSECL as a Whole		5541.067	

4.2 Operating Performance Parameters

The fuel cost of a generation station depends on (i) the performance parameters, such as PLF, Station Heat Rate, Auxiliary Consumption, Specific Fuel Oil Consumption and Transit Loss of Coal (in case of Coal stations), which are controllable and (ii) 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 Plant Availability Factor (PAF), Plant Load Factor (PLF), Station Heat Rate, Coal transit loss, Auxiliary Consumption (AC) and Specific Oil Consumption etc. for FY 2017-18 for individual stations. The Commission has taken up the truing up of the annual performance parameters for FY 2017-18, 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 2017-18. The PAF (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 4.2: Plant Availability Factors for FY 2017-18

Sr. No.	Power Station	Approved as per MYT Order	Actual
1.	Ukai (3-5)	80.00%	89.65%
2.	Gandhinagar (3-4)	84.00%	93.37%
3.	Gandhinagar 5*	85.00%	92.26%
4.	Wanakbori 1-6 TPS	85.00%	86.95%
5.	Wanakbori 7*	85.00%	100.00%
6.	Sikka Extension (3-4)*	85.00%	84.49%
7.	KLTPS 1-3	75.00%	65.62%
8.	KLTPS 4	80.00%	49.02%
9.	Dhuvaran CCPP 1*	85.00%	73.39%
10.	Dhuvaran CCPP 2	85.00%	83.16%
11.	Dhuvaran CCPP 3*	85.00%	83.19%
12.	Utran Extension*	85.00%	90.18%
13.	Ukai 6*	85.00%	74.94%
14.	Ukai Hydro	80.00%	96.55%
15.	Kadana Hydro	80.00%	91.98%

* PPA based stations

It is observed from the above Table that Sikka Extn. 3 & 4, KLTPS (1-3), KLTPS 4, Dhuvaran CCPP 1, Dhuvaran CCPP 2, Dhuvaran CCPP 3 and Ukai 6 stations have achieved lower PAF than approved by the Commission in the MYT Order for FY2017-18.

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 2017-18, as given below:

- Ukai (6): Generator Rotor Earth Fault (74 days).
- Sikka (3-4): Boiler Choke up, APH choke up, MSSV stuck up and PA Fan stalling (37 days) issue.



- KLPTS (1-3): Bottom ash conveying & Clinker removal (77 days) and Non availability of coal mills (63 days) due to change in source of coal.
- KLTPS 4: Combustor inspection (44 days) and Cyclone vertex & seal pot (52 days) issue.
- Dhuvaran CCPP 1: Generator Rotor Earth Fault.
- Dhuvaran CCPP 2: Exhaust gas temp high (23 days) and Non availability of Gas (29 days).
- Dhuvaran CCPP 3: Non availability of Gas (25 days).

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

Commission's Analysis

The actual PAF is less than the approved one in case of Sikka Extn. 3 & 4, KLTPS (1-3), KLTPS 4, Dhuvaran CCPP 1, Dhuvaran CCPP 2, Dhuvaran CCPP 3 and Ukai 6. Petitioner has explained the reasons for low PAF of these plants. The submissions have been noted.

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 2017-18 is considered.

The PAF approved for truing up purpose for FY 2017-18 for each station is given in the Table below:

Table 4.3: Plant Availability Factors approved for truing up for FY 2017-18

Sr. No.	Particulars	Approved as per MYT Order	Actual	Approved in truing up
1.	Ukai (3-5)	80.00%	89.65%	80.00%
2.	Gandhinagar (3-4)	84.00%	93.37%	84.00%
3.	Gandhinagar 5*	85.00%	92.26%	85.00%
4.	Wanakbori 1-6 TPS	85.00%	86.95%	85.00%
5.	Wanakbori 7*	85.00%	100.00%	85.00%
6.	Sikka Extension (3-4)*	85.00%	84.49%	85.00%
7.	KLTPS 1-3	75.00%	65.62%	75.00%
8.	KLTPS 4	80.00%	49.02%	80.00%
9.	Dhuvaran CCPP 1*	85.00%	73.39%	85.00%
10.	Dhuvaran CCPP 2	85.00%	83.16%	85.00%
11.	Dhuvaran CCPP 3*	85.00%	83.19%	85.00%
12.	Utran Extension*	85.00%	90.18%	85.00%
13.	Ukai 6*	85.00%	74.94%	85.00%
14.	Ukai Hydro	80.00%	96.55%	80.00%
15.	Kadana Hydro	80.00%	91.98%	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 2017-18. 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 2017-18

Sr. No.	Power Station	Approved as per MYT Order	Actual
1.	Ukai (3-5)	60.00%	70.75%
2.	Gandhinagar (3-4)	45.00%	62.29%
3.	Gandhinagar 5*	77.00%	78.83%
4.	Wanakbori 1-6 TPS	55.00%	56.39%
5.	Wanakbori 7*	70.00%	80.41%
6.	Sikka Extension (3-4)*	70.00%	61.13%
7.	KLTPS 1-3	75.00%	53.30%
8.	KLTPS 4	75.00%	44.73%
9.	Dhuvaran CCPP 1*	25.00%	21.03%
10.	Dhuvaran CCPP 2	25.00%	37.79%
11.	Dhuvaran CCPP 3*	25.00%	0.89%
12.	Utran Extension*	25.00%	7.85%
13.	Ukai 6*	77.00%	68.23%
14.	Ukai Hydro	13.00%	12.14%
15.	Kadana Hydro	6.00%	14.77%

* PPA based stations

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

- Ukai 6: Generator Rotor Earth Fault (74 days)
- Sikka (3-4): Boiler choke up, APH choke up, MSSV stuck up and PA Fan stalling (37 days) issue and Reserve shut down (86 days)
- KLTPS 1-3: Bottom ash conveying & Clinker removal (77 days) and Non availability of coal mills (63 days) due to change in source of coal
- KLTPS 4: Combustor inspection (44 days) and Cyclone vertex & seal pot (52 days) issue
- Dhuvaran CCPP 1: Generator Rotor Earth Fault (74 days) and Reserve shut down (155 days)
- Dhuvaran CCPP 3: Reserve shut down (298 days) and Non availability of Gas (25 days)
- Utran Extension: Reserve shut down (282 days)
- Ukai Hydro: Low reservoir level.



Commission's Analysis

Commission has analyzed the submissions made by the Petitioner in the Table above. It is observed that all the stations except Ukai 6, Ukai Hydro, 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 2017-18 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 2017-18 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 2017-18 for truing up purpose

Sr. No.	Power Station	Approved as per MYT Order	Actual	Approved in truing up
1.	Ukai (3-5)	60.00%	70.75%	70.75%
2.	Gandhinagar (3-4)	45.00%	62.29%	62.29%
3.	Gandhinagar 5*	77.00%	78.83%	78.83%
4.	Wanakbori 1-6 TPS	55.00%	56.39%	56.39%
5.	Wanakbori 7*	70.00%	80.41%	80.41%
6.	Sikka Extension (3-4)*	70.00%	61.13%	61.13%
7.	KLTPS 1-3	75.00%	53.30%	53.30%
8.	KLTPS 4	75.00%	44.73%	44.73%
9.	Dhuvaran CCPP 1*	25.00%	21.03%	21.03%
10.	Dhuvaran CCPP 2	25.00%	37.79%	37.79%
11.	Dhuvaran CCPP 3*	25.00%	0.89%	0.89%
12.	Utran Extension*	25.00%	7.85%	7.85%
13.	Ukai 6*	77.00%	68.23%	68.23%
14.	Ukai Hydro	13.00%	12.14%	12.14%
15.	Kadana Hydro	6.00%	14.77%	14.77%

* PPA based stations

4.2.3 Auxiliary Consumption

Petitioner's Submission

GSECL has submitted the actual auxiliary consumption of different stations for FY 2017-18. 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 2017-18

Sr. No.	Power Station	Approved as per MYT Order	Actual
1.	Ukai (3-5)	9.00%	9.67%
2.	Gandhinagar (3-4)	9.00%	10.59%
3.	Gandhinagar 5*	9.50%	9.82%
4.	Wanakbori 1-6 TPS	9.00%	9.09%
5.	Wanakbori 7*	9.50%	9.07%



Sr. No.	Power Station	Approved as per MYT Order	Actual
6.	Sikka Extension (3-4)*	9.00%	9.65%
7.	KLTPS 1-3	12.00%	14.24%
8.	KLTPS 4	12.00%	21.80%
9.	Dhuvaran CCPP 1*	4.00%	7.26%
10.	Dhuvaran CCPP 2	3.00%	5.33%
11.	Dhuvaran CCPP 3*	3.00%	26.02%
12.	Utran Extension*	3.00%	6.04%
13.	Ukai 6*	6.00%	5.94%
14.	Ukai Hydro	0.60%	1.04%
15.	Kadana Hydro	1.00%	0.87%

* 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 Ukai Hydro: Partial operation due to backing down and APC during RSD
- Sikka 3-4: Partial Operation due to backing down & Boiler and APH choke up and APC during RSD
- KLTPS 1-3: Partial Operation due to backing down and unit constrains (mill outages) and APC during RSD
- KLTPS 4: Partial Operation due to unit constrains (Combustor lower temp) and APC during RSD
- Dhuvaran CCPP1 and CCPP 2: Partial Operation due to backing down and condensor problem and APC during RSD
- Dhuvaran CCPP3 and Utran Extension: APC during RSD

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 2017-18. The actual auxiliary consumption in all plants is higher than approved in the MYT Order dated 31st March, 2017 for FY 2017-18 except, Wanakbori 7, Ukai 6 and Kadana hydro stations where the actual auxiliary consumption is less than what was approved in the MYT Order.

For other plants, though GSECL has indicated the reasons for higher auxiliary consumption, the Commission is of the opinion 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 2017-18, 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 2017-18, 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 2017-18 is given in the Table below:

Table 4.7: Auxiliary consumption (%) approved for FY 2017-18 for truing up

Sr. No.	Power Station	Approved as per MYT Order	Actual	Approved in truing up
1.	Ukai (3-5)	9.00%	9.67%	9.00%
2.	Gandhinagar (3-4)	9.00%	10.59%	9.00%
3.	Gandhinagar 5*	9.50%	9.82%	9.50%
4.	Wanakbori 1-6 TPS	9.00%	9.09%	9.00%
5.	Wanakbori 7*	9.50%	9.07%	9.50%
6.	Sikka Extension (3-4)*	9.00%	9.65%	9.00%
7.	KLTPS 1-3	12.00%	14.24%	12.00%
8.	KLTPS 4	12.00%	21.80%	12.00%
9.	Dhuvaran CCPP 1*	4.00%	7.26%	4.00%
10.	Dhuvaran CCPP 2	3.00%	5.33%	3.00%
11.	Dhuvaran CCPP 3*	3.00%	26.02%	3.00%
12.	Utran Extension*	3.00%	6.04%	3.00%
13.	Ukai 6*	6.00%	5.94%	6.00%
14.	Ukai Hydro	0.60%	1.04%	0.60%
15.	Kadana Hydro	1.00%	0.87%	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 2017-18.

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 2017-18

(kcal/kWh)

Sr. No.	Power Station	Approved as per MYT Order	Actual
1.	Ukai (3-5)	2,715	2,589
2.	Gandhinagar (3-4)	2,625	2,532
3.	Gandhinagar 5*	2,460	2,503
4.	Wanakbori 1-6 TPS	2,625	2,580
5.	Wanakbori 7*	2,460	2,450
6.	Sikka Extension (3-4)*	2,398	2,507
7.	KLTPS 1-3	3,231	3,231
8.	KLTPS 4	3,000	2,968
9.	Dhuvaran CCPP 1*	1,950	2,122
10.	Dhuvaran CCPP 2	1,950	2,056
11.	Dhuvaran CCPP 3*	1,850	3,643
12.	Utran Extension*	1,850	1,848
13.	Ukai 6*	2,385	2,368

* 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 2017-18:

- Gandhinagar 5: Partial load operation due to backing down.
- Sikka 3-4: Partial Operation due to backing down and Boiler and APH choke up, frequent start stops due to RSD and Outages
- Dhuvaran CCPP1, CCPP 2 and CCPP 3: Partial Operation due to backing down and condensor problem and frequent start stop
- Utran Extension: Partial Operation due to backing down and 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, in respect of other stations, some plants have poor heat rate than approved by the Commission while in the case of Sikka Extn 3-4, Dhuvaran CCPP 1, Dhuvaran CCPP 2 and Dhuvaran CCPP 3, the SHR is abnormally high for FY 2017-18. 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.

In the last true up order for FY 2016-17, for Ukai Unit No.4, GSECL submitted that it has improved the heat rate from 2715 kcal/kWh to 2625 kcal/kWh. Accordingly, the Commission has considered the SHR as 2625 kcal/kWh for Ukai (3-5).

For the purpose of truing up for FY 2017-18, the Commission approves the SHR as considered in the MYT Order for FY 2017-18 for all the stations except Ukai TPS as given in the Table below:

Table 4.9: Station Heat Rate approved for FY 2017-18 for truing up
(kcal/kWh)

Sr. No.	Power Station	Approved as per MYT Order	Actual	Approved in truing up
1.	Ukai (3-5)	2,715	2,589	2,625
2.	Gandhinagar (3-4)	2,625	2,532	2,625
3.	Gandhinagar 5*	2,460	2,503	2,460
4.	Wanakbori 1-6 TPS	2,625	2,580	2,625
5.	Wanakbori 7*	2,460	2,450	2,460
6.	Sikka Extension (3-4)*	2,398	2,507	2,398
7.	KLTPS 1-3	3,231	3,231	3,231
8.	KLTPS 4	3,000	2,968	3,000
9.	Dhuvaran CCPP 1*	1,950	2,122	1,950
10.	Dhuvaran CCPP 2	1,950	2,056	1,950
11.	Dhuvaran CCPP 3*	1,850	3,643	1,850
12.	Utran Extension*	1,850	1,848	1,850
13.	Ukai 6*	2,385	2,368	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 2017-18. 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 2017-18

Sr. No.	Power Station	Approved as per MYT Order	Actual (ml/kWh)
1.	Ukai (3-5)	1.00	1.32
2.	Gandhinagar (3-4)	1.00	0.97
3.	Gandhinagar 5*	3.50	0.37
4.	Wanakbori 1-6 TPS	1.00	1.10
5.	Wanakbori 7*	3.50	0.32
6.	Sikka Extension (3-4)*	1.00	1.27
7.	KLTPS 1-3	3.00	8.45
8.	KLTPS 4	3.00	4.35
9.	Ukai 6*	1.00	0.31

* 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 2017-18:

- Ukai (3-5): Unit 4 R&M activity (0.85 ml/kWh)
- Wanakbori (1-6): Start Stop due to RSD (53 Nos) and Higher forced outages (66 Nos)
- Sikka (3-4): Start Stop due to RSD (19 Nos) and Higher forced outages (27 Nos) (0.54 ml/kWh)
- KLTPS 1-3: Start Stop due to Higher forced outages (96 Nos) (5.28 ml/kWh)
- KLTPS 4: Start Stop due to Higher forced outages (27 Nos) (0.84 ml/kWh)

Commission's Analysis

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



Except in case of Gandhinagar (3-4), Gandhinagar 5, Wanakbori 7 and Ukai 6 all other plants have higher SFO consumption than what is approved.

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 2017-18, the Commission approves the specific oil consumption as considered in the MYT Order for FY 2017-18.

Accordingly, the secondary fuel oil consumption approved for FY 2017-18 for various stations is given in the Table below:

Table 4.11: Secondary Fuel Oil Consumption approved for FY 2017-18 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	1.32	1.00
2.	Gandhinagar (3-4)	1.00	0.97	1.00
3.	Gandhinagar 5*	3.50	0.37	3.50
4.	Wanakbori 1-6 TPS	1.00	1.10	1.00
5.	Wanakbori 7*	3.50	0.32	3.50
6.	Sikka Extension (3-4)*	1.00	1.27	1.00
7.	KLTPS 1-3	3.00	8.45	3.00
8.	KLTPS 4	3.00	4.35	3.00
9.	Ukai 6*	1.00	0.31	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 2017-18.

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 2017-18

Sr. No.	Power Station	Approved as per MYT Order	Actual
1.	Ukai (3-5)	0.80%	0.80%
2.	Gandhinagar (3-4)	0.80%	0.80%
3.	Gandhinagar 5*	0.80%	0.80%
4.	Wanakbori 1-6 TPS	0.80%	0.80%
5.	Wanakbori 7*	0.80%	0.80%
6.	Sikka Extension (3-4)*	0.00%	0.80%



Sr. No.	Power Station	Approved as per MYT Order	Actual
7.	KLTPS 1-3	0.20%	0.20%
8.	KLTPS 4	0.20%	0.20%
9.	Ukai 6*	0.80%	0.80%

* PPA based stations

Subsequently, vide email dated 13th February, 2019, the Petitioner has filed the following actual transit loss:

Table 4.13: Actual transit Loss for FY 2017-18

Name of the Power station	Transit Loss (%)
Ukai	0.17%
Gandhinagar	0.22%
Wanakbori	0.16%
Sikka	0.08%

Commission's Analysis

The transit loss as per actuals is less than that approved in the MYT Order dated 31st March, 2017 for FY 2017-18. 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 2017-18 as given in the Table below:

Table 4.14: Transit Loss approved for FY 2017-18 for truing up

Sr. No.	Power Stations	Approved as per MYT Order	Actual	Approved in truing up (%)
1.	Ukai (3-5)	0.80%	0.17%	0.80%
2.	Gandhinagar (3-4)	0.80%	0.22%	0.80%
3.	Gandhinagar 5*	0.80%	0.22%	0.80%
4.	Wanakbori 1-6 TPS	0.80%	0.16%	0.80%
5.	Wanakbori 7*	0.80%	0.16%	0.80%
6.	Sikka Extension (3-4)*	0.00%	0.08%	0.00%
7.	KLTPS 1-3	0.20%	0.20%	0.20%
8.	KLTPS 4	0.20%	0.20%	0.20%
9.	Ukai 6*	0.80%	0.17%	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 2017-18

The performance parameters, approved for different stations for FY 2017-18 after the analysis in the preceding paras for the purpose of truing up of FY 2017-18, are listed in the Table below:

Table 4.15: Performance parameters approved for truing up purpose for the FY 2017-18

Sr. No.	Power Stations	PAF (%)	PLF (%)	Auxiliary consumption (%)	SHR (kcal / kWh)	SFO consumption (ml / kWh)	Transit Loss (%)
1.	Ukai (3-5)	80%	70.75%	9.00%	2625	1.00	0.80%
2.	Gandhinagar (3-4)	84%	62.29%	9.00%	2625	1.00	0.80%
3.	Gandhinagar 5*	85%	78.83%	9.50%	2460	3.50	0.80%
4.	Wanakbori 1-6 TPS	85%	56.39%	9.00%	2625	1.00	0.80%
5.	Wanakbori 7*	85%	80.41%	9.50%	2460	3.50	0.80%
6.	Sikka Extension (3-4)*	85%	61.13%	9.00%	2398	1.00	0.00%
7.	KLTPS 1-3	75%	53.30%	12.00%	3231	3.00	0.20%
8.	KLTPS 4	80%	44.73%	12.00%	3000	3.00	0.20%
9.	Dhuvaran CCPP 1*	85%	21.03%	4.00%	1950	0.00	
10.	Dhuvaran CCPP 2	85%	37.79%	3.00%	1950	0.00	
11.	Dhuvaran CCPP 3*	85%	0.89%	3.00%	1850	0.00	
12.	Utran Extension*	85%	7.85%	3.00%	1850	0.00	
13.	Ukai 6*	85%	68.23%	6.00%	2385	1.00	0.80%
14.	Ukai Hydro	80%	12.14%	0.60%	0	0.00	
15.	Kadana Hydro	80%	14.77%	1.00%	0	0.00	

* 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 2017-18, are given in the Table below:



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Table 4.16: Gross and net generation for FY 2017-18 for truing up purpose

Sr. No.	Power Stations	As per actuals submitted by GSECL				As approved by the Commission			
		Gross Generation (MUs)	Aux. Cons. (%)	Aux. Cons. (MUs)	Net Generation (MUs)	Gross Generation (MUs)	Aux. Cons. (%)	Aux. Cons. (MUs)	Net Generation (MUs)
1.	Ukai (3-5)	3780.60	9.67%	365.58	3415.01	3780.60	9.00%	340.25	3440.34
2.	Gandhinagar (3-4)	2291.78	10.59%	242.78	2049.00	2291.78	9.00%	206.26	2085.52
3.	Gandhinagar 5*	1450.18	9.82%	142.44	1307.74	1450.18	9.50%	137.77	1312.41
4.	Wanakbori 1-6 TPS	6224.50	9.09%	565.59	5658.92	6224.50	9.00%	560.21	5664.30
5.	Wanakbori 7*	1479.25	9.07%	134.21	1345.04	1479.25	9.50%	140.53	1338.72
6.	Sikka Extension (3-4)*	2677.50	9.65%	258.42	2419.09	2677.50	9.00%	240.98	2436.53
7.	KLTPS 1-3	1003.91	14.24%	142.95	860.96	1003.91	12.00%	120.47	883.44
8.	KLTPS 4	293.86	21.80%	64.07	229.79	293.86	12.00%	35.26	258.59
9.	Dhuvaran CCPP 1*	196.38	7.26%	14.25	182.13	196.38	4.00%	7.86	188.52
10.	Dhuvaran CCPP 2	372.23	5.33%	19.84	352.39	372.23	3.00%	11.17	361.07
11.	Dhuvaran CCPP 3*	29.42	26.02%	7.65	21.76	29.42	3.00%	0.88	28.53
12.	Utran Extension*	257.59	6.04%	15.55	242.04	257.59	3.00%	7.73	249.86
13.	Ukai 6*	2988.47	5.94%	177.52	2810.96	2988.47	6.00%	179.31	2809.17
14.	Ukai Hydro	324.42	1.04%	3.37	321.05	324.42	0.60%	1.95	322.47
15.	Kadana Hydro	313.03	0.87%	2.72	310.31	313.03	1.00%	3.13	309.90
	Total	23683.12		2156.94	21526.18	23683.12		1993.74	21689.38

