

GUJARAT ELECTRICITY REGULATORY COMMISSION



Tariff Order

Truing up for FY 2014-15,
Approval of Provisional ARR for FY 2016-17 and
Determination of Tariff for FY 2016-17

For

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

Case No. 1544 of 2015

31st March, 2016

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(GERC)**

GANDHINAGAR

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CONTENTS

1. Background and Brief History	1
1.1 Background	1
1.2 Gujarat State Electricity Corporation Limited (GSECL)	2
1.3 Commission's Order for the Second control period	2
1.4 Background for the present petition	3
1.5 Admission of the Current Petition and Public Hearing Process	4
1.6 Contents of this Order.....	5
1.7 Approach of this Order.....	5
2. A Summary of GSECL's Petition	7
2.1 Actuals for FY 2014-15 submitted by GSECL.....	7
2.2 Summary of fixed and variable costs claimed by GSECL for True up of FY 2014-15... 7	
2.3 A Summary of fixed and variable costs claimed by GSECL for FY 2016-17	8
2.4 Request of GSECL	9
3. Brief outline of Objections raised, response from GSECL and Commission's View	11
3.1 Stakeholders' suggestions / objections, Petitioner's Response and Commission's Observation.....	11
4. Truing up for FY 2014-15	24
4.1 Generating Stations of GSECL	24
4.2 Operating Performance Parameters	26
4.2.1 Plant Availability Factor (PAF)	26
4.2.2 Plant Load Factor (PLF)	28
4.2.3 Auxiliary Consumption	30
4.2.4 Station Heat Rate (SHR)	32
4.2.5 Secondary Fuel Oil Consumption (Specific Oil Consumption).....	34
4.2.6 Transit Loss	35
4.2.7 A Summary of Performance Parameters Approved for FY 2014-15.....	36
4.3 Gross and Net Generation	37
4.4 Cost Parameters.....	39
4.4.1 Wt. Av. Gross Calorific Value (GCV) of fuels	39
4.4.2 Mix of Coal	39



Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

4.4.3 Wt. Av. Prices of Fuel	40
4.5 Fuel Cost.....	40
4.5.1 Variation between Actual Fuel Costs and Approved Fuel Costs	42
4.5.2 Gains and Losses in Fuel costs due to controllable factors.....	42
4.6 Fixed Charges	43
4.6.1 Operations & Maintenance (O&M) Expenses.....	43
4.6.2 Depreciation for FY 2014-15.....	45
4.6.3 Interest and Finance charges for FY 2014-15.....	48
4.6.4 Return on Equity for FY 2014-15	51
4.6.5 Interest on Working Capital for FY 2014-15	53
4.6.6 SLDC charges for FY 2014-15.....	55
4.6.7 Water charges for FY 2014-15.....	56
4.6.8 Income Tax for FY 2014-15	58
4.6.9 Non-Tariff Income for FY 2014-15	60
4.7 Approved Fixed Charges	62
4.8 Sharing of Gains / (Losses) for FY 2014-15.....	64
5. Determination of Generation Charges for FY 2016-17	82
5.1 Introduction.....	82
5.2 Provisional ARR for FY 2016-17	82
6. Compliance of Directives.....	86
6.1 Compliance of Directives issued by the Commission.....	86
6.2 Directive issued in Tariff Order dated 31 st March, 2015	86
6.3 New Directive	87
COMMISSION'S ORDER.....	88



LIST OF TABLES

Table 2.1: Fixed Cost for FY 2014-15	8
Table 2.2: Energy Charge for GSECL Plants for FY 2014-15	8
Table 2.3: Proposed Fixed Cost for FY 2016-17.....	9
Table 2.4: Proposed Energy Charges for FY 2015-16.....	9
Table 4.1: Capacity, CoD and Age of GSECL generating Stations as on 1 st April 2014	24
Table 4.2: Plant Availability Factors for FY 2014-15	26
Table 4.3: Plant Availability Factors approved for Truing up for FY 2014-15	27
Table 4.4: Plant Load Factors for FY 2014-15	28
Table 4.5: PLF considered for FY 2014-15 for Truing up.....	29
Table 4.6: Auxiliary Consumption for FY 2014-15	30
Table 4.7: Auxiliary Consumption approved for FY 2014-15 for Truing up.....	32
Table 4.8: Station Heat Rate for FY 2014-15.....	32
Table 4.9: Station Heat Rate approved for FY 2014-15 for Truing up	34
Table 4.10: Secondary Fuel Oil Consumption FY 2014-15.....	34
Table 4.11: Secondary Fuel Oil Consumption approved for FY 2014-15	35
Table 4.12: Transit Loss for FY 2014-15.....	36
Table 4.13: Transit Loss approved for FY 2014-15 for Truing up	36
Table 4.14: Performance Parameters approved for Truing up purpose for FY 2014-15	37
Table 4.15: The Gross and Net Generation for FY 2014-15 for Truing up purpose	38
Table 4.16: Weighted Average Gross Calorific Value (GCV) of Fuels for Different Stations for FY 2014-15.....	39
Table 4.17: The Mix of Different Types of Coal for FY 2014-15	39
Table 4.18: Weighted Average Price / Unit of Fuels for FY 2014-15.....	40
Table 4.19: Fuel Cost of different stations for FY 2014-15 for Truing up.....	41
Table 4.20: Cost of different fuels as per Audited Annual Accounts and as approved for Truing up for FY 2014-15.....	42
Table 4.21: Approved Gains / (Losses) from Fuel Expenses for FY 2014-15	43
Table 4.22: O&M expenses claimed by GSECL in Truing up for FY 2014-15.....	43
Table 4.23: Gains/(Losses) from O&M expenses claimed for FY 2014-15.....	44
Table 4.24: Approved O&M Expenses & Gains / (Losses) for FY 2014-15.....	45
Table 4.25: Depreciation claimed for FY 2014-15.....	45
Table 4.26: Depreciation and Gains/(Losses) claimed for FY 2014-15	46
Table 4.27: Approved Depreciation Charges & Gains / (Losses) for FY 2014-15	47
Table 4.28: Interest and Finance charges claimed in Truing up for FY 2014-15.....	48
Table 4.29: Interest and Finance charges and Gains/(Losses) claimed for FY 2014-15.....	49
Table 4.30: Approved Interest & Finance Charges & Gains / (Losses) for FY 2014-15.....	50



Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

Table 4.31: Return on Equity claimed for FY 2014-15	51
Table 4.32: Return on equity and Gains/(Losses) claimed for FY 2014-15	51
Table 4.33: Approved Return on Equity Gains / (Losses) for FY 2014-15.....	52
Table 4.34: Interest on Working Capital claimed by GSECL in Truing up for FY 2014-15	53
Table 4.35: Gains / (Losses) from Interest on Working Capital claimed for FY 2014-15.....	53
Table 4.36: Approved Interest on Working Capital Gains / (Losses) for FY 2014-15.....	54
Table 4.37: SLDC charges claimed in Truing up for FY 2014-15	55
Table 4.38: SLDC charges and Gains/(Losses) claimed for FY 2014-15	55
Table 4.39: Approved SLDC charges Gains / (Losses) for FY 2014-15	56
Table 4.40: Water charges claimed in Truing up for FY 2014-15	57
Table 4.41: Water charges and Gains/(Losses) claimed for FY 2014-15	57
Table 4.42: Approved Water Charges Gains / (Losses) for FY 2014-15	58
Table 4.43: Income Tax claimed in Truing up for FY 2014-15.....	58
Table 4.44: Income Tax and Gains/(Losses) claimed for FY 2014-15.....	59
Table 4.45: Approved Income Tax Gains / (Losses) for FY 2014-15.....	60
Table 4.46: Non-Tariff income claimed in Truing up for FY 2014-15	60
Table 4.47: Non-tariff income and Gains/(Losses) claimed for FY 2014-15	61
Table 4.48: Approved Non-Tariff Income Gains/(Losses) for FY 2014-15.....	61
Table 4.49: Fixed Charges Approved in the Truing up for FY 2014-15	62
Table 4.50: Approved Station-wise Fixed Charges for FY 2014-15.....	63
Table 4.51: Approved Gains / (Losses) due to Controllable Factors for FY 2014-15	65
Table 4.52: Approved Gains / (Losses) due to Uncontrollable Factors for FY 2014-15	66
Table 4.53: Total Consolidated Gains / (Losses) Approved for FY 2014-15	67
Table 5.1: Variable Charges claimed for FY 2016-17	82
Table 5.2: Fixed Charges claimed for FY 2016-17	84
Table 5.3: Provisionally Approved charges for FY 2016-17.....	85



LIST OF ANNEXURES

4.1	Approved Fuel costs for FY 2013-14 for True-up for Ukai (1-5).....	68
4.2	Approved Fuel costs for FY 2013-14 for True-up for Ukai 6.....	69
4.3	Approved Fuel costs for FY 2013-14 for True-up for Gandhinagar (1-4).....	70
4.4	Approved Fuel costs for FY 2013-14 for True-up for Gandhinagar 5.....	71
4.5	Approved Fuel costs for FY 2013-14 for True-up for Wanakbori 1-6 TPS....	72
4.6	Approved Fuel costs for FY 2013-14 for True-up for Wanakbori 7 TPS.....	73
4.7	Approved Fuel costs for FY 2013-14 for True-up for Sikka TPS.....	74
4.8	Approved Fuel costs for FY 2013-14 for True-up for KLTPS 1-3.....	75
4.9	Approved Fuel costs for FY 2013-14 for True-up for KLTPS 4.....	76
4.10	Approved Fuel costs for FY 2013-14 for True-up for Dhuvaran (Gas 1).....	77
4.11	Approved Fuel costs for FY 2013-14 for True-up for Dhuvaran (Gas 2).....	78
4.12	Approved Fuel costs for FY 2013-14 for True-up for Dhuvaran (Gas 3).....	79
4.13	Approved Fuel costs for FY 2013-14 for True-up for Utran (Gas).....	80
4.14	Approved Fuel costs for FY 2013-14 for True-up for Utran extension.....	81



ABBREVIATIONS

ABT	Availability Based Tariff
Act	Electricity Act, 2003
AOH	Annual Overhauling
APR	Annual Performance Review
ARR	Aggregate Revenue Requirement
BHEL	Bharat Heavy Electricals Limited
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
COH	Capital Overhauling
CUF	Capacity Utilization Factor
CV	Calorific Value
DGVCL	Dakshin Gujarat Vij Company Limited
DISCOMs	Distribution Companies
ESP	Electro Static Precipitator
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
GSECL	Gujarat State Electricity Corporation Limited
GUVNL	Gujarat Urja Vikas Nigam Limited
HSD	High Speed Diesel
IPP	Independent Power Producer
K.Cal	Kilo Calorie
kV/KV	Kilo Volt
kWh	Kilo Watt Hour
LE	Life Extension
LSHS	Low Sulphur Heavy stock
LTSA	Long Term Service Agreement
MAT	Minimum Alternate Tax
MGVCL	Madhya Gujarat Vij Company Limited
MoU	Memorandum of Understanding
MW	Mega Watt
MYT	Multi-Year Tariff
NCV	Net Calorific Value
O&M	Operations and Maintenance
OEM	Original Equipment Manufacturer
PGVCL	Paschim Gujarat Vij Company Limited
PAF	Plant Availability Factor
PG test	Performance Guarantee Test
PLF	Plant Load Factor
PPA	Power Purchase Agreement
Ps	Paise
R&M	Renovation and Modernization
RE	Revised Estimates



Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

RLA	Residual Life Assessment
ROE	Return on Equity
Rs.	Rupees
RSD	Re-start Duration
Scm	Standard cubic meter
SHR	Station Heat Rate
SLDC	State Load Despatch Centre
TPS	Thermal Power Station
UGVCL	Uttar Gujarat Vij Company Limited
UI	Unscheduled Interchange
Wt. Av.	Weighted Average
WTPS	Wanakbori Thermal Power Station



Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17



Before the Gujarat Electricity Regulatory Commission at Gandhinagar

Case No. 1544 of 2015

Date of the Order: 31/03/2016

CORAM

Shri K. M. Shringarpure, Member

Shri. P. J. Thakkar, Member

ORDER

1. Background and Brief History

1.1 Background

The Gujarat State Electricity Corporation Limited (hereinafter referred to as "GSECL" or "petitioner") has filed its petition on 8th December, 2015 under Section 62 of the Electricity Act, 2003 read with Gujarat Electricity Regulatory Commission GERC (MYT) Regulations, 2011, for the True-up of FY 2014-15 and determination of tariff for the FY 2016-17.

The Commission admitted the petition on 17th December, 2015.



1.2 Gujarat State Electricity Corporation Limited (GSECL)

The Government of Gujarat unbundled and restructured the 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. The seven successor companies are listed below:

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

Four Distribution Companies:

- iii. Dakshin Gujarat Vij Company Limited (DGVCL)
- iv. Madhya Gujarat Vij Company Limited (MGVCL)
- v. Uttar Gujarat Vij Company Limited (UGVCL)
- vi. Paschim Gujarat Vij Company Limited (PGVCL) and
- vii. Gujarat Urja Vikas Nigam Limited (GUVNL) – A Holding Company and is also responsible for purchase of electricity from various sources and 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 the Government of Gujarat.

1.3 Commission's Order for the Second control period

Gujarat State Electricity Corporation Limited filed its petition under the Multi-Year Tariff framework for the control period FY 2011-12 to FY 2015-16, on 30th December, 2010 in accordance with the Gujarat Electricity Regulatory Commission (Multi-Year Tariff Framework) Regulations, 2007 notified by GERC. However, the Commission issued the new MYT Regulations notified as GERC (Multi-Year Tariff), 2011 on 22nd March, 2011.

As per Regulation 1.4 (a) of the GERC (Multi-Year Tariff) Regulations, 2011, which reads as under: *“These Regulations shall be applicable for determination of tariff in all cases covered under these Regulations from 1st April, 2011 and onwards.”*, the Commission considered the petition as per the new Regulation.

The Commission, in exercise of the powers vested in it under Sections 61, 62 and 64 of the Electricity Act 2003 and all other powers enabling it in this behalf and after taking into consideration the submissions made by GSECL, the objections by various stakeholders, response of GSECL, issues raised during the public hearing and all other relevant material, issued the Multi-Year Tariff order on 11th April, 2011 for the control period comprising FY 2011-12, FY 2012-13, FY 2013-14, FY 2014-15 and FY 2015-16 based on the GERC (MYT) Regulations, 2011.

The Commission issued the orders for truing up for FY 2010-11 and determination of Tariff for FY 2012-13 on 2nd June, 2012.

The Commission issued the orders for truing up for FY 2011-12 and determination of Tariff for FY 2013-14 on 30th March, 2013.

The Commission issued the order for Truing up for FY 2012-13 and determination of Tariff for FY 2014-15 on 29th April, 2014.

The Commission issued the order for Truing up for FY 2013-14 and determination of Tariff for FY 2015-16 on 31st March, 2015.

1.4 Background for the present petition

The Commission in its order dated 2nd December, 2015, on the Petition No. 1534/2015 has stated that the Commission has decided that the approved ARR of FY 2015-16 of the licensees / generating companies concerned be considered as provisional ARR of the licensees / generating companies for FY 2016-17.

The Commission has also decided that the licensees / generating companies shall file the ARR for FY 2016-17 based on the MYT Regulations for FY 2016-17 to FY 2020-21 and the true-up for the same shall also be governed as per the new MYT Regulations. It is also decided that the licensees / generating companies shall file the petition for determination of ARR and tariff for FY 2016-17 and true-up for FY 2014-15 within 3 weeks from the date of issuance of this order for Commission's

consideration and decision.

GSECL has accordingly filed the Petition for true-up for FY 2014-15 and Approval of provisional Tariff for FY 2016-17 to the Commission for approval.

1.5 Admission of the Current Petition and Public Hearing Process

GSECL submitted the current petition for “Truing up” of FY 2014-15 and determination of Tariff for FY 2016-17 on 8th December, 2015. The Commission admitted the petition (Case no. 1544 of 2015) on 17th December, 2015.

In accordance with Section 64 of the Electricity Act, 2003, the Commission directed GSECL to publish its application in the abridged form to ensure public participation. The Public Notice was published in the following newspapers on 23rd December, 2015 inviting objections / suggestions from its stakeholders on the ARR petition filed by it.

Sl. No.	Name of the Newspaper	Language	Date of publication
1	The Indian Express	English	23/12/2015
2	Gujarat Samachar	Gujarati	23/12/2015

The petitioner has also placed the public notice and the petition on the website (www.gsecl.in) for inviting objections and suggestions on its petition.

The interested parties / stakeholders were asked to file their objections / suggestions on the petition on or before 22nd January, 2016.

The Commission received objections / suggestions from 4 consumers / consumer organizations. The Commission examined the objections / suggestions received and scheduled the public hearing for GSECL on 11th February, 2016 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 public hearing was conducted in Commission’s Office in Gandhinagar as scheduled.

The names of the stakeholders who filed their objections and the objectors who participated in the public hearing for presenting their objections are given below:

Sl. No.	Name of Stakeholders	Participated in the Public Hearing
1	Gujarat Urja Vikas Nigam Limited (GUVNL)	Yes
2	Consumer Education and Research Society (CERS)	Yes
3	Laghu Udyog Bharati - Gujarat	Yes
4	Utilities Users' Welfare Association (UUWA)	Yes

A short note on the main issues raised by the objectors in the submissions with respect to the petition along with the response of GSECL and the Commission's Views on the response are briefly given in chapter 3.

1.6 Contents of this Order

This order is divided into **six** 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 provides a brief account of the public hearing process, including 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 2014-15.
5. The **fifth** chapter deals with the Determination of tariff for the FY 2016-17.
6. The **sixth** chapter deals with the compliance of directives.

1.7 Approach of this Order

The GERC (Multi-Year Tariff) Regulations, 2011 provide for "Truing up" of the previous year, and determination of tariff for the ensuing year. The Commission had approved the ARR for the five years of the control period FY 2011-12 to FY 2015-16 in the MYT order dated 11th April, 2011.

The GSECL has approached the Commission with the present petition for "Truing up" of the FY 2014-15 and determination of tariff for the FY 2016-17 as directed by the Commission (as mentioned in Para 1.4).

In this order, the Commission has considered the "Truing up" for FY 2014-15 and the determination of Tariff for the FY 2016-17.

The Commission has undertaken "Truing up" of the FY 2014-15 including computation of gains and losses of the stations other than PPA based stations based

on the submissions of the petitioner and the audited annual accounts.

While “Truing up” of FY 2014-15 and determination of Tariff for FY 2016-17 the Commission has been primarily guided by the following principles:

1. Controllable parameters have been considered at the level approved under the MYT order, unless the Commission considers there are valid reasons for revision of the same.
2. Uncontrollable parameters have been revised based on the actual performance observed.
3. The Truing up for the FY 2014-15 has been considered based on the GERC (MYT) Regulations, 2011. For the determination of the Provisional ARR for FY 2016-17, the Commission has considered the ARR approved for FY 2015-16 in the order dated 31st March, 2015, as the provisional ARR for FY 2016-17, for the stations other than Ukai-6 station. The Commission has considered final fixed charges for Ukai-6 station as determined in the Order dated 10th February, 2016 in Petition No. 1508/2015 read with Order dated 29th March, 2016 in Petition No. 1563/2016. The variable charge for Ukai-6 station has been considered as what was determined in the tariff order for FY 2015-16.



2. A Summary of GSECL's Petition

2.1 Actuals for FY 2014-15 submitted by GSECL

GSECL in its petition has submitted the actual values of operational parameters and costs for each of the generating stations owned and operated by it for FY 2014-15. The Operational Parameters pertain to plant availability, Plant Load Factor, Station Heat Rate (SHR), auxiliary consumption, specific oil consumption, transit loss of coal, gross and net generation. The costs cover both variable and fixed costs.

GSECL has also mentioned that for the PPA based stations, all the parameters are based on the provisions of PPAs. For the thermal power stations of GSECL where the availability factor is less than 80%, such availability factor is proposed to be the neutralization level for full fixed costs recovery as has been approved earlier by the Commission. In all other cases, PAF of 80% is proposed as the normative level for full Fixed Cost recovery as per the GERC (MYT) Regulations.

GSECL has submitted the Operational Parameters and costs for the approval of the Commission. The approved parameters and costs would be the basis for billing GUVNL- the sole purchaser of power from GSECL.

GSECL has worked out its Aggregate Revenue Requirement (ARR) for FY 2014-15 as a part of the true-up for FY 2014-15. The Commission had issued order for GSECL for FY 2014-15 with effect from 1st May 2014 and hence, the approved ARR for entire FY 2014-15 has been computed by GSECL as summation of 1/12th of approved ARR of FY 2013-14 and 11/12th of approved ARR for FY 2014-15. GSECL has presented the actual cost components based on audited annual accounts for FY 2014-15.

2.2 Summary of fixed and variable costs claimed by GSECL for True-up of FY 2014-15

The fixed costs and energy charges claimed by GSECL for FY 2014-15 for true-up purpose are given in Table 2.1 & Table 2.2 below:

Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

Table 2.1: Fixed Cost for FY 2014-15

(Rs. Crore)

Sl. No.	Power Station	Net Fixed Charges
1	Ukai (1-5)	336.36
2	Ukai Extn. 6*	546.80
3	Gandhinagar (1-4)	333.74
4	Gandhinagar 5*	53.83
5	Wanakbori 1-6 TPS	535.06
6	Wanakbori 7 TPS*	89.35
7	Sikka TPS	135.40
8	KLTPS 1-3	208.15
9	KLTPS 4	112.94
10	Dhuvaran CCPP 1*	47.65
11	Dhuvaran CCPP 2	92.48
12	Dhuvaran CCPP 3**	213.87
13	Utran (Gas)*	58.78
14	Utran Extension*	281.46
15	Ukai Hydro	46.97
16	Kadana Hydro	66.54
	Total	3163.00

** Dhuvaran CCPP3 COD is pending acceptance. The expenses of the Dhuvaran CCPP 3 are shown to match values with GSECL's accounts.

* PPA based Stations

Table 2.2: Energy Charge for GSECL Plants for FY 2014-15

(Rs. kWh)

Sl. No.	Power station	Approved	Actual
1	Ukai (1-5)	2.95	2.96
2	Ukai Extn. 6*	2.44	2.67
3	Gandhinagar (1-4)	3.61	3.46
4	Gandhinagar 5*	3.20	3.25
5	Wanakbori 1-6 TPS	3.19	3.26
6	Wanakbori 7 TPS*	3.08	2.98
7	Sikka TPS	3.67	3.56
8	KLTPS 1-3	1.36	1.23
9	KLTPS 4	1.25	1.30
10	Dhuvaran CCPP 1*	4.04	5.57
11	Dhuvaran CCPP 2	4.70	5.34
12	Dhuvaran CCPP 3**	-	-
13	Utran (Gas)*	-	-
14	Utran Extension*	9.20	9.88

* PPA Governed Station

** Dhuvaran CCPP 3 COD acceptance is pending till date

2.3 A Summary of fixed and variable costs claimed by GSECL for FY 2016-17

The provisional fixed costs as claimed by GSECL for FY 2016-17 (which are the same approved for FY 2015-16) are given in Table 2.3 and energy charges in Table 2.4 below:



Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

Table 2.3: Proposed Fixed Cost for FY 2016-17

		(Rs. Crore)
Sl. No.	Power Station	Net Fixed Charges
1	Ukai (1-5)	334.69
2	Gandhinagar (1-4)	265.31
3	Gandhinagar 5*	101.32
4	Wanakbori 1-6 TPS	469.57
5	Wanakbori 7 TPS*	98.62
6	Sikka TPS	120.81
7	KLTPS 1-3	218.77
8	KLTPS 4	118.94
9	Dhuvaran CCPP 1*	52.00
10	Dhuvaran CCPP 2	63.73
11	Utran (Gas)*	54.35
12	Utran Extension*	259.89
13	Ukai Hydro	24.93
14	Kadana Hydro	57.72
15	Sikka Extn. (3-4)*	617.73
16	Ukai Extn. 6*	571.30
17	Dhuvaran CCPP 3*	344.71
	Total	3774.39

* PPA governed stations

Table 2.4: Proposed Energy Charges for FY 2015-16

		(Rs. kWh)
Sl. No.	Power station	Energy Charges
1	Ukai (1-5)	1.698
2	Gandhinagar (1-4)	2.375
3	Gandhinagar 5*	2.130
4	Wanakbori 1-6 TPS	2.108
5	Wanakbori 7*	2.022
6	Sikka TPS	2.752
7	KLTPS 1-3	1.181
8	KLTPS 4	1.109
9	Dhuvaran (Gas 1)*	2.411
10	Dhuvaran (Gas 2)	2.388
11	Utran Gas*	2.367
12	Utran Extension*	2.071
13	Sikka Extn 3-4*	3.185
14	Ukai Extn 6*	1.683
15	Dhuvaran (Gas 3)*	2.285

*PPA based stations

2.4 Request of GSECL

GSECL respectfully prays to the Commission;

1. To admit this Petition for True-Up for FY 2014-15 and Approval of provisional ARR for FY 2016-17.
2. To approve the gains/ losses for the True-Up for FY 2014-15 and allow sharing of such gains/ losses as prescribed in the MYT Regulations, 2011.



3. To approve the operational and financial parameters of GSECL for FY 2014-15 considering the vintage and constraints of the old machines, and consider the same for recovery of full fixed cost.
4. To approve the Station operating parameters viz. PAF, Auxiliary Consumption, Station Heat Rate, Transit Loss, Specific Oil Consumption and actual fuel rate for each of the station of GSECL for FY 2014-15 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 provisional Tariff for GSECL plants for FY 2016-17.
7. To grant any other relief as the Commission may consider appropriate.
8. To allow further submissions, addition and alteration to this Petition as may be necessary from time to time.
9. 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

3.1 Stakeholders' suggestions / objections, Petitioner's Response and Commission's Observation

In response to the public notice inviting objections / suggestions from stakeholders on the Petition filed by GSECL for Truing up of FY 2014-15 and determination of Tariff for FY 2016-17 under GERC (MYT) Regulations, 2011, a number of Consumers / organisations filed their objections / suggestions in writing. Some of these objectors participated in the public hearing also. The Commission has addressed the objections / suggestions by the consumer / consumers organisations, the response from the Petitioner and the view of the Commission as given below:

Issue 1: Claim of Gap of loss on Interest on Working Capital

Stakeholder's view

1. Gujarat Urja Vikas Nigam Limited has stated that the GSECL has claimed gap of loss on Interest on Working Capital amounting to Rs. 105.44 Crore which is on normative basis instead of actual basis. Till now, GSECL claimed Interest on Working Capital on actual basis in their previous years truing up petitions. Picking-up of one parameter on normative basis and another on actual basis is incorrect. Further the GSECL has claimed such Interest on Working Capital on normative basis under uncontrollable factor and has claimed full gap amount which is liable to be rejected.
2. The Commission may allow the respondent to restrict the approved truing up gap of fixed cost amount proportionately with respect to actual availability.

Response of GSECL

On the above issue, the Petitioner has stated as under:

1. regarding gap of loss on Interest on Working Capital the Petitioner has filed the Petition under true-up mechanism as per MYT Regulation, 2011 (Clause 41.1).
2. Recovery of truing up amount is based on actual availability against approved availability by the Commission as per usual practice of previous years.

Commission's view

The matter has been examined with respect to GERC (MYT) Regulations, 2011 and a suitable decision has been taken.

Issue 2: Poor Performance of Plant

Stakeholder's view

M/s. Consumer Education and Research Society has stated that:

a. Poor performance during last 10 years

The poor performance of the Petitioner's plant is attributable to:

- i. high cost of generation and disqualification from merit order dispatch
- ii. lack of preventive maintenance of old plants
- iii. Poor plant load factor. The drop in the PLF is nearly 50% during last 10 years and with the addition of new plants, the situation will go worse.

In view of this, the Commission is requested not to transfer the burden of inefficiency of GSECL to consumers.

b. High fuel costs

The following deficiencies in data provided by the Petitioner are observed.

- i. difference in cost of lignite for KLTPS (1-3) and KLTPS (4)
- ii. difference in cost of oil for KLTPS (1-3) and KLTPS (4)
- iii. high cost of washed coal and oil for Sikka TPS

The Petitioner should submit its explanation on above inefficiencies.

c. Inefficiency in Operation

1. When the plants are operating at low power factor, it is not clear how the specific oil consumption and station heat rate are less than the approved by the Commission. The Petitioner may be asked to provide actual data.
2. the gap of Rs. 138.76 Crore shown by the Petitioner should be rejected as it is due to the inefficiency in operation and should be recovered by the Petitioner by operating the plants efficiently and economically.

Response of GSECL

- a. Regarding poor performance during last 10 years, it is submitted that the GSECL plant availability factor has increased. The Plant Load Factor (PLF) decreased because of backing down and partial operation which is beyond the control of

Petitioner as the Petitioner has to follow the instructions of SLDC. Due to partial operation and backing down, PLF, actual auxiliary consumption, SHR and specific oil consumption always remain higher than normal. GTPS, WTPS, STPS, UTPS receive minimum schedule dispatch which results in low generation / low PLF. During FY 2004-05, when the State was power deficit, all the machines were required to run to meet the demand and hence the MUs generated were higher compared to the year 2014-15. Further breakdown events decreased in near past compared to last couple of years even though many machines have crossed their useful life.

- b. The fuel cost depends on the freight charges which depend on the railway declaration of hike for goods transportation. Further the design of KLTPS (1-3) and KLTPS (4) are different. KLTPS (4) is designed only to use LDO and other power stations are designed for LDO and majority of FO. Therefore, the rate of KLTPS unit no.4 is high, while KLTPS (1-3) is using FO. It is known that LDO is costlier than FO. Collieries of washed coal are very far from Sikka TPS and hence due to high transportation cost for Sikka washed coal is costlier at Sikka TPS.
- c. After FY 2011-12, as the State became power surplus, GSECL stations have undergone more and more BD/RSD even though PAF of GSECL stations increased every year most of the time. As and when any machine operates on partial load the overall performance viz. SHR, Aux. consumption specific oil consumption, always increase causing higher energy charges which is beyond the control of the Petitioner.

Commission's view

The response of the Petitioner is noted.

Issue 3: Computation of units generated by Dhuvaran CCPP – 3 and Utran gas extension

Stakeholder's view:

Laghu Udyog Bharati, Gujarat has stated that for computing total units generated at Sr. No. 12/13 Dhuvaran CCPP – 3 and Utran Gas extension, the generation details are not known. In the absence of details of total generation comparison of revenue and expenditure remain unreliable. Further third party audit of net generation is not given.

Response of GSECL

The Dhuvaran CCPP – 3 is ready but COD is not accepted by GUVNL. Hence there is no generation shown during FY 2014-15. During FY 2014-15 Utran GBPS has no generation and hence generation is not shown.

Commission view

GSECL has explained factual position of there being no generation at both the plants during the year as mentioned in the Tariff Petition.

Issue 4: Discrepancy in expenditure data

Stakeholder's view

M/s. Laghu Udyog Bharati, Gujarat has stated that there is discrepancy in data and reliability of ARR for power stations as shown below, which is self-explanatory:

Sl. No.	Table	Power Station
1.	36	18
2.	29,35,37	17
3.	24,25,27,28, 31 to 34	16

Response of GSECL

Out of 17 stations, gain / loss is included for 15 stations whereas Dhuvaran CCPP – 3 and Sikka units 3 & 4 are not considered for gain / loss calculation for FY 2014-15 as COD was not admitted by GUVNL. During FY 2014-15 Utran GBPS has no generation, hence generation is not shown.

In Table 26, Sl. No. 7 is missing due to oversight. Table No. 29, Kadana Hydro was written twice by oversight and Table No. 24,25,27,28, 30 to 34 are for gain / loss tables applicable to 15 stations whereas Dhuvaran CCPP – 3, though it is shown, as COD is not accepted the same is not considered for calculation.

Regarding Sikka unit no. 3 & 4, they are not considered for gain / loss calculations as the COD was not considered.

Commission's view

The response of Petitioner is self-explanatory.

Issue 5: Unreliable expenditure details

Stakeholder's view

M/s. Laghu Udyog Bharati, Gujarat has stated that;

- i. fixed and variable charges are required to be reduced as they are manipulated and high, there is no reduction, addition in expenses for fixed cost treatment, head-wise as seen from Tables 25 to 33 of ARR.
- ii. the difference in fixed cost even after manipulation is Rs. 557.32 (Rs. 2949.13 – 2391.81) Crore (Table 1 of Summary of ARR)

Response of GSECL

The submission of the respondent is confusing and not clear. The Petitioner has submitted the details in line with the MYT Regulations, 2011 and they cannot be submitted otherwise;

Commission's view

The Commission has allowed the petition with detailed scrutiny and prudence check as per provisions of GERC (MYT) Regulations, 2011.

Issue 6: Treatment of Reserve and Surplus

Stakeholder's view:

M/s. Laghu Udyog Bharati has stated that the reserve and surplus is Rs. 3418.17 Crore which 39.98% of total ARR and for the current year it is Rs. 289.87 Crore. The treatment for the amount of reserve and surplus has not been indicated and why the true-up amount cannot be adjusted from Reserve and surplus amount.

Response of GSECL

The true-up is submitted as per MYT Regulations, 2011 and the same cannot be submitted otherwise.

Commission's view

While reserves and surplus is a balance sheet item, ARR is a P&L item. Since the nature of both the items is different, they cannot be set off against each other.

Issue 7: Reduction of Interest on Working Capital

Stakeholder's view

M/s Laghu Udyog Bharati, Gujarat has stated that;

1. It should be verified whether any advance amount is received by GSECL, either by way of monthly advance or extra deposit. No interest charges on working capital be allowed.
2. In ARR finance charges of Rs. 177.06 Crore is shown more (Rs. 922.36 Crore – Rs. 745.3 Crore)
3. The total sum available for expenses is Rs. 8271.06 (Rs 2651.43 Crore as current assets and Rs. 6619.63 Crore as depreciation) on which finance charges on working capital is accounted for in ARR as Rs. 922 Crore but in annual report it is as Rs. 745.30 Crore. At nominal rate of 11% interest on Rs. 8271.06 Crore the amount to be adjusted against interest is Rs. 909.81 Crore.

Response of GSECL

Interest & Finance charges (Table 26) and interest on working capital (Table 27) are different components of fixed charge and there is no Annual Account Finance cost of Rs. 745.30 Crore in Table 24.

Commission's view

The Commission has allowed the petition with detailed scrutiny and prudence check as per provisions of GERC (MYT) Regulations, 2011.

Issue 8: Recovery of Fixed Cost at 39.97% PLF instead of at 80% PLF

Stakeholder's view

M/s. Utility Users' Welfare Association has stated that GSECL generated 20,397.67 MUs (Thermal) and 924.38 MUs (Hydro) totalling to 21,322.05 MUs whereas net generation is 18384.82 MUs net (Thermal) and 909.65 (Hydro) totalling to 19,294.47 MUs. GSECL operated at 39.97% with installed capacity of 5825 MW instead of generating at 80% PLF. It should generate 40,821.6 MUs for recovery of fixed cost at 80% PLF since GERC (Terms and Conditions of Tariff) Regulations, 2005 and 2007 contemplate that recovery of fixed cost can only be allowed when plant achieves 80% PLF. Both the private and government generators are successful to get the regulations amended by the Commission that fixed cost can be recovered on PAF 80% and not PLF %. The very purpose of enacted Electricity Act, 2003 is to make the

machinery as well as employees work to get higher percentage trajectory to bring down the cost of production.

Response of GSECL

The Petitioner has adhered to the MYT Regulations, 2011 and fixed charges are calculated as per the provisions of these Regulations.

Commission's view

The Commission has allowed the petition with detailed scrutiny and prudence check as per provisions of GERC (MYT) Regulations, 2011.

Issue 9: Operation of Generating Plants

Stakeholder's view:

M/s. Utility Users' Welfare Association has stated that the Commission has not taken care to look into the issue of non-operation of the available plants. Due to this, the coal linkage contract is in danger and also GSECL does not have the storage space for coal.

Response of GSECL

The operation of available plants is being decided as per instructions of SLDC following merit order in respect to prevailing demand and supply at that time which in turn is as per the provisions of grid code and respective provisions of Regulations.

Commission's view

The response of Petitioner is self-explanatory.

Issue 10: Promotion of Competition among electricity players

Stakeholder's view

M/s. Utility Users' Welfare Association has suggested that;

1. Gujarat is having surplus production of 27,862 MUs in spite of the fact that the generating plants of GSECL have only 39.97% PLF and generated only 19,294 MUs in FY 2014-15. Had the GSECL operated at 80% PLF additional of 20,424 MUs would have been added. Hence the total surplus of the state would have been 48,250 MUs (20,424 + 27,826 MUs), which is more than 60% of the total

energy required. It is therefore the ripe situation to create an atmosphere of competition amongst the distribution licensees as envisaged in Sections 60, 61 and 66 of Electricity Act 2003 and to advise GoG as per Section 82 of Electricity Act, 2003.

2. the Commission may advise the Government of Gujarat under Section 86 (2) of Electricity Act 2003 to promote competition among the electricity players as the production of power is 56888 MUs for six months and 1,13,776 MUs per annum in FY 2014-15 as against the demand of 60,352.12 MUs and along with the T&D loss, the energy comes to 73078.97 MUs.

Response of GSECL

No Comments

Commission's view

The suggestion is noted.

Issue 11: Sale of Power of GSECL by GUVNL

Stakeholder's view

M/s. Utility Users' Welfare Association has stated that GUVNL should sell GSECL power to other licensees in the country and keeping the plants idle is a violation of Section 61 of Electricity Act 2003, which states that the operation of electricity shall be carried out on commercial principle.

Response of GSECL

The sale of power by GSECL is as per provisions of PPA between Petitioner and the respondent GUVNL and GUVNL can sell power of GSECL as per the respective provisions. The Petitioner cannot sell the power to outside agency as per the provisions of PPA.

Commission's view

GUVNL procures the entire power from GSECL and after meeting the demand of the four DISCOMs, sells the surplus power in open market as per the market conditions.

Issue 12: Higher Cost of Power in Gujarat

Stakeholder's view

M/s. Utility Users' Welfare Association has stated that the cost of power in Gujarat is Rs. 8 to 8.50 / unit whereas in other countries like Japan, China, Korea, Taiwan etc. the cost is not more than Rs. 4 to 4.50 / unit. The industries like plastic, metal casting, textile, chemicals, engineering etc. cannot compete in the international market due to high cost of power. The power cost is also lower in other states, particularly Uttarakhand, Uttar Pradesh, Madhya Pradesh, Daman, Diu and Goa etc.

Response of GSECL

No Comments

Commission's view

The cost of generation in Thermal stations is high due to high transportation cost of fuel and the power stations are located far away from coal mines.

Issue 13: Projection of lower fixed and variable costs for FY 2016-17 in ARR

Stakeholder's view

M/s. Utility Users' Welfare Association has stated that the fixed and variable costs during FY 2013-14, FY 2014-15 and FY 2015-16 are as under

Year	Fixed Cost per unit	Variable cost per unit	Total cost per unit
FY 2013-14	1.90	2.60	4.50
FY 2014-15	1.53	2.90	4.43
FY 2015-16	0.98	2.12	3.10

For FY 2016-17, the Petitioner has projected fixed cost Rs. 0.98 / unit and variable cost at Rs. 2.12 / unit. It is hoped that this will come true.

Response of GSECL

Approval given in MYT order dated 11.04.2011 is made applicable as per orders given by the Commission in Suo Moto Petition No. 1534 of 2015 for the purpose of provisional ARR and Tariff determination for FY 2016-17. The approved variable cost in MYT order dated 11.04.2011 is based on actual fuel parameters of FY 2010-11. Hence lower fixed and variable costs are submitted.

Commission's view

As explained earlier the variable cost is high as the transportation cost of fuel is high.

Issue 14: Generation Cost

Stakeholder's view

M/s. Utility Users' Welfare Association has stated that;

- i. If the GSECL units are allowed to operate at 80% PLF during FY 2014-15, the generation fixed cost would have been less than Rs. 1.53 / unit which is stated in the truing up.
- ii. Private generators like ESSAR, Tata and Adani entered into PPA with GUVNL to get power for 25 years at a fixed cost of Rs. 2.40 / unit to Rs. 2.80 / unit both variable and fixed cost still the said generators raised a dispute and are demanding Rs. 1.40 / unit as compensatory Tariff. If they succeed, the cost of power generated would be Rs. 3.80 / unit to Rs. 4.20 / unit. The cost of generation of Rs. 3.10 / unit of GSECL for FY 2016-17 is lower than Essar, Tata and Adani. The Commission is therefore requested to divert the power of GSECL to TPL and other consumers or D.L. so that the consumers of Ahmedabad, Gandhinagar and Surat can be saved from exploitation.
- iii. The cost of generation of GSECL comes to Rs. 3.60 to Rs. 4.43 / unit with variable and fixed cost and is not getting supply instructions under MOD system whereas the cost of generation of private generating units like TPL, Ahmedabad plant is Rs. 4.50 / unit and gas based SUGEN / UNOSUGEN plants of TPL, though their variable cost is more than Rs. 7.00 / unit but still they are operating but the State owned generating plants remain closed under the guise of MOD system, it is not clear why MOD principle is not applicable to TPL. GSECL has estimated the cost of Rs. 3.10 / unit as per their ARR and summary.

Response of GSECL

The Petitioner offers no comments.

Commission's view

GSECL and TPL plants have to honour their respective PPAs with their beneficiaries and as such cannot be brought under common MOD for the state as a whole.

Issue 15: Transit loss of coal

Stakeholder's view

M/s. Utility Users' Welfare Association has stated that GSECL has successfully received approval for Transit Loss Trajectory of 0.8% to 0.2%. This requires clarification as to how GSECL is able to arrive at such perfect figure and GSECL should guide TPL whose transit loss is quite high of 1.6% against approved 0.9%, though it is controllable.

Response of GSECL

The Petitioner has claimed transit loss as per approved parameters as allowed.

Commission's view

The Commission has approved transit loss of 0.8% as provided by GSECL which is the target set by the Commission.

Issue 16: Why fixed cost of GSECL is to be borne by the consumers even after delicensing of generation

Stakeholder's view

M/s. Utility Users' Welfare Association has stated that when generation is totally delicensed, why fixed cost of GSECL should be borne by the consumers, amounting to Rs. 2949.13 Crore when generation is only 39.97 / PLF.

Response of GSECL

The Petitioner has to adhere to MYT Regulations and accordingly fixed charges are calculated as per regulations only.

Commission's view

GSECL has to recover the fixed cost towards the investment made in setting up the generation plants for meeting the requirement of various categories of consumers of DISCOMs. The PPAs entered into with DISCOMs provide for recovery of such fixed cost by GSECL. De-licensing of generation does not entail foreclosure of PPAs already entered into.

Issue 17: Replacement of inefficient plants

Stakeholder's view

GSECL should replace inefficient plants like Sikka and others as the cost per unit can still be reduced.

Response of GSECL

The Petitioner has a plan to install plants of higher capacity.

Commission's view

The response of Petitioner is self-explanatory.

Issue 18: Violation of Section 86 (1) (a) of Electricity Act 2003 by GERC

Stakeholder's view

M/s. Utility Users' Welfare Association has stated that;

1. GERC approved PPA between GUVNL and TPL for 400 MW at the rate of Rs. 3.40 to Rs. 3.60 / unit RTC power. GSECL is having coal stocks of more than Rs. 600 Crore and the plants have been closed as TPL has terminated the PPA with GUVNL without approval of GERC. GSECL has no space for storage of coal. TPL is procuring power from its own sister concerns at SUGEN, UNOSUGEN (where PPA is not approved by GERC) at the rate of Rs. 9.70 / unit.
2. The Stakeholder has suggested that the Commission should ensure that all the transactions of generators and distribution licensees are approved on line to avoid the loading of expenditure of non-regulated area to regulated electricity industry in a real sense.

Response of GSECL

The Commission is to take appropriate action.

Commission's view

The observation of stakeholder is noted.

Issue 19: Merger of DISCOMs and GUVNL to carryout business

Stakeholder's view

M/s. Utility Users' Welfare Association has suggested that all DISCOMs should be merged and GUVNL only should carry out the business to avoid fixed cost of 6 subsidiaries viz. UGVCL, DGVCL, MGVCL, PGVCL, GSECL, GETCO in the interest of consumers, Government and Utilities.

Response of GSECL

No Comments

Commission's view

The restructuring of erstwhile State Electricity Board was done on functional lines to improve the performance of each segment i.e. Generation, Transmission and Distribution. This has improved the performance of the sector in almost all the States including Gujarat. This was done only on the experience of the past when a single entity GEB was managing the sector. As regards the merger of DISCOMs and GUVNL, it is for the utilities concerned to take up with the appropriate authorities.

4. Truing up for FY 2014-15

4.1 Generating Stations of GSECL

GSECL owns and operates the following generating stations, as on 1st April 2014:

- Four coal based thermal generating stations at Ukai, Gandhinagar, Wanakbori and Sikka;
- One lignite based thermal station at Panandhro (KLTPS)
- One thermal station, with gas fired units at Dhuvaran;
- One gas fired station at Utran;
- Two major hydel stations at Ukai and Kadana and two mini hydel stations at Panam and Ukai LBC.
- Windmills
- Two Solar Power stations each of 1 MW

The details of the stations existing as on 1st April, 2014, along with their capacities and dates of commissioning, are given in the Table below:

Table 4.1: Capacity, CoD and Age of GSECL generating Stations as on 1st April 2014

Units	Name of station	Unit No.	Capacity of the Unit (MW)	Date of Commissioning	Age on 01.04.14 (Years)
Ukai (1-5)	Ukai	1	120	19/03/1976	39
		2	120	23/06/1976	39
		3	200	21/01/1979	36
		4	200	11/9/1979	36
		5	210	30/01/1985	30
		Sub Total	850		
Gandhinagar (1-4)	Gandhinagar	1	120	13/03/1977	38
Gandhinagar 5*		2	120	10/4/1977	38
		3	210	20/03/1990	25
		4	210	20/07/1991	24
		5	210	17/03/1998	17
	Sub Total	870			
Wanakbori 1-6 TPS	Wanakbori	1	210	23/03/1982	33
Wanakbori 7 TPS*		2	210	15/01/1983	32
		3	210	15/03/1984	31
		4	210	9/3/1986	29
		5	210	23/09/1986	29
		6	210	18/11/1987	27
		7	210	31/12/1998	16
	Sub Total	1470			
Sikka TPS	Sikka	1	120	26/03/1988	27
		2	120	31/03/1993	22
		Sub Total	240		



Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

Units	Name of station	Unit No.	Capacity of the Unit (MW)	Date of Commissioning	Age on 01.04.14 (Years)	
KLTPS 1-3	KLTPS	1	70	29/03/1990	25	
		2	70	25/03/1991	24	
KLTPS 4		3	75	31/03/1997	18	
		4	75	20/12/2009	5	
		Sub Total	290			
Dhuvaran (CCPP 1)*	Dhuvaran	7-Gas	106.617	28/01/2004	11	
Dhuvaran (CCPP 2)		8-Gas	112.45	1/11/2007	7	
		Sub Total	219.067			
Utran (Gas)*	Utran	GT - 1	30	17/12/1992	22	
		GT - 2	30	28/12/1992	22	
		GT - 3	30	7/5/1993	22	
		STG	45	17/7/1993	22	
		Sub Total	135			
Utran Extension*	Utran Extension	GT – 1	375	8/11/2009	5	
Sikka TPS 3 & 4	Sikka TPS	3	250	31/03/2015	To be commissioned in FY 2015-16	
		4	250	31/03/2015		
		Sub Total	500			
Ukai TPS	Ukai TPS	6	500	08/06/2013	3	
Dhuvaran CCPP	Dhuvaran CCPP	3	376	21/05/2014	COD acceptance is pending	
Sub Total of GSECL (Coal + Lignite)			4720			
Sub Total of GSECL (Gas)			1105			
Total GSECL (Thermal)			5825			
Ukai Hydro	Ukai Hydro	1	75	08/07/1974	41	
		2	75	13/12/1974	40	
		3	75	22/04/1975	40	
		4	75	04/03/1976	40	
			Sub Total	300		
	Ukai LBC	Ukai LBC	1	2.5	08/12/1987	27
			2	2.5	19/02/1988	27
Sub Total			5			
Kadana Hydro	Kadana Hydro	1	60	31/03/1990	25	
		2	60	02/09/1990	25	
		3	60	03/01/1998	17	
		4	60	27/05/1998	17	
			Sub Total	240		
	Panam	Panam	1	1	24/03/1994	21
			2	1	31/03/1994	21
Sub Total			2			
Sub Total GSECL (Hydro)			547			
	Wind Mills		10	04/01/2009	6	
Solar Plants	Plant at GTPS		1	27/03/2012	3	
	Plant at Sanand		1	29/03/2012	3	
Total GSECL as a whole			6384			

*PPA based stations



4.2 Operating Performance Parameters

The fuel cost of a generation station depends on: (i) performance parameters, such as PLF, Station Heat Rate, Auxiliary Consumption, Secondary Fuel Oil Consumption and Transit Loss of coal which are controllable, and (ii) cost parameters, such as Gross Calorific Value of the fuel, type of fuel and price of fuel, which are not within the control of the utility.

GSECL has submitted the actual operating performance on Plant Availability Factor (PAF), Plant Load Factor (PLF), Station Heat Rate, Coal transit loss, Auxiliary Consumption and Specific Oil Consumption etc. for FY 2014-15 for all the stations. The Commission has taken up the truing up of the annual performance parameters for FY 2014-15. The same 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 2014-15. The PAF (i) approved in the MYT Order dated 11th April, 2011 and tariff order for FY 2014-15; (ii) the actuals, as furnished by GSECL in the petition for the period, are given in the Table below:

Table 4.2: Plant Availability Factors for FY 2014-15

Sl. No.	Power Station	Approved for FY 2014-15 in the MYT Order dated 11 th April, 2011	Actuals for FY 2014-15 (%)
1	Ukai (1-5)	75.00%	79.14%
2	Ukai 6*	85.00%	69.84%
3	Gandhinagar (1-4)	79.00%	82.53%
4	Gandhinagar 5*	80.00%	97.85%
5	Wanakbori 1-6 TPS	85.00%	87.05%
6	Wanakbori 7 TPS*	80.00%	101.14%
7	Sikka TPS	75.00%	89.50%
8	KLTPS 1-3	75.00%	64.62%
9	KLTPS 4	80.00%	55.61%
10	Dhuvaran (CCPP 1)*	80.00%	92.63%
11	Dhuvaran (CCPP 2)	85.00%	98.01%
12	Dhuvaran (CCPP 3)**	85.00%	-
13	Utran (Gas)*	85.00%	99.98%
14	Utran extension *	80.00%	99.68%
15	Ukai Hydro	80.00%	79.63%
16	Kadana Hydro	80.00%	85.38%

* PPA Governed Stations. Parameters of these will be governed as per PPA.

** Dhuvaran CCPP 3 COD acceptance is pending till date



It is observed from the above Table that Ukai Extn 6, KLTPS 1-3, KLTPS-4 and Ukai Hydro stations have achieved lower PAF than approved by the Commission in the Tariff Order dated 11th April, 2011.

GSECL has submitted that the following factors have impacted availability and deviation from the norms of the thermal stations:

- **Ukai Extn. 6:** Due to unforeseen issue of ash evacuation system problems, the B & C pass of ESP got severely damaged. To attend the same, the unit was taken under outage from 2nd February 2015 to 23rd February 2015. Subsequently the load on unit was restricted to 360 MW as the total replacement of internals was proposed during AOH of unit in Aug 2015.
- **KLTPS 1-3:** Planned outage of Unit no 3 from 08.05.2014 to 26.11.2014 (203 days) to regain the rated load & to attend the turbine vibration problem by rebladding and balancing of turbine.
- **KLTPS 4:** Load restricted to 50-52 MW on unit no 4 due to APH and FBHE problem, forced outages.

Commission's Analysis

The Commission has analysed the submissions made by the petitioner regarding plant availability factor. The Commission has found that the PAF is much lower than the approved one in case of Ukai Extn. 6, KLTPS 1-3 and KLTPS-4.

The Plant Availability Factor is considered as controllable. Hence for Truing up purpose, the PAF, as approved in the MYT Order and tariff order for FY 2014-15, has been considered.

The PAF approved for Truing up purpose for FY 2014-15 for each station is given in the Table below:

Table 4.3: Plant Availability Factors approved for Truing up for FY 2014-15 (%)

Sl. No.	Power Station	Approved for FY 2014-15 in the MYT Order dated 11 th April, 2011	Actuals for FY 2014-15	Approved for Truing up purpose for FY 2014-15
1	Ukai (1-5)	75.00%	79.14%	75.00%
2	Ukai 6*	85.00%	69.84%	85.00%
3	Gandhinagar (1-4)	79.00%	82.53%	79.00%
4	Gandhinagar 5*	80.00%	97.85%	80.00%
5	Wanakbori 1-6 TPS	85.00%	87.05%	85.00%
6	Wanakbori 7 TPS*	80.00%	101.14%	80.00%



Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

Sl. No.	Power Station	Approved for FY 2014-15 in the MYT Order dated 11 th April, 2011	Actuals for FY 2014-15	Approved for Truing up purpose for FY 2014-15
7	Sikka TPS	75.00%	89.50%	75.00%
8	KLTPS 1-3	75.00%	64.62%	75.00%
9	KLTPS 4	80.00%	55.61%	80.00%
10	Dhuvaran (CCPP 1)*	80.00%	92.63%	80.00%
11	Dhuvaran (CCPP 2)	85.00%	98.01%	85.00%
12	Dhuvaran (CCPP3)*	85.00%	-	85.00%
13	Utran (Gas)*	85.00%	99.98%	85.00%
14	Utran extension *	80.00%	99.68%	80.00%
15	Ukai Hydro	80.00%	79.63%	80.00%
16	Kadana Hydro	80.00%	85.38%	80.00%

* PPA Governed Stations

For the stations, where actual PAF is less than the approved one, the fixed charges are to be reduced proportionately.

4.2.2 Plant Load Factor (PLF)

Petitioner's Submission

GSECL has submitted the actual Plant Load Factor of different stations for FY 2014-15. The PLF (i) approved in the MYT Order dated 11th April, 2011 and tariff order for FY 2014-15, and (ii) the actuals, as furnished by GSECL in the petition for the period, are given in the Table below:

Table 4.4: Plant Load Factors for FY 2014-15

Sl. No.	Power Station	Approved for FY 2014-15 in the MYT Order dated 11 th April, 2011	Actuals for FY 2014-15
1	Ukai (1-5)	75.00%	54.14%
2	Ukai Extn. 6*	85.00%	61.01%
3	Gandhinagar (1-4)	79.00%	31.57%
4	Gandhinagar 5*	85.00%	85.08%
5	Wanakbori 1-6 TPS	85.00%	54.54%
6	Wanakbori 7 TPS*	85.00%	76.89%
7	Sikka TPS	71.00%	44.70%
8	KLTPS 1-3	75.00%	66.56%
9	KLTPS 4	75.00%	57.63%
10	Dhuvaran CCPP 1*	80.00%	3.46%
11	Dhuvaran CCPP 2	80.00%	13.34%
12	Dhuvaran CCPP 3**	85.00%	-
13	Utran (Gas)*	80.00%	-
14	Utran Extension*	80.00%	4.06%
15	Ukai Hydro	13.00%	26.53%
16	Kadana Hydro	6.00%	10.17%

* PPA Governed Stations. Parameters of these will be governed as per PPA.

** Dhuvaran CCPP 3 COD acceptance is pending till date



Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

The reasons for deviation of PLFs from the approved ones are mentioned by the Petitioner as follows:

- Low Schedule in the case of Ukai 1-5, Gandhinagar 1-4, Wanakbori 1-6, Wanakbori 7, Sikka TPS, Dhuvaran CAPP-1, Dhuvaran CAPP-2, Utran gas and Utran Extension.
- In the case of Ukai Extn. 6 due to Backing down and due to unforeseen issue of ash evacuation system problems, the B & C pass of ESP got severely damaged. To attend the same, the unit was taken under outage from 2nd February 2015 to 23rd February 2015. Subsequently the load on unit was restricted to 360 MW as the total replacement of internals was required for about 45 days which was proposed during AOH of unit scheduled in Aug 2015.
- **KLTPS 1-3:** Planned outage of Unit no 3 from 08.05.2014 to 26.11.2014 (203 days) to regain the rated load & to attend the turbine vibration problem by rebladding and balancing of turbine & generator rotor.
- **KLTPS 4:** Load restricted to 50-52 MW on unit no 4 due to APH and FBHE problem, higher forced outages

Commission's Analysis

The Commission has analysed the submissions made by the petitioner. It is observed that all the stations, except the Hydro stations achieved much lower PLF for the FY 2014-15 than that approved in the Tariff Orders due to aforesaid reasons. The Commission has taken note of the above and considered the PLF during FY 2014-15 for Truing up purpose, as given in the Table below:

Table 4.5: PLF considered for FY 2014-15 for Truing up

Sl. No.	Power Station	Approved for FY 2014-15 in the MYT Order dated 11 th April, 2011	Actuals for FY 2014-15	Considered for Truing up purpose for FY 2014-15 (%)
1	Ukai (1-5)	75.00%	54.14%	54.14%
2	Ukai Extn. 6*	85.00%	61.01%	61.01%
3	Gandhinagar (1-4)	79.00%	31.57%	31.57%
4	Gandhinagar 5*	85.00%	85.08%	85.08%
5	Wanakbori 1-6 TPS	85.00%	54.54%	54.54%
6	Wanakbori 7 TPS*	85.00%	76.89%	76.89%
7	Sikka TPS	71.00%	44.70%	44.70%
8	KLTPS 1-3	75.00%	66.56%	66.56%
9	KLTPS 4	75.00%	57.63%	57.63%
10	Dhuvaran CAPP 1*	80.00%	3.46%	3.46%
11	Dhuvaran CAPP 2	80.00%	13.34%	13.34%
12	Dhuvaran CAPP 3**	85.00%	-	-



Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

Sl. No.	Power Station	Approved for FY 2014-15 in the MYT Order dated 11 th April, 2011	Actuals for FY 2014-15	Considered for Truing up purpose for FY 2014-15
13	Utran (Gas)*	80.00%	-	-
14	Utran Extension*	80.00%	4.06%	4.06%
15	Ukai Hydro	13.00%	26.53%	26.53%
16	Kadana Hydro	6.00%	10.17%	10.17%

*PPA based stations

4.2.3 Auxiliary Consumption

Petitioner's Submission

GSECL has submitted the actual auxiliary consumption of different stations for FY 2014-15. The auxiliary consumption (i) approved in the MYT Order dated 11th April, 2011 and tariff order for FY 2014-15, and (ii) the actuals, as furnished by GSECL in the Petition for the period, are given in Table below:

Table 4.6: Auxiliary Consumption for FY 2014-15

(%)

Sl. No.	Power Station	Approved for FY 2014-15 in the MYT Order dated 11 th April, 2011	Actuals for FY 2014-15
1	Ukai (1-5)	9.00%	9.59%
2	Ukai Extn. 6*	6.00%	7.90%
3	Gandhinagar (1-4)	10.00%	10.94%
4	Gandhinagar 5*	9.00%	9.97%
5	Wanakbori 1-6 TPS	9.00%	9.11%
6	Wanakbori 7 TPS*	9.00%	9.35%
7	Sikka TPS	11.00%	11.71%
8	KLTPS 1-3	12.00%	12.58%
9	KLTPS 4	12.00%	21.26%
10	Dhuvaran CCPP 1*	3.00%	23.00%
11	Dhuvaran CCPP 2	3.00%	10.41%
12	Dhuvaran CCPP 3**	3.00%	-
13	Utran (Gas)*	4.00%	-
14	Utran Extension*	3.00%	6.88%
15	Ukai Hydro	0.70%	0.58%
16	Kadana Hydro	1.19%	4.92%

* PPA Governed Stations. Parameters of these will be governed as per PPA.

** Dhuvaran CCPP 3 COD acceptance is pending till date

GSECL has submitted that the old stations consume higher auxiliary power, when operated at part load capacities under constraints.

GSECL also brought out the following reasons in its petition for deviation in the auxiliary consumption for the stations, where auxiliary consumption was high during the FY 2014-15:



- Partial load operation due to backing down in case of Ukai 1-5, Gandhinagar 1-4, Gandhinagar 5, Wanakbori 1-6, Wanakbori – 7, Sikka TPS, Dhuvaran CCPP-1, Dhuvaran CCPP-2 and Utran extension stations.
- In case of Ukai Extn -6, due to ESP problems and backing down, higher number of forced outages due to teething problems.
- In case of KLTPS 4, Partial load operation due to APH & FBHE problems, higher number of starts /stops due to forced outages
- In case of Utran gas the unit was under RSD for complete year

Over and above backing down, the units frequently undergo reserve shut down and during the said period minimum auxiliaries are required to be run to keep the units available so that the same can be taken as & when required by SLDC / system.

Commission's Analysis

It is observed that the actual auxiliary consumption is more than the approved one for all the stations. In case of Dhuvaran CCPP-3 and Utran Gas, there was no generation at all and have no auxiliary consumption. The Commission has taken note of the submissions made by the petitioner with regard to the actual auxiliary consumption.

The Commission approves the auxiliary consumption for various stations, as approved in the MYT order for FY 2014-15 and tariff order for FY 2014-15, for truing up purpose, since this is a controllable parameter. In case of Dhuvaran CCPP (I) and Utran gas stations where gas boosters are installed, the Commission has considered the auxiliary consumption of gas booster, as provided by GSECL separately, vide letter dated 4th February, 2016, for the truing up of FY 2014-15, in addition to auxiliary consumption approved in the MYT Order.

The auxiliary consumption approved for different stations, for the purpose of Truing up for FY 2014-15, is as given in the Table below:

Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

Table 4.7: Auxiliary Consumption approved for FY 2014-15 for Truing up (%)

Sl. No.	Power Station	Approved for FY 2014-15 in the MYT Order dated 11 th April, 2011	Actuals for FY 2014-15	Approved for Truing up purpose for FY 2014-15
1	Ukai (1-5)	9.00%	9.59%	9.00%
2	Ukai Extn. 6*	6.00%	7.90%	6.00%
3	Gandhinagar (1-4)	10.00%	10.94%	10.00%
4	Gandhinagar 5*	9.00%	9.97%	9.00%
5	Wanakbori 1-6 TPS	9.00%	9.11%	9.00%
6	Wanakbori 7 TPS*	9.00%	9.35%	9.00%
7	Sikka TPS	11.00%	11.71%	11.00%
8	KLTPS 1-3	12.00%	12.58%	12.00%
9	KLTPS 4	12.00%	21.26%	12.00%
10	Dhuvaran CCPP 1*	3.00%	23.00%	3.00%+GBC
11	Dhuvaran CCPP 2	3.00%	10.41%	3.00%
12	Dhuvaran CCPP 3**	3.00%	-	3.00%
13	Utran (Gas)*	4.00%	-	4.00%
14	Utran Extension*	3.00%	6.88%	3.00%
15	Ukai Hydro	0.70%	0.58%	0.70%
16	Kadana Hydro	1.19%	4.92%	1.19%

* PPA based stations

** Includes actual gas boosters consumption in percentage

4.2.4 Station Heat Rate (SHR)

Petitioner's Submission

GSECL has furnished the actual SHR attained for different stations during FY 2014-15.

The station heat rate (i) approved by the Commission in the MYT Order of 11th April, 2011 and tariff order for FY 2014-15, and (ii) the actuals as furnished by GSECL in the petition for the period are given in the Table below:

Table 4.8: Station Heat Rate for FY 2014-15

Sl. No.	Power Station	Approved for FY 2014-15 in the MYT Order dated 11 th April, 2011	Actuals for FY 2014-15
1	Ukai (1-5)	2755	2759
2	Ukai Extn. 6*	2385	2543
3	Gandhinagar (1-4)	2782	2653
4	Gandhinagar 5*	2460	2575
5	Wanakbori 1-6 TPS	2625	2681
6	Wanakbori 7 TPS*	2460	2457
7	Sikka TPS	3025	2996
8	KLTPS 1-3	3300	2968
9	KLTPS 4	3000	2893
10	Dhuvaran CCPP 1*	1950	2133
11	Dhuvaran CCPP 2	1950	2045
12	Dhuvaran CCPP 3**	1850	-



Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

Sl. No.	Power Station	Approved for FY 2014-15 in the MYT Order dated 11 th April, 2011	Actuals for FY 2014-15
13	Utran (Gas)*	2150	-
14	Utran Extension*	1850	1908

* PPA Governed Stations. Parameters of these will be governed as per PPA.

** Dhuvaran CCPP 3 COD acceptance is pending till date

In the True-up Petition, GSECL has stated the following reasons for exceeding the Station Heat Rate for certain stations during FY 2014-15.

- Partial load operation due to Backing down in case of Ukai 1-5, Gandhinagar-5, Wanakbori 1-6, Dhuvaran CCPP-1, Dhuvaran CCPP-2, and Utran Extension.
- In case of Ukai 6, Partial load due to ESP problems and backing down, higher number of forced outages due to teething problems.

It is also submitted that for any generation plant the SHR always deteriorates with aging and hence, the old stations of GSECL are not expected to achieve the SHR comparable to the norms of the Commission and that GSECL has taken measures to improve SHR due to which some stations have shown considerable improvement.

Commission's Analysis

The Commission observes that for PPA governed stations, the SHR is approved as per the respective PPA terms. In the case of Ukai 1-5, Wanakbori 1-6, Dhuvaran CCPP 1, Dhuvaran CCPP 2 and Utran Extension the actual heat rate is higher than the one considered in the Tariff Order for FY 2014-15. In the case of Ukai 1-5, Gandhinagar 1-4, Sikka TPS, KLTPS 1-3 and KLTPS 4 the actual heat rate is less than the one approved in the MYT Order. The Commission has noted the reasons submitted by the petitioner for these stations and found that the main reason put forward is partial operation due to backing down except in case of Ukai 6. The higher heat rate in Ukai-6 is due to partial operation on account of ESP problems and backing down and higher number of forced outages due to teething problems.

For the purpose of truing up for FY 2014-15, the Commission approves the SHR, as approved in the MYT Order dated 11th April, 2011 for FY 2014-15, since it is a controllable parameter as given in the Table below:

Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

Table 4.9: Station Heat Rate approved for FY 2014-15 for Truing up
(Kcal/kWh)

Sl. No.	Power Station	Approved for FY 2014-15 in the MYT Order dated 11 th April, 2011	Actuals for FY 2014-15	Approved for Truing up purpose for FY 2014-15
1	Ukai (1-5)	2755	2759	2755
2	Ukai Extn. 6*	2385	2543	2385
3	Gandhinagar (1-4)	2782	2653	2782
4	Gandhinagar 5*	2460	2575	2460
5	Wanakbori 1-6 TPS	2625	2681	2625
6	Wanakbori 7 TPS*	2460	2457	2460
7	Sikka TPS	3025	2996	3025
8	KLTPS 1-3	3300	2968	3300
9	KLTPS 4	3000	2893	3000
10	Dhuvaran CCPP 1*	1950	2133	1950
11	Dhuvaran CCPP 2	1950	2045	1950
12	Dhuvaran CCPP 3**	1850	-	1850
13	Utran (Gas)*	2150	-	2150
14	Utran Extension	1850	1908	1850

*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 the FY 2014-15. The secondary fuel oil consumption (i) approved by the Commission in the MYT Order dated 11th April, 2011 and tariff order for FY 2014-15, and (ii) the actuals as furnished by GSECL in the petition for the period are given in the Table below:

Table 4.10: Secondary Fuel Oil Consumption FY 2014-15
(ml/kWh)

Sl. No.	Power Station	Approved for FY 2014-15 in the MYT Order dated 11 th April, 2011	Actuals for FY 2014-15
1	Ukai (1-5)	2.00	1.48
2	Ukai 6*	1.00	1.62
3	Gandhinagar (1-4)	1.50	1.09
4	Gandhinagar 5*	3.50	0.10
5	Wanakbori 1-6 TPS	1.00	0.99
6	Wanakbori 7 TPS*	3.50	0.39
7	Sikka TPS	4.00	1.52
8	KLTPS 1-3	3.00	2.86
9	KLTPS 4	3.00	2.29

*PPA based stations

GSECL, in its Petition, has mentioned that higher specific oil consumption for FY 2014-15 for Ukai 6 was due to higher number of start/stops due to forced outages & teething issues.



The Secondary oil consumption for the other stations for the FY 2014-15, is in line with the approved parameters.

Commission's Analysis

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

For all other stations other than Ukai 6 the actual secondary fuel oil consumption is less than what was approved by the Commission in the Tariff order for FY 2014-15.

Accordingly, the secondary fuel oil consumption, approved for FY 2014-15 for various stations, is as given in the Table below:

Table 4.11: Secondary Fuel Oil Consumption approved for FY 2014-15

Sl. No.	Power Station	Approved for FY 2014-15 in the MYT Order dated 11 th April, 2011	Actuals for FY 2014-15	Approved for Truing up purpose for FY 2014-15
1	Ukai (1-5)	2.00	1.48	2.00
2	Ukai 6*	1.00	1.62	1.00
3	Gandhinagar (1-4)	1.50	1.09	1.50
4	Gandhinagar 5*	3.50	0.10	3.50
5	Wanakbori 1-6 TPS	1.00	0.99	1.00
6	Wanakbori 7 TPS*	3.50	0.39	3.50
7	Sikka TPS	4.00	1.52	4.00
8	KLTPS 1-3	3.00	2.86	3.00
9	KLTPS 4	3.00	2.29	3.00

*PPA based stations

4.2.6 Transit Loss

Petitioner's Submission

GSECL furnished the actual transit loss of coal for different stations for the FY 2014-15.

The transit loss (i) approved by the Commission in the MYT Order 11th April, 2011 and tariff order for FY 2014-15, and (ii) the actuals as furnished by GSECL in the petition for the period are given in the Table below:



Table 4.12: Transit Loss for FY 2014-15

Sl. No.	Power Station	Approved for FY 2014-15 in the MYT Order dated 11 th April, 2011	Actuals for FY 2014-15
1	Ukai (1-5)	0.80	0.80
2	Ukai 6*	0.80	0.80
3	Gandhinagar (1-4)	0.80	0.80
4	Gandhinagar 5*	0.80	0.80
5	Wanakbori 1-6 TPS	0.80	0.80
6	Wanakbori -7 TPS*	0.80	0.80
7	Sikka TPS	0.80	0.80
8	KLTPS 1-3	0.20	0.20
9	KLTPS -4	0.20	0.20

*PPA based stations

Commission's Analysis

The transit loss of coal, as submitted in the petition, is the same as approved in the MYT Order for FY 2014-15 and tariff order for FY 2014-15. Hence, the same is approved, as given in the Table below:

Table 4.13: Transit Loss approved for FY 2014-15 for Truing up

Sl. No.	Power Station	Approved for FY 2014-15 in the MYT Order dated 11 th April, 2011	Actuals for FY 2014-15	Approved for Truing up purpose for FY 2014-15
1	Ukai (1-5)	0.80	0.80	0.80
2	Ukai 6*	0.80	0.80	0.80
3	Gandhinagar (1-4)	0.80	0.80	0.80
4	Gandhinagar 5*	0.80	0.80	0.80
5	Wanakbori 1-6 TPS	0.80	0.80	0.80
6	Wanakbori -7 TPS*	0.80	0.80	0.80
7	Sikka TPS	0.80	0.80	0.80
8	KLTPS 1-3	0.20	0.20	0.20
9	KLTPS -4	0.20	0.20	0.20

*PPA based stations

The transit loss is to be considered only in the case of indigenous coal, washed coal and Lignite, but not for imported coal, as mentioned in the MYT Order dated 11th April, 2011.

4.2.7 A Summary of Performance Parameters Approved for FY 2014-15

The performance parameters approved for different stations for the FY 2014-15, after analysis in the preceding paras for the purpose of Truing up for the FY 2014-15, are listed in the Table below:



Table 4.14: Performance Parameters approved for Truing up purpose for FY 2014-15

Sl. No.	Power Station	PAF	PLF	Auxiliary consumption	SHR	Specific Oil Consumption
		%	%	%	Kcal/kWh	ml/kWh
1	Ukai (1-5)	75.00%	54.14%	9.00%	2755	2.00
2	Ukai 6*	85.00%	61.01%	6.00%	2385	1.00
3	Gandhinagar (1-4)	79.00%	31.57%	10.00%	2782	1.50
4	Gandhinagar 5*	80.00%	85.08%	9.00%	2460	3.50
5	Wanakbori 1-6 TPS	85.00%	54.54%	9.00%	2625	1.00
6	Wanakbori - 7 TPS*	80.00%	76.89%	9.00%	2460	3.50
7	Sikka TPS	75.00%	44.70%	11.00%	3025	4.00
8	KLTPS 1-3	75.00%	66.56%	12.00%	3300	3.00
9	KLTPS - 4*	80.00%	57.63%	12.00%	3000	3.00
10	Dhuvaran (CCPP - 1)*	80.00%	3.46%	3.00%+GBC	1950	-
11	Dhuvaran (CCPP - 2)	85.00%	13.34%	3.00%	1950	-
12	Dhuvaran (CCPP - 3)	85.00%	-	3.00%	1850	-
13	Utran (Gas)*	85.00%	-	4.00%	2150	-
14	Utran extension *	80.00%	4.06%	3.00%	1850	-
15	Ukai Hydro	80.00%	26.53%	0.70%	-	-
16	Kadana Hydro	80.00%	10.17%	1.19%	-	-

* PPA governed stations

4.3 Gross and Net Generation

The gross and net generation of different generating stations, as per actuals, as furnished by GSECL and as approved for truing up purpose for the FY 2014-15, are given in the Table below:



Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

Table 4.15: The Gross and Net Generation for FY 2014-15 for Truing up purpose

Sl. No	Power Station	As per actuals submitted by GSECL				As approved by the Commission			
		Gross Generation (MUs)	Auxiliary Consumption (%)	Auxiliary Consumption (MUs)	Net Generation (MUs)	Gross Generation (MUs)	Auxiliary Consumption (%)	Auxiliary Consumption (MUs)	Net Generation (MUs)
1	2	3	4	5	6	7	8	9	10
1	Ukai (1-5)	4031.39	9.59%	386.68	3644.71	4031.39	9.00%	362.83	3668.56
2	Ukai 6*	2672.19	7.90%	210.98	2461.21	2672.19	6.00%	160.33	2511.86
3	Gandhinagar (1-4)	1825.41	10.94%	199.78	1625.63	1825.41	10.00%	182.54	1642.87
4	Gandhinagar 5*	1565.06	9.97%	156.11	1408.95	1565.06	9.00%	140.86	1424.20
5	Wanakbori 1-6 TPS	6020.17	9.11%	548.49	5471.68	6020.17	9.00%	541.82	5478.35
6	Wanakbori 7*	1414.38	9.35%	132.19	1282.19	1414.38	9.00%	127.29	1287.09
7	Sikka TPS	939.78	11.71%	110.09	829.69	939.78	11.00%	103.38	836.40
8	KLTPS 1-3	1253.5	12.58%	157.73	1095.77	1253.50	12.00%	150.42	1103.08
9	KLTPS 4	378.62	21.26%	80.51	298.11	378.62	12.00%	45.43	333.19
10	Dhuvaran (CCPP 1)*	32.27	23.00%	7.42	24.85	32.27	3.00%+GBC	0.97+818** =1.79	30.48
11	Dhuvaran (CCPP 2)	131.38	10.41%	13.68	117.7	131.38	3.00%	3.94	127.44
12	Dhuvaran (CCPP 3)	-	-	-	-	-	3.00%	0.00	0.00
13	Utran Gas*	-	-	-	-	-	4.00%	0.00	0.00
14	Utran Extension*	133.52	6.88%	9.19	124.33	133.52	3.00%	4.01	129.51
15	Ukai Hydro	708.73	0.58%	4.11	704.62	708.73	0.70%	4.96	703.77
16	Kadana Hydro	215.65	4.92%	10.62	205.03	215.65	1.19%	2.57	213.08
	Total	21322.05		2027.58	19294.47	21322		1832.17	19489.88

*PPA governed stations

**Gas Booster Consumption



4.4 Cost Parameters

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

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

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

GSECL has furnished the actual Wt. Av. Gross Calorific Values of different fuels (as fed into the boiler in the case of usage of mix of coal) for FY 2014-15, as given in the Table below:

Table 4.16: Weighted Average Gross Calorific Value (GCV) of Fuels for Different Stations for FY 2014-15

Sl. No.	Power Stations	Weighted Average GCV of lignite or mix of coal (Kcal /kg)	Weighted average of GCV of secondary Fuel (Kcal /litre)	Weighted Average GCV of Gas (Kcal/SCM)
1	Ukai (1-5)	3,908	10,416	-
2	Ukai Extn. 6*	3,925	10,413	-
3	Gandhinagar (1-4)	4,039	10,525	-
4	Gandhinagar 5*	4,066	10,533	-
5	Wanakbori 1-6 TPS	3,771	10,524	-
6	Wanakbori 7 TPS*	3,736	10,396	-
7	Sikka TPS	4,123	10,510	-
8	KLTPS 1-3	2,875	10228**	-
9	KLTPS 4	2,871	10630**	-
10	Dhuvaran CCPP 1*	-	-	9,464
11	Dhuvaran CCPP 2	-	-	9,653
12	Dhuvaran CCPP 3**	-	-	-
13	Utran (Gas)*	-	-	-
14	Utran Extension*	-	-	9,625

* PPA Governed Stations,

** As furnished by GSECL, vide email dated 12th January 2016.

4.4.2 Mix of Coal

GSECL has furnished the actual percentage of the mix of different types of coal used for the stations during the FY 2014-15, as given in the Table below:

Table 4.17: The Mix of Different Types of Coal for FY 2014-15

Sl. No.	Power Stations	Indigenous Coal (%)	Washed Coal (%)	Imported Coal (%)
1	Ukai (1-5)	22.73%	68.66%	8.60%
2	Ukai Extn. 6*	13.50%	76.36%	10.14%
3	Gandhinagar (1-4)	5.97%	74.40%	19.63%



Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

Sl. No.	Power Stations	Indigenous Coal (%)	Washed Coal (%)	Imported Coal (%)
4	Gandhinagar 5*	6.17%	76.09%	17.74%
5	Wanakbori 1-6 TPS	11.19%	86.58%	2.23%
6	Wanakbori 7 TPS*	10.45%	87.19%	2.37%
7	Sikka TPS	0.00%	72.67%	27.33%
8	KLTPS 1-3	100%	-	-
9	KLTPS 4	100%	-	-

*PPA governed stations

4.4.3 Wt. Av. Prices of Fuel

GSECL has furnished the actual weighted average price per unit of different fuels for different stations, for FY 2014-15, as per the Table below:

Table 4.18: Weighted Average Price / Unit of Fuels for FY 2014-15

Sl. No.	Power Stations	Wt. Av. cost of indigenous coal (Rs./Mt)	Wt. Av. Cost of washed coal (Rs./Mt)	Wt. Av. Cost of imported coal (Rs./Mt)	Wt. Av. Cost of lignite (Rs./Mt)	Wt. Av. Cost of Gas (Rs./SCM)	Wt. Av. cost of Oil (Rs./KI)
1	Ukai (1-5)	3,066	3,553	6,405			44,768
2	Ukai Extn. 6*	3,081	3,436	6,395			43,578
3	Gandhinagar (1-4)	4,900	4,078	6,562			43,738
4	Gandhinagar 5*	4,939	4,122	6,500			45,639
5	Wanakbori 1-6 TPS	4,917	3,923	6,465			45,344
6	Wanakbori 7 TPS*	4,914	3,881	6,487			44,305
7	Sikka TPS	-	4,499	3,487			48,738
8	KLTPS 1-3				940		41,580
9	KLTPS 4				873		66,742
10	Dhuvaran CCPP 1*					19.02	-
11	Dhuvaran CCPP 2					22.57	-
12	Dhuvaran CCPP 3						
13	Utran (Gas)*					-	-
14	Utran Extension*					46.42	-

*PPA governed stations

The Commission, after due validation, approves the weighted average GCV of fuels, percentage of mix of coal and prices of fuel (actuals), as furnished by GSECL, for truing up purpose for FY 2014-15 as these are uncontrollable items.

4.5 Fuel Cost

Based on the performance and cost parameters, the approved fuel costs for each of the stations for the year FY 2014-15 for truing up purpose, along with the actuals furnished by GSECL are given in Table below.



Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

Table 4.19: Fuel Cost of different stations for FY 2014-15 for Truing up

Sl. No	Power Station	As per Actuals furnished by GSECL				As Approved by the Commission			
		Gross Generation (MUs)	Net Generation (MUs)	Fuel cost (Rs. Cr.)	Fuel Cost per unit Net (Rs./kWh)	Gross Generation (MUs)	Net Generation (MUs)	Fuel cost (Rs. Cr.)	Fuel Cost per unit Net (Rs./kWh)
1	2	3	4	5	6	7	8	9	10
1	Ukai (1-5)	4031.39	3644.71	1,077.66	2.96	4031.39	3668.56	1,083.21	2.95
2	Ukai 6*	2672.19	2461.21	657.39	2.67	2672.19	2511.86	611.85	2.44
3	Gandhinagar (1-4)	1825.41	1625.63	562.84	3.46	1825.41	1642.87	592.25	3.60
4	Gandhinagar 5*	1565.06	1408.95	458.61	3.25	1565.06	1424.20	456.09	3.20
5	Wanakbori 1-6 TPS	6020.17	5471.68	1,784.93	3.26	6020.17	5478.35	1,748.07	3.19
6	Wanakbori 7*	1414.38	1282.19	381.51	2.98	1414.38	1287.09	396.52	3.08
7	Sikka TPS	939.78	829.69	295.54	3.56	939.78	836.40	307.21	3.67
8	KLTPS 1-3	1253.50	1095.77	135.28	1.23	1253.50	1103.08	149.63	1.36
9	KLTPS 4	378.62	298.11	38.82	1.30	378.62	333.19	41.75	1.25
10	Dhuvaran(CCPP 1)*	32.27	24.85	13.83	5.57	32.27	30.48	12.65	4.15
11	Dhuvaran (CCPP 2)	131.38	117.70	62.83	5.34	131.38	127.44	59.90	4.70
12	Dhuvaran (CCPP 3)	-	-	73.09	0.00	-	0.00	0.00	0.00
13	Utran Gas*	-	-	2.55	0.00	-	0.00	0.00	0.00
14	Utran Extension*	133.52	124.33	122.86	9.88	133.52	129.51	119.13	9.20
	Total	20397.67	18385	5667.74	3.08	20397.67	18573.03	5578.25	3.00

*PPA governed stations

The detailed calculations for each station for arriving at the above costs are given in Annexure 4.1 to 4.14



4.5.1 Variation between Actual Fuel Costs and Approved Fuel Costs

The comparison between the fuel costs of all stations taken together, as per annual accounts for FY 2014-15 and the cost approved for truing up purpose, is given in the Table below:

Table 4.20: Cost of different fuels as per Audited Annual Accounts and as approved for Truing up for FY 2014-15

Item	Cost as per Annual Accounts	(Rs. Crore) Cost as approved
Total Fuel Cost	5667.74	5578.25

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 11th April, 2011 for truing up for FY 2014-15 and considering the actual fuel-related parameters, such as GCV of fuel and price of fuels, etc. For generating stations which are not covered under the aforesaid MYT order, the tariff approved by the Commission in its true-up order for FY 2012-13 & tariff determination for FY 2014-15 dated 29th April, 2014 has been considered.

The fuel expenses so derived have been compared with the fuel expenses actually incurred with actual performance parameters of GSECL for identification of gains/ losses on account of efficiency of these performance parameters. Thus, based on the same, GSECL's gain/ (losses) is Rs. (3.31) Crore in fuel expenses on account of operational efficiencies during FY 2014-15. The same is to be treated appropriately in line with the provisions of the MYT Regulations.



Commission's Analysis

The Commission has compared the fuel expenses, so derived by GSECL, with the fuel expenses arrived with the now approved operational performance parameters and for actual net generation for identification of Gains / (Losses) on account of variation in these parameters and approves the Gains / (Losses) station-wise for Non-PPA stations, as given in the Table below:

Table 4.21: Approved Gains / (Losses) from Fuel Expenses for FY 2014-15
(Rs. Crore)

Sl. No	Power Station	Actual Fuel Cost	Fuel cost arrived with approved parameter for actual net generation for FY 14-15	Deviation +/-	Gains / (Losses) due to controllable factor (5-3)
1	2	3	4	5	6
A	Non-PPA based Stations				
1	Ukai (1-5)	1077.66	1076.17	(1.49)	(1.49)
2	Gandhinagar (1-4)	562.84	586.03	23.19	23.19
3	Wanakbori 1-6 TPS	1784.93	1745.94	(38.99)	(38.99)
4	Sikka TPS	295.54	304.74	9.20	9.20
5	KLTPS 1-3	135.28	148.63	13.35	13.35
6	KLTPS 4	38.82	37.36	(1.46)	(1.46)
7	Dhuvaran (CCPP 2)	62.83	55.32	(7.51)	(7.51)
	Total	3957.90	3954.19	(3.71)	(3.71)

4.6 Fixed Charges

4.6.1 Operations & Maintenance (O&M) Expenses

GSECL has claimed Rs. 824.09 Crore towards actual O&M expenses for all the generating stations in the Truing up for FY 2014-15 against Rs. 902.25 Crore approved for FY 2014-15 in the MYT Order for FY 2014-15 and Tariff order for FY 2014-15. The O&M charges approved for the year FY 2014-15 in the MYT Order and now claimed by GSECL are as given in Table below:

Table 4.22: O&M expenses claimed by GSECL in Truing up for FY 2014-15
(Rs. Crore)

Particulars	Approved for FY 2014-15 in MYT Order	Claimed in truing up for FY 2014-15
O&M expenses	902.25	824.09

Petitioner's Submission

The Operations and Maintenance expenses have been classified as "controllable" under the MYT Regulations except employee cost. In the present Petition, GSECL



Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

has categorized Employee expenses, Insurance expenses, R&M expenses, and A&G expenses as controllable.

Table 4.23: Gains/(Losses) from O&M expenses claimed for FY 2014-15
(Rs. Crore)

Sl. No.	Power Station	O&M Expenses (Approved)	O&M Expenses (Actual)	Gains/(Losses) due to controllable factors	Gains/(Losses) due to uncontrollable factors
1	Ukai (1-5)	151.59	164.71	(13.11)	
2	Ukai Extn. 6*	72.98	29.94		
3	Gandhinagar (1-4)	107.36	115.27	(7.91)	
4	Gandhinagar 5*	27.92	4.31		
5	Wanakbori 1-6 TPS	155.13	195.49	(40.36)	
6	Wanakbori 7 TPS*	27.92	15.92		
7	Sikka TPS	54.38	60.76	(6.38)	
8	KLTPS 1-3	85.24	88.78	(3.54)	
9	KLTPS 4	19.08	13.27	5.81	
10	Dhuvaran CCPP 1*	20.50	23.23		
11	Dhuvaran CCPP 2	21.00	23.23	(2.24)	
12	Dhuvaran CCPP 3	67.20	3.29		
13	Utran (Gas)*	14.00	20.91		
14	Utran Extension*	48.92	21.38		
15	Ukai Hydro	13.50	24.33	(10.83)	
16	Kadana Hydro	15.53	19.26	(3.73)	
	Total	902.25	824.09	(82.29)	

* PPA based stations

Commission's Analysis:

The actual O&M expenses station wise are given in the Appendix A of the petition. The actual O&M expenses as given in the format aggregate to Rs. 824.08 Crore including the PPA governed stations. The approved figure in the MYT was Rs. 765.63 Crore and an amount of Rs. 72.97 Crore for Ukai-6 was provisionally approved by the Commission as per order dated 29th April, 2014. whereas actual O&M Expenses of Ukai 6 is Rs. 29.94 Crore. Similarly, the O&M expenses incurred in respect of Dhuvaran (CCPP-3) are Rs. 3.29 Crore against Rs. 73.31 Crore approved for FY 2014-15 in the tariff order dated 29.04.2014.

GSECL has claimed the variation in O&M Expenses under controllable factor in accordance with the provisions under Regulation 23 of GERC (MYT) Regulations, 2011. The approved O&M expenses and gains and losses are given in the Table below:



Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

Table 4.24: Approved O&M Expenses & Gains / (Losses) for FY 2014-15

(Rs. Crore)							
Sl. No	Power Station	Approved for FY 2014-15 in MYT order	Claimed in truing up of FY 2014-15	Approved in Truing up for FY 2014-15	Deviation +/-	Gains / (Losses) due to controllable factor	Gains / (Losses) due to uncontrollable factor
1	2	3	4	5	6	7	8
A Non-PPA based Stations							
1	Ukai (1-5)	152.28	164.71	164.71	(12.43)	(12.43)	
2	Gandhinagar (1-4)	107.85	115.27	115.27	(7.42)	(7.42)	
3	Wanakbori 1-6 TPS	155.83	195.49	188.76 [#]	(32.93)	(32.93)	
4	Sikka TPS	54.63	60.76	60.76	(6.13)	(6.13)	
5	KLTPS 1-3	85.63	88.78	88.78	(3.15)	(3.15)	
6	KLTPS 4	19.17	13.27	13.27	5.90	5.90	
7	Dhuvaran (CCPP 2)	21.09	23.23	23.23	(2.14)	(2.14)	
8	Ukai Hydro	13.56	24.33	24.33	(10.77)	(10.77)	
9	Kadana Hydro	15.60	19.26	19.26	(3.66)	(3.66)	
	Sub Total (A)	625.64	705.10	698.37	(72.73)	(72.73)	
B PPA based Stations							
1	Ukai Extn 6	72.97	29.94	29.94			
2	Gandhinagar 5	28.00	4.31	4.31			
3	Wanakbori 7	28.00	15.92	15.92			
4	Dhuvaran (CCPP 1)	21.00	23.23	23.23			
5	Dhuvaran (CCPP 3)	73.31	3.29	3.29			
6	Utran Gas	14.00	20.91	20.91			
7	Utran Extension	49.00	21.38	21.38			
	Sub Total (B)	286.28	118.98	118.98	0.00	0.00	
	Total (A+B)	911.92	824.08	817.35	(72.73)	(72.73)	

the amount of Rs. 6.73 crore claimed towards bad and doubtful debts is only a provision and not written off, so the amount is not allowed.

4.6.2 Depreciation for FY 2014-15

GSECL has claimed Rs. 853.37 Crore towards actual depreciation in the truing up for FY 2014-15 against Rs. 821.31 Crore approved for the year in MYT Order dated 11th April, 2011 and tariff order for FY 2014-15. The depreciation approved for the FY 2014-15 in MYT Order and now claimed by GSECL is as given in the Table below:

Table 4.25: Depreciation claimed for FY 2014-15

(Rs. Crore)		
Particulars	Approved for FY 2014-15 in MYT Order	Claimed in Truing up for FY 2014-15
Depreciation	821.31	853.37

Petitioner's Submission

GSECL has submitted that based on opening gross fixed assets as per the annual audited accounts and considering capital additions during the year, the actual depreciation for FY 2014-15 is Rs. 784.82 Crore as against Rs. 738.15 Crore (excluding Dhuvaran CCPP 3 whose expenses have been shown to match values



Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

with GSECL's accounts) approved by the Commission. Accordingly, based on the above classification of cost elements into controllable and uncontrollable elements in line with the provisions of the MYT Regulations, GSECL has incurred a gain/ (loss) of Rs. (71.15) Crore due to variation in actual value of depreciation against the cost approved by the Commission.

Reason for higher deviation in depreciation for Ukai (1-5) & Gandhinagar (1-4) is as under:

- a) Ukai (1-5):** Depreciation on capital spares charged on the basis of the balance life of plant as per Accounting Standard 6.
- b) GTPS (1-4):** Higher depreciation is charged for GTPS unit 1&2 for phasing out the units by March 2016.

The comparison of the actual value for depreciation during FY 2014-15 with the value approved by the Commission is as outlined below.

Table 4.26: Depreciation and Gains/(Losses) claimed for FY 2014-15

(Rs. Crore)					
Sl. No.	Power Station	Depreciation (Approved)	Depreciation (Actual)	Gains/ (Losses) due to controllable factors	Gains/ (Losses) due to uncontrollable factors
1	Ukai (1-5)	74.21	88.05		(13.84)
2	Ukai Extn. 6*	140.60	151.13		
3	Gandhinagar (1-4)	66.38	118.41		(52.03)
4	Gandhinagar 5*	32.70	7.27		
5	Wanakbori 1-6 TPS	106.04	105.99		0.06
6	Wanakbori 7 TPS*	31.75	28.29		
7	Sikka TPS	30.43	33.44		(3.01)
8	KLTPS 1-3	60.05	61.00		(0.95)
9	KLTPS 4	35.17	35.45		(0.28)
10	Dhuvaran CAPP 1*	16.50	20.01		
11	Dhuvaran CAPP 2	21.64	21.11		0.53
12	Dhuvaran CAPP 3	83.16	68.55		
13	Utran (Gas)*	20.68	24.44		
14	Utran Extension*	79.56	66.19		
15	Ukai Hydro	7.37	8.79		(1.42)
16	Kadana Hydro	15.07	15.27		(0.20)
	Total	821.31	853.37	-	(71.15)

* PPA based stations

Commission's Analysis

The Commission has analysed the depreciation claimed by GSECL. The depreciation claimed by GSECL for the stations Ukai (1-5) and Gandhinagar (1-4) is



Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

on higher side when compared to the depreciation approved for these stations for the year in MYT Order. The depreciation claimed on all other stations is within the average rate of depreciation of 5.28%. GSECL has submitted that (i) for Ukai (1-5) capital spares have been depreciated on the basis of balance life of the plant as per Accounting Standard 6 and (ii) Higher depreciation is charged for GTPS units 1 & 2 for phasing out of these units by March, 2016. The Commission has computed the depreciation of all the stations taking into consideration the closing GFA for FY 2013-14 and addition of assets capitalised during FY 2014-15 adopting the actual weighted average rate of depreciation of FY 2011-12 as considered in the truing up for FY 2011-12 in the Tariff order dated 30th March 2013.

Gains/(Losses)

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 which impact depreciation should be treated as uncontrollable. GSECL has not claimed any Gains/(Losses) in respect of PPA governed stations.

The Commission, accordingly, approves the depreciation and Gains/(Losses) on account of depreciation station wise in the Truing up for FY 2014-15 as detailed in the Table below:

Table 4.27: Approved Depreciation Charges & Gains / (Losses) for FY 2014-15
(Rs. Crore)

Sl. No	Power Station	Approved for FY 2014-15 in MYT order	Claimed in truing up of FY 2014-15	Approved in Truing up for FY 2014-15	Deviation +/-	Gains / (Losses) due to controllable factor	Gains / (Losses) due to uncontrollable factor
1	2	3	4	5	6	7	8
A Non-PPA based Stations							
1	Ukai (1-5)	74.55	88.05	72.35	2.20		2.20
2	Gandhinagar (1-4)	66.38	118.41	78.61	(12.23)		(12.23)
3	Wanakbori 1-6 TPS	106.55	105.99	85.74	20.81		20.81
4	Sikka TPS	30.43	33.44	32.52	(2.09)		(2.09)
5	KLTPS 1-3	60.05	61.00	63.06	(3.01)		(3.01)
6	KLTPS 4	35.17	35.45	35.72	(0.55)		(0.55)
7	Dhuvaran (CCPP 2)	21.64	21.11	20.09	1.55		1.55
8	Ukai Hydro	7.37	8.79	7.46	(0.09)		(0.09)
9	Kadana Hydro	15.07	15.27	15.27	(0.20)		(0.20)
	Sub Total (A)	417.21	487.51	410.80	6.41		6.41
B PPA based Stations							
1	Ukai Extn 6	146.73	151.13	144.35			



Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

Sl. No	Power Station	Approved for FY 2014-15 in MYT order	Claimed in truing up of FY 2014-15	Approved in Truing up for FY 2014-15	Deviation +/-	Gains / (Losses) due to controllable factor	Gains / (Losses) due to uncontrollable factor
2	Gandhinagar 5	32.70	7.27	33.85			
3	Wanakbori 7	31.75	28.29	32.22			
4	Dhuvaran (CCPP 1)	16.50	20.01	19.45			
5	Dhuvaran (CCPP 3)	83.16	68.55	68.55			
6	Utran Gas	20.70	24.44	23.39			
7	Utran Extension	79.56	66.19	65.95			
	Sub Total (B)	411.10	365.88	387.77	0.00		0.00
	Total (A+B)	828.31	853.39	798.58	6.41		6.41

4.6.3 Interest and Finance charges for FY 2014-15

GSECL has claimed Rs. 526.79 Crore towards interest and finance charges in the Truing up FY 2014-15 against Rs. 616.45 Crore approved for the year in MYT Order dated 11th April, 2011 and tariff order for FY 2014-15. The interest and finance charges approved for FY 2014-15 in the MYT Order and tariff order for FY 2014-15 and claimed by GSECL as furnished by GSECL are given in the Table below:

Table 4.28: Interest and Finance charges claimed in Truing up for FY 2014-15
(Rs. Crore)

Particular	Approved for FY 2014-15 in MYT Order	Claimed in Truing up for FY 2014-15
Interest and Finance charges	616.45	526.79

Petitioner's Submission

GSECL has submitted that the interest and finance charges have been classified as "uncontrollable" expenses in the MYT Order dated 11th April, 2011 and accordingly it has considered the Gains/(Losses) on account of Interest and Finance charges into "uncontrollable" factors.

GSECL has further submitted total Interest & finance charges for FY 2014-15 as Rs. 420.45 Crore in comparison to the approved costs of Rs. 505.11 Crore (excluding Dhuvaran CCPP 3 whose expenses have been shown only to match values with GSECL's accounts) leading to an uncontrollable gain/(loss) of Rs. 98.30 Crore in respect of other than PPA based stations.



Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

Accordingly, GSECL has submitted a net gain of Rs. 98.30 Crore during FY 2014-15 for interest and Finance charges which are on account of “uncontrollable” factors which is due to change in interest rate.

The station wise Interest and Finance charges claimed by GSECL in the Truing up for FY 2014-15 and the uncontrollable Gains/(Losses) as furnished by GSECL are given in the Table below:

Table 4.29: Interest and Finance charges and Gains/(Losses) claimed for FY 2014-15
(Rs. Crore)

Sl. No.	Power Station	Interest & Finance charges (Approved)	Interest & Finance charges (Actual)	Gains/(Losses) due to controllable factors	Gains/(Losses) due to uncontrollable factors
1	Ukai (1-5)	69.58	14.57		55.00
2	Ukai Extn. 6*	173.60	205.74		
3	Gandhinagar (1-4)	18.84	10.53		8.31
4	Gandhinagar 5*	-	0.53		
5	Wanakbori 1-6 TPS	80.30	61.07		19.23
6	Wanakbori 7 TPS*	-	0.52		
7	Sikka TPS	7.58	1.74		5.84
8	KLTPS 1-3	22.13	3.07		19.06
9	KLTPS 4	31.08	30.93		0.15
10	Dhuvaran CCPP 1*	4.44	0.54		
11	Dhuvaran CCPP 2	5.74	21.13		(15.39)
12	Dhuvaran CCPP 3	111.34	106.33		
13	Utran (Gas)*	5.82	0.32		
14	Utran Extension*	78.78	68.64		
15	Ukai Hydro	3.21	0.85		2.35
16	Kadana Hydro	4.02	0.26		3.76
	Total	616.45	526.79		98.30

*PPA based stations

Commission’s Analysis

The actual Interest and Finance charges station-wise are given in the Appendix A of the petition. The actual Interest and Finance charges aggregate to Rs. 526.79 Crore including the PPA governed stations and Ukai 6 station against Rs. 618.69 Crore approved for FY 2014-15 in the MYT Order and Tariff order for FY 2014-15. The capitalization achieved for GSECL stations is Rs. 1769.12 Crore. GSECL has taken into consideration the capitalisation achieved during FY 2014-15 and the normative borrowings. It has taken the repayment equal to the depreciation in its computation of interest and finance charges. The Commission has recomputed the allowable interest charges in the truing up for FY 2014-15 considering the 70% of actual capitalisation



Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

as normative loan and repayment of loan equivalent to depreciation approved for FY 2014-15 in accordance with the GERC (MYT) Regulations, 2011.

Regulation 39.5 of GERC (MYT) Regulations, 2011, specifies that the weighted average rate of interest is to be calculated on the basis of the actual loan portfolio at the beginning of each year to the generating company. GSECL has submitted the interest charges adopting interest rate as on 01.04.2014 on each loan portfolio for FY 2014-15. The Commission has worked out weighted average rate of interest on the outstanding loans at the beginning of FY 2014-15 as 10.39%

The parameters, which impact interest and finance charges, such as capital expenditure and capitalization are uncontrollable. The Commission accordingly approves the interest charges and the Gains/(Losses) on account of interest and finance charges in the Truing up as detailed in the Table below:

Table 4.30: Approved Interest & Finance Charges & Gains / (Losses) for FY 2014-15
(Rs. Crore)

Sl. No	Power Station	Approved for FY 2014-15 in MYT order	Claimed in truing up of FY 2014-15	Approved in Truing up for FY 2014-15	Deviation +/-	Gains / (Losses) due to controllable factor	Gains / (Losses) due to uncontrollable factor
1	2	3	4	5	6	7	8
A	Non-PPA based Stations						
1	Ukai (1-5)	69.49	14.57	26.85	42.64		42.64
2	Gandhinagar (1-4)	18.34	10.53	29.47	(11.13)		(11.13)
3	Wanakbori 1-6 TPS	80.27	61.07	24.78	55.49		55.49
4	Sikka TPS	7.29	1.74	6.64	0.65		0.65
5	KLTPS 1-3	21.58	3.07	15.47	6.11		6.11
6	KLTPS 4	30.78	30.93	30.75	0.03		0.03
7	Dhuvaran (CCPP 2)	5.57	21.13	3.76	1.81		1.81
8	Ukai Hydro	3.14	0.85	2.64	0.50		0.50
9	Kadana Hydro	3.87	0.26	2.36	1.51		1.51
	Sub Total (A)	240.33	144.15	142.73	97.60		97.60
B	PPA based Stations						
1	Ukai Extn 6	178.77	205.74	192.91			
2	Gandhinagar 5	0.00	0.53	0.00			
3	Wanakbori 7	0.00	0.52	0.00			
4	Dhuvaran (CCPP 1)	4.40	0.54	0.00			
5	Dhuvaran (CCPP 3)	111.34	106.33	53.03			
6	Utran Gas	5.80	0.32	0.00			
7	Utran Extension	78.05	68.64	74.88			
	Sub Total (B)	378.36	382.62	320.82	0.00		0.00
	Total (A+B)	618.69	526.79	463.55	97.60		97.60



4.6.4 Return on Equity for FY 2014-15

GSECL has claimed Rs. 568.18 Crore towards return on equity in the Truing up for FY 2014-15 against Rs. 581.13 Crore approved for the year in the MYT Order dated 11th April, 2011 and tariff order for FY 2014-15 for all the generating stations as detailed in the Table below:

Table 4.31: Return on Equity claimed for FY 2014-15

Particulars	Approved for FY 2014-15 in MYT Order	Claimed in Truing up for FY 2014-15
Return on equity	581.13	568.18

(Rs. Crore)

Petitioner's Submission

GSECL has submitted that comparison of the actual value of Return on equity computed on the basis of opening equity for FY 2014-15 and addition to equity during the year on account of funding of capital expenditure against approved, resulted in uncontrollable gain of Rs. 1.07 Crore. The station wise return on equity claimed by GSECL in the Truing up for FY 2014-15 and the uncontrollable Gains/(Losses) are given in the Table below:

Table 4.32: Return on equity and Gains/(Losses) claimed for FY 2014-15

Sl. No.	Power Station	Return on Equity (Approved)	Return on Equity (Actual)	Gains/ (Losses) due to controllable factors	Gains/ (Losses) due to uncontrollable factors
1	Ukai (1-5)	33.35	26.22		7.13
2	Ukai Extn. 6*	111.18	127.35		
3	Gandhinagar (1-4)	30.66	38.12		(7.46)
4	Gandhinagar 5*	26.78	26.84		
5	Wanakbori 1-6 TPS	68.43	61.36		7.07
6	Wanakbori 7 TPS*	26.00	26.04		
7	Sikka TPS	20.44	22.52		(2.08)
8	KLTPS 1-3	43.68	46.27		(2.59)
9	KLTPS 4	28.42	28.68		(0.26)
10	Dhuvaran CCPP 1*	12.87	11.76		
11	Dhuvaran CCPP 2	15.40	14.90		0.50
12	Dhuvaran CCPP 3	60.70	32.68		
13	Utran (Gas)*	10.40	10.87		
14	Utran Extension*	56.70	57.22		
15	Ukai Hydro	8.12	9.10		(0.98)
16	Kadana Hydro	28.00	28.25		(0.25)
	Total	581.13	568.18	-	1.07

*PPA based stations



Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

Commission's Analysis

The Commission has observed that GSECL has compared the actual return on equity claimed against the return on equity approved for the generating stations other than PPA governed stations. The actual return on equity FY 2014-15 is Rs. 568.18 Crore against Rs. 592.65 Crore approved in the MYT Order for all the stations. The Commission has computed the RoE taking into consideration the opening equity and addition / deletion of equity during FY 2014-15.

Gains/(Losses)

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 return on equity and Gains/(Losses) on account of return on equity in the Truing up for FY 2014-15 station wise as detailed in the Table below:

Table 4.33: Approved Return on Equity Gains / (Losses) for FY 2014-15

(Rs. Crore)

Sl. No	Power Station	Approved for FY 2014-15 in MYT order	Claimed in truing up of FY 2014-15	Approved in Truing up for FY 2014-15	Deviation +/-	Gains / (Losses) due to controllable factor	Gains / (Losses) due to uncontrollable factor
1	2	3	4	5	6	7	8
A	Non-PPA based Stations						
1	Ukai (1-5)	33.53	26.22	25.94	7.59		7.59
2	Gandhinagar (1-4)	30.66	38.12	35.89	(5.23)		(5.23)
3	Wanakbori 1-6 TPS	68.67	61.36	60.97	7.70		7.70
4	Sikka TPS	20.44	22.52	22.48	(2.04)		(2.04)
5	KLTPS 1-3	43.68	46.27	46.22	(2.54)		(2.54)
6	KLTPS 4	28.42	28.68	28.74	(0.32)		(0.32)
7	Dhuvaran (CCPP 2)	15.40	14.90	13.88	1.52		1.52
8	Ukai Hydro	8.12	9.10	9.09	(0.97)		(0.97)
9	Kadana Hydro	28.00	28.25	28.27	(0.27)		(0.27)
	Sub Total (A)	276.92	275.42	271.48	5.44		5.44
B	PPA based Stations						
1	Ukai Extn 6	116.76	127.35	121.74			
2	Gandhinagar 5	26.78	26.84	28.66			
3	Wanakbori 7	26.00	26.04	26.02			
4	Dhuvaran (CCPP 1)	12.87	11.76	10.85			
5	Dhuvaran (CCPP 3)	66.22	32.68	32.68			
6	Utran Gas	10.40	10.87	10.87			
7	Utran Extension	56.70	57.22	57.27			
	Sub Total (B)	315.73	292.76	288.08	0.00		0.00
	Total (A+B)	592.65	568.18	559.56	5.44		5.44



4.6.5 Interest on Working Capital for FY 2014-15

Petitioner's Submission

GSECL has claimed Rs. 395.57 Crore towards interest on working capital in the Truing up for FY 2014-15 against Rs. 226.49 Crore approved for the year in the MYT Order dated 11th April, 2011 for all the generating stations as detailed in the Table below:

Table 4.34: Interest on Working Capital claimed by GSECL in Truing up for FY 2014-15 (Rs. Crore)

Particular	Approved for FY 2014-15 in MYT Order	Claimed in Truing up for FY 2014-15
Interest on Working Capital	226.49	395.57

The gains and losses submitted by GSECL in its petition for truing up for FY 2014-15 are as given in the Table below:

Table 4.35: Gains / (Losses) from Interest on Working Capital claimed for FY 2014-15 (Rs. Crore)

Sl. No.	Power Station	Interest on WC (Approved)	Interest on WC (Actual)	Gains/(Losses) due to Controllable factors	Gains/(Losses) due to uncontrollable factors
1	Ukai (1-5)	27.46	54.15		(26.68)
2	Ukai Extn. 6*	28.47	39.07		
3	Gandhinagar (1-4)	28.62	51.06		(22.44)
4	Gandhinagar 5*	9.32	14.89		
5	Wanakbori 1-6 TPS	52.08	96.74		(44.66)
6	Wanakbori 7 TPS*	8.87	14.40		
7	Sikka TPS	9.30	18.62		(9.31)
8	KLTPS 1-3	12.04	9.57		2.47
9	KLTPS 4	9.10	4.05		5.05
10	Dhuvaran CCPP 1*	2.84	9.23		
11	Dhuvaran CCPP 2	3.11	11.95		(8.84)
12	Dhuvaran CCPP 3	20.58	3.02		
13	Utran (Gas)*	3.26	0.88		
14	Utran Extension*	9.81	65.29		
15	Ukai Hydro	0.54	1.10		(0.56)
16	Kadana Hydro	1.10	1.55		(0.45)
	Total	226.49	395.57		(105.44)

*PPA based stations

Commission's Analysis

The Commission has examined the interest on working capital claimed by GSECL for FY 2014-15. The Commission has observed that GSECL has worked out the interest on working capital considering 14.75% the SBAR as on 1.4.2014.



Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

Regulation 41.2 (b) specifies that interest shall be allowed at a rate equal to the State Bank Advance Rate (SBAR) as on 1st April of the financial year in which the petition is filed. The Commission while Truing up for FY 2014-15 had decided to consider the rate (SBAR) prevailing as on 1st April of the financial year for which Truing up is being done. The SBAR as on 1st April 2014 is 14.75%. The Commission, accordingly, takes into consideration the SBAR of 14.75% in computation of Interest on Working Capital for FY 2014-15.

The Commission has computed the interest on Working Capital, as detailed in Table 4.36 below.

Gains / (Losses)

The Commission is of the view that interest on working capital being normative should be considered as uncontrollable.

The Commission, accordingly, approves interest on working capital and Gains / (Losses) on account of interest on working capital in the truing up for FY 2014-15 station-wise as detailed in the Table below:

Table 4.36: Approved Interest on Working Capital Gains / (Losses) for FY 2014-15
(Rs. Crore)

Sl. No	Power Station	Approved for FY 2014-15 in MYT order	Claimed in truing up of FY 2014-15	Approved in Truing up for FY 2014-15	Deviation +/-	Gains / (Losses) due to controllable factor	Gains / (Losses) due to uncontrollable factor
1	2	3	4	5	6	7	8
A	Non-PPA based Stations						
1	Ukai (1-5)	27.48	54.15	49.03	(21.55)		(21.55)
2	Gandhinagar (1-4)	28.62	51.06	41.72	(13.10)		(13.10)
3	Wanakbori 1-6 TPS	52.10	96.74	80.14	(28.04)		(28.04)
4	Sikka TPS	9.30	18.62	16.78	(7.48)		(7.48)
5	KLTPS 1-3	12.04	9.57	9.45	2.59		2.59
6	KLTPS 4	9.10	4.05	3.39	5.71		5.71
7	Dhuvaran (CCPP 2)	3.12	11.95	6.46	(3.34)		(3.34)
8	Ukai Hydro	0.54	1.10	1.53	(0.99)		(0.99)
9	Kadana Hydro	1.10	1.55	1.07	0.03		0.03
	Sub Total (A)	143.40	248.79	209.56	(66.16)		(66.16)
B	PPA based Stations						
1	Ukai Extn 6	29.24	39.07	30.67			
2	Gandhinagar 5	9.32	14.89	17.08			
3	Wanakbori 7	8.87	14.40	15.64			
4	Dhuvaran (CCPP 1)	2.84	9.23	4.98			
5	Dhuvaran (CCPP 3)	22.45	3.02	2.00			
6	Utran Gas	3.26	0.88	5.28			
7	Utran Extension	9.80	65.29	34.23			
	Sub Total (B)	85.78	146.78	109.88	0.00		0.00
	Total (A+B)	229.18	395.57	319.44	(66.16)		(66.16)



4.6.6 SLDC charges for FY 2014-15

GSECL has claimed Rs. 4.13 Crore towards SLDC charges in the Truing up FY 2014-15 against Rs. 2.90 Crore approved for the year in MYT Order dated 11th April, 2011. SLDC charges approved for FY 2014-15 in the MYT Order and claimed by GSECL as furnished by GSECL are given in the Table below:

Table 4.37: SLDC charges claimed in Truing up for FY 2014-15

	(Rs. Crore)	
Particular	Approved for FY 2014-15 in MYT Order	Claimed in Truing up for FY 2014-15
SLDC charges	2.90	4.13

Petitioner's Submission

GSECL has submitted it has considered the Gains/(Losses) on account of SLDC charges as "uncontrollable" factors. The station wise SLDC charges claimed by GSECL in the Truing up for FY 2014-15 and the uncontrollable Gains/(Losses) are given in the Table below:

Table 4.38: SLDC charges and Gains/(Losses) claimed for FY 2014-15

(Rs. Crore)					
Sl. No.	Power Station	SLDC (Approved)	SLDC (Actual)	Gains/(Losses) due to controllable Factors	Gains/(Losses) due to uncontrollable Factors
1	Ukai (1-5)	0.46	0.66		(0.20)
2	Ukai Extn. 6*	0.21	0.34		
3	Gandhinagar (1-4)	0.36	0.70		(0.34)
4	Gandhinagar 5*	0.11	0.04		
5	Wanakbori 1-6 TPS	0.68	1.03		(0.35)
6	Wanakbori 7 TPS*	0.11	0.04		
7	Sikka TPS	0.13	0.19		(0.06)
8	KLTPS 1-3	0.12	0.22		(0.10)
9	KLTPS 4	0.04	0.01		0.03
10	Dhuvaran CCPP 1*	0.06	0.08		
11	Dhuvaran CCPP 2	0.06	0.08		(0.02)
12	Dhuvaran CCPP 3				
13	Utran (Gas)*	0.07	0.31		
14	Utran Extension*	0.20	0.06		
15	Ukai Hydro	0.16	0.21		(0.05)
16	Kadana Hydro	0.13	0.18		(0.05)
	Total	2.90	4.13	-	(1.13)

*PPA based stations

Commission's Analysis

The actual SLDC charges station wise are given in the Appendix-A to the petition. The actual SLDC charges aggregate to Rs. 4.15 Crore including the PPA governed stations against Rs. 2.90 Crore approved for FY 2014-15 in the MYT Order. The



Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

Commission approves the SLDC charges at Rs. 4.15 Crore in the truing up for FY 2014-15.

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 4.39: Approved SLDC charges Gains / (Losses) for FY 2014-15

(Rs. Crore)							
Sl. No	Power Station	Approved for FY 2014-15 in MYT order	Claimed in truing up of FY 2014-15	Approved in Truing up for FY 2014-15	Deviation +/-	Gains / (Losses) due to controllable factor	Gains / (Losses) due to uncontrollable factor
1	2	3	4	5	6	7	8
A	Non-PPA based Stations						
1	Ukai (1-5)	0.46	0.66	0.66	(0.20)		(0.20)
2	Gandhinagar (1-4)	0.36	0.70	0.70	(0.34)		(0.34)
3	Wanakbori 1-6 TPS	0.68	1.03	1.03	(0.35)		(0.35)
4	Sikka TPS	0.13	0.19	0.19	(0.06)		(0.06)
5	KLTPS 1-3	0.12	0.22	0.22	(0.10)		(0.10)
6	KLTPS 4	0.04	0.01	0.01	0.03		0.03
7	Dhuvaran (CCPP 2)	0.06	0.08	0.08	(0.02)		(0.02)
8	Ukai Hydro	0.16	0.21	0.21	(0.05)		(0.05)
9	Kadana Hydro	0.13	0.18	0.18	(0.05)		(0.05)
	Sub Total (A)	2.14	3.28	3.28	(1.14)		(1.14)
B	PPA based Stations						
1	Ukai Extn 6	0.21	0.34	0.34			
2	Gandhinagar 5	0.11	0.04	0.04			
3	Wanakbori 7	0.11	0.04	0.04			
4	Dhuvaran (CCPP 1)	0.06	0.08	0.08			
5	Dhuvaran (CCPP 3)	0.16	0.00	0.00			
6	Utran Gas	0.07	0.31	0.31			
7	Utran Extension	0.20	0.06	0.06			
	Sub Total (B)	0.55	0.87	0.87	0.00		0.00
	Total (A+B)	3.06	4.15	4.15	(1.14)		(1.14)

4.6.7 Water charges for FY 2014-15

GSECL has claimed Rs. 68.67 Crore towards water charges in the Truing up for FY 2014-15 against Rs. 94.56 Crore approved in the MYT Order. The water charges approved for FY 2014-15 in the MYT Order and claimed by GSECL as furnished by GSECL are given in the Table below:



Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

Table 4.40: Water charges claimed in Truing up for FY 2014-15

(Rs. Crore)

Particular	Approved for FY 2014-15 in MYT order	Claimed in truing up of FY 2014-15
Water Charges	94.56	68.67

Petitioner's Submission

GSECL has submitted that it has considered the Gains/(Losses) on account of water charges as “uncontrollable” factors. The station wise water charges claimed by GSECL in the Truing up for FY 2014-15 and the uncontrollable Gains/(Losses) are given in the Table below:

Table 4.41: Water charges and Gains/(Losses) claimed for FY 2014-15

(Rs. Crore)

Sl. No.	Power Station	Water Charges (Approved)	Water Charges (Actual)	Gains/ (Losses) Due to controllable factors	Gains/(Losses) due to uncontrollable factors
1	Ukai (1-5)	0.00	0.00		
2	Ukai Extn. 6*	0.00	0.00		
3	Gandhinagar (1-4)	30.47	9.44		21.03
4	Gandhinagar 5*	7.62	8.10		
5	Wanakbori 1-6 TPS	40.57	38.65		1.92
6	Wanakbori 7 TPS*	7.12	8.93		
7	Sikka TPS	3.89	2.51		1.38
8	KLTPS 1-3	0.60	0.55		0.05
9	KLTPS 4	0.00	0.10		(0.10)
10	Dhuvaran CAPP 1*	0.00	0.05		
11	Dhuvaran CAPP 2	0.00	0.21		(0.21)
12	Dhuvaran CAPP 3				
13	Utran (Gas)*	2.70	0.10		
14	Utran Extension*	1.59	0.03		
15	Ukai Hydro	0.00	0.00		-
16	Kadana Hydro	0.00	0.00		-
	Total	94.56	68.67	-	24.07

*PPA based stations

Commission's Analysis

The actual water charges station wise are given in the Appendix A of the petition. The actual water charges aggregate to Rs. 68.67 Crore for GSECL stations against Rs. 94.56 Crore approved for FY 2014-15 in the MYT Order. The water charges as per audited accounts are Rs. 68.67 Crore. The Commission approves the water charges as claimed by GSECL as they are as per audited annual accounts.



Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

Gains / (Losses):

As provided in the GERC (MYT) Regulations, 2011, as well as in MYT Order, 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 4.42: Approved Water Charges Gains / (Losses) for FY 2014-15

(Rs. Crore)

Sl. No	Power Station	Approved for FY 2014-15 in MYT order	Claimed in truing up of FY 2014-15	Approved in Truing up for FY 2014-15	Deviation +/-	Gains / (Losses) due to controllable factor	Gains / (Losses) due to uncontrollable factor
1	2	3	4	5	6	7	8
A	Non-PPA based Stations						
1	Ukai (1-5)	0.00	0.00	0.00	0.00		0.00
2	Gandhinagar (1-4)	30.47	9.44	9.44	21.03		21.03
3	Wanakbori 1-6 TPS	40.57	38.65	38.65	1.92		1.92
4	Sikka TPS	3.89	2.51	2.51	1.38		1.38
5	KLTPS 1-3	0.60	0.55	0.55	0.05		0.05
6	KLTPS 4	0.00	0.10	0.10	(0.10)		(0.10)
7	Dhuvaran (CCPP 2)	0.00	0.21	0.21	(0.21)		(0.21)
8	Ukai Hydro	0.00	0.00	0.00	0.00		0.00
9	Kadana Hydro	0.00	0.00	0.00	0.00		0.00
	Sub Total (A)	75.53	51.46	51.46	24.07		24.07
B	PPA based Stations						
1	Ukai Extn 6	0.00	0.00	0.00			
2	Gandhinagar 5	7.62	8.10	8.10			
3	Wanakbori 7	7.12	8.93	8.93			
4	Dhuvaran (CCPP 1)	0.00	0.05	0.05			
5	Dhuvaran (CCPP 3)	0.00	0.00	0.00			
6	Utran Gas	2.70	0.10	0.10			
7	Utran Extension	1.59	0.03	0.03			
	Sub Total (B)	19.03	17.21	17.21	0.00		0.00
	Total (A+B)	94.56	68.67	68.67	24.07		24.07

4.6.8 Income Tax for FY 2014-15

GSECL has claimed Rs. 54.50 Crore towards Income Tax in the Truing up FY 2014-15 against Rs. 25.00 Crore approved for the year in MYT Order dated 11th April, 2011. The Income Tax approved for FY 2014-15 in the MYT Order and claimed by GSECL are given in the Table below:

Table 4.43: Income Tax claimed in Truing up for FY 2014-15

(Rs. Crore)

Particular	Approved for FY 2014-15 in MYT order	Claimed in truing up of FY 2014-15
Income Tax	25.00	54.50



Petitioner's Submission

GSECL has submitted that it has paid a total tax of Rs. 54.50 Crore as against which the approved tax was only Rs. 25.00 Crore leading to a loss of Rs. 22.89 Crore in respect of generating stations other than PPA governed stations which is uncontrollable. The station wise details are given in the Table below:

Table 4.44: Income Tax and Gains/(Losses) claimed for FY 2014-15
(Rs. Crore)

Sl. No.	Power Station	Tax (Approved)	Tax (Actual)	Gains/(Losses) due to controllable factors	Gains/(Losses) due to uncontrollable factors
1	Ukai (1-5)	1.00	8.43		(7.43)
2	Ukai Extn. 6*	0.00	4.96		
3	Gandhinagar (1-4)	2.00	6.54		(4.54)
4	Gandhinagar 5*	2.00	2.08		
5	Wanakbori 1-6 TPS	4.00	12.49		(8.49)
6	Wanakbori 7 TPS*	2.00	2.08		
7	Sikka TPS	2.00	2.38		(0.38)
8	KLTPS 1-3	3.00	2.13		0.87
9	KLTPS 4	1.00	0.74		0.26
10	Dhuvaran CCPP 1*	1.00	0.43		
11	Dhuvaran CCPP 2	1.00	1.74		(0.74)
12	Dhuvaran CCPP 3		0.00		
13	Utran (Gas)*	1.00	1.34		
14	Utran Extension*	2.00	3.72		
15	Ukai Hydro	1.00	3.02		(2.02)
16	Kadana Hydro	2.00	2.40		(0.40)
	Total	25.00	54.50	-	(22.89)

*PPA based stations

Commission's Analysis

As verified from the audited annual accounts the income tax expense is Rs. 54.50 Crore in FY 2014-15.

The Commission allows Income Tax for the Non-PPA based stations and considers variation in Income Tax as uncontrollable under the provisions of Regulation 23 of GERC (MYT) Regulations 2011.

Gains / (Losses):

The Commission, accordingly, approves the Gains/(Losses) on account of Income Tax in the Truing up as detailed in the Table below:



Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

Table 4.45: Approved Income Tax Gains / (Losses) for FY 2014-15

							(Rs. Crore)
Sl. No	Power Station	Approved for FY 2014-15 in MYT order	Claimed in truing up of FY 2014-15	Approved in Truing up for FY 2014-15	Deviation +/-	Gains / (Losses) due to controllable factor	Gains / (Losses) due to uncontrollable factor
1	2	3	4	5	6	7	8
A Non-PPA based Stations							
1	Ukai (1-5)	1.00	8.43	8.43	(7.43)		(7.43)
2	Gandhinagar (1-4)	2.00	6.54	6.54	(4.54)		(4.54)
3	Wanakbori 1-6 TPS	4.00	12.49	12.49	(8.49)		(8.49)
4	Sikka TPS	2.00	2.38	2.38	(0.38)		(0.38)
5	KLTPS 1-3	3.00	2.13	2.13	0.87		0.87
6	KLTPS 4	1.00	0.74	0.74	0.26		0.26
7	Dhuvaran (CCPP 2)	1.00	1.74	1.74	(0.74)		(0.74)
8	Ukai Hydro	1.00	3.02	3.02	(2.02)		(2.02)
9	Kadana Hydro	2.00	2.40	2.40	(0.40)		(0.40)
	Sub Total (A)	17.00	39.87	39.87	(22.87)		(22.87)
B PPA based Stations							
1	Ukai Extn 6	0.00	4.96	0.00			
2	Gandhinagar 5	2.00	2.08	0.00			
3	Wanakbori 7	2.00	2.08	0.00			
4	Dhuvaran (CCPP 1)	1.00	0.43	0.00			
5	Dhuvaran (CCPP 3)	0.00	0.00	0.00			
6	Utran Gas	1.00	1.34	0.00			
7	Utran Extension	2.00	3.72	0.00			
	Sub Total (B)	8.00	14.61	0.00	0.00		0.00
	Total (A+B)	25.00	54.48	39.87	(22.87)		(22.87)

4.6.9 Non-Tariff Income for FY 2014-15

GSECL has claimed Rs. 132.31 Crore towards non-tariff income in the Truing up FY 2014-15 against Rs. 148.50 Crore approved for the year in MYT Order dated 11th April, 2011. The non-tariff incomes approved for FY 2014-15 in the MYT Order and claimed by GSECL as furnished by GSECL are given in the Table below:

Table 4.46: Non-Tariff income claimed in Truing up for FY 2014-15

			(Rs. Crore)
Particular	Approved for FY 2014-15 in MYT order	Claimed in truing up of FY 2014-15	
Non-Tariff income	148.50	132.31	

Petitioner's Submission

The petitioner has submitted that the station wise non-tariff income claimed by GSECL in the Truing up for FY 2014-15 and the Gains/(Losses) as given in the Table below:



Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

Table 4.47: Non-tariff income and Gains/(Losses) claimed for FY 2014-15

(Rs. Crore)					
Sl. No.	Power Station	Non- Tariff Income (Approved)	Non-Tariff Income (Actual)	Gains/ (Losses) due to controllable factors	Gains/ (Losses) due to uncontrollable factors
1	Ukai (1-5)	25.27	18.34		6.93
2	Ukai Extn. 6*	-	11.74		
3	Gandhinagar (1-4)	19.62	15.14		4.48
4	Gandhinagar 5*	6.24	10.22		
5	Wanakbori 1-6 TPS	37.45	37.75		(0.30)
6	Wanakbori 7 TPS*	6.24	6.87		
7	Sikka TPS	7.13	6.76		0.37
8	KLTPS 1-3	6.39	3.29		3.10
9	KLTPS 4	2.23	0.32		1.91
10	Dhuvaran CCPP 1*	3.18	17.41		
11	Dhuvaran CCPP 2	3.33	1.96		1.37
12	Dhuvaran CCPP 3	-	-		
13	Utran (Gas)*	4.01	0.39		
14	Utran Extension*	11.15	1.07		
15	Ukai Hydro	9.07	0.43		8.64
16	Kadana Hydro	7.19	0.63		6.56
	Total	148.50	132.31	-	33.06

*PPA based stations

Commission's Analysis

The actual non-tariff income given in Appendix-A of the Petition aggregate to Rs. 132.32 Crore including the PPA governed stations against Rs. 148.50 Crore approved for FY 2014-15 in the MYT Order. The Commission approves the non-tariff income as shown by GSECL.

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 4.48: Approved Non-Tariff Income Gains/(Losses) for FY 2014-15

(Rs. Crore)							
Sl. No	Power Station	Approved for FY 2014-15 in MYT order	Claimed in truing up of FY 2014-15	Approved in Truing up for FY 2014-15	Deviation +/-	Gains / (Losses) due to controllable factor	Gains / (Losses) due to uncontrollable factor
1	2	3	4	5	6	7	8
A	Non-PPA based Stations						
1	Ukai (1-5)	25.27	18.34	18.34	6.93		6.93
2	Gandhinagar (1-4)	19.62	15.14	15.14	4.48		4.48
3	Wanakbori 1-6 TPS	37.45	37.75	37.75	(0.30)		(0.30)
4	Sikka TPS	7.13	6.76	6.76	0.37		0.37
5	KLTPS 1-3	6.39	3.29	3.29	3.10		3.10
6	KLTPS 4	2.23	0.32	0.32	1.91		1.91



Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

Sl. No	Power Station	Approved for FY 2014-15 in MYT order	Claimed in truing up of FY 2014-15	Approved in Truing up for FY 2014-15	Deviation +/-	Gains / (Losses) due to controllable factor	Gains / (Losses) due to uncontrollable factor
7	Dhuvaran (CCPP 2)	3.33	1.96	1.96	1.37		1.37
8	Ukai Hydro	9.07	0.43	0.43	8.64		8.64
9	Kadana Hydro	7.19	0.63	0.63	6.56		6.56
	Sub Total (A)	117.68	84.62	84.62	33.06		33.06
B	PPA based Stations						
1	Ukai Extn 6	0.00	11.74	11.74			
2	Gandhinagar 5	6.24	10.22	10.22			
3	Wanakbori 7	6.24	6.87	6.87			
4	Dhuvaran (CCPP 1)	3.18	17.41	17.41			
5	Dhuvaran (CCPP 3)	0.00	0.00	0.00			
6	Utran Gas	4.01	0.39	0.39			
7	Utran Extension	11.15	1.07	1.07			
	Sub Total (B)	30.82	47.70	47.70	0.00		0.00
	Total (A+B)	148.50	132.32	132.32	33.06		33.06

4.7 Approved Fixed Charges

The Commission reviewed the performance of GSECL under Regulation 22 of GERC (MYT) Regulations 2011.

The Commission has discussed and approved various components of fixed charges for approval of trued up ARR in the above paragraphs.

The fixed charges approved for FY 2014-15 in the MYT Order for FY 2011-16 dated 31st March 2011, claimed by GSECL in Truing up and approved in the truing up are given in the Table below:

Table 4.49: Fixed Charges Approved in the Truing up for FY 2014-15
(Rs. Crore)

Sl. No	Fixed Charges	Approved for FY 2014-15 in MYT order	Claimed in truing up of FY 2014-15	Approved in Truing up for FY 2014-15	Deviation +/-
1	2	4	3	5	6
1	Depreciation	828.31	853.39	798.58	29.73
2	Interest & Finance Charges	618.69	526.77	463.55	155.14
3	Return on Equity	592.65	568.18	559.56	33.09
4	Interest on Working Capital	229.18	395.57	319.44	(90.26)
5	O&M Expenses	911.92	824.08	817.35	94.57
6	Water Expenses	94.56	68.67	68.67	25.89
7	SLDC Charges	3.06	4.15	4.15	(1.09)
8	Income Tax	25.00	54.48	39.87	(14.87)
9	Total Fixed Charges	3303.37	3295.29	3071.18	232.19
10	Less: Non-Tariff Income	148.50	132.32	132.32	16.18
11	Net Fixed Charges	3154.87	3162.97	2938.86	216.01

The Fixed charges approved station wise are given in Table below:



Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

Table 4.50: Approved Station-wise Fixed Charges for FY 2014-15

(Rs. Crore)

Sl. No	Power Station	Depreciation	Interest & Finance Charges	Return on Equity	Interest on Working Capital	O&M Expenses	Water Charges	SLDC Charges	Income Tax	Total Fixed Cost	Less Non-Tariff Income	Net Fixed Charges
A	Non-PPA based Stations											
1	Ukai (1-5)	72.35	26.85	25.94	49.03	164.71	0.00	0.66	8.43	347.96	18.34	329.62
2	Gandhinagar (1-4)	78.61	29.47	35.89	41.72	115.27	9.44	0.70	6.54	317.64	15.14	302.50
3	Wanakbori 1-6 TPS	85.74	24.78	60.97	80.14	188.76	38.65	1.03	12.49	492.55	37.75	454.80
4	Sikka TPS	32.52	6.64	22.48	16.78	60.76	2.51	0.19	2.38	144.26	6.76	137.50
5	KLTPS 1-3	63.06	15.47	46.22	9.45	88.78	0.55	0.22	2.13	225.89	3.29	222.60
6	KLTPS 4	35.72	30.75	28.74	3.39	13.27	0.10	0.01	0.74	112.72	0.32	112.40
7	Dhuvaran (CCPP 2)	20.09	3.76	13.88	6.46	23.23	0.21	0.08	1.74	69.45	1.96	67.49
8	Ukai Hydro	7.46	2.64	9.09	1.53	24.33	0.00	0.21	3.02	48.28	0.43	47.85
9	Kadana Hydro	15.27	2.36	28.27	1.07	19.26	0.00	0.18	2.40	68.82	0.63	68.19
	Sub Total (A)	410.80	142.73	271.48	209.56	698.37	51.46	3.28	39.87	1827.56	84.62	1742.94
B	PPA based Stations											
1	Ukai Extn 6	144.35	192.91	121.74	30.67	29.94	0.00	0.34	0.00	519.95	11.74	508.21
2	Gandhinagar 5	33.85	0.00	28.66	17.08	4.31	8.10	0.04	0.00	92.03	10.22	81.81
3	Wanakbori 7	32.22	0.00	26.02	15.64	15.92	8.93	0.04	0.00	98.78	6.87	91.91
4	Dhuvaran(CCPP 1)	19.45	0.00	10.85	4.98	23.23	0.05	0.08	0.00	58.64	17.41	41.23
5	Dhuvaran(CCPP 3)	68.55	53.03	32.68	2.00	3.29	0.00	0.00	0.00	159.55	0.00	159.55
6	Utran Gas	23.39	0.00	10.87	5.28	20.91	0.10	0.31	0.00	60.87	0.39	60.48
7	Utran Extension	65.95	74.88	57.27	34.23	21.38	0.03	0.06	0.00	253.81	1.07	252.74
	Sub Total (B)	387.77	320.82	288.08	109.88	118.98	17.21	0.87	0.00	1243.62	47.70	1195.92
	Total (A+B)	798.58	463.55	559.56	319.44	817.35	68.67	4.15	39.87	3071.18	132.32	2938.86



4.8 Sharing of Gains / (Losses) for FY 2014-15

The Commission has analysed the Gains / (Losses) on account of Controllable and Uncontrollable factors.

The relevant Regulations are extracted below

Regulation 24. Mechanism for pass through of gains or losses on account of uncontrollable factors

24.1 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.

24.2 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.

24.3 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 25. Mechanism for sharing of gains or losses on account of controllable factors

25.1 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 22.6;*
- 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.*

Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

25.2 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 22.6; 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 their beneficiaries are given in the Table below:

Table 4.51: Approved Gains / (Losses) due to Controllable Factors for FY 2014-15
(Rs. Crore)

Sl. No.	Power Station	Approved for FY 2014-15			Gains / (Losses) to be passed through 1/3	Gains / (Losses) on account of company 2/3
		O&M Charges	Fuel Charges	Total		
A	Non-PPA based Stations					
1	Ukai (1-5)	(12.43)	(1.49)	(13.92)	(4.64)	(9.28)
2	Gandhinagar (1-4)	(7.42)	23.19	15.77	5.26	10.52
3	Wanakbori 1-6 TPS	(32.93)	(38.99)	(71.92)	(23.97)	(47.95)
4	Sikka TPS	(6.13)	9.20	3.07	1.02	2.05
5	KLTPS 1-3	(3.15)	13.35	10.20	3.40	6.80
6	KLTPS 4	5.90	(1.46)	4.44	1.48	2.96
7	Dhuvaran (CCPP 2)	(2.14)	(7.51)	(9.65)	(3.22)	(6.43)
8	Ukai Hydro	(10.77)	0.00	(10.77)	(3.59)	(7.18)
9	Kadana Hydro	(3.66)	0.00	(3.66)	(1.22)	(2.44)
	Sub Total (A)	(72.73)	(3.71)	(76.44)	(25.48)	(50.96)
B	PPA based Stations					
1	Ukai Extn 6					
2	Gandhinagar 5					
3	Wanakbori 7					
4	Dhuvaran (CCPP 1)					
5	Dhuvaran (CCPP 3)					
6	Utran Gas					
7	Utran Extension					
	Sub Total (B)					
	Total (A+B)	(72.73)	(3.71)	(76.44)	(25.48)	(50.96)

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 their beneficiaries are given in the Table below:

Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

Table 4.52: Approved Gains / (Losses) due to Uncontrollable Factors for FY 2014-15

Sl. No	Power Station	Approved for FY 2014-15								Total Gains / (Losses)
		Depreciation	Interest & Finance	Return on Equity	Interest on Working Capital	SLDC	Water Charges	Income Tax	Non - Tariff Income	
A	Non-PPA based Stations									
1	Ukai (1-5)	2.20	42.64	7.59	(21.55)	(0.20)	0.00	(7.43)	6.93	30.19
2	Gandhinagar (1-4)	(12.23)	(11.13)	(5.23)	(13.10)	(0.34)	21.03	(4.54)	4.48	(21.06)
3	Wanakbori 1-6 TPS	20.81	55.49	7.70	(28.04)	(0.35)	1.92	(8.49)	(0.30)	48.75
4	Sikka TPS	(2.09)	0.65	(2.04)	(7.48)	(0.06)	1.38	(0.38)	0.37	(9.65)
5	KLTPS 1-3	(3.01)	6.11	(2.54)	2.59	(0.10)	0.05	0.87	3.10	7.06
6	KLTPS 4	(0.55)	0.03	(0.32)	5.71	0.03	(0.10)	0.26	1.91	6.97
7	Dhuvaran (CCPP 2)	1.55	1.81	1.52	(3.34)	(0.02)	(0.21)	(0.74)	1.37	1.94
8	Ukai Hydro	(0.09)	0.50	(0.97)	(0.99)	(0.05)	0.00	(2.02)	8.64	5.02
9	Kadana Hydro	(0.20)	1.51	(0.27)	0.03	(0.05)	0.00	(0.40)	6.56	7.17
	Sub Total (A)	6.41	97.60	5.44	(66.16)	(1.14)	24.07	(22.87)	33.06	76.40
B	PPA based Stations									
1	Ukai Extn 6									
2	Gandhinagar 5									
3	Wanakbori 7									
4	Dhuvaran (CCPP 1)									
5	Dhuvaran (CCPP 3)									
6	Utran Gas									
7	Utran Extension									
	Sub Total (B)									
	Total (A+B)	6.41	97.60	5.44	(66.16)	(1.14)	24.07	(22.87)	33.06	76.40

(Rs. Crore)



Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

The consolidated Gains / (Losses) approved in the Truing up for FY 2014-15 are given in the Table below:

Table 4.53: Total Consolidated Gains / (Losses) Approved for FY 2014-15
(Rs. Crore)

Sl. No	Power Station	Gains / (Losses) to be passed through 1/3	Gains / (Losses) of Uncontrollable factors to be passed through	Total Gains / (Losses)
A	Non-PPA based Stations			
1	Ukai (1-5)	(4.64)	30.19	25.55
2	Gandhinagar (1-4)	5.26	(21.06)	(15.80)
3	Wanakbori 1-6 TPS	(23.97)	48.75	24.78
4	Sikka TPS	1.02	(9.65)	(8.63)
5	KLTPS 1-3	3.40	7.06	10.47
6	KLTPS 4	1.48	6.97	8.45
7	Dhuvaran (CCPP 2)	(3.22)	1.94	(1.27)
8	Ukai Hydro	(3.59)	5.02	1.43
9	Kadana Hydro	(1.22)	7.17	5.95
	Sub Total (A)	(25.48)	76.40	50.92
B	PPA based Stations			
1	Ukai Extn 6			
2	Gandhinagar 5			
3	Wanakbori 7			
4	Dhuvaran (CCPP 1)			
5	Dhuvaran (CCPP 3)			
6	Utran Gas			
7	Utran Extension			
	Sub Total (B)			
	Total (A+B)	(25.48)	76.40	50.92

The Commission thus approves the net gain of Rs. 50.92 Crore in the Truing up for FY 2014-15.

Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

Annexure 4.1

Approved Fuel costs for FY 2014-15 for True-up
Fuel costs (Coal, Lignite & Secondary Oil) - Ukai TPS 1 to 5

Sl.No.	Item	Derivation	Unit	2014-15
1	Gross Generation	A	MUs	4031.39
2	Auxiliary Consumption	C	%	9.00%
3	Auxiliary Consumption	B	Mus	363
4	Net Generation	Y=A - B	Mus	3669
5	Station Heat Rate	D	KCal/kWh	2,755
6	Sp. Oil Consumption	E	ml/kWh	2.00
7	Gross Calorific Value of Coal	F	kcal/kg	3,908
8	Calorific value of Oil	G	kcal/l	10,416
9	Overall Heat	H=A x D	G Cal	11106479.45
10	Heat from Oil	I=(A x E x G)/1000	G Cal	83982
11	Heat from Coal	J=H-I	G Cal	11022498
12	Transit losses	K	%	0.8%
13	Coal Blend			
14	A) Indigenous Coal	X1	%	22.73%
15	B) Washed Coal	X2	%	68.66%
16	C) Imported Coal	X3	%	8.60%
17	Actual Oil Consumption	L=A x E	kl	8063
18	Actual Coal Consumption	M=(J X 1000)/F	MT	2820496
19	A) Indigenous Coal	Q1=M* x X1/(1-K)	MT	646269
20	B) Washed Coal	Q2=M* x X2 / (1-K)	MT	1952170
21	C) Imported Coal	Q3=M* X X3	MT	242562.64
22	Price of Coal			
23	A) Indigenous Coal	P1	Rs/MT	3066
24	B) Washed Coal	P2	Rs/MT	3553.00
25	C) Imported Coal	P3	Rs/MT	6405
26	Price of Oil	P4	Rs/kl	44768
27	Coal cost			
28	A) Indigenous Coal	N1=Q1 X P1	Rs Lakh	19815
29	B) Washed Coal	N2=Q2 X P2	Rs Lakh	69361
30	C) Imported Coal	N3=Q3 X P3	Rs Lakh	15536
31	Total Coal Cost	N4=N1+N2+N3	Rs Lakh	104711
32	Oil Cost	N5=P4 x L/10^5	Rs Lakh	3610
33	Total Fuel Cost	O=N4 + N5	Rs Lakh	108321
34	Fuel Cost/Unit Gross	P=O/(A*10)	Rs/kWh	2.69
35	Fuel Cost/Unit Net	Q=O/(Y*10)	Rs/kWh	2.95
36	Cost of fuel/G.Cal	R=(O/H)*10^5	Rs/Gcal	975
37	Actual Net Generation	S	MUs	3644.71
38	Normative Fuel Cost for actual Net Generation	T=S*Q/10	Rs. Crore	1076.17



Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

Annexure 4.2

Approved Fuel costs for FY 2014-15 for True-up
Fuel costs (Coal, Lignite & Secondary Oil) - Ukai 6

Sl.No.	Item	Derivation	Unit	2014-15
1	Gross Generation	A	MUs	2672.19
2	Auxiliary Consumption	C	%	6.00%
3	Auxiliary Consumption	B	MUs	160
4	Net Generation	$Y=A - B$	MUs	2512
5	Station Heat Rate	D	KCal/kWh	2,385
6	Sp. Oil Consumption	E	ml/kWh	1.00
7	Gross Calorific Value of Coal	F	kcal/kg	3,925
8	Calorific value of Oil	G	kcal/l	10,413
9	Overall Heat	$H=A \times D$	G Cal	6373173.2
10	Heat from Oil	$I=(A \times E \times G)/1000$	G Cal	27826
11	Heat from Coal	$J=H-I$	G Cal	6345348
12	Transit losses	K	%	0.8%
13	<u>Coal Blend</u>			
14	A) Indigenous Coal	X1	%	13.50%
15	B) Washed Coal	X2	%	76.36%
16	C) Imported Coal	X3	%	10.14%
17	Actual Oil Consumption	$L=A \times E$	kl	2672
18	<u>Actual Coal Consumption</u>	$M=(J \times 1000)/F$	MT	1616649
19	A) Indigenous Coal	$Q1=M^* \times X1/(1-K)$	MT	220008
20	B) Washed Coal	$Q2=M^* \times X2/(1-K)$	MT	1244429
21	C) Imported Coal	$Q3=M^* \times X3$	MT	163928.22
22	Price of Coal			
23	A) Indigenous Coal	P1	Rs/MT	3081
24	B) Washed Coal	P2	Rs/MT	3436.00
25	C) Imported Coal	P3	Rs/MT	6395
26	Price of Oil	P4	Rs/kl	43578
27	<u>Coal cost</u>			
28	A) Indigenous Coal	$N1=Q1 \times P1$	Rs Lakh	6778
29	B) Washed Coal	$N2=Q2 \times P2$	Rs Lakh	42759
30	C) Imported Coal	$N3=Q3 \times P3$	Rs Lakh	10483
31	Total Coal Cost	$N4=N1+N2+N3$	Rs Lakh	60020
32	Oil Cost	$N5=P4 \times L/10^5$	Rs Lakh	1164
33	Total Fuel Cost	$O = N4 + N5$	Rs Lakh	61185
34	Fuel Cost/Unit Gross	$P=O/(A^*10)$	Rs/kWh	2.29
35	Fuel Cost/Unit Net	$Q=O/(Y^*10)$	Rs/kWh	2.44
36	Cost of fuel/G.Cal	$R=(O/H)^*10^5$	Rs/Gcal	960
37	Actual Net Generation	S	MUs	2461
38	Normative Fuel Cost for actual Net Generation	$T=S^*Q/10$	Rs. Crore	599.51



Approved Fuel costs for FY 2014-15 for True-up
Fuel costs (Coal, Lignite & Secondary Oil) - Gandhinagar 1-4

Sl.No	Item	Derivation	Unit	2014-15
1	Gross Generation	A	MUs	1825.41
2	Auxiliary Consumption	C	%	10.00%
3	Auxiliary Consumption	B	MUs	183
4	Net Generation	Y=A - B	MUs	1643
5	Station Heat Rate	D	KCal/kWh	2,782
6	Sp. Oil Consumption	E	ml/kWh	1.50
7	Gross Calorific Value of Coal	F	kcal/kg	4,039
8	Calorific value of Oil	G	kcal/l	10,525
9	Overall Heat	H=A x D	G Cal	5078291
10	Heat from Oil	I=(A x E x G)/1000	G Cal	28819
11	Heat from Coal	J=H-I	G Cal	5049472
12	Transit losses	K	%	0.8%
13	Coal Blend			
14	A) Indigenous Coal	X1	%	5.97%
15	B) Washed Coal	X2	%	74.40%
16	C) Imported Coal	X3	%	19.63%
17	Actual Oil Consumption	L=A x E	kl	2738
18	Actual Coal Consumption	M=(J X 1000)/F	MT	1250179
19	A) Indigenous Coal	Q1=M* x X1/(1-K)	MT	75238
20	B) Washed Coal	Q2=M* x X2/(1-K)	MT	937634
21	C) Imported Coal	Q3=M* X X3	MT	245410
22	Price of Coal			
23	A) Indigenous Coal	P1	Rs/MT	4900.00
24	B) Washed Coal	P2	Rs/MT	4078.00
25	C) Imported Coal	P3	Rs/MT	6562
26	Price of Oil	P4	Rs/kl	43738
27	Coal cost			
28	A) Indigenous Coal	N1=Q1 X P1	Rs Lakh	3687
29	B) Washed Coal	N2=Q2 X P2	Rs Lakh	38237
30	C) Imported Coal	N3=Q3 X P3	Rs Lakh	16104
31	Total Coal Cost	N4=N1+N2+N3	Rs Lakh	58027
32	Oil Cost	N5=P4 x L/10^5	Rs Lakh	1198
33	Total Fuel Cost	O=N4 + N5	Rs Lakh	59225
34	Fuel Cost/Unit Gross	P=O/(A*10)	Rs/kWh	3.24
35	Fuel Cost/Unit Net	Q=O/(Y*10)	Rs/kWh	3.60
36	Cost of fuel/G.Cal	R=(O/H)*10^5	Rs/Gcal	1166
37	Actual Net Generation	S	MUs	1626
38	Normative Fuel Cost for actual Net Generation	T=S*Q/10	Rs. Crore	586.03



Approved Fuel costs for FY 2014-15 for True-up
Fuel costs (Coal, Lignite & Secondary Oil) - Gandhinagar 5

Sl.No	Item	Derivation	Unit	2014-15
1	Gross Generation	A	MUs	1565.06
2	Auxiliary Consumption	C	%	9.00%
3	Auxiliary Consumption	B	MUs	141
4	Net Generation	Y=A - B	MUs	1424
5	Station Heat Rate	D	KCal/kWh	2,460
6	Sp. Oil Consumption	E	ml/kWh	3.50
7	Gross Calorific Value of Coal	F	kcal/kg	4,066
8	Calorific value of Oil	G	kcal/l	10,533
9	Overall Heat	H=A x D	G Cal	3850047.6
10	Heat from Oil	I=(A x E x G)/1000	G Cal	57697
11	Heat from Coal	J=H-I	G Cal	3792351
12	Transit losses	K	%	0.8%
13	Coal Blend			
14	A) Indigenous Coal	X1	%	6.17%
15	B) Washed Coal	X2	%	76.09%
16	C) Imported Coal	X3	%	17.74%
17	Actual Oil Consumption	L=A x E	kl	5478
18	Actual Coal Consumption	M=(J X 1000)/F	MT	932698
19	A) Indigenous Coal	Q1=M* x X1/(1-K)	MT	58012
20	B) Washed Coal	Q2=M* x X2/(1-k)	MT	715413
21	C) Imported Coal	Q3=M* X X3	MT	165461
22	Price of Coal			
23	A) Indigenous Coal	P1	Rs/MT	4939.00
24	B) Washed Coal	P2	Rs/MT	4122.00
25	C) Imported Coal	P3	Rs/MT	6500.00
26	Price of Oil	P4	Rs/kl	45639
27	Coal cost			
28	A) Indigenous Coal	N1=Q1 X P1	Rs Lakh	2865
29	B) Washed Coal	N2=Q2 X P2	Rs Lakh	29489
30	C) Imported Coal	N3=Q3 X P3	Rs Lakh	10755
31	Total Coal Cost	N4=N1+N2+N3	Rs Lakh	43109
32	Oil Cost	N5=P4 x L/10^5	Rs Lakh	2500
33	Total Fuel Cost	O=N4 + N5	Rs Lakh	45609
34	Fuel Cost/Unit Gross	P=O/(A*10)	Rs/kWh	2.91
35	Fuel Cost/Unit Net	Q=O/(Y*10)	Rs/kWh	3.20
36	Cost of fuel/G.Cal	R=(O/H)*10^5	Rs/Gcal	1185
37	Actual Net Generation	S	MUs	1409
38	Normative Fuel Cost for actual Net Generation	T=S*Q/10	Rs. Crore	451.23



Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

Annexure 4.5

Approved Fuel costs for FY 2014-15 for True-up
Fuel costs (Coal, Lignite & Secondary Oil) - Wanakbori 1-6

Sl.No	Item	Derivation	Unit	2014-15
1	Gross Generation	A	MUs	6020.17
2	Auxiliary Consumption	C	%	9.00%
3	Auxiliary Consumption	B	MUs	542
4	Net Generation	Y=A - B	MUs	5478
5	Station Heat Rate	D	KCal/kWh	2,625
6	Sp. Oil Consumption	E	ml/kWh	1.00
7	Gross Calorific Value of Coal	F	kcal/kg	3,771
8	Calorific value of Oil	G	kcal/l	10,524
9	Overall Heat	H=A x D	G Cal	15802946
10	Heat from Oil	I=(A x E x G)/1000	G Cal	63356
11	Heat from Coal	J=H-I	G Cal	15739590
12	Transit losses	K	%	0.8%
13	Coal Blend			
14	A) Indigenous Coal	X1	%	11.19%
15	B) Washed Coal	X2	%	86.58%
16	C) Imported Coal	X3	%	2.23%
17	Actual Oil Consumption	L=A x E	kl	6020
18	Actual Coal Consumption	M=(J X 1000)/F	MT	4173850
19	A) Indigenous Coal	Q1=M* x X1/(1-K)	MT	470820
20	B) Washed Coal	Q2=M* x X2/(1-K)	MT	3642863
21	C) Imported Coal	Q3=M* X X3	MT	93077
22	Price of Coal			
23	A) Indigenous Coal	P1	Rs/MT	4917.00
24	B) Washed Coal	P2	Rs/MT	3923.00
25	C) Imported Coal	P3	Rs/MT	6465.00
26	Price of Oil	P4	Rs/kl	45344
27	Coal cost			
28	A) Indigenous Coal	N1=Q1 X P1	Rs Lakh	23150
29	B) Washed Coal	N2=Q2 X P2	Rs Lakh	142910
30	C) Imported Coal	N3=Q3 X P3	Rs Lakh	6017
31	Total Coal Cost	N4=N1+N2+N3	Rs Lakh	172077
32	Oil Cost	N5=P4 x L/10^5	Rs Lakh	2730
33	Total Fuel Cost	O=N4 + N5	Rs Lakh	174807
34	Fuel Cost/Unit Gross	P=O/(A*10)	Rs/kWh	2.90
35	Fuel Cost/Unit Net	Q=O/(Y*10)	Rs/kWh	3.19
36	Cost of fuel/G.Cal	R=(O/H)*10^5	Rs/Gcal	1106
37	Actual Net Generation	S	MUs	5472
38	Normative Fuel Cost for actual Net Generation	T=S*Q/10	Rs. Crore	1745.94

Approved Fuel costs for FY 2014-15 for True-up
Fuel costs (Coal, Lignite & Secondary Oil) - Wanakbori 7

Sl.No	Item	Derivation	Unit	2014-15
1	Gross Generation	A	MUs	1414.38
2	Auxiliary Consumption	C	%	9.00%
3	Auxiliary Consumption	B	MUs	127
4	Net Generation	Y=A - B	MUs	1287
5	Station Heat Rate	D	KCal/kWh	2,460
6	Sp. Oil Consumption	E	ml/kWh	3.50
7	Gross Calorific Value of Coal	F	kcal/kg	3,736
8	Calorific value of Oil	G	kcal/l	10,396
9	Overall Heat	H=A x D	G Cal	3479374.8
10	Heat from Oil	I=(A x E x G)/1000	G Cal	51464
11	Heat from Coal	J=H-I	G Cal	3427911
12	Transit losses	K	%	0.8%
13	Coal Blend			
14	A) Indigenous Coal	X1	%	10.45%
15	B) Washed Coal	X2	%	87.19%
16	C) Imported Coal	X3	%	2.37%
17	Actual Oil Consumption	L=A x E	kl	4950
18	Actual Coal Consumption	M=(J X 1000)/F	MT	917535
19	A) Indigenous Coal	Q1=M* x X1/(1-K)	MT	96656
20	B) Washed Coal	Q2=M* x X2/(1-K)	MT	806450
21	C) Imported Coal	Q3=M* X X3	MT	21746
22	Price of Coal			
23	A) Indigenous Coal	P1	Rs/MT	4914
24	B) Washed Coal	P2	Rs/MT	3881
25	C) Imported Coal	P3	Rs/MT	6487
26	Price of Oil	P4	Rs/kl	44305
27	Coal cost			
28	A) Indigenous Coal	N1=Q1 X P1	Rs Lakh	4750
29	B) Washed Coal	N2=Q2 X P2	Rs Lakh	31298
30	C) Imported Coal	N3=Q3 X P3	Rs Lakh	1411
31	Total Coal Cost	N4=N1+N2+N3	Rs Lakh	37459
32	Oil Cost	N5=P4 x L/10^5	Rs Lakh	2193
33	Total Fuel Cost	O=N4 + N5	Rs Lakh	39652
34	Fuel Cost/Unit Gross	P=O/(A*10)	Rs/kWh	2.80
35	Fuel Cost/Unit Net	Q=O/(Y*10)	Rs/kWh	3.08
36	Cost of fuel/G.Cal	R=(O/H)*10^5	Rs/Gcal	1140
37	Actual Net Generation	S	MUs	1282.19
38	Normative Fuel Cost for actual Net Generation	T=S*Q/10	Rs. Crore	395.01



Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

Annexure 4.7

Approved Fuel costs for FY 2014-15 for True-up
Fuel costs (Coal, Lignite & Secondary Oil) - Sikka TPS

Sl.No	Item	Derivation	Unit	2014-15
1	Gross Generation	A	MUs	939.78
2	Auxiliary Consumption	C	%	11.00%
3	Auxiliary Consumption	B	MUs	103
4	Net Generation	Y=A - B	MUs	836
5	Station Heat Rate	D	KCal/kWh	3,025
6	Sp. Oil Consumption	E	ml/kWh	4.00
7	Gross Calorific Value of Coal	F	kcal/kg	4,123
8	Calorific value of Oil	G	kcal/l	10,510
9	Overall Heat	H=A x D	G Cal	2842834.5
10	Heat from Oil	I=(A x E x G)/1000	G Cal	39508
11	Heat from Coal	J=H-I	G Cal	2803326
12	Transit losses	K	%	0.8%
13	Coal Blend			
14	A) Indigenous Coal	X1	%	0.00%
15	B) Washed Coal	X2	%	72.67%
16	C) Imported Coal	X3	%	27.33%
17	Actual Oil Consumption	L=A x E	kl	3759
18	Actual Coal Consumption	M=(J X 1000)/F	MT	679924
19	A) Indigenous Coal	Q1=M* x X1/(1-K)	MT	0
20	B) Washed Coal	Q2=M* x X2/(1-K)	MT	498085
21	C) Imported Coal	Q3=M* X X3	MT	185823
22	Price of Coal			
23	A) Indigenous Coal	P1	Rs/MT	0.00
24	B) Washed Coal	P2	Rs/MT	4499.00
25	C) Imported Coal	P3	Rs/MT	3487.00
26	Price of Oil	P4	Rs/kl	48738
27	Coal cost			
28	A) Indigenous Coal	N1=Q1 X P1	Rs Lakh	0
29	B) Washed Coal	N2=Q2 X P2	Rs Lakh	22409
30	C) Imported Coal	N3=Q3 X P3	Rs Lakh	6480
31	Total Coal Cost	N4=N1+N2+N3	Rs Lakh	28889
32	Oil Cost	N5=P4 x L/10^5	Rs Lakh	1832
33	Total Fuel Cost	O=N4 + N5	Rs Lakh	30721
34	Fuel Cost/Unit Gross	P=O/(A*10)	Rs/kWh	3.27
35	Fuel Cost/Unit Net	Q=O/(Y*10)	Rs/kWh	3.67
36	Cost of fuel/G.Cal	R=(O/H)*10^5	Rs/Gcal	1081
37	Actual Net Generation	S	MUs	830
38	Normative Fuel Cost for actual Net Generation	T=S*Q/10	Rs. Crore	304.74



Approved Fuel costs for FY 2014-15 for True-up
Fuel costs (Coal, Lignite & Secondary Oil) - KLTPS 1-3

Sl.No	Item	Derivation	Unit	2014-15
1	Gross Generation	A	Mus	1253.5
2	Auxiliary Consumption	C	%	12.00%
3	Auxiliary Consumption	B	MUs	150
4	Net Generation	$Y=A - B$	MUs	1103
5	Station Heat Rate	D	KCal/kWh	3,300
6	Sp. Oil Consumption	E	ml/kWh	3.00
7	Gross Calorific Value of Lignite	F	kcal/kg	2,875
8	Calorific value of Oil	G	kcal/l	10,228
9	Overall Heat	$H=A \times D$	G Cal	4136550
10	Heat from Oil	$I=(A \times E \times G)/1000$	G Cal	38462
11	Heat from Lignite	$J=H-I$	G Cal	4098088
12	Transist losses	K	%	0.20%
13	Actual Oil Consumption	$L=A \times E$	kl	3761
14	Actual Lignite Coal Consumption	$M=(J \times 1000)/F$	MT	1425422
15	Coal Consumption including Transist Loss	$N=M/(1-K)$	MT	1428278
16	Price of Lignite	P1	Rs/MT	940.00
17	Price of Oil	P2	Rs/kl	41580
18	Cost of Lignite	$N1=M \times P1$	Rs Lakh	13399
19	Oil Cost	$N2=P2 \times L/10^5$	Rs Lakh	1564
20	Total Fuel Cost	$O=N1 + N2$	Rs Lakh	14963
21	Fuel Cost/Unit Gross	$P=O/(A*10)$	Rs/kWh	1.19
22	Fuel Cost/Unit Net	$Q=O/(Y*10)$	Rs/kWh	1.36
23	Cost of fuel/G.Cal	$R=(O/H)*10^5$	Rs/Gcal	362
24	Actual Net Generation	S	MUs	1096
25	Normative Fuel Cost for actual Net Generation	$T=S*Q/10$	Rs. Crore	148.63



Approved Fuel costs for FY 2014-15 for True-up
Fuel costs (Coal, Lignite & Secondary Oil) - KLTPS 4

Sl.No	Item	Derivation	Unit	2014-15
1	Gross Generation	A	MUs	378.62
2	Auxiliary Consumption	C	%	12.00%
3	Auxiliary Consumption	B	MUs	45
4	Net Generation	$Y=A - B$	MUs	333
5	Station Heat Rate	D	KCal/kWh	3,000
6	Sp. Oil Consumption	E	ml/kWh	3.00
7	Gross Calorific Value of Lignite	F	kcal/kg	2,871
8	Calorific value of Oil	G	kcal/l	10,630
9	Overall Heat	$H=A \times D$	G Cal	1135860
10	Heat from Oil	$I=(A \times E \times G)/1000$	G Cal	12074
11	Heat from Lignite	$J=H-I$	G Cal	1123786
12	Transit losses	K	%	0.20%
13	Actual Oil Consumption	$L=A \times E$	kl	1136
14	Actual Lignite Coal Consumption	$M=(J \times 1000)/F$	MT	391427
15	Coal Consumption including Transit Loss	$N=M/(1-K)$	MT	392211
16	Price of Lignite	P1	Rs/MT	873.00
17	Price of Oil	P2	Rs/kl	66742.00
18	Cost of Lignite	$N1=M \times P1$	Rs Lakh	3417
19	Oil Cost	$N2=P2 \times L/10^5$	Rs Lakh	758
20	Total Fuel Cost	$O=N1 + N2$	Rs Lakh	4175
21	Fuel Cost/Unit Gross	$P=O/(A*10)$	Rs/kWh	1.10
22	Fuel Cost/Unit Net	$Q=O/(Y*10)$	Rs/kWh	1.25
23	Cost of fuel/G.Cal	$R=(O/H)*10^5$	Rs/Gcal	368
24	Actual Net Generation	S	MUs	298
25	Normative Fuel Cost for actual Net Generation	$T=S*Q/10$	Rs. Crore	37.36

Approved Fuel costs for FY 2014-15 for True-up
Fuel costs (Gas) - Dhuvaran Gas 1

Sl.No	Item	Derivation	Unit	2014-15
1	Gross Generation	A	MUs	32.27
2	Auxiliary Consumption	C	%	3.000%+GBC
3	Auxiliary Consumption including GBC	B	MUs	1.79
4	Net Generation	Y=A - B	MUs	30.48
5	Station Heat Rate	D	KCal/kWh	1,950
6	Calorific value of Gas	F	kcal/scm	9,464
7	Overall Heat from Gas	H=A x D	G Cal	62926.5
8	Actual Gas Consumption	M=(H x 1000)/F	M. scm	6649
9	Price of Gas	P1	Rs/scm	19.02
10	Cost of Gas	N5=P1 x M/10 ⁵	Rs Lakh	1265
11	Total Fuel Cost	N5	Rs Lakh	1265
12	Fuel Cost/Unit Gross	P=N5/(A*10)	Rs/kWh	3.92
13	Fuel Cost/Unit Net	Q=N5/(Y*10)	Rs/kWh	4.15
14	Cost of fuel/G.Cal	R=(N5/H)*10 ⁵	Rs/Gcal	2010
15	Actual Net Generation	S	MUs	24.85
16	Normative Fuel Cost for actual Net Generation	T=S*Q/10	Rs. Crore	10.31

Approved Fuel costs for FY 2014-15 for True-up
Fuel costs (Gas) - Dhuvaran Gas 2

Sl.No	Item	Derivation	Unit	2014-15
1	Gross Generation	A	MUs	131.38
2	Auxiliary Consumption	C	%	3.00%
3	Auxiliary Consumption	B	MUs	4
4	Net Generation	$Y=A - B$	MUs	127
5	Station Heat Rate	D	KCal/kWh	1,950
6	Calorific value of Gas	F	kcal/scm	9,653
7	Overall Heat from Gas	$H=A \times D$	G Cal	256191
8	Actual Gas Consumption	$M=(H \times 1000)/F$	M. scm	26540
9	Price of Gas	P1	Rs/scm	22.57
10	Cost of Gas	$N5=P1 \times M/10^2$	Rs Lakh	5990
11	Total Fuel Cost	N5	Rs Lakh	5990
12	Fuel Cost/Unit Gross	$P=N5/(A \times 10)$	Rs/kWh	4.56
13	Fuel Cost/Unit Net	$Q=N5/(Y \times 10)$	Rs/kWh	4.70
14	Cost of fuel/KCal	$R=(N5/H) \times 10^5$	Rs/Gcal	2338
15	Actual Net Generation	S	MUs	118
16	Normative Fuel Cost for actual Net Generation	$T=S \times Q/10$	Rs. Crore	55.32

Approved Fuel costs for FY 2014-15 for True-up
Fuel costs (Gas) - Dhuvaran Gas 3

Sl.No	Item	Derivation	Unit	2014-15
1	Gross Generation	A	MUs	0
2	Auxiliary Consumption	C	%	3.00%
3	Auxiliary Consumption	B	MUs	0
4	Net Generation	$Y=A - B$	MUs	0
5	Station Heat Rate	D	KCal/kWh	1,850
6	Calorific value of Gas	F	kcal/scm	0
7	Overall Heat from Gas	$H=A \times D$	G Cal	0
8	Actual Gas Consumption	$M=(H \times 1000)/F$	M. scm	0
9	Price of Gas	P1	Rs/scm	0.00
10	Cost of Gas	$N5=P1 \times M/10^2$	Rs Lakh	0.00
11	Total Fuel Cost	N5	Rs Lakh	0.00
12	Fuel Cost/Unit Gross	$P=N5/(A \times 10)$	Rs/kWh	0.00
13	Fuel Cost/Unit Net	$Q=N5/(Y \times 10)$	Rs/kWh	0.00
14	Cost of fuel/KCal	$R=(N5/H) \times 10^5$	Rs/Gcal	0.00
15	Actual Net Generation	S	MUs	0
16	Normative Fuel Cost for actual Net Generation	$T=S \times Q/10$	Rs. Crore	0.00

Approved Fuel costs for FY 2014-15 for True-up
Fuel costs (Gas) - Utran Gas

Sl.No	Item	Derivation	Unit	2014-15
1	Gross Generation	A	MUs	0
2	Auxiliary Consumption	C	%	4.000%
3	Auxiliary Consumption	B	MUs	0
4	Net Generation	$Y=A - B$	MUs	0
5	Station Heat Rate	D	KCal/kWh	2,150
6	Calorific value of Gas	F	kcal/scm	0
7	Overall Heat from Gas	$H=A \times D$	G Cal	0
8	Actual Gas Consumption	$M=(H \times 1000)/F$	M. scm	0.00
9	Price of Gas	P1	Rs/scm	0.00
10	Cost of Gas	$N5=P1 \times M/10^5$	Rs Lakh	0.00
11	Total Fuel Cost	N5	Rs Lakh	0.00
12	Fuel Cost/Unit Gross	$P=N5/(A*10)$	Rs/kWh	0.00
13	Fuel Cost/Unit Net	$Q=N5/(Y*10)$	Rs/kWh	0.00
14	Cost of fuel/G.Cal	$R=(N5/H)*10^5$	Rs/Gcal	0

Approved Fuel costs for FY 2014-15 for True-up
Fuel costs (Gas) - Utran Extension

Sl.No	Item	Derivation	Unit	2014-15
1	Gross Generation	A	MUs	133.52
2	Auxiliary Consumption	C	%	3.00%
3	Auxiliary Consumption	B	MUs	4
4	Net Generation	$Y=A - B$	MUs	130
5	Capacity		MW	375
6	Station Heat Rate	D	KCal/kWh	1,850
7	Calorific value of Gas	F	kcal/scm	9,625
8	Overall Heat from Gas	$H=A \times D$	G Cal	247012
9	Actual Gas Consumption	$M=(H \times 1000)/F$	M. scm	25664
10	Price of Gas	P1	Rs/scm	46.42
11	Cost of Gas	$N5=P1 \times M/10^5$	Rs Lakh	11913
12	Total Fuel Cost	N5	Rs Lakh	11913
13	Fuel Cost/Unit Gross	$P=N5/(A \times 10)$	Rs/kWh	8.92
14	Fuel Cost/Unit Net	$Q=N5/(Y \times 10)$	Rs/kWh	9.20
15	Cost of fuel/G.Cal	$R=(N5/H) \times 10^5$	Rs/Gcal	4823
16	Actual Net Generation	S	MUs	124.33
17	Normative Fuel Cost for actual Net Generation	$T=S \times Q/10$	Rs. Crore	114.37



5. Determination of Generation Charges for FY 2016-17

5.1 Introduction

This Chapter deals with the determination of the Generation Charges (Fixed charges and Variable charges) for FY 2016-17 for GSECL.

5.2 Provisional ARR for FY 2016-17

Petitioner's Submission

GERC order on the Petition No. 1534/2015 dated 2nd December, 2015, states the following:

"We decide that the approved ARR of FY 2015-16 of the licensees / generating companies concerned be considered as provisional ARR of the licensees / generating companies for FY 2016-17.

We also decide that the licensees / generating companies shall file the ARR for FY 2016-17 based on the MYT Regulations for FY 2016-17 to FY 2020-21 and the true up for the same shall also be governed as per the new MYT Regulations."

As per the above mentioned Commission's order, GSECL is required to consider ARR approved for FY 2015-16 as provisional ARR for FY 2016-17. For existing Generating Stations, the ARR approved for FY 2015-16 as per the MYT "Tariff Order dated 11th April, 2011" has been considered. For upcoming Generating Stations & generating stations not covered under the aforesaid MYT order like Sikka 3-4, Dhuvaran CCPP 3 & Ukai-6, the "Tariff order dated 31st March, 2015 for true-up of FY 2013-14 & Determination of tariff for FY 2015-16" has been considered. The details of the tariff approved by the Commission is as follows:

Table 5.1: Variable Charges claimed for FY 2016-17
(Rs/kWH)

Sl. No	Power Station	Variable Charges
1	Ukai (1-5)	1.698
2	Gandhinagar (1-4)	2.375
3	Gandhinagar 5*	2.130
4	Wanakbori 1-6 TPS	2.108
5	Wanakbori 7*	2.022
6	Sikka TPS	2.752
7	KLTPS 1-3	1.181
8	KLTPS 4	1.109
9	Dhuvaran (Gas 1)*	2.411

Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

Sl. No	Power Station	Variable Charges
10	Dhuvaran (Gas 2)	2.388
11	Utran Gas*	2.367
12	Utran Extension*	2.071
13	Sikka Extn 3-4*	3.185
14	Ukai Extn 6*	1.683
15	Dhuvaran (Gas 3)*	2.285

* PPA based stations.



Gujarat State Electricity Corporation Limited
Truing up for FY 2014-15, Approval of Provisional ARR for FY 2016-17
and Determination of Tariff for FY 2016-17

Table 5.2: Fixed Charges claimed for FY 2016-17

(Rs. Crore)

Sr. No.	Power Station	Depreciation	Interest & Finance Charges	Return on Equity	Interest on Working Capital	O&M Expenses	Water Charges	Tax	SLDC Fees & Charges	Total Fixed Cost	Less: Non-Tariff Income	Net Fixed Charges
1	Ukai (1-5)	74.88	61.56	33.67	27.40	160.99	-	1.00	0.46	359.96	25.27	334.69
2	Gandhinagar (1-4)	66.38	12.39	30.66	28.65	114.02	30.47	2.00	0.36	284.93	19.62	265.31
3	Gandhinagar 5*	32.70	-	26.78	9.35	29.00	7.62	2.00	0.11	107.56	6.24	101.32
4	Wanakbori 1-6 TPS	107.05	68.94	68.81	52.24	164.74	40.57	4.00	0.68	507.03	37.45	469.57
5	Wanakbori 7*	31.75	-	26.00	8.88	29.00	7.12	2.00	0.11	104.86	6.24	98.62
6	Sikka TPS	30.50	3.91	20.44	9.31	57.75	3.89	2.00	0.13	127.93	7.13	120.81
7	KLTPS 1-3	60.10	15.05	43.68	12.08	90.53	0.60	3.00	0.12	225.16	6.39	218.77
8	KLTPS 4	35.17	27.19	28.42	9.08	20.27	-	1.00	0.04	121.17	2.23	118.94
9	Dhuvaran (Gas 1)*	16.50	3.94	12.87	2.81	18.00	-	1.00	0.06	55.18	3.18	52.00
10	Dhuvaran (Gas 2)	21.64	3.54	15.40	3.13	22.29	-	1.00	0.06	67.06	3.33	63.73
11	Utran Gas*	20.70	5.22	10.40	3.28	15.00	2.70	1.00	0.07	58.37	4.01	54.35
12	Utran Extension*	79.56	70.21	56.70	9.78	51.00	1.59	2.00	0.20	271.04	11.15	259.89
13	Ukai Hydro	7.42	2.40	8.12	0.55	14.34	-	1.00	0.16	33.99	9.07	24.93
14	Kadana Hydro	15.07	2.12	28.00	1.10	16.49	-	2.00	0.13	64.91	7.19	57.72
15	Sikka Extn 3-4	159.14	213.17	126.59	32.40	86.21	-	-	0.22	617.73	-	617.73
16	Ukai Extn 6*	160.23	179.62	127.46	22.91	77.14	-	3.72	0.22	571.30	-	571.30
17	Dhuvaran (Gas 3)	83.16	102.66	66.15	14.84	77.74	-	-	0.16	344.71	-	344.71
	Total	1,001.95	771.92	730.15	247.79	1,044.51	94.56	28.72	3.29	3,922.89	148.50	3,774.39

* PPA based stations.



Commission's Analysis

The Commission provisionally approves the variable and fixed charges as given in the table below:

Table 5.3: Provisionally Approved charges for FY 2016-17

Sl. No	Power Station	Approved Fixed Charges for FY 2016-17 (Rs. Crore)	Approved Energy Charges for FY 2016-17 (Rs. /kWh)
1	Ukai (1-5)	334.68	1.698
2	Gandhinagar (1-4)	265.31	2.375
3	Gandhinagar 5*	101.32	2.130
4	Wanakbori 1-6 TPS	469.57	2.108
5	Wanakbori 7*	98.62	2.022
6	Sikka TPS	120.81	2.752
7	KLTPS 1-3	218.77	1.181
8	KLTPS 4	118.94	1.109
9	Dhuvaran (Gas 1)*	52.00	2.411
10	Dhuvaran (Gas 2)	63.73	2.388
11	Utran Gas*	54.35	2.367
12	Utran Extension*	259.89	2.071
13	Ukai Hydro	24.93	0.00
14	Kadana Hydro	57.72	0.00
15	Sikka Extn 3-4#	617.73	3.185
16	Ukai Extn 6*§	566.56	1.683
17	Dhuvaran (Gas 3)#	344.71	2.285

* PPA Based Stations

New stations for which fixed and energy charges are provisionally approved.

§ Commission has considered the fixed charges for Ukai 6 as per the final tariff order of the station vide order dated 10.02.2016 in Petition No. 1508/2015 read with Order dated 29.03.2016 in Petition No, 1563/2016.



6. Compliance of Directives

6.1 Compliance of Directives issued by the Commission

The Commission in its Tariff order dated 2nd June, 2012 had issued certain directives to GSECL relating to the compliance of the already issued directives

The Commission also issued some new directives to GSECL in the Tariff order dated 2nd June, 2012 and 31st March 2015.

The Commission, while discussing the compliance of the above directives, recorded its comments on the compliance and in the process, further action required was indicated in the Tariff Order dated 31st March, 2013. The response to these comments and further action are submitted by GSECL on which certain comments were made by the Commission in the Tariff Order dated 29th April, 2014. The compliance of the petitioner on these directives and comments are discussed here under:

6.2 Directive issued in Tariff Order dated 31st March, 2015

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 present 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.

Commission's comments:

The Progress of the work of Wanakbori Unit No. 1 may be submitted by GSECL.

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 as per present petition:

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.

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.

Commission's comments:

The progress on the above works may be submitted by GSECL at quarterly intervals. The Annexure-I, as submitted by GSECL is attached to this order as Annexure-1.

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 as per present petition:

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

Commission's 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.

6.3 New Directive

Directive 1: 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 also place the said information on its website.

COMMISSION'S ORDER

The Commission approves the station-wise fixed charges and energy charges for the FY 2016-17 as shown in the Table below:

Approved Charges for FY 2016-17

Sl. No	Power Station	Approved Fixed Charges for FY 2016-17 (Rs. Crore)	Approved Energy Charges for FY 2016-17 (Rs. /kWh)
1	Ukai (1-5)	334.68	1.698
2	Gandhinagar (1-4)	265.31	2.375
3	Gandhinagar 5*	101.32	2.130
4	Wanakbori 1-6 TPS	469.57	2.108
5	Wanakbori 7*	98.62	2.022
6	Sikka TPS	120.81	2.752
7	KLTPS 1-3	218.77	1.181
8	KLTPS 4	118.94	1.109
9	Dhuvaran (Gas 1)*	52.00	2.411
10	Dhuvaran (Gas 2)	63.73	2.388
11	Utran Gas*	54.35	2.367
12	Utran Extension*	259.89	2.071
13	Ukai Hydro	24.93	0.00
14	Kadana Hydro	57.72	0.00
15	Sikka Extn 3-4#	617.73	3.185
16	Ukai Extn 6*§	566.56	1.683
17	Dhuvaran (Gas 3)#	344.71	2.285

* PPA Based Stations

New stations for which fixed and energy charges are provisionally approved.

§ Commission has considered the fixed charges for Ukai 6 as per the final tariff order of the station vide order dated 10.02.2016 in Petition No. 1508/2015 read with Order dated 29.03.2016 in Petition No, 1563/2016.

The net gain of Rs. 50.92 Crore approved in the Truing up for FY 2014-15 is to be passed on to the DISCOMs in 12 equal monthly instalments through GUVNL.

This order shall come into force with effect from 1st April, 2016.

Sd/-

P. J. THAKKAR
 Member

Sd/-

K. M. SHRINGARPURE
 Member

Place: Gandhinagar
 Date: 31/03/2016

ANNEXURE-1

(1) Retrofitting LMZ steam Turbines of Wanakbori Unit No. 3 and Ukai Unit No.4:

Ukai & Wanakbori LMZ Turbines are very old; efficiency of the turbine is lower and has already operated for more than 30 years. Its design is now nearly 50 years old. Present Turbine Heat rate of these running Units are 2269 Kcal/Kwh, which is very high with reference to the design heat rate, and resultantly it consumes higher percentage of coal, which increase the Generation cost of power. In present situation, the turbines with advanced design are available with improved heat rate of 1950 to 1970 Kcal / Kwh globally. The turbine retrofitting is successfully done globally to improve turbine heat rate and to extend reliable life of the turbine globally.

Considering the above facts, it is decided to go for turbine retrofitting work to achieve better heat rate than existing design HR and extension of reliable life of turbine more than 15 years with complete replacement of HP Module, IP Module and LP steam path along with rotor with improved design of turbine modules. The estimated cost was Rs. 250 Crore.

Present Status:

GSECL have invited the bid to carry out the work of turbine retrofitting of Wanakbori Unit No.3 and Ukai Unit No.4. The detail work order is placed of Rs.207 Crore for the above stated work to M/s. NASL (JV of NTPC and ALSTOM) and the zero date of the project is 10-03.2015. Designing and engineering work is under progress.

(2) Air Pre heater and Economizer modification for 200 / 210 MW LMZ 6

Units:

Ukai Unit No. 3, 4 & 5 and WTPS Unit No. 1, 2 & 3 of LMZ design were commissioned about more 30 years back. The boilers of these units are running with lower efficiency than design due to worn out condition of Boiler components / accessories and as on today the boilers of newly designed Units are operating with better efficiency than these boilers. In order to improve boiler efficiency and increase reliability it is essential to replace existing APH & Economizer with improved design and accordingly it is decided to go for Air Preheater and Economizer modification for



200/210 MW LMZ 6 units to improve boiler efficiency by 1.5 to 2% with increased reliability. Also the coal consumption will be reduced by 82780 MT per year.

Present Status:

Work Order placement to BHEL is under process for Ukai Unit No.4 amounting to Rs. 55 Crore.

Target of the Project Completion:

- For Turbine Retrofitting Project – 28 Months for two units.
- For Air Preheater economizer – 16 months.

(3) 1 x 800 MW Extension Unit No.8 Wanakbori TPS

- LOA placed on BHEL: 26.09.2014
- Notice to Proceed to BHEL is 20.10.2014 and Zero Date is 21.10.2014
- Estimated Project Cost is Rs. 4465 Crore
- Scheduled date of commissioning: 20.10.2018
- Soil investigation completed.
- Excavation work for levelling & grading is under progress.
- Engineering work is in progress.
- BHEL have placed order to Alstom for Boiler and for Turbine to Siemens.

(4) 2 x 800 MW Coal Based Power Plant at Dhuvaran

- Total land required for the 2x800 MW is available with GSECL:1050 Acres (425.08 Hectares.)
- Order for consultancy services for Environment Impact Assessment (EIA) study is issued on 07.02.2015.
- Order for consultancy services for preparing feasibility report & DPR issued on 19.03.2015.
- High tide Line/Low Tide Line & Coastal Regulatory Zone mapping with Government Agencies is carried out by M/s. Remote Sensing (MoEF, Authorized), Chennai.
- Application to Aviation Authority of India for chimney clearance submitted.
- For Transfer of PPA from NTPC to GSECL, the matter is taken up by GUVNL with authority of NTPC as directed by GoG.