

GUJARAT ELECTRICITY REGULATORY COMMISSION



Tariff Order

Truing up for FY 2010-11 and
Determination of Tariff for FY 2012-13

For

**Gujarat Energy Transmission Corporation Limited
(GETCO)**

Case No. 1152 of 2011

7th April, 2012

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(GERC)**

AHMEDABAD

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ABBREVIATIONS

A&G	ADMINISTRATION AND GENERAL
APR	ANNUAL PERFORMANCE REVIEW
ARR	AGGREGATE REVENUE REQUIREMENT
CAPEX	CAPITAL EXPENDITURE
CERC	CENTRAL ELECTRICITY REGULATORY COMMISSION
CKT-KM	CIRCUIT KILOMETER
CPP	CAPTIVE POWER PLANT
DGVCL	DAKSHIN GUJARAT VIJ COMPANY LIMITED
FY	FINANCIAL YEAR
GEB	GUJARAT ELECTRICITY BOARD
GERC	GUJARAT ELECTRICITY REGULATORY COMMISSION
GETCO	GUJARAT ENERGY TRANSMISSION CORPORATION LIMITED
GFA	GROSS FIXED ASSETS
GIPCL	GUJARAT INDUSTRIES POWER COMPANY LIMITED
GoG	GOVERNMENT OF GUJARAT
GSECL	GUJARAT STATE ELECTRICITY CORPORATION LIMITED
GUVN	GUJARAT URJA VIKAS NIGAM LIMITED
HRA	HOUSE RENT ALLOWANCE
HVDC	HIGH VOLTAGE DIRECT CURRENT
IPTC	INDEPENDENT POWER TRANSMISSION COMPANY
kV	KILO VOLT
kVA	KILO VOLT AMPERE
kVAH	KILO VOLT AMPERE HOUR
kWh	KILO WATT HOUR
MAT RATE	MINIMUM ALTERNATE TAX RATE
MGVCL	MADHYA GUJARAT VIJ COMPANY LIMITED
MU	MILLION UNITS
MVA	MEGA VOLT AMPERE
MW	MEGA WATT
MYT	MULTI-YEAR TARIFF
NTPC	NATIONAL THERMAL POWER CORPORATION
O&M	OPERATIONS & MAINTENANCE
P.A.	PER ANNUM
PGCIL	POWER GRID CORPORATION OF INDIA LIMITED
PGVCL	PASCHIM GUJARAT VIJ COMPANY LIMITED
PLR	PRIME LENDING RATE
R&M	REPAIRS AND MAINTENANCE
RoE	RETURN ON EQUITY
SBAR	STATE BANK ADVANCE RATE
SLDC	STATE LOAD DESPATCH CENTRE
T.O.	TARIFF ORDER
UGVCL	UTTAR GUJARAT VIJ COMPANY LIMITED
UMPP	ULTRA MEGA POWER PROJECTS
Wt. Av.	WEIGHTED AVERAGE



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

Case No. 1152/2011

Date of the Order: 07/04/2012

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 Energy Transmission Corporation Limited (hereinafter referred to as 'GETCO' or 'petitioner') has filed 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 transmission fees and charges for the FY 2012-13 on 25th November, 2011.

The Commission admitted the petition on 17th December, 2011.



1.2 Gujarat Energy Transmission Corporation Limited (GETCO)

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 Energy Transmission Corporation Limited (GETCO). Assets and liabilities (gross block, loans and equity) as on the date mentioned in the notification have been considered by the Commission in line with the Financial Restructuring Plan (FRP) as approved by Government of Gujarat.

1.3 Commission's order for the first control period

Gujarat Energy Transmission 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. 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 GETCO, the objections by various stakeholders, response of GETCO, 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.

1.4 Commission's order for the second control period

Gujarat Energy Transmission 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 March 22, 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 GETCO, the objections by various stakeholders, response of GETCO, issues raised during the public hearing and all other relevant material, issued the Multi-Year Tariff order on 31st March 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 regulation, 2011.

1.5 Admission of the current petition and the public hearing process

The Petitioner submitted the current petition for ‘Truing up’ of FY 2010-11, and determination of tariff for FY 2012-13. The Commission admitted the above petition (Case No. 1152/2011) on 17th December, 2011.



In accordance with Section 64 of the Electricity Act 2003, the Commission directed GETCO to publish its application in the abridged form to ensure public participation. The Public Notice was issued in the following newspapers on 25th 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 also placed the public notice and the petition on the website (www.getcogujarat.com) 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 only one organization - the Gondal Chamber of Commerce and Industry, Gondal. The Commission examined the objections / suggestions received and fixed the date for public hearing for GETCO on 24th February, 2012 at Commission's Office, Ahmedabad and subsequently a communication was sent to the objector to take part in the public hearing process for presenting its views in person before the Commission. The public hearing was conducted in Commission's Office in Ahmedabad as scheduled on the above date. The objector could not attend the public hearing, but intimated that it had already given a written submission, which may be considered during the hearing. 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.

A short note on the main issues raised by the objectors in the written submissions in respect to the petition along with the response of GETCO and the Commission's views on the responses are briefly given in Chapter 3.

1.6 Contents of this order

The order is divided into six chapters as under:

1. The first chapter provides the 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 GETCO's True Up Petition.



3. The third chapter provides a brief account of the public hearing process, including the objections raised by various stakeholders, GETCO'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 Transmission charges for FY 2012-13
6. The sixth chapter deals with the compliance of directives.

1.7 Approach of this order

The MYT 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 also approved the 'Truing up' for the year 2008-09 in the Tariff order dated 31st March 2010 and the 'Truing up' for the year 2009-10 in the MYT order dated 31st March 2011.

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

In this order the Commission has considered the 'Truing up' for the FY 2010-11 and the determination of tariff for the FY 2012-13, also considering the impact of the truing up for FY 2008-09 and FY 2009-10.

The Commission has undertaken 'Truing up' for the FY 2010-11 based on the submissions of the petitioner. The Commission has undertaken the computation of gains and losses for the FY 2010-11 based on 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 as per the Tariff order unless the Commission considers that 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 31st March 2011.



Chapter 2

A Summary of GETCO's Petition

2.1 Actuals for FY 2010-11 submitted by GETCO

Gujarat Energy Transmission Corporation Limited (GETCO) submitted the petition seeking approval of True Up for Aggregate Revenue Requirement of FY 2010-11 and determination of transmission charges for the FY 2012-13. The transmission charges are to be recovered from the transmission system users as per the GERC Regulations in force.

The details of expenses under various heads are given in Table 2.1 below:

Table 2.1: Actuals claimed by GETCO for FY 2010-11

(Rs. Crore)

Components of ARR	Approved as per Tariff Order 2010-11	Actuals 2010-11
O&M Expense	549.69	623.87
Employee Cost	398.71	443.99
A&G Cost	47.48	55.61
R&M Cost	103.20	124.27
Depreciation	405.52	369.47
Interest & Finance Charges	278.19	232.41
Interest on Working Capital Loans	38.63 *	37.13
Return on Equity	315.44	276.28
Other debits Net prior period expenses	0.00	10.11
Less:		
Expenses Capitalised	193.03 *	171.77
Non-Tariff Income	77.83	104.96
Add:		
Provision for tax	48.73	55.12



Gujarat Energy Transmission Corporation Limited
Truing Up for FY 2010-11 and
Determination of Tariff for FY 2012-13

Components of ARR	Approved as per Tariff Order 2010-11	Actuals 2010-11
Incentive for target availability	4.95	33.35
Annual Revenue Requirement	1,356.44	1,361.01

* REVISED, CONSIDERING WEIGHTED AVERAGE OF TARIFF ORDER OF FY 2010-11 AND REVIEW ORDER DATED FEBRUARY, 2011

2.2 Proposed Transmission Charges for FY 2012-13

The proposed transmission charges per MW per day based on the capacity to be handled and charges per kWh based on energy likely to be handled would be as under.

