GUJARAT ELECTRICITY REGULATORY COMMISSION

Tariff Order

Truing up for FY 2010-11 and

Determination of Tariff for FY 2012-13

For

Gujarat State Electricity Corporation Limited (GSECL)

Case No. 1157 of 2011

2nd June 2012

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GUJARAT ELECTRICITY REGULATORY COMMISSION (GERC)

AHMEDABAD

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ANNEXURES

ABBREVIATIONS

ABT	Availability Based Tariff
Act	Electricity Act, 2003
AOH	Annual Overhauling
APR	Annual Performance Review
ARR	Aggregate Revenue Requirement
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
COH	Capital Overhauling
CUF	Capacity Utilization Factor
CV	Calorific Value
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	Kilo Volt
KWh	Kilo Watt Hour
LE	Life Extension
LEP	Life Extension Plan
LSHS	Low Sulphur Heavy Stock
LTSA	Long Term Service Agreement
MoU	Memorandum of Understanding
MW	Mega Watt
MYT	Multi-Year Tariff
NCV	Net Calorific Value
O&M	Operations & Maintenance
OEM	Original Equipment Manufacturer
OPEC	Organization of Petroleum Exporting Countries
PAF	Plant Availability Factor
PG test	Performance Guarantee Test
PLF	Plant Load Factor
R & M	Renovation & Modernization

R E	Revised Estimates
RLA	Residual life Assessment
ROE	Return on Equity
RSD	Re-start Duration
Scm	Standard cubic meter
SHR	Station Heat Rate
SLDC	State Load Despatch Centre
TPS	Thermal Power Station
Wt. Av.	Weighted Average
WTPS	Wanakbori Thermal Power Station

Before the Gujarat Electricity Regulatory Commission at Ahmedabad

Case No. 1157 of 2011

Date of the Order: 02.06.2012

CORAM

Dr. P.K. Mishra, Chairman
Shri Pravinbhai Patel, Member
Dr. M.K. Iyer, 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 under section 62 of the Electricity Act, 2003 read with Gujarat Electricity Regulatory Commission (Multi-Year Tariff Framework) Regulations, 2007 for the True Up of FY 2010-11 and MYT Regulations, 2011 for determination of tariff for the FY 2012-13 on 25th November, 2011.

The Commission admitted the petition on 23rd December, 2011.

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 Orders for the First Control Period

Gujarat State Electricity Corporation Limited filed its petition under the Multi-Year Tariff framework for the FY 2008-09, FY 2009-10 and FY 2010-11 on 31st July 2008 in accordance with the Gujarat Electricity Regulatory Commission (Multi-Year Tariff Framework) Regulations, 2007 notified by GERC. 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 17th January, 2009 for the control period comprising FY 2008-09, FY 2009-10 and FY 2010-11.

The Commission issued the orders on the Annual Performance Review for FY 2008-09 and determination of tariff for FY 2009-10 on 14th December 2009 and Annual

Performance Review for FY 2009-10 and determination of tariff for FY 2010-11 on 31st March 2010.

Subsequently, the Commission issued an order dated 3rd February, 2011 on the review petition filed by the petitioner requesting review of the Commission's order dated 31st March, 2010 seeking review of technical parameters for some generating stations based on local operating conditions. The Commission found that there was some justification for review and accordingly revised (i) PAF of WTPS 1-6, (ii) Auxiliary Consumption of Utran Gas I (iii) SHR of Ukai, Gandhinagar 1-4, Wanakbori 1-6 and Sikka TPS for the year 2010-11.

1.4 Commission's Orders for the Second Control Period

Gujarat State Electricity Corporation Limited filed its petition under the Multi-Year Tariff framework for the 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.

The Commission issued the new MYT regulations notified as GERC (Multi-Year Tariff) Regulations, 2011 on 22nd March, 2011.

Regulation 1.4 (a) of GERC (Multi-Year Tariff) Regulations, 2011 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, 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 MYT Regulations, 2011.

1.5 Admission of the Current Petition and Public Hearing Process

The GSECL submitted the current petition for 'Truing up' of FY 2010-11 and determination of tariff for FY 2012-13. The Commission admitted the petition (Case No. 1157/2011) on 23rd December 2011.

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 27th December, 2011 inviting objections / suggestions from its stakeholders on the ARR petition filed by it.

1. Indian Express (English)
2. Divya Bhaskar (Gujarati)

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 24th January 2012.

Commission received objections / suggestions from three consumer organisations. The Commission examined the objections / suggestions received and fixed the date for public hearing for GSECL to be held at Commission's Office, Ahmedabad on 24th February, 2012. 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 Ahmedabad as scheduled.

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

Sr. No.	Name of organization	Participated in the Public Hearing
1.	Consumer Education and Research Society	Yes
2.	Gondal Chamber of Commerce and Industry	No
3.	Utility Users Welfare Association	Yes
4.	GUVNL	Yes

During the public hearing GUVNL raised a few objections. The Commission asked GUVNL by the Commission to submit its objections in writing. Accordingly, GUVNL submitted its objections through a letter dated 1st March, 2012. A short note on the main issues raised by the objectors in the written submissions and also in public hearing in respect of 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 MYT 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 2010-11.
5. The **fifth** chapter deals with the Determination of charges for the FY 2012-13.
6. The **sixth** chapter deals with the compliance of directives.

1.7 Approach of this Order

The Multi-Year Tariff Regulations, 2007 provide for 'Truing up' of the previous year, Annual Performance Review (APR) for the current year and determination of tariff for the ensuing year. The Commission had approved the ARR for the three years of the first control period FY 2008-09 to FY 2010-11 in the MYT order dated 17th January 2009. The Commission had approved the 'Truing up' of the FY 2008-09 in the tariff order dated 31st March 2010 and the 'Truing up of the FY 2009-10 in the tariff order dated 31st March 2011.

The GSECL has approached the Commission with the present petition for 'Truing up' of the FY 2010-11 and determination of tariff for the FY 2012-13.

The Commission has undertaken 'Truing up' of the FY 2010-11 including computation of gains and losses based on the submissions of the petitioner and the audited annual accounts.

While Truing up of FY 2010-11 the Commission has been primarily guided by the following principles:

1. Controllable parameters have been considered at the level approved under the Tariff 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.

The Truing up for the FY 2010-11 has been considered based on the GERC MYT Regulations, 2007. For the determination of the ARR for FY 2012-13, the Commission has considered the ARR for FY 2012-13 as approved in the MYT order dated 11th April, 2011.

Chapter 2

A Summary of GSECL's Petition

2.1 Actuals for FY 2010-11 submitted by GSECL

GSECL in its petition submitted the actual value of operational parameters and costs for each of the generating stations owned and operated by it. 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 including O&M expenses.

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 earlier approved by the Commission. In all other cases, a PAF of 80% is proposed as the normative level for full Fixed Cost recovery as per Terms and conditions of tariff.

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.

2.2 A Summary of fixed and variable costs claimed by GSECL

The fixed costs as claimed by GSECL for FY 2012-13 are given in Table 2.1 and energy charges in Table 2.2 below:

Table 2.1: Proposed Fixed Costs for FY 2012-13

(Rs. Crore)

Sr. No.	Power Station	Net Fixed Charges
1	Ukai (1-5)	280.41
2	Gandhinagar 1-4	265.59
3	Gandhinagar-5*	98.25
4	Wanakbori 1-6 TPS	405.69

Sr. No.	Power Station	Net Fixed Charges
5	Wanakbori-7*	95.59
6	Sikka TPS	121.98
7	KLTPS 1-3	223.24
8	KLTPS 4	126.66
9	Dhuvaran (Gas-1)*	51.52
10	Dhuvaran (Gas-2)	66.40
11	Utran Gas*	52.92
12	Utran Extension*	281.21
13	Ukai Hydro	25.00
14	Kadana Hydro	60.32
15	Ukai 6**	498.37
	Total	2653.15

*PPA based stations
**Provisionally approved

Table 2.2: Proposed Energy Charges for FY 2012-13

Sr. No.	Power Station	Approved energy charge for FY 2012-13 (Rs./Kwh)
1	Ukai (1-5)	1.71
2	Gandhinagar 1-4	2.38
3	Gandhinagar-5*	2.13
4	Wanakbori 1-6 TPS	2.11
5	Wanakbori-7*	2.02
6	Sikka TPS	2.77
7	KLTPS 1-3	1.18
8	KLTPS 4	1.11
9	Dhuvaran (Gas-1)*	2.41
10	Dhuvaran (Gas-2)	2.39
11	Utran Gas*	2.37
12	Utran Extension*	2.07
13	Ukai 6**	1.76

*PPA Based Stations
**Provisionally approved

Government of Gujarat has imposed a green cess to be levied at 2 paise per unit of the electricity generated. GSECL has requested the Commission to consider the charges payable as Green Cess while determining the variable charges for FY 2012-13.

2.3 Requests of GSECL

GSECL has requested the Commission:

- To admit this Petition for True up of FY 2010-11 and ARR and Tariff Determination for FY 2012-13.

- To approve the gains/ losses for the True up for FY 2010-11 and allow sharing of such gains/ losses as proposed including approved True-up of FY 2008-09 and FY 2009-10.

- To allow the pass through of the effect as per the Judgment dated 3rd February 2011 on review petition no. 1032/2010 filed by GSECL regarding SHR.

- To approve Tariff as proposed after considering true-up of FY 2010-11 and allow the past recoveries as additional entitlement along with approved tariff and Green Cess as requested.

- To approve the depreciation proposed by GSECL for GTPS Unit I and II as proposed in Chapter 8: "Additional Depreciation for GTPS assets", of the petition.

- To allow cost of Long Term Service Agreement (LTSA) for Dhuvaran CCPP I for FY 2008-09, 2009-10 and 2010-11 to be added in the True-up of FY 2010-11.

- To approve the financial parameters including water charges as proposed by GSECL considering the vintage and constraints of the old machines, and to consider the same for recovery of full fixed cost. Also it is requested to approve PAF for WTPS (1-6) at 80% as Unit No. 1 to 5 are already aged out, and hence it is requested not to consider their PAF at par with new 210 MW station.

- 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 recovery of variable cost considering the vintage and constraints of the old machines as well as site specific constraints.

- To compensate the additional cost borne by GSECL because of Backing Down/Reserve Shut Down, and hike in operational parameters thereon.

- To approve reimbursement of Green Cess and any other taxes levied by the Central and the State Government as well as any statutory Authorities.

- The calculation of fixed cost for Coal based generation units of 200/210 MW and 120 MW may be clubbed together and that variable costs should be according to the approved SHR for the respective plants.

- To approve Lime charges at actual for KLPTS-4 and to allow price difference through FPPPA approval.

- The Petitioner craves leave of the Commission to allow further submissions, addition and alteration to this Petition as may be necessary from time to time.

- Pass any other order as the Commission may deem fit and appropriate under the circumstances of the case and in the interest of justice.

Chapter 3

Brief outline of objections raised, response from GSECL and Commission's view

3.1 Public Response to the Petition

In response to the public notice inviting objections / suggestions from stakeholders on the petition filed by GSECL for True up (ARR) of FY 2010-11 and determination of tariff for FY 2012-13, three consumer organizations i.e., (i) Gondal Chamber of Commerce and Industry and (ii) Consumer Education and Research Society (CERS) and (iii) Utility Users Welfare Association have filed their objections / suggestions in writing. During the public hearing conducted on 24th February, 2012, CERS, Utility Users Welfare Association and GUVNL participated. The Gondal Chamber of Commerce and Industry did not participate in the public hearing, however it had requested the Commission to consider its objections already submitted. Also during the public hearing GUVNL raised a few objections and was asked by the Commission to submit its objections in writing. Accordingly, GUVNL submitted its objections through a letter dated 1st March, 2012.

The Commission has considered the objections / suggestions, the issues presented before the commission and the response of GSECL on the same.

The details of submissions made by the objectors, response of the petitioner and the views of the Commission are summarized in the following sections.

3.2 Objector 1: Consumer Education and Research Society

Objection 1: GSECL's revenue gap of the last three years

The objector has submitted that the petitioner has not operated its plants on sound commercial principles. As a result of that the petitioner has incurred a huge revenue gap of Rs. 359.54 Crore in FY 2010-11. Further, the petitioner has also demanded recovery of revenue gap of Rs. 98.83 Crore and Rs. 28.33 Crore for FY 2008-09 and

FY 2009-10 respectively. If approved, the additional revenue gaps for FY 2008-09 and FY 2009-10 will put heavy burden on the consumers.

Hence it is requested to the Commission to reject this revenue deficit and direct GSECL to operate its plants economically and efficiently.

Response of GSECL

The revenue gap for FY 2008-09 and FY 2009-10 was approved by the Commission vide its Tariff Orders dated 14.12.09 and 31.03.10. The petitioner has claimed this revenue gap of FY 2008-09 and FY 2009-10 based on the MYT Order dated 11.04.2011. In respect of the fuel cost of Dhuvaran Oil in FY 2008-09, the petitioner has claimed that the Commission has passed two-thirds of the gain for approved gain/loss due to controllable factors. The same has been modified by the petitioner and an amount of Rs. 98.83 Crore has been claimed instead of Rs. 87.06 Crore calculated by the Commission. With respect to Wanakbori 1-6, the petitioner has claimed that the Commission vide its tariff order dated 11.04.2011 has allowed Rs. 3.52 Crore as the loss due to depreciation charges instead of Rs. 9.52 Crore. As a result of that the net uncontrollable gain to be passed through would be Rs. 28.33 Crore in place of Rs. 22.33 Crore.

Commission's view

Commission has considered the objection and the response of GSECL while deciding on the issue.

Objection 2: Poor Capacity Addition by the petitioner

The capacity addition by the petitioner during the last ten years is given below:

Table 3.1: Capacity Addition in the last ten years

New Plant	Capacity (MW)	Date of Commissioning
Dhuvaran Gas – 7	106	28.1.2004
Dhuvaran Gas – 8	112	11.1.2007
Kutch Lignite – 4	75	20.12.2009
Total	293	

Against the capacity addition of 293 MW in the last three years the petitioner has scrapped six units of Dhuvaran Oil Power Station with total capacity of 534 MW. This has created a deficit of 241 MW in the last ten years. Moreover, the petitioner has planned capacity addition of 5000 MWs, which will be commissioned after 2014. Till then, the petitioner has to purchase power from Independent Power Producers (IPPs) at exorbitant rates putting additional burden on consumers.

Response of GSECL

The petitioner has submitted the details of capacity addition of 669 MW against the objector's claim of 293 MW. The petitioner has scrapped the six units of Dhuvaran Oil based plant as it became economically unviable as the service life of these units was over and the cost of generation was very high. Moreover, M/S Indian Oil Corporation had expressed its inability to supply low sulphur heavy stock (LSHS) for the power plant after July 2009.

The petitioner has envisaged plans for capacity augmentation as under:

Table 3.2: Plans for Capacity Augmentation

Sl. No.	Name of Station/ Plant	Capacity (MW)	Expected CoD	Status
1.	Ukai TPS Unit – 6	500	July, 2012	Work in under progress
2.	Sikka TPS Unit – 3 & 4 (2X250 MW)	500	2015-16	Work started and under progress
3.	Dhuvaran CCPP Unit – 3	375	2013-14	EPC Contract is issued and work is going to be started shortly
4.	Wanakbori TPS Unit – 8	800	2015-16	Tender process is likely to be completed. On finalization of Tender, work can be started.
5.	Sinor/Dholera	1600	2016-17	The work of Finalization of site is under process
6.	**Total**	**3775**		

So, all efforts are being made by the petitioner to increase the generating capacity.

Commission's view

The Commission has taken note of the submission made by the petitioner. The petitioner has taken the initiative to install additional capacity of 3775 MW during the next 5 to 6 years. Additional capacity addition by the petitioner, purchase of power from IPPs and share from central generating stations will result in adequate power availability in the state.

Objection 3: Deteriorating Performance of the petitioner

The Objector has submitted that the performance of plants being operated by the petitioner, including plants under Power Purchase Agreement has deteriorated. The following table highlights the deteriorating performance of the petitioner from FY 2007-08 to FY 2010-11.

Table 3.3: Performance Achieved in last four years

Parameter	FY 2007-08	FY 2008-09	FY 2009-10	FY 2010-11
Generation (MU)	29241	28388	28525	27775
PLF (%)	76.50	75.32	72.48	67.48
Auxiliary Consumption (%)	9.30	9.01	8.84	9.14
Consumption (ml/kWh)	1.74	2.16	1.69	1.90

Response of GSECL

The petitioner has submitted that the generation from its power plants is made as per the merit order dispatch system followed by the state SLDC. Accordingly, the units are produced depending on the demand and availability of the power system.

The petitioner has further added that due to addition of new units with better efficiency than that of the older units, backing down is advised to power stations in line with the variable cost of generation. As the majority of the power plants of the petitioner are old the variable cost of the power remains higher as compared to the new units. As a result of that the petitioner has not given schedule in spite of having capacity to produce more electricity and the Plant Load Factor (PLF) of the petitioner remains lower due this reason. As per the petitioner's submission PAF and PLF of the GSECL plants in the last four years are as follows:

Table 3.4: PAF and PLF achieved in the last four years

Parameter	2007-08	2008-09	2009-10	2010-11
PAF (%)	80.29	77.68	77.46	79.75
PLF (%)	76.19	75.32	72.48	67.48

With regard to auxiliary consumption the petitioner has highlighted that the auxiliary consumption in its power plants, including the older plants, is in the range of 9% which is around the normative level. The older plants of the petitioner have undergone more forced shutdown and start/stops as compared to the newer plants. GSECL has further mentioned that because of backing down there is partial/low load operation. The petitioner highlighted that despite these constraints it has tried to maintain the auxiliary consumption at a lower level.

In respect of SP. Oil consumption the petitioner has highlighted that except for FY 2008-09, the petitioner has maintained the SP. Oil consumption below the normative level. In FY 2008-09, the SP. Oil consumption was marginally higher than that of the normative level of 2 ml/kWh.

Commission's view

The Commission has taken note of the submission made by the petitioner with regard to the performance of the power stations. The petitioner (GSECL) has been mentioning vintage, technology and other reasons for not being able to achieve the approved operating parameters. The Commission has examined the vintage of the generating plants and certain operating constraints under which the plants of GSECL are working and has fixed certain operational parameters for various thermal and hydro plants of GSECL vide the MYT Regulations, 2011. GSECL shall meet these operational parameters during the period FY 2011-12 to 2015-16.

Objection 4: Plant Load Factor in FY 2010-11

The objector has submitted that due to poor operating efficiency of the petitioner the PLF during the last five years has been poor. The objector has highlighted Plant Load Factor in some of the plants during FY 2010-11 as shown below:

Table 3.5: Plant wise PLF during FY 2010-11

Plant	PLF (%) Approved by GERC	Actual PLF (%)	Loss in Rs. Crore
Gandhinagar 1 – 4	75.00	65.57	59.37
Wanakbori – 7	92.00	82.88	N/A
Sikka TPS	75.00	55.88	34.43
KLTPS – 4	80.00	20.30	17.44
Dhuvaran – 7	90.00	28.25	N/A
Dhuvaran – 8	92.00	63.70	7.27

Response of GSECL

The petitioner has mentioned “backing down” as advised by SLDC as the main reason for lower PLF in the power plants. The reasons given by the petitioner for lower PLF of the plants are as follows:

(a) Sikka TPS: This Plant faces problem of condenser vacuum on account of silting of CW intake channel. During low tide the load of the plant needs to be reduced considerably which necessitates usage of oil to maintain furnace stability. As a result of that the cost of generation from Sikka TPS has gone upward. The petitioner will start de-silting work of sea water canal soon. After completion of this work, performance of the plant will improve.

(b) KLTPS 4: Due to delay in stabilization of unit 4 the PLF of the Plant is lower.

(c) Dhuvaran CCPP I: Due to forced outage for 157 days on account of problem in compressor rotor the PLF of this unit has been lower.

Commission's view

GSECL has not achieved the approved PLF for the reasons explained above. The petitioner should expedite the work to improve the PLF and ensure normal operation of the plant on priority.

Objection 5: Performance of KLTPS – 4

The Objector has raised the issue of "Teething Trouble" with regard to KLTPS - 4 which was commissioned on December 2012. The Objector highlighted that the Original Equipment Manufacturer (OEM) has also failed to give the "Performance Guarantee Test" since the unit could not generate 75 MW at any point of time. As a result of that the unit is running in an inefficient manner and the generation cost of Rs. 2.09/kWh is much higher than Rs. 0.96/kWh approved by the Commission for the same.

Response of GSECL

The petitioner submitted that for stabilization of KLTPS – 4, the OEM was persuaded to resolve the teething problems and conducting Performance Guarantee Test. The petitioner has managed to resolve the majority of the problems and as a result of that load of unit 4 has increased in the range of 72-75 MW and achieved PLF of 85.89% during the month of December 2011.

Commission's view

The Commission has taken note of the submission made by the petitioner. The Commission has noted the explanation of GSECL on the poor performance of KLTPS – 4 stations. The petitioner claims to have undertaken the possible steps to stabilize unit 4 and managed to achieve PLF of 85.89% during the month December 2011. GSECL needs to ensure its sustainability.

Objection 6: Green Cess levied by the Government of Gujarat

The State Government introduced and directed Generating Companies of Gujarat to recover green gas cess @ 2 paise/unit from the consumers. Accordingly, the petitioner has demanded an amount of Rs. 60.82 Crore as Green Cess to be recovered from the consumers. Since the electricity duty levied from the consumers is already the highest in the country, the objector has requested the Commission to pursue this matter with the State Government. The Objector also pointed out that the petitioner is also paying Rs. 50/MT on account of purchase of lignite as green cess. The Objector's requested for clarification as to how the green cess can be recovered from two sources, i.e. from the consumers as well as from the lignite suppliers.

Response of GSECL

The petitioner has submitted that the Green Cess and Electricity Duty are levied by the State Government and therefore are to be paid by the consumers. The Clean Energy Cess being paid to the lignite supplier is imposed by the Ministry of Finance, Government of India vide Department of Revenue Notification No. 06/1020-Clean Energy Cess dated 22nd June 2010. Hence, it is required to be treated separately.

Commission's view

The matter relates to the State Government.

Objection 7: High Energy Charges for FY 2010-11

The Objector has pointed out that on account of high fuel cost, high station heat rate, high auxiliary consumption, high secondary consumption and low PLF in the GSECL Plants the energy charges have gone higher. The following table presents the increase of energy charges in GSECL plants in comparison to the energy charges approved by the Commission.

Table 3.6: Approved and Actual Energy Charges during FY 2010-11

Plant	Energy charges approved by GERC	Actual Energy Charges	Increase in energy charges	
	(Rs./kWh)	(Rs./kWh)	(Rs./kWh)	In %
Gandhinagar 1-4	1.59	2.83	1.24	78.00
Gandhinagar 5	1.48	2.57	1.09	73.60

Plant	Energy charges approved by GERC	Actual Energy Charges	Increase in energy charges	
	(Rs./kWh)	(Rs./kWh)	(Rs./kWh)	In %
Wanakbori 1-6	1.69	2.42	0.73	43.20
Wanakbori 7	1.63	2.25	0.62	38.00
Sikka TPS	1.72	2.94	1.22	70.90
KLTPS 4	0.96	2.09	1.13	117.70

The objector has requested the Commission to reject these charges and losses incurred due to in-efficient running of the power plants should be borne by the petitioner.

Response of GSECL

The petitioner submitted that the higher energy charges reflect the actual performance of the power plants, whereas, energy charges are availed by the petitioner based on the approved parameters. Effect of fuel price is being addressed by the FPPPA formula approved by the Commission.

Commission's view

The Commission approves energy charges, to be passed on to the consumers, based on normative parameters which take into consideration factors such as the efficiency level to be achieved by the petitioner, local site conditions and other relevant technical aspects.

Objection 8: Commissioning of Ukai unit 6

The petitioner is planning to commission a 500 MW capacity plant at Ukai with washed coal in July 2012 and has approached the Commission to approve the fixed cost and energy charges for this plant. The objector has said that the designed heat rate, auxiliary consumption, secondary oil consumption and other details are as per the manufacturer specifications. The objector has requested the Commission not to approve the SHR of 2425 Kcal/kWh till all the details are provided by the petitioner.

Response of GSECL

The petitioner has considered the SHR of 2425 Kcal/kWh for Ukai unit 6, whereas, as per the prevailing "Terms and Conditions of Tariff Regulations" 2005, the SHR was calculated at 2450 Kcal/kWh at the time of Power Purchase Agreement (PPA) signed between GSECL and GUVNL. Further, as per the Gujarat Electricity Regulatory Commission (Multi-Year Tariff) Regulations, 2011, the SHR of Ukai Unit 6 was worked out to 2443 Kcal/kWh at designed parameter SH Temp. 537° C and 170 kg./cm ^{2} pressure with applying 1.065 factor on designed heat rate.

The petitioner has further submitted that the per unit cost of Ukai unit 6 will be Rs. 1.76/kWh which is calculated on the basis of coal price of Rs. 2730/MT washed coal with 4200 Kcal/kg. The petitioner has proposed that if the actual coal price is lower than anticipated, the benefit of the same will be passed on to the consumers through FCA mechanism.

Commission's view

The Commission has taken appropriate decision keeping in view the relevant regulations.

3.3 Objector 2: Utility Users Welfare Association

Objection 1: Maintainability of the Petition submitted by the petitioner

The petitioner has entered into Power Purchase Agreement (PPA) with GUVNL, which is a electricity trader and not a distribution licensee. Section 62(1) and (1) (a) of the Electricity Act, 2003 under which the petitioner has filed its petition before GERC states that the appropriate commission shall determine the tariff in accordance with the provision of this Act, for "Supply of electricity by a generating company to a distribution licensee"

Hence, there is no question of determination of tariff under Section 62 of the Electricity Act 2003. In support of its plea, the objector has cited the Judgment of Honorable APTEL in case of Lanco Amarkantak Power Pvt. Ltd. versus Madhya Pradesh Electricity Regulatory Commission (MPERC), where the Honorable APTEL has passed the following judgment in Para No. 23.

"Even if we keep the purchaser in view, the purchaser was not also a trading licensee. PPA in question cannot be read as an agreement to sell power by generator to a distribution licensee. Accordingly, the argument that the PPA was between a generator and distribution licensee and that the Commission can fix the tariff under this PPA in exercise of power vested under section 62 must fail."

In the light of the above judgment, the objector has requested the Commission the petition submitted by the petitioner is not maintainable and should be rejected.

Response of GSECL

Under Section 62 of the Electricity Act, 2003, the Commission has to determine tariff for sale of power from a generating company to a distribution company. In case of the petitioner the sale of power is also between a generating company to distribution companies. The power of the Commission to determine tariff for generating companies is further fortified by the provisions of Section 86 of the Electricity Act, 2003, which reads as under:

"Section 86 (Functions of State Commission):- (1) The State Commission shall discharge the following functions, namely:

(b) regulate electricity purchase and procurement process of distribution licensees including the price at which electricity shall be procured from the generating companies or licensees or from other sources through agreements for purchase of power for distribution and supply within the state;

Under Section 61 the Commission specifies "Terms and Conditions of Tariff Regulations for Tariff Determination" and accordingly, tariff determination is carried out under Section 62. The petitioner therefore maintains that the petition has been filed strictly in terms of the MYT Regulations, 2011 and mechanism provided there under.