* 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 2017-18 as given in the Table below:

Table 4.17: Wt. Avg. Gross Calorific Value (GCV) of fuels for different stations for FY 2017-18

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)	3901			10459
2.	Gandhinagar (3-4)	3690			10420
3.	Gandhinagar 5*	3829			10467
4.	Wanakbori 1-6 TPS	3864			10386
5.	Wanakbori 7 TPS*	3834			10491
6.	Sikka Extension (3-4)*	5022			10348
7.	KLTPS 1-3		2618		10261
8.	KLTPS 4		2581		10261
9.	Dhuvaran CCPP 1*			9618	
10.	Dhuvaran CCPP 2			9596	
11.	Dhuvaran CCPP 3*			9486	
12.	Utran Extension*			9366	
13.	Ukai 6*	3949			10438

* 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 2017-18 as given in the Table below:

Table 4.18: The Mix of Different Types of Coal for FY 2017-18

Sr. No.	Power Station	Mix of coal (%)		
		Indigenous	Washed	Imported
1.	Ukai (3-5)	37.99%	54.77%	7.24%
2.	Gandhinagar (3-4)	45.81%	46.38%	7.80%
3.	Gandhinagar 5*	34.55%	56.31%	9.14%
4.	Wanakbori 1-6 TPS	32.07%	64.15%	3.79%



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Sr. No.	Power Station	Mix of coal (%)		
		Indigenous	Washed	Imported
5.	Wanakbori 7*	55.18%	40.94%	3.88%
6.	Sikka Extension (3-4)*	0.00%	1.55%	98.45%
7.	KLTPS 1-3	0.00%		
8.	KLTPS 4			
9.	Dhuvaran CCPP 1*			
10.	Dhuvaran CCPP 2			
11.	Dhuvaran CCPP 3*			
12.	Utran Extension*			
13.	Ukai 6*	10.72%	77.71%	11.57%

* 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 2017-18, as given in the Table below:

Table 4.19: Wt. Avg. Price / Unit of Fuels for 2017-18 (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)	3939	4387	7314			24869
2.	Gandhinagar (3-4)	4237	4749	6748			26755
3.	Gandhinagar 5*	4268	4826	6784			26755
4.	Wanakbori 1-6 TPS	4176	4212	7256			26664
5.	Wanakbori 7*	4176	4216	7282			26664
6.	Sikka Extension (3-4)*	0	5149	6998			28996
7.	KLTPS 1-3				1472		32818
8.	KLTPS 4				1462		32818
9.	Dhuvaran CCPP 1*					9.62	
10.	Dhuvaran CCPP 2					9.81	
11.	Dhuvaran CCPP 3*					23.85	
12.	Utran Extension*					25.32	
13.	Ukai 6*	3983	4405	7374			25103

* PPA based stations

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 2017-18 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 2017-18 for truing up purpose, along with the actuals furnished by GSECL, are given in the Table below:



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Table 4.20: Fuel Cost of different stations for FY 2017-18 Truing up

Sr. No.	Power Stations	As per actuals submitted by GSECL				As approved by the Commission			
		Gross Generation (MUs)	Net Generation (MUs)	Fuel Cost (Rs. Crore)	Fuel Cost per unit (Rs./kWh)	Gross Generation (MUs)	Net Generation (MUs)	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)	3780.60	3415.01	1125.44	3.30	3780.60	3440.34	1139.42	3.31
2.	Gandhinagar (3-4)	2291.78	2049.00	742.71	3.62	2291.78	2085.52	769.98	3.69
3.	Gandhinagar 5*	1450.18	1307.74	460.07	3.52	1450.18	1312.41	458.37	3.49
4.	Wanakbori 1-6 TPS	6224.50	5658.92	1817.43	3.21	6224.50	5664.30	1847.98	3.26
5.	Wanakbori 7*	1479.25	1345.04	411.47	3.06	1479.25	1338.72	420.12	3.14
6.	Sikka Extension (3-4)*	2677.50	2419.09	936.48	3.87	2677.50	2436.53	894.97	3.67
7.	KLTPS 1-3	1003.91	860.96	205.59	2.39	1003.91	883.44	190.83	2.16
8.	KLTPS 4	293.86	229.79	52.96	2.30	293.86	258.59	52.42	2.03
9.	Dhuvaran CCPP 1*	196.38	182.13	41.66	2.29	196.38	188.52	38.29	2.03
10.	Dhuvaran CCPP 2	372.23	352.39	78.21	2.22	372.23	361.07	74.17	2.05
11.	Dhuvaran CCPP 3*	29.42	21.76	26.95	12.38	29.42	28.53	13.68	4.80
12.	Utran Extension*	257.59	242.04	128.74	5.32	257.59	249.86	128.85	5.16
13.	Ukai 6*	2988.47	2810.96	849.58	3.02	2988.47	2809.17	858.28	3.06
14.	Ukai Hydro	324.42	321.05	0.00	-	324.42	322.47	-	-
15.	Kadana Hydro	313.03	310.31	0.00	-	313.03	309.90	-	-
	Total	23683.12	21526.18	6877.28	3.19	23683.12	21689.38	6887.34	3.18

* 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 2017-18 and the cost approved for truing up purpose is given in the Table below:

Table 4.21: Cost of different fuels as per audited annual accounts and as approved for Truing up for FY 2017-18

(Rs. Crore)			
Sr. No.	Particulars	Cost as per Annual Accounts	Cost as approved
1.	Fuel Cost	6877.28	6837.15
2.	Water Charges	143.98	
3.	Cost of Trading Activity	57.23	
4.	Sale of Reject Coal	19.86	
5.	Loss on Physical Verification of Coal Stock	1.35	
6.	Total Fuel Cost as per Accounts	7099.70	

Total fuel cost as per annual accounts is Rs. 7099.70 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 2017-18 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. While there is a gain of Rs. 86.77 Crore, there is also a loss of Rs. 31.82 Crore due to controllable factors



resulting into a net gain of Rs. 54.95 Crore in fuel expenses on account of operational efficiencies during FY 2017-18. 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 totaling to net gain of Rs. 16.33 Crore as given in the Table below:

Table 4.22: Approved Gains / (losses) from Fuel Expenses for FY 2017-18

(Rs. Crore)

Sr. No.	Power Station	Actual Fuel cost incurred by GSECL	Fuel cost arrived with approved parameters for actual net generation for 2017-18	Gain /(Loss) due to Controllable Factors
1.	Ukai (3-5)	1125.44	1131.03	5.59
2.	Gandhinagar (3-4)	742.71	756.49	13.78
3.	Wanakbori 1-6 TPS	1817.43	1846.22	28.79
4.	KLTPS 1-3	205.59	185.97	(19.62)
5.	KLTPS 4	52.96	46.58	(6.38)
6.	Dhuvaran CCPP 2	78.21	72.39	(5.82)
7.	Ukai Hydro	0.00	0.00	-
8.	Kadana Hydro	0.00	0.00	-
9.	Ukai 6*	849.58	858.83	
10.	Gandhinagar 5*	460.07	456.73	
11.	Wanakbori 7*	411.47	422.10	
12.	Sikka Extension (3-4)*	936.48	888.56	
13.	Dhuvaran CCPP 1*	41.66	36.99	
14.	Dhuvaran CCPP 3*	26.95	10.44	
15.	Utran Extension*	128.74	124.82	
	Total	6877.28	6837.15	16.33

* PPA based stations

4.6 Fixed Charges

4.6.1 Depreciation for FY 2017-18

Petitioner's Submission

GSECL has claimed Rs. 723.94 Crore towards depreciation charges in the Truing up for FY 2017-18. The depreciation approved for FY 2017-18 by the Commission in the MYT Order dated 31st March, 2017 and now claimed by GSECL are as given in the Table below:



Table 4.23: Depreciation for FY 2017-18

	(Rs. Crore)	
Particulars	Approved as per MYT Order	Actual claimed
Depreciation	862.78	723.94

The Petitioner submitted that the Commission in the MYT Order dated 31st March, 2017 has observed the following:

“Further, Regulation 39 of the GERC (MYT) Regulations, 2016 stipulates the methodology for the calculation of depreciation as under:

“The Generation Company or Transmission Licensee or SLDC or Distribution Licensee shall be permitted to recover depreciation on the value of fixed assets used in their respective Business computed in the following manner:

(a) The approved original cost of the project/fixed assets shall be the value base for calculation of depreciation;

(b) Depreciation shall be computed annually based on the straight line method at the rates specified in the Annexure I to these Regulations:

Provided that the remaining depreciable value as on 31st March of the year closing after a period of 12 years from date of commercial operation shall be spread over the balance useful life of the assets:

Provided further that for a Generating Company or a Transmission Licensee or SLDC or a Distribution Licensee formed as a result of a Transfer Scheme, the depreciation on assets transferred under the Transfer Scheme shall be charged as per rates specified in these Regulations for a period of 12 years from the date of the Transfer Scheme, and thereafter depreciation will be spread over the balance useful life of the assets:”

In view of above, GSECL is hereby directed to calculate the depreciation from FY 2017-18 as per the aforesaid Regulation of the GERC (MYT) Regulations, 2016. For consideration of 12 years, GSECL shall consider 1st April, 2005 as the date of commencement of 12 years period. GSECL shall align its mechanism for calculation of Depreciation with the stipulations of Regulations and the Commission shall consider depreciation calculated as per the MYT Regulations, 2016 for truing up from FY 2017-18.”



Accordingly, GSECL has calculated the Depreciation for FY 2017-18 in accordance with the provisions of the GERC (MYT) Regulations, 2016 and the afore-mentioned directives of the Commission and a gain of Rs. 135.96 Crore.

The station-wise depreciation approved as per the MYT Order dated 31st March, 2017 for FY 2017-18, 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 4.24: Gains / Losses from Depreciation claimed for FY 2017-18

(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)	72.06	33.46		38.60
2.	Gandhinagar (3-4)	55.81	31.96		23.85
3.	Wanakbori 1-6 TPS	101.36	67.60		33.76
4.	Sikka TPS	17.22	0.00		
5.	KLTPS 1-3	65.83	33.13		32.70
6.	KLTPS 4	36.03	35.65		0.38
7.	Dhuvaran CCPP 2	20.67	22.32		(1.65)
8.	Ukai Hydro	-	2.15		(2.15)
9.	Kadana Hydro	15.63	5.14		10.49
10.	Ukai 6*	141.13	152.88		
11.	Gandhinagar 5*	-	2.16		
12.	Wanakbori 7*	-	2.13		
13.	Sikka Extension (3-4)*	172.90	179.68		
14.	Dhuvaran CCPP 1*	21.24	8.83		
15.	Dhuvaran CCPP 3*	76.43	78.77		
16.	Utran Extension*	66.47	68.06		
	Total	862.78	723.94	-	135.96

* PPA based stations

Commission's Analysis

The Commission has observed that as per audited annual accounts the depreciation for the year is Rs. 723.94 Crore. Additional information was sought from GSECL for RE assets depreciation for the respective power stations. In reply, GSECL has submitted that it has claimed depreciation of Rs. 723.94 Crore, however, revised depreciation after deduction of RE depreciation is Rs. 717.02 Crore as mentioned in the Table below:



Table 4.25: Statement of Depreciation with RE Assets for FY 2017-18

(Rs. Crore)

Sr No	Name of Power Station	Actual claimed in Petition	RE Depreciation	Revised Net Depreciation
1.	Ukai (3-5)	33.46	0.00	33.46
2.	Gandhinagar (3-4)	31.96	3.32	28.65
3.	Gandhinagar 5*	2.16	0.00	2.16
4.	Wanakbori 1-6 TPS	67.60	0.02	67.58
5.	Wanakbori 7*	2.13	0.00	2.13
6.	Sikka TPS	0.00	0.00	0.00
7.	Sikka Extension (3-4)*	33.13	0.33	32.80
8.	KLTPS 1-3	35.65	3.25	32.40
9.	KLTPS 4	8.83	0.00	8.83
10.	Dhuvaran CCPP 1*	22.32	0.00	22.32
11.	Dhuvaran CCPP 2	78.77	0.00	78.77
12.	Dhuvaran CCPP 3*	152.88	0.00	152.88
13.	Utran Extension*	68.06	0.00	68.06
14.	Ukai 6*	179.68	0.00	179.68
15.	Ukai Hydro	2.15	0.00	2.15
16.	Kadana Hydro	5.14	0.00	5.14
	Total	723.94	6.92	717.02

* PPA based stations

The Commission has computed the depreciation for all the stations, taking into consideration the closing GFA of FY 2016-17 as the opening GFA for FY 2017-18, and adding the assets capitalized and deduction during FY 2017-18 as given in the Table below:

Table 4.26: Approved Gross Fixed Assets

(Rs. Crore)

Sr. No.	Particulars	Opening GFA	Additions	Deductions	Closing GFA
1.	Ukai (3-5)	1490.22	338.98	559.98	1269.22
2.	Gandhinagar (3-4)	1156.95	26.11	1.69	1181.37
3.	Gandhinagar 5*	657.84	-	-	657.84
4.	Wanakbori 1-6 TPS	1854.51	293.55	2.73	2145.33
5.	Wanakbori 7*	638.97	-	-	638.97
6.	Sikka TPS	675.77	-	677.05	(1.28)
7.	Sikka Extension (3-4)*	3307.05	56.20	0.10	3363.15
8.	KLTPS 1-3	1313.86	22.96	0.00	1336.81
9.	KLTPS 4	686.70	-	-	686.70
10.	Dhuvaran CCPP 1*	406.47	0.52	0.17	406.82
11.	Dhuvaran CCPP 2	421.50	0.69	-	422.19
12.	Dhuvaran CCPP 3*	1542.32	0.85	-	1543.17



Sr. No.	Particulars	Opening GFA	Additions	Deductions	Closing GFA
13.	Utran Extension*	1355.80	0.82	0.17	1356.45
14.	Ukai 6*	2927.77	20.46	-	2948.23
15.	Ukai Hydro	175.45	2.53	0.42	177.56
16.	Kadana Hydro	325.25	1.68	0.78	326.15
	Total	18936.43	765.34	1243.09	18458.68

* PPA based stations

The Commission has observed that the Petitioner has complied with the provisions of Regulation 39 (b). Accordingly, the Commission has considered the depreciation rate as claimed by the Petitioner except in case of the following stations:

- a. **GTPS 5 and Wanakbori 7:** Since the assets of these two stations have been depreciated up to 90% of its GFA value, no depreciation is allowed on Opening gross fixed assets. Further, since the Petitioner has not claimed any assets addition during the year in respect of these two stations, correspondingly no depreciation is claimed.
- b. **Sikka Extension (3-4):** The Petitioner, vide email dated 15th January, 2019, informed that the assets of decommissioned Sikka (1-2) units of Rs 119.52 Crore were transferred to Sikka extension (3-4). Hence, Rs. 119.52 Crores has been reduced from the additions amount.
- c. Assets addition of Rs 1.00 Crore on corporate allocation has been reduced from the additions amount of all the 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 at Rs. 142.56 Crore.

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

The Commission, accordingly approves the station-wise depreciation charges and the gain / (loss) on account of depreciation in the Truing up for FY 2017-18 as detailed in the Table below:



Table 4.27: Approved station-wise depreciation charges and gains/(losses) from Depreciation for FY 2017-18

(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)	72.06	33.46	33.46		38.60
2.	Gandhinagar (3-4)	55.81	28.65	28.64		27.17
3.	Wanakbori 1-6 TPS	101.36	67.58	67.58		33.78
4.	KLTPS 1-3	65.83	29.88	29.88		35.95
5.	KLTPS 4	36.03	35.65	35.65		0.38
6.	Dhuvaran CCPP 2	20.67	22.32	22.32		(1.65)
7.	Ukai Hydro	-	2.15	2.15		(2.15)
8.	Kadana Hydro	15.63	5.14	5.14		10.49
	Sub Total A	367.39	224.84	224.83		142.56
9.	Ukai Extn. *	141.13	152.88	152.88		
10.	Gandhinagar 5*	-	2.16	0.00		
11.	Wanakbori 7* TPS	-	2.13	0.00		
12.	Sikka Extn.(3-4)*	172.90	179.35	176.19		
13.	Dhuvaran CCPP 1*	21.24	8.83	8.83		
14.	Dhuvaran CCPP 3*	76.43	78.77	78.77		
15.	Utran Extn.*	66.47	68.06	68.06		
	Sub Total B	478.17	492.18	484.73		
	Total (A+B)	845.56	717.02	709.55		142.56

* PPA based stations

4.6.2 Interest and Finance charges for FY 2017-18

Petitioner's Submission

GSECL has claimed Rs. 470.37 Crore towards interest and finance charges in the Truing up for FY 2017-18. The interest and finance charges, approved for FY 2017-18 by the Commission in the MYT Order, and now claimed by GSECL as actual, are given in the Table below:

Table 4.28: Interest and Finance Charges claimed in truing up for FY 2017-18

(Rs. Crore)		
Particulars	Approved as per MYT Order	Actual claimed
Interest and Finance charges	562.91	470.37

GSECL has claimed Rs. 34.79 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 2017-18 and the gains / losses are given in the Table below:

Table 4.29: Gains / Losses from Interest & Finance charges claimed for FY 2017-18

(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)	24.73	5.82		18.91
2.	Gandhinagar (3-4)	11.90	-		11.90
3.	Wanakbori 1-6 TPS	17.25	16.79		0.46
4.	Sikka TPS	0.35	-		-
5.	KLTPS 1-3	1.08	2.80		(1.72)
6.	KLTPS 4	19.26	16.01		3.25
7.	Dhuvaran CCPP 2	8.75	7.05		1.70
8.	Ukai Hydro	2.57	2.29		0.28
9.	Kadana Hydro	-	-		-
10.	Ukai 6*	141.16	121.51		-
11.	Gandhinagar 5*	-	-		-
12.	Wanakbori 7*	-	-		-
13.	Sikka Extension (3-4)*	197.24	178.37		-
14.	Dhuvaran CCPP 1*	-	-		-
15.	Dhuvaran CCPP 3*	87.63	75.41		-
16.	Utran Extension*	50.99	44.33		-
	Total	562.91	470.37		34.79

* PPA based stations

Commission's Analysis

Commission has analyzed the audited annual accounts of GSECL for FY 2017-18 and obtained the details of loans outstanding and the rate of interest for different stations. Commission has considered the Closing Loans of FY 2016-17 as approved in FY 2016-17 true-up order as Opening Loans for FY 2017-18 and repayment is considered equal to the depreciation approved by Commission. For the stations for which depreciation allowed is lower than the Opening GFA plus addition in GFA during FY 2017-18 and for the stations for which depreciation is higher than the Opening GFA plus addition in GFA for FY 2017-18, lower amount of these two is considered as repayment since depreciation of asset cannot be more than the Closing GFA making Closing GFA a negative figure. The Petitioner, vide email dated 15th January, 2019, informed that it has decommissioned Sikka TPS 1 & 2 and some assets were transferred to Sikka TPS 3 & 4. Hence, amount of Rs. 119.52 Crore related to Sikka



TPS 1 & 2 has been deducted from the addition of Rs. 175.91 Crore and considered Rs. 56.20 Crore as total additions of assets in Sikka Extension 3 & 4 station during the year.

Table 4.30: Details of Approved Loan for FY 2017-18

(Rs. Crore)

Sr. No.	Power Station	Opening Loan	Additions	Repayment	Closing Loan
1.	Ukai (3-5)	132.94	(154.70)	(21.76)	0.00
2.	Gandhinagar (3-4)	0.00	17.10	17.10	0.00
3.	Gandhinagar 5*	0.00	0.00	0.00	0.00
4.	Wanakbori 1-6 TPS	133.73	203.58	67.60	269.71
5.	Wanakbori 7*	0.00	0.00	0.00	0.00
6.	Sikka Extension (3-4)*	2143.61	39.27	176.51	2006.37
7.	KLTPS 1-3	41.38	16.07	33.13	24.31
8.	KLTPS 4	207.12	0.00	35.65	171.47
9.	Dhuvaran CCPP 1*	0.00	0.24	0.24	0.00
10.	Dhuvaran CCPP 2	94.12	0.48	22.32	72.28
11.	Dhuvaran CCPP 3*	932.35	0.60	78.77	854.18
12.	Utran Extension*	558.44	0.45	68.06	490.84
13.	Ukai 6*	1508.35	14.32	152.88	1369.80
14.	Ukai Hydro	27.54	1.48	2.15	26.87
15.	Kadana Hydro	0.00	0.63	0.63	0.00
	Total	5779.58	139.51	629.69	5289.40

* PPA based stations

The weighted average rate of interest of 8.18% 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 2017-18 as detailed in the Table below:

Table 4.31: Approved Interest and Finance charges and gain/ (loss) for FY 2017-18

(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)	24.73	5.82	5.86		18.87
2.	Gandhinagar (3-4)	11.90	-	0.00		11.90
3.	Wanakbori 1-6 TPS	17.25	16.79	16.93		0.32
4.	KLTPS 1-3	1.08	2.80	2.95		(1.87)
5.	KLTPS 4	19.26	16.01	16.15		3.11
6.	Dhuvaran CCPP 2	8.75	7.05	7.11		1.64
7.	Ukai Hydro	2.57	2.29	2.31		0.26
8.	Kadana Hydro	-	-	0.00		-
	Sub Total A	85.54	50.75	51.32		34.22
9.	Ukai Extn. *	141.16	121.51	122.57		
10.	Gandhinagar 5*	-	-	0.00		
11.	Wanakbori 7* TPS	-	-	0.00		
12.	Sikka Extn.(3-4)*	197.24	178.37	176.65		
13.	Dhuvaran CCPP 1*	-	-	0.00		
14.	Dhuvaran CCPP 3*	87.63	75.41	76.07		
15.	Utran Extn.*	50.99	44.33	44.71		
	Sub Total B	477.02	419.62	420.00		
	Total (A+B)	562.56	470.37	471.33		34.22

* PPA based stations

4.6.3 Return on Equity for FY 2017-18

Petitioner's Submission

GSECL has claimed Rs. 704.48 Crore towards RoE in the Truing up for FY 2017-18. The RoE approved for FY 2017-18 by the Commission in the MYT Order 31st March, 2017 for FY 2017-18, and now claimed by GSECL as actual are given in Table below:

Table 4.32: Return on Equity for FY 2017-18

(Rs. Crore)		
Particulars	Approved as per MYT Order	Actual claimed
Return on Equity	711.03	704.48

GSECL has submitted that the comparison of actual value for Return on Equity computed based on Opening Equity for FY 2017-18 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 2017-18 resulted in a loss of Rs. 2.64 Crore attributed to uncontrollable factors. The station-wise RoE claimed by GSECL in the truing for FY 2017-18 and the gains/ (losses) are given in the Table below:

Table 4.33: Gains / Losses from Return on equity claimed for FY 2017-18

(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)	25.70	24.89		0.81
2.	Gandhinagar (3-4)	17.30	20.89		(3.59)
3.	Wanakbori 1-6 TPS	73.98	73.52		0.46
4.	Sikka TPS	9.74	-		-
5.	KLTPS 1-3	48.47	49.82		(1.35)
6.	KLTPS 4	29.20	28.76		0.44
7.	Dhuvaran CCPP 2	14.74	14.14		0.60
8.	Ukai Hydro	10.42	10.48		(0.06)
9.	Kadana Hydro	28.60	28.55		0.05
10.	Ukai Extn. *	122.46	123.40		
11.	Gandhinagar 5*	30.88	28.67		
12.	Wanakbori 7* TPS	28.03	26.17		
13.	Sikka Extn.(3-4)*	137.53	142.59		
14.	Dhuvaran CCPP 1*	11.07	10.45		
15.	Dhuvaran CCPP 3*	65.36	64.80		
16.	Utran Extn.*	57.55	57.36		
	Total	711.03	704.48		(2.64)

* PPA based stations

Commission's Analysis

The Commission has observed that GSECL has compared the actual RoE of Rs. 704.48 Crore for FY 2017-18 with the RoE of Rs. 711.03 Crore approved in the MYT Order dated 31st March, 2017 and arrived at a loss of Rs. 2.64 Crore.

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

The Commission has taken the closing equity of FY 2016-17 as the opening equity of FY 2017-18, further 30% of net addition has been considered as equity addition during the year as given in the Table below:



Table 4.34: Approved Equity for FY 2017-18

(Rs. Crore)				
Sr. No.	Power Station	Opening Equity	Addition	Closing Equity
1.	Ukai (3-5)	210.89	(66.30)	144.59
2.	Gandhinagar (3-4)	145.53	7.33	152.86
3.	Gandhinagar 5*	220.57	0.00	220.57
4.	Wanakbori 1-6 TPS	481.49	87.25	568.74
5.	Wanakbori 7*	201.22	0.00	201.22
6.	Sikka Extension (3-4)*	992.12	16.83	1008.95
7.	KLTPS 1-3	352.39	6.89	359.28
8.	KLTPS 4	205.43	0.00	205.43
9.	Dhuvaran CCPP 1*	80.31	0.10	80.41
10.	Dhuvaran CCPP 2	100.90	0.21	101.11
11.	Dhuvaran CCPP 3*	462.70	0.26	462.96
12.	Utran Extension*	409.63	0.19	409.82
13.	Ukai 6*	878.33	6.14	884.47
14.	Ukai Hydro	74.56	0.63	75.19
15.	Kadana Hydro	203.79	0.27	204.06
	Total	5019.86	59.79	5079.65

* 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 2017-18 as detailed in the Table below:

Table 4.35: Approved Return on Equity and gain/ (loss) for FY 2017-18

(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)	25.70	24.89	24.88		0.82
2.	Gandhinagar (1-4)	17.30	20.89	20.89		(3.59)



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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
3.	Wanakbori 1-6 TPS	73.98	73.52	73.52		0.46
4.	KLTPS 1-3	48.47	49.82	49.82		(1.35)
5.	KLTPS 4	29.20	28.76	28.76		0.44
6.	Dhuvaran CCPP 2	14.74	14.14	14.14		0.60
7.	Ukai Hydro	10.42	10.48	10.48		(0.06)
8.	Kadana Hydro	28.60	28.55	28.55		0.05
	Subtotal A	248.41	251.05	251.04		(2.63)
9.	Ukai Extn. 6*	122.46	123.40	123.40		
10.	Gandhinagar 5*	30.88	28.67	28.67		
11.	Wanakbori 7* TPS	28.03	26.17	26.16		
12.	Sikka Extn.(3-4)*	137.53	142.59	140.08		
13.	Dhuvaran CCPP 1*	11.07	10.45	10.45		
14.	Dhuvaran CCPP 3*	65.36	64.80	64.80		
15.	Utran Extn.*	57.55	57.36	57.36		
	Subtotal B	452.88	453.43	450.91		
	Total (A+B)	701.29	704.48	701.94		(2.63)

* PPA based stations

4.6.4 O&M Expenses for FY 2017-18

Petitioner's Submission

GSECL had earlier claimed Rs. 1,044.54 Crore towards actual O&M expenses in the truing up for FY 2017-18. However, subsequently vide e-mail dated 11th January, 2019, the Petitioner informed that it has inadvertently claimed less employee cost by Rs. 33.75 Crore considering employee cost as Rs. 673.48 Crore instead of Rs. 707.23 Crore and that inclusion of the above changes will require change in certain parts of the petition. The reconciliation of the same with annual account was also given by GSECL. Accordingly, GSECL has claimed Rs. 1078.29 Crore towards actual O&M expenses in the Truing up for FY 2017-18. The O&M charges approved for FY 2017-18 by the Commission in the MYT Order, and now claimed by GSECL are given in the Table below:

Table 4.36: O&M expenses for FY 2017-18

(Rs. Crore)

Particulars	Approved as per MYT Order	Actual claimed
O&M Expenses	1,174.05	1,078.29



GSECL submitted that the O&M expenses have been classified as “controllable” in the true-up for previous years. 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 towards the 7th Pay Commission and considering the impact thereof, has worked out a gain of Rs. 0.30 Crore due to controllable factors and a loss of Rs. 33.75 Crore due to uncontrollable factors as per the revised submission of the O&M expenses for all the stations. 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 2017-18 are given in the Table below:

Table 4.37: Gains / Losses from O&M expenses for FY 2017-18

(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)	217.09	203.28	20.84	(7.04)
2.	Gandhinagar (3-4)	86.65	120.19	(29.12)	(4.42)
3.	Wanakbori 1-6 TPS	226.73	221.40	12.78	(7.45)
4.	Sikka TPS	80.09	-	-	
5.	KLTPS 1-3	108.60	113.91	(2.15)	(3.16)
6.	KLTPS 4	18.60	15.14	3.81	(0.35)
7.	Dhuvaran CCPP 2	31.72	38.58	(5.89)	(0.98)
8.	Ukai Hydro	19.12	12.70	6.90	(0.49)
9.	Kadana Hydro	23.02	30.67	(6.88)	(0.77)
10.	Ukai Extn. *	81.22	52.81		(0.84)
11.	Gandhinagar 5*	22.08	59.78		(2.21)
12.	Wanakbori 7* TPS	18.33	17.13		(0.53)
13.	Sikka Extn.(3-4)*	90.77	106.88		(3.34)
14.	Dhuvaran CCPP 1*	31.64	36.58		(0.92)
15.	Dhuvaran CCPP 3*	65.89	3.34		(0.06)
16.	Utran Extn.*	52.50	45.90		(1.19)
	Total	1,174.05	1,078.29	0.30	(33.75)

* 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. 682.11 Crore net off expenses capitalised. In addition, expenses on account of Remeasurement of Defined Benefit Plans in respect of employees of Rs. 121.58 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. 803.69 Crore. It is further observed that these expenses include provision of Rs. 77.29 Crore towards impact of 7th Pay Commission and Rs. 19.17 Crore towards SSNNL and SPS. The Employees expenses also include Rs. 33.75 Crore towards actual payment against implementation of 7th Pay Commission for part of the year and that too in respect of some employees. 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. 77.29 Crore on this account from the Employees expenses. Further, the Commission also decides to exclude Rs. 19.17 Crore towards Employees cost in respect of O&M contract being executed for SSNNL and SPS. Accordingly, the net Employees cost works out to Rs. 707.23 Crore.

(ii) Repairs & Maintenance expenses

As per the audited Annual Accounts (Note No. 33), the R&M expenses are to the tune of Rs. 271.44 Crore. The Commission observed that these expenses also include Rs. 13.94 Crore towards O&M contract for SSNNL and SPS. The Commission decides to exclude Rs. 13.94 Crore on this account and approves R&M expenses of Rs. 257.50 Crore.

(iii) Administration & General expenses

As per the audited Annual Accounts, the A&G expenses are Rs. 326.67 Crore net off expenses capitalised of Rs. 2.35 Crore. It is observed that these A&G



expenses include expenses of Rs. 2.93 Crore towards Corporate Social Responsibility, Rs. 208.06 Crore towards Cash Discount, Rs. 0.62 Crore towards provision on Loan to joint Venture, Rs. 2.13 Crore towards O&M contract of SSNNL & SPS and Rs. 4.18 Crore towards SLDC charges. While the SLDC charges are being dealt with separately, the other expenses as mentioned above are excluded from A&G expenses being not admissible to arrive at the net expenses of Rs. 108.75 Crore.

The total O&M expenses considering above approval in respect of these three elements works out to Rs. 1073.48 Crore (707.23 + 257.50 + 108.75). The Commission decides to approve the O&M expenses at Rs. 1073.48 Crore.

Gains / (Loss)

The Commission observed that there is a gain of Rs. 3.15 Crore due to controllable factors and a loss of Rs. 24.65 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 2017-18 as detailed in the Table below:

Table 4.38: Approved O&M expenses gains/losses for FY 2017-18

(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)	217.09	203.28	202.20	21.93	(7.04)
2.	Gandhinagar (3-4)	86.65	120.19	119.72	(28.64)	(4.42)
3.	Wanakbori 1-6 TPS	226.73	221.40	220.74	13.44	(7.45)
4.	KLTPS 1-3	108.60	113.91	113.58	(1.82)	(3.16)
5.	KLTPS 4	18.60	15.14	15.08	3.87	(0.35)
6.	Dhuvaran CCPP 2	31.72	38.58	38.46	(5.76)	(0.98)
7.	Ukai Hydro	19.12	12.70	12.68	6.92	(0.49)
8.	Kadana Hydro	23.02	30.67	30.58	(6.78)	(0.77)
	Subtotal A	731.53	755.88	753.03	3.15	(24.65)
9.	Ukai Extn. 6*	81.22	52.81	52.42		
10.	Gandhinagar 5*	22.08	59.78	59.55		
11.	Wanakbori 7* TPS	18.33	17.13	17.08		
12.	Sikka Extn.(3-4)*	90.77	106.88	105.95		
13.	Dhuvaran CCPP 1*	31.64	36.58	36.46		



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
14.	Dhuvaran CCPP 3*	65.89	3.34	3.25		
15.	Utran Extn.*	52.50	45.90	45.75		
	Subtotal B	362.43	322.41	320.46		
	Total (A+B)	1,093.96	1,078.29	1,073.49	3.15	(24.65)

* PPA based stations

4.6.5 Interest on Working Capital for FY 2017-18

Petitioner's Submission

GSECL has claimed Rs. 324.61 Crore towards interest on working capital in the Truing up for FY 2017-18. The interest on working capital approved for FY 2017-18 in the MYT Order and as claimed in the Truing up are given in the Table below:

Table 4.39: Interest on Working Capital Claimed by GSECL in Truing up for FY 2017-18

(Rs. Crore)

Particulars	Approved as per MYT Order	Actual claimed
Interest on Working Capital	286.51	324.61

GSECL has submitted that they have taken 10.50% (weighted average of 1-year SBI MCLR for FY 2017-18 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 2017-18 indicates a gain of Rs. 1.13 Crore as shown in the Table below:

Table 4.40: Gains / Losses from Interest on working capital claimed for FY 2017-18

(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)	41.34	34.23		7.11
2.	Gandhinagar (3-4)	22.33	26.25		(3.92)
3.	Wanakbori 1-6 TPS	67.10	68.56		(1.46)
4.	Sikka TPS	13.89	-		-
5.	KLTPS 1-3	8.52	9.65		(1.13)
6.	KLTPS 4	3.36	3.46		(0.10)
7.	Dhuvaran CCPP 2	5.72	4.63		1.09



Sr. No.	Power Station	Approved as per MYT Order	Actual claimed	Gain/(Loss) due to Controllable Factors	Gain/(Loss) due to Uncontrollable Factors
8.	Ukai Hydro	0.70	0.60		0.10
9.	Kadana Hydro	1.26	1.84		(0.58)
10.	Ukai Extn. 6*	29.66	30.94		
11.	Gandhinagar 5*	14.59	13.12		
12.	Wanakbori 7* TPS	11.35	10.92		
13.	Sikka Extn.(3-4)*	29.25	38.81		
14.	Dhuvaran CCPP 1*	5.15	4.23		
15.	Dhuvaran CCPP 3*	13.10	48.97		
16.	Utran Extn.*	19.19	28.42		
	Total	286.51	324.61		1.13

* 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 2017-18 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 10.50% as per the GERC (MYT) Regulations, 2016.

The interest on working capital is calculated at Rs 256.81 Crore based on the expenses approved in the truing up for FY 2017-18.

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 2017-18 as detailed in the Table below:



Table 4.41: Approved Gains/ (Losses) from Interest on Working Capital for FY 2017-18

(Rs. Crore)

Sr. No.	Power Station	Approved as per MYT order	Actual claimed	Approved in truing up	Deviation (+/-)	Gain/(Loss) due to Controllable Factors	Gain/(Loss) due to Uncontrollable Factors
1	Ukai (3-5)	41.34	34.23	32.87	8.47		8.47
2	Gandhinagar (3-4)	22.33	26.25	24.62	(2.29)		(2.29)
3	Wanakbori 1-6 TPS	67.10	68.56	60.96	6.14		6.14
5	KLTPS 1-3	8.52	9.65	8.32	0.20		0.20
6	KLTPS 4	3.36	3.46	3.05	0.31		0.31
7	Dhuvaran CCPP 2	5.72	4.63	3.06	2.66		2.66
8	Ukai Hydro	0.70	0.60	0.90	(0.20)		(0.20)
9	Kadana Hydro	1.26	1.84	1.83	(0.57)		(0.57)
	Subtotal A	150.33	149.20	135.62	14.71		14.71
10	Ukai Extn. 6*	29.66	30.94	29.16			
11	Gandhinagar 5*	14.59	13.12	12.79			
12	Wanakbori 7* TPS	11.35	10.92	10.95			
13	Sikka Extn.(3-4)*	29.25	38.81	34.18			
14	Dhuvaran CCPP 1*	5.15	4.23	2.66			
15	Dhuvaran CCPP 3*	13.10	48.97	15.21			
16	Utran Extn.*	19.19	28.42	16.25			
	Subtotal B	122.29	175.40	121.19			
	Total (A+B)	272.62	324.61	256.81	14.71		14.71

* PPA based stations

4.6.6 SLDC Charges for FY 2017-18

Petitioner's Submission

GSECL has claimed Rs.4.18 Crore towards SLDC charges in the Truing up for FY 2017-18.

SLDC charges approved by the Commission in the MYT Order for FY 2017-18, and now claimed by GSECL as actual are tabulated below:

Table 4.42: SLDC charges for FY 2017-18

(Rs. Crore)

Particulars	Approved as per MYT Order	Actual claimed
SLDC charges	3.66	4.18



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 2017-18 and Gains/(Losses) on account of uncontrollable factors are given in the Table below:

Table 4.43: Gain/ (loss) for SLDC charges claimed for FY 2017-18

(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	0.50		0.10
2.	Gandhinagar (3-4)	0.50	0.49		0.01
3.	Wanakbori 1-6 TPS	0.81	0.91		(0.10)
4.	Sikka TPS	0.16	-		-
5.	KLTPS 1-3	0.17	0.16		0.01
6.	KLTPS 4	0.02	0.05		(0.03)
7.	Dhuvaran CCPP 2	0.05	0.10		(0.05)
8.	Ukai Hydro	0.17	0.22		(0.05)
9.	Kadana Hydro	0.15	0.18		(0.03)
10.	Ukai Extn. *	0.34	0.36		
11.	Gandhinagar 5*	0.05	-		
12.	Wanakbori 7* TPS	0.05	0.15		
13.	Sikka Extn.(3-4)*	0.23	0.42		
14.	Dhuvaran CCPP 1*	0.05	0.09		
15.	Dhuvaran CCPP 3*	0.17	0.27		
16.	Utran Extn.*	0.14	0.27		
	Total	3.66	4.18		(0.14)

* PPA based stations

Commission’s Analysis

SLDC charges are not reflected separately in the annual accounts but are included in Other Expenses (Note 33). On a query from the Commission, GSECL, vide e-mail dated 15th January, 2019, submitted that SLDC charges of Rs. 4.18 Crore are clubbed with A&G expenses and claimed A&G Expenses after reducing Rs. 4.18 Crore therefrom as SLDC Charges.

The Commission approves Rs. 4.18 Crore towards SLDC charges in the truing up for FY 2017-18 as claimed by GSECL against Rs. 3.66 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 4.44: Approved SLDC charges gains/ (losses) for FY 2017-18

(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)	0.60	0.50	0.50	0.10		0.10
2.	Gandhinagar (1-4)	0.50	0.49	0.49	0.01		0.01
3.	Wanakbori 1-6 TPS	0.81	0.91	0.91	(0.10)		(0.10)
4.	KLTPS 1-3	0.17	0.16	0.16	0.01		0.01
5.	KLTPS 4	0.02	0.05	0.05	(0.03)		(0.03)
6.	Dhuvaran CCPP 2	0.05	0.10	0.10	(0.05)		(0.05)
7.	Ukai Hydro	0.17	0.22	0.22	(0.05)		(0.05)
8.	Kadana Hydro	0.15	0.18	0.18	(0.03)		(0.03)
	Subtotal A	2.47	2.61	2.61	(0.14)		(0.14)
9.	Ukai Extn. 6*	0.34	0.36	0.36			
10.	Gandhinagar 5*	0.05	-	-			
11.	Wanakbori 7* TPS	0.05	0.15	0.15			
12.	Sikka Extn.(3-4)*	0.23	0.42	0.42			
13.	Dhuvaran CCPP 1*	0.05	0.09	0.09			
14.	Dhuvaran CCPP 3*	0.17	0.27	0.27			
15.	Utran Extn.*	0.14	0.27	0.27			
	Subtotal B	1.03	1.57	1.57			
	Total (A+B)	3.50	4.18	4.18	(0.14)		(0.14)

* PPA based stations

4.6.7 Water Charges for FY 2017-18

GSECL has claimed Rs. 129.04 Crore towards water charges in the Truing up for FY 2017-18 against Rs. 71.69 Crore approved in the MYT Order as given in the Table below:

Table 4.45: Water Charges for FY 2017-18

(Rs. Crore)		
Particulars	Approved as per MYT Order	Actual claimed
Water Charges	71.69	129.04



Petitioner's Submission

GSECL has submitted that it has considered the Gains/(Losses) on account of water charges as "uncontrollable". 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 2017-18 and Gains/(Losses) on account of uncontrollable factors are given in the Table below:

Table 4.46: Gain/ (loss) for Water charges claimed for FY 2017-18

(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)	0.13	0.22		(0.09)
2.	Gandhinagar (3-4)	7.01	43.05		(36.04)
3.	Wanakbori 1-6 TPS	35.76	47.97		(12.21)
4.	Sikka TPS	2.28	-		
5.	KLTPS 1-3	0.43	0.53		(0.10)
6.	KLTPS 4	0.13	0.01		0.12
7.	Dhuvaran CCPP 2	0.76	-		0.76
8.	Ukai Hydro	-	0.07		(0.07)
9.	Kadana Hydro	-	-		-
10.	Ukai Extn. *	0.10	-		
11.	Gandhinagar 5*	11.87	21.53		
12.	Wanakbori 7* TPS	8.18	10.43		
13.	Sikka Extn.(3-4)*	1.19	3.80		
14.	Dhuvaran CCPP 1*	0.21	-		
15.	Dhuvaran CCPP 3*	-	-		
16.	Utran Extn.*	3.64	1.43		
	Total	71.69	129.04		(47.63)

* PPA based stations

Commission's Analysis

Water Charges as per audited accounts are Rs. 143.98 Crore which is inclusive of Rs.14.94 Crore provision towards corporate expenses. The Commission has deducted these corporate expenses and approved Rs. 129.04 Crore towards water charges for GSECL stations as against Rs. 71.69 Crore approved in the MYT Order dated 31st March, 2017 for FY 2017-18.



Gains / (Losses):

As provided in the GERC (MYT) Regulations, 2016, as well as in the MYT Order for FY 2017-18, 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 4.47: Approved Water charges gain/ (loss) for FY 2017-18

(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)	0.13	0.22	0.22	(0.09)		(0.09)
2.	Gandhinagar (1-4)	7.01	43.05	43.05	(36.04)		(36.04)
3.	Wanakbori 1-6 TPS	35.76	47.97	47.97	(12.21)		(12.21)
4.	KLTPS 1-3	0.43	0.53	0.53	(0.10)		(0.10)
5.	KLTPS 4	0.13	0.01	0.01	0.12		0.12
6.	Dhuvaran CCPP 2	0.76	-	-	0.76		0.76
7.	Ukai Hydro	-	0.07	0.07	(0.07)		(0.07)
8.	Kadana Hydro	-	-	-	-		-
	Subtotal A	44.22	91.85	91.85	(47.63)		(47.63)
9.	Ukai Extn. 6*	0.10	-	-			
10.	Gandhinagar 5*	11.87	21.53	21.53			
11.	Wanakbori 7* TPS	8.18	10.43	10.43			
12.	Sikka Extn.(3-4)*	1.19	3.80	3.80			
13.	Dhuvaran CCPP 1*	0.21	-	-			
14.	Dhuvaran CCPP 3*	-	-	-			
15.	Utran Extn.*	3.64	1.43	1.43			
	Subtotal B	25.19	37.19	37.19			
	Total (A+B)	69.41	129.04	129.04	(47.63)		(47.63)

* PPA based stations

4.6.8 Income Tax for FY 2017-18

Petitioner's Submission

GSECL has claimed Rs. 107.17 Crore towards Income Tax in the Truing up for 2017-18. The Income Tax approved for FY 2017-18 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 4.48: Income Tax for FY 2017-18

(Rs. Crore)

Particulars	Approved as per MYT Order	Actual claimed
Income Tax	34.10	107.17

GSECL has claimed Income Tax of Rs. 107.17 Crore as against Rs.34.10 Crore approved in the MYT Order dated 31st March, 2017 in respect of all stations resulting into a loss of Rs. 74.44 Crore due to uncontrollable factors. The station wise details claimed by GSECL are given in the Table below:

Table 4.49: Gain/ (loss) for Income Tax claimed for FY 2017-18

(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)	4.83	11.85		(7.02)
2.	Gandhinagar (3-4)	2.39	8.16		(5.77)
3.	Wanakbori 1-6 TPS	7.17	24.48		(17.31)
4.	Sikka TPS	1.37	-		-
5.	KLTPS 1-3	1.22	4.18		(2.96)
6.	KLTPS 4	0.43	1.46		(1.03)
7.	Dhuvaran CCPP 2	0.64	2.18		(1.54)
8.	Ukai Hydro	1.73	5.92		(4.19)
9.	Kadana Hydro	1.38	4.70		(3.32)
10.	Ukai Extn. *	2.84	9.71		(6.87)
11.	Gandhinagar 5*	1.19	4.08		(2.89)
12.	Wanakbori 7* TPS	1.19	4.08		(2.89)
13.	Sikka Extn.(3-4)*	2.84	9.71		(6.87)
14.	Dhuvaran CCPP 1*	0.61	2.07		(1.46)
15.	Dhuvaran CCPP 3*	2.14	7.31		(5.17)
16.	Utran Extn.*	2.13	7.28		(5.15)
	Total	34.10	107.17		(74.44)

* PPA based stations

Commission's Analysis

The Commission has observed that the actual Income Tax as per the audited annual accounts for FY 2017-18 is Rs. 106.58 Crore. It is further observed that there is a credit of Rs. 1.61 Crore in respect of earlier years. Taking into consideration this credit, the net Income Tax (current) works out to Rs. 104.97 Crore. GSECL has submitted copies



of challans and year wise break up of tax paid in FY 2017-18 vide letter dated 30th December, 2018. The details have been verified.

It is observed that the Income Tax paid by the Petitioner is also on income from SSNNL and RE assets and hence, Commission has reduced the current year Income Tax by Rs. 0.42 Crore pertaining to SSNNL and RE assets.

The Commission accordingly approves Income Tax of Rs. 104.55 Crore for FY 2017-18. The station-wise approved Income Tax and gains/(losses) are given in the Table below:

Table 4.50: Approved Income Tax and gains/ (losses) for FY 2017-18

(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)	4.83	11.85	11.56	(6.73)		(6.73)
2.	Gandhinagar (1-4)	2.39	8.16	7.96	(5.57)		(5.57)
3.	Wanakbori 1-6 TPS	7.17	24.48	23.88	(16.71)		(16.71)
4.	KLTPS 1-3	1.22	4.18	4.07	(2.85)		(2.85)
5.	KLTPS 4	0.43	1.46	1.42	(0.99)		(0.99)
6.	Dhuvaran CCPP 2	0.64	2.18	2.13	(1.49)		(1.49)
7.	Ukai Hydro	1.73	5.92	5.78	(4.05)		(4.05)
8.	Kadana Hydro	1.38	4.70	4.59	(3.21)		(3.21)
	Subtotal A	19.79	62.93	61.39	(41.60)		(41.60)
9.	Ukai Extn. 6*	2.84	9.71	9.48			
10.	Gandhinagar 5*	1.19	4.08	3.98			
11.	Wanakbori 7* TPS	1.19	4.08	3.98			
12.	Sikka Extn.(3-4)*	2.84	9.71	9.48			
13.	Dhuvaran CCPP 1*	0.61	2.07	2.02			
14.	Dhuvaran CCPP 3*	2.14	7.31	7.13			
15.	Utran Extn.*	2.13	7.28	7.10			
	Subtotal B	12.94	44.24	43.16			
	Total (A+B)	32.73	107.17	104.55	(41.60)		(41.60)

* PPA based stations

4.6.9 Non-Tariff Income for FY 2017-18

GSECL has claimed Rs. 116.30 Crore towards Non-Tariff Income in the Truing up FY 2017-18 as against Rs. 157.68 Crore approved in the MYT Order dated 31st March, 2017, as given in the Table below:



Table 4.51: Non-Tariff Income claimed for FY 2017-18

(Rs. Crore)

Particulars	Approved as per MYT Order	Actual claimed
Non-Tariff Income	157.68	116.30

Petitioner's Submission

The Petitioner has submitted the station wise Non-Tariff Income approved in the MYT Order, claimed in the Truing up for FY 2017-18 and the Gains/(Losses) as given in the Table below:

Table 4.52: Gain/ (loss) for Non-Tariff Income claimed for FY 2017-18

(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)	22.11	12.28		(9.83)
2.	Gandhinagar (3-4)	15.47	20.43		4.96
3.	Wanakbori 1-6 TPS	46.29	24.74		(21.55)
4.	Sikka TPS	6.20	-		-
5.	KLTPS 1-3	4.84	3.48		(1.36)
6.	KLTPS 4	1.65	0.01		(1.64)
7.	Dhuvaran CCPP 2	1.81	0.87		(0.94)
8.	Ukai Hydro	3.51	0.02		(3.49)
9.	Kadana Hydro	3.06	0.82		(2.24)
10.	Ukai Extn. *	12.71	28.03		
11.	Gandhinagar 5*	11.93	9.50		
12.	Wanakbori 7* TPS	6.75	4.02		
13.	Sikka Extn.(3-4)*	9.60	10.63		
14.	Dhuvaran CCPP 1*	1.74	0.87		
15.	Dhuvaran CCPP 3*	4.32	-		
16.	Utran Extn.*	5.69	0.61		
	Total	157.68	116.30		(36.10)

* PPA based stations

Commission's Analysis

It is observed that Non-Tariff Income as per audited annual accounts is Rs. 282.68 Crore which includes SSNNL income of Rs. 36.81 Crore, gain on sale of GTPS assets of Rs 37.88 Crore, supervision income of Rs 5.57 Crore, trading activity income of Rs 57.22 Crore, reject coal sale of Rs 19.86 Crore and Interest on Staff Advances of Rs. 9.04 Crore. After excluding these elements, the net non-tariff income works out to Rs.



116.30 Crore and accordingly, the Commission approves the Non-Tariff Income of Rs. 116.30 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 4.53: Approved Non-Tariff Income and gain/ (loss) for FY 2017-18

(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)	22.11	12.28	12.28	(9.83)		(9.83)
2.	Gandhinagar (1-4)	15.47	20.43	20.43	4.96		4.96
3.	Wanakbori 1-6 TPS	46.29	24.74	24.74	(21.55)		(21.55)
4.	KLTPS 1-3	4.84	3.48	3.48	(1.36)		(1.36)
5.	KLTPS 4	1.65	0.01	0.01	(1.64)		(1.64)
6.	Dhuvaran CCPP 2	1.81	0.87	0.87	(0.94)		(0.94)
7.	Ukai Hydro	3.51	0.02	0.02	(3.49)		(3.49)
8.	Kadana Hydro	3.06	0.82	0.82	(2.24)		(2.24)
	Subtotal A	98.74	62.64	62.64	(36.10)		(36.10)
9.	Ukai Extn. 6*	12.71	28.03	28.03			
10.	Gandhinagar 5*	11.93	9.50	9.50			
11.	Wanakbori 7* TPS	6.75	4.02	4.02			
12.	Sikka Extn.(3-4)*	9.60	10.63	10.63			
13.	Dhuvaran CCPP 1*	1.74	0.87	0.87			
14.	Dhuvaran CCPP 3*	4.32	-	-			
15.	Utran Extn.*	5.69	0.61	0.61			
	Subtotal B	52.74	53.66	53.66			
	Total (A+B)	151.48	116.30	116.30	(36.10)		(36.10)

* PPA based stations

4.7 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 2017-18. Accordingly, the Commission has discussed and approved various components of fixed charges for approval of trued up ARR in the above paragraphs.



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The fixed charges approved for FY 2017-18 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 4.54: Fixed Charges Approved in the Truing up for FY 2017-18

(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	367.39	224.84	224.83	142.56
2.	Interest and Finance Charges	85.54	50.75	51.32	34.22
3.	Return on Equity	248.41	251.05	251.04	(2.63)
4.	Interest on Working Capital	150.33	149.20	135.62	14.71
5.	O&M Expenses	731.53	755.88	753.03	(21.50)
6.	Water Charges	44.22	91.85	91.85	(47.63)
7.	SLDC Charges	2.47	2.61	2.61	(0.14)
8.	Income Tax	19.79	62.93	61.39	(41.60)
9.	Total Fixed Charges	1,649.68	1,589.12	1,571.69	77.99
10.	Less: Non- Tariff Income	98.74	62.64	62.64	36.10
11.	Net Fixed Charges	1,550.94	1,526.47	1,509.05	41.89
(B) PPA Based Stations					
1.	Depreciation	478.17	492.18	484.73	
2.	Interest and Finance Charges	477.02	419.62	420.00	
3.	Return on Equity	452.88	453.43	450.91	
4.	Interest on Working Capital	122.29	175.40	121.19	
5.	O&M Expenses	362.43	322.41	320.46	
6.	Water Charges	25.19	37.19	37.19	
7.	SLDC Charges	1.03	1.57	1.57	
8.	Income Tax	12.94	44.24	43.16	
9.	Total Fixed Charges	1,931.95	1,946.03	1,879.20	
10.	Less: Non- Tariff Income	52.74	53.66	53.66	
11.	Net Fixed Charges	1,879.21	1,892.38	1,825.55	
	Total Net Fixed Charges (A+B)	3,430.15	3,418.85	3,334.59	

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



Table 4.55: Approved Station-wise Fixed Charges for FY 2017-18

(Rs. Crore)

Sr. No.	Power Station	Depreciation	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)	33.46	5.86	24.88	32.87	202.20	0.22	0.50	11.56	311.56	12.28	299.28
2.	Gandhinagar (3-4)	28.64	0.00	20.89	24.62	119.72	43.05	0.49	7.96	245.37	20.43	224.95
3.	Wanakbori 1-6 TPS	67.58	16.93	73.52	60.96	220.74	47.97	0.91	23.88	512.49	24.74	487.75
4.	KLTPS 1-3	29.88	2.95	49.82	8.32	113.58	0.53	0.16	4.07	209.30	3.48	205.83
5.	KLTPS 4	35.65	16.15	28.76	3.05	15.08	0.01	0.05	1.42	100.18	0.01	100.18
6.	Dhuvaran CCPP 2	22.32	7.11	14.14	3.06	38.46	0.00	0.10	2.13	87.32	0.87	86.45
7.	Ukai Hydro	2.15	2.31	10.48	0.90	12.68	0.07	0.22	5.78	34.60	0.02	34.58
8.	Kadana Hydro	5.14	0.00	28.55	1.83	30.58	0.00	0.18	4.59	70.86	0.82	70.04
9.	Ukai Extn 6*	152.88	122.57	123.40	29.16	52.42	0.00	0.36	9.48	490.27	28.03	462.25
10.	Gandhinagar 5*	0.00	0.00	28.67	12.79	59.55	21.53	-	3.98	126.53	9.50	117.03
11.	Wanakbori 7*	0.00	0.00	26.16	10.95	17.08	10.43	0.15	3.98	68.75	4.02	64.73
12.	Sikka Extension (3-4)*	176.19	176.65	140.07	34.18	105.95	3.80	0.42	9.48	646.73	10.63	636.10
13.	Dhuvaran CCPP 1*	8.83	0.00	10.45	2.66	36.46	0.00	0.09	2.02	60.51	0.87	59.64
14.	Dhuvaran CCPP 3*	78.77	76.07	64.80	15.21	3.25	0.00	0.27	7.13	245.49	-	245.49
15.	Utran Extension*	68.06	44.71	57.36	16.25	45.75	1.43	0.27	7.10	240.92	0.61	240.31
	Total	709.55	471.33	701.94	256.81	1073.49	129.04	4.18	104.55	3450.90	116.30	3334.59

* PPA based stations



Sharing of Gains or Losses for FY 2017-18

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 4.56: Approved Gains / (Losses) due to controllable factors for FY 2017-18
(Rs. Crore)

Sr. No.	Power Station	Approved for 2017-18			Total Gains / (Losses) to be passed through(1/3 rd of gains / losses)
		O&M Expenses	Fuel Charges	Total Gains / (Losses) to be Controllable factors	
1.	Ukai (3-5)	21.93	5.59	27.51	9.17
2.	Gandhinagar (3-4)	(28.64)	13.78	(14.86)	(4.95)
3.	Wanakbori 1-6 TPS	13.44	28.79	42.23	14.08
4.	KLTPS 1-3	(1.82)	(19.62)	(21.44)	(7.15)
5.	KLTPS 4	3.87	(6.38)	(2.51)	(0.84)
6.	Dhuvaran CCPP 2	(5.76)	(5.82)	(11.58)	(3.86)
7.	Ukai Hydro	6.92	-	6.92	2.31
8.	Kadana Hydro	(6.78)	-	(6.78)	(2.26)
	Subtotal A	3.15	16.33	19.49	6.50
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)	3.15	16.33	19.49	6.50

* 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:



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Table 4.57: Approved Gains / (Losses) due to Uncontrollable Factors for FY 2017-18

(Rs. Crore)

Sr. No.	Power Station	Depreciation	Interest and Finance Charges	Return on Equity	Interest on Working Capital	SLDC	Water Charges	Income Tax	Non-Tariff Income	O&M Cost	Total Gains / (Losses) to be passed through
1.	Ukai (3-5)	38.60	18.87	0.82	8.47	0.10	(0.09)	(6.73)	(9.83)	(7.04)	43.16
2.	Gandhinagar (3-4)	27.17	11.90	(3.59)	(2.29)	0.01	(36.04)	(5.57)	4.96	(4.42)	(7.88)
3.	Wanakbori 1-6 TPS	33.78	0.32	0.46	6.14	(0.10)	(12.21)	(16.71)	(21.55)	(7.45)	(17.32)
4.	KLTPS 1-3	35.95	(1.87)	(1.35)	0.20	0.01	(0.10)	(2.85)	(1.36)	(3.16)	25.47
5.	KLTPS 4	0.38	3.11	0.44	0.31	(0.03)	0.12	(0.99)	(1.64)	(0.35)	1.33
6.	Dhuvaran CCPP 2	(1.65)	1.64	0.60	2.66	(0.05)	0.76	(1.49)	(0.94)	(0.98)	0.55
7.	Ukai Hydro	(2.15)	0.26	(0.06)	(0.20)	(0.05)	(0.07)	(4.05)	(3.49)	(0.49)	(10.30)
8.	Kadana Hydro	10.49	-	0.05	(0.57)	(0.03)	-	(3.21)	(2.24)	(0.77)	3.73
	Sub Total A	142.56	34.22	(2.63)	14.71	(0.14)	(47.63)	(41.60)	(36.10)	(24.65)	38.74
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)	142.56	34.22	(2.63)	14.71	(0.14)	(47.63)	(41.60)	(36.10)	(24.65)	38.74

* PPA based stations



The Consolidated Gains / (Losses) approved in the Truing up for FY 2017-18 are given in the Table below:

Table 4.58: Total Consolidated Gains / (Losses) Approved for FY 2017-18

(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)	27.51	43.16	52.33
2.	Gandhinagar (3-4)	(14.86)	(7.88)	(12.84)
3.	Wanakbori 1-6 TPS	42.23	(17.32)	(3.24)
4.	KLTPS 1-3	(21.44)	25.47	18.32
5.	KLTPS 4	(2.51)	1.33	0.50
6.	Dhuvaran CCPP 2	(11.58)	0.55	(3.31)
7.	Ukai Hydro	6.92	(10.30)	(8.00)
8.	Kadana Hydro	(6.78)	3.73	1.47
	Sub Total A	19.49	38.74	45.24
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)	19.49	38.74	45.24

* PPA based stations

The presentation of the aforesaid loss and gain under fixed and fuel cost is given in the Table below:



Table 4.59: Total Consolidated (Fixed and Fuel Cost) Gains / (Losses) Approved for FY 2017-18

(Rs. Crore)							
Sr. No.	Power Station	Gains / (Losses) of controllable factors (a)	Gains / (Losses) of Uncontrollable factors to be passed through (b)	Total Gains / (Losses) c = a/3+b	Gains / (Losses) of controllable factors (d)	Total Gains / (Losses) d/3	Total Gains / (Losses)
		Fixed charges	Fixed charges	Fixed charges	Fuel cost	Fuel cost	Fixed & Fuel cost
A	Non PPA Based Stations						
1.	Ukai (3-5)	21.93	38.74	45.24	5.59	1.86	52.33
2.	Gandhinagar (3-4)	(28.64)	38.74	45.24	13.78	4.59	(12.84)
3.	Wanakbori 1-6 TPS	13.44	38.74	45.24	28.79	9.60	(3.24)
4.	KLTPS 1-3	(1.82)	25.47	24.86	(19.62)	(6.54)	18.32
5.	KLTPS 4	3.87	1.33	2.62	(6.38)	(2.13)	0.50
6.	Dhuvaran CCPP 2	(5.76)	0.55	(1.37)	(5.82)	(1.94)	(3.31)
7.	Ukai Hydro	6.92	(10.30)	(8.00)	-	-	(8.00)
8.	Kadana Hydro	(6.78)	3.73	1.47	-	-	1.47
	Sub Total A	3.15	38.74	39.79	16.33	5.44	45.24
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)	3.15	38.74	39.79	16.33	5.44	45.24

* PPA based stations

The Commission thus approves the net gain of Rs. 45.24 Crore in the Truing up for FY 2017-18. The net gain of Rs. 45.24 Crore approved in the truing up for FY 2017-18 is to be passed on to four DISCOMs through GUVNL.



5. Unabsorbed Depreciation for GTPS 1 & 2

Petitioner's Submission

The Petitioner submitted that Unit No. 1 & 2 of Gandhinagar TPS have been decommissioned on 3rd September, 2016. In anticipation of the expected decommissioning, GSECL has charged depreciation at a higher rate for these Units in the Audited Accounts for FY 2011-12 to FY 2016-17 and accordingly claimed this higher depreciation in the respective True up Petitions. However, the Commission has not approved the depreciation for these Units as claimed but approved at the regulated rates. Therefore, there is a disallowance of depreciation for FY 2011-12 to FY 2016-17 for GTPS Unit No. 1 & 2 as shown in the following Table:

Table 5.1: Depreciation for GTPS Unit No. 1 & 2 disapproved by the Commission
(Rs. Crore)

Particulars	Depreciation as per Accounts	Depreciation approved by GERC	Disapproved Depreciation
FY 2011-12	78.11	71.02	7.09
FY 2012-13	108.00	73.48	34.52
FY 2013-14	110.64	75.25	35.39
FY 2014-15	118.41	78.61	39.80
FY 2015-16	117.16	81.81	35.35
FY 2016-17	55.10	49.11	5.99
Total	587.42	429.28	158.14

GSECL has now completed the sale process of the assets pertaining to GTPS Unit No. 1 & 2 and accordingly, GSECL has computed the unabsorbed depreciation for GTPS Unit No. 1 & 2 to be claimed in this petition as follows. GSECL has requested the Commission to approve the unabsorbed depreciation for GTPS Unit No. 1 & 2 and allow recovery of the same in 12 equal instalments in FY 2019-20.

Table 5.2: Unabsorbed Depreciation claimed for GTPS Unit No. 1 & 2
(Rs. Crore)

Particulars	Legend	Amount
Opening GFA of GTPS 1-2 as on 1.4.2016	A	455.65
Residual Value for GTPS 1 and 2	B	23.33
Disapproved Depreciation	C	158.14
Deprecation yet to be claimed from GERC	D = B + C	181.47
Less: Total Sale proceeds	E	61.21
Net Unabsorbed Depreciation to be claimed in FY 2019-20	F = D - E	120.26



Commission's Analysis

As per GSECL's submission, the Commission has noted that Unit No. 1 & 2 of Gandhinagar TPS have been decommissioned on 3rd September, 2016 and the sale process of the assets have been completed.

GSECL had claimed depreciation for GTPS Units 1-4 at higher rate than the Commission approved average rate of 5.28% in previous years (FY 2011-12 to FY 2016-17) due to its retirement plan. The Commission had approved the depreciation of these units at the average rate of 5.28% during that period and the higher depreciation claimed was not allowed on account of retirement of GTPS Unit No. 1 & 2. However, in its Order for truing up of FY 2016-17, the Commission had directed that,

"The balance depreciation out of 90% of GFA of GTPS 1 & 2 and Utran Gas is to be adjusted against the sale proceeds of retired assets of these two units and to be claimed in true-up of the respective financial years in which these assets are sold."

Based on the additional details submitted by GSECL for GFA and depreciation charged in the books of account for GTPS Unit No. 1 & 2 and GTPS Unit No. 3 & 4 separately, the Commission has arrived at the unabsorbed depreciation for GTPS Unit No. 1 & 2 to the extent of depreciation not allowed, as mentioned in the Table below:

Table 5.3: Unabsorbed Depreciation for GTPS Units 1 & 2 Approved by the Commission

(Rs. Crore)			
Particulars	Legend	Actual Claimed	Approved by the Commission
Opening GFA of GTPS 1-2 as on 01.04.2016	A	455.65	455.65
Residual value for GTPS 1 and 2	B	23.33	0
Disapproved Depreciation	C	158.14	84.88
Deprecation yet to be claimed from GERC	D = B + C	181.47	84.88
Less: Total Sale Proceeds	E	61.21	61.21
Net Unabsorbed Depreciation to be claimed in FY 2019-20	F = D - E	120.26	23.67
Amount to be adjusted with gain / loss of FY 2017-18	G = F		23.67

As per Regulation 39.2 (c) of the GERC (MYT) Regulations, 2016, the Commission approves the unabsorbed depreciation as mentioned below:



Based on the above Table, unabsorbed depreciation of Rs. 23.67 Crore is allowed to be adjusted from net Fixed Charges for FY 2019-20 of GTPS arrived after passing of net gain / loss for FY 2017-18.



6. Determination of Tariff for FY 2019-20

GSECL vide letter dated 25th February, 2019 has submitted to revise the SHR of Wanakbori Unit No. 3 due to improvement in SHR of this unit on completion of R&M activities carried out during the FY 2017-18. GSECL has achieved improvement in the Station Heat Rate from 2625 kcal/kWh to 2575 kcal/kWh for Wanakbori TPS (1-6).

The Commission has approved improvement in SHR from 2715 kcal/kWh to 2625 kcal/kWh for Ukai (3-5), due to completion of R&M activities in Ukai Unit No. 4 during FY 2016-17, in its Tariff Order dated 1st April, 2018.

Accordingly, the Commission has recomputed the Energy Charges for FY 2019-20 at Rs. 2.768 / Unit for Ukai (3-5) against the MYT approved Rs. 2.821 / Unit, and at Rs. 3.207 / Unit as against the MYT approved Rs. 3.269 / Unit for Wanakbori TPS (1-6) and thus passing on the benefit to the beneficiaries. This computation is as mentioned in Annexure B-1 and B-5, respectively.

The Commission approves the station-wise energy charges (Annexure B) for the FY 2019-20 as outlined in the Table below:

Table 6.1: Energy Charges Approved For FY 2019-20

Sr. No.	Power Station	Energy Charges (Rs./kWh)
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*	2.525
14.	Wanakbori 8*	2.941

* PPA based stations

The Commission approves the station-wise fixed charges for the FY 2019-20 as approved in MYT Order dated 31st March, 2017, as mentioned in the Table below:



Gujarat State Electricity Corporation Limited
Truing Up for FY 2017-18 and Determination of Tariff for FY 2019-20

Table 6.2: Net Fixed Charges approved for FY 2019-20

(Rs. Crore)

Sr. No.	Power Station	Depreciation	Interest & Finance Charges	Return on Equity	O&M Expenses	Interest on Working Capital	SLDC Charges	Water Charges	Income Tax	Total Fixed Cost	Less: Non-Tariff Income	Net Fixed Charges
1.	Ukai (3-5)	74.23	35.79	27.47	174.13	29.93	0.6	0.10	3.47	345.72	15.87	329.86
2.	Gandhinagar (3-4)	56.15	2.07	17.58	96.85	22.47	0.50	7.01	2.39	205.02	12.50	192.52
3.	Gandhinagar 5*	0.00	0.00	30.88	24.68	14.70	0.05	11.87	1.19	83.38	11.93	71.45
4.	Wanakbori (1-6)	122.72	23.88	91.78	253.41	67.24	0.81	35.76	7.17	602.78	46.29	556.49
5.	Wanakbori 7*	0.00	0.00	28.03	20.48	11.49	0.05	8.18	1.19	69.42	6.75	62.68
6.	Sikka Extn. (3-4)*	172.90	161.10	137.53	106.80	29.29	0.23	1.19	2.84	611.88	9.60	602.27
7.	KLTPS (1-3)	66.50	0.01	49.03	121.38	8.80	0.17	0.43	1.22	247.54	4.84	242.70
8.	KLTPS 4	36.28	12.39	29.40	20.79	3.35	0.02	0.13	0.43	102.81	1.65	101.16
9.	Dhuvaran CCPP 1*	21.24	0.00	11.07	35.37	5.24	0.05	0.21	0.61	73.79	1.74	72.05
10.	Dhuvaran CCPP 2	23.14	7.90	16.92	35.45	5.90	0.05	0.76	0.64	90.77	1.81	88.96
11.	Dhuvaran CCPP 3*	76.43	71.64	65.36	73.64	13.12	0.17	0.00	2.14	302.50	4.32	298.18
12.	Ukai Hydro	0.00	2.53	10.42	21.37	0.74	0.17	0.00	1.73	36.96	3.51	33.45
13.	Kadana Hydro	15.81	0.00	28.76	25.73	1.32	0.15	0.00	1.38	73.15	3.06	70.09
14.	Utran Extension*	66.54	37.58	57.60	58.68	19.22	0.14	3.64	2.13	245.52	5.69	239.83
15.	Ukai Extn. 6*	141.13	112.02	122.46	106.80	29.95	0.34	0.10	2.84	515.64	12.71	502.94
16.	Wanakbori 8*	235.75	274.82	187.53	145.25	55.68	0.00	0.00	0.00	899.02	0.00	899.02
	Total	1108.83	741.72	911.84	1320.80	318.45	3.50	69.39	31.37	4505.90	142.26	4363.64

* PPA based stations



7. Determination of Tariff of BLTPS for Units 1 & 2 for FY 2019-20

7.1 Determination of Fixed and Variable Charges

Petitioner Submission

GSECL has submitted to determine and approve fixed and variable cost (tariff) for the erstwhile Bhavnagar Energy Company Ltd. (BECL).

Petitioner has submitted that BECL is merged with GSECL vide the GoG notification dated 27th August, 2018. The effective date of transfer is 1st April, 2018 as per the notification. Accordingly, the Assets and Liabilities of BECL are transferred to GSECL. The date of commissioning for Unit 1 is 16th May, 2016 and Unit 2 is 27th March, 2017.

GSECL has computed the fixed cost and variable cost for Bhavnagar Lignite Thermal Power Station (BLTPS) for FY 2019-20 based on the PPA for BLTPS between GUVNL and GSECL approved by the Commission. The working of the fixed cost and variable cost components is elaborated below:

Fixed Costs:

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 2019-20

(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 2016-17 is computed at 70:30 debt-equity ratio. The depreciation for FY 2016-17 to FY 2018-19 is computed at 5.28% and considered as loan repayment during respective years. Based on this the Opening Loan for FY 2019-20 is computed. The interest rate of 8.50% is considered for computing interest expenses as under:

Table 7.2: Interest & Finance Charges claimed for FY 2019-20

(Rs. Crore)

Particulars	Actual claimed
Opening Loans	1,957.88
Loan Additions during the Year	-
Repayment during the Year	190.87
Closing Loans	1,767.01
Average Loans	1,862.45
Wt. Avg. Rate of Interest on Loan	8.50%
Interest on Loan	158.31
Total Interest & Financial Charges	158.31

- 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 2019-20

(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 10.65% which is the 1-year SBI MCLR as on 1st April, 2018 i.e. 8.15% 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 2019-20
(Rs. Crore)

Particulars	Actual claimed
Lignite Cost (1 1/2 months)	100.09
Sec Fuel Cost (1 Months)	2.18
O&M Expenses (1 Month)	13.29
Maintenance Spares	36.15
Receivables (1 Months)	128.09
Total Working Capital	279.81
Rate of Interest	10.65%
Interest on Working Capital	29.80

- 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 2019-20
(Rs. Crore)

Particulars	Actual claimed
O&M Cost	159.50

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

Table 7.6: SLDC Fees & Charges claimed for FY 2019-20
(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 2019-20
(Rs. Crore)

Particulars	Actual claimed
Income Tax	32.72



- 8. Fixed Cost for FY 2019-20:** Fixed Cost claimed by the Petitioner for BLTPS Units 1 & 2 is shown in Table below:

Table 7.8: Fixed Cost claimed for FY 2019-20
(Rs. Crore)

Particulars	Actual claimed
Depreciation	190.87
Interest on Loan	158.31
Return on Equity	151.83
Interest on Working Capital	29.80
O&M Cost	159.50
SLDC Charges	0.24
Income Tax	32.72
Total Fixed Cost	723.27

- 9. Energy charges for FY 2019-20:** Based on the operating and fuel related parameters considered in the PPA approved by the Commission, Annexure C indicates energy charges for FY 2019-20.

Commission's Analysis

As per the powers conferred under Regulation 46.2 (a) as stated below, the Commission hereby determines the provisional tariff for Bhavnagar Lignite Thermal Power station (BLTPS) (erstwhile BECL) for FY 2019-20 based on the present petition filed by GSECL.

Regulation 46.2 (a) of the GERC (MYT) Regulations, 2016:

“46.2 The Commission shall be guided by the Regulations contained in this Chapter in determining the tariff for supply of electricity by a Generating Company to a Distribution Licensee in the following cases:

- a) *where such tariff is pursuant to a power purchase agreement or arrangement entered into subsequent to the date of effectiveness of these Regulations; or*

.....”

GSECL has requested to approve the tariff for Bhavnagar Lignite thermal power Station which is as per the approved PPA between BECL (GSECL) and GUVNL. In this petition for the first time GSECL has submitted the PPA of BECL which is merged with the GSECL with its effect from 1st April, 2018. GSECL has submitted the following documents:



1. PPA between BECL (GSECL) and GUVNL.
2. Notification dated 27th August, 2018 issued by Government of Gujarat for transfer and vesting of BECL in the Government of Gujarat and re-vesting by the Government of Gujarat in GSECL.
3. CoD Certificates issued by SLDC dated 19.05.2016 and 04.04.2017 for declaration of CoD of Unit 1 (250 MW) as 16th May, 2016 and CoD of Unit 2 (250 MW) as 27th March, 2017.

Capital Cost of Rs. 3,615 Crore has been considered 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. Total Fixed Cost works out to be Rs. 690.26 Crore based on above capital cost and as per the parameters in the PPA submitted by GSECL which is as mentioned below:

Table 7.9: Approved Fixed Cost for FY 2019-20 (Provisional)

Particulars	Actual claimed	Approved by the Commission
Depreciation	190.87	190.87
Interest on Loan	158.31	158.31
Return on Equity	151.83	151.83
Interest on Working Capital	29.80	29.51
O&M Cost	159.50	159.50
SLDC Charges	0.24	0.24
Income Tax	32.72	0.00
Total Fixed Cost	723.27	690.26

The Commission has worked out the Variable Cost / Fuel Cost of Rs. 2.60 / kWh for BLTPS in Annexure C 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 approves the same for the ensuing FY 2019-20.



8. Compliance of Directives

8.1 Compliance of Directives issued by the Commission

The Commission, in its MYT Order dated 31st March, 2017, had issued certain directives to GSECL. The Commission also issued fresh directives in the Tariff Order dated 31st March, 2018. 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:

C & I Up Gradation work of Wanakbori TPS Unit No. 1 is completed on 11.03.2017. Work of Unit No. 1 was carried out during shutdown period from 01.12.2016 to 11.03.2017.

Commission Comments:

The Progress of the work of Wanakbori Unit No. 1 may be submitted by GSECL Further Compliance: The C & I upgradation (R&M) work of WTPS-1 is planned during November 2016-March 2017.

GSECL shall submit the completion report of R&M works of WTPS-1.

Directive 2: Preparedness to face competition

GSECL may submit its preparedness for facing competition indicating the action taken / proposed to be taken to bring down the overall cost of generation.



Compliance:

To improve efficiency and bring down the Generation Cost of old machine and to compete with private generators, GSECL has initiated certain proven technological advancement works, which are submitted at Annexure I of the petition.

Also, GSECL has planned to enhance capacity building by installing Super Critical Machines having modern technology and high-performance parameters which may also help GSECL to compete with private generators. It is also submitted vide Annexure I of the petition.

Commission Comments:

The progress on the above works may be submitted by GSECL at quarterly intervals. The Annexure I, as submitted by GSECL is noted by the Commission.

Further Compliance:

Work progress is submitted as Annexure I of the petition.

Commission's comments:

The Commission has noted the submission.

Directive 3: Inefficiency of Sikka Unit 1 & 2

GSECL is directed to examine the inefficiency, if any, of Sikka power station and intimate the Commission of the action taken in this regard within a period of 3 months.

Compliance:

Efficiency of Sikka TPS is improving gradually after completion of de-silting. As such there is no inefficiency noticed.

Commission Comments:

The action taken by GSECL is noted. The Auxiliary consumption, which is 11.71%, against 11.00% approved for FY 2014-15, needs to be brought down further.

Further Compliance:

The percentage of Backing Down and RSD is 68.44% during FY 2015-16. During RSD period minimum Auxiliaries are required to be run to keep the Units available for Generation as per requirement of SLDC. This adds to Percentage of Auxiliary Consumption. If Generation is increased, then Auxiliary Consumption may go down.



Commission Comments:

The Commission has noted the submission. The Commission has also noted that Sikka 1 & 2 plants are decommissioned in FY 2017-18.

Directive 4: 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.

Directive 5: Calculation of Depreciation

The Commission directs the Petitioner to calculate depreciation for true-up from FY 2017-18 as per Regulation 39 of the GERC (MYT) Regulations, 2016.

Compliance:

As Directed by the Commission, GSECL is Calculating depreciation from FY 2017-18 as per Regulation 39 of the GERC (MYT) Regulations, 2016.

Commission Comments:

The Commission has observed that the calculation for depreciation done by GSECL is as directed and as per the Commission's said Regulations.

Directive 6: 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 GoI shall be put up for approval of the Commission.

Directive 7: Lignite Cost of KLTPS

It is observed by the Commission that in FY 2016-17 lignite price for KLTPS has exorbitantly increased. GSECL shall take up the matter with appropriate authority to procure the lignite at a rate which is at par or lesser than the equally placed lignite thermal power station in the state.

Compliance:

As GMDC Panandhro mine was exhausted, GMDC started supplying lignite to KLTPS from Mata no Madh mine from 1st August, 2016. The basic price of lignite from Mata no Madh mine was higher. As per guideline issued by Industries and Mine Department GoG dated 15th February, 2012, pricing of lignite is decided by formula “Cost + 15% or Market Price – 25% discount whichever is lower”. GSECL vide letter dated 10th August, 2016 requested GMDC to furnish the detail calculation for the pricing. GUVNL was also asked for their concurrence. On receipt of detail calculations from GMDC and after auditing, GUVNL vide letter dated 22nd September, 2016 approved the basic rate @ Rs. 854/MT and other charges as applicable.

Prior to 1st July, 2017 (implementation of GST), Excise duty @ 6% and Clean energy Cess @ Rs. 400/MT was charged on assessable value and over and above 22.5% (20+2.5) VAT was levied. So, the end cost of lignite was Rs. 1915.28/MT considering the basic price of lignite as Rs. 854/MT. After implementation of GST w.e.f. 1st July, 2017, excise duty @ 6% was abolished, GST Compensation Cess @ Rs. 400/MT was introduced in place of Clean energy Cess and GST @ 5% charged on assessable value before GST Compensation Cess. Hence, the end cost of lignite got revised to Rs. 1552.52/MT considering the same basic price of lignite instead of Rs. 1915.26 / MT. Hence, lignite price is reduced by Rs. 362.76 / MT.



Commission Comments:

The Commission has noted the submission.

Directive 8: Procurement of coal from Western Coal Fields

GSECL should take up the matter with appropriate authority to maximize coal procurement from Western Coal Fields, to reduce the fuel cost by saving on freight charges.

Compliance:

Ministry of Power and Ministry of Coal have approved rationalization of coal linkage of 12 Lakh MT (5 LMT-GTPS + 7 LMT-WTPS) from SECL to WCL for GSECL Power Stations. WCL was insisting for 50% coal on notified price and 50% on cost plus basis. However, in the month of November-2016, WCL agreed to supply coal on Notified price and signed MoU to supply coal at notified price to GSECL.

Further, Coal India has approved supply of 30 Lakh MT from WCL for GSECL power Stations in addition to 12 Lakh MT coal on 28.04.2017 to reduce the cost of power to the consumer of State. Therefore, additional 42 Lakh MT coal would be available from WCL in place of SECL.

MoU agreement signed between GSECL and WCL on 05.05.17 for supply of coal under Rationalization.

Commission Comments:

The Commission has noted the submission

Directive 9: Green Cess on Coal Cost

GSECL is advised to take up the matter with appropriate authority to rationalize the Green Cess imposed on procurement of coal for charging the Green Cess in the ratio of RPO fulfillment by the state/entity.

It is also observed by the Commission that Green Cess is imposed by the Government of India uniformly across the coal quality. GSECL is advised to take up the matter with appropriate authority to get the necessary amendment to reduce the overall cost of fuel.



Compliance:

Clean Energy Cess which was being collected under Central Excise regime is now abolished w.e.f. 1st July, 2017 after the introduction of Goods and Service Tax. Now, GST Compensation Cess @ Rs. 400/MT is being levied on coal w.e.f. 1st July, 2017. The concept of Compensation Cess is now completely different from Clean Energy Cess. It is levied to compensate the revenue loss occurred to the States because of implementation of GST Act, 2017. As GST revenue will flow to the State where the coal is consumed, the Coal producing States will have revenue loss and to compensate the same Compensation Cess is levied. As per Goods and Services Tax (Compensation to States) Act, 2017, Compensation Cess would be charged for a period of 5 years only from the date of its implementation.

Thus, the Clean Energy Cess has already been abolished w.e.f. 1st July, 2017 and Compensation Cess has been levied with totally different purpose. Hence, the matter of Green Cess cannot be referred to Central Government.

Commission Comments:

The Commission has noted the submission

Directive 10: 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.

8.3 Compliance of Directives given vide Order dated 31st March, 2018

Directive 1: Scrapping of Old Units

GSECL is directed to expedite the disposal of decommissioned generating units.

Compliance:

The status of disposal of decommissioned generating units (as on 31st July, 2018) is as under:

Sr. No.	Unit	Present Disposal Status
1.	GTPS 1 & 2 (2 x 120 MW)	The sale order is awarded to M/s. Ghansiram Gokalchand, Ship Breaking Yard, Bhavnagar on 8 th January, 2018. Approx. 35% work of dismantling is completed till date.
2.	STPS 1 & 2 (2 x 120 MW)	The e-Auction is completed on 6 th June, 2018 and the issuance of sale order is under approval of board of Directors of GSECL.
3.	Utran CCPP - 1 (1 x 135 MW)	e-Auction is under progress.
4.	UTPS 1 & 2 (2 x 120 MW)	Valuation is under progress.

Commission Comments:

The Commission has noted the submission.

Directive 2: Tying up gas supply

GSECL should explore the possibility of tying up gas supply with overseas suppliers at competitive price through global tenders by following prudent practice; as per rules and regulations.

Compliance:

As approved by GUVNL vide letter dated 14th March, 2018, GSECL has imported 1 no. of part cargo of LNG having quantity of 37.5 MMSCM during the period from 23.03.2018 to 30.04.2018.



Commission Comments:

The Commission has noted the submission.

8.4 Fresh Directives

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.

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.

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.

COMMISSION'S ORDER

The Commission has determined tariff of GSECL for FY 2019-20 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 has approved improvement in SHR from 2715 kcal/kWh to 2625 kcal/kWh for Ukai (3-5), due to completion of R&M activities in Ukai Unit No. 4 during FY 2016-17, in its Tariff Order dated 1st April, 2018. This improvement has been considered in this Order also. GSECL has achieved improvement in the SHR from 2625 kcal/kWh to 2575 kcal/kWh for Wanakbori TPS (1-6) due to R&M during the FY 2017-18. The Commission has considered this while computing the energy charges for Wanakbori TPS (1-6) for FY 2019-20.

Accordingly, the Commission has recomputed the energy charges for FY 2019-20 at Rs. 2.768 / Unit for Ukai (3-5) against the MYT approved Rs. 2.821 / Unit, and Rs. 3.207 / Unit as against the MYT approved Rs. 3.269 / Unit for Wanakbori TPS (1-6) and thus passing on the benefit to the beneficiaries.

The Commission approves the station-wise fixed charges and energy charges for FY 2019-20 as outlined in the Table below:

Sr. No.	Power Station	Annual Fixed Charges for FY 2019-20 (Rs. Crore)	Energy Charges for FY 2019-20 (Rs./kWh)
1.	Ukai (3-5)	329.86	2.768
2.	Gandhinagar (3-4)	192.52	3.308
3.	Gandhinagar 5*	71.45	3.117
4.	Wanakbori 1-6	556.49	3.207
5.	Wanakbori 7*	62.68	3.093
6.	Sikka 3 & 4*	602.27	2.425
7.	KLTPS 1-3	242.70	1.496
8.	KLTPS 4	101.16	1.469
9.	Dhuvaran CCPP 1*	72.05	3.899
10.	Dhuvaran CCPP 2	88.96	4.066
11.	Dhuvaran CCPP 3*	298.18	2.256
12.	Utran Extension*	239.83	4.345
13.	Ukai 6*	502.94	2.525
14.	Wanakbori 8*	899.02	2.941
15.	Ukai Hydro	33.45	-
16.	Kadana Hydro	70.09	-
Total		4,363.64	

* PPA based stations



The Annual Fixed Charges are inclusive of Consolidated (Fixed & Fuel Cost) Gains / (Losses) of Rs. 45.24 Crore. The Commission has approved unabsorbed depreciation of Rs. 23.67 Crore of GTPS 1 & 2 for FY 2011-12 to FY 2015-16 on account of decommissioning of these units.

The net gain of Rs. 21.56 Crore is arrived at after considering Consolidated (Fixed & Fuel Cost) Gains / (Losses) of Rs. 45.24 Crore and Net Unabsorbed Depreciation of Rs. 23.67 Crore (Rs. 45.24 Crore – Rs. 23.67 Crore = Rs. 21.56 Crore).

The net gain of Rs. 21.56 Crore approved in the truing up for FY 2017-18 is to be passed on to four DISCOMs in 12 equal monthly instalments through GUVNL.

This order shall come into force with effect from 1st May, 2019.

Sd/-

P. J. THAKKAR
Member

Sd/-

K. M. SHRINGARPURE
Member

Sd/-

ANAND KUMAR
Chairman

Place: Gandhinagar

Date: 24/04/2019

Annexure A

A-1: Ukai TPS 3 to 5 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2017-18

Sl. No.	Item	Derivation	Unit	FY 2017-18
1.	Gross Generation	A	MUs	3780.60
2.	Auxiliary Consumption	C	%	9.00%
3.	Auxiliary Consumption	B	MUs	340.25
4.	Net Generation	Y=A-B	MUs	3440.34
5.	Station Heat Rate	D	kcal/kWh	2625
6.	Sp. Oil Consumption	E	ml/kWh	1.00
7.	Gross calorific value of coal	F	kcal/Kg	3901
8.	Calorific value of oil	G	kcal/l	10459.41
9.	Overall Heat	H= A x D	GCal	9924067.13
10.	Heat from Oil	I= (A x E x G)/1000	GCal	39542.81
11.	Heat from Coal	J = H-I	GCal	9884524.32
12.	Transit losses	K	%	0.80%
13.	Coal Blend			
14.	(A) Indigenous coal	X1	%	37.99%
15.	(B) Washed Coal	X2	%	54.77%
16.	(C) Imported Coal	X3	%	7.24%
17.	Actual oil consumption	L= A x E	Kl	3780.60
18.	Actual Coal consumption	M= (J x 1000)/F	MT	2533540.81
19.	(A) Indigenous coal	Q1=M* x X1/(1-K)	MT	970139.81
20.	(B) Washed Coal	Q2=M* x X2 / (1-K)	MT	1398848.27
21.	(C) Imported Coal	Q3=M* X X3	MT	183504.64
22.	Price of coal			
23.	(A) Indigenous coal	P1	Rs./MT	3938.50
24.	(B) Washed Coal	P2	Rs./MT	4387.30
25.	(C) Imported Coal	P3	Rs./MT	7313.73
26.	Price of oil	P4	Rs./Kl	24868.65
27.	Coal Cost			
28.	(A) Indigenous coal	N1=Q1 X P1/10^5	Rs. Lakh	38208.96
29.	(B) Washed Coal	N2=Q2 X P2/10^5	Rs. Lakh	61371.67
30.	(C) Imported Coal	N3=Q3 X P3/10^5	Rs. Lakh	13421.03
31.	Total coal cost	N4= N1+N2+N3	Rs. Lakh	113001.66
32.	Oil Cost	N5=P4 x L/10^5	Rs. Lakh	940.18
33.	Total fuel cost	O= N4+N5	Rs. Lakh	113941.84
34.	Fuel cost/Unit (Gross)	P= O/(A*10)	Rs./kWh	3.01
35.	Fuel cost/Unit (Net)	Q=O/(Y*10)	Rs./kWh	3.31
36.	Cost of fuel/GCal	R=(O/H)*10^5	Rs./GCal	1148.14
37.	Actual net generation	S	MUs	3415.01
38.	Normative Fuel Cost for actual Net Generation	T=S*Q/10	Rs. Crore	1131.03



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A-2: Ukai Extension 6 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2017-18

Sl. No.	Item	Derivation	Unit	FY 2017-18
1.	Gross Generation	A	MUs	2988.47
2.	Auxiliary Consumption	C	%	6.00%
3.	Auxiliary Consumption	B	MUs	179.31
4.	Net Generation	Y=A-B	MUs	2809.17
5.	Station Heat Rate	D	kcal/kWh	2385
6.	Sp. Oil Consumption	E	ml/kWh	1.00
7.	Gross calorific value of coal	F	kcal/Kg	3949
8.	Calorific value of oil	G	kcal/l	10438.26
9.	Overall Heat	H= A x D	GCal	7127510.49
10.	Heat from Oil	I= (A x E x G)/1000	GCal	31194.47
11.	Heat from Coal	J = H-I	GCal	7096316.02
12.	Transit losses	K	%	0.80%
13.	Coal Blend			
14.	(A) Indigenous coal	X1	%	10.72%
15.	(B) Washed Coal	X2	%	77.71%
16.	(C) Imported Coal	X3	%	11.57%
17.	Actual oil consumption	L= A x E	Kl	2988.47
18.	Actual Coal consumption	M= (J x 1000)/F	MT	1797060.15
19.	(A) Indigenous coal	Q1=M* x X1/(1-K)	MT	194143.25
20.	(B) Washed Coal	Q2=M* x X2 / (1-K)	MT	1407845.02
21.	(C) Imported Coal	Q3=M* X X3	MT	207887.79
22.	Price of coal			
23.	(A) Indigenous coal	P1	Rs./MT	3982.68
24.	(B) Washed Coal	P2	Rs./MT	4405.01
25.	(C) Imported Coal	P3	Rs./MT	7374.37
26.	Price of oil	P4	Rs./Kl	25102.78
27.	Coal Cost			
28.	(A) Indigenous coal	N1=Q1 X P1/10^5	Rs. Lakh	7732.10
29.	(B) Washed Coal	N2=Q2 X P2/10^5	Rs. Lakh	62015.71
30.	(C) Imported Coal	N3=Q3 X P3/10^5	Rs. Lakh	15330.41
31.	Total coal cost	N4= N1+N2+N3	Rs. Lakh	85078.23
32.	Oil Cost	N5=P4 x L/10^5	Rs. Lakh	750.19
33.	Total fuel cost	O= N4+N5	Rs. Lakh	85828.42
34.	Fuel cost/Unit (Gross)	P= O/(A*10)	Rs./kWh	2.87
35.	Fuel cost/Unit (Net)	Q=O/(Y*10)	Rs./kWh	3.06
36.	Cost of fuel/GCal	R=(O/H)*10^5	Rs./GCal	1204.19
37.	Actual net generation	S	MUs	2810.96
38.	Normative Fuel Cost for actual Net Generation	T=S*Q/10	Rs. Crore	858.83



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A-3: Gandhinagar 3 & 4 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2017-18

Sl. No.	Item	Derivation	Unit	FY 2017-18
1.	Gross Generation	A	MUs	2291.78
2.	Auxiliary Consumption	C	%	9.00%
3.	Auxiliary Consumption	B	MUs	206.26
4.	Net Generation	Y=A-B	MUs	2085.52
5.	Station Heat Rate	D	kcal/kWh	2625
6.	Sp. Oil Consumption	E	ml/kWh	1.00
7.	Gross calorific value of coal	F	kcal/Kg	3690
8.	Calorific value of oil	G	kcal/l	10419.57
9.	Overall Heat	H= A x D	GCal	6015922.50
10.	Heat from Oil	I= (A x E x G)/1000	GCal	23879.37
11.	Heat from Coal	J = H-I	GCal	5992043.13
12.	Transit losses	K	%	0.80%
13.	Coal Blend			
14.	(A) Indigenous coal	X1	%	45.81%
15.	(B) Washed Coal	X2	%	46.38%
16.	(C) Imported Coal	X3	%	7.80%
17.	Actual oil consumption	L= A x E	Kl	2291.78
18.	Actual Coal consumption	M= (J x 1000)/F	MT	1623859.93
19.	(A) Indigenous coal	Q1=M* x X1/(1-K)	MT	749929.33
20.	(B) Washed Coal	Q2=M* x X2 / (1-K)	MT	759292.14
21.	(C) Imported Coal	Q3=M* X X3	MT	126712.23
22.	Price of coal			
23.	(A) Indigenous coal	P1	Rs./MT	4237.00
24.	(B) Washed Coal	P2	Rs./MT	4749.13
25.	(C) Imported Coal	P3	Rs./MT	6747.74
26.	Price of oil	P4	Rs./Kl	26755.33
27.	Coal Cost			
28.	(A) Indigenous coal	N1=Q1 X P1	Rs. Lakh	31774.51
29.	(B) Washed Coal	N2=Q2 X P2	Rs. Lakh	36059.77
30.	(C) Imported Coal	N3=Q3 X P3	Rs. Lakh	8550.21
31.	Total coal cost	N4= N1+N2+N3	Rs. Lakh	76384.49
32.	Oil Cost	N5=P4 x L/10^5	Rs. Lakh	613.17
33.	Total fuel cost	O= N4+N5	Rs. Lakh	76997.66
34.	Fuel cost/Unit (Gross)	P= O/(A*10)	Rs./kWh	3.36
35.	Fuel cost/Unit (Net)	Q=O/(Y*10)	Rs./kWh	3.69
36.	Cost of fuel/GCal	R=(O/H)*10^5	Rs./GCal	1279.90
37.	Actual net generation	S	MUs	2049.00
38.	Normative Fuel Cost for actual Net Generation	T=S*Q/10	Rs. Crore	756.49



A-4: Gandhinagar 5 - Approved Fuel Costs (Coal, Lignite & Secondary Oil) for FY 2017-18

Sl. No.	Item	Derivation	Unit	FY 2017-18
1.	Gross Generation	A	MUs	1450.18
2.	Auxiliary Consumption	C	%	9.50%
3.	Auxiliary Consumption	B	MUs	137.77
4.	Net Generation	Y=A-B	MUs	1312.41
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	3829
8.	Calorific value of oil	G	kcal/l	10467.30
9.	Overall Heat	H= A x D	GCal	3567435.42
10.	Heat from Oil	I= (A x E x G)/1000	GCal	53128.02
11.	Heat from Coal	J = H-I	GCal	3514307.40
12.	Transit losses	K	%	0.80%
13.	Coal Blend			
14.	(A) Indigenous coal	X1	%	34.55%
15.	(B) Washed Coal	X2	%	56.31%
16.	(C) Imported Coal	X3	%	9.14%
17.	Actual oil consumption	L= A x E	Kl	5075.62
18.	Actual Coal consumption	M= (J x 1000)/F	MT	917808.07
19.	(A) Indigenous coal	Q1=M* x X1/(1-K)	MT	319650.88
20.	(B) Washed Coal	Q2=M* x X2 / (1-K)	MT	520999.62
21.	(C) Imported Coal	Q3=M* X X3	MT	83882.77
22.	Price of coal			
23.	(A) Indigenous coal	P1	Rs./MT	4268.12
24.	(B) Washed Coal	P2	Rs./MT	4826.34
25.	(C) Imported Coal	P3	Rs./MT	6783.69
26.	Price of oil	P4	Rs./Kl	26755.33
27.	Coal Cost			
28.	(A) Indigenous coal	N1=Q1 X P1	Rs. Lakh	13643.08
29.	(B) Washed Coal	N2=Q2 X P2	Rs. Lakh	25145.21
30.	(C) Imported Coal	N3=Q3 X P3	Rs. Lakh	5690.35
31.	Total coal cost	N4= N1+N2+N3	Rs. Lakh	44478.64
32.	Oil Cost	N5=P4 x L/10^5	Rs. Lakh	1358.00
33.	Total fuel cost	O= N4+N5	Rs. Lakh	45836.64
34.	Fuel cost/Unit (Gross)	P= O/(A*10)	Rs./kWh	3.16
35.	Fuel cost/Unit (Net)	Q=O/(Y*10)	Rs./kWh	3.49
36.	Cost of fuel/GCal	R=(O/H)*10^5	Rs./GCal	1284.86
37.	Actual net generation	S	MUs	1307.74
38.	Normative Fuel Cost for actual Net Generation	T=S*Q/10	Rs. Crore	456.73



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A-5: Wanakbori 1-6 - Approved Fuel Costs (Coal, Lignite & Secondary Oil) for FY 2017-18

Sl. No.	Item	Derivation	Unit	FY 2017-18
1.	Gross Generation	A	MUs	6224.50
2.	Auxiliary Consumption	C	%	9.00%
3.	Auxiliary Consumption	B	MUs	560.21
4.	Net Generation	Y=A-B	MUs	5664.30
5.	Station Heat Rate	D	kcal/kWh	2625
6.	Sp. Oil Consumption	E	ml/kWh	1.00
7.	Gross calorific value of coal	F	kcal/Kg	3864
8.	Calorific value of oil	G	kcal/l	10386
9.	Overall Heat	H= A x D	GCal	16339315.13
10.	Heat from Oil	I= (A x E x G)/1000	GCal	64648.06
11.	Heat from Coal	J = H-I	GCal	16274667.06
12.	Transit losses	K	%	0.80%
13.	Coal Blend			
14.	(A) Indigenous coal	X1	%	32.07%
15.	(B) Washed Coal	X2	%	64.15%
16.	(C) Imported Coal	X3	%	3.79%
17.	Actual oil consumption	L= A x E	Kl	6224.50
18.	Actual Coal consumption	M= (J x 1000)/F	MT	4211870.36
19.	(A) Indigenous coal	Q1=M* x X1/(1-K)	MT	1361484.32
20.	(B) Washed Coal	Q2=M* x X2 / (1-K)	MT	2723499.01
21.	(C) Imported Coal	Q3=M* X X3	MT	159566.89
22.	Price of coal			
23.	(A) Indigenous coal	P1	Rs./MT	4176.01
24.	(B) Washed Coal	P2	Rs./MT	4211.64
25.	(C) Imported Coal	P3	Rs./MT	7256.15
26.	Price of oil	P4	Rs./Kl	26663.75
27.	Coal Cost			
28.	(A) Indigenous coal	N1=Q1 X P1	Rs. Lakh	56855.72
29.	(B) Washed Coal	N2=Q2 X P2	Rs. Lakh	114703.97
30.	(C) Imported Coal	N3=Q3 X P3	Rs. Lakh	11578.41
31.	Total coal cost	N4= N1+N2+N3	Rs. Lakh	183138.11
32.	Oil Cost	N5=P4 x L/10^5	Rs. Lakh	1659.69
33.	Total fuel cost	O= N4+N5	Rs. Lakh	184797.79
34.	Fuel cost/Unit (Gross)	P= O/(A*10)	Rs./kWh	2.97
35.	Fuel cost/Unit (Net)	Q=O/(Y*10)	Rs./kWh	3.26
36.	Cost of fuel/GCal	R=(O/H)*10^5	Rs./GCal	1131.00
37.	Actual net generation	S	MUs	5658.92
38.	Normative Fuel Cost for actual Net Generation	T=S*Q/10	Rs. Crore	1846.22



A-6: Wanakbori 7 - Approved Fuel Costs (Coal, Lignite & Secondary Oil) for FY 2017-18

Sl. No.	Item	Derivation	Unit	FY 2017-18
1.	Gross Generation	A	MUs	1479.25
2.	Auxiliary Consumption	C	%	9.50%
3.	Auxiliary Consumption	B	MUs	140.53
4.	Net Generation	Y=A-B	MUs	1338.72
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	3834
8.	Calorific value of oil	G	kcal/l	10491
9.	Overall Heat	H= A x D	GCal	3638955.00
10.	Heat from Oil	I= (A x E x G)/1000	GCal	54317.96
11.	Heat from Coal	J = H-I	GCal	3584637.04
12.	Transit losses	K	%	0.80%
13.	Coal Blend			
14.	(A) Indigenous coal	X1	%	55.18%
15.	(B) Washed Coal	X2	%	40.94%
16.	(C) Imported Coal	X3	%	3.88%
17.	Actual oil consumption	L= A x E	Kl	5177.38
18.	Actual Coal consumption	M= (J x 1000)/F	MT	934960.10
19.	(A) Indigenous coal	Q1=M* x X1/(1-K)	MT	520066.08
20.	(B) Washed Coal	Q2=M* x X2 / (1-K)	MT	385842.15
21.	(C) Imported Coal	Q3=M* X X3	MT	36299.14
22.	Price of coal			
23.	(A) Indigenous coal	P1	Rs./MT	4176.33
24.	(B) Washed Coal	P2	Rs./MT	4216.32
25.	(C) Imported Coal	P3	Rs./MT	7281.61
26.	Price of oil	P4	Rs./Kl	26663.75
27.	Coal Cost			
28.	(A) Indigenous coal	N1=Q1 X P1	Rs. Lakh	21719.68
29.	(B) Washed Coal	N2=Q2 X P2	Rs. Lakh	16268.34
30.	(C) Imported Coal	N3=Q3 X P3	Rs. Lakh	2643.16
31.	Total coal cost	N4= N1+N2+N3	Rs. Lakh	40631.18
32.	Oil Cost	N5=P4 x L/10^5	Rs. Lakh	1380.48
33.	Total fuel cost	O= N4+N5	Rs. Lakh	42011.66
34.	Fuel cost/Unit (Gross)	P= O/(A*10)	Rs./kWh	2.84
35.	Fuel cost/Unit (Net)	Q=O/(Y*10)	Rs./kWh	3.14
36.	Cost of fuel/GCal	R=(O/H)*10^5	Rs./GCal	1154.50
37.	Actual net generation	S	MUs	1345.04
38.	Normative Fuel Cost for actual Net Generation	T=S*Q/10	Rs. Crore	422.10



A-7: Sikka Extension 3 & 4 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2017-18

Sl. No.	Item	Derivation	Unit	FY 2017-18
1.	Gross Generation	A	MUs	2677.50
2.	Auxiliary Consumption	C	%	9.00%
3.	Auxiliary Consumption	B	MUs	240.98
4.	Net Generation	Y=A-B	MUs	2436.53
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	5022
8.	Calorific value of oil	G	kcal/l	10348
9.	Overall Heat	H= A x D	GCal	6420652.19
10.	Heat from Oil	I= (A x E x G)/1000	GCal	27707.28
11.	Heat from Coal	J = H-I	GCal	6392944.92
12.	Transit losses	K	%	0.00%
13.	Coal Blend			
14.	(A) Indigenous coal	X1	%	0.00%
15.	(B) Washed Coal	X2	%	1.55%
16.	(C) Imported Coal	X3	%	98.45%
17.	Actual oil consumption	L= A x E	Kl	2677.50
18.	Actual Coal consumption	M= (J x 1000)/F	MT	1273081.63
19.	(A) Indigenous coal	Q1=M* x X1/(1-K)	MT	0.00
20.	(B) Washed Coal	Q2=M* x X2 / (1-K)	MT	19745.77
21.	(C) Imported Coal	Q3=M* X X3	MT	1253335.86
22.	Price of coal			
23.	(A) Indigenous coal	P1	Rs./MT	0.00
24.	(B) Washed Coal	P2	Rs./MT	5149.38
25.	(C) Imported Coal	P3	Rs./MT	6997.64
26.	Price of oil	P4	Rs./Kl	28995.72
27.	Coal Cost			
28.	(A) Indigenous coal	N1=Q1 X P1	Rs. Lakh	0.00
29.	(B) Washed Coal	N2=Q2 X P2	Rs. Lakh	1016.78
30.	(C) Imported Coal	N3=Q3 X P3	Rs. Lakh	87703.93
31.	Total coal cost	N4= N1+N2+N3	Rs. Lakh	88720.72
32.	Oil Cost	N5=P4 x L/10^5	Rs. Lakh	776.36
33.	Total fuel cost	O= N4+N5	Rs. Lakh	89497.08
34.	Fuel cost/Unit (Gross)	P= O/(A*10)	Rs./kWh	3.34
35.	Fuel cost/Unit (Net)	Q=O/(Y*10)	Rs./kWh	3.67
36.	Cost of fuel/GCal	R=(O/H)*10^5	Rs./GCal	1393.89
37.	Actual net generation	S	MUs	2419.09
38.	Normative Fuel Cost for actual Net Generation	T=S*Q/10	Rs. Crore	888.56



A-8: KLTPS 1-3 - Approved Fuel Costs (Coal, Lignite & SFO for FY 2017-18)

Sl. No.	Item	Derivation	Unit	FY 2017-18
1.	Gross Generation	A	MUs	1003.91
2.	Auxiliary Consumption	C	%	12.00%
3.	Auxiliary Consumption	B	MUs	120.47
4.	Net Generation	$Y=A-B$	MUs	883.44
5.	Station Heat Rate	D	kcal/kWh	3231.00
6.	Sp. Oil Consumption	E	ml/kWh	3.00
7.	Gross calorific value of Lignite	F	kcal/Kg	2618.00
8.	Calorific value of oil	G	kcal/l	10260.78
9.	Overall Heat	$H= A \times D$	GCal	3243646.13
10.	Heat from Oil	$I= (A \times E \times G)/1000$	GCal	30902.84
11.	Heat from Lignite	$J = H-I$	GCal	3212743.30
12.	Transit losses	K	%	0.20%
13.	Actual Oil consumption	$L= A \times E$	Kl	3011.74
14.	Actual Lignite consumption	$M= (J \times 1000)/F$	MT	1227174.67
15.	Lignite consumption incl. transit losses	$N=M/(1-K)$	MT	1229633.94
16.	Price of Lignite	P1	Rs./MT	1471.52
17.	Price of Oil	P2	Rs./Kl	32818
18.	Cost of Lignite	$N1= M \times P1$	Rs. Lakh	18094.26
19.	Oil cost	$N2=P2 \times L/10^5$	Rs. Lakh	988.38
20.	Total Fuel Cost	$O= N1 + N2$	Rs. Lakh	19082.64
21.	Fuel cost/Unit (Gross)	$P=O/(A*10)$	Rs./kWh	1.90
22.	Fuel cost/Unit (Net)	$Q=O/(Y*10)$	Rs./kWh	2.16
23.	Cost of fuel/GCal	$R=(O/H)*10^5$	Rs./GCal	588.31
24.	Actual net generation	S	MUs	860.96
25.	Normative Fuel Cost for actual Net Generation	$T=S*Q/10$	Rs. Crore	185.97



A-9: KLTPS 4 - Approved Fuel Costs (Coal, Lignite & SFO for FY 2017-18)

Sl. No.	Item	Derivation	Unit	FY 2017-18
1.	Gross Generation	A	MUs	293.86
2.	Auxiliary Consumption	C	%	12.00%
3.	Auxiliary Consumption	B	MUs	35.26
4.	Net Generation	Y=A-B	MUs	258.59
5.	Station Heat Rate	D	kcal/kWh	3000
6.	Sp. Oil Consumption	E	ml/kWh	3.00
7.	Gross calorific value of Lignite	F	kcal/Kg	2581
8.	Calorific value of oil	G	kcal/l	10261
9.	Overall Heat	H= A x D	GCal	881571.00
10.	Heat from Oil	I= (A x E x G)/1000	GCal	9045.61
11.	Heat from Lignite	J = H-I	GCal	872525.39
12.	Transit losses	K	%	0.20%
13.	Actual Oil consumption	L= A x E	Kl	881.57
14.	Actual Lignite consumption	M= (J x 1000)/F	MT	338057.11
15.	Lignite consumption incl. transit losses	N=M/(1-K)	MT	338734.57
16.	Price of Lignite	P1	Rs./MT	1462.02
17.	Price of Oil	P2	Rs./Kl	32817.61
18.	Cost of Lignite	N1= M x P1	Rs. Lakh	4952.35
19.	Oil cost	N2=P2 x L/10 ⁵	Rs. Lakh	289.31
20.	Total Fuel Cost	O= N1 + N2	Rs. Lakh	5241.66
21.	Fuel cost/Unit (Gross)	P=O/(A*10)	Rs./kWh	1.78
22.	Fuel cost/Unit (Net)	Q=O/(Y*10)	Rs./kWh	2.03
23.	Cost of fuel/GCal	R=(O/H)*10 ⁵	Rs./GCal	594.58
24.	Actual net generation	S	MUs	229.79
25.	Normative Fuel Cost for actual Net Generation	T=S*Q/10	Rs. Crore	46.58



A-10: Utran Extension - Approved Fuel Costs (Gas) for FY 2017-18

Sl. No.	Item	Derivation	Unit	FY 2017-18
1.	Gross Generation	A	MUs	257.59
2.	Auxiliary Consumption	C	%	3.00%
3.	Auxiliary Consumption	B	MUs	7.73
4.	Net Generation	Y=A-B	MUs	249.86
5.	Station Heat Rate	D	kcal/kWh	1850
6.	Calorific value of gas	F	kcal/Scm	9366
7.	Overall heat from gas	H= A x D	GCal	476541.5
8.	Actual gas consumption	M= (H x 1000)/F	M. scm	50.88
9.	Price of gas	P1	Rs./scm	25.32
10.	Cost of gas	N5=P1 x M	Rs.M	1288.48
11.	Total fuel cost	N5	Rs.M	1288.48
12.	Fuel cost/unit (Gross)	P=N5/(A*10)	Rs./kWh	5.00
13.	Fuel cost/unit (Net)	Q=N5/(Y*10)	Rs./kWh	5.16
14.	Cost of fuel/GCal	R=(N5/H)*10 ⁵	Rs./GCal	2703.82
15.	Actual net generation	S	Mus	242.04
16.	Normative Fuel Cost for actual Net Generation	T=S*Q/10	Rs. Crore	124.82

A-11: Dhuvaran CCPP 1 - Approved Fuel Costs (Gas) for FY 2017-18

Sl. No.	Item	Derivation	Unit	FY 2017-18
1.	Gross Generation	A	MUs	196.38
2.	Auxiliary Consumption	C	%	4.00%
3.	Auxiliary Consumption	B	MUs	7.86
4.	Net Generation	Y=A-B	MUs	188.52
5.	Station Heat Rate	D	kcal/kWh	1950
6.	Calorific value of gas	F	kcal/Scm	9618
7.	Overall heat from gas	H= A x D	GCal	382939.05
8.	Actual gas consumption	M= (H x 1000)/F	M. scm	39.81
9.	Price of gas	P1	Rs./scm	9.62
10.	Cost of gas	N5=P1 x M/10 ⁵	Rs.M	382.88
11.	Total fuel cost	N5	Rs.M	382.88
12.	Fuel cost/unit (Gross)	P=N5/(A*10)	Rs./kWh	1.95
13.	Fuel cost/unit (Net)	Q=N5/(Y*10)	Rs./kWh	2.03
14.	Cost of fuel/GCal	R=(N5/H)*10 ⁶	Rs./GCal	999.84
15.	Actual net generation	S	Mus	182.13
16.	Normative Fuel Cost for actual Net Generation	T=S*Q/10	Rs. Crore	36.99



A-12: Dhuvaran CCPP 2 - Approved Fuel Costs (Gas) for FY 2017-18

Sl. No.	Item	Derivation	Unit	FY 2017-18
1.	Gross Generation	A	MUs	372.23
2.	Auxiliary Consumption	C	%	3.00%
3.	Auxiliary Consumption	B	MUs	11.17
4.	Net Generation	$Y=A-B$	MUs	361.07
5.	Station Heat Rate	D	kcal/kWh	1950
6.	Calorific value of gas	F	kcal/Scm	9596
7.	Overall heat from gas	$H= A \times D$	GCal	725854.35
8.	Actual gas consumption	$M= (H \times 1000)/F$	M. scm	75.64
9.	Price of gas	P1	Rs./scm	9.81
10.	Cost of gas	$N5=P1 \times M/10^5$	Rs.M	741.69
11.	Total fuel cost	N5	Rs.M	741.69
12.	Fuel cost/unit (Gross)	$P=N5/(A*10)$	Rs./kWh	1.99
13.	Fuel cost/unit (Net)	$Q=N5/(Y*10)$	Rs./kWh	2.05
14.	Cost of fuel/GCal	$R=(N5/H)*10^5$	Rs./GCal	1021.82
15.	Actual net generation	S	Mus	352.39
16.	Normative Fuel Cost for actual Net Generation	$T=S*Q/10$	Rs. Crore	72.39

A-13: Dhuvaran CCPP 3 - Approved Fuel Costs (Gas) for FY 2017-18

Sl. No.	Item	Derivation	Unit	FY 2017-18
1.	Gross Generation	A	MUs	29.42
2.	Auxiliary Consumption	C	%	3%
3.	Auxiliary Consumption	B	MUs	0.88
4.	Net Generation	$Y=A-B$	MUs	28.53
5.	Station Heat Rate	D	kcal/kWh	1850
6.	Calorific value of gas	F	kcal/Scm	9486
7.	Overall heat from gas	$H= A \times D$	GCal	54419.60
8.	Actual gas consumption	$M= (H \times 1000)/F$	M. scm	5.74
9.	Price of gas	P1	Rs./scm	23.85
10.	Cost of gas	$N5=P1 \times M/10^5$	Rs.M	136.85
11.	Total fuel cost	N5	Rs.M	136.85
12.	Fuel cost/unit (Gross)	$P=N5/(A*10)$	Rs./kWh	4.65
13.	Fuel cost/unit (Net)	$Q=N5/(Y*10)$	Rs./kWh	4.80
14.	Cost of fuel/GCal	$R=(N5/H)*10^5$	Rs./GCal	2524.70
15.	Actual net generation	S	Mus	21.76
16.	Normative Fuel Cost for actual Net Generation	$T=S*Q/10$	Rs. Crore	10.44



Annexure B

B-1: Ukai 3-5 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2019-20

Sl. No.	Item	Derivation	Unit	FY 2019-20
1.	Gross Generation	A	MUs	3000.61
2.	Auxiliary Consumption	C	%	9.00%
3.	Auxiliary Consumption	B	MUs	270.06
4.	Net Generation	Y=A-B	MUs	2730.56
5.	Station Heat Rate	D	kcal/kWh	2625
6.	Sp. Oil Consumption	E	ml/kWh	1.00
7.	Gross calorific value of coal	F	kcal/Kg	3834.71
8.	Calorific value of oil	G	kcal/l	10440.72
9.	Overall Heat	H= A x D	GCal	7876612.80
10.	Heat from Oil	I= (A x E x G)/1000	GCal	31328.58
11.	Heat from Coal	J = H-I	GCal	7845284.22
12.	Transit losses	K	%	0.80%
13.	Coal Blend			
14.	(A) Indigenous coal	X1	%	22.00%
15.	(B) Washed Coal	X2	%	78.00%
16.	(C) Imported Coal	X3	%	0.00%
17.	Actual oil consumption	L= A x E	Kl	3000.61
18.	Actual Coal consumption	M= (J x 1000)/F	MT	2045861.56
19.	(A) Indigenous coal	Q1=M* x X1/(1-K)	MT	453719.30
20.	(B) Washed Coal	Q2=M* x X2 / (1-K)	MT	1608641.14
21.	(C) Imported Coal	Q3=M* X X3	MT	0.00
22.	Price of coal			
23.	(A) Indigenous coal	P1	Rs./MT	3395.99
24.	(B) Washed Coal	P2	Rs./MT	3679.49
25.	(C) Imported Coal	P3	Rs./MT	6227.10
26.	Price of oil	P4	Rs./Kl	33170.19
27.	Coal Cost			
28.	(A) Indigenous coal	N1=Q1 X P1/10^5	Rs. Lakh	15408.26
29.	(B) Washed Coal	N2=Q2 X P2/10^5	Rs. Lakh	59189.83
30.	(C) Imported Coal	N3=Q3 X P3/10^5	Rs. Lakh	0.00
31.	Total coal cost	N4= N1+N2+N3	Rs. Lakh	74598.09
32.	Oil Cost	N5=P4 x L/10^5	Rs. Lakh	995.31
33.	Total fuel cost	O= N4+N5	Rs. Lakh	75593.40
34.	Fuel cost/Unit (Gross)	P= O/(A*10)	Rs./kWh	2.52
35.	Fuel cost/Unit (Net)	Q=O/(Y*10)	Rs./kWh	2.77
36.	Cost of fuel/GCal	R=(O/H)*10^5	Rs./GCal	959.72



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B-2: Ukai Extension 6 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2019-20

Sl. No.	Item	Derivation	Unit	FY 2019-20
1.	Gross Generation	A	MUs	3381.84
2.	Auxiliary Consumption	C	%	6.00%
3.	Auxiliary Consumption	B	MUs	202.91
4.	Net Generation	Y=A-B	MUs	3178.93
5.	Station Heat Rate	D	kcal/kWh	2385
6.	Sp. Oil Consumption	E	ml/kWh	1.00
7.	Gross calorific value of coal	F	kcal/Kg	3821.47
8.	Calorific value of oil	G	kcal/l	10422.25
9.	Overall Heat	H= A x D	GCal	8065688.40
10.	Heat from Oil	I= (A x E x G)/1000	GCal	35246.40
11.	Heat from Coal	J = H-I	GCal	8030442.00
12.	Transit losses	K	%	0.80%
13.	Coal Blend			
14.	(A) Indigenous coal	X1	%	22.00%
15.	(B) Washed Coal	X2	%	78.00%
16.	(C) Imported Coal	X3	%	0.00%
17.	Actual oil consumption	L= A x E	Kl	3381.84
18.	Actual Coal consumption	M= (J x 1000)/F	MT	2101398.75
19.	(A) Indigenous coal	Q1=M* x X1/(1-K)	MT	466036.01
20.	(B) Washed Coal	Q2=M* x X2 / (1-K)	MT	1652309.50
21.	(C) Imported Coal	Q3=M* X X3	MT	0.00
22.	Price of coal			
23.	(A) Indigenous coal	P1	Rs./MT	3516.04
24.	(B) Washed Coal	P2	Rs./MT	3798.64
25.	(C) Imported Coal	P3	Rs./MT	6221.72
26.	Price of oil	P4	Rs./Kl	32949.92
27.	Coal Cost			
28.	(A) Indigenous coal	N1=Q1 X P1/10^5	Rs. Lakh	16386.01
29.	(B) Washed Coal	N2=Q2 X P2/10^5	Rs. Lakh	62765.29
30.	(C) Imported Coal	N3=Q3 X P3/10^5	Rs. Lakh	0.00
31.	Total coal cost	N4= N1+N2+N3	Rs. Lakh	79151.30
32.	Oil Cost	N5=P4 x L/10^5	Rs. Lakh	1114.31
33.	Total fuel cost	O= N4+N5	Rs. Lakh	80265.61
34.	Fuel cost/Unit (Gross)	P= O/(A*10)	Rs./kWh	2.37
35.	Fuel cost/Unit (Net)	Q=O/(Y*10)	Rs./kWh	2.52
36.	Cost of fuel/GCal	R=(O/H)*10^5	Rs./GCal	995.15



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B-3: Gandhinagar 3 & 4 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2019-20

Sl. No.	Item	Derivation	Unit	FY 2019-20
1.	Gross Generation	A	MUs	1660.18
2.	Auxiliary Consumption	C	%	9.00%
3.	Auxiliary Consumption	B	MUs	149.42
4.	Net Generation	Y=A-B	MUs	1510.76
5.	Station Heat Rate	D	kcal/kWh	2625.00
6.	Sp. Oil Consumption	E	ml/kWh	1.00
7.	Gross calorific value of coal	F	kcal/Kg	3918.22
8.	Calorific value of oil	G	kcal/l	10367.65
9.	Overall Heat	H= A x D	GCal	4357962.00
10.	Heat from Oil	I= (A x E x G)/1000	GCal	17212.12
11.	Heat from Coal	J = H-I	GCal	4340749.88
12.	Transit losses	K	%	0.80%
13.	Coal Blend			
14.	(A) Indigenous coal	X1	%	0.00%
15.	(B) Washed Coal	X2	%	100.00%
16.	(C) Imported Coal	X3	%	0.00%
17.	Actual oil consumption	L= A x E	Kl	1660.18
18.	Actual Coal consumption	M= (J x 1000)/F	MT	1107836.37
19.	(A) Indigenous coal	Q1=M* x X1/(1-K)	MT	0.00
20.	(B) Washed Coal	Q2=M* x X2 / (1-K)	MT	1116770.54
21.	(C) Imported Coal	Q3=M* X X3	MT	0.00
22.	Price of coal			
23.	(A) Indigenous coal	P1	Rs./MT	4931.76
24.	(B) Washed Coal	P2	Rs./MT	4427.82
25.	(C) Imported Coal	P3	Rs./MT	6817.29
26.	Price of oil	P4	Rs./Kl	31792.72
27.	Coal Cost			
28.	(A) Indigenous coal	N1=Q1 X P1/10^5	Rs. Lakh	0.00
29.	(B) Washed Coal	N2=Q2 X P2/10^5	Rs. Lakh	49448.63
30.	(C) Imported Coal	N3=Q3 X P3/10^5	Rs. Lakh	0.00
31.	Total coal cost	N4= N1+N2+N3	Rs. Lakh	49448.63
32.	Oil Cost	N5=P4 x L/10^5	Rs. Lakh	527.82
33.	Total fuel cost	O= N4+N5	Rs. Lakh	49976.45
34.	Fuel cost/Unit (Gross)	P= O/(A*10)	Rs./kWh	3.01
35.	Fuel cost/Unit (Net)	Q=O/(Y*10)	Rs./kWh	3.31
36.	Cost of fuel/GCal	R=(O/H)*10^5	Rs./GCal	1146.78



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B-4: Gandhinagar 5 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2019-20

Sl. No.	Item	Derivation	Unit	FY 2019-20
1.	Gross Generation	A	MUs	1420.37
2.	Auxiliary Consumption	C	%	9.50%
3.	Auxiliary Consumption	B	MUs	134.94
4.	Net Generation	Y=A-B	MUs	1285.44
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	3933.51
8.	Calorific value of oil	G	kcal/l	10440.00
9.	Overall Heat	H= A x D	GCal	3494117.09
10.	Heat from Oil	I= (A x E x G)/1000	GCal	51900.42
11.	Heat from Coal	J = H-I	GCal	3442216.67
12.	Transit losses	K	%	0.00%
13.	Coal Blend			
14.	(A) Indigenous coal	X1	%	0.00%
15.	(B) Washed Coal	X2	%	100.00%
16.	(C) Imported Coal	X3	%	0.00%
17.	Actual oil consumption	L= A x E	Kl	4971.30
18.	Actual Coal consumption	M= (J x 1000)/F	MT	875101.15
19.	(A) Indigenous coal	Q1=M* x X1/(1-K)	MT	0.00
20.	(B) Washed Coal	Q2=M* x X2 / (1-K)	MT	882158.42
21.	(C) Imported Coal	Q3=M* X X3	MT	0.00
22.	Price of coal			
23.	(A) Indigenous coal	P1	Rs./MT	4823.83
24.	(B) Washed Coal	P2	Rs./MT	4359.89
25.	(C) Imported Coal	P3	Rs./MT	7186.85
26.	Price of oil	P4	Rs./Kl	32220.88
27.	Coal Cost			
28.	(A) Indigenous coal	N1=Q1 X P1/10^5	Rs. Lakh	0.00
29.	(B) Washed Coal	N2=Q2 X P2/10^5	Rs. Lakh	38461.14
30.	(C) Imported Coal	N3=Q3 X P3/10^5	Rs. Lakh	0.00
31.	Total coal cost	N4= N1+N2+N3	Rs. Lakh	38461.14
32.	Oil Cost	N5=P4 x L/10^5	Rs. Lakh	1601.80
33.	Total fuel cost	O= N4+N5	Rs. Lakh	40062.94
34.	Fuel cost/Unit (Gross)	P= O/(A*10)	Rs./kWh	2.82
35.	Fuel cost/Unit (Net)	Q=O/(Y*10)	Rs./kWh	3.12
36.	Cost of fuel/GCal	R=(O/H)*10^5	Rs./GCal	1146.58



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B-5: Wanakbori 1-6 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2019-20

Sl. No.	Item	Derivation	Unit	FY 2019-20
1.	Gross Generation	A	MUs	5533.92
2.	Auxiliary Consumption	C	%	9.00%
3.	Auxiliary Consumption	B	MUs	498.05
4.	Net Generation	Y=A-B	MUs	5035.87
5.	Station Heat Rate	D	kcal/kWh	2575
6.	Sp. Oil Consumption	E	ml/kWh	1.00
7.	Gross calorific value of coal	F	kcal/Kg	3879.89
8.	Calorific value of oil	G	kcal/l	10326.54
9.	Overall Heat	H= A x D	GCal	14249844.00
10.	Heat from Oil	I= (A x E x G)/1000	GCal	57146.27
11.	Heat from Coal	J = H-I	GCal	14192697.73
12.	Transit losses	K	%	0.80%
13.	Coal Blend			
14.	(A) Indigenous coal	X1	%	0.00%
15.	(B) Washed Coal	X2	%	100.00%
16.	(C) Imported Coal	X3	%	0.00%
17.	Actual oil consumption	L= A x E	Kl	5533.92
18.	Actual Coal consumption	M= (J x 1000)/F	MT	3658016.34
19.	(A) Indigenous coal	Q1=M* x X1/(1-K)	MT	0.00
20.	(B) Washed Coal	Q2=M* x X2 / (1-K)	MT	3687516.47
21.	(C) Imported Coal	Q3=M* X X3	MT	0.00
22.	Price of coal			
23.	(A) Indigenous coal	P1	Rs./MT	5368.31
24.	(B) Washed Coal	P2	Rs./MT	4333.55
25.	(C) Imported Coal	P3	Rs./MT	6750.21
26.	Price of oil	P4	Rs./Kl	31021.56
27.	Coal Cost			
28.	(A) Indigenous coal	N1=Q1 X P1	Rs. Lakh	0.00
29.	(B) Washed Coal	N2=Q2 X P2	Rs. Lakh	159800.27
30.	(C) Imported Coal	N3=Q3 X P3	Rs. Lakh	0.00
31.	Total coal cost	N4= N1+N2+N3	Rs. Lakh	159800.27
32.	Oil Cost	N5=P4 x L/10^5	Rs. Lakh	1716.71
33.	Total fuel cost	O= N4+N5	Rs. Lakh	161516.98
34.	Fuel cost/Unit (Gross)	P= O/(A*10)	Rs./kWh	2.92
35.	Fuel cost/Unit (Net)	Q=O/(Y*10)	Rs./kWh	3.21
36.	Cost of fuel/GCal	R=(O/H)*10^5	Rs./GCal	1133.46



B-6: Wanakbori 7 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2019-20

Sl. No.	Item	Derivation	Unit	FY 2019-20
1.	Gross Generation	A	MUs	1291.25
2.	Auxiliary Consumption	C	%	9.50%
3.	Auxiliary Consumption	B	MUs	122.67
4.	Net Generation	Y=A-B	MUs	1168.58
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	3957.03
8.	Calorific value of oil	G	kcal/l	10293.00
9.	Overall Heat	H= A x D	GCal	3176470.08
10.	Heat from Oil	I= (A x E x G)/1000	GCal	46517.85
11.	Heat from Coal	J = H-I	GCal	3129952.23
12.	Transit losses	K	%	0.80%
13.	Coal Blend			
14.	(A) Indigenous coal	X1	%	0.00%
15.	(B) Washed Coal	X2	%	100.00%
16.	(C) Imported Coal	X3	%	0.00%
17.	Actual oil consumption	L= A x E	Kl	4519.37
18.	Actual Coal consumption	M= (J x 1000)/F	MT	790984.72
19.	(A) Indigenous coal	Q1=M* x X1/(1-K)	MT	0.00
20.	(B) Washed Coal	Q2=M* x X2 / (1-K)	MT	797363.63
21.	(C) Imported Coal	Q3=M* X X3	MT	0.00
22.	Price of coal			
23.	(A) Indigenous coal	P1	Rs./MT	5421.60
24.	(B) Washed Coal	P2	Rs./MT	4354.70
25.	(C) Imported Coal	P3	Rs./MT	6818.93
26.	Price of oil	P4	Rs./Kl	31535.82
27.	Coal Cost			
28.	(A) Indigenous coal	N1=Q1 X P1	Rs. Lakh	0.00
29.	(B) Washed Coal	N2=Q2 X P2	Rs. Lakh	34722.77
30.	(C) Imported Coal	N3=Q3 X P3	Rs. Lakh	0.00
31.	Total coal cost	N4= N1+N2+N3	Rs. Lakh	34722.77
32.	Oil Cost	N5=P4 x L/10^5	Rs. Lakh	1425.22
33.	Total fuel cost	O= N4+N5	Rs. Lakh	36147.99
34.	Fuel cost/Unit (Gross)	P= O/(A*10)	Rs./kWh	2.80
35.	Fuel cost/Unit (Net)	Q=O/(Y*10)	Rs./kWh	3.09
36.	Cost of fuel/GCal	R=(O/H)*10^5	Rs./GCal	1137.99



B-7: Wanakbori 8 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2019-20

Sl. No.	Item	Derivation	Unit	FY 2019-20
1.	Gross Generation	A	MUs	5973.12
2.	Auxiliary Consumption	C	%	5.25%
3.	Auxiliary Consumption	B	MUs	313.59
4.	Net Generation	Y=A-B	MUs	5659.53
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	4200.00
8.	Calorific value of oil	G	kcal/l	10327.00
9.	Overall Heat	H= A x D	GCal	13427573.76
10.	Heat from Oil	I= (A x E x G)/1000	GCal	30842.21
11.	Heat from Coal	J = H-I	GCal	13396731.55
12.	Transit losses	K	%	0.80%
13.	Coal Blend			
14.	(A) Indigenous coal	X1	%	0.00%
15.	(B) Washed Coal	X2	%	100.00%
16.	(C) Imported Coal	X3	%	0.00%
17.	Actual oil consumption	L= A x E	Kl	2986.56
18.	Actual Coal consumption	M= (J x 1000)/F	MT	3189697.99
19.	(A) Indigenous coal	Q1=M* x X1/(1-K)	MT	0.00
20.	(B) Washed Coal	Q2=M* x X2 / (1-K)	MT	3215421.36
21.	(C) Imported Coal	Q3=M* X X3	MT	0.00
22.	Price of coal			
23.	(A) Indigenous coal	P1	Rs./MT	0.00
24.	(B) Washed Coal	P2	Rs./MT	5157.00
25.	(C) Imported Coal	P3	Rs./MT	0.00
26.	Price of oil	P4	Rs./Kl	21464.00
27.	Coal Cost			
28.	(A) Indigenous coal	N1=Q1 X P1	Rs. Lakh	0.00
29.	(B) Washed Coal	N2=Q2 X P2	Rs. Lakh	165819.28
30.	(C) Imported Coal	N3=Q3 X P3	Rs. Lakh	0.00
31.	Total coal cost	N4= N1+N2+N3	Rs. Lakh	165819.28
32.	Oil Cost	N5=P4 x L/10^5	Rs. Lakh	641.04
33.	Total fuel cost	O= N4+N5	Rs. Lakh	166460.31
34.	Fuel cost/Unit (Gross)	P= O/(A*10)	Rs./kWh	2.79
35.	Fuel cost/Unit (Net)	Q=O/(Y*10)	Rs./kWh	2.94
36.	Cost of fuel/GCal	R=(O/H)*10^5	Rs./GCal	1239.69



B-8: Sikka Extension 3 & 4 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2019-20

Sl. No.	Item	Derivation	Unit	FY 2019-20
1.	Gross Generation	A	MUs	3074.40
2.	Auxiliary Consumption	C	%	9.00%
3.	Auxiliary Consumption	B	MUs	276.70
4.	Net Generation	Y=A-B	MUs	2797.70
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	5270.16
8.	Calorific value of oil	G	kcal/l	10310.42
9.	Overall Heat	H= A x D	GCal	7372411.20
10.	Heat from Oil	I= (A x E x G)/1000	GCal	31698.35
11.	Heat from Coal	J = H-I	GCal	7340712.85
12.	Transit losses	K	%	0.00%
13.	Coal Blend			
14.	(A) Indigenous coal	X1	%	0.00%
15.	(B) Washed Coal	X2	%	0.00%
16.	(C) Imported Coal	X3	%	100.00%
17.	Actual oil consumption	L= A x E	Kl	3074.40
18.	Actual Coal consumption	M= (J x 1000)/F	MT	1392882.97
19.	(A) Indigenous coal	Q1=M* x X1/(1-K)	MT	0.00
20.	(B) Washed Coal	Q2=M* x X2 / (1-K)	MT	0.00
21.	(C) Imported Coal	Q3=M* X X3	MT	1392882.97
22.	Price of coal			
23.	(A) Indigenous coal	P1	Rs./MT	0.00
24.	(B) Washed Coal	P2	Rs./MT	0.00
25.	(C) Imported Coal	P3	Rs./MT	4818.71
26.	Price of oil	P4	Rs./Kl	23936.01
27.	Coal Cost			
28.	(A) Indigenous coal	N1=Q1 X P1	Rs. Lakh	0.00
29.	(B) Washed Coal	N2=Q2 X P2	Rs. Lakh	0.00
30.	(C) Imported Coal	N3=Q3 X P3	Rs. Lakh	67118.93
31.	Total coal cost	N4= N1+N2+N3	Rs. Lakh	67118.93
32.	Oil Cost	N5=P4 x L/10^5	Rs. Lakh	735.89
33.	Total fuel cost	O= N4+N5	Rs. Lakh	67854.81
34.	Fuel cost/Unit (Gross)	P= O/(A*10)	Rs./kWh	2.21
35.	Fuel cost/Unit (Net)	Q=O/(Y*10)	Rs./kWh	2.43
36.	Cost of fuel/GCal	R=(O/H)*10^5	Rs./GCal	920.39



B-9: KLTPS 1-3 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2019-20

Sl. No.	Item	Derivation	Unit	FY 2019-20
1.	Gross Generation	A	MUs	1416.42
2.	Auxiliary Consumption	C	%	12.00%
3.	Auxiliary Consumption	B	MUs	169.97
4.	Net Generation	$Y=A-B$	MUs	1246.45
5.	Station Heat Rate	D	kcal/kWh	3231
6.	Sp. Oil Consumption	E	ml/kWh	3.00
7.	Gross calorific value of Lignite	F	kcal/Kg	2786.00
8.	Calorific value of oil	G	kcal/l	10285.47
9.	Overall Heat	$H= A \times D$	GCal	4576453.02
10.	Heat from Oil	$I= (A \times E \times G)/1000$	GCal	43705.63
11.	Heat from Lignite	$J = H-I$	GCal	4532747.39
12.	Transit losses	K	%	0.20%
13.	Actual Oil consumption	$L= A \times E$	Kl	4249.26
14.	Actual Lignite consumption	$M= (J \times 1000)/F$	MT	1626973.22
15.	Lignite consumption incl. transit losses	$N=M/(1-K)$	MT	1630233.69
16.	Price of Lignite	P1	Rs./MT	1072.14
17.	Price of Oil	P2	Rs./Kl	28419.47
18.	Cost of Lignite	$N1= M \times P1$	Rs. Lakh	17443.37
19.	Oil cost	$N2=P2 \times L/10^5$	Rs. Lakh	1207.62
20.	Total Fuel Cost	$O= N1 + N2$	Rs. Lakh	18650.99
21.	Fuel cost/Unit (Gross)	$P=O/(A*10)$	Rs./kWh	1.32
22.	Fuel cost/Unit (Net)	$Q=O/(Y*10)$	Rs./kWh	1.50
23.	Cost of fuel/GCal	$R=(O/H)*10^5$	Rs./GCal	407.54



B-10: KLTPS 4 - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2019-20

Sl. No.	Item	Derivation	Unit	FY 2019-20
1.	Gross Generation	A	MUs	492.75
2.	Auxiliary Consumption	C	%	12.00%
3.	Auxiliary Consumption	B	MUs	59.13
4.	Net Generation	$Y=A-B$	MUs	433.62
5.	Station Heat Rate	D	kcal/kWh	3000
6.	Sp. Oil Consumption	E	ml/kWh	3.00
7.	Gross calorific value of Lignite	F	kcal/Kg	2786.00
8.	Calorific value of oil	G	kcal/l	10285.47
9.	Overall Heat	$H= A \times D$	GCal	1478250.00
10.	Heat from Oil	$I= (A \times E \times G)/1000$	GCal	15204.50
11.	Heat from Lignite	$J = H-I$	GCal	1463045.50
12.	Transit losses	K	%	0.20%
13.	Actual Oil consumption	$L= A \times E$	Kl	1478.25
14.	Actual Lignite consumption	$M= (J \times 1000)/F$	MT	525141.96
15.	Lignite consumption incl. transit losses	$N=M/(1-K)$	MT	526194.35
16.	Price of Lignite	P1	Rs./MT	1087.75
17.	Price of Oil	P2	Rs./Kl	44458.81
18.	Cost of Lignite	$N1= M \times P1$	Rs. Lakh	5712.22
19.	Oil cost	$N2=P2 \times L/10^5$	Rs. Lakh	657.21
20.	Total Fuel Cost	$O= N1 + N2$	Rs. Lakh	6369.44
21.	Fuel cost/Unit (Gross)	$P=O/(A*10)$	Rs./kWh	1.29
22.	Fuel cost/Unit (Net)	$Q=O/(Y*10)$	Rs./kWh	1.47
23.	Cost of fuel/GCal	$R=(O/H)*10^5$	Rs./GCal	430.88



B-11: Utran Extension - Approved Fuel Costs (Gas) for FY 2019-20

Sl. No.	Item	Derivation	Unit	FY 2019-20
1.	Gross Generation	A	MUs	823.50
2.	Auxiliary Consumption	C	%	3.00%
3.	Auxiliary Consumption	B	MUs	24.71
4.	Net Generation	$Y=A-B$	MUs	798.80
5.	Station Heat Rate	D	kcal/kWh	1850
6.	Calorific value of gas	F	kcal/Scm	9536.57
7.	Overall heat from gas	$H= A \times D$	GCal	1523475.00
8.	Actual gas consumption	$M= (H \times 1000)/F$	M. scm	159.75
9.	Price of gas	P1	Rs./scm	21.73
10.	Cost of gas	$N5=P1 \times M$	Rs.M	3470.92
11.	Total fuel cost	N5	Rs.M	3470.92
12.	Fuel cost/unit (Gross)	$P=N5/(A*10)$	Rs./kWh	4.21
13.	Fuel cost/unit (Net)	$Q=N5/(Y*10)$	Rs./kWh	4.35
14.	Cost of fuel/GCal	$R=(N5/H)*10^5$	Rs./GCal	2278.29

B-12: Dhuvaran CCPP 1 - Approved Fuel Costs (Gas) for FY 2019-20

Sl. No.	Item	Derivation	Unit	FY 2019-20
1.	Gross Generation	A	MUs	234.13
2.	Auxiliary Consumption	C	%	4.00%
3.	Auxiliary Consumption	B	MUs	9.37
4.	Net Generation	$Y=A-B$	MUs	224.77
5.	Station Heat Rate	D	kcal/kWh	1950
6.	Calorific value of gas	F	kcal/Scm	9508.70
7.	Overall heat from gas	$H= A \times D$	GCal	456555.32
8.	Actual gas consumption	$M= (H \times 1000)/F$	M. scm	48.01
9.	Price of gas	P1	Rs./scm	18.25
10.	Cost of gas	$N5=P1 \times M$	Rs.M	876.46
11.	Total fuel cost	N5	Rs.M	876.46
12.	Fuel cost/unit (Gross)	$P=N5/(A*10)$	Rs./kWh	3.74
13.	Fuel cost/unit (Net)	$Q=N5/(Y*10)$	Rs./kWh	3.90
14.	Cost of fuel/GCal	$R=(N5/H)*10^5$	Rs./GCal	1919.73



B-13: Dhuvaran CCPP 2 - Approved Fuel Costs (Gas) for FY 2019-20

Sl. No.	Item	Derivation	Unit	FY 2019-20
1.	Gross Generation	A	MUs	246.94
2.	Auxiliary Consumption	C	%	3.00%
3.	Auxiliary Consumption	B	MUs	7.41
4.	Net Generation	$Y=A-B$	MUs	239.53
5.	Station Heat Rate	D	kcal/kWh	1950
6.	Calorific value of gas	F	kcal/Scm	9519.01
7.	Overall heat from gas	$H= A \times D$	GCal	481533.39
8.	Actual gas consumption	$M= (H \times 1000)/F$	M. scm	50.59
9.	Price of gas	P1	Rs./scm	19.26
10.	Cost of gas	$N5=P1 \times M$	Rs.M	974.05
11.	Total fuel cost	N5	Rs.M	974.05
12.	Fuel cost/unit (Gross)	$P=N5/(A*10)$	Rs./kWh	3.94
13.	Fuel cost/unit (Net)	$Q=N5/(Y*10)$	Rs./kWh	4.07
14.	Cost of fuel/GCal	$R=(N5/H)*10^5$	Rs./GCal	2022.80

B-14: Dhuvaran CCPP 3 - Approved Fuel Costs (Gas) for FY 2019-20

Sl. No.	Item	Derivation	Unit	FY 2019-20
1.	Gross Generation	A	MUs	825.70
2.	Auxiliary Consumption	C	%	3.00%
3.	Auxiliary Consumption	B	MUs	24.77
4.	Net Generation	$Y=A-B$	MUs	800.93
5.	Station Heat Rate	D	kcal/kWh	1850
6.	Calorific value of gas	F	kcal/Scm	9825.54
7.	Overall heat from gas	$H= A \times D$	GCal	1527537.60
8.	Actual gas consumption	$M= (H \times 1000)/F$	M. scm	155.47
9.	Price of gas	P1	Rs./scm	11.62
10.	Cost of gas	$N5=P1 \times M$	Rs.M	1806.51
11.	Total fuel cost	N5	Rs.M	1806.51
12.	Fuel cost/unit (Gross)	$P=N5/(A*10)$	Rs./kWh	2.19
13.	Fuel cost/unit (Net)	$Q=N5/(Y*10)$	Rs./kWh	2.26
14.	Cost of fuel/GCal	$R=(N5/H)*10^5$	Rs./GCal	1182.63



Annexure C

C-1: BLTPS (erstwhile BECL) - Approved Fuel Costs (Coal, Lignite & SFO) for FY 2019-20

Sl. No.	Item	Units	FY 2019-20
1.	Gross Generation	MUs	3513.60
2.	Auxiliary Consumption	MUs	386.50
3.	Net Generation	MUs	3127.10
4.	Capacity	MW	500.00
5.	Availability Factor	%	80.00%
6.	Plant Load Factor	%	80.00%
7.	Auxiliary Consumption	%	11.00%
8.	Station Heat Rate	kcal/kWh	2623
9.	Sp. Oil Consumption	ml/kWh	1.00
10.	Sp. Consumption of Limestone	Kg/kWh	0.26
11.	Gross Calorific Value of Lignite	kcal/kg	2900.00
12.	Calorific Value of Oil	kcal/l	10283.00
13.	Overall Heat	GCal	9216172.80
14.	Heat from Oil	GCal	36130.35
15.	Heat from Lignite	GCal	9180042.45
16.	Transit losses	%	0.80%
17.	Lignite	%	100.00%
18.	Actual Lime Consumption	MT	913536.00
19.	Actual Oil Consumption	kl	3513.60
20.	Actual Lignite Consumption	MT	3165531.88
21.	A) Indigenous Lignite	MT	3191060.36
22.	Specific Lignite Consumption	kg/kWh	0.90
23.	Price of Lignite	Rs./MT	2193.74
24.	Price of Oil	Rs./kl	37206.89
25.	Price of Lime	Rs./MT	1102.50
26.	Lignite Cost	Rs. Crore	700.04
27.	Oil Cost	Rs. Crore	13.07
28.	Lime Cost	Rs. Crore	100.72
29.	Total Fuel Cost	Rs. Crore	813.83
30.	Fuel Cost/ Gross Generation	Rs./kWh	2.32
31.	Fuel Cost/ Net Generation	Rs./kWh	2.60