Table 2.2: Proposed Transmission Tariff/charges for FY 2012-13

Particulars	Unit	FY 2012-13
Approved ARR for FY 2012-13 as per the order issued by Hon'ble Commission on 31st March, 2011	Rs. Crore	1,996.00
Add: Revenue gap/(surplus) for FY2010-11	Rs. Crore	35
Carrying cost on recoveries for FY 2010-11	Rs. Crore	4
Add: Revenue gap/(surplus) for FY2009-10	Rs. Crore	(2.76)
Carrying cost on recoveries for FY 2009-10	Rs. Crore	(0.59)
Add: Revenue gap/(surplus) for FY2008-09	Rs. Crore	7.14
Carrying cost on recoveries for FY 2008-09	Rs. Crore	2.43
Additional tax paid for previous years based on demand raised by the IT Department	Rs. Crore	48.04
Total recoveries of the past to be addressed in the determination of tariff for FY 2012-13	Rs. Crore	92.84
ARR after considering gap of previous years	Rs. Crore	2,088.84
Total MW allocation as per the order issued by Hon'ble Commission on 31st March, 2011	MW	18,510.00
Mus transferred at 80% PLF	MU	129,718.00
Transmission Tariff(Rs/MW/day)	(Rs/MW/day)	3,091.00
Transmission Tariff(Paise/unit)	(Paise/unit)	16.10



2.3 Request of GETCO:

1. To admit the petition for Truing up for FY 2010-11, and approval of revised estimated tariff for FY 2012-13.
2. To approve True-Up for FY 2010-11 and allow sharing of losses with the Consumers as per sharing mechanism.
3. To approve methodology for recovery of net annual transmission charges as given in paragraph 5.1.1 of the petition.
4. To consider incentive on the basis of target availability of 98% as mentioned in GERC (Terms and Conditions of Tariff Regulations) 2007.
5. To grant any other relief as the Commission may consider appropriate.
6. To allow further submissions, addition and alteration to this Petition as may be necessary from time to time.
7. To 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 GETCO 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 GETCO for True Up of FY 2010-11, and determination of Tariff for FY 2012-13 under MYT Regulations, 2011 two consumers / organizations have filed their objections / suggestions in writing. Detail of the consumers / organizations who have submitted their objection is provided in Table 3.1

Table 3.1: List of Objectors

Sr. no.	Name
1.	Gondal Chamber of Commerce and Industry
2.	GUVNL

Objection 1: Review petition filed by the petitioner

The petitioner was not required to file the present petition proposing hike for transmission charges as the transmission charges are recently increased by the Commission in the GERC review order (Feb 3, 2012)

Response of GETCO

GETCO has submitted that a review petition was filed against GERC order no. 1062 of 2011 within the framework of GERC regulations. The review petition was based on the legitimate claims. GETCO has further submitted that the increase in tariff is decided by the Commission based on the GERC regulations, codes and procedures.



Commission's view

As per MYT regulations true up is required at the end of each Financial Year and therefore GETCO has submitted the present petition. Further, Commission has analyzed all the components of ARR while determining the tariff for FY 2012-13.

Objection 2: Function of GETCO

Restore the erstwhile GEB and abolish GUVNL and its associated companies.

Response of GETCO

The functions and system of working of GETCO as Transmission Licensee/State Transmission Utility (STU) are well defined in the Electricity Act 2003/GERC Regulations and the GETCO is following the same.

Commission's view

Commission has noted the response of GETCO.

Objection 3: Capital Expenditure

The petitioner has incurred a capital expenditure of Rs. 1849.46 Crore against the approved capital expenditure of Rs. 2036 Crore and similarly has capitalized Rs. 1347.43 Crore as against the approved capitalization of Rs. 1542.93 Crore which indicates that the petitioner has not completed certain projects.

Response of GETCO

In its response GETCO has stated that during FY 2010-11, it incurred capital expenditure of Rs. 1849.46 Crores as against the approved capex of Rs 1975.04 Cr (Tariff Order No. 1062 of 2011). The actual capex incurred is very much in line with the approved capex and out of the total capex, GETCO capitalized Rs. 1347.43 Crores as against the approved capitalization of Rs. 1542.93 Crores emphasising the point that it has not over capitalised.

Commission's view

Commission has noted the viewpoint of the objector and the response of GETCO.



Objection 4: O&M Expenses

The petitioner has claimed O&M expenses amounting to Rs. 623.86 Crore as against the approved O&M expenses of Rs. 549.69 Crore by the Commission. The Commission should not approve any increase in the O&M expenses as these costs are controllable in nature.

Response of GETCO

GETCO has stated that Employee Expenses should be considered uncontrollable since the salaries, dearness allowances, increments and other benefits given to the employees are payable as per the government guideline and notifications, and Repairs and Maintenance are necessary and essential expense.

Commission's view

Commission has noted the viewpoint of the objector and the response of GETCO. Appropriate treatment to the O&M expense has been given by the Commission while truing up for FY 2010-11.

Objection 5: Interest & Finance Charges

The petitioner has claimed discount given to users of the transmission system for timely payment of bills. As the Commission has already allowed interest on working capital considering two months receivables, the Commission should not approve, as other finance charges, the amount of discount given by the petitioner.

Response of GETCO

Discount on timely payment is a legitimate expense and allowed as per the Regulations and hence the entire amount needs to be passed through.

Commission's view

Commission has noted the viewpoint of the objector and the response of GETCO. The Commission has addressed this issue while truing up for FY 2010-11.

Objection 6: Incentive on Higher Transmission System Availability

The petitioner has claimed incentive of Rs. 33.35 Crore towards availability of transmission system (99.69%) as compared to the target availability of 98% as given in



the GERC (Terms and Conditions of Tariff), Regulations, 2005. The Commission should consider target availability as specified in the MYT Order dated 17.1.2009 instead of target availability considered by the petitioner.

Response of GETCO

GETCO is entitled to an incentive on availability of the transmission system being greater than the target availability specified in the Regulations as 98% and the same has been submitted in the true-up petition.

Commission's view

Commission has noted the viewpoint of the objector and the response of GETCO. The Commission has addressed this issue while truing up for FY 2010-11.

Objection 7: Net prior period charges and other debits

The Commission may direct the petitioner to produce the details of the net prior period charges as claimed by the petitioner.

Response of GETCO

In its response GETCO has given the breakup of net prior period charges and other debits and stated that the disclosure of prior period items by the company is in line with Accounting Standard (AS)-5 on Prior Period and Extraordinary Items, which emphasizes that Prior period items should be separately disclosed in the current statement of profit and loss together with their nature and amount; and in a manner that their impact on current profit or loss can be perceived.

Commission's view

Commission has noted the viewpoint of the objector and the response of GETCO.

Objection 8: Revenue from Other Income

The petitioner has given other income at Rs. 104.96 Crore in the petition whereas the other income approved by the Commission is Rs. 77.83 Crore. The Commission should approve Rs. 196.54 Crore as other income as given in the annual accounts of the petitioner.



Response of GETCO

In its submission GETCO has emphasized the fact that the Depreciation is a source of funding of the assets financed through Grants and consumer contribution, which would need to be replaced after their estimated useful life. Thus, in the computation of ARR, the income from other sources, which pertains to subsidies, grants and consumer contribution as described above, has not been considered i.e. it has been subtracted from the total Other Income shown in the Annual Accounts.

Commission's view

Commission has noted the viewpoint of the objector and the response of GETCO. The Commission has addressed this issue while truing up for FY 2010-11.

Objection 8: Interest on staff welfare fund

The petitioner has claimed Rs. 2.31 Crore towards interest on staff welfare fund/ scheme as an interest and finance charge. Whereas, the petitioner has proposed "Other Income" as controllable parameter and shared 1/3rd of gain in the tariff with its users. Therefore, Commission may not consider Rs. 2.31 Crore as interest and finance charges but adjust in "Other Income".

Response of GETCO

GETCO has submitted that Interest on Staff Welfare Fund is an expense related to the employee expense under interest and finance charges and hence needs to be passed through.

Commission's view

Commission has noted the viewpoint of the objector and the response of GETCO. The Commission has addressed this issue while truing up for FY 2010-11.

Chapter 4

True up for FY 2010-11

4.1 Introduction

This chapter deals with the 'Truing up' of FY 2010-11 of GETCO.

While doing 'Truing up' of the various components of ARR for FY 2010-11, the actuals for FY 2010-11 are compared with the approval, as per tariff order for FY 2010-11 issued on 31st March, 2010 and review order dated 3rd February, 2011.