Commission's view

The Commission has considered the objection and the response of the petitioner. The Commission is of the view that the GUVNL is purchasing power from various sources on behalf of and as authorized by the four distribution companies, and not as a trader.

Objection 2: MYT framework

The incentive based Multi-Year Tariff (MYT) framework has been implemented in Gujarat with the intention to make the tariff setting exercise more predictable and to impart greater regulatory certainty to the process of determination of tariff.

For the licensees, firstly, the MYT framework provides clarity on the role of Regulations and that is applied over a long term and help in financial growth and better operation efficiency of the licensees. Secondly, the design of incentives as a part of MYT Framework will help to promote efficiency.

The consumers will be benefitted from the improved efficiency of the licensees, which will ultimately translate into reduction of tariff in the long run.

As the first MYT period from FY 2008-09 to FY 2010-11 is already over and intended benefit of the first MYT framework has not been achieved by the petitioner. The petitioner has asked for increase of tariff despite the fact that increase in fuel purchase cost has been recovered by the petitioner through FPPPA mechanism.

The objector has requested to identify the factors responsible for not getting the desired benefits of the MYT framework.

Commission's view

The MYT framework provides for improvement in efficiency and sharing of gains/losses with consumers. In other words, any gain due to efficiency is shared with the consumer.

Objection 3: Profit earned by the petitioner during FY 2009-10 and FY 2010-11

As per the True-up Petition for FY 2010-11, the petitioner has prayed for recovery of revenue gap for FY 2008-09, FY 2009-10 and FY 2010-11. The profit earned by the petitioner during FY 2009-10 and FY 2010-11 amounted to Rs. 12406.48 and Rs. 1356.96 lakh respectively. In view of the profit earned by the petitioner, the objector has questioned the necessity of increase of tariff.

Moreover, the objector has also questioned the recovery of revenue gap of FY 2008-09 and FY 2009-10 in view of the Honorable Appellate Tribunal (APTEL) of Electricity as well as Supreme Court judgment on the similar matter.

Against appeal no. 100 of 2007 (KPCL vs. KERC and others), the Honorable APTEL remarked the following:

"Invariably, the projections at the beginning of the year and actual expenditure and revenue received differ due to one reason or the other. Therefore, truing up is necessary. Truing up can be taken up in two stages: Once when provisional financial results for the year are compiled and subsequently after the audited accounts are available. The impact of truing up exercises must be reflected in the tariff calculations for the following year. …………………………………………… It is not desirable to delay the truing up exercise for several years and then spring a surprise for the licensee and the consumers by giving effect to the truing up for the past several years."

The Honorable Supreme Court in the case between UPPCL and NTPC Limited (2009) has ruled that the additional costs shall not be passed on to the next tariff since some persons who are consumers during the tariff year in question may not continue to be consumers and some new consumers might have been added to the system and there is no reason why they should bear the burnt. Hence, it is clear that timely filing of truing up of accounts is compulsory in a regulatory regime.

Response of GSECL

The petitioner has submitted that being a government utility, the entire profit will be utilized for future development work and enhancing capacity of the petitioner. The benefit of such utilization of profit is ultimately passed on the consumers.

Commission's view

The Commission has taken an appropriate view on this issue.

Objection 4: Transit loss of coal

In its true-up petition for FY 2009-10 the actual transit loss of coal of the petitioner was 0.4%. However, transit loss of the petitioner during FY 2010-11 has reached the normative level of 0.8%. The objector has quoted the chief transport manager, where he clarified that the Indian Railways is bound to supply the same quantity of coal at the destination as that is loaded. If any shortfall is found in quantity, one can claim for the loss of material.

In view of the above, the objector has requested the Commission not to allow any amount on account of transit loss of coal

Response of GSECL

The petitioner has submitted that in the past they have observed higher transit loss as compared to the normative transit loss allowed by the Commission, however, claimed only normative transit loss in the past. The petitioner submitted that if the Railway Authority is bound to supply the same quantity of coal at the destination as that is loaded, none of the Electricity Regulatory Commission would have ever approved transit loss of coal. The provisional approval of the transit loss in Regulations themselves establish that it exists and to control the same, the Electricity Regulatory Commissions give benchmark or a limit for the purpose.

Commission's view

The Commission has allowed transit loss as per the regulations. However, the Commission directs GSECL to make claims for the transit loss with the railways and in the event of settlement of such claims, the benefit shall be passed on to the consumers.

Objection 5: Fuel supply Agreement (FSA) and the terms of FSA

The petitioner must have entered into Fuel Supply Agreement (FSA) with suppliers and as per the terms of the FSA, if the coal is not received of having the calorific value (CV) of the grade that is paid for, the compensation for lower CV should be claimed from the suppliers. In no case the consumers should be burdened for the inefficiencies of the generators.

Response of GSECL

The petitioner has submitted that as per the terms of FSA, a quantity is allotted to the Petitioner from the respective coal mines for the respective year and not the grade or the CV. Therefore the contentions of the Respondent in this regard are frivolous and without any merit.

Commission's view

The Commission has already directed GSECL to make all possible efforts to obtain adequate and better quality of mined coal, and adequate quantity of washed coal. GSECL should make all efforts so that it receives the coal of the quality for which it is paying.

Objection 6: PPA Governed power stations

The petitioner has mentioned that "the parameters of the PPA governed stations are only indicative and requests the Commission to note that the parameters for these stations will be governed by the terms and conditions of the PPA. The objector has requested the Commission to consider only the terms and conditions of the PPA governed plants and not the parameters submitted by the petitioner.

Response of GSECL

The petitioner has submitted a list of PPAs and approved parameters, which are presented in the table below.

Table 3.7: Approved Parameters for PPA based stations

			Approved Parameters				
Sr. No.	Power Station	Capacity	PAF (%)	Auxiliary Consumption (%)	SHR (kcal/kwh)	Sp. Oil consumption (ml/kwh)	RoE
1	Gandhinagar 5*	210.00	80.00	9.00	2460	3.5	13%
2	Wanakbori 7 TPS*	210.00	80.00	9.00	2460	3.5	13%
3	Utran Gas based Power Plant No. 1	135.00	80.00	4.00	2150	-	14%
4	Dhuvaran Combined Cycle Power Plant no. 1	106.62	80.00	3.00	1950	-	13%

The petitioner also submitted the parameters of the PPA governed plants shown above are approved by the Commission. The terms and conditions of the PPA are binding and hence, the gap as well as gain/loss calculations are not made applicable to these units.

Commission's view

The Commission considers the terms and conditions of the respective PPA in case of PPA governed power plants. This includes the parameters envisaged by the PPA.

3.4 Objector 3: Gondal Chamber of Commerce and Industry

Objection 1: GSECL's fuel cost for FY 2010-11

Fuel cost in FY 2010-11 remained stable and there was no abnormal hike in fuel purchase cost. The Commission should consider the CAG report before fixing the energy cost of GSECL.

Response of GSECL

The petitioner has submitted that any variation i.e. increase/decrease in the fuel cost has been taken care of by the FPPPA formula and the same has been approved by the Commission and accordingly the petitioner recovers the fuel cost on approved parameters.

Commission's view

The Commission approves fuel cost of GSECL keeping in view the performance parameter and the annual audited accounts.

The Commission periodically reviews the fuel cost incurred by the petitioner and accordingly approved the FPPPA cost. Any increase/decrease due to variation in fuel purchase has been taken care in the FPPPA formula.

Objection 2: Planning and project cost of the petitioner

Project work of the petitioner is based on the planning done 10 years back. The objector has suggested to the petitioner to speed up the work of their power plants.

Response of GSECL

The petitioner has submitted that being a Government Utility, planning for establishment of new power plant requires approval from the competent authorities after completing the necessary formalities, which is time consuming. The petitioner accepts the objector's suggestion to speed up the works to complete the same as per schedule.

Commission's view

The Commission has taken note of the submission made by the Petitioner.

3.5 Objector 4: Gujarat Urja Vikas Nigam Limited

Objection 1: Additional Claim of Rs. 510.38 Crore from FY 2008-09 to FY 2010-11

Norms for the performance parameters are fixed by the Commission in the Order relating to the petition for Multi-Year Tariff filed by the petitioner for the Control Period. Therefore no additional claim should be admitted based on the actual parameters achieved by the generator. If all actual parameters are allowed in the tariff, there would not be any incentive for the generator to increase efficiency and reduce costs and the basic purpose of fixing tariff norms gets defeated.

Response of GSECL

The additional claim of Rs. 510.38 Crore made by GSECL towards fixed and energy charges is a consolidation of gap defined by the Commission for FY 2008-09 in the tariff order dated 31st March 2010 and the gap defined by the Commission for FY 2009-10 in tariff order dated 11th April 2011. It also includes the gap of FY 2010-11 which has been worked out in the petition after truing up of FY 2010-11, in line with the MYT Regulation 2007.

In respect to the point that performance parameters and claim should not be as per actual parameters and the purpose of incentives gets defeated, GSECL has submitted that the energy charges calculated in the true up petition for FY 2010-11 is in line with the methodology specified in the MYT Regulations and as per the procedure followed by the Commission in tariff order dated 11th April 2011. The fixed charges are considered at actual and accordingly the controllable /uncontrollable gain/loss with respect to the approved fixed charges for FY 2010-11 is calculated as specified in MYT Regulations.

Commission's view

The Commission has addressed this issue while doing the true up for the period FY 2008-09 to FY 2010-11.

Objection 2: Revenue gap for FY 2008-09 to FY 2010-11 linked with PAF

GSECL has submitted that if revenue gap for fixed charges for the FY 2008-09 to FY 2010-11 is added to the approved fixed charges for the FY 2012-13, the recovery of such additional entitlement will become subject to the achievement of plant availability factor of the generating station in the FY 2012-13. Further, the additional entitlement should not depend on achievement of PAF in the FY 2012-13. GSECL has made similar submission for allowing additional entitlement for energy charges also.

Response of GSECL

In respect to the point that Claim not to be linked with PAF, GSECL has submitted that claim should be subject to PAF for the respective financial year, and accordingly, once approved by the Commission, it should be passed in totality irrespective of performance parameters, as they have already been given the effect of under-performance, and thereafter approved. GSECL proposes that it is entitled for a claim of Rs. 510.38 Crore including gap of previous years. The entire amount needs to be passed through without any linkages to plant availability factor for the ensuing years.

Commission's view

The Commission has addressed this issue while determining the plant-wise tariff for FY 2012-13.

Objection 3: Claim of LTSA by GSECL

LTSA expense is basically an expenditure for operation and maintenance of the plant. Therefore the same should be met from the normative O&M expenses approved by the commission. It cannot be claimed as a separate item in the truing up exercise nor as a gap in fixed cost.

Response of GSECL

The contract for LTSA for Dhuvaran CCPP-I commenced in the FY 2007-08 on 14^{th} August 2007 after the order was issued for PPA and therefore, no claim for LTSA was made at the time of signing of PPA. Thus, there is no provision made for LTSA of Dhuvaran CCPP I in its PPA and hence needs to be passed through.

Commission's view

The Commission has addressed this issue while doing the true up for the period FY 2008-09 to FY 2010-11.

Chapter 4

Truing up of FY 2010-11

4.1 Generating Stations of GSECL

GSECL owns and operates the following generating stations:

- Four coal based thermal generating stations at Ukai, Gandhinagar, Wanakbori and Sikka;
- One lignite fired thermal station at Panandhro;
- 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 windmills.

The details of the stations existing as on 1st April, 2011 along with their capacities and dates of commissioning are given in Table 4.1 below:

Table 4.1: Capacity, COD and Age of GSECL generating stations as on 1st April, 2011

Units	Name of Station	Unit No.	Capacity of the Unit (MW)	Date of Commissioning	Age on 01.04.11 (Years)
	Ukai	1	120	29/03/1976	35
		2	120	23/06/1976	35
		3	200	21/01/1979	32
		4	200	11/9/1979	32
		5	210	30/01/1985	26
Ukai (1-5)		Sub Total	850		
	Gandhinagar	1	120	13/03/1977	34
		2	120	10/4/1977	34
		3	210	20/03/1990	21
Gandhinagar (1-4)		4	210	20/07/1991	20
Gandhinagar 5*		5	210	17/03/1998	13
		Sub Total	870		
	Wanakbori	1	210	23/03/1982	29
		2	210	15/01/1983	28
		3	210	15/03/1984	27
		4	210	9/3/1986	25
		5	210	23/09/1986	25

Units	Name of Station	Unit No.	Capacity of the Unit (MW)	Date of Commissioning	Age on 01.04.11 (Years)
Wanakbori 1-6 TPS		6	210	18/11/1987	23
Wanakbori 7 TPS*		7	210	31/12/1998	12
		Sub Total	1470		
	Sikka	1	120	26/03/1988	23
		2	120	31/03/1993	18
Sikka TPS		Sub Total	240		
	KLTPS	1	70	29/03/1990	21
		2	70	25/03/1991	20
KLTPS 1-3		3	75	31/03/1997	14
KLTPS 4		4	75	20/12/2009	2
		Sub Total	290		
Dhuvaran (Gas 1)*	Dhuvaran	7 - Gas	106.617	28/01/2004	7
Dhuvaran (Gas 2)		8 - Gas	112.45	1/11/2007	3
		Sub Total	219.067		
	Utran	GT - 1	30	17/12/1992	18
		GT - 2	30	28/12/1992	18
		GT - 3	30	7/5/1993	18
		STG	45	17/07/1993	18
Utran (Gas)*		Sub Total	135		
Utran Extension*	Utran Extension	GT -1	375	8/11/2009	2
	SUB TOTAL GSECL (Coal + Lignite)		3720		
	SUB TOTAL GSECL (Gas)		729		
	TOTAL GSECL (Thermal)		4449		
	Ukai Hydro	1	75	8/7/1974	37
		2	75	13/12/1974	36
		3	75	22/4/1975	36
		4	75	4/3/1976	35
Ukai Hydro		Sub Total	300		
	Ukai LBC	1	2.5	8/12/1987	23
		2	2.5	19/02/1988	23
		Sub Total	5		
	Kadana Hydro	1	60	31/03/1990	21
		2	60	2/9/1990	21
		3	60	3/1/1998	13
		4	60	27/05/1998	13
Kadana Hydro		Sub Total	240		
	Panam	1	1	24/03/1994	17
		2	1	31/03/1994	17
		Sub Total	2		
	SUB TOTAL GSECL (Hydro)		547		
	Wind Mills		10	1/4/2009	2
	TOTAL GSECL as a Whole		5006		

4.2 Operating Performance Parameters

The fuel cost of a generation station depends on (i) the performance parameters, such as PLF, Station Heat Rate, Auxiliary Consumption, Secondary Fuel Oil Consumption and Transit Loss of coal (in case of coal station) which are controllable and (ii) cost parameters such as Gross Calorific Value of fuel, type of fuel and price of fuel, which are uncontrollable by 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 (AC) and Specific Oil Consumption etc for FY 2010-11 for all the stations. The Commission has taken up the truing up of the annual performance parameters for FY 2010-11, which is discussed in the following sections.

4.2.1 Plant Availability Factor (PAF)

Petitioner's Submission

GSECL has submitted the actuals of plant availability of different stations for FY 2010-11. The PAF (i) approved in the MYT order dated 17th January 2009; (ii) approved in the Tariff Order dated 31st March 2010 and (iii) the actuals as furnished by GSECL in the petition for the period are given in the Table 4.2 below:

Table 4.2: Plant Availability Factors for FY 2010-11

(%)

Sr. No.	Power Station	Approved for FY 2010-11 in the MYT Order	Approved in the Tariff Order for FY 2010-11	Actuals for FY 2010-11
1	Ukai (1-5)	74.00	74.00	74.61
2	Gandhinagar (1-4)	80.00	80.00	81.33
3	Gandhinagar 5*	90.00	80.00	92.16
4	Wanakbori 1-6 TPS	90.00	85.00**	85.50
5	Wanakbori 7 TPS*	90.00	80.00	89.67
6	Sikka TPS	75.00	75.00	71.39
7	KLTPS 1-3	78.00	75.00	64.16
8	KLTPS 4	80.00	75.00	18.35
9	Dhuvaran oil	80.00	80.00	88.18
10	Dhuvaran (Gas 1)*	85.00	80.00	47.60

Sr. No.	Power Station	Approved for FY 2010-11 in the MYT Order	Approved in the Tariff Order for FY 2010-11	Actuals for FY 2010-11
11	Dhuvaran (Gas 2)	88.00	80.00	80.87
12	Utran (Gas)*	90.00	80.00	87.02
13	Utran Extension*	87.00	80.00	81.88
14	Ukai Hydro	80.00	80.00	99.61
15	Kadana Hydro	80.00	80.00	98.94

*** PPA based stations.**

**** Revised to 80% in Review Order dated 03.02.2011**

It is observed from the above table that the stations - Sikka TPS, KLTPS 1-3, KLTPS 4, Dhuvaran Gas (1) have achieved lower PAF than approved by the Commission in Tariff order dated 31st March 2010.

GSECL has submitted the following in respect of PAF in general:

- To consider PAF for fixed cost recovery for Wanakbori Station at 80% instead of keeping the same at par with new stations.
- 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 earlier approved by the Commission. In all other cases, a PAF of 80% is proposed as the normative level for full fixed cost recovery as per terms and conditions of Tariff.
- For Hydro stations, the neutralization level for full fixed cost recovery will be availability of machines, irrespective of actual operations during peak hours subject to a ceiling of 80% availability of machines.
- GSECL has hydro based power stations at Ukai and Kadana. GSECL submits that the operations of the hydro stations of GSECL are solely dependent on the instructions issued by Govt. of Gujarat (Irrigation Dept.) - which in turn are based primarily on the irrigation requirements of the state. Thus, GSECL has no control over the generation from these plants.
- For the PPA governed stations of GSECL (viz. Gandhinagar V, Wanakbori 7, Dhuvaran Gas 1 Utran), GSECL had proposed 80% availability factor as per PPA and provisions of the terms & conditions of the regulation.

GSECL has further submitted the reasons for the deviation of PAF for FY 2010-11 as given below for the stations where the PAF was low.

- Sikka TPS: Vacuum Problems due to low tide and insufficient cooling water flow on account of silting of CW intake channel
- KLTPS 1-3: Partial operation (load restricted to 50 MW as 2 stages of turbine shaved off to reduce the down time for repairing of high vibrations of turbine)
- KLTPS 4: Unit under stabilization as there are major teething problems (Frequent failure of Non metallic expansion joints etc.)
- Dhuvaran Gas 1: Forced outage for 157 days (Compressor damaged)

Commission's Analysis

The Commission has analyzed the submissions made by the petitioner regarding plant availability factor. The Commission has found that the PAF is lower than the approved one in case of Sikka TPS, KLTPS 1-3, KLTPS 4 and Dhuvaran Gas (1) stations.

The Plant Availability Factor is considered as controllable, hence for Truing up purpose the PAF as approved in the Tariff order is considered.

GSECL is directed to furnish the details of damage caused to the Dhuvaran Gas 1 and the action taken for restoration of the same.

The PAF approved for Truing up purpose for FY 2010-11 for each station is given in Table 4.3 below:

Table 4.3: Plant Availability Factors approved for Truing up for FY 2010-11

(%)

Sr. No.	Power Station	Approved for FY 2010-11 in the MYT Order	Approved in the Tariff Order for FY 2010-11	Actuals for FY 2010-11	Approved for Truing up purpose for FY 2010-11
1	Ukai (1-5)	74.00	74.00	74.61	74.00
2	Gandhinagar (1-4)	80.00	80.00	81.33	80.00
3	Gandhinagar 5*	90.00	80.00	92.16	80.00
4	Wanakbori 1-6 TPS	90.00	85.00**	85.50	80.00**
5	Wanakbori 7 TPS*	90.00	80.00	89.67	80.00

Sr. No.	Power Station	Approved for FY 2010-11 in the MYT Order	Approved in the Tariff Order for FY 2010-11	Actuals for FY 2010-11	Approved for Truing up purpose for FY 2010-11
6	Sikka TPS	75.00	75.00	71.39	75.00
7	KLTPS 1-3	78.00	75.00	64.16	75.00
8	KLTPS 4	80.00	75.00	18.35	75.00
9	Dhuvaran oil	80.00	80.00	88.18	80.00
10	Dhuvaran (Gas 1)*	85.00	80.00	47.60	80.00
11	Dhuvaran (Gas 2)	88.00	80.00	80.87	80.00
12	Utran (Gas)*	90.00	80.00	87.02	80.00
13	Utran Extension*	87.00	80.00	81.88	80.00
14	Ukai Hydro	80.00	80.00	99.61	80.00
15	Kadana Hydro	80.00	80.00	98.94	80.00

* PPA based stations.

** Revised to 80% in Review Order dated 03.02.2011

4.2.2 Plant Load Factor (PLF)

Petitioner's Submission

GSECL has submitted the actuals of Plant Load Factor of different stations for FY 2010-11. The PLF (i) approved in the MYT order 17th January 2009 (ii) approved in the Tariff Order dated 31st March 2010 and (iii) the actuals as furnished by GSECL in the petition for the period are given in Table 4.4 below:

Table 4.4: Plant Load Factors for FY 2010-11

(%)

Sr. No.	Power Station	Approved for FY 2010-11 in the MYT Order	Approved in the Tariff Order for FY 2010-11	Actuals for FY 2010-11
1	Ukai (1-5)	74.00	74.00	72.27
2	Gandhinagar (1-4)	75.00	75.00	65.57
3	Gandhinagar 5*	92.00	92.00	87.15
4	Wanakbori 1-6 TPS	85.00	85.00	76.80
5	Wanakbori 7 TPS*	92.00	92.00	82.88

Sr. No.	Power Station	Approved for FY 2010-11 in the MYT Order	Approved in the Tariff Order for FY 2010-11	Actuals for FY 2010-11
6	Sikka TPS	75.00	75.00	55.88
7	KLTPS 1-3	72.00	72.00	65.96
8	KLTPS 4	80.00	80.00	20.30
9	Dhuvran oil	77.00	77.00	0.00
10	Dhuvaran (Gas 1)*	90.00	90.00	28.25
11	Dhuvaran (Gas 2)	90.00	90.00	63.70
12	Utran (Gas)*	92.00	92.00	58.84
13	Utran Extension*	80.00	80.00	68.61
14	Ukai Hydro	24.00	24.00	17.79
15	Kadana Hydro	9.00	9.00	5.71

* PPA based stations

The petitioner has mentioned “backing down” as advised by SLDC is the main reason for lower PLF in the power plants. The reasons given by the petitioner for lower PLF of the plants are as follows:

(a) Sikka TPS: This Plant faces problem of condenser vacuum on account of silting of CW intake channel. During low tide the load of the plant need to be reduced considerably which resulted in lower PLF. The petitioner will start de-silting work of sea water canal soon. After completion of this work, performance of the plant will improve.

(b) KLTPS 4: Due to delay in stabilization of unit 4 the PLF of the Plant is lower.

(c) Dhuvaran CCPP I: Due to forced outage for 157 days on account of problem in compressor rotor the PLF of this unit has been lower.

Commission’s Analysis

The Commission has analyzed the submissions made by the petitioner in Table 4.4 above.

The Commission has observed that the stations Ukai 1-5, Gandhinagar (1-4), Wanakbori 1-6, Sikka TPS, KLTPS 4, Dhuvaran gas 1, Dhuvaran gas 2, Utran (Gas), Utran Extension, Ukai hydro and Kadana Hydro stations achieved lower PLF for the FY 2010-11 than approved in the Tariff order. The Commission has taken note of the above and approved the PLF for FY 2010-11 for Truing up purpose as given in the Table 4.5 below:

Table 4.5: PLF Approved for FY 2010-11 for Truing up

(%)

Sr. No.	Power Station	Approved for FY 2010-11 in the MYT Order	Approved in the Tariff Order for FY 2010-11	Actuals for FY 2010-11	Approved for Truing up purpose for FY 2010-11
1	Ukai (1-5)	74.00	74.00	72.27	72.27
2	Gandhinagar (1-4)	75.00	75.00	65.57	65.57
3	Gandhinagar 5*	92.00	92.00	87.15	87.15
4	Wanakbori 1-6 TPS	85.00	85.00	76.80	76.80
5	Wanakbori 7 TPS*	92.00	92.00	82.88	82.88
6	Sikka TPS	75.00	75.00	55.88	55.88
7	KLTPS 1-3	72.00	72.00	65.96	65.96
8	KLTPS 4	80.00	80.00	20.30	20.30
9	Dhuvran oil	77.00	77.00	0.00	0.00
10	Dhuvaran (Gas 1)*	90.00	90.00	28.25	28.25
11	Dhuvaran (Gas 2)	90.00	90.00	63.70	63.70
12	Utran (Gas)*	92.00	92.00	58.84	58.84
13	Utran Extension*	80.00	80.00	68.61	68.61
14	Ukai Hydro	24.00	24.00	17.79	17.79
15	Kadana Hydro	9.00	9.00	5.71	5.71

* PPA based stations

4.2.3 Auxiliary Consumption

Petitioner's Submission

GSECL has submitted the actuals of auxiliary consumption of different stations for FY 2010-11. The auxiliary consumption (i) approved in the MYT order dated 17th January

2009 (ii) approved in the Tariff order dated 31st March 2010 and (iii) the actuals as furnished by GSECL in the petition for the period are given in Table 4.6 below:

Table 4.6: Auxiliary consumption for FY 2010-11

(%)

Sr. No.	Power Station	Approved for FY 2010-11 in the MYT Order	Approved in the Tariff Order for FY 2010-11	Actuals for FY 2010-11
1	Ukai (1-5)	9.00	9.10	10.01
2	Gandhinagar (1-4)	11.12	10.27	10.47
3	Gandhinagar 5*	9.00	9.00	9.41
4	Wanakbori 1-6 TPS	9.00	9.00	8.98
5	Wanakbori 7 TPS*	9.00	9.00	9.15
6	Sikka TPS	10.70	10.50	12.14
7	KLTPS 1-3	12.25	12.00	14.57
8	KLTPS 4	12.25	12.00	27.81
9	Dhuvran oil	11.50	9.50	0.00
10	Dhuvaran (Gas 1)*	3.00	3.00	6.66
11	Dhuvaran (Gas 2)	3.00	3.00	4.35
12	Utran (Gas)*	4.00	3.00**	5.71
13	Utran Extension*	4.00	3.00	2.52
14	Ukai Hydro	0.70	0.70	0.86
15	Kadana Hydro	1.19	1.19	2.41

* PPA based stations

**** Revised to 4% in Review Order dated 03.02.2011**

GSECL has further submitted that the consumption of gas booster compressor is to be considered at Utran and Dhuvaran stations as per actuals as approved earlier by the Commission.

GSECL also stated the following reasons in its petition for deviation of the auxiliary consumption for the stations where auxiliary consumption is high during the FY 2010-11.

- Ukai 1-5: Partial Operation due to (1) Unit no 1 & 2 under stabilization after major R & M and initial teething problem following the same, (2) extremely wet & muddy coal from WCL mines due to severe rain.

- Gandhinagar 1-4: Partial Operation due to Backing down of Unit no. 1 & 2 - Partial operation due to ageing effect,
- Gandhinagar 5: Partial Operation - Backing down
- Wanakbori 7: Partial Operation - Backing down
- Sikka: Partial operation (Backing down & Vacuum problems during low tide and insufficient cooling water flow on account of silting of CW intake channel)
- KLTPS 1-3: Partial operation (load restricted to 50 MW as 2 stages of turbine shaved off to reduce the down time for repairing of high vibrations of turbine)
- KLTPS 4: The design auxiliary consumption is @ 18 %. Unit is under stabilization
- Dhuvaran Gas 1: Partial Operation due to Backing down
- Dhuvaran Gas 2: Partial Operation due to Backing down
- Utran Gas: Partial Operation due to Backing down
- Ukai Hydro, Kadana Hydro: These units are kept available with minimum auxiliaries running, but operated as per instructions from irrigation department

Commission's Analysis

The Commission has taken note of the submissions made by the petitioner with regard to the actual auxiliary consumption. The Commission observes that with regard to PPA governed stations, the auxiliary consumption is based on the respective PPAs and accordingly, the auxiliary consumption as considered in the Tariff Order is approved for FY 2010-11. In the case of Wanakbori 1-6, the actual auxiliary consumption is lower than what was considered in the Tariff order. For Gandhinagar 5 & Wanakbori 7, the reasons given by the petitioner are not convincing as the actual PLF achieved by these two plants for FY 2010-11 is 87.15 % and 82.88 % respectively.

The actual auxiliary consumption in the case of Ukai 1-5, Sikka, KLTPS 1-3, KLTPS 4, Dhuvaran gas 2, Ukai hydro and Kadana hydro stations is higher than approved in the Tariff order. Though the GSECL has indicated the reasons in its petition for the higher auxiliary consumption, the Commission is of the opinion that the reasons are not acceptable as the Commission had taken all the factors into consideration while approving auxiliary consumption in the Tariff order for FY 2010-11.

The Commission approves the auxiliary consumption for various stations as approved in the Tariff order for FY 2010-11, for truing up purpose as it is a controllable parameter. In the case of Dhuvran and Utran stations where gas boosters are installed, the Commission has considered the auxiliary consumption of gas booster as provided by GSECL separately vide. an e-mail dated 29.03.2012 for the truing up of FY 2010-11 in addition to auxiliary consumption approved in the Tariff order.

The auxiliary consumption approved for different stations for the purpose of Truing up for FY 2010-11 are as given in Table 4.7 below:

Table 4.7: Auxiliary consumption approved for FY 2010-11 for Truing up

(%)

Sr. No.	Power Station	Approved for FY 2010-11 in the MYT Order	Approved in the Tariff Order for FY 2010-11	Actuals for FY 2010-11	Approved for Truing up purpose for FY 2010-11
1	Ukai (1-5)	9.00	9.10	10.01	9.10
2	Gandhinagar (1-4)	11.12	10.27	10.47	10.27
3	Gandhinagar 5*	9.00	9.00	9.41	9.00
4	Wanakbori 1-6 TPS	9.00	9.00	8.98	9.00
5	Wanakbori 7 TPS*	9.00	9.00	9.15	9.00
6	Sikka TPS	10.70	10.50	12.14	10.50
7	KLTPS 1-3	12.25	12.00	14.57	12.00
8	KLTPS 4	12.25	12.00	27.81	12.00
9	Dhuvran oil	11.50	9.50	0.00	0.00
10	Dhuvaran (Gas 1)*	3.00	3.00	6.66	3.00
11	Dhuvaran (Gas 2)	3.00	3.00	4.35	3.00
12	Utran (Gas)*	4.00	3.00**	5.71	4.00**
13	Utran Extension*	4.00	3.00	2.52	3.00
14	Ukai Hydro	0.70	0.70	0.86	0.70
15	Kadana Hydro	1.19	1.19	2.41	1.19

* PPA based stations
** Revised to 4% in Review Order dated 03.02.2011

4.2.4 Station Heat Rate (SHR)

Petitioner's Submission

GSECL has furnished the actual SHR attained for different stations during FY 2010-11.

The station heat rates (i) approved by the Commission in the MYT order of 17th January, 2009 (ii) approved by the Commission in the Tariff order dated 31st March 2010 (iii) approved in the Review order dated 3rd February 2011 and (iv) the actuals as furnished by GSECL in the petition for the period are given in Table 4.8 below:

Table 4.8: Station Heat Rate for FY 2010-11

(Kcal/kWh)

Sr. No.	Power Station	Approved for FY 2010-11 in the MYT Order	Approved in the Tariff Order for FY 2010-11	Approved as per Review Order	Actuals for FY 2010-11
1	Ukai (1-5)	2775	2658	2775	2860
2	Gandhinagar (1-4)	2855	2673	2782	2915
3	Gandhinagar 5*	2460	2460	2460	2608
4	Wanakbori 1-6 TPS	2650	2600	2625	2658
5	Wanakbori 7 TPS*	2460	2460	2460	2455
6	Sikka TPS	3100	2750	3045	2985
7	KLTPS 1-3	3300	3300	3300	3567
8	KLTPS 4	3000	3000	3000	3413
9	Dhuvran oil	3200	3000	3000	-
10	Dhuvaran (Gas 1)*	1950	1950	1950	1996
11	Dhuvaran (Gas 2)	1950	1950	1950	1915
12	Utran (Gas)*	2150	2150	2150	2234
13	Utran Extension*	1850	1850	1850	1654

* PPA based stations

In the True up petition, GSECL has stated the following reasons for exceeding the Station Heat Rate during FY 2010-11.

- Ukai 1-5: Partial Operation due to (1) Unit no 1 & 2 are under stabilization after major R & M and there was initial teething problem after the same (2) extremely wet & muddy coal from WCL mines due to severe rain
- Gandhinagar 1-4: Partial Operation due to backing down

- Gandhinagar 5: Partial Operation due to backing down
- Wanakbori 1-6: Partial Operation due to backing down
- KLTPS 1-3: Partial operation (load restricted to 50 MW as 2 stages of turbine shaved off to reduce the down time for repairing of high vibrations of turbine)
- Dhuvaran Gas 1: Partial Operation due to backing down
- Utran Gas: Partial Operation due to backing down

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 Wanakbori 1-6 the actual heat rate is marginally higher than the one considered in the Tariff order of FY 2010-11. In the case of Gandhinagar 1-4, KLTPS 1-3, KLTPS 4 and Dhuvaran Gas-1, the actual SHR is more than what were considered in the Tariff order of FY 2010-11. The Commission has analyzed the reasons submitted by the petitioner for these stations and is of the view that the reasons put forward are not convincing and hence not acceptable.

The Commission in the order dated 3rd February 2011, on the review petition filed by GSECL against GERC Order dated 31st March 2010, has revised the SHR for four stations – Ukai 1-5, Gandhinagar 1-4, Wanakbori 1-6 and Sikka TPS considering local site conditions and reasons mentioned by GSECL. Hence while doing the true up for FY 2010-11, the approved SHR as per the Review order has been considered for the whole year and the sharing of gains/ losses have been computed accordingly.

For the purpose of truing up for FY 2010-11, the Commission approves the SHR as considered in the Review order and Tariff Order for FY 2010-11 as given in the Table 4.9 below:

Table 4.9: Station Heat Rate approved for FY 2010-11 for Truing up

(Kcal/kWh)

Sr. No.	Power Station	Approved for FY 2010-11 in the MYT Order	Approved in the Tariff Order for FY 2010-11	Approved as per Review Order	Actuals for FY 2010-11	Approved for truing up purpose for FY 2010-11
1	Ukai (1-5)	2775	2658	2775	2860	2775
2	Gandhinagar (1-4)	2855	2673	2782	2915	2782

Sr. No.	Power Station	Approved for FY 2010-11 in the MYT Order	Approved in the Tariff Order for FY 2010-11	Approved as per Review Order	Actuals for FY 2010-11	Approved for truing up purpose for FY 2010-11
3	Gandhinagar 5*	2460	2460	2460	2608	2460
4	Wanakbori 1-6 TPS	2650	2600	2625	2658	2625
5	Wanakbori 7 TPS*	2460	2460	2460	2455	2460
6	Sikka TPS	3100	2750	3045	2985	3045
7	KLTPS 1-3	3300	3300	3300	3567	3300
8	KLTPS 4	3000	3000	3000	3413	3000
9	Dhuvran oil	3200	3000	3000	-	-
10	Dhuvaran (Gas 1)*	1950	1950	1950	1996	1950
11	Dhuvaran (Gas 2)	1950	1950	1950	1915	1950
12	Utran (Gas)*	2150	2150	2150	2234	2150
13	Utran Extension*	1850	1850	1850	1654	1850

* PPA based stations

4.2.5 Secondary Fuel Oil Consumption (Specific Oil Consumption)

Petitioner's Submission

GSECL has furnished the actuals of secondary fuel oil consumption for different stations during the FY 2010-11. The secondary fuel oil consumption (i) approved by the Commission for the MYT order 17th January 2009 (ii) approved in the Tariff order dated 31st March 2010 (iii) the actuals as furnished by GSECL in the petition for the period are given in Table 4.10 below:

Table 4.10: Secondary Fuel Oil Consumption for FY 2010-11

(ml/kWh)

Sr. No.	Power Station	Approved for FY 2010-11 in the MYT Order	Approved in the Tariff Order for FY 2010-11	Actuals for FY 2010-11
1	Ukai (1-5)	2.00	1.50	3.77
2	Gandhinagar (1-4)	3.50	1.50	1.38
3	Gandhinagar 5*	3.50	3.50	0.45
4	Wanakbori 1-6 TPS	1.00	1.00	0.74
5	Wanakbori 7 TPS*	3.50	3.50	0.73

Sr. No.	Power Station	Approved for FY 2010-11 in the MYT Order	Approved in the Tariff Order for FY 2010-11	Actuals for FY 2010-11
6	Sikka TPS	2.77	1.50	3.48
7	KLTPS 1-3	3.00	2.50	3.69
8	KLTPS 4	3.00	2.50	14.01

* PPA based stations

GSECL in its ARR petition has stated the reasons for higher specific oil consumption for FY 2010-11 for the following stations.

- Ukai 1-5: (A) Partial Operation due to (1) Unit no 1 & 2 were under stabilization after major R & M and there was initial teething problem ,(2) extremely wet & muddy coal from WCL mines due to severe rain. Due to these reasons, oil support required to maintain flame stability, (B) no HP/LP By pass system in unit no. 3 & 4
- Sikka TPS: Partial operation (Backing down & Vacuum problems during low tide, silting of CW intake channel)
- KLTPS 1-3: Partial operation (load restricted to 50 MW as 2 stages of turbine shaved off. At low load, oil support is required for flame stability
- KLTPS 4: Unit is not stabilized yet as it has teething problem

Commission's Analysis

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

In the case of Gandhinagar 1-4 and Wanakbori 1-6 the actual secondary fuel oil consumption is less than what was considered by the Commission in the Tariff order FY 2010-11.

In the case of Ukai 1-5, Sikka TPS, KLTPS 1-3 and KLTPS 4 stations, the secondary fuel oil consumption is higher than what was considered in the Tariff order for FY 2010-11. The Commission analyzed the reasons submitted by GSECL for higher secondary oil consumption for these stations and feels that GSECL should have tried harder to achieve the specified targets for secondary fuel oil consumption, as higher consumption leads to higher generation cost. Therefore, for all non-PPA stations and for the purpose of truing up for FY 2010-11, the Commission approves the specific oil consumption as considered in the Tariff order FY 2010-11.

Accordingly, the secondary fuel oil consumption approved for FY 2010-11 for various stations is as given in Table 4.11 below:

Table 4.11: Secondary Fuel Oil Consumption approved for FY 2010-11 for Truing up

(ml/kWh)

Sr. No.	Power Station	Approved for FY 2010-11 in the MYT Order	Approved in the Tariff Order for FY 2010-11	Actuals for FY 2010-11	Approved for Truing up purpose for FY 2010-11
1	Ukai (1-5)	2.00	1.50	3.77	1.50
2	Gandhinagar (1-4)	3.50	1.50	1.38	1.50
3	Gandhinagar 5*	3.50	3.50	0.45	3.50
4	Wanakbori 1-6 TPS	1.00	1.00	0.74	1.00
5	Wanakbori 7 TPS*	3.50	3.50	0.73	3.50
6	Sikka TPS	2.77	1.50	3.48	1.50
7	KLTPS 1-3	3.00	2.50	3.69	2.50
8	KLTPS 4	3.00	2.50	14.01	2.50

* PPA based stations

4.2.6 Transit Loss

Petitioner's Submission

GSECL furnished the actuals for transit loss of coal for different stations for the FY 2010-11.

The transit loss (i) approved by the Commission in the MYT order 17th January 2009 (ii) approved in the Tariff order dated 31st March 2010 (ii) the actuals as furnished by GSECL in the petition for the period are given in the Table 4.12 below:

Table 4.12: Transit Loss for FY 2010-11

(%)

Sr. No.	Power Station	Approved for FY 2010-11 in the MYT Order	Approved in the Tariff Order for FY 2010-11	Actuals for FY 2010-11
1	Ukai (1-5)	1.20	0.80	0.80

Sr. No.	Power Station	Approved for FY 2010-11 in the MYT Order	Approved in the Tariff Order for FY 2010-11	Actuals for FY 2010-11
2	Gandhinagar (1-4)	1.40	0.80	0.80
3	Gandhinagar 5*	1.40	0.80	0.80
4	Wanakbori 1-6 TPS	1.50	0.80	0.80
5	Wanakbori 7 TPS*	1.50	0.80	0.80
6	Sikka TPS	2.00	0.80	0.80
7	KLTPS 1-3	0.00	0.00	0.30
8	KLTPS 4	0.00	0.00	0.30

* PPA based station

Commission's Analysis

The transit loss as per actuals is less than that approved in the MYT order for FY 2010-11 in the case of Ukai (1-5), Gandhinagar 1-4, Wanakbori 1-6 TPS and Sikka stations. Further, Commission has observed that the transit loss claimed by the petitioner as actuals for Ukai (1-5), Gandhinagar 1-4, Wanakbori 1-6 TPS and Sikka stations is similar to the transit loss level approved by the Commission in the Tariff order for FY 2010-11. For the PPA governed stations, the transit loss is approved by the Commission as per the PPA conditions.

The transit loss considered in the Tariff order for FY 2010-11, is approved for all stations for Truing up purpose for FY 2010-11 as given in the table 4.13 below:

Table 4.13: Transit Loss approved for FY 2010-11 for Truing up

(%)

Sr. No.	Power Station	Approved for FY 2010-11 in the MYT Order	Approved in the Tariff Order for FY 2010-11	Actuals for FY 2010-11	Approved for Truing up purpose for FY 2010-11
1	Ukai (1-5)	1.20	0.80	0.80	0.80
2	Gandhinagar (1-4)	1.40	0.80	0.80	0.80
3	Gandhinagar 5*	1.40	0.80	0.80	0.80
4	Wanakbori 1-6 TPS	1.50	0.80	0.80	0.80
5	Wanakbori 7 TPS*	1.50	0.80	0.80	0.80

Sr. No.	Power Station	Approved for FY 2010-11 in the MYT Order	Approved in the Tariff Order for FY 2010-11	Actuals for FY 2010-11	Approved for Truing up purpose for FY 2010-11
6	Sikka TPS	2.00	0.80	0.80	0.80
7	KLTPS 1-3	0.00	0.00	0.30	0.00
8	KLTPS 4*	0.00	0.00	0.30	0.00

* PPA based station

The transit loss is to be considered only in the case of indigenous coal other than washed coal in the MYT Order FY 2008-11.

4.2.7 Summary of Performance Parameters Approved for FY 2010-11

The performance parameters approved for different stations for the FY 2010-11 after the analysis in the preceding paras for the purpose of Truing up for the FY 2010-11 are listed in the Table 4.14 below:

Table 4.14: Performance parameters approved for Truing up purpose for the FY 2010-11

Sr. No.	Power Station	PAF	PLF	Auxiliary Consumption	SHR	Spec. Oil Consumption	Transit Loss
		%	%	%	Kcal/Kwh	ml/Kwh	%
1	Ukai (1-5)	74.00	72.27	9.10	2775	1.50	0.80
2	Gandhinagar (1-4)	80.00	65.57	10.27	2782	1.50	0.80
3	Gandhinagar 5*	80.00	87.15	9.00	2460	3.50	0.80
4	Wanakbori 1-6 TPS	80.00	76.80	9.00	2625	1.00	0.80
5	Wanakbori 7 TPS*	80.00	82.88	9.00	2460	3.50	0.80
6	Sikka TPS	75.00	55.88	10.50	3045	1.50	0.80
7	KLTPS 1-3	75.00	65.96	12.00	3300	2.50	0.00
8	KLTPS 4*	75.00	20.30	12.00	3000	2.50	0.00
9	Dhuvran oil	80.00	0.00	0.00	0.00		
10	Dhuvaran (Gas 1)*	80.00	28.25	3.00	1950		
11	Dhuvaran (Gas 2)	80.00	63.70	3.00	1950		
12	Utran (Gas)*	80.00	58.84	4.00	2150		

Sr. No.	Power Station	PAF	PLF	Auxiliary Consumption	SHR	Spec. Oil Consumption	Transit Loss
		%	%	%	Kcal/Kwh	ml/Kwh	%
13	Utran Extension*	80.00	68.61	3.00	1850		
14	Ukai Hydro	80.00	17.79	0.70			
15	Kadana Hydro	80.00	5.71	1.19			

* PPA governed stations

4.3 Gross and Net Generation

The gross and net generation of different generating stations, as per actual, as furnished by GSECL and as approved for truing up purpose for the FY 2010-11, are given in Table 4.15 below:

Table 4.15: The gross and net generation for FY 2010-11 for Truing up purpose

Sr. No.	Power stations	As per Actuals submitted by GSECL				As Approved by the Commission			
		Gross generation (MU)	Aux Cons. (%)	Aux. cons. (MU)	Net generation (MU)	Gross generation (MU)	Aux Cons. (%)	Aux. cons. (MU)	Net generation (MU)
1.	Ukai 1-5	5381	10.01	539	4843	5381	9.10	490	4892
2.	Gandhinagar (1-4)	3791	10.47	397	3394	3791	10.27	389	3402
3.	Gandhinagar- 5*	1603	9.41	151	1452	1603	9.00	144	1459
4.	Wanakbori 1-6 TPS	8477	8.98	761	7716	8477	9.00	763	7714
5.	Wanakbori 7 TPS*	1525	9.15	140	1385	1525	9.00	137	1387
6.	Sikka TPS	1175	12.14	143	1032	1175	10.50	123	1051
7.	KLTPS 1-3	1242	14.57	181	1061	1242	12.00	149	1093
8.	KLTPS 4	133	27.81	37	96	133	12.00	16	117
9.	Dhuvaran (Oil)	-	-	-	-	-	9.50	-	-
10.	Dhuvaran (Gas 1)*	264	6.66	18	246	264	3.00	8	256
11.	Dhuvaran (Gas 2)	627	4.35	27	600	627	3.00	20**	608
12.	Utran (Gas)*	696	5.71	40	656	696	4.00	28	668
13.	Utran Extension *	2251	2.52	57	2195	2251	3.00	72**	2179
14.	Ukai Hydro	475	0.86	4	471	475	0.70	3	472
15.	Kadana Hydro	121	2.41	3	118	121	1.19	1	120
	Total	27762		2496	25266	**27762**		**2345**	**25417**

* PPA governed station
** Actual consumption of Gas Booster is included

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 fuel. For some coal based stations, a mix of indigenous, washed and imported coal is used.

GSECL 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 actuals of Wt Av Gross Calorific Values of different fuels (as fed into the boiler in the case of usage of mix of coal) for FY 2010-11 as given in the Table 4.16 below:

Table 4.16: Wt. Av. Gross Calorific Value (GCV) of fuels for different stations for FY 2010-11

Sr . No.	Power stations	Wt Av GCV of coal, lignite or mix of coal (Kcal/kg)	Wt Av GCV of Secondary fuel (Kcal/liter)	Wt Av GCV of gas (Kcal/SCM
1.	Ukai 1-5	3873	10424	-
2.	Gandhinagar 1-4	4021	10478	-
3.	Gandhinagar- 5*	4104	10478	-
4.	Wanakbori 1-6 TPS	3708	10531	-
5.	Wanakbori 7 TPS*	3708	10531	-
6.	Sikka TPS	3741	10295	-
7.	KLTPS 1-3	2890	10564	-
8.	KLTPS 4	2890	10564	-
9.	Dhuvaran (Oil)	-	-	-
10.	Dhuvaran (Gas 1)*	-	-	9617
11.	Dhuvaran (Gas 2)	-	-	9581
12.	Utran (Gas)*	-	-	9547
13.	Utran Extension *	-	-	9254

* PPA governed stations

4.4.2 Mix of Coal

GSECL has furnished the actuals of percentage of the mix of different types of coal used for the stations during the FY 2010-11 as given in Table 4.17 below:

Table 4.17: The Mix of Different Types of Coal for FY 2010-11

(%)

Sr. No.	Power stations	Indigenous coal	Washed coal	Imported coal
1	Ukai 1-5	30.97	69.03	0.00
2	Gandhinagar 1-4	23.85	59.35	16.80
3	Gandhinagar 5	22.88	55.93	21.19
4	Wanakbori 1-6	34.37	59.32	6.31
5	Wanakbori 7	34.75	58.73	6.52
6	Sikka	32.58	67.42	0.00

4.4.3 Wt. Av. Prices of Fuel

GSECL has furnished the actuals of Wt Av price per unit of different fuels for different stations, for FY 2010-11, as per Table 4.18 below:

Table 4.18: Wt. Av. Price / Unit of Fuels for 2009-10 (Actual)

Sr. 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 coal (Rs/Mt)	Wt Av cost of gas (Rs/SCM)	Wt Av cost of oil (Rs/Kl)
1.	Ukai 1-5	2185	2262	0			30789.67
2.	Gandhinagar 1-4	3028	2537	7174			29607.75
3.	Gandhinagar- 5*	3012	2549	7138			29607.75
4.	Wanakbori 1-6 TPS	3034	2593	7093			29663.36
5.	Wanakbori 7 TPS*	3037	2597	7089			29663.36
6.	Sikka TPS	3665	2806	0			38181.2
7.	KLTPS 1-3				854		38552.97
8.	KLTPS 4				854		38552.97

Sr. 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 coal (Rs/Mt)	Wt Av cost of gas (Rs/SCM)	Wt Av cost of oil (Rs/Kl)
9.	Dhuvaran (Oil)						-
10.	Dhuvaran (Gas 1)*					13	
11.	Dhuvaran (Gas 2)					11	
12.	Utran (Gas)*					10	
13.	Utran Extension*					11	

* PPA governed stations

The Commission approves the Wt. Av. GCVs of fuels, percentage of mix of coal and prices of fuel (actuals), as furnished by GSECL for truing up purpose for FY 2010-11 as they are uncontrollable items.

4.5 Fuel Costs

Based on the performance and cost parameters the approved fuel costs for each of the stations for the year FY 2010-11 for truing up purpose along with the actuals furnished by GSECL are given in Table 4.19 below:

Table 4.19: Approved Fuel Cost of different Stations for FY 2010-11 for Truing up

Sr. No.	Power stations	As per Actuals furnished by GSECL					As Approved by the Commission				
		Gross Generation (Mus)	Net Generation (Mus)	Fuel Cost (Rs.Crore)	Fuel Cost per unit Gross	Fuel Cost per unit Net	Gross Generation (Mus)	Net Generation (Mus)	Fuel Cost (Rs.Crore)	Fuel Cost per unit Gross	Fuel Cost per unit Net
1.	Ukai 1-5	5381	4843	946.67	1.76	1.95	5381	4892	885.03	1.64	1.81
2.	Gandhinagar 1-4	3791	3394	959.28	2.53	2.83	3791	3402	913.73	2.41	2.69
3	Gandhinagar- 5*	1603	1452	372.75	2.33	2.57	1603	1459	360.50	2.25	2.47
4	Wanakbori	8477	7716	1866.45	2.2	2.42	8477	7714	1840.49	2.17	2.39
5	Wanakbori 7 TPS*	1525	1385	311.58	2.04	2.25	1525	1387	319.81	2.10	2.31
6	Sikka TPS	1175	1032	303.72	2.59	2.94	1175	1051	301.23	2.56	2.86
7	KLTPS 1-3	1242	1061	147.51	1.19	1.39	1242	1093	132.15	1.06	1.21
8	KLTPS 4	133	96	20.1	1.51	2.09	133	117	13.00	0.98	1.11
9	Dhuvaran (Oil)	-	-	-	-	-	-	-	-	-	-
10.	Dhuvaran (Gas 1)*	264	246	71.57	2.71	2.91	264	256	69.55	2.64	2.72
11.	Dhuvaran (Gas 2)	627	600	136.58	2.18	2.28	627	608	140.48	2.24	2.31
12.	Utran (Gas)*	696	656	169.5	2.44	2.58	696	668	156.70	2.25	2.35
13.	Utran Extension *	2251	2195	439.8	1.95	2	2251	2179	495.63	2.20	2.27
14.	Total	27166	24677	5745.51			27166	24826	5628.30		

*PPA governed stations

The detailed calculations for each station for arriving at the above costs are given in Annexure I to Annexure XII.

GSECL has considered transit loss for washed coal also in its calculations for arriving at the fuel cost, which is not accepted. The transit loss is considered only in the case of the indigenous coal (other than washed coal) by the Commission.

4.5.1 Variation between Actual Costs and Approved Costs

The approved fuel costs, for most of the stations are less than actuals, as GSECL failed to achieve the performance parameters approved by the Commission. However, for a few stations, the actual fuel costs are less than the approved ones for truing up and the reasons are discussed below:

- Wanakbori 7 TPS: The actual specific oil consumption is much less (0.73ml/kWh) than the approved one (3.50ml/kWh).
- Dhuvran Gas 2: Achieved less SHR than the approved one.
- Utran extension: This station has achieved a remarkably low Station Heat Rate (1654 K.Cal/kWh) than the approved one (1850 K.Ca./kWh)

Commission had observed that the fuel cost as claimed by GSECL and that given in the audited annual accounts for FY 2010-11 do not match. Commission vide e-mail dated 31.01.2012 directed the petitioner for reconciliation of fuel cost with Annual Accounts. GSECL in its reply vide letter dated 16.02.2012, submitted that the actual SHR of the stations as claimed in the petition are independent of the actual GCV of the fuel as reported in the audited annual accounts and hence the actual fuel cost computed on the actual SHR of the stations given in the petition differs from the actual fuel cost reported in the audited annual accounts.
The fuel costs of all stations put together as per audited annual accounts for FY 2010-11 and the cost approved for truing up purpose are given in Table 4.20 below:

Table 4.20: Cost of different fuels as per audited annual accounts and as Approved for Truing up for FY 2010-11

(Rs. Crore)

Item	Cost as per annual accounts	Cost as claimed in the petition	Costs as approved
Total Fuel Cost	5779.02	5745.51	5628.30

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 approves the fuel cost as computed based on the performance parameters approved by it.

4.5.2 Gains and Losses in fuel costs due to controllable factors

GSECL has derived fuel expenses incurred for FY 2010-11 considering the actual operational performance parameters such as, station heat rate, auxiliary consumption, specific oil consumption and transit loss of coal. The Commission has compared the fuel expenses so derived by the 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 Table 4.21 below:

Table 4.21: Approved Gains / losses from Fuel Expenses for FY 2010-11

(Rs. Crore)

Sr. No.	Power Station	Approved Fuel Cost	Actual Fuel Cost	Gains / (losses) due to controllable factors
1	Ukai 1-5	885.03	946.67	(61.64)
2	Gandhinagar 1-4	913.73	959.28	(45.55)
3	Wanakbori 1-6	1840.49	1866.45	(25.96)
4	Sikka	301.23	303.72	(2.49)
5	KLTPS 1-3	132.15	147.51	(15.36)
6	KLTPS-4	13.00	20.1	(7.10)
7	Dhuvaran (Gas-2)	140.48	136.58	3.90
	Total	4226.12	4380.31	(154.19)

4.5.3 Gains and Losses in fuel costs due to revision of SHR

Further GSECL has submitted that the Commission had revised the SHR for Ukai (1-5), Gandhinagar (1-4), Wanakbori 1-6 TPS and Sikka TPS as per the review Order dated 3rd, February 2011 for FY 201011. As per the Review Order GSECL had billed GUVNL at revised SHR from 1st January, 2011. The balance recovery of the fuel cost based on reviewed SHR approved in the order on review petition needs to be addressed separately. Since this is only late recovery of approved energy charges it can be considered as an uncontrollable loss to GSECL. In its petition GSECL has computed the net loss due to the revision of SHR, as given in the tables below (Table 4.22 to Table 4.26):

Table 4.22: Uncontrollable Gain/Loss in Fuel cost for FY 2010-11 of Ukai 1-5 due to revision of SHR

Sr. No.	Item	Unit	Fuel cost for first nine months of FY 2010-11 calculated based on approved parameters with approved SHR as per the review order dated 3rd February 2011	Fuel cost for first nine months of FY 2010-11 calculated based on approved parameters with approved SHR as per order dated 31st March 2010
1	Gross Generation for first nine months of FY 2010-11	MUs	3,835	3,835
2	Auxiliary Consumption	%	9.10%	9.10%
3	Auxiliary Consumption	MUs	349	349
4	Net Generation	MUs	3,486	3,486
5	Station Heat Rate	KCal/ KWH.	2,775	2,658
6	Sp. Oil Consumption	ml/kWh	1.50	1.50
7	Gross Calorific Value of Coal	kcal/kg	3,873	3,873
8	Calorific value of Oil	kcal/l	10,424	10,424
9	Overall Heat	G Cal	10,641,126	10,192,473
10	Heat from Oil	G Cal	59,958	59,958
11	Heat from Coal	G Cal	10,581,168	10,132,515
12	Transit losses	%	0.80%	0.80%
13	Coal Blend			
14	A) Indigenous Coal	%	30.97%	30.97%
15	B) Washed Coal	%	69.03%	69.03%
16	C) Imported Coal	%	0.00%	0.00%
17	Actual Oil Consumption	kl	5,752	5,752

Sr. No.	Item	Unit	Fuel cost for first nine months of FY 2010-11 calculated based on approved parameters with approved SHR as per the review order dated 3rd February 2011	Fuel cost for first nine months of FY 2010-11 calculated based on approved parameters with approved SHR as per order dated 31st March 2010
18	Actual Coal Consumption	MT	2,732,034	2,616,193
19	A) Indigenous Coal	MT	852,934	816,769
20	B) Washed Coal	MT	1,885,923	1,805,958
21	C) Imported Coal	MT	-	-
22	Specific Coal Consumption	kg/kWh	0.71	0.71
23	Price of Coal			
24	A) Indigenous Coal	Rs/MT	2,185	2,185
25	B) Washed Coal	Rs/MT	2,262	2,262
26	C) Imported Coal	Rs/MT	-	-
27	Price of Oil	Rs/kl	30,790	30,790
28	Coal cost			
29	A) Indigenous Coal	Rs Lakh	18,637	17,846
30	B) Washed Coal	Rs Lakh	42,660	40,851
31	C) Imported Coal	Rs Lakh	-	-
32	Total Coal Cost	Rs Lakh	61,296	58,697
33	Oil Cost	Rs Lakh	1,771	1,771
34	Total Fuel Cost	Rs Lakh	63,067	60,468
35	Uncontrollable Loss due to late billing on Revised Approved SHR	Rs Crore		25.99

Table 4.23: Uncontrollable Gain/Loss in Fuel cost for FY 2010-11 of Ghandinagar 1-4 due to revision of SHR

Sr. No.	Item	Unit	Fuel cost for first nine months of FY 2010-11 calculated based on approved parameters with approved SHR as per the review order dated 3rd February 2011	Fuel cost for first nine months of FY 2010-11 calculated based on approved parameters with approved SHR as per order dated 31st March 2010
1	Gross Generation for first nine months of FY 2010-11	MUs	2,796	2,796
2	Auxiliary Consumption	%	10.27%	10.27%
3	Auxiliary Consumption	MUs	287	287
4	Net Generation	MUs	2,509	2,509
5	Station Heat Rate	KCal/KWH.	2,782	2,673
6	Sp. Oil Consumption	ml/kWh	1.50	1.50
7	Gross Calorific Value of Coal	kcal/kg	4,021	4,021
8	Calorific value of Oil	kcal/l	10,478	10,478
9	Overall Heat	G Cal	7,778,695	7,473,922
10	Heat from Oil	G Cal	43,946	43,946
11	Heat from Coal	G Cal	7,734,749	7,429,976
12	Transit losses	%	0.80%	0.80%
13	Coal Blend			
14	A) Indigenous Coal	%	23.85%	23.85%
15	B) Washed Coal	%	59.35%	59.35%
16	C) Imported Coal	%	16.80%	16.80%
17	Actual Oil Consumption	kl	4,194	4,194
18	Actual Coal Consumption	MT	1,923,588	1,847,793
19	A) Indigenous Coal	MT	462,476	444,253
20	B) Washed Coal	MT	1,141,650	1,096,665
21	C) Imported Coal	MT	323,163	310,429
22	Specific Coal Consumption	kg/kWh	1.00	1.00

Sr. No.	Item	Unit	Fuel cost for first nine months of FY 2010-11 calculated based on approved parameters with approved SHR as per the review order dated 3rd February 2011	Fuel cost for first nine months of FY 2010-11 calculated based on approved parameters with approved SHR as per order dated 31st March 2010
23	Price of Coal			
24	A) Indigenous Coal	Rs/MT	3,028	3,028
25	B) Washed Coal	Rs/MT	2,537	2,537
26	C) Imported Coal	Rs/MT	7,174	7,174
27	Price of Oil	Rs/kl	29,608	29,608
28	Coal cost			
29	A) Indigenous Coal	Rs Lakh	14,005	13,453
30	B) Washed Coal	Rs Lakh	28,966	27,824
31	C) Imported Coal	Rs Lakh	23,184	22,271
32	Total Coal Cost	Rs Lakh	66,154	63,548
33	Oil Cost	Rs Lakh	1,242	1,242
34	Total Fuel Cost	Rs Lakh	67,396	64,789
35	Uncontrollable Loss due to late billing on Revised Approved SHR	Rs Crore		26.07

Table 4.24: Uncontrollable Gain/Loss in Fuel cost for FY 2010-11 of Wanakbori 1-6 due to revision of SHR

Sr. No.	Item	Unit	Fuel cost for first nine months of FY 2010-11 calculated based on approved parameters with approved SHR as per the review order dated 3rd February 2011	Fuel cost for first nine months of FY 2010-11 calculated based on approved parameters with approved SHR as per order dated 31st March 2010
1	Gross Generation for first nine months of FY 2010-11	MUs	6,151	6,151
2	Auxiliary Consumption	%	9.00%	9.00%
3	Auxiliary Consumption	MUs	554	554

Sr. No.	Item	Unit	Fuel cost for first nine months of FY 2010-11 calculated based on approved parameters with approved SHR as per the review order dated 3rd February 2011	Fuel cost for first nine months of FY 2010-11 calculated based on approved parameters with approved SHR as per order dated 31st March 2010
4	Net Generation	MUs	5,597	5,597
5	Station Heat Rate	KCal/KWH.	2,625	2,600
6	Sp. Oil Consumption	ml/kWh	1.00	1.00
7	Gross Calorific Value of Coal	kcal/kg	3,708	3,708
8	Calorific value of Oil	kcal/l	10,531	10,531
9	Overall Heat	G Cal	16,146,191	15,992,418
10	Heat from Oil	G Cal	64,775	64,775
11	Heat from Coal	G Cal	16,081,416	15,927,643
12	Transit losses	%	0.80%	0.80%
13	Coal Blend			
14	A) Indigenous Coal	%	34.38%	34.38%
15	B) Washed Coal	%	59.32%	59.32%
16	C) Imported Coal	%	6.31%	6.31%
17	Actual Oil Consumption	kl	6,151	6,151
18	Actual Coal Consumption	MT	4,336,951	4,295,481
19	A) Indigenous Coal	MT	1,503,068	1,488,696
20	B) Washed Coal	MT	2,572,680	2,548,079
21	C) Imported Coal	MT	273,662	271,045
22	Specific Coal Consumption	kg/kWh	0.68	0.68
23	Price of Coal			
24	A) Indigenous Coal	Rs/MT	3,034	3,034
25	B) Washed Coal	Rs/MT	2,593	2,593
26	C) Imported Coal	Rs/MT	7,093	7,093
27	Price of Oil	Rs/kl	29,663	29,663
28	Coal cost			

Sr. No.	Item	Unit	Fuel cost for first nine months of FY 2010-11 calculated based on approved parameters with approved SHR as per the review order dated 3rd February 2011	Fuel cost for first nine months of FY 2010-11 calculated based on approved parameters with approved SHR as per order dated 31st March 2010
29	A) Indigenous Coal	Rs Lakh	45,607	45,171
30	B) Washed Coal	Rs Lakh	66,719	66,081
31	C) Imported Coal	Rs Lakh	19,410	19,224
32	Total Coal Cost	Rs Lakh	131,736	130,476
33	Oil Cost	Rs Lakh	1,825	1,825
34	Total Fuel Cost	Rs Lakh	133,560	132,301
35	Uncontrollable Loss due to late billing on Revised Approved SHR	Rs Crore		12.60

Table 4.25: Uncontrollable Gain/Loss in Fuel cost for FY 2010-11 of Sikka TPS due to revision of SHR

Sr. No.	Item	Unit	Fuel cost for first nine months of FY 2010-11 calculated based on approved parameters with approved SHR as per the review order dated 3rd February 2011	Fuel cost for first nine months of FY 2010-11 calculated based on approved parameters with approved SHR as per order dated 31st March 2010
1	Gross Generation for first nine months of FY 2010-11	MUs	832	832
2	Auxiliary Consumption	%	10.50%	10.50%
3	Auxiliary Consumption	MUs	87	87
4	Net Generation	MUs	745	745
5	Station Heat Rate	KCal/KWH.	3,045	2,750
6	Sp. Oil Consumption	ml/kWh	1.50	1.50
7	Gross Calorific Value of Coal	kcal/kg	3,741	3,741
8	Calorific value of Oil	kcal/l	10,295	10,295
9	Overall Heat	G Cal	2,533,745	2,288,275

Sr. No.	Item	Unit	Fuel cost for first nine months of FY 2010-11 calculated based on approved parameters with approved SHR as per the review order dated 3rd February 2011	Fuel cost for first nine months of FY 2010-11 calculated based on approved parameters with approved SHR as per order dated 31st March 2010
10	Heat from Oil	G Cal	12,850	12,850
11	Heat from Coal	G Cal	2,520,895	2,275,425
12	Transit losses	%	0.80%	0.80%
13	Coal Blend			
14	A) Indigenous Coal	%	32.58%	32.58%
15	B) Washed Coal	%	67.42%	67.42%
16	C) Imported Coal	%	0.00%	0.00%
17	Actual Oil Consumption	kl	1,248	1,248
18	Actual Coal Consumption	MT	673,856	608,240
19	A) Indigenous Coal	MT	221,313	199,763
20	B) Washed Coal	MT	454,314	410,075
21	C) Imported Coal	MT	-	-
22	Specific Coal Consumption	kg/kWh	0.71	0.71
23	Price of Coal			
24	A) Indigenous Coal	Rs/MT	3,665	3,665
25	B) Washed Coal	Rs/MT	2,806	2,806
26	C) Imported Coal	Rs/MT	-	-
27	Price of Oil	Rs/kl	38,181	38,181
28	Coal cost			
29	A) Indigenous Coal	Rs Lakh	8,111	7,321
30	B) Washed Coal	Rs Lakh	12,749	11,508
31	C) Imported Coal	Rs Lakh	-	-
32	Total Coal Cost	Rs Lakh	20,860	18,829
33	Oil Cost	Rs Lakh	477	477
34	Total Fuel Cost	Rs Lakh	21,336	19,305

Sr. No.	Item	Unit	Fuel cost for first nine months of FY 2010-11 calculated based on approved parameters with approved SHR as per the review order dated 3rd February 2011	Fuel cost for first nine months of FY 2010-11 calculated based on approved parameters with approved SHR as per order dated 31st March 2010
35	Uncontrollable Loss due to late billing on Revised Approved SHR	Rs Crore		20.31

Table 4.26: Summary of Gain/Loss from fuel Expenses on account of Review order dated 3rd February, 2011

(Rs. Crore)

Sr. No.	Power Station	Gain/Loss from fuel Expenses on account of Review order dated 3rd February, 2011
1	Ukai 1-5	25.99
2	Gandhinagar 1-4	26.07
3	Wanakbori 1-6	12.60
4	Sikka	20.31
	Total	84.97

The commission considers the submission of GSECL as valid and allows an uncontrollable loss of Rs. 84.97 Crore on account of fuel charges.

4.6 Fixed Charges

The fixed charges considered for truing up for FY 2010-11 are explained below:

4.6.1 O&M Expenses for FY 2010-11

Petitioner's Submission

GSECL has claimed Rs. 822.40 Crore towards actual O&M expenses in the Truing up for FY 2010-11. GSECL submitted that these O&M expenses include water charges and insurance charges exclusive of the insurance charges of old PPA based stations. The O&M charges approved for FY 2010-11 by the Commission in the MYT Order dated 17th January, 2009, in the Tariff Order for FY 2010-11and now claimed by GSECL are as given in Table 4.27 below:

Table 4.27: O&M expenses for FY 2010-11

(Rs. Crore)

Particulars	MYT approved FY 2010-11	T.O FY 2010-11	Claimed by GSECL (Truing up) FY 2010-11
O&M Charges	604.75	655.48	822.40

GSECL has categorized O&M expenses as controllable except for the impact of inflation and pay revision which has been considered as an uncontrollable one. In the present case, GSECL has submitted that the increase in its O&M expenses is primarily due to the impact of the sixth pay commission and the dearness allowance. GSECL has indicated a net loss of Rs.133.52 Crore after taking into consideration the sharing of gain and loss mechanism. The station-wise O&M expenses claimed by GSECL in the truing for FY 2010-11 and the uncontrollable gains/losses are given in the table 4.28 below

Table 4.28: Gains / Losses from O&M expenses for FY 2010-11

(Rs. Crore)

Sr. No.	Power Station	O&M Charges (T.O. FY 2010-11)	O&M Charges (Actual)	Gain / (Loss) due to controllable factor	Gain / (Loss) due to uncontrollable factor
1	Ukai (1-5)	114.33	127.81		(13.48)
2	Gandhinagar 1-4	119.53	130.03		(10.50)
3	Gandhinagar-5*	32.34	23.78		0.00
4	Wanakbori 1-6 TPS	174.76	187.53		(12.77)
5	Wanakbori-7*	22.35	14.42		0.00
6	Sikka TPS	38.37	55.45		(17.08)
7	KLTPS 1-3	27.85	81.95		(54.10)
8	KLTPS 4	10.09	1.73		8.36
9	Dhuvaran (Oil)	18.23**	19.85		(1.62)
10	Dhuvaran (Gas-1)*	6.8	50.11		0.00
11	Dhuvaran (Gas-2)	10.23	20.61		(10.38)
12	Utran Gas*	11.89	27.59		0.00
13	Utran Extension*	37.79	59.29		(21.50)
14	Ukai Hydro	8.5	10.65		(2.15)

Sr. No.	Power Station	O&M Charges (T.O. FY 2010-11)	O&M Charges (Actual)	Gain / (Loss) due to controllable factor	Gain / (Loss) due to uncontrollable factor
15	Kadana Hydro	13.3	11.59		1.71
	Total	**646.36**	**822.40*****		**(133.52)**

* PPA governed stations.

** Computed eight months pro-rata O&M, based on the approved O&M in the Tariff order for Dhuvaran (Oil)

**** Rs. 822.40 Crore includes Rs. 721.19 Crore of O&M charges, Rs. 97.26 Crore of Water charges and Rs. 3.95 Crore of insurance charges, exclusive of the insurance cost of old PPA based stations.

Commission's Analysis

Commission noted that the O&M expenses as claimed by GSECL and as provided in the audited accounts do not match.

The Commission directed the Petitioner to reconcile the O&M cost with the Annual Audited Accounts. The Petitioner through its letter dated 16.02.2012 clarified that the O&M expenses provided in the audited accounts are Rs. 735.61 Crore whereas it has claimed Rs. 721.19 Crore in the petition after deducting the O&M expenses of SSNL amounting to Rs. 14.42 Crore.

Further, the Commission observed that the GSECL has also included the insurance charges of Rs. 3.95 Crore and the water charges of Rs. 97.26 Crore in the O&M expenses for FY 2010-11.

Also Dhuvaran (oil) was decommissioned from Dec 2010 and, therefore, Commission has approved the O&M charges only for the period of 8 months (April 2010 to Nov 2010) for which the station was available for the generation.

Gains / (Loss)

GSECL computed losses of Rs.133.51 Crore and claimed them to be uncontrollable by attributing them solely to the impact of the sixth pay commission and the dearness allowance.

The Commission is of the view that the out of the total O&M expenses claimed by GSECL, the increase in Employee expenses due to the impact of the 6th Pay

Commission, Insurance charges and Water charges are uncontrollable whereas the R&M and A&G expenses are controllable. Therefore the increase in O&M expenses due to the impact of the sixth pay commission will be considered as uncontrollable and increase due to R&M and A&G expenses shall be considered as controllable.

The Commission asked GSECL to furnish the plant wise breakup of the O&M expenses into employee expense, R&M expense and A&G expense. GSECL vide an e-mail dated 17.03.2012 provided the required breakup. In order to compute the gain and loss of O&M expenses the Commission divided the O&M expenses as approved in the Tariff Order dated March 31st 2010, into the same ratio as per the actuals furnished by GSECL for FY 2010-11.

The gains and losses for employee expenses and R&M plus A&G has been computed separately. Further the gains and losses for water charges and insurance charges of PPA based stations have also been computed separately and have been given in Table 4.31 and Table 4.32. The actual insurance charges of Non-PPA based stations have been included in the R&M and A&G expenses for the computation of gains and losses for the FY 2010-11.

Table 4.29: Approved Employee expenses & gains/loss for FY 2010-11

(Rs. Crore)

Sr.No.	Power Station	T.O FY 2010-11	Actual claimed by GSECL	Approved for True Up for FY 2010-11	Deviation	Gain/(Loss) due to uncontrollable factors
1	Ukai (1-5)	74.07	83.72	83.72	(9.65)	(9.65)
2	Gandhinagar 1-4	51.66	66.91	66.91	(15.25)	(15.25)
3	Gandhinagar-5*	15.17	16.73	16.73	0.00	0.00
4	Wanakbori 1-6 TPS	77.74	82.13	82.13	(4.39)	(4.39)
5	Wanakbori-7*	13.75	7.33	7.33	0.00	0.00
6	Sikka TPS	19.55	32.58	32.58	(13.03)	(13.03)
7	KLTPS 1-3	11.45	29.50	29.50	(18.05)	(18.05)
8	KLTPS 4	9.25	9.83	9.83	(0.58)	(0.58)
9	Dhuvaran (Oil)	9.71**	10.15	10.15	(0.44)	(0.44)
10	Dhuvaran (Gas-1)*	0.68	5.48	5.48	0.00	0.00
11	Dhuvaran (Gas-2)	2.62	5.49	5.49	(2.87)	(2.87)

Sr.No.	Power Station	T.O FY 2010-11	Actual claimed by GSECL	Approved for True Up for FY 2010-11	Deviation	Gain/(Loss) due to uncontrollable factors
12	Utran Gas*	7.18	18.20	18.20	0.00	0.00
13	Utran Extension*	2.36	3.23	3.23	0.00	0.00
14	Ukai Hydro	4.87	6.05	6.05	(1.18)	(1.18)
15	Kadana Hydro	9.23	8.10	8.10	1.13	1.13
	Total	309.29	385.43	385.43		(64.30)

* PPA governed stations.
** Computed eight months pro-rata Employee Cost, based on the approved Employee Cost in the Tariff order for Dhuvaran (Oil)

Table 4.30: Approved R&M and A&G expenses & gains/loss for FY 2010-11

(Rs. Crore)

Sr.No.	Power Station	T.O FY 2010-11	Actual claimed by GSECL	Approved for True Up for FY 2010-11	Deviation	Gain/(Loss) due to controllable factors
1	Ukai (1-5)	40.26	45.53	45.53	(5.27)	(5.27)
2	Gandhinagar 1-4	23.14	30.03	30.03	(6.89)	(6.89)
3	Gandhinagar-5*	5.98	6.60	6.60	0.00	0.00
4	Wanakbori 1-6 TPS	58.06	61.36	61.36	(3.30)	(3.30)
5	Wanakbori-7*	1.03	0.55	0.55	0.00	0.00
6	Sikka TPS	11.52	19.22	19.22	(7.70)	(7.70)
7	KLTPS 1-3	16.15	41.72	41.72	(25.57)	(25.57)
8	KLTPS 4	0.84	1.69	1.69	(0.85)	(0.85)
9	Dhuvaran (Oil)	7.73**	8.92	8.92	(1.19)	(1.19)
10	Dhuvaran (Gas-1)*	5.52	44.62	44.62	0.00	0.00
11	Dhuvaran (Gas-2)	7.01	15.25	15.25	(8.24)	(8.24)
12	Utran Gas*	2.30	5.82	5.82	0.00	0.00
13	Utran Extension*	35.43	48.44	48.44	0.00	0.00
14	Ukai Hydro	3.63	4.51	4.51	(0.88)	(0.88)
15	Kadana Hydro	4.07	3.57	3.57	0.50	0.50
	Total	222.66	337.83	337.83		(59.40)

* PPA governed stations.
** Computed eight months pro-rata R&M and A&G Expenses, based on the approved R&M and A&G Expenses in the Tariff order for Dhuvaran (Oil)

Table 4.31: Approved Water Charges & gains/loss for FY 2010-11

(Rs. Crore)

Sr.No.	Power Station	T.O FY 2010-11	Actual claimed by GSECL	Approved for True Up for FY 2010-11	Deviation	Gain/(Loss) due to uncontrollable factors
1	Ukai (1-5)	0.00	0.00	0.00	0.00	0.00
2	Gandhinagar 1-4	44.73	34.85	34.85	9.88	9.88
3	Gandhinagar-5*	11.19	0.00	0.00	0.00	0.00
4	Wanakbori 1-6 TPS	38.96	43.17	43.17	(4.21)	(4.21)
5	Wanakbori-7*	7.58	6.52	6.52	0.00	0.00
6	Sikka TPS	7.29	3.74	3.74	3.55	3.55
7	KLTPS 1-3	0.25	1.05	1.05	(0.80)	(0.80)
8	KLTPS 4	0.00	0.00	0.00	0.00	0.00
9	Dhuvaran (Oil)	0.80**	1.62	1.62	(0.82)	(0.82)
10	Dhuvaran (Gas-1)*	0.60	0.00	0.00	0.00	0.00
11	Dhuvaran (Gas-2)	0.60	0.00	0.00	0.60	0.60
12	Utran Gas*	2.40	3.94	3.94	0.00	0.00
13	Utran Extension*	0.00	2.37	2.37	0.00	0.00
14	Ukai Hydro	0.00	0.00	0.00	0.00	0.00
15	Kadana Hydro	0.00	0.00	0.00	0.00	0.00
	Total	114.40	97.26	97.26	8.20	8.20

* PPA governed stations.
** Computed eight months pro-rata Water Charges, based on the approved Water Charges in the Tariff order for Dhuvaran (Oil)

Table 4.32: Approved Insurance Charges & gains/loss for FY 2010-11

(Rs. Crore)

Sr.No.	Power Station	T.O FY 2010-11	Actual claimed by GSECL	Approved for True Up for FY 2010-11	Deviation	Gain/Loss due to uncontrollable factors
1	Gandhinagar-5*	0.86	0.75	0.75	0.11	0.11
2	Wanakbori-7*	0.86	0.77	0.77	0.09	0.09
3	Dhuvaran (Gas-1)*	0.48	0.43	0.43	0.05	0.05

Sr.No.	Power Station	T.O FY 2010-11	Actual claimed by GSECL	Approved for True Up for FY 2010-11	Deviation	Gain/Loss due to uncontrollable factors
4	Utran Gas*	0.47	2.48	2.48	(2.01)	(2.01)
5	Utran Extension*	0.00	0.00	0.00	0.00	0.00
	Total	2.67	4.43	4.43	(1.76)	(1.76)

* PPA governed stations.

Table 4.33: Summary of Approved O&M Expenses for FY 2010-11

(Rs. Crore)

Sr. No.	Power Station	Employee Expenses	O&M and A&G Charges	Water Expenses	Insurance Expenses
1	Ukai (1-5)	83.72	45.53	0.00	0.00
2	Gandhinagar 1-4	66.91	30.03	34.85	0.00
3	Gandhinagar-5*	16.73	6.60	0.00	0.75
4	Wanakbori 1-6 TPS	82.13	61.36	43.17	0.00
5	Wanakbori-7*	7.33	0.55	6.52	0.77
6	Sikka TPS	32.58	19.22	3.74	0.00
7	KLTPS 1-3	29.50	41.72	1.05	0.00
8	KLTPS 4	9.83	1.69	0.00	0.00
9	Dhuvaran (Oil)	10.15	8.92	1.62	0.00
10	Dhuvaran (Gas-1)*	5.48	44.62	0.00	0.43
11	Dhuvaran (Gas-2)	5.49	15.25	0.00	0.00
12	Utran Gas*	18.20	5.82	3.94	2.48
13	Utran Extension*	3.23	48.44	2.37	0.00
14	Ukai Hydro	6.05	4.51	0.00	0.00
15	Kadana Hydro	8.10	3.57	0.00	0.00
	Total	**385.43**	**337.83**	**97.26**	**4.43**

4.6.2 Depreciation for FY 2010-11

Petitioner's Submission:

GSECL has claimed Rs. 597.13 Crore towards depreciation charges in the Truing up for FY 2010-11. The depreciation approved for FY 2010-11 by the Commission in the MYT order dated 17th January, 2009, in the Tariff Order for FY 2010-11 and now claimed by GSECL are as given in the Table 4.34 below:

Table 4.34: Depreciation for FY 2010-11

(Rs. Crore)

Particulars	MYT approved FY 2010-11	Tariff Order FY 2010-11	Claimed by GSECL (Truing up) FY 2010-11
Depreciation	439.42	537.94	597.13

The station-wise depreciation claimed by GSECL as actual and the computation of gains/losses on account of controllable and uncontrollable factors are given in the Table 4.35 below:

Table 4.35: Gains / Losses from Depreciation claimed for FY 2010-11

(Rs. Crore)

Sr. No.	Power Station	Depreciation (T.O. FY 2010-11)	Depreciation (Actual)	Gain / (Loss) due to controllable factor	Gain / (Loss) due to uncontrollable factor
1	Ukai (1-5)	51.2	103.68		(52.48)
2	Gandhinagar 1-4	62.89	73.72		(10.83)
3	Gandhinagar-5*	32.62	33.80		0.00
4	Wanakbori 1-6 TPS	72.72	76.72		(4.00)
5	Wanakbori-7*	31.73	32.22		0.00
6	Sikka TPS	30.23	29.19		1.04
7	KLTPS 1-3	57.6	60.56		(2.96)
8	KLTPS 4	28.25	35.32		(7.07)
9	Dhuvaran (Oil)	5.85**	4.18		1.67
10	Dhuvaran (Gas-1)*	16.98	17.02		0.00
11	Dhuvaran (Gas-2)	22.45	22.02		0.43

Sr. No.	Power Station	Depreciation (T.O. FY 2010-11)	Depreciation (Actual)	Gain / (Loss) due to controllable factor	Gain / (Loss) due to uncontrollable factor
12	Utran Gas*	19.04	22.28		0.00
13	Utran Extension*	81.1	65.25		15.85
14	Ukai Hydro	6.92	6.11		0.81
15	Kadana Hydro	15.44	15.05		0.39
	Total	535.02	597.13		(57.16)

* PPA governed stations.
** Computed eight months pro-rata depreciation, based on the approved depreciation in the Tariff order for Dhuvaran (Oil)

Commission's Analysis

The Commission noted that GSECL had claimed actual depreciation for FY 2010-11 at Rs. 597.13 Crore which is in line with schedule 6 of audited annual accounts. GSECL has proposed Rs. 57.16 Crore towards loss attributing to uncontrollable factors. The commission observed that major deviation in depreciation is of Ukai station. For Ukai 1-5, GSECL has claimed depreciation at the rate of 9.62% as per their submission. The average rate of depreciation for all the plants excluding Ukai 1-5 is 5.25% as submitted by GSECL. The Commission has thus recalculated the depreciation for Ukai 1-5 at the rate of 5.25% for the whole year which amounts to Rs. 56.58 Crore. The commission thus approves Rs. 56.58 Crore as depreciation for Ukai 1-5 for FY 2010-11.

Further, the Commission observed that the petitioner has claimed the depreciation for the full year for Dhuvaran (oil) even though the station was decommissioned from Dec 2010. Therefore, Commission has approved the depreciation only for the period (April 2010 to Nov 2010) for which the station was available for the generation.

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 gain / loss in respect of PPA governed stations.

The Commission accordingly approves the depreciation charges (and the gain / loss) on account of depreciation station-wise in the Truing up for FY 2010-11 as detailed in the Table 4.36 below:

Table 4.36: Approved station-wise depreciation charges and gains/(loss) from Depreciation for FY 2010-11

(Rs. Crore)

Sr. No.	Power Station	T.O FY 2010-11	Actual claimed by GSECL	Approved for True Up for FY 2010-11	Deviation (5-3)	Gain/(Loss) due to controllable factors	Gain/(Loss) due to uncontrollable factors
1	2	3	4	5	6	7	8
1	Ukai (1-5)	51.20	103.68	56.58	(5.38)		(5.38)
2	Gandhinagar 1-4	62.89	73.72	73.72	(10.83)		(10.83)
3	Gandhinagar-5*	32.62	33.80	33.80	0.00		0.00
4	Wanakbori 1-6 TPS	72.72	76.72	76.72	(4.00)		(4.00)
5	Wanakbori-7*	31.73	32.22	32.22	0.00		0.00
6	Sikka TPS	30.23	29.19	29.19	1.04		1.04
7	KLTPS 1-3	57.60	60.56	60.56	(2.96)		(2.96)
8	KLTPS 4	28.25	35.32	35.32	(7.07)		(7.07)
9	Dhuvaran (Oil)	5.85**	4.18	2.79	3.06		3.06
10	Dhuvaran (Gas-1)*	16.98	17.02	17.02	0.00		0.00
11	Dhuvaran (Gas-2)	22.45	22.02	22.02	0.43		0.43
12	Utran Gas*	19.04	22.28	22.28	0.00		0.00
13	Utran Extension*	81.10	65.25	65.25	0.00		0.00
14	Ukai Hydro	6.92	6.11	6.11	0.81		0.81
15	Kadana Hydro	15.44	15.05	15.05	0.39		0.39
	Total	535.02	597.13	548.64			(24.52)

* PPA governed stations.
** Computed eight months pro-rata depreciation, based on the approved depreciation in the Tariff order for Dhuvaran (Oil)

4.6.3 Interest and Finance charges for FY 2010-11

Petitioner's submission

The GSECL has claimed Rs. 420.90 Crore towards interest and finance charges in the Truing up for FY 2010-11. The interest and finance charges approved for FY 2010-11 by the Commission in the MYT order, in Tariff Order for FY 2010-11 and now claimed by GSECL as actual are tabulated in Table 4.37 below:

Table 4.37: Interest & Finance Charges claimed in truing up for FY 2010-11

(Rs. Crore)

Particulars	MYT approved FY 2010-11	T.O FY 2010-11	Claimed by GSECL (Truing up) FY 2010-11
Interest & Finance Charges	419.99	400.16	420.90

GSECL has claimed Rs. 28 Crore towards loss attributing to uncontrollable factor owning to the difference in the actual capitalization. The station-wise interest and finance charges claimed by GSECL in the truing for FY 2010-11 and the gains / losses are given in the table 4.38 below:

Table 4.38: Gains / Losses from Interest & Finance charges claimed for FY 2010-11

(Rs. Crore)

Sr. No.	Power Station	Interest & Finance Charges (T.O. FY 2010-11)	Interest & Finance Charges (Actual)	Gain / (Loss) due to controllable factor	Gain / (Loss) due to uncontrollable factor
1	Ukai (1-5)	51.53	53.69		(2.16)
2	Gandhinagar 1-4	61.61	55.25		6.36
3	Gandhinagar-5*	0	0.00		0.00
4	Wanakbori 1-6 TPS	53.35	44.02		9.33
5	Wanakbori-7*	0.46	0.00		0.00
6	Sikka TPS	20.67	16.36		4.31
7	KLTPS 1-3	40.78	35.61		5.17
8	KLTPS 4	35.63	44.04		(8.41)

Sr. No.	Power Station	Interest & Finance Charges (T.O. FY 2010-11)	Interest & Finance Charges (Actual)	Gain / (Loss) due to controllable factor	Gain / (Loss) due to uncontrollable factor
9	Dhuvaran (Oil)	5.44**	4.66		0.78
10	Dhuvaran (Gas-1)*	8.05	6.56		0.00
11	Dhuvaran (Gas-2)	13.5	13.68		(0.18)
12	Utran Gas*	7.41	4.89		0.00
13	Utran Extension*	81.83	130.43		(48.60)
14	Ukai Hydro	5.36	3.18		2.18
15	Kadana Hydro	11.82	8.53		3.29
	Total	397.44	420.90		(28)

* PPA governed stations.
** Computed eight months pro-rata Interest & Finance Charges, based on the approved Interest & Finance Charges in the Tariff order for Dhuvaran (Oil)

Commission's Analysis

Commission observed from the audited annual accounts in respect of GSECL for the FY 2010-11 that the actual interest & finance charges for FY 2010-11 are Rs. 429.07 Crore as against Rs. 420.90 Crore claimed by GSECL in the truing up. In the additional information submitted to Commission (vide letter dated 16.02.2012), GSECL clarified that Interest claimed in true-up petition of Rs. 420.90 Crore is interest on term loans of Rs. 396.85 Crore (excluding interest on windmill of Rs. 2.94 Crore) and an additional interest cost of Rs. 24.05 Crore from short term borrowing, which is used in order to finance the project cost of KLTPS-IV. The Commission has not considered the amount of Rs. 24.05 Crore claimed by GSECL on Interest During Construction (IDC) for KLTPS-IV as the IDC should be booked in the capital expenditure of KLTPS IV. Therefore, Commission has approved Rs. 396.85 Crore as interest and finance charges during the Truing up for FY 2010-11.

Gains / Losses

The Commission is of the view that amount of interest and finance charges are dependent on the quantum of capitalization, and the extent of borrowing considered during the financial year. The Commission is therefore of the view that the parameters which impact interest and finance charges should be treated as uncontrollable. GSECL has not claimed any gain / loss in respect of PPA governed stations.

The Commission accordingly approves the interest and finance charges and the gain / loss on account of interest and finance charges station-wise in the Truing up for FY 2010-11 as detailed in the Table 4.39 below:

Table 4.39: Approved interest and finance charges and gain/(loss) for FY 2010-11

(Rs. Crore)

Sr. No.	Power Station	T.O FY 2010-11	Actual claimed by GSECL	Approved for True Up for FY 2010-11	Deviation (5-3)	Gain/(Loss) due to controllable factors	Gain/(Loss) due to uncontrollable factors
1	2	3	4	5	6	7	8
1	Ukai (1-5)	51.53	53.69	53.69	(2.16)		(2.16)
2	Gandhinagar 1-4	61.61	55.25	55.25	6.36		6.36
3	Gandhinagar-5*	0.00	0.00	0.00	0.00		0.00
4	Wanakbori 1-6 TPS	53.35	44.02	44.02	9.33		9.33
5	Wanakbori-7*	0.46	0.00	0.00	0.00		0.00
6	Sikka TPS	20.67	16.36	16.36	4.31		4.31
7	KLTPS 1-3	40.78	35.61	35.61	5.17		5.17
8	KLTPS 4	35.63	44.04	19.99	15.64		15.64
9	Dhuvaran (Oil)	8.16	4.66	4.66	3.50		3.50
10	Dhuvaran (Gas-1)*	8.05	6.56	6.56	0.00		0.00
11	Dhuvaran (Gas-2)	13.50	13.68	13.68	(0.18)		(0.18)
12	Utran Gas*	7.41	4.89	4.89	0.00		0.00
13	Utran Extension*	81.83	130.43	130.43	0.00		0.00
14	Ukai Hydro	5.36	3.18	3.18	2.18		2.18
15	Kadana Hydro	11.82	8.53	8.53	3.29		3.29
	Total	400.16	420.90	396.85			47.43

* PPA governed stations.

4.6.4 Return on Equity for FY 2010-11

Petitioner's submission

GSECL has claimed Rs. 391.05 Crore towards return on RoE in the Truing up for FY 2010-11. The return on RoE approved for FY 2010-11 by the Commission in the MYT order dated 17th January, 2009, in the Tariff Order for FY 2010-11 and now claimed by GSECL as actual are given in Table 4.40 below:

Table 4.40: Return on Equity for FY 2010-11

(Rs. Crore)

Particulars	MYT approved FY 2010-11	T.O FY 2010-11	Claimed by GSECL (Truing up) FY 2010-11
Return on Equity	**421.13**	**386.79**	**391.05**

GSECL has submitted that the comparison of actual value for return on equity computed on the basis of opening equity for FY 2010-11 and addition to equity during the year on account of funding of capital expenditure, against the return on equity approved in the Tariff order for FY 2010-11 resulted in a loss of Rs.7 Crore. This variation of Rs. 7 Crore has been attributed to uncontrollable factors. The station-wise Return on equity claimed by GSECL in the truing for FY 2010-11 and the controllable gains/losses are given in the Table 4.41 below:

Table 4.41: Gains / Losses from Return on equity claimed for FY 2010-11

(Rs. Crore)

Sr. No.	Power Station	Return on Equity (T.O. FY 2010-11)	Return on Equity (Actual)	Gain / (Loss) due to controllable factor	Gain / (Loss) due to uncontrollable factor
1	Ukai (1-5)	20.98	25.83		(4.85)
2	Gandhinagar 1-4	36.86	32.10		4.76
3	Gandhinagar-5*	26.84	26.93		0.00
4	Wanakbori 1-6 TPS	53.82	52.90		0.92
5	Wanakbori-7*	26.03	26.04		0.00
6	Sikka TPS	20.75	20.56		0.19
7	KLTPS 1-3	43.14	43.88		(0.74)

Sr. No.	Power Station	Return on Equity (T.O. FY 2010-11)	Return on Equity (Actual)	Gain / (Loss) due to controllable factor	Gain / (Loss) due to uncontrollable factor
8	KLTPS 4	19.81	28.45		(8.64)
9	Dhuvaran (Oil)	4.84**	6.88		(2.04)
10	Dhuvaran (Gas-1)*	12.94	12.93		0.00
11	Dhuvaran (Gas-2)	15.99	15.46		0.53
12	Utran Gas*	10.65	10.42		0.00
13	Utran Extension*	55.67	52.94		2.73
14	Ukai Hydro	7.95	7.72		0.23
15	Kadana Hydro	28.1	28.00		0.10
	Total	384.37	391.05		(7)

* PPA governed stations.
** Computed eight months pro-rata Return on Equity, based on the approved Return on Equity in the Tariff order for Dhuvaran (Oil)

Commission's Analysis

The Commission observed that the petitioner has claimed the return on equity for the full year for Dhuvaran (oil) even though the station was decommissioned from Dec 2010. Therefore, Commission has approved the return on equity only for the period (April 2010 to Nov 2010) for which the station was available for the generation.

Further vide an e-mail dated 29.02.2012 GSECL has clarified that in the petition it has erroneously calculated the RoE for Utran Gas power plant at 13 %. As per the amended PPA for Utran Gas approved vide. GERC order dated 27.06.2011 on GUVNL Petition No. 1094/11, the approved Return on Equity for Utran Gas is 14%.

The Commission has accordingly approved 14% RoE for Utran Gas in the truing up for FY 2010-11.

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 gain / loss on account of return on equity in the truing up for FY 2010-11 station-wise as detailed in the Table 4.42 below:

Table 4.42: Approved return on equity and gain/loss for FY 2010-11

(Rs. Crore)

Sr. No.	Power Station	T.O FY 2010-11	Actual claimed by GSECL	Approved for True Up for FY 2010-11	Deviation (5-3)	Gain/(Loss) due to controllable factors	Gain/(Loss) due to uncontrollable factors
1	2	3	4	5	6	7	8
1	Ukai (1-5)	20.98	25.83	25.83	(4.85)		(4.85)
2	Gandhinagar 1-4	36.86	32.10	32.10	4.76		4.76
3	Gandhinagar-5*	26.84	26.93	26.93	0.00		0.00
4	Wanakbori 1-6 TPS	53.82	52.90	52.90	0.92		0.92
5	Wanakbori-7*	26.03	26.04	26.04	0.00		0.00
6	Sikka TPS	20.75	20.56	20.56	0.19		0.19
7	KLTPS 1-3	43.14	43.88	43.88	(0.74)		(0.74)
8	KLTPS 4	19.81	28.45	28.45	(8.64)		(8.64)
9	Dhuvaran (Oil)	4.84**	6.88	4.59	0.25		0.25
10	Dhuvaran (Gas-1)*	12.94	12.93	12.93	0.00		0.00
11	Dhuvaran (Gas-2)	15.99	15.46	15.46	0.53		0.53
12	Utran Gas*	10.65	10.42	11.22	0.00		0.00
13	Utran Extension*	55.67	52.94	52.94	0.00		0.00
14	Ukai Hydro	7.95	7.72	7.72	0.23		0.23
15	Kadana Hydro	28.10	28.00	28.00	0.10		0.10
	Total	384.37	391.05	389.55			(7.25)

* PPA governed stations.

** Computed eight months pro-rata Return on Equity, based on the approved Return on Equity in the Tariff order for Dhuvaran (Oil)

4.6.5 Interest on Working Capital for FY 2010-11

Petitioner's Submission

GSECL has claimed Rs. 255.45 Crore towards interest on working capital in the Truing up for FY 2010-11. The interest on working capital approved for FY 2010-11 in the MYT order dated 17th January, 2009, in the Tariff Order for FY 2010-11 and claimed by GSECL in the Truing up are given in the Table 4.43 below:

Table 4.43: Interest on Working Capital Claimed by GSECL in Truing up for FY 2010-11

(Rs. Crore)

Particulars	MYT approved FY 2010-11	T.O FY 2010-11	Claimed by GSECL (Truing up) FY 2010-11
Interest on Working Capital	237.78	252.13	255.45

The gains and losses submitted by GSECL in its petition for true up for FY 2010-11 are as given in the Table 4.44

Table 4.44: Gains / Losses from Interest on working capital claimed for FY 2010-11

(Rs. Crore)

Sr. No.	Power Station	Interest on Working Capital (T.O. FY 2010-11)	Interest on Working Capital (Actual)	Gain / (Loss) due to controllable factor	Gain / (Loss) due to uncontrollable factor
1	Ukai (1-5)	31.18	40.82		(9.64)
2	Gandhinagar 1-4	32.86	40.78		(7.92)
3	Gandhinagar-5*	14.13	15.42		0.00
4	Wanakbori 1-6 TPS	60.95	74.13		(13.18)
5	Wanakbori-7*	13.75	12.92		0.00
6	Sikka TPS	12.06	13.81		(1.75)
7	KLTPS 1-3	10.14	10.48		(0.34)
8	KLTPS 4	4.04	3.35		0.69

Sr. No.	Power Station	Interest on Working Capital (T.O. FY 2010-11)	Interest on Working Capital (Actual)	Gain / (Loss) due to controllable factor	Gain / (Loss) due to uncontrollable factor
9	Dhuvaran (Oil)	16.15**	1.12		15.03
10	Dhuvaran (Gas-1)*	6.66	5.06		0.00
11	Dhuvaran (Gas-2)	8.06	6.57		1.49
12	Utran Gas*	8.37	6.21		0.00
13	Utran Extension*	23.02	22.47		0.55
14	Ukai Hydro	0.88	0.72		0.16
15	Kadana Hydro	1.8	1.59		0.21
	Total	244.05	255.45		(14.71)

* PPA governed stations.
** Computed pro-rata interest on working capital approved for eight months for Dhuvaran (Oil)

Commission's Analysis

The Commission has examined the interest on working capital claimed by GSECL for FY 2010-11. The Commission has observed that the working capital and the interest on working capital have been worked out by the GSECL as per the GERC Tariff Regulations. However, Commission has recomputed the interest on working capital at Rs. 249.62 Crore based on the expenses approved in the truing up exercise for FY 2010-11. The interest on working capital for Dhuvaran (Gas-2) and Utran Extension plants have been taken as 12.25% as per the existing SBI PLR on 1st April, 2007 and 1st April, 2009 for the two stations respectively.

Dhuvaran (oil) was decommissioned from Dec 2010 and, therefore, Commission has approved the interest on working capital only for the period (April 2010 to Nov 2010) for which the station was available for generation.

Gain / (losses)

With regard to GSECL's submission that interest on working capital should be considered as uncontrollable, 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 at Rs.249.62 Crore. The gains / losses on account of interest on working capital in the truing up for FY 2010-11 station-wise as detailed in the Table 4.45 below:

Table 4.45: Approved Gains/Losses from Interest on working capital for FY 2010-11

(Rs. Crore)

Sr. No.	Power Station	T.O FY 2010-11	Actual claimed by GSECL	Approved for True Up for FY 2010-11	Deviation (5-3)	Gain/(Loss) due to controllable factors	Gain/(Loss) due to un controllable factors
1	2	3	4	5	6	7	8
1	Ukai (1-5)	31.18	40.82	37.90	(6.72)		(6.72)
2	Gandhinagar 1-4	32.86	40.78	39.25	(6.39)		(6.39)
3	Gandhinagar-5*	14.13	15.42	14.98	0.00		0.00
4	Wanakbori 1-6 TPS	60.95	74.13	73.69	(12.74)		(12.74)
5	Wanakbori-7*	13.75	12.92	13.21	0.00		0.00
6	Sikka TPS	12.06	13.81	13.72	(1.66)		(1.66)
7	KLTPS 1-3	10.14	10.48	9.74	0.40		0.40
8	KLTPS 4	4.04	3.35	3.01	1.03		1.03
9	Dhuvaran (Oil)	16.15**	1.12	0.93	15.23		15.23
10	Dhuvaran (Gas-1)*	6.66	5.06	4.16	0.00		0.00
11	Dhuvaran (Gas-2)	8.06	6.57	6.70	1.36		1.36
12	Utran Gas*	8.37	6.21	5.93	0.00		0.00
13	Utran Extension*	23.02	22.47	24.10	0.00		0.00
14	Ukai Hydro	0.88	0.72	0.72	0.16		0.16
15	Kadana Hydro	1.80	1.59	1.60	0.20		0.20
	Total	**244.05**	**255.45**	**249.62**	**(9.12)**		**(9.12)**

* PPA governed stations.
** Computed eight months pro-rata interest on working capital, based on the approved interest on working capital in the Tariff order for Dhuvaran (Oil)

4.6.6 SLDC Charges for FY 2010-11

Petitioner's submission

GSECL has claimed Rs.3.68 Crore towards SLDC charges in the Truing up for FY 2010-11.

The SLDC charges approved for FY 2010-11 by the Commission in the Tariff Order for FY 2010-11 and now claimed by GSECL as actual are tabulated in Table 4.46 below:

Table 4.46: SLDC charges for FY 2010-11

(Rs. Crore)

Particulars	T.O FY 2010-11	Claimed by GSECL (Truing up) FY 2010-11
SLDC Charges	3.68	3.68

Commission's Analysis

The Commission approves Rs. 3.68 Crore towards SLDC charges in the Truing up for FY 2010-11 as claimed by GSECL which is as per the Tariff order dated 31st March 2010.

The station-wise approved SLDC charges and gains/(losses) are given in table 4.47 below:

Table 4.47: Approved SLDC charges gains/losses for FY 2010-11

(Rs. Crore)

Sr. No.	Power Station	T.O FY 2010-11	Actual claimed by GSECL	Approved for True Up for FY 2010-11	Deviation (5-3)	Gain/(Loss) due to controllable factors	Gain/(Loss) due to uncontrollable factors
1	2	3	4	5	6	7	8
1	Ukai (1-5)	0.59	0.59	0.59	0.00	0.00	0.00
2	Gandhinagar 1-4	0.46	0.46	0.46	0.00	0.00	0.00
3	Gandhinagar-5*	0.15	0.15	0.15	0.00	0.00	0.00
4	Wanakbori 1-6 TPS	0.88	0.88	0.88	0.00	0.00	0.00
5	Wanakbori-7*	0.15	0.15	0.15	0.00	0.00	0.00
6	Sikka TPS	0.17	0.17	0.17	0.00	0.00	0.00

Sr. No.	Power Station	T.O FY 2010-11	Actual claimed by GSECL	Approved for True Up for FY 2010-11	Deviation (5-3)	Gain/(Loss) due to controllable factors	Gain/(Loss) due to uncontrollable factors
1	2	3	4	5	6	7	8
7	KLTPS 1-3	0.20	0.20	0.20	0.00	0.00	0.00
8	KLTPS 4	0.05	0.05	0.05	0.00	0.00	0.00
9	Dhuvaran (Oil)	0.10**	0.17	0.17	(0.07)	0.00	(0.07)
10	Dhuvaran (Gas-1)*	0.07	0.15	0.15	0.00	0.00	0.00
11	Dhuvaran (Gas-2)	0.08	0.07	0.07	0.01	0.00	0.01
12	Utran Gas*	0.09	0.08	0.08	0.00	0.00	0.00
13	Utran Extension*	0.26	0.09	0.09	0.00	0.00	0.00
14	Ukai Hydro	0.21	0.26	0.26	(0.05)	0.00	(0.05)
15	Kadana Hydro	0.17	0.21	0.21	(0.04)	0.00	(0.04)
	Total	3.63	3.68	3.68	(0.15)	0.00	(0.15)

* PPA governed stations.
** Computed eight months pro-rata SLDC Charges, based on the approved SLDC Charges in the Tariff order for Dhuvaran (Oil)

4.6.7 Income Tax for FY 2010-11

Petitioner's Submission

GSECL has claimed Rs. 35.81 Crore towards income tax in the Truing up for FY 2010-11. The income tax approved for FY 2010-11 by the Commission in the Tariff Order for FY 2010-11, and now claimed by GSECL as actual are tabulated in Table 4.48 below:

Table 4.48: Income Tax for FY 2010-11

(Rs. Crore)

Particulars	T.O FY 2010-11	Claimed by GSECL (Truing up) FY 2010-11
Income Tax	58.02	35.81

Commission's Analysis

The Commission has observed that the actual income tax paid by GSECL during FY 2010-11 is Rs. 35.81 Crore as per the copy of the challan submitted by GSECL.

The Commission accordingly approves Rs. 35.81 Crore towards income tax, as per the actual payment made during FY 2010-11.

Table 4.49: Approved income tax and gains/loss for FY 2010-11

(Rs. Crore)

Sr. No.	Power Station	T.O FY 2010-11	Actual claimed by GSECL	Approved for True Up for FY 2010-11	Deviation (5-3)	Gain/(Loss) due to controllable factors	Gain/(Loss) due to uncontrollable factors
1	2	3	4	5	6	7	8
1	Ukai (1-5)	3.15	2.37	2.37	0.78		0.78
2	Gandhinagar 1-4	5.53	2.94	2.94	2.59		2.59
3	Gandhinagar-5*	4.03	2.47	2.47	0.00		0.00
4	Wanakbori 1-6 TPS	8.07	4.84	4.84	3.23		3.23
5	Wanakbori-7*	3.9	2.38	2.38	0.00		0.00
6	Sikka TPS	3.11	1.88	1.88	1.23		1.23
7	KLTPS 1-3	6.47	4.02	4.02	2.45		2.45
8	KLTPS 4	2.97	2.61	2.61	0.36		0.36
9	Dhuvaran (Oil)	0.73**	0.63	0.63	0.10		0.10
10	Dhuvaran (Gas-1)*	1.94	1.18	1.18	0.00		0.00
11	Dhuvaran (Gas-2)	2.4	1.42	1.42	0.98		0.98
12	Utran Gas*	1.6	0.95	0.95	0.00		0.00
13	Utran Extension*	8.35	4.85	4.85	0.00		0.00
14	Ukai Hydro	1.19	0.71	0.71	0.48		0.48
15	Kadana Hydro	4.22	2.56	2.56	1.66		1.66
	Total	**57.66**	**35.81**	**35.81**	**13.86**		**13.86**

* PPA governed stations.
** Computed eight months pro-rata Income Tax, based on the approved Income Tax in the Tariff order for Dhuvaran (Oil)

4.7 Approved Fixed Charges and Sharing of Gains and Losses

The Commission has reviewed the performance of GSECL under Regulation 9.3 of MYT Regulations, 2007 with reference to audited annual accounts for FY 2010-11.

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

The fixed charges approved in the Tariff Order dated 31st March 2010, claimed by GSECL in Truing up, now approved by the Commission and deviation (gain/loss) with reference to approved values are given in the Table 4.50 below:

Table 4.50: Fixed Charges Approved in the Truing up for FY 2010-11

(Rs. Crore)

Sl. No.	Fixed Charges	Tariff Order FY 2010-11*	Actual claimed in True up	Approved in True up*	Deviation
1	Depreciation	535.02	597.13	548.64	(13.62)
2	Interest & Finance charges	400.16	420.90	396.85	3.31
3	Return on equity	384.37	391.05	389.55	(5.18)
4	Interest on working capital	244.05	255.45	249.62	(5.56)
5	Employee expenses	309.29	385.43	385.43	(76.14)
6	R&M and A&G expenses	222.66	337.83	337.83	(115.17)
7	Water Expense	114.40	97.26	97.26	17.14
13	Insurance charges	2.67	4.43	4.43	(1.76)
11	Income Tax	57.66	35.81	35.81	21.84
12	SLDC charges	3.63	3.68	3.68	(0.05)
14	Total fixed charges	2273.91	2528.97	2449.10	(175.19)

*Including eight months pro-rata approved charges in case of Dhuvaran (oil)

Sharing of Gains or Losses for FY 2010-11

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

The relevant Regulations are extracted below:

Regulation 11.1 " The approved aggregate gain to the Generating Company or 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 9.7;

(b) One third of the amount of such gain shall be retained in a special reserve by the Generating Company or Licensee for the purpose of absorbing the impact of any future losses on account of controllable factors under clause (b) of Regulation 11.2 and

(c) The balance amount of gain may be utilized, at the discretion of the Generating Company or Licensee".

Regulation 10.1 " The approved aggregate gain or loss to the Generating Company or Licensee on account of uncontrollable factors shall be passed through as an adjustment in the tariff of the Generating Company or Licensee over such period as may be specified in the Order of the Commission passed under Regulation 9.7 (a)".

Regulation 11.2 The approved aggregate loss to the Generating Company or Licensee on account of controllable factors shall be dealt 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 9.7 and

(b) The balance amount of loss shall be absorbed by the Generating Company or licensee.

The gains / losses due to controllable factors and uncontrollable factors and the consolidated gains / losses approved to be passed through to their beneficiaries are given in the tables 4.51 to 4.55 below:

Table 4.51: Sharing of Gains/losses due to fuel cost as controllable factors

(Rs. Crore)

Sr. No.	Power Station	Gains / (losses) due to controllable factors	Gain/(losses) to be passed through	Gain to be retained in a sp. reserve	Gain/(losses) on account of Company
1	Ukai 1-5	(61.64)	(20.55)		(41.09)
2	Gandhinagar 1-4	(45.55)	(15.18)		(30.37)
3	Gandhinagar-5*	0.00	0.00		0.00
4	Wanakbori 1-6	(25.96)	(8.65)		(17.31)
5	Wanakbori-7*	0.00	0.00		0.00
6	Sikka	(2.49)	(0.83)		(1.66)

Sr. No.	Power Station	Gains / (losses) due to controllable factors	Gain/(losses) to be passed through	Gain to be retained in a sp. reserve	Gain/(losses) on account of Company
7	KLTPS 1-3	(15.36)	(5.12)		(10.24)
8	KLTPS-4	(7.10)	(2.37)		(4.73)
9	Dhuvaran (Oil)	0.00	0.00		0.00
10	Dhuvaran (Gas-1)*	0.00	0.00		0.00
11	Dhuvaran (Gas-2)	3.90	1.30	1.30	1.30
12	Utran Gas*	0.00	0.00		0.00
13	Utran Extension	0.00	0.00		0.00
14	Ukai Hydro	0.00	0.00		0.00
15	Kadana Hydro	0.00	0.00		0.00
	Total	(154.19)	(51.40)	1.30	(104.10)

Table 4.52: Sharing of Gains/losses from fuel Expenses on account of Review order dated 3rd February, 2011

(Rs. Crore)

Sr. No.	Power Station	Fuel cost for first Nine months of FY 2010-11 calculated based on approved parameters with approved SHR as per the review order dated 3rd February 2011	Fuel cost for first nine months of FY 2010-11 calculated based on approved parameters with approved SHR as per order dated 31st March 2010	Uncontrollable Gain/(Loss) to be passed through
1	Ukai 1-5	630.67	604.68	(25.99)
2	Gandhinagar 1-4	673.96	647.89	(26.07)
3	Gandhinagar-5*	-	-	-
4	Wanakbori 1-6	1335.60	1323.01	(12.60)
5	Wanakbori-7*	-	-	-
6	Sikka	213.36	193.05	(20.31)
7	KLTPS 1-3	0.00	0.00	
8	KLTPS-4	0.00	0.00	
9	Dhuvaran (Oil)	-	-	
10	Dhuvaran (Gas-1)*	-	-	
11	Dhuvaran (Gas-2)	0.00	0.00	0.00

Sr. No.	Power Station	Fuel cost for first Nine months of FY 2010-11 calculated based on approved parameters with approved SHR as per the review order dated 3rd February 2011	Fuel cost for first nine months of FY 2010-11 calculated based on approved parameters with approved SHR as per order dated 31st March 2010	Uncontrollable Gain/(Loss) to be passed through
12	Utran Gas*	-	-	-
13	Utran Extension	0.00	0.00	0.00
14	Ukai Hydro	-	-	
15	Kadana Hydro	-	-	
	Total	2853.60	2768.63	(84.97)

Table 4.53: Sharing of Gains/losses due to controllable O&M Expenses

(Rs. Crore)

Sr. No.	Power Station	Gains / (losses) due to controllable factors	Gain/(losses) to be passed through	Gain to be retained in a sp. reserve	Gain/(losses) on account of Company
1	Ukai 1-5	(5.27)	(1.76)	0.00	(3.52)
2	Gandhinagar 1-4	(6.89)	(2.30)	0.00	(4.59)
3	Gandhinagar-5*	0.00	0.00	0.00	0.00
4	Wanakbori 1-6	(3.30)	(1.10)	0.00	(2.20)
5	Wanakbori-7*	0.00	0.00	0.00	0.00
6	Sikka	(7.70)	(2.57)	0.00	(5.13)
7	KLTPS 1-3	(25.57)	(8.52)	0.00	(17.05)
8	KLTPS-4	(0.85)	(0.28)	0.00	(0.57)
9	Dhuvaran (Oil)	(1.19)	(0.40)	0.00	(0.80)
10	Dhuvaran (Gas-1)*	0.00	0.00	0.00	0.00
11	Dhuvaran (Gas-2)	(8.24)	(2.75)	0.00	(5.49)
12	Utran Gas*	0.00	0.00	0.00	0.00
13	Utran Extension	0.00	0.00	0.00	0.00
14	Ukai Hydro	(0.88)	(0.29)	0.00	(0.59)
15	Kadana Hydro	0.50	0.17	0.17	0.17
	Total	(59.40)	(19.80)	0.17	(39.77)

Table 4.54: Gain/(loss) due to uncontrollable factors

(Rs. Crore)

Sr. No.	Power Station	Depreciation	Interest & Finance Charges	Return on Equity	Employee Cost	Water Charges	Insurance	SLDC Charges	Income Tax	Interest on Working Capital	Total Gains / (losses) to be passed through
1	Ukai (1-5)	(5.38)	(2.16)	(4.85)	(9.65)	0.00	0.00	0.00	0.78	(6.72)	(27.98)
2	Gandhinagar 1-4	(10.83)	6.36	4.76	(15.25)	9.88	0.00	0.00	2.59	(6.39)	(8.89)
3	Gandhinagar-5*	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.11
4	Wanakbori 1-6 TPS	(4.00)	9.33	0.92	(4.39)	(4.21)	0.00	0.00	3.23	(12.74)	(11.86)
5	Wanakbori-7*	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.09
6	Sikka TPS	1.04	4.31	0.19	(13.03)	3.55	0.00	0.00	1.23	(1.66)	(4.38)
7	KLTPS 1-3	(2.96)	5.17	(0.74)	(18.05)	(0.80)	0.00	0.00	2.45	0.40	(14.52)
8	KLTPS 4	(7.07)	15.64	(8.64)	(0.58)	0.00	0.00	0.00	0.36	1.03	0.74
9	Dhuvaran (Oil)	3.06	3.50	0.25	(0.44)	(0.82)	0.00	(0.07)	0.10	15.23	20.81
10	Dhuvaran (Gas-1)*	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.05
11	Dhuvaran (Gas-2)	0.43	(0.18)	0.53	(2.87)	0.60	0.00	0.01	0.98	1.36	0.87
12	Utran Gas*	0.00	0.00	0.00	0.00	0.00	(2.01)	0.00	0.00	0.00	(2.01)
13	Utran Extension*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	Ukai Hydro	0.81	2.18	0.23	(1.18)	0.00	0.00	(0.05)	0.48	0.16	2.63
15	Kadana Hydro	0.39	3.29	0.10	1.13	0.00	0.00	(0.04)	1.66	0.20	6.74
	Total	(24.52)	47.43	(7.25)	(64.30)	8.20	(1.76)	(0.15)	13.86	(9.12)	(37.61)

Table 4.55: Consolidated gains/(loss) for FY 2010-11

(Rs. Crore)

Sr. No.	Power Station	Total controllable Gains/(losses) to be passed through	Total uncontrollable Gains/(losses) to be passed through	Total Gains/(losses) to be passed through
1	Ukai (1-5)	(22.30)	(53.97)	(76.27)
2	Gandhinagar 1-4	(17.48)	(34.95)	(52.43)
3	Gandhinagar-5*	0.00	0.11	0.11
4	Wanakbori 1-6 TPS	(9.76)	(24.46)	(34.22)
5	Wanakbori-7*	0.00	0.09	0.09
6	Sikka TPS	(3.40)	(24.69)	(28.08)
7	KLTPS 1-3	(13.64)	(14.52)	(28.17)
8	KLTPS 4	(2.65)	0.74	(1.91)
9	Dhuvaran (Oil)	(0.40)	20.81	20.41
10	Dhuvaran (Gas-1)*	0.00	0.05	0.05
11	Dhuvaran (Gas-2)	(1.45)	0.87	(0.58)
12	Utran Gas*	0.00	(2.01)	(2.01)
13	Utran Extension*	0.00	0.00	0.00
14	Ukai Hydro	(0.29)	2.63	2.34
15	Kadana Hydro	0.17	6.74	6.90
	Total gains/(losses)	(71.20)	(122.57)	(193.77)

4.8 Recoveries for FY 2008-09

Petitioners Submission

GSECL in its petition has claimed for the additional entitlement of Rs. 98.83 Crore for the FY 2008-09.

Commission’s Analysis

The Commission has not considered the gap of FY 2008-09 while determining the tariff for FY 2011-12 in its Tariff Order dated April 11, 2011. Commission had specified that the revenue gap for FY 2008-09 will be considered along with the net entitlement for the first MYT control period at the time of determination of tariff for FY 2012-13.

The commission approves the additional entitlement of Rs. 98.84 Crore as given in the table below.

Table 4.56: Recoveries for FY 2008-09

(Rs. Crore)

Sr. No.	Power Station	Gain/(Loss) to be passed through due to controllable variable expense	Gain/(Loss) to be passed through due to other controllable expense	Gain/(Loss) to be passed through due to uncontrollable expense	Total Gain/(Loss) to be passed through
1	Ukai (1-5)	(21.64)	1.86	(25.59)	(45.37)
2	Gandhinagar 1-4	2.79	(10.10)	16.31	9.00
3	Gandhinagar-5*	-	-	-	-
4	Wanakbori 1-6 TPS	(21.75)	(1.13)	(27.60)	(50.48)
5	Wanakbori-7*	-	-	-	-
6	Sikka TPS	(6.80)	(4.83)	(5.53)	(17.15)
7	KLTPS 1-3	(2.25)	(5.62)	(0.52)	(8.39)
8	Dhuvaran (Oil)	13.96	(1.08)	(2.88)	10.00
9	Dhuvaran (Gas-1)*	-	-	-	-
10	Dhuvaran (Gas-2)	-	-	-	-
11	Utran Gas*	-	-	-	-
12	Ukai Hydro	-	(1.93)	(1.22)	(3.15)
13	Kadana Hydro	-	(1.66)	8.37	6.71
	Total gains/(losses)	(35.69)	(24.50)	(38.66)	(98.84)

4.9 Recoveries for FY 2009-10

Petitioners Submission

GSECL in its petition has asked for the additional entitlement of Rs. 28.33 crore for the FY 2009-10. The commission vide mail dated 31.01.2012 had sought clarification from GSECL regarding the amount of Rs.28.33 crore, which GSECL has now revised to Rs. 22.33 crore in its reply to the commission.

Commission's Analysis

The Commission has not considered the gap of FY 2009-10 while determining the tariff for FY 2011-12 in its Tariff Order dated April 11, 2011. Commission had specified that the revenue gap for FY 2009-10 will be considered along with the net entitlement for the first MYT control period at the time of determination of tariff for FY 2012-13. However, Commission observed that the petitioner has claimed an additional amount of Rs. 6 Crore over and above the trued-up amount. The petitioner has stated that the Rs. 6 Crore is due to error in calculation in the Sr. no. 4 of Table 4.24 of Tariff Order dated April 11, 2011.

Commission has reviewed the calculation in the Table 4.24 of the tariff order dated April 11, 2011 and has found that there is a typological error in the Sr. no. 4, however, the total figure shown in the Table 4.24 is correct, hence there is not any impact in revenue gap.

Accordingly, Commission approves the amount of Rs. 22.33 Crore for FY 2009-10 and the same shall be considered during the tariff determination of FY 2012-13 as given in the table below.

Table 4.57: Recoveries for FY 2009-10

(Rs. Crore)

Sr.No.	Power Station	Gain/Loss to be passed through due to controllable variable expense	Gain/Loss to be passed through due to other controllable expense	Gain/Loss to be passed through due to uncontrollable expense	Total Gain/Loss to be passed through
1	Ukai (1-5)	(1.00)	(1.87)	(6.57)	(9.44)
2	Gandhinagar 1-4	5.33	(8.98)	19.94	16.29
3	Gandhinagar-5*	-	-	-	-
4	Wanakbori 1-6 TPS	(3.67)	6.99	(33.43)	(30.11)
5	Wanakbori-7*	-	-	-	-
6	Sikka TPS	1.33	(5.47)	(3.93)	(8.07)
7	KLTPS 1-3	(4.00)	(20.24)	(12.38)	(36.62)
8	KLTPS 4	(1.00)	2.53	26.88	28.41

Sr.No.	Power Station	Gain/Loss to be passed through due to controllable variable expense	Gain/Loss to be passed through due to other controllable expense	Gain/Loss to be passed through due to uncontrollable expense	Total Gain/Loss to be passed through
9	Dhuvaran (Oil)	(4.00)	(3.85)	15.82	7.97
10	Dhuvaran (Gas-1)*	-	-	-	-
11	Dhuvaran (Gas-2)	0.33	(2.42)	6.57	4.48
12	Utran Gas*	-	-	-	-
13	Utran Extension*	-	-	-	-
14	Ukai Hydro	-	0.57	(2.99)	(2.42)
15	Kadana Hydro	-	1.65	(2.87)	(1.22)
16	Insurance	-	-	8.39	8.39
17	Total gains/(losses)	(6.68)	(31.09)	15.43	(22.33)

The Commission thus approves the additional entitlement of Rs. 98.84 Crore for the FY 2008-09, Rs. 22.33 Crore for the FY 2009-10 and Rs. 193.77 Crore for FY 2010-11 and allows GSECL to recover the consolidated amount of Rs. 314.95 Crore in twelve equal monthly installments from GUVNL.

Further the Commission directs GSECL to recover the fixed charges for FY 2008-09, FY 2009-10 and FY 2010-11 on pro-rata basis for the actual PAF vis-a-vis the approved PAF during the truing up for the respective years.

4.10 Energy Cess for FY 2012-13

Petitioner's Submission

GSECL has submitted that the Government of Gujarat has imposed a green cess to be levied at 2 paise per unit of the electricity generated vide GOG Notification No. GHU/2011(98)/GST/10/2011/526/E dated 28th July 2011 according to the proviso to subsection (3) of section 20 of Gujarat Green Cess Act, 2011. GSECL has requested the commission to consider the energy cess for the determination of tariff for FY 2012-13.

Commissions Analysis

The commission has considered the submission of GSECL and approves the energy cess at Rs. 2 paise per unit of gross generation as given in the table below.

Table 4.58: Approved Green Cess for FY 2012-13

Sr. No.	Power Station	Approved Gross Generation (MUs)	Energy cess at 2 paise per unit of gross generation (Rs. Crore)
1	Ukai (1-5)	5585.00	11.17
2	Gandhinagar 1-4	4567.00	9.134
3	Gandhinagar-5*	1564.00	3.128
4	Wanakbori 1-6 TPS	9382.00	18.764
5	Wanakbori-7*	1564.00	3.128
6	Sikka TPS	1430.00	2.86
7	KLTPS 1-3	1413.00	2.826
8	KLTPS 4	493.00	0.986
9	Dhuvaran (Gas-1)*	747.00	1.494
10	Dhuvaran (Gas-2)	788.00	1.576
11	Utran Gas*	946.00	1.892
12	Utran Extension*	2628.00	5.256
13	Ukai 6**	2805.00	5.61
14	Total	33912.00	67.82

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4.11 Additional Depreciation

Petitioner's Submission

GSECL has submitted that the performance of GTPS Unit 1 and 2 is continuously deteriorating with time due to ageing. Looking at the technical aspects, the power plant is not expected to run optimally for more than three years starting FY 2011-12. GSECL further submitted that the details of gross block of fixed asset of Unit I and II was Rs. 512 Crore as on March 31, 2011 and GSECL had charged depreciation of

Rs. 151 Crore. GSECL has proposed to claim the balance net block of Rs. 361 Crore (Rs. 310 Crore is net of residual value) as on March 31, 2011.

GSECL has proposed to charge the depreciation of Rs. 103 Crore in the next three years against the depreciation of Rs. 27 Crore, which would have been charged in case the project could be operated optimally for a longer period. In line with the above, GSECL has requested the Commission to approve an additional depreciation of Rs. 76 Crore per annum for FY 2011-12, FY 2012-13 and FY 2013-14 for GTPS Unit 1-4.

Further, the GSECL has requested the Commission to approve an additional depreciation of Rs. 55 Crore per annum for FY 2011-12, FY 2012-13 and FY 2013-14 for Ukai III and IV in its letter dated 16.02.2012 as well as the in its presentation dated Jan 25, 2012.

Commission's Analysis

Commission has noted the details provided by the GSECL. Commission is of the view that the recovery mechanism of the GTPS unit 1 & 2 and Ukai III & IV will be considered when the station will be actually withdrawn from the services.

Chapter 5

Determination of Generation Charges for FY 2012-13

5.1 Introduction

This chapter deals with the determination of the fixed and variable charges for the FY 2012-13 for GSECL. Commission has considered the ARR approved in the MYT order dated April 11, 2011 for FY 2012-13 while determining the generation tariff for FY 2012-13.

5.2 Tariff for Ukai-6 Generating Station for FY 2012-13

5.2.1 Fixed Charges

Petitioners Submission

Ukai-6 Generating Station of 500 MW is expected to be commissioned on 1st July 2012. Since tariff for Ukai-6 has not been approved earlier, the same has been proposed by the GSECL in the ARR petition. The fixed charges proposed for Ukai-6 have been given in the table below:

Table 5.1: Proposed Fixed Charge for Ukai-6 for FY 2012-13

(Rs. Crore)

Sr. No.	Particulars	Amount
1	O&M Charges	76.80
2	Depreciation	124.92
3	Interest Charges	194.42
4	Return on Equity	82.74
5	Interest on Working capital	19.49
6	**Total Fixed Charges for the year**	**498.38**

Component-wise fixed charges is discussed as under.

Operations and Maintenance charges

Petitioner's Submission

GSECL has claimed O&M charges as Rs. 76.80 crores for Ukai-6 Unit for FY 2012-13 considering Rs. 15.36 lakhs/MW as per GERC (MYT) Regulations, 2011.

Commissions Analysis

As per the GERC (Multi-Year Tariff) Regulations, 2011 the normative O&M expense for a new coal based power station shall be computed as under:

Table 5.2: O&M expense norms of new coal based generating station for the control period

(Rs. Lakh/MW)

Particulars	O&M Expense Norms
FY 2011-12	14.53
FY 2012-13	15.36
FY 2013-14	16.24
FY 2014-15	17.17
FY 2015-16	18.15

Provided that the above norms shall be multiplied by the following factors for the additional Units whose COD occurs on or after 01.04.2011 in the same Station:

Additional 4^{th} and 5^{th} Units: 0.90

Now, Ukai-6 Unit is additional fifth unit at Ukai. Applying the above given norms, the normative O&M charges for Ukai-6 come to Rs. 69.12 crore for FY 2012-13.

Capitalization and Funding

Petitioner's Submission

The GSECL has submitted the expected project cost to be Rs. 2366 crores, out of which Rs. 591 crores will be financed from equity and the balance Rs. 1775 crores will be financed through debt.

Commission's Analysis

The Commission provisionally approves the equity of Rs. 591 crores which is proposed by GSECL as it is less than 30% of proposed capital cost of project. Accordingly, the Commission provisionally approves balance amount of Rs. 1775 crores as debt.

Depreciation

Petitioner's Submission

The GSECL has claimed Rs. 124.92 crores towards depreciation considering 5.28% rate of depreciation on closing GFA of Rs. 2366 crores.

Commission's Analysis

The Ukai-6 plant is likely to be commissioned on 01/07/2012, therefore, the opening GFA for plant for FY 2012-13 is NIL. The Commission has computed the average asset and depreciation as given in table below:

Table 5.3: Depreciation of Ukai-6 for FY 2012-13

(Rs. Crore)

Particulars	Amount
Opening GFA	0
Addition During the year	2366
Deductions	0
Closing GFA	2366
Average GFA	1183
Rate of depreciation	5.28%
Depreciation for the year	62.46

Accordingly, the Commission provisionally approves depreciation as Rs. 62.46 crores for FY 2012-13.

Interest and Finance Charges

Petitioner's Submission

The GSECL has claimed Rs. 194.42 crores as interest and finance charges considering the borrowing of Rs. 1775 crores at the interest rate of 11.53%. Computation of interest and finance charges by GSECL is given in table below:

Table 5.4: Proposed Interest Charges of Ukai-6 for FY 2012-13

(Rs. Crore)

Particulars	Amount
Opening loan	1775
Addition During the year	0
Repayments	177.5
Closing loan	1597.5
Average Loan	1686
Rate of Interest	11.53%
Interest for the year	194.42

Commission's Analysis

The Ukai-6 plant is likely to be commissioned on 01/07/2012, therefore, the Commission considers the opening loan for plant for FY 2012-13 as NIL. Further, as per GERC (MYT) Regulations, 2011, the repayment of the loan is equal to the depreciation allowed during the year. Accordingly, the repayment of the loan is considered as Rs. 62.46 crores. Computation of interest and finance charges, considering the interest rate of 11.53% as proposed by GSECL, is as shown in the table below:

Table 5.5: Approved Interest Charges of Ukai-6 for FY 2012-13

(Rs. Crore)

Particulars	Amount
Opening loan	0
Addition During the year	1775
Repayments	62.46
Closing loan	1712.54
Average Loan	856.27
Rate of Interest	11.53%
Interest for the year	98.72

Accordingly, the Commission provisionally approves interest and finance charges as Rs. 98.72 crores for FY 2012-13.

Return on Equity

Petitioner's Submission

The GSECL has claimed Rs. 82.74 crores as return on equity considering the average equity of Ukai-6 project as Rs. 591 crores.

Commission's Analysis

The Commission has computed the return on equity considering the opening equity as NIL and equity addition during the year as Rs. 591 crores, as detailed in table below:

Table 5.6: Approved Return on Equity of Ukai-6 for FY 2012-13

(Rs. Crore)

Particulars	Amount
Opening Equity	0
Addition During the year	591
Closing Equity	591
Average Equity	295.5
Rate of Return on Equity	14%
Return on Equity	41.37

The Commission provisionally approves the return on equity at Rs. 41.37 crores.

Interest on Working Capital

Petitioner's Submission

The GSECL has claimed Rs. 19.49 crores as interest on working capital as computed in table below:

Table 5.7: Proposed Interest on Working Capital of Ukai-6 for FY 2012-13

(Rs. Crore)

Particulars	Amount
Cost of Coal (for 1.5 months)	55.5
Cost of Secondary Fuel (for 2 months)	1.16

Particulars	Amount
O&M Expense (for 1 month)	6.4
Maintenance of Spares (at 1%)	23.66
Receivables (for 1 month)	78.53
Total Working Capital	165.25
Rate of Interest of Working Capital	11.75%
Interest on Working Capital	19.49

Commission's Analysis

On basis of approved O&M charges, the Commission has computed interest on working capital on basis of approved O&M charges and receivable as shown in table below;

Table 5.8: Approved Interest on Working Capital of Ukai-6 for FY 2012-13

(Rs. Crore)

Particulars	Amount
Cost of Coal (for 1.5 months)	55.5
Cost of Secondary Fuel (for 2 months)	1.16
O&M Expense (for 1 month)	5.76
Maintenance of Spares (at 1%)	23.66
Receivables (for 1 month)	61.66
Total Working Capital	147.74
Rate of Interest of Working Capital	11.75%
Interest on Working Capital	17.36

The Commission provisionally approves the interest on working capital as Rs. 17.36 crores for FY 2012-13.

On the basis of analysis of different components of fixed charges, the Commission provisionally approves the fixed cost for Ukai-6 for FY 2012-13 as shown in table below:

Table 5.9: Approved Fixed Charge for Ukai-6 for FY 2012-13

(Rs. Crore)

S.No.	Particulars	Amount
1	O&M Charge	69.12
2	Depreciation	62.46
3	Interest and Finance Charges	98.72
4	Return on Equity	41.37
5	Interest on Working Capital	17.36
	Total Fixed Charges for the year	**289.03**

GSECL should recover the fixed charges on pro-rata basis in accordance to date of commissioning of the Ukai-6 plant. The Commission will revisit the provisionally approved fixed charges for FY 2012-13 when the details of actual capital expenditure will be made available and approved by the Commission after the commissioning of the project.

5.2.2 Variable Charges

Petitioner's Submission

The detailed computation of the fuel cost and variable charges for Ukai-6 as submitted by GSECL along with the performance parameters has been given in Annexure XIII. The table below summarizes the performance parameters proposed by GSECL for Ukai-6.

Table 5.10: Proposed Performance Parameters for Ukai-6

S.No.	Particulars	Unit	Value
1	Plant Availability factor	%	85
2	Plant Load Factor	%	85
3	Auxiliary Consumption	%	8.5
4	Station Heat Rate	kCal/kWh	2425
5	Specific Oil Consumption	ml/kWh	1.00

The table below summarizes the fuel related parameters for Ukai-6 as claimed by GSECL.

Table 5.11: Proposed Fuel related parameters claimed for Ukai-6

S.No.	Particulars	Value
1	GCV of Coal (kcal/kwh)	4200
2	Calorific Value of Oil (kcal/l)	10469
3	Price of Coal (Rs/MT)	2730
4	Price of Oil (Rs/kl)	25775

Commission's Analysis

The PAF is as per the norms of the GERC (Multi-Year Tariff) Regulations, 2011. GSECL has taken the SHR at 2425 Kcal/kWh which is within the maximum limit stipulated by the Commission in GERC (Multi-Year Tariff) Regulations, 2011. The Commission provisionally approves the SHR at 2425 Kcal/kWh, however GSECL is directed to furnish the Design Heat Rate of the unit, Max Turbine Cycle Heat Rate (Kcal/kWh) and minimum boiler efficiency for Sub-Bituminous Indian Coal.

The commission provisionally approves the auxiliary energy consumption at 8.50% as claimed by GSECL for Ukai-6 however directs GSECL to clarify whether the boiler feed pumps of the plant are steam driven or electrically driven.

The secondary fuel oil consumption (SFC) as proposed by GSECL is 1.00 ml/kWh and is as per the norms of the GERC (Multi-Year Tariff) Regulations, 2011. The Commission thus provisionally approves the SFC as given by GSECL.

The Commission approves the fuel related parameters as furnished by GSECL and considers them as the base value for Ukai-6. Any difference in the fuel cost due to variation in above parameters is to be passed on to the beneficiaries as per the approved FPPPA formula. The variable charges computed by the Commission, based on the above given fuel related parameters have been given in Annexure XIV. The Commission thus provisionally approves the variable charges for Ukai-6 at Rs. 1.757/kwh.

5.3 Determination of Fixed Charges for FY 2012-13

The Table below summarizes the fixed charges as approved by the Commission for the FY 2012-13 in the MYT Order dated April 11, 2011. Detailed analysis of each expense head has already been provided in the MYT Order.

Table 5.12: Approved Fixed Charge for FY 2012-13

(Rs. Crore)

Sr.No.	Power Station	Depreciation	Interest & Finance Charges	Return on Equity	O&M Charges	Water Charges	SLDC Charges	Income Tax	Interest on Working Capital	Total Fixed Cost	Less: Non Tariff Income	Net Fixed Cost
1	Ukai (1-5)	58.79	57.51	24.99	136.24	0.00	0.46	1.00	26.69	305.68	25.27	280.41
2	Gandhinagar 1-4	66.38	30.23	30.66	96.49	30.47	0.36	2.00	28.62	285.22	19.62	265.60
3	Gandhinagar-5*	32.70	0.00	26.78	26.00	7.62	0.11	2.00	9.28	104.49	6.24	98.25
4	Wanakbori 1-6 TPS	85.60	63.47	58.38	139.42	40.57	0.68	4.00	51.02	443.15	37.45	405.70
5	Wanakbori-7*	31.75	0.00	26.00	26.00	7.12	0.11	2.00	8.85	101.83	6.24	95.59
6	Sikka TPS	30.40	14.33	20.44	48.88	3.89	0.13	2.00	9.04	129.10	7.13	121.97
7	KLTPS 1-3	59.66	34.11	43.54	76.62	0.60	0.12	3.00	11.98	229.62	6.39	223.23
8	KLTPS 4	35.17	37.98	28.42	17.15	0.00	0.04	1.00	9.13	128.88	2.23	126.65
9	Dhuvaran (Gas-1)*	16.50	5.47	12.87	16.00	0.00	0.06	1.00	2.80	54.70	3.18	51.52
10	Dhuvaran (Gas-2)	21.64	9.64	15.40	18.87	0.00	0.06	1.00	3.12	69.72	3.33	66.39
11	Utran Gas*	20.25	6.28	10.40	13.00	2.70	0.07	1.00	3.23	56.93	4.01	52.92
12	Utran Extension*	79.56	96.38	56.70	46.00	1.59	0.20	2.00	9.93	292.35	11.15	281.20
13	Ukai Hydro	7.35	4.80	8.12	12.14	0.00	0.16	1.00	0.53	34.09	9.07	25.02
14	Kadana Hydro	15.07	7.38	28.00	13.96	0.00	0.13	2.00	1.10	67.64	7.19	60.45
15	Ukai 6**	62.46	98.72	41.37	69.12				17.36	289.03		289.03
	Total	623.28	466.29	432.07	755.89	94.56	2.69	25.00	192.66	2592.43	148.50	2443.93

**GSECL should recover the fixed charges on pro-rata basis in accordance to date of commissioning

5.4 Determination of Energy Charges for FY 2012-13

Petitioners Submission

The table below gives the energy charges for FY 2012-13 proposed by GSECL as approved in the MYT order dated April 11, 2011.

Table 5.13: Approved Energy Charge for FY 2012-13

Sr. No.	Power Station	Approved energy charge for FY 2012-13 (Rs./Kwh)
1	Ukai (1-5)	1.71
2	Gandhinagar 1-4	2.38
3	Gandhinagar-5*	2.13
4	Wanakbori 1-6 TPS	2.11
5	Wanakbori-7*	2.02
6	Sikka TPS	2.77
7	KLTPS 1-3	1.18
8	KLTPS 4	1.11
9	Dhuvaran (Gas-1)*	2.41
10	Dhuvaran (Gas-2)	2.39
11	Utran Gas*	2.37
12	Utran Extension*	2.07

Government of Gujarat has imposed a Green Cess to be levied at 2 paise per unit of the electricity generated. GSECL has requested the Commission to consider the charges payable as Green Cess while determining the variable charges for FY 2012-13.

Commission's Analysis

The Commission has noted the submission of GSECL. The approved variable charges for FY 2012-13 have been given in Table 5.4 below:

Table 5.14: Energy Charges including Green Cess for FY 2012-13

Sr.No.	Power Station	Approved energy charge for FY 2012-13 (Rs./Kwh)	Approved Gross Generation for FY 2012-13 (MUs)	Additional Variable Cost (Rs. Cr.)	Approved Net Generation for FY 2012-13 (Mus)	Additional Variable Charge (Rs./Kwh)	New Energy Charge for FY 2012-13
	(1)	(2)	(3)	(4)	(5)	(6)	(2+6)
1	Ukai (1-5)	1.707	5585.00	11.17	5082.00	0.022	1.729
2	Gandhinagar 1-4	2.375	4567.00	9.13	4110.00	0.022	2.397
3	Gandhinagar-5*	2.130	1564.00	3.13	1423.00	0.022	2.152
4	Wanakbori 1-6 TPS	2.108	9382.00	18.76	8538.00	0.022	2.130
5	Wanakbori-7*	2.022	1564.00	3.13	1423.00	0.022	2.044
6	Sikka TPS	2.765	1430.00	2.86	1273.00	0.022	2.787
7	KLTPS 1-3	1.181	1413.00	2.83	1243.00	0.023	1.204
8	KLTPS 4	1.109	493.00	0.99	434.00	0.023	1.132
9	Dhuvaran (Gas-1)*	2.411	747.00	1.49	725.00	0.021	2.432
10	Dhuvaran (Gas-2)	2.388	788.00	1.58	764.00	0.021	2.409
11	Utran Gas*	2.367	946.00	1.89	908.00	0.021	2.388
12	Utran Extension*	2.071	2628.00	5.26	2549.00	0.021	2.092
13	Ukai 6**	1.757	2805.00	5.61	2567.00	0.022	1.779

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Chapter 6
Compliance of Directives

6.1 Compliance of Directives issued by the Commission

The Commission in its tariff order dated 31st March 2011 had issued certain directives to GSECL. The GSECL has submitted the status of compliance of directives issued by the Commission.

The compliance of directives and the new directives issued by the Commission in this tariff order are discussed below:

6.2 Directives

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

The status of implementation of R&M of Ukai TPS, unit no. 1 & 2 to be reported quarterly. The current status and scheduled programme for R&M and allied works of Wanakbori TPS 1-6 shall also be reported to the Commission quarterly.

Compliance:

➢ Latest status of R&M and LE works of 2 x 120 MW of Ukai TPS unit No.1 & 2 by M/s. BHEL:

Unit 1:

- Shutdown was taken on 06.09.2006.Machine synchronised on 24.05.08.
- Yet full load of 120 MW is not achieved. M/s BHEL yet to give PG Test.

Unit 2:

- Unit 2 shutdown taken on 12.08.08
- Unit -2 re-commissioned on 24.02.10
- Unit is running with 105 MW
- BHEL yet to give PG Test

➢ Further, GSECL has submitted that as Ukai Units 3, 4 & 5 and Wanakbori Units 1,2 & 3 had completed 20 years of their useful life, CEA had identified these units for R&M and LEP under document "Mission 2012, Power for all" during 11th plan period. Accordingly, planning for comprehensive RLA/LE study and R&M and LE works is done and anticipated expenditure for the same is projected in the MYT petition. Even after vigorous follow up with BHEL, OEM, comprehensive RLA/LE study could not be carried out as on date. Now, GSECL has decided to go for need based R&M instead of R&M and LEP during 11th plan period.

- GSECL further submits that as per MOU signed between CEA and M/S JCOAL (Japan Coal Energy Center), Units No. 1&2 of Wanakbori TPS and Unit no. 3 & 4 of Ukai TPS were identified for major R&M diagnosis study. From the aforesaid identified stations, Wanakbori TPS Unit no.1 has been selected for diagnosis purpose and work by M/s JCOAL is under progress. On receipt of the report, GSECL will take necessary steps and accordingly it will be informed to the Commission.

Commission's comments:

The status of R&M of Ukai TPS unit 1 & 2 is noted. Quarterly progress report on the same shall be submitted to the Commission.

The current status of the study by M/s JCOAL shall be submitted to the Commission on a quarterly basis and once the full report is received from JCOAL, GSECL should analyze the cost effectiveness of the proposed R&M and submit the same for the approval of the Commission.

6.2.2 Directive 2: Energy Audit

The energy audit shall be continued on the balance generating plant also and reports submitted to the Commission.

Compliance:

Some of the energy conservation measures, recommended by energy audit agency were implemented at Gandhinagar TPS unit-1, unit-2, unit-4 & unit-5, Wanakbori TPS unit-2, unit-4 & unit-6, KLTPS unit-2, Ukai unit-1, unit-2 & unit-4. But as the post verification of the energy conservation measures is pending at the above Power

Stations, the details of savings will be submitted as and when report of post verification will be received. The details of energy saving from 1st April 2011 to 30th June 2011 are submitted as Annexure XIII.

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Commission's comments:

The report on the energy audit comprises of energy savings achieved in Gandhinagar 1-4 only. Savings achieved by other projects should also be submitted to the Commission.

6.2.3 Directive 3: Quality of Coal

GSECL shall make all possible efforts to obtain adequate and better quality mine coal and adequate quantity of washed coal. The Commission has taken note of the submission made by the petitioner. The Commission has directed GSECL to improve upon its feedstock strategy so as to minimize its fuel cost and improve the quality of fuel obtained. An annual report in this regard summarizing the action taken during the year should be submitted by the petitioner along with its petition for annual tariff determination. Efforts are to be made to replace the balance mainline coal with washed coal.

Compliance:

GSECL vide its letter dated 21.07.2011 informed the Commission regarding the quality issue of Korea Rewa coal from SECL, viz. Korea Rewa coal being billed on higher grade while the quality received at TPS end is inferior resulting in higher fuel cost. GSECL has stated that they have received proposal for washing of Korea Rewa ROM D grade coal from SECL. It was also stated that GSECL is exploring possibility of washing coal on trial basis for Sikka TPS for approx. 25,000 MT per month. The Commission vide its letter dated 14.02.2012 asked the GSECL to submit the progress in this regard.

GSECL vide its letter dated 23.02.2012 submitted that GSECL has explored the possibility for washing of Korea Rewa D grade coal to achieve higher efficiency. However, washing of D grade coal is not feasible as it is not in line with MOEF guidelines. Further, the ash content in D grade coal is less than 34% as per the CIL/CEA guidelines and, therefore the committee has dropped the proposal.

GSECL has further submitted that to increase the quota of washed coal, The "Inter-Ministerial Task Force" constituted by Ministry of Coal recommended rationalization of coal sources for GSECL by reduction in the quantity of Korea-Rewa fields by 1-2 MMT and proportionate increase in Korba fields by swapping quantities of MPPGCL (Madhya Pradesh Power Generation Co. Ltd.). This increased allocation of Korba fields will be received after beneficiation (washing) of coal through present orders to the Washeries in Korba Area and higher quantum of washed coal will be received at GSECL Power Stations.

Commission's comments:

The action taken in getting the mainline coal replaced with washed coal is appreciated by the Commission. The Commission directs GSECL to make all efforts for replacing the balance mainline coal with washed coal.

6.2.4 Directive 4: Business Plan

GSECL has submitted a "Business Plan" for the control period of five (5) years i.e. from FY 2011-12 to FY 2015-16, in accordance with the directive of the Commission vide Letter No. GERC/MYT/Tariff-2010/1794 dated 12th November, 2010. It is observed that the assumptions used by GSECL in the Business Plan for projection of various components of ARR are as per the GERC Regulations, 2005 and MYT Regulations, 2007. As the MYT Regulations, 2011 are applicable for determination of tariff for the control period, FY 2011-12 to FY 2015-16 the projections for various components of ARR in the Business Plan should be as per the provisions of the MYT Regulations, 2011.

The GSECL is directed to revise the "Business Plan" for the control period FY 2011-12 to FY 2015-16 in line with the provisions in the MYT Regulations, 2011 and submit the same by August 2011 for approval of the Commission.

Compliance:

GSECL has submitted the revised Business Plan on 15th October 2011 in accordance with the various norms fixed in the MYT Regulations, 2011. However, the commission had vide letter dated 14th February, 2012 asked for additional details regarding the revised business plan as under:

- It is mentioned that 4 new projects are in advanced stage of planning: Ukai 6, Sikka Expansion, Dhuvaran (375 MW) and Wanakbori-8.
    - Kindly indicate as to whether PPAs have been signed for these projects or not?
    - The details of estimated capital cost for these projects may be submitted and approval of the Commission may be obtained well in time.
    - Two new projects at Sinor and Dholera have been planned. Kindly state as to whether any demand survey has been carried out for these projects or not?
    - Please indicate the readiness of GSECL to face the market in the scenario of competitive bidding for new projects.
    - An amount of Rs. 1428 crores have been proposed for Major and Minor R&M for 7 projects. Has the approval under Regulation 51.6 of the GERC (MYT) Regulations, 2011 been obtained for these Projects? If not, please ensure that necessary approvals are obtained at the earliest.

The reply submitted by GSECL vide letter dated 23.02.2012 is as under:

Business Plan for new projects viz. Ukai-VI, Sikka Expansion, Dhuvaran 375 MW and Wanakbori-VIII is:

- The estimated capital cost of Ukai-6 is around Rs. 2500 Crores including IDC and HOSC. The estimated capital cost of Sikka Unit 3 & 4 shall be around Rs. 2775 Crores including IDC and HOSC. Similarly, estimated cost of 375 MW Dhuvaran Gas Based Project shall be around Rs. 1450 Crores including IDC and HOSC and estimated capital cost of Wanakbori is around Rs. 4000 Crores excluding IDC and HOSC; as the orders are yet to be placed for the same.

- The estimated capital cost stated as above is exclusive of the trial run fuel cost, which will be charged on actual basis on achieving the commercial operation of each plant. The actual expenditure incurred on these projects up to 31st December 2011 is as under:

Table 6.1: Estimated Capital Expenditure

(Rs.Crore)

Particulars	Projects			
	Ukai TPS Unit 6	Sikka TPS Unit 3&4	Dhuvaran CCPP 3	Wanakbori 800 MW
EPC Expenditure	1579.57	1156.14	192.51	0
Other Parties	40.51	19.61	0	1.59
Interest (IDC)	218.08	126.35	0	0
HOSC	76.00	28.36	0	0
Total	1914.16	1330.46	192.51	1.59

The PPAs for the above projects were entered on 1-1-2011 and the same were approved by GERC on 27-6-2011, except Wanakbori 800 MW. The approval for capital cost will be submitted as per the GERC Norms.

- Two new projects at Sinor and Dholera have been planned, however capacity of the same will be decided as per the Demand Survey Report.

- GSECL have already entered into PPA for Sinor with GUVNL on 1-1-2011.

- As per the Regulation No. 51.6 of MYT Regulations, 2011, application is required to be filed for R&M before the Hon'ble Commission for approval. The proposal of R&M should be filed with a Detailed Project Report giving complete scope, justification, cost-benefit analysis estimated life extension from a reference dated, Financial package, phasing of expenditure, schedule of completion, reference price level, estimated completion cost, record of consultation with beneficiaries and any other information considered to be relevant by the Generating Company. GSECL submits hereby that Detailed Report as well as complete scope of the works for Unit No. 1 of WTPS is yet not received. M/s J-COAL have submitted certain comments. On receipt of the Detailed Project Report along with the required works to be carried out for R&M, GSECL can submit the proposal as per the Regulation 51.6 of MYT Regulations, 2011 for the Major R&M Works of Wanakbori Unit No. 1&2 and Ukai Unit No. 3&4. For Minor R&M, GSECL submits Justification and Benefit along with Petition of ARRs.

Commission's comments:

The Commission noted the submissions made by GSECL vide its letter dated 23.02.2012. The GSECL has not replied about readiness to face the market in the scenario of competitive bidding for new projects. GSECL should develop competency in all fields of planning and operations, and should come up as an efficient state owned generating company which is ready to compete with private generating companies. GSECL is directed to design a roadmap for the same and apprise the Commission of the action taken.

6.2.5 Directive 5: Sikka TPS

It is being stated that the units at Sikka TPS are operating at partial load due to vacuum problems during low tide period which adversely affects the Station Heat Rate, Auxiliary consumption and secondary fuel oil consumption. It is stated that the sea water canal is being de-silted and after de-silting of the canal adequate water would be available and the problem of low vacuum during low tide period will be solved.

GSECL is directed to submit a report on the schedule for completion of de-silting of the canal and also submit quarterly reports to the Commission till the de-silting is completed and on the performance of the units at Sikka thereafter. The first report on de-silting shall be submitted by May 2011.

Compliance:

The tenders for the de-silting of the sea water channel were invited and the tenders were opened on 23rd June 2011. Further, LOI is issued to the L-1 agency M/s IMS Ship Management Bombay vide this office letter No: GSECL/CEC/ STPS/Dredging/NS/925 dated. 12th October 2011. The work is expected to commence in the last week of December.

Commission's comments:

The action taken by GSECL is noted by the Commission. However, the compliance submitted by GSECL is silent about the report on the schedule of completion of the de-silting of the canal. GSECL is directed to apprise the Commission about the schedule for completion and submit the progress report of the de-silting work on a *quarterly basis. GSECL is also directed to submit the performance improvement report of the units at Sikka as soon as de-silting work is completed.*

6.2.6 Directive 6: KLTPS Unit- 4

It is submitted that this newly commissioned unit of KLTPS is not performing well due to teething problems encountered during stabilization.
GSECL is directed to draw a time-bound program for improvement of performance of KLTPS- 4 unit and submit the same within a period of three months.

Compliance:

KLTPS-IV was shut down from 16th January 2011 to 25th April 2011 to resolve the problems and the matter was taken up with OEM. After attending to the problems, the Unit achieved 75 MW load on 19th May 2011 and thereafter, it was stable and ran at about 68-70 MW for about a month. Also PG Test is under process and the efficiency report will be incorporated.

The major teething problems observed in KLTPS unit no. 4 during stabilization and PG test were as under:

- Condenser vacuum low problems on account of blocking of tubes due to detachment of anti corrosive coating “corro coat” inside CW inlet pipes
- Problems of Lignite Feeders – frequent breakdowns / failure of lignite feeder components e.g. chain, flight, etc
- Frequent leakages of seal pot and combustor Non metallic expansion joints
- Passing of spies valves

The Commission vide letter dated 14.02.2012 asked GSECL to submit the data of PLF, PAF, SHR, auxiliary consumption of KLTPS unit 4 from 19.05.2011 onwards on monthly basis and submit the updates regularly. Also, the progress in PG test and the final result after it is completed needs to be submitted to the Commission.

GSECL vide its letter dated 23.02.2012 submitted the PLF, PAF, SHR, auxiliary consumption of KLTPS unit 4 from 19.05.2011 onwards on monthly basis as shown below:

Table 6.2: Performance parameters of KLTPS Unit 4

KLTPS 4 Data					
	Performance Parameters				
	Auxiliary Consumption	PAF	PLF	SHR	Sp. Oil Cons.
	%	%	%	Kcal/kwh	ml/kwh
May '11	23.34	49.36	49.36	3194	5.16
June '11	22.24	54.41	54.41	3260	3.01
July '11	19.59	75.66	75.66	3200	7.53
August '11	21.83	64.96	64.96	3396	4.57
September '11	52.01	6.47	6.47	3620	22.9
October '11	26.52	43.33	43.33	3478	4.09
November '11	24.85	40.21	40.21	3390	5
December '11	17.41	85.89	85.89	3396	0.68
January '12	17.87	72.58	72.5	3336	0.24

The progress in PG test along with final results thereof shall be submitted to the Commission on completion of PG test for KLTPS 4.

Commission's comments:

The Commission noted the submission made for KLTPS-4. It is seen that there has been an improvement in the overall performance parameters. GSECL shall submit progress in PG test along with final results of the test to the Commission.

6.2.7 Directive 7: Water Charges

GSECL has stated that the O & M charges were increased during control period of 2008-09 to 2010-11 due to increase in water charges by the Government of Gujarat.

GSECL is directed to submit the station-wise details regarding quantity of water consumption, rate of water charges, total water charges, actual amount paid towards water charges for past five years within a period of three months.

Compliance:

The details regarding Water Charges as directed by the Commission were submitted vide Compliance for Qtr.-I of FY 2011-12 (i.e. Apr-Jun'11). The details as submitted by GSECL have been attached as Annexure XIV.GSECL has also submitted the details of water supply agreement with various government agencies for supply of water for its various power stations as per Annexure XV.

Commission's comments:

The information submitted by GSECL is insufficient to establish the increase in cost of water over a period of time as claimed by it. GSECL is once again directed to submit plant wise quantity of water purchased from various agencies and its cost over the period of five years. GSECL shall also submit the increase in the rate of water by the agencies concerned in the above period. A copy of government notification or such other document may be submitted to the Commission.

6.2.8 Directive 8: Cost Audit of generating stations

Apart from the Energy Audit being conducted at various thermal generating stations, the GSECL is directed to get 'Cost Audit' conducted, for each of the thermal generating stations to identify the areas where efficiency could be improved and costs reduced. If such cost audit is already being conducted the report for FY 2009-10 shall be submitted to the Commission along with the details of the action taken to improve the efficiency of the areas identified and reduce the costs.

Compliance:

The GSECL has submitted the cost audit report for FY 2009-10.

Commission's comments:

The mere submission of the statutory cost audit report is not appropriate compliance. GSECL is directed to do a comprehensive cost audit and identify the area where efficiency is improved and cost is reduced. This may be taken up in a phased manner, power station wise. Action taken should be reported.

6.3 New Directives

6.3.1 Directive 1: Details of damage caused to the Dhuvaran Gas 1

GSECL has submitted in its petition that a compressor was damaged in Dhuvaran Gas 1 due to which there was forced outage of 157 days in the plant. GSECL is directed to furnish the details of damage caused to the Dhuvaran Gas 1, and the action taken for restoration of the same. Further, it is also directed to submit the reasons as to why it took so long to restore the plant.

6.3.2 Directive 2: Transit loss of Coal

GSECL is directed to make claims for the transit loss with the railways and in the event of settlement of such claims, the benefit of such claims shall be passed on to the consumers.

6.3.3 Directive 3: Capital expenditure and parameters of Ukai 6

a. GSECL is directed to furnish the actual capital expenditure of Ukai 6 after it is commissioned.
b. GSECL is directed to furnish the Design Heat Rate, Max Turbine Cycle Heat Rate (Kcal/kWh) and minimum boiler efficiency for Sub-Bituminous Indian Coal of Ukai 6.
c. GSECL is directed to clarify whether the boiler feed pumps of the Ukai 6 plant are steam driven or electrically driven.

COMMISSION'S ORDER

The Commission approves the station-wise fixed charges and energy charges for the FY 2012-13 as outlined in the table below:

Sr. No.	Power Station	Annual Fixed Charges for FY 2012-13 (Rs. in Crore)	Energy Charges FY 2012-13 (Rs/KWH)
1	Ukai (1-5)	280.41	1.729
2	Gandhinagar (1-4)	265.60	2.397
3	Gandhinagar 5	98.25	2.152
4	Wanakbori (1-6)	405.70	2.130
5	Wanakbori 7	95.59	2.044
6	Sikka	121.97	2.787
7	KLTPS (1-3)	223.23	1.204
8	KLTPS 4	126.65	1.132
9	Dhuvaran (Gas 1)	51.52	2.432
10	Dhuvaran (Gas 2)	66.39	2.409
11	Utran Gas	52.92	2.388
12	Utran Extension	281.20	2.092
13	Ukai Hydro	25.02	-
14	Kadana Hydro	60.45	-
15	Ukai 6*	289.03	1.779
	Total	**2443.93**	

*Provisionally Approved and GSECL should recover the fixed charges on pro-rata basis in accordance to date of commissioning

This order shall come into force with effect from the 1st June 2012.

Sd/-	Sd/-	Sd/-
DR. M.K. IYER	**SHRI PRAVINBHAI PATEL**	**DR. P.K. MISHRA**
Member	Member	Chairman

Place: Ahmedabad

Date: 2nd June 2012

Annexure I: Fuel costs (Coal, Lignite & Secondary Oil) - Ukai TPS 1 to 5

GENERATION		
Ukai (1-5)	Units	FY 2010-11
		Approved
Gross Generation	MUs	5,381
Auxiliary Consumption	MUs	490
Net Generation	MUs	4,892
Capacity	MW	850
Availability Factor	%	74.00%
Plant Load Factor	%	72.27%
Auxiliary Consumption	%	9.10%
Station Heat Rate	kcal/kWh	2,775
Sp. Oil Consumption	ml/kWh	1.50
Gross Calorific Value of Coal	kcal/kg	3,873
Calorific Value of Oil	kcal/l	10,424
Overall Heat	G Cal	14,932,897
Heat from Oil	G Cal	84,141
Heat from Coal	G Cal	14,848,756
Transit losses	%	0.80%
Coal Blend		
A) Indigenous Coal	%	30.97%
B) Washed Coal	%	69.03%
c) Imported Coal	%	0%
Actual Oil Consumption	kl	8,072
Actual Coal Consumption	MT	3,833,916
A) Indigenous Coal	MT	1,196,939
B) Washed Coal	MT	2,646,552
c) Imported Coal	MT	-
Specific Coal Consumption	kg/kWh	0.71
Price of Coal		
A) Indigenous Coal	Rs/MT	2185
B) Washed Coal	Rs/MT	2262
c) Imported Coal	Rs/MT	-
Price of Oil	Rs/kl	

GENERATION		
Ukai (1-5)	**Units**	**FY 2010-11**
		Approved
		30,790
Coal Cost		
A) Indigenous Coal	Rs Crores	262
B) Washed Coal	Rs Crores	599
c) Imported Coal	Rs Crores	-
Total Coal Cost	Rs Crores	860
Oil Cost	Rs Crores	25
Total Fuel Cost	**Rs Crores**	**885**
Fuel Cost/Unit Gross	**Rs/kWh**	**1.64**
Fuel Cost/Unit Net	**Rs/kWh**	**1.81**

Annexure II: Fuel costs (Coal, Lignite & Secondary Oil) - Gandhinagar 1-4

GENERATION		
Gandhinagar (1-4)	Units	FY 2010-11
		Approved
Gross Generation	MUs	3,791
Auxiliary Consumption	MUs	389
Net Generation	MUs	3,402
Capacity	MW	660
Availability Factor	%	80.00%
Plant Load Factor	%	65.57%
Auxiliary Consumption	%	10.27%
Station Heat Rate	kcal/kWh	2,782
Sp. Oil Consumption	ml/kWh	1.50
Gross Calorific Value of Coal	kcal/kg	4,021
Calorific Value of Oil	kcal/l	10,478
Overall Heat	G Cal	10,546,548
Heat from Oil	G Cal	59,583
Heat from Coal	G Cal	10,486,965
Transit losses	%	0.80%
Coal Blend		
A) Indigenous Coal	%	23.85%
B) Washed Coal	%	59.35%
c) Imported Coal	%	16.80%
Actual Oil Consumption	kl	5,686
Actual Coal Consumption	MT	2,608,049
A) Indigenous Coal	MT	627,036
B) Washed Coal	MT	1,547,877
c) Imported Coal	MT	438,152.25
Specific Coal Consumption	kg/kWh	

GENERATION		
Gandhinagar (1-4)	**Units**	**FY 2010-11**
		Approved
		0.69
Price of Coal		
A) Indigenous Coal	Rs/MT	3028
B) Washed Coal	Rs/MT	2537
c) Imported Coal	Rs/MT	7,174.00
Price of Oil	Rs/kl	29,608
Coal Cost		
A) Indigenous Coal	Rs Crores	190
B) Washed Coal	Rs Crores	393
c) Imported Coal	Rs Crores	314
Total Coal Cost	Rs Crores	897
Oil Cost	Rs Crores	17
Total Fuel Cost	**Rs Crores**	**914**
Fuel Cost/Unit Gross	**Rs/kWh**	**2.41**
Fuel Cost/Unit Net	**Rs/kWh**	**2.69**

Annexure III: Fuel costs (Coal, Lignite & Secondary Oil) - Gandhinagar 5

GENERATION		
Gandhinagar 5*	Units	FY 2010-11
		Actuals
Gross Generation	MUs	1,603
Auxiliary Consumption	MUs	144
Net Generation	MUs	1,459
Capacity	MW	210
Availability Factor	%	80.00%
Plant Load Factor	%	87.15%
Auxiliary Consumption	%	9.00%
Station Heat Rate	kcal/kWh	2,460
Sp. Oil Consumption	ml/kWh	3.50
Gross Calorific Value of Coal	kcal/kg	4,104
Calorific Value of Oil	kcal/l	10,478
Overall Heat	G Cal	3,943,900
Heat from Oil	G Cal	58,795
Heat from Coal	G Cal	3,885,105
Transit losses	%	0.80%
Coal Blend		
A) Indigenous Coal	%	22.87%
B) Washed Coal	%	55.93%
c) Imported Coal	%	21.19%
Actual Oil Consumption	kl	5,611
Actual Coal Consumption	MT	946,663
A) Indigenous Coal	MT	218,248
B) Washed Coal	MT	529,469
c) Imported Coal	MT	200,597.92

GENERATION		
Gandhinagar 5*	**Units**	**FY 2010-11**
		Actuals
Specific Coal Consumption	kg/kWh	0.59
Price of Coal		
A) Indigenous Coal	Rs/MT	3012
B) Washed Coal	Rs/MT	2549
c) Imported Coal	Rs/MT	7,138.00
Price of Oil	Rs/kl	29,608
Coal Cost		
A) Indigenous Coal	Rs Crores	66
B) Washed Coal	Rs Crores	135
c) Imported Coal	Rs Crores	143
Total Coal Cost	Rs Crores	344
Oil Cost	Rs Crores	17
Total Fuel Cost	**Rs Crores**	**360**
Fuel Cost/Unit Gross	**Rs/kWh**	**2.25**
Fuel Cost/Unit Net	**Rs/kWh**	**2.47**

Annexure IV: Fuel costs (Coal, Lignite & Secondary Oil) - Wanakbori 1-6

GENERATION		
Wanakbori 1-6 TPS	Units	FY 2010-11
		Approved
Gross Generation	MUs	8,477
Auxiliary Consumption	MUs	763
Net Generation	MUs	7,714
Capacity	MW	1,260
Availability Factor	%	80.00%
Plant Load Factor	%	76.80%
Auxiliary Consumption	%	9.00%
Station Heat Rate	kcal/kWh	2,625
Sp. Oil Consumption	ml/kWh	1.00
Gross Calorific Value of Coal	kcal/kg	3,708
Calorific Value of Oil	kcal/l	10,531
Overall Heat	G Cal	22,251,802
Heat from Oil	G Cal	89,270
Heat from Coal	G Cal	22,162,532
Transit losses	%	0.80%
Coal Blend		
A) Indigenous Coal	%	34%
B) Washed Coal	%	59%
c) Imported Coal	%	6.31%
Actual Oil Consumption	kl	8,477
Actual Coal Consumption	MT	5,976,950
A) Indigenous Coal	MT	2,071,447
B) Washed Coal	MT	3,545,527
c) Imported Coal	MT	377,145.56
Specific Coal Consumption	kg/kWh	

GENERATION		
Wanakbori 1-6 TPS	Units	FY 2010-11
		Approved
		0.71
Price of Coal		
A) Indigenous Coal	Rs/MT	3034
B) Washed Coal	Rs/MT	2593
c) Imported Coal	Rs/MT	7,093.00
Price of Oil	Rs/kl	29,663
Coal Cost		
A) Indigenous Coal	Rs Crores	628
B) Washed Coal	Rs Crores	919
c) Imported Coal	Rs Crores	268
Total Coal Cost	Rs Crores	1,815
Oil Cost	Rs Crores	25
Total Fuel Cost	**Rs Crores**	**1,840**
Fuel Cost/Unit Gross	**Rs/kWh**	**2.17**
Fuel Cost/Unit Net	**Rs/kWh**	**2.39**

Annexure V: Fuel costs (Coal, Lignite & Secondary Oil) - Wanakbori 7

GENERATION		
Wanakbori 7 TPS*	Units	FY 2010-11
		Approved
Gross Generation	MUs	1,525
Auxiliary Consumption	MUs	137
Net Generation	MUs	1,387
Capacity	MW	210
Availability Factor	%	80.00%
Plant Load Factor	%	82.88%
Auxiliary Consumption	%	9.00%
Station Heat Rate	kcal/kWh	2,460
Sp. Oil Consumption	ml/kWh	3.50
Gross Calorific Value of Coal	kcal/kg	3,708
Calorific Value of Oil	kcal/l	10,531
Overall Heat	G Cal	3,750,665
Heat from Oil	G Cal	56,197
Heat from Coal	G Cal	3,694,468
Transit losses	%	0.80%
Coal Blend		
A) Indigenous Coal	%	35%
B) Washed Coal	%	59%
c) Imported Coal	%	6.52%
Actual Oil Consumption	kl	5,336
Actual Coal Consumption	MT	996,351
A) Indigenous Coal	MT	348,924
B) Washed Coal	MT	585,157
c) Imported Coal	MT	64,962.06

GENERATION		
Wanakbori 7 TPS*	Units	FY 2010-11
		Approved
Specific Coal Consumption	kg/kWh	0.65
Price of Coal		
A) Indigenous Coal	Rs/MT	3037
B) Washed Coal	Rs/MT	2597
c) Imported Coal	Rs/MT	7,089.00
Price of Oil	Rs/kl	29,663
Coal Cost		
A) Indigenous Coal	Rs Crores	106
B) Washed Coal	Rs Crores	152
c) Imported Coal	Rs Crores	46
Total Coal Cost	Rs Crores	304
Oil Cost	Rs Crores	16
Total Fuel Cost	**Rs Crores**	**320**
Fuel Cost/Unit Gross	**Rs/kWh**	**2.10**
Fuel Cost/Unit Net	**Rs/kWh**	**2.31**

Annexure VI: Fuel costs (Coal, Lignite & Secondary Oil) - Sikka TPS

GENERATION		
Sikka TPS	Units	FY 2010-11
		Approved
Gross Generation	MUs	1,175
Auxiliary Consumption	MUs	123
Net Generation	MUs	1,051
Capacity	MW	240
Availability Factor	%	75.00%
Plant Load Factor	%	55.88%
Auxiliary Consumption	%	10.50%
Station Heat Rate	kcal/kWh	3,045
Sp. Oil Consumption	ml/kWh	1.50
Gross Calorific Value of Coal	kcal/kg	3,741
Calorific Value of Oil	kcal/l	10,295
Overall Heat	G Cal	3,577,330
Heat from Oil	G Cal	18,142
Heat from Coal	G Cal	3,559,188
Transit losses	%	0.80%
Coal Blend		
A) Indigenous Coal	%	33%
B) Washed Coal	%	67%
c) Imported Coal	%	0.00%
Actual Oil Consumption	kl	1,762
Actual Coal Consumption	MT	951,400
A) Indigenous Coal	MT	312,466
B) Washed Coal	MT	641,434
c) Imported Coal	MT	-

GENERATION		
Sikka TPS	Units	FY 2010-11
		Approved
Specific Coal Consumption	kg/kWh	0.81
Price of Coal		
A) Indigenous Coal	Rs/MT	3665
B) Washed Coal	Rs/MT	2806
c) Imported Coal	Rs/MT	-
Price of Oil	Rs/kl	38,181
Coal Cost		
A) Indigenous Coal	Rs Crores	115
B) Washed Coal	Rs Crores	180
c) Imported Coal	Rs Crores	-
Total Coal Cost	Rs Crores	295
Oil Cost	Rs Crores	7
Total Fuel Cost	**Rs Crores**	**301**
Fuel Cost/Unit Gross	**Rs/kWh**	**2.56**
Fuel Cost/Unit Net	**Rs/kWh**	**2.86**

Annexure VII: Fuel costs (Coal, Lignite & Secondary Oil) - KLTPS 1-3

GENERATION		
KLTPS 1-3	Units	FY 2010-11
		Approved
Gross Generation	MUs	1,242
Auxiliary Consumption	MUs	149
Net Generation	MUs	1,093
Capacity	MW	215
Availability Factor	%	75.00%
Plant Load Factor	%	65.96%
Auxiliary Consumption	%	12.00%
Station Heat Rate	kcal/kWh	3,300
Sp. Oil Consumption	ml/kWh	2.50
Gross Calorific Value of Lignite	kcal/kg	2,890
Calorific Value of Oil	kcal/l	10,564
Overall Heat	G Cal	4,099,559
Heat from Oil	G Cal	32,809
Heat from Lignite	G Cal	4,066,750
Actual Oil Consumption	kl	3,106
Actual Lignite Coal Consumption	MT	1,407,180
Specific Lignite Coal Consumption	kg/kWh	1
Price of Lignite	Rs/MT	854
Price of Oil	Rs/kl	38,553
Cost of Lignite	Rs Crores	120
Oil Cost	Rs Crores	12
Total Fuel Cost	**Rs Crores**	**132**
Fuel Cost/Unit Gross	**Rs/kWh**	**1.06**
Fuel Cost/Unit Net	**Rs/kWh**	**1.21**

Annexure VIII: Fuel costs (Coal, Lignite & Secondary Oil) - KLTPS 4

GENERATION		
KLTPS 4*	Units	FY 2010-11
		Approved
Gross Generation	MUs	133
Auxiliary Consumption	MUs	16
Net Generation	MUs	117
Capacity	MW	75
Availability Factor	%	75.00%
Plant Load Factor	%	20.30%
Auxiliary Consumption	%	12.00%
Station Heat Rate	kcal/kWh	3,000
Sp. Oil Consumption	ml/kWh	2.50
Gross Calorific Value of Lignite	kcal/kg	2,890
Calorific Value of Oil	kcal/l	10,564
Overall Heat	G Cal	400,113
Heat from Oil	G Cal	3,522
Heat from Lignite	G Cal	396,591
Actual Oil Consumption	kl	333
Actual Lignite Coal Consumption	MT	137,229
Specific Lignite Coal Consumption	kg/kWh	1
Price of Lignite	Rs/MT	854
Price of Oil	Rs/kl	38,553
Cost of Lignite	Rs Crores	12
Oil Cost	Rs Crores	1
Total Fuel Cost	**Rs Crores**	**13**
Fuel Cost/Unit Gross	**Rs/kWh**	**0.98**
Fuel Cost/Unit Net	**Rs/kWh**	**1.11**

Annexure IX: Fuel costs (Gas) Dhuvaran Gas 1

GENERATION		
Dhuvaran (Gas 1)*	Units	FY 2010-11
		Approved
Gross Generation	MUs	264
Auxiliary Consumption	MUs	8
Net Generation	MUs	256
Capacity	MW	107
Availability Factor	%	80.00%
Plant Load Factor	%	28.25%
Auxiliary Consumption	%	3.00%
Station Heat Rate	kcal/kWh	1,950
Calorific Value of Gas	kcal/scm	9,617
Overall Heat from Gas	G Cal	514,498
Actual Gas Consumption	M. scm	53
Price of Gas	Rs/scm	13
Cost of Gas	Rs Crores	70
Total Fuel Cost	**Rs Crores**	**70**
Fuel Cost/Unit Gross	**Rs/kWh**	**2.64**
Fuel Cost/Unit Net	**Rs/kWh**	**2.72**

Annexure X: Fuel costs (Gas) Dhuvaran Gas 2

GENERATION		
Dhuvaran (Gas 2)*	**Units**	**FY 2010-11**
		Approved
Gross Generation	MUs	627
Auxiliary Consumption	MUs	20
Net Generation	MUs	608
Capacity	MW	112
Availability Factor	%	80.00%
Plant Load Factor	%	63.70%
Auxiliary Consumption	%	3.00%
Station Heat Rate	kcal/kWh	1,950
Calorific Value of Gas	kcal/scm	9,581
Overall Heat from Gas	G Cal	1,223,595
Actual Gas Consumption	M. scm	128
Price of Gas	Rs/scm	11
Cost of Gas	Rs Crores	140
Total Fuel Cost	**Rs Crores**	**140**
Fuel Cost/Unit Gross	**Rs/kWh**	**2.24**
Fuel Cost/Unit Net	**Rs/kWh**	**2.31**

Annexure XI: Fuel costs (Gas) Utran Gas

GENERATION		
Utran (Gas)*	Units	FY 2010-11
		Approved
Gross Generation	MUs	696
Auxiliary Consumption	MUs	28
Net Generation	MUs	668
Capacity	MW	135
Availability Factor	%	80.00%
Plant Load Factor	%	58.84%
Auxiliary Consumption	%	4.00%
Station Heat Rate	kcal/kWh	2,150
Calorific Value of Gas	kcal/scm	9,547
Overall Heat from Gas	G Cal	1,496,060
Actual Gas Consumption	M. scm	157
Price of Gas	Rs/scm	10
Cost of Gas	Rs Crores	157
Total Fuel Cost	**Rs Crores**	**157**
Fuel Cost/Unit Gross	**Rs/kWh**	**2.25**
Fuel Cost/Unit Net	**Rs/kWh**	**2.35**

Annexure XII: Fuel costs (Gas) Utran Extension

GENERATION		
Utran Extension*	**Units**	**FY 2010-11**
		Approved
Gross Generation	MUs	2,251
Auxiliary Consumption	MUs	72
Net Generation	MUs	2,179
Capacity	MW	375
Availability Factor	%	80.00%
Plant Load Factor	%	68.61%
Auxiliary Consumption	%	3.00%
Station Heat Rate	kcal/kWh	1,850
Calorific Value of Gas	kcal/scm	9,254
Overall Heat from Gas	G Cal	4,164,350
Actual Gas Consumption	M. scm	450
Price of Gas	Rs/scm	11
Cost of Gas	Rs Crores	495
Total Fuel Cost	**Rs Crores**	**495**
Fuel Cost/Unit Gross	**Rs/kWh**	**2.20**
Fuel Cost/Unit Net	**Rs/kWh**	**2.27**

Annexure XIII: Proposed Fuel costs Ukai-6

GENERATION		
Ukai 6	Units	FY 2012-13
		Projected
Gross Generation	MUs	2,805
Auxiliary Consumption	MUs	238
Net Generation	MUs	2,567
Capacity	MW	500
Availability Factor	%	85.00%
Plant Load Factor	%	85.00%
Auxiliary Consumption	%	8.50%
Station Heat Rate	kcal/kWh	2,425
Sp. Oil Consumption	ml/kWh	1.00
Gross Calorific Value of Coal	kcal/kg	4,200
Calorific Value of Oil	kcal/l	10,469
Overall Heat	G Cal	6,802,125
Heat from Oil	G Cal	29,366
Heat from Coal	G Cal	6,772,759
Transit losses	%	0.80%
Coal Blend		
A) Indigenous Coal	%	0.00%
B) Washed Coal	%	100.00%
c) Imported Coal	%	0.00%
Actual Oil Consumption	kl	2,805
Actual Coal Consumption	MT	1,612,562
A) Indigenous Coal	MT	-
B) Washed Coal	MT	1,625,566
c) Imported Coal	MT	-

GENERATION		
Ukai 6	**Units**	**FY 2012-13**
		Projected
Specific Coal Consumption	kg/kWh	0.57
Price of Coal		
A) Indigenous Coal	Rs/MT	0
B) Washed Coal	Rs/MT	2730
c) Imported Coal	Rs/MT	-
Price of Oil	Rs/kl	25,775
Coal Cost		
A) Indigenous Coal	Rs Crores	-
B) Washed Coal	Rs Crores	444
c) Imported Coal	Rs Crores	-
Total Coal Cost	Rs Crores	444
Oil Cost	Rs Crores	7
Total Fuel Cost	**Rs Crores**	**451**
Fuel Cost/Unit Gross	**Rs/kWh**	**1.61**
Fuel Cost/Unit Net	**Rs/kWh**	**1.76**

Annexure XIV: Provisionally Approved Fuel Cost for Ukai-6

GENERATION		
Ukai 6	Units	FY 2012-13
		Provisionally Approved
Gross Generation	MUs	2,805
Auxiliary Consumption	MUs	238
Net Generation	MUs	2,567
Capacity	MW	500
Availability Factor	%	85.00%
Plant Load Factor	%	85.00%
Auxiliary Consumption	%	8.50%
Station Heat Rate	kcal/kWh	2,425
Sp. Oil Consumption	ml/kWh	1.00
Gross Calorific Value of Coal	kcal/kg	4,200
Calorific Value of Oil	kcal/l	10,469
Overall Heat	G Cal	6,802,125
Heat from Oil	G Cal	29,366
Heat from Coal	G Cal	6,772,759
Transit losses	%	0.80%
Coal Blend		
A) Indigenous Coal	%	0.00%
B) Washed Coal	%	100.00%
c) Imported Coal	%	0.00%
Actual Oil Consumption	kl	2,805
Actual Coal Consumption	MT	1,612,562
A) Indigenous Coal	MT	-
B) Washed Coal	MT	1,625,566
c) Imported Coal	MT	-

GENERATION		
Ukai 6	**Units**	**FY 2012-13**
		Provisionally Approved
Specific Coal Consumption	kg/kWh	0.57
Price of Coal		
A) Indigenous Coal	Rs/MT	0
B) Washed Coal	Rs/MT	2730
c) Imported Coal	Rs/MT	-
Price of Oil	Rs/kl	25,775
Coal Cost		
A) Indigenous Coal	Rs Crores	-
B) Washed Coal	Rs Crores	444
c) Imported Coal	Rs Crores	-
Total Coal Cost	Rs Crores	444
Oil Cost	Rs Crores	7
Total Fuel Cost	**Rs Crores**	**451**
Fuel Cost/Unit Gross	**Rs/kWh**	**1.608**
Fuel Cost/Unit Net	**Rs/kWh**	**1.757**

Annexure XV: ENERGY SAVING DETAILS FOR THE PERIOD 01-04-2011 to 30-06-2011

ENERGY SAVING DETAILS FOR THE PERIOD 01-04-2011 TO 30-06-2011				
SR. NO.	RECOMMENDATION	ACTION TAKEN	EXPECTED SAVING IN KWH/ANNUM	EXPECTED SAVING IN RS. (LAKHS)/ANNUM
	GANDHINAGAR TPS #1			
1	RE-INSULATE WEAK AND EXPOSED HEATING AREA OF BOILER SYSTEM AND STEAM LINE	INSULATION WORK CARRIED OUT: WHOLE SURFACE AREA HPH-6 EXT, LPH-1 SURFACE, EXT TO LPH-1, LPH-3, DEARATOR WHOLE SURFACE AREA, TOP-BOTTOM SIDE, VALVE POSITION AREA.	78.96 T COAL	1.5792
		TOTAL	78.96 T COAL	1.5792

SR. NO.	RECOMMENDATION	ACTION TAKEN	EXPECTED SAVING IN KWH/ANNUM	EXPECTED SAVING IN RS. (LAKHS)/ANNUM
	GANDHINAGAR TPS #2			
1	PERFORMANCE IMPROVEMENT OF CHILLER COMPRESSORS - 1 & 2 IN AC PLANT	CLEANING OF CONDENSER & CHECKING OF GAS PRESSURE IS BEING DONE REGULARLY. AHU-1 MAINTENANCE IS CARRIED OUT. COMPRESSOR-1&2 OVERHAULING WORK IS DONE. IN COMPRESSOR-1&2, CONNECTING ROD ASSEMBLY, SUCTION VALVE SPRING, SHAFT SEAL, OIL PUMP ASSLY., CYLINDER LINER ASSLY., UNLOADER PISTON ASSLY., PISTON RING SETS, SUCTION STOP VALVE, ANGLE VALVE ETC. REPLACED.	43800	0.88
		TOTAL	43800	0.88

SR. NO.	RECOMMENDATION	ACTION TAKEN	EXPECTED SAVING IN KWH/ANNUM	EXPECTED SAVING IN RS. (LAKHS)/ANNUM
	GANDHINAGAR TPS #3			
1	PERFORMANCE IMPROVEMENT OF CE PUMP-3B.	PUMP FLOAT ADJUSTED.	372893	7.46
2	REPLACEMENT OF EXISTING CHILLED WATER PUMPS WITH LOWER SIZE NEW PUMP IN AC PLANT	EXISTING CHILLED WATER PUMP - A REPLACED WITH NEW PUMP HAVING FLOW - 50 M3/HR, HEAD - 18 MTR. & MOTOR RATING - 5.5 KW	34076	0.68
		TOTAL	406969	8.14
	GANDHINAGAR TPS #4			
1	PERFORMANCE IMPROVEMENT OF STATOR WATER CW PUMPS	OVERHAULING OF PUMP - A & B IS CARRIED OUT AND SPARES LIKE SHAFT, SLEEVE & SEAL REPLACED IN BOTH PUMPS.	5259	0.11
		TOTAL	5259	0.11

Annexure XVI: DETAILS OF WATER CHARGES FOR FIVE YEARS: (FROM FY 06-07 To FY 10-11)

Sr. No.	Name of Station	Year	Qty. of Water Cu. Mt.	Total Amount Paid (Rs. Cr.)	Rs. / Cu. Mt.
1	**Ukai TPS**	2006-07		0	-
		2007-08		0	-
		2008-09		0	-
		2009-10		0	-
		2010-11		0	-
2	**Gandhinagar 1-4**	2006-07	25043360	8.58	4.57
		2007-08	28354695	13.98	4.93
	Qty.& Rate are for	2008-09	28730070	36.98	16.09
	GTPS 1-5 as a whole	2009-10	25451813	28.89	14.96
		2010-11	26118273	24.5	13.35
3	**Gandhinagar 5**	2006-07		2.87	-
		2007-08		0	-
		2008-09		9.24	-
		2009-10		9.19	-
		2010-11		10.36	-
4	**Wanakbori 1-6**	2006-07	47284878	24.03	6.78
		2007-08	41638350	33.68	9.56
	Qty.& Rate are for	2008-09	39817771	32.44	9.31
	WTPS 1-7 as a whole	2009-10	39878735	40.57	11.96
		2010-11	38700740	43.17	12.84
5	**Wanakbori 7**	2006-07		8.01	-
		2007-08		6.14	-
		2008-09		4.63	-
		2009-10		7.11	-
		2010-11		6.52	-
6	**Sikka**	2006-07	1908336	4.03	0.20
		2007-08	1216703	1.21	0.05
		2008-09	839100	6.03	0.23
		2009-10	895081	3.89	0.16
		2010-11	900204	3.74	0.16
7	**KLTPS 1-3**	2006-07	5879565	1.52	2.59
		2007-08	7560091	1.32	1.75

Sr. No.	Name of Station	Year	Qty. of Water Cu. Mt.	Total Amount Paid (Rs. Cr.)	Rs. / Cu. Mt.
	Qty. is for	2008-09	6174432	0.51	0.83
	KLTPS as a whole	2009-10	6119241	0.45	1.00
		2010-11	7066862	0.95	16.29
8	**KLTPS 4**	2006-07			-
		2007-08		0	-
		2008-09		0	-
		2009-10		0.16	-
		2010-11		10.56	-
9	**Dhuvaran CCPP-I**	2006-07	2049721	1.99	19.37
		2007-08	1741397	1.72	19.75
	Qty. is for	2008-09	1790005	1.43	15.98
	Dhuvaran CCPP-I	2009-10	1748601	0.65	7.66
	& CCPP-II total	2010-11	1466917	0.46	10.70
10	**Dhuvaran CCPP-II**	2006-07		1.98	-
		2007-08		1.72	-
		2008-09		1.43	-
		2009-10		0.69	-
		2010-11		1.11	-
11	**Utran GBPS-I**	2006-07	543510	0.43	7.91
		2007-08	960243	0.87	9.06
		2008-09	1357381	1.36	10.02
		2009-10	3416511	2.71	12.59
		2010-11	5213704	3.94	12.10
12	**Utran GBPS-II**	2006-07			-
		2007-08		0	-
		2008-09		0	-
		2009-10		1.59	-
		2010-11		2.37	-
13	**Ukai Hydro**	2006-07			-
		2007-08			-
		2008-09			-
		2009-10			-
		2010-11			-
14	**Kadana Hydro**	2006-07			-
		2007-08			-
		2008-09			-
		2009-10			-

Sr. No.	Name of Station	Year	Qty. of Water Cu. Mt.	Total Amount Paid (Rs. Cr.)	Rs. / Cu. Mt.
		2010-11			-
15	**Dhuvaran Oil**	2006-07			-
		2007-08		3.44	-
		2008-09		2.85	-
		2009-10		1.34	-
		2010-11			-
16	**Overall**	2006-07	82709370	53.44	6.46
		2007-08	81471479	64.08	7.87
		2008-09	78708759	96.9	12.31
		2009-10	77509982	97.24	12.55
		2010-11	79466701	107.68	13.55

Note: Water Charges are as per the Balance Sheet of the respective year.

Annexure XVII: Water Supply Details

Sr.No	Name of Power Station	Agreement with	Agreement Expiry Date	Quantity of water supply as per agreement	Rate of Water Supply Rs per 1000 Lit.	Remarks
1	Gandhinagar	GWIL	14-10-2018	103 MLD	14.00	
2	Wanakbori	IRRIGATION	28-10-2013	40.82 MGD[@185.52 MLD]	13.31	
3	Ukai	IRRIGATION			13.31	
4	Dhuvaran	IRRIGATION	Renewal every year	40.0 MLD	13.31	
5	Sikka	IRRIGATION	23-09-2015	4.545 MLD	13.31	
		GWIL		3.9 MLD	15.0	
6	Utran	IRRIGATION		56.23 MLD	13.31	
7	Pannadhro			Nil		
8	SSNNL			Nil		