The Commission has analyzed each of the components of the ARR for the FY 2010-11 in the following sections.

4.2 Operation and Maintenance (O&M) Expenses for FY 2010-11

GETCO has claimed Rs.623.87 Crore towards actual O&M expenses in the Truing up for FY 2010-11 against Rs. 549.69 Crore approved in the Tariff Order dated 31st March, 2010. The O&M expenses approved for FY 2010-11 by the Commission in the MYT Order FY 2008-11, in the Tariff Order for FY 2010-11 and claimed by GETCO as actuals are given in the Table 4.1 below:

Table 4.1: O&M Expenses claimed by GETCO

(Rs. Crore)			
Particulars	MYT Order	T.O FY 2010-11	Claimed for FY 2010-11 (Truing up)
Employee cost	276.42	398.71	443.99
Repairs & Maintenance	103.20	103.20	124.27
Administration & General charges	49.38	47.78	55.61
O&M expenses	429.00	549.69	623.87

Petitioner's Submission

GETCO has compared the O&M charges actually incurred during FY 2010-11 with the value approved by the Commission in the Tariff Order for FY 2010-11 and arrived at a loss of Rs.74.18 Crore as detailed in the Table 4.2 below:



Table 4.2: Deviation in O&M Expenses claimed for FY 2010-11
(Rs. Crore)

Particulars	T.O FY 2010-11	Claimed for FY 2010-11 (Truing up)	Deviation
Employee cost	398.71	443.99	(45.28)
Repairs & Maintenance	103.20	124.27	(21.07)
Administration & General charges	47.78	55.61	(7.83)
O&M expenses	549.69	623.87	(74.18)

The O&M expenses are discussed component wise in the following paras.

4.2.1 Employee Cost

GETCO has claimed Rs. 443.99 Crore towards actual employee cost in the 'Truing up' for FY 2010-11. The employee cost approved for FY 2010-11 in the MYT Order, in Tariff Order for FY 2010-11, and claimed by GETCO are as tabulated below:

Table 4.3: Employee Cost claimed by GETCO

(Rs. Crore)

Particulars	MYT Order	T.O FY 2010-11	Claimed for FY 2010-11 (Truing up)
Employee cost	276.42	398.71	443.99

Petitioner's Submission

GETCO has submitted that the increase in employee cost is mainly on account of the impact due to increase in dearness allowance in FY 2010-11 which is a statutory requirement. GETCO has mentioned that it has resulted in an uncontrollable loss of Rs. 45.28 Crore in FY 2010-11 as detailed in the Table 4.4 below:

Table 4.4: Gain / Loss in Employee cost claimed for FY 2010-11

(Rs. Crore)

Particulars	T.O FY 2010-11	(Actuals) FY 2010-11	Gain / (loss) due to controllable factor	Gain / (loss) due to uncontrollable factor
Employee cost	398.71	443.99	-	(45.28)



Commission's Analysis

GETCO has compared the actual employee cost of Rs.443.99 Crore incurred during FY 2010-11 with Rs.398.71 Crore approved by the Commission in the Tariff Order for FY 2010-11. The GETCO has arrived at the loss of Rs.45.28 Crore for FY 2010-11 in Truing up. The employee cost as per audited annual accounts for FY 2010-11 is Rs.443.99 Crore. The increase is mainly on account of the impact of the sixth pay commission which is treated as an uncontrollable expense.

The Commission approves the employee cost at Rs.443.99 Crore in Truing up for FY 2010-11.

4.2.2 Repair and Maintenance (R&M) Expenses

GETCO has claimed Rs.124.27 Crore towards R&M expenses in the Truing up for FY 2010-11. The R&M expenses approved for FY 2010-11 in the MYT Order, in Tariff Order for FY 2010-11 and claimed by GETCO are as given in the Table 4.5 below:

Table 4.5: R&M expenses claimed by GETCO

(Rs. Crore)

Particulars	MYT Order	T.O FY 2010-11	Claimed for FY 2010-11 (Truing up)
R&M expenses	103.20	103.20	124.27

Petitioner's Submission

GETCO has claimed Rs. 21.07 Crore towards loss in R&M expenses as detailed in the Table 4.6 below:

Table 4.6: Gain / Loss in R&M expenses claimed for FY 2010-11

(Rs. Crore)

Particulars	T.O FY 2010-11	(Actuals) FY 2010-11	Gain / (loss) due to controllable factor	Gain / (loss) due to uncontrollable factor
R&M expenses	103.20	124.27	(21.07)	-



GETCO has submitted that during the last three years R&M expenses have increased due to:

- (1) Increase in auxiliary consumption costs on account of increase in substations and increase in cost of power.
- (2) Increase in maintenance cost of transformers and its auxiliaries, overhauling of old transformers, repairing of OLTC etc.
- (3) Increased maintenance requirement of aged transmission lines and equipments.
- (4) Outsourcing of O&M of the substations.
- (5) Increase in the expenses of maintenance of substation equipments, their condition monitoring and testing charges.

Commission's Analysis

The actual R&M expenses incurred during FY 2010-11 is Rs.124.27 Crore as per the audited annual accounts. In view of the circumstances explained by the petitioner the Commission, takes into consideration the amount of Rs.124.27 Crore in the Truing up for FY 2010-11.

The R&M expense is controllable item of expenditure under the MYT Regulations, 2007. There is an increase in R&M expenses of Rs. 21.07 Crore over Rs.103.20 Crore approved in the Tariff Order dated 31st march, 2010 for FY 2010-11.

The Commission accordingly approves the R&M expenses at Rs. 124.27 Crore for Truing up for FY 2010-11.

4.2.3 Administration and General (A&G) Expenses

GETCO has claimed Rs.55.61 Crore towards A&G expenses in the Truing up for FY 2010-11. The A&G expenses approved for FY 2010-11 in the MYT Order, in the Tariff Order for FY 2010-11 and claimed by GETCO are as given in the Table 4.7 below:



Table 4.7: Administration and General Expenses claimed by GETCO

(Rs. Crore)

Particulars	MYT Order	T.O FY 2010-11	Claimed for FY 2010-11 (Truing up)
A&G expenses	49.38	47.78	55.61

Petitioner's Submission

GETCO has claimed that it has incurred a loss of Rs. 7.83 Crore due to controllable factor towards A&G expenses during FY 2010-11 as detailed in the Table 4.8 below:

Table 4.8: Gain / (Loss) in Administration and General Expenses claimed for FY 2010-11

(Rs. Crore)

Particulars	T.O FY 2010-11	(Actuals) FY 2010-11	Gain / (loss) due to controllable factor	Gain / (loss) due to uncontrollable factor
A&G expenses	47.78	55.61	(7.83)	-

Commission's Analysis

The Commission is of the view that parameters impacting A&G expenses are controllable in nature and hence considered as controllable expenses as specified in MYT Regulations, 2007. The Commission thus approves that the actual A&G expenses are Rs. 55.61 Crore as per the audited annual accounts.

The Commission approves the A&G expenses at Rs.55.61 Crore in the Truing up for FY 2010-11.

The total O&M expenses and gain /(loss) considered in the Truing up for FY 2010-11 are summarized in Table 4.9 below:

Table 4.9: O&M expenses and gain / (loss) approved in Truing up for FY 2010-11

(Rs. Crore)

Particulars	T.O. FY 2010-11	Approved in Truing up (FY 2010-11)	Deviation	Gain / (loss) due to controllable factor	Gain / (loss) due to uncontrollable factor
Employee cost	398.71	443.99	(45.28)	-	(45.28)
R&M	103.20	124.27	(21.07)	(21.07)	-
A&G expenses	47.78	55.61	(7.83)	(7.83)	-
Total O&M expenses	549.69	623.87	(74.18)	(28.90)	(45.28)

4.3 Capital Expenditure and Capitalization for FY 2010-11

Petitioner's Submission

GETCO has submitted in its petition that it has incurred a capital expenditure of Rs. 1849.46 Crore and capitalized an amount of Rs. 1347.43 Crore during the FY 2010-11.

Commission's Analysis

The Commission considers the capital expenditure as given in the petition by GETCO and has verified the capitalization from the audited annual accounts for the FY 2010-11. The approved capital expenditure, capitalization and the normative debt & equity for the FY 2010-11 are given in the Table 4.10 below:

Table 4.10: Capital Expenditure and Capitalization approved in Truing up for FY 2010-11

(Rs. Crore)

Particular	FY 2010-11 (Approved)
Capex during FY 2010-11	1849.46
Capitalized in FY 2010-11	1347.43
Less: Grants	420.94
Balance Capitalisation	926.49
Debt (70%)	648.54
Equity (30%)	277.95



4.4 Depreciation for FY 2010-11

GETCO has claimed Rs.369.47 Crore towards depreciation in the Truing up for FY 2010-11. The depreciation charges approved for FY 2010-11 in the MYT Order, in the Tariff Order for FY 2010-11 and claimed by GETCO are given in the Table 4.11 below:

Table 4.11: Depreciation claimed by GETCO

(Rs. Crore)

Particulars	MYT Order FY 2010-11	T.O FY 2010-11	Claimed for FY 2010-11 (Truing up)
Depreciation	221.09	405.52	369.47

Petitioner's Submission

GETCO has submitted that actual depreciation charges for FY 2010-11 are Rs.369.47 Crore as against Rs.405.52 Crore approved by the Commission in the Tariff Order and the weighted average rate of depreciation based on rates approved by CERC works out to 4.97% as detailed in the Table 4.12 below:

Table 4.12: Computation of Depreciation of FY 2010-11

(Rs. Crore)

Particulars	T.O FY 2010-11	(Actuals) FY 2010-11	Deviation
Gross block in beginning of the year	7226.96	6762.27	
Additions during the year	1542.93	1347.43	
Depreciation for the year	405.52	369.47	36.05
Average rate of depreciation	5.07%	4.97%	

GETCO has submitted that there is uncontrollable gain of Rs.36.05 Crore in depreciation as detailed in the Table 4.13 below:

Table 4.13: Gains / Losses from Depreciation claimed by GETCO

(Rs. Crore)				
Particulars	T.O FY 2010-11	(Actuals) FY 2010-11	Gain / (loss) due to controllable factor	Gain / (loss) due to uncontrollable factor
Depreciation	405.52	369.47	-	36.05

Commission's Analysis

The Commission has noted that the actual depreciation as per the audited annual accounts for FY 2010-11 is Rs. 369.35 Crore after segregating the depreciation of SLDC. Further, the Commission has considered the Rs. 2.40 Crore of depreciation adjusted during the FY 2010-11 while computing the depreciation of Rs. 366.95 Crore as per the audited annual accounts. The weighted average rate of depreciation works out to be 4.94% as detailed in the Table 4.14 below:

Table 4.14: Depreciation approved in the Truing up for FY 2010-11

(Rs. Crore)	
Particulars	Approved
Gross block in beginning of the year	6760.18
Additions during the year	1347.43
Closing Gross block	8107.61
Depreciation for the year	366.95
Average Assets	7433.90
Average rate of depreciation	4.94%

The Commission approves the depreciation at Rs.366.95 Crore in the Truing up for FY 2010-11.

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. The Commission is, therefore, of the view that the parameters which impact depreciation should be treated as uncontrollable.



The Commission accordingly, approves the gains / losses on account of depreciation in the Truing up for FY 2010-11 as given in the Table 4.15 below:

Table 4.15: Gain/Loss due to Depreciation approved in Truing up for FY 2010-11

(Rs. Crore)

Particulars	T.O. FY 2010-11	Approved in Truing up (FY 2010-11)	Deviation	Gain / (loss) due to uncontrollable factor
Depreciation	405.52	366.95	38.57	38.57

4.5 Interest and Finance Charges for FY 2010-11

GETCO has claimed Rs.232.41 Crore towards interest and finance charges in the Truing up for FY 2010-11. The interest and finance charges approved for FY 2010-11 in the MYT Order, in the Tariff Order for FY 2010-11 and claimed by GETCO are as tabulated below:

Table 4.16: Interest and Finance Charges claimed by GETCO

(Rs. Crore)

Particulars	MYT Order FY 2008-11	T.O FY 2010-11	Claimed for FY 2010-11 (Truing up)
Interest & Finance charges	362.63	278.19	232.41

Petitioner's Submission

GETCO has submitted that interest and finance charges approved by the Commission and those actually incurred, resulted in a gain of Rs.45.78 Crore and this can be considered as a gain on account of uncontrollable factor. The detailed computation of interest and finance charges submitted by GETCO is given in the Table 4.17 below:

**Table 4.17: Gain / Loss from Interest and Finance Charges claimed for
FY 2010-11**

(Rs. Crore)

Particulars	T.O FY 2010-11	(Actuals) FY 2010-11	Deviation	Gain / (loss) due to uncontrollable factor
Opening loans	2287.57	1926.63		
Loan additions during the year	1080.05	648.54		
Repayment during the year	228.76	192.66		
Closing loan	3138.86	2382.51		
Average loan	2713.22	2154.57		
Interest on loan	274.31	201.19		
Other finance charges	3.88	31.21		
Total Interest and Finance charges	278.19	232.41	45.78	45.78
Weighted average rate of interest on loan	10.11%	9.34%		

Commission's Analysis

The Commission has verified the capitalization of assets during the FY 2010-11 from the audited accounts and has approved asset addition of Rs. 1347.43 Crore after deducting assets pertaining to SLDC.

The Commission has also verified the grants of Rs. 420.94 Crore with reference to the audited annual accounts for the FY 2010-11 and found them in order. Further, Commission has deducted the consumer contribution and grants of Rs. 420.94 Crore while computing the total normative debt of Rs. 648.54 Crore. Based on the actual capitalization achieved during FY 2010-11 and normative borrowing Commission has computed the interest on normative debts as Rs. 206.19 Crore.

Table 4.18: Approved Interest & Finance Charges in Truing up for FY 2010-11

(Rs. Crore)

Particulars	T.O. FY 2010-11	Approved in Truing up (FY 2010-11)	Deviation
Opening loans	2287.57	1926.63	
Loan additions during the year	1080.05	648.54	



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Particulars	T.O. FY 2010-11	Approved in Truing up (FY 2010-11)	Deviation
Repayment during the year	228.76	192.66	
Closing loan	3138.86	2382.51	
Average loan	2713.22	2154.57	
Interest on loan	274.31	206.19	
Other finance charges	3.88	4.14	
Total Interest and Finance charges	278.19	210.33	67.87
Weighted average rate of interest on loan	10.11%	9.57%	

The Commission has verified the capitalization of assets and grants with reference to the audited annual accounts for the FY 2010-11 and found them in order. Based on the actual capitalization achieved during FY 2010-11 and normative borrowing Commission has computed the interest on normative debts at Rs. 206.19 Crore. The rate of interest has been taken from the additional submission given by GETCO dated 23rd February, 2012, wherein it has computed the rate of interest at 9.57% based on the opening loan portfolio for FY 2010-11.

In addition to the interest charges, the GETCO has also claimed the other finance charges of Rs. 31.21 Crore for FY 2010-11. Commission has verified the other finance charges from the audited accounts and found that the GETCO has also considered the interest on welfare funds/schemes of Rs. 2.31 Crore and discount to consumers for timely payment of bills of Rs. 24.77 Crore under this head.

GUVNL, the holding company in its submission to the Commission has stated that GETCO is claiming Rs. 2.31 Crore on welfare funds/schemes as interest and finance charge, whereas on the other hand it has proposed "other income" as controllable income and sharing 1/3rd revenue in the tariff with users. Therefore the Commission should not consider 2.31 Crore as interest and finance charge but adjust in "other income".

The Commission has taken a note of GUVNL's submission. The GETCO's claim of Rs. 2.31 Crore against the interest on staff and welfare fund/schemes is not considered, as other finance charges, as it is not related with other finance charges.

Further, the Commission has observed that the discount given on timely payment of bills has increased from 0.17 Crore in FY 2009-10 to Rs. 24.77 Crore in FY 2010-11,



which has substantially increased the other finance charges during FY 2010-11. As per the submission made by GUVNL the holding company, the Commission allows interest on working capital on a normative basis considering 2 months receivables and rebate is given to the users of the transmission system for timely payment of bills.

Since GETCO is already getting interest on working capital on a normative basis considering 2 months receivables, the Commission has not considered the finance charges of Rs. 24.77 Crore claimed by the GETCO. The other finance charges approved by the Commission in truing up of FY 2010-11 are given in the Table 4.19 below:

Table 4.19: Other Finance Charges approved by the Commission for FY 2010-11

(Rs. Crore)		
Particulars	(Actual) FY 2010-11	Approved in Truing Up 2010-11
Interest on staff welfare Funds/schemes	2.31	0.00
Discount to Cons. For Timely Payment of Bills	24.77	0.00
Cost of raising Finance	0.74	0.74
Service Charges/ Management Fees	0.02	0.02
Discount on Bills-Banks /Fin. Inst	0.01	0.01
Other Charges	0.54	0.54
Guarantee Fees	2.84	2.84
Banking Cash Transaction Tax	0.00	0.00
Other charges	31.21	4.14

The Commission accordingly approves the other finance charges at Rs.4.14 Crore in the Truing up for FY 2010-11 and the total interest and finance charges at Rs.210.33 Crore in the Truing up for FY 2010-11.

The Commission has observed that the amount of interest and finance charges is dependent on the amount of capitalization and the extent of borrowing considered during the financial year. The Commission therefore is of the view that the parameters which impact interest and finance charges should be treated as uncontrollable.



The Commission accordingly approves the gains / losses on account of interest and finance charges in the Truing up for FY 2010-11 as detailed in the Table 4.20 below:

Table 4.20: Gains/(Losses) in Interest and Finance charges approved in the Truing up for FY 2010-11

Particulars	T.O. FY 2010-11	Approved in Truing up (FY 2010-11)	Deviation	(Rs. Crore)
				Gain / (loss) due to uncontrollable factor
Interest and finance charges	278.19	210.32	67.87	67.87

4.6 Return on Equity (RoE) for FY 2010-11

GETCO has claimed Rs.276.28 Crore towards return on equity in the Truing up for FY 2010-11. The ROE approved for FY 2010-11, in the MYT Order, in the Tariff Order for FY 2010-11 and claimed by GETCO are given in the Table 4.21 below:

Table 4.21: Return on Equity claimed by GETCO

Particulars	MYT Order FY 2008-11	T.O FY 2010-11	(Rs. Crore)
			Claimed for FY 2010-11 (Truing up)
Return on Equity	380.74	315.44	276.28

Petitioner's Submission

GETCO has submitted that return on equity has been computed based on a rate of return of 14% as provided in the Tariff Regulations. It is further submitted that comparison between the actual value of return on equity for FY 2010-11 with the value approved in the Tariff Order dated 31st March, 2010 for APR for FY 2010-11 and actual indicates a gain of Rs. 39.16 Crore. GETCO has claimed that it has incurred a gain of Rs.39.26 Crore on account of Return on Equity for FY 2010-11 as detailed in the Table 4.22 below:

Table 4.22: Gain / Loss in Return on Equity claimed for FY 2010-11

(Rs. Crore)				
Particulars	T.O FY 2010-11	(Actuals) FY 2010-11	Deviation	Gain / (loss) due to controllable factor
Opening equity capital	2021.69	1834.49		
Equity additions during the year	462.88	277.95		
Closing equity	2484.57	2112.44		
Average equity	2253.13	1973.46		
Rate of Return on equity	14%	14%		
Return on equity	315.44	276.28	39.16	39.16

Commission's Analysis

The Commission has examined the submission of GETCO. The return on equity is being allowed on a normative basis and the quantum of equity addition in the year depends upon the capitalization achieved during the year. The closing equity of the previous year is considered as opening equity of the ensuing year. The opening balance and closing balance of equity for FY 2010-11 are arrived at as detailed below based on the actual capitalization during FY 2010-11 as per audited annual accounts.

Table 4.23: Approved Return on Equity

(Rs. Crore)		
Particulars		Approved in Truing Up 2010-11
Opening equity capital for FY 2010-11	(a)	1834.49
Equity additions during 2010-11 based on capitalization (30%)	(b)	277.95
Closing equity for FY 2010-11	(c=a+b)	2112.44
Average equity	d=(a+b)/2	1973.46
Rate of Return on equity	(e)	14%
Return on equity	f=(d*e)	276.28



The Commission accordingly approves the return on equity at Rs.276.28 Crore in the Truing up for FY 2010-11.

The Commission is of the view that the return on equity depends on the amount of capitalization and the normative debt equity ratio of 70:30 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 gains / losses on account of return on equity in the Truing up for FY 2010-11 as detailed below:

Table 4.24: Gains/Losses in Return on Equity approved in the Truing up for FY 2010-11

Particulars	T.O. FY 2010-11	Approved in Truing up (FY 2010-11)	Deviation	(Rs. Crore)
				Gain / (loss) due to uncontrollable factor
Return on equity	315.44	276.28	39.16	39.16

4.7 Capitalization of Expenses for FY 2010-11

GETCO has furnished the expenses capitalized at Rs.171.77 Crore in the Truing up for FY 2010-11. The capitalization of expenses approved for FY 2010-11 by the Commission in the MYT Order, in the Tariff Order for FY 2010-11 and actuals furnished by GETCO are given in Table 4.25 below:

Table 4.25: Capitalization of Expenses furnished by GETCO

Particulars	MYT Order FY 2008-11	T.O FY 2010-11	(Rs. Crore)
			Claimed for FY 2010-11 (Truing up)
Capitalization of Expenses	86.32	193.03*	171.77

* **BASED ON THE WEIGHTED AVERAGE FOR THE FY 2010-11**(In the Tariff order for 2010-11, Rs. 206.35 Crore was allowed for the period April 2010 to Dec 2010 and in the review order dated Feb 3, 2011 Rs. 153.08 Crore was allowed for the period Jan to Mar 2011)



Petitioner's Submission

GETCO has submitted that the actual capitalizations of expenses are Rs.171.77 Crore against the approved capitalized expenses of Rs. 193.03 Crore resulting in uncontrollable gain of Rs.21.26 Crore. GETCO has not considered the interest capitalised as a part of expenses capitalized as per the Order dated Feb 3, 2011 on GETCO's appeal against the Tariff order dated Mar 31, 2010.

Commission's Analysis

The capitalization of other expenses relates to capitalization of Employee Cost, A&G expenses, R&M expenses. The actual 'other expenses capitalized' are Rs.171.77 Crore as per the audited annual accounts for FY 2010-11.

The Commission accordingly approves the capitalization of 'other expenses' at Rs.171.77 Crore as per the audited annual accounts in the Truing up for FY 2010-11. The Commission considers the capitalization of 'other expenses' as uncontrollable.

4.8 Income Tax for FY 2010-11

GETCO has furnished the actual tax at Rs. 55.12 Crore in the Truing up for FY 2010-11 against Rs. 48.73 Crore approved in the Tariff Order dated 31st March, 2010 for FY 2010-11. The provision for tax approved in the Tariff Order for FY 2010-11, and actual claimed by GETCO are as given in Table 4.26 below:

Table 4.26: Income Tax Claimed By GETCO

(Rs. Crore)		
Particulars	T.O FY 2010-11	Claimed for FY 2010-11 (Truing up)
Income Tax	48.73	55.12

Petitioner's Submission

GETCO has submitted that the actual provision for tax works out to Rs.55.12 Crore as against approved tax of Rs.48.73 Crore resulting in uncontrollable loss of Rs.6.39 Crore.



Commission's Analysis

The Commission has verified and found that the actual consolidated income tax paid by GETCO for the FY 2010-11 is Rs.10.94 Crore as per the details submitted by GETCO vide its letter dated 24th February, 2012. Out of Rs. 10.94 Crore, Rs.4.47 lakh has been claimed by SLDC towards income tax in their petition for true up of FY 2010-11.

The Commission has approved Rs. 4.47 lakh as income tax for SLDC and therefore approves the income tax at Rs.10.90 Crore for GETCO in the Truing up for FY 2010-11.

In regard to the computation of gains / losses, Regulation 9.6.1 (d) considers variation in Taxes on income as uncontrollable.

The Commission accordingly approves the gains / losses on account of tax on income in the Truing up for FY 2010-11 as detailed in the Table 4.27 below:

Table 4.27: Gains/Losses approved in the Truing up for FY 2010-11

Particulars	T.O. FY 2010-11	Approved in Truing up (FY 2010-11)	Deviation	(Rs. Crore)
				Gain / (loss) due to uncontrollable factor
Income Tax	48.73	10.90	37.83	37.83

4.9 Revenue from Non Tariff Income for FY2009-10

GETCO has claimed the actual 'other income' at Rs.104.96 Crore in the Truing up for FY 2010-11. The other income approved for FY 2010-11, in the MYT Order, in the Tariff Order for FY 2010-11 and furnished by GETCO are as given in Table 4.28 below:

Table 4.28: Non Tariff Income claimed by GETCO

Particulars	MYT Order FY 2008-11	T.O FY 2010-11	(Rs. Crore)
			Claimed for FY 2010-11 (Truing up)
Non Tariff Income	45.14	77.83	104.96



Petitioner's Submission

GETCO has submitted that the other income includes interest on staff loans, interest on investment, income from sale of stores and this is Rs.104.96 Crore for FY 2010-11 against Rs.77.83 Crore approved in Tariff order for FY 2010-11 which resulted in controllable loss of Rs.27.13 Crore.

GETCO has not considered the Rs. 90.48 Crore of income towards Govt. grants/subsidies and has submitted that the depreciation on assets which are financed by Grants, Subsidies and Consumer Contribution are considered while computing the depreciation in the Annual Accounts i.e. depreciation is claimed on these assets. As per the provisions in the Accounting Standards, this expense is off-set by showing 10% of the opening written down value of Subsidies, Grants and Consumer Contribution as Other Income. However, GETCO is entitled to recover the depreciation on these assets from the tariff as the revenue earned by claiming depreciation is expected to be used to re-finance the assets when they have completed their useful life.

Commission's Analysis

The Commission has verified and found that the actual 'other income' is Rs.195.45 Crore as per the audited annual accounts. Commission has considered the Rs. 90.48 Crore of income towards Govt. grants/subsidies while computing the other income for FY 2010-11. Commission allows depreciation on all the assets including assets created through grants and consumer contribution. Hence, it is required to consider the deferred revenue of Rs. 90.48 Crore in the other income in view of the prevailing practice.

The Commission accordingly approves the other income at Rs.195.45 Crore as actual as per the audited annual accounts in the Truing up for FY 2010-11. The Commission considers the other income as uncontrollable.

The Commission accordingly approves the gains / losses on Non Tariff Income in the Truing up for FY 2010-11 as detailed in the Table 4.29 below:

Table 4.29: Gains/Losses on Non Tariff Income approved in the Truing up for FY 2010-11

(Rs. Crore)				
Particulars	T.O. FY 2010-11	Approved in Truing up (FY 2010-11)	Deviation	Gain / (loss) due to uncontrollable factor
Non Tariff Income	77.83	195.45	(117.62)	(117.62)

4.10 Interest on Working Capital for FY 2010-11

GETCO has claimed Rs.37.13 Crore towards interest on working capital in the Truing up for FY 2010-11 against Rs.38.63 Crore approved in the Tariff Order for FY 2010-11. The interest on working capital approved for FY 2010-11 in the MYT Order, in the Tariff Order for FY 2010-11 and furnished by GETCO are given in the Table 4.30 below:

Table 4.30: Interest on Working Capital Claimed by GETCO

(Rs. Crore)			
Particulars	MYT Order FY 2008-11	T.O FY 2010-11	Claimed for FY 2010-11 (Truing up)
Interest on Working Capital	36.95	38.63 *	37.13

* Based on the weighted average for the **FY 2010-11** (In the Tariff order for 2010-11, Rs. 38.40 Crore was allowed for the period April 2010 to Dec 2010 and in the review order dated Feb 3, 2011 Rs. 39.33 Crore was allowed for the period Jan to Mar 2011)

Petitioner's Submission

GETCO has submitted that it has considered the SBI PLR as on 1st April 2004 i.e. 10.25% for the purpose of computation of interest on working capital. GETCO has further submitted that comparison of actual value of interest on working capital based on the above methodology and the value approved by the Commission in the Tariff Order for 2010-11 resulted in an uncontrollable gain of Rs.1.50 Crore as detailed in the Table 4.31 below:

Table 4.31: Gain / Loss in Interest on Working Capital for FY 2010-11

Particulars	T.O FY 2010-11	(Actuals) FY 2010-11	Deviation	(Rs. Crore)
				Gain / (loss) due to uncontrollable factor
O&M expenses (1 month)	45.81	51.99		
Maintenance spares(1%*Opening GFA)	102.78	85.15		
Receivables (2 months)	228.39	225.15		
Total Working capital	376.98	362.29		
Rate of Interest on working capital	10.25%	10.25%		
Interest on working capital	38.63	37.13	1.50	1.50

Commission's Analysis

The Commission has examined the computation of normative working capital and interest thereon under GERC (Terms and Conditions for Determination of Tariff) Regulations, 2005. Based on the O&M expenses approved in the Truing up and other components of ARR in the Truing up for 2010-11 the Commission has computed the working capital and interest thereon as detailed in the Table 4.32 below:

Table 4.32: Interest on working capital approved by the Commission for FY 2010-11 (Truing up)

Particulars	(Rs. Crore)
	Approved in Truing Up 2010-11
O&M expenses (1 month)	51.99
Maintenance spares(1%*Opening GFA)	67.60
Receivables (2 months)	193.15
Total Working capital	312.74
Rate of Interest on working capital	10.25%
Interest on working capital	32.06

The Commission accordingly approves the interest on working capital at Rs.32.06 Crore in the Truing up for FY 2010-11.



The Commission considers the interest on working capital as uncontrollable as the components contributing for working capital are mostly uncontrollable. The Commission accordingly approves the gains / losses on account of interest on working capital in the Truing up for FY 2010-11 as detailed in the Table 4.33 below:

Table 4.33: Gain / Loss in Interest on working capital approved in the Truing up for FY 2010-11

Particulars	T.O. FY 2010-11	Approved in Truing up (FY 2010-11)	Deviation	(Rs. Crore)
				Gain / (loss) due to uncontrollable factor
Interest on Working Capital	38.63	32.06	6.57	6.57

4.11 Incentive for Target availability for FY 2010-11

GETCO has claimed incentive for target availability at Rs. 33.35 Crore in the Truing up for FY 2010-11. The incentive approved in the Tariff Order for FY 2010-11 and claimed by GETCO in the Truing up are given in the Table 4.34 below:

Table 4.34: Incentive for Target Availability claimed by GETCO

Particulars	T.O FY 2010-11	(Rs. Crore)
		Claimed for FY 2010-11 (Truing up)
Incentive for Target Availability	4.95	33.35

Petitioner's Submission

The petitioner has submitted the claim for Rs. 33.35 Crore of incentive based on the target availability of 98%. GETCO has submitted that the Commission should allow an incentive for each percentage point increase over the target availability of 98% as stipulated in the Regulations and should be computed based on the target availability approved by the Commission in the MYT order.

Commission's Analysis

The Commission has noted that the GETCO has estimated the incentive Rs.33.35 Crore for FY2010-11 comparing with a base target availability of 98%.The

Commission has observed that the target availability for FY 2010-11 approved under MYT order is 99.40%. The petitioner had asked for the trajectory to be revised in their review petition No. 1034 of 2010, but the Commission had rejected their plea and reiterated that for computation of the incentive, the trajectory as specified in the MYT order will prevail. The Commission has also noted that in accordance to the Regulation 8.2 of MYT Regulations, the trajectory specified under MYT regulations shall replace the trajectories fixed under any other regulation. The availability during FY 2010-11 is 99.69%. The incentive amount, therefore, works out as shown in Table 4.35 below:

Table 4.35: Incentive for Target Availability approved by the Commission for FY 2010-11

S.No.	Particulars	Approved in Truing Up 2010-11
1	Target Availability approved in MYT Order for FY 2010-11	99.40%
2	Actual availability during FY 2010-11	99.69%
3	Average equity arrived for FY 2010-11 - (Rs. Crore)	1973.46
4	Incentive for target availability for FY 2010-11 $(3 \times (2-1))/100$ – (Rs. Crore)	5.72

The Commission, therefore, approves the incentive at Rs 5.72 Crore in Truing up for FY 2010-11.

4.12 Net Prior Period charges and Other Debits

Petitioner's Submission

GETCO has claimed net prior period charges and other debits to the tune of Rs. 10.11 Crore in the truing up for FY 2010-11. It is submitted by GETCO that the disclosure of prior period items by the company is in line with Accounting Standard (AS)-5 on Prior Period and Extraordinary Items, which emphasizes that Prior period items should be separately disclosed in the current statement of profit and loss together with their nature and amount; and in a manner that their impact on current profit or loss can be perceived.



Commission's Analysis

As per the provision of the regulations there is no head under which the net prior period charges and other debits are allowed. Further the ARR is worked out on a normative basis therefore the Commission does not approve the net prior period charges and other debits as claimed by the petitioner.

4.13 Gains/Losses under 'Truing up'

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

The Commission has computed the sharing of gains and losses for FY 2010-11 based on Truing up for each of the components discussed in the above paragraphs.

The fixed charges approved in the Tariff Order dated 31st March, 2010, ARR for 2010-11, claimed by GETCO in Truing up, (losses/ gains) computed in accordance with the MYT Regulations are given in the Table 4.36 below:

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Table 4.36: Approved Fixed Charges in Truing up for FY 2010-11

(Rs. Crore)

Sr. No.	Fixed Charges	Tariff Order 2010-11 (31-03-2010)	Actual claimed in Truing up	Approved in Truing Up	Deviation (3-5)	Controllable (Loss) / Gain	Uncontrollable (Loss)/ Gain
1	2	3	4	5	6	7	8
1	Operation & Maintenance Expenses	549.69	623.86	623.87	(74.18)		
1.1	Employee Cost	398.71	443.99	443.99	(45.28)		(45.28)
1.2	Repair & Maintenance	103.20	124.27	124.27	(21.07)	(21.07)	
1.3	Administration & Gen. Charges	47.78	55.61	55.61	(7.83)	(7.83)	
2	Depreciation	405.52	369.47	366.95	38.57		38.57
3	Interest & Finance Charges	278.19	232.41	210.33	67.86		67.86
4	Interest on Working Capital	38.63*	37.13	32.06	6.57		6.57
5	Return on Equity	315.44	276.28	276.28	39.16		39.16
6	Other Debits	0.00	10.11	0.00	0.00		
7	Total Fixed Costs	1587.47	1549.27	1509.48			
8	Less: Expenses Capitalized	193.03*	171.77	171.77	21.26		21.26
9	Add: Actual Tax Paid	48.73	55.12	10.90	37.83		37.83
10	Total Transmission Charges	1443.17	1432.62	1348.60			
11	Less: Other Income	77.83	104.96	195.45	(117.62)		(117.62)
12	Aggregate Revenue Requirement	1365.34	1327.66	1153.15			
13	Add: Incentive for target availability	4.95	33.35	5.72	(0.77)		(0.77)
14	Net Aggregate Revenue Requirement	1370.29	1361.01	1158.88	211.41	(28.90)	240.31

* BASED ON THE WEIGHTED AVERAGE FOR THE FY 2010-11 AND AS PER THE REVIEW ORDER DATED FEB 3, 2011



The table 4.36 indicates a controllable loss of Rs.28.90 Crore and the uncontrollable gain of Rs. 240.31 Crore.

4.14 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 loss on account of controllable factors is arrived at Rs.28.90 Crore for FY 2010-11. Out of this 1/3rd loss is to be passed on as an additional charge in tariffs, and the balance amount of loss shall be absorbed by GETCO. The entire gain of Rs. 240.31 Crore on account of uncontrollable factors shall be passed through as an adjustment in the Tariff. The revenue gap as compared to the ARR approved in the tariff order dated 31st March, 2010 is summarized in Table 4.37 below:

Table 4.37: Revenue (Gap)/Surplus for FY 2010-11

		(Rs Crore)
Sr. No.	Particulars	FY 2010-11
1	ARR approved in the Tariff order for FY 2010-11(T.O. dated 31/03/2010)	1370.29
2	Add: Loss on account of controllable factor to be passed on to the consumers (1/3 rd)	9.63
3	Less: Gain on account of uncontrollable factor to be passed on to the consumers	240.31
4	Revised ARR for FY 2010-11	1,139.61
5	Net (gap)/surplus (4-1)	230.68

The Truing up exercise carried out indicates a revenue surplus of Rs. 230.68 Crore against ARR of Rs.1370.29 Crore approved in the Tariff Order dated 31st March 2010 as well as order of review petition.

4.15 Recoveries for FY 2008-09

Petitioner's Submission

GETCO in its ARR petition has requested the Commission to approve the revenue gap of Rs. 7.14 Crore for the FY 2008-09 and the same should be considered at the time of determination of tariff for FY 2012-13.

GETCO has claimed the actual 'ARR of Rs. 1043.17 Crore as per the audited accounts against the ARR of Rs. 1036.03 Crore approved in the MYT Order, resulting into a gap of Rs. 7.14 Crore. The revised ARR for FY 2008-09 furnished by GETCO is as tabulated below:



Table 4.38: Revised ARR for FY 2008-09 submitted by GETCO

(Rs Crore)

Sr. No	Annual Revenue Requirement	MYT Order	Provisionally Considered for APR of FY 2008-09	Actuals as per Audited Accounts FY 2008-09
1	O&M Expense	428.93	551.07	544.7
1.1	Employee Cost	291.23	371.44	371.44
1.2	R&M Cost	91.85	132.27	125.89
1.3	A&G Cost	45.85	47.37	47.37
2	ULDC Charges	15.36	6.38	6.38
3	Depreciation	179.02	189.02	185.46
4	Advance Against Depreciation	33.84	13.25	
5	Interest & Finance Charges	219.07	215.43	239.67
6	Interest on Working Capital Loans	27.78	24.23	29.38
7	Return on Equity	263.36	231.07	245.70
8	Total Fixed cost	1,167.36	1,230.45	1,251.29
9	Less: Expenses Capitalized	86.32	99.77	130.06
11	Total Transmission charges	1,081.04	1,130.68	1,121.23
12	Less: Non-Tariff Income	45.01	78.06	78.06
13	Net Annual Revenue Requirement	1,036.03	1,052.62	1,043.17

Commission's Analysis

The Commission had observed that the petitioner had not computed the revenue gap as per the MYT Regulations and, therefore, has not submitted the Gain/Loss for the FY 2008-09. Commission vide e-mail dated 31st January, 2012 directed the petitioner to submit the additional information along with net gain and loss statement for FY 2008-09 as per the MYT Regulations.

GETCO vide letter dated Feb 23rd, 2012 has withdrawn the claim for FY 2008-09 of Rs. 7.14 Crore as mentioned in the true-up petition for FY 2010-11. Further, GETCO has submitted that the Hon'ble Commission had only approved ARR for FY 2008-09 and the gap was not calculated in the Tariff order dated 31st March 2010,

Therefore, Commission has trued up the ARR for FY 2008-09 as per the Audited Accounts and also computed the gain/loss for the FY 2008-09.



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The Commission accordingly approves the gains / losses for FY 2008-09 as detailed in the Table 4.39 below:

Table 4.39: Truing up for FY 2008-09 along with Gain / Loss Computation

(Rs Crore)

Sr. No	Annual Revenue Requirement	MYT order	Provisionally Considered for APR of FY 2008-09	Actuals as per Audited Accounts FY 2008-09	Approved in Truing up for FY 08-09	Deviation (2-5)	Controllable (Loss)/ Gain	Uncontrollable (Loss)/ Gain
	1	2	3	4	5	6	7	8
1	O&M Expense	428.93	551.07	544.70	544.70			
1.1	Employee Cost	291.23	371.44	371.44	371.44	(80.21)		(80.21)
1.2	R&M Cost	91.85	132.27	125.89	125.89	(34.04)	(34.04)	
1.3	A&G Cost	45.85	47.37	47.37	47.37	(1.52)	(1.52)	
2	ULDC Charges	15.36	6.38	6.38	6.38	8.98		8.98
3	Depreciation	179.02	189.02	185.46	185.46	(6.44)		(6.44)
4	Advance Against Depreciation	33.84	13.25			33.84		33.84
5	Interest & Finance Charges	219.07	215.43	239.67	215.43	3.64		3.64
6	Interest on Working Capital Loans	27.78	24.23	29.38	24.24	3.54		3.54
7	Return on Equity	263.36	231.07	245.70	245.70	17.66		17.66
8	Total Fixed cost	1,167.36	1,230.45	1,251.29	1,221.91	(54.55)	(35.56)	(18.99)
9	Less: Expenses Capitalised	86.32	99.77	130.06	130.06	(43.74)		43.74
11	Total Transmission charges	1,081.04	1,130.68	1,121.23	1,091.85			
12	Less: Non-Tariff Income	45.01	78.06	78.06	78.06	(33.05)		33.05
13	Net Annual Revenue Requirement	1,036.03	1,052.62	1,043.17	1,013.79	22.24	(35.56)	57.80

4.15.1 Sharing of Gains or Losses for FY 2008-09

The Commission has analyzed the gains / losses on account of controllable and uncontrollable factors. The Commission decides to pass on the gains/ losses as per the provision in MYT Regulations.



The loss on account of controllable factors is arrived at Rs.35.56 Crore for FY 2008-09. Out of this 1/3rd loss is to be passed on as an additional charge in tariffs, and the balance amount of loss shall be absorbed by GETCO. The entire gain of Rs. 57.80 Crore on account of uncontrollable factors shall be passed through as an adjustment in the Tariff. The revenue gap/surplus for FY 2008-09 summarized in Table 4.40 below:

Table 4.40: Approved Revenue (Gap)/Surplus for FY 2008-09

(Rs Crore)		
Sr. No.	Particulars	FY 2008-09
1	ARR approved in the MYT Order	1036.03
2	Add: Loss on account of controllable factor to be passed on to the consumers (1/3 rd)	11.85
3	Less: Gain on account of uncontrollable factor to be passed on to the consumers	57.80
4	Trued up ARR for FY 2008-09	990.08
5	Net (gap)/surplus (4-1)	45.95

The above surplus of Rs. 45.95 Crore shall be considered at the time of determination of tariff for FY 2012-13.

4.16 Recoveries for FY 2009-10

Petitioner's Submission

In the ARR petition, GETCO has considered the revenue surplus of Rs. 2.76 Crore as computed by the Commission in its Tariff Order 31st March, 2011.

Further, GETCO vide letter dated Feb 23rd, 2012 has referred to the order No. 1112 of 2011 dated 19th December 2011 on review petition (filed by GETCO for True-up of FY 2009-10, Annual Performance Review (APR) of F.Y. 2010-11 and Determination of Aggregate Revenue Requirement (ARR) for 2nd Control Period from F.Y. 2011-12 to F.Y. 2015-16) and has requested the Commission to consider the net entitlement of Rs. 109.56 Crore for FY 2009-10 at the time of determination of tariff for FY 2012-13.



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GETCO has also requested the Commission to approve the carrying cost of 10.25% on the past recoveries considering the gap in the year of revenue gap/ surplus and the year of recovery.

Commission's Analysis

Commission has considered the submission made by the GETCO regarding additional claim of Rs. 109.56 Crore and has trued up the ARR for FY 2009-10 as per the Audited Accounts. However, Commission has not considered the carrying cost claimed by the petitioner as there is no provision for carrying cost in the GERC MYT Regulations.

The Commission accordingly approves the gains / losses for FY 2009-10 as detailed in the Table 4.41 below:

Table 4.41: Truing up of Revised ARR for FY 2009-10

Sr. No	Annual Revenue Requirement	T O 2009-10 (14.12.2009)	Approved for True up of FY 09-10	Deviation (2-3)	(Rs Crore)	
					Controllable (Loss)/Gain	Uncontrollable (Loss)/Gain
	1	2	3	4	5	6
1	O&M Expense	423.28	601.00			
1.1	Employee Cost	290.92	423.00	(132.08)		(132.08)
1.2	R&M Cost	97.26	128.00	(30.74)	(30.74)	
1.3	A&G Cost	44.11	50.00	(5.89)	(5.89)	
2	ULDC Charges	0.00	-	-		-
3	Depreciation	340.08	321.54	18.54		18.54
4	Advance Against Depreciation	0.00	-	-		-
5	Interest & Finance Charges	206.73	191.93*	14.80		14.80
6	Interest on Working Capital Loans	35.86	31.39*	4.47		4.47
7	Return on Equity	261.02	247.65	13.37		13.37
8	Total Fixed cost	1,275.97	1,393.51	(117.54)	(36.63)	(80.91)
9	Less: Expenses Capitalised	119.67	132.08	(12.41)		12.41
10	Add: Provision for tax	31.87	15.37	16.50		16.50



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Sr. No	Annual Revenue Requirement	T O 2009-10 (14.12.2009)	Approved for True up of FY 09-10	Deviation (2-3)	Controllable (Loss)/Gain	Uncontrollable (Loss)/Gain
	1	2	3	4	5	6
11	Total Transmission charges	1,188.17	1,276.80	(88.63)		(52.00)
12	Less: Non-Tariff Income	64.60	103.92	(39.32)		39.32
13	Add: Incentive for target availability	0.04	4.60	(4.56)		(4.56)
14	Net Annual Revenue Requirement	1,123.61	1,177.48	(53.87)	(36.63)	(17.24)

* Revised as per the Review Order No. 1112/2011 dated 19th December, 2011

4.16.1 Sharing of Gains or Losses for FY 2009-10

The Commission has analyzed the gains / losses on account of controllable and uncontrollable factors. The Commission decides to pass on the gains/ losses as per the provision in MYT Regulations.

The loss on account of controllable factors is arrived at Rs.36.63 Crore for FY 2008-09. Out of this, 1/3rd loss is to be passed on as an additional charge in tariffs, and the balance amount of loss shall be absorbed by GETCO. The entire loss of Rs. 17.24 Crore on account of uncontrollable factors shall be passed through as an adjustment in the Tariff. The revenue gap/surplus for FY 2009-10 summarized in Table 4.42 below:

Table 4.42: Approved Revenue (Gap)/Surplus for FY 2009-10

(* Revised as per the Review Order No. 1112/2011 dated 19th December, 2011)

(Rs Crore)

Sr. No	Particulars	FY 2009-10
1	ARR approved in the Tariff Order for FY 09-10 (Dated 14/12/2009)	1123.61
2	Add: Loss on account of controllable factor to be passed on to the consumers (1/3 rd)	12.21
3	Add: Loss on account of uncontrollable factor to be passed on to the consumers	17.24
4	Revised ARR for FY 2009-10	1,153.06
5	Less: Revenue earned by GETCO as per Audited Accounts	1,043.49
6	Revised Net (Gap)/Surplus (4-5)	(109.57)



The above revenue gap of Rs. 109.56 Crore shall be considered at the time of determination of tariff for FY 2012-13.

4.17 Additional Taxes paid by GETCO

Petitioner's Submission

In the petition, GETCO has also claimed Rs. 48.04 Crore of additional income tax/FBT paid over and above the tax claimed under the head of income tax. GETCO has submitted that the additional income tax is for prior periods i.e. before FY 2010-11 and the taxes have already been paid by GETCO as per the demand raised by the Income Tax Department.

Commission's Analysis

The Commission observed that the petitioner has not provided adequate details in the petition for the additional tax of Rs. 48.04 Crore. Commission vide e-mail dated 31st January, 2012 directed the petitioner to submit the segregation between the actual income tax paid during the year with the income tax department. Commission had also asked for the detailed justification for the additional income tax claimed by the GETCO.

GETCO in its response to the Commission's letter vide letter dated Feb 24, 2012 has submitted the details of the additional income tax actually paid for previous years.

The Commission observed the details furnished by the GETCO and has found that the GETCO has claimed the income tax paid prior to FY 2008-09 i.e. before the first control period. The Commission considers the actual income tax paid by GETCO during FY 2008-09 and FY 2009-10 as it pertains to first MYT control period. As per the details furnished by GETCO it paid Rs. 43.07 Crore in FY 2008-09 and Rs. 24.90 Crore in FY 2009-10 totaling to Rs. 67.97 Crore. The commission considers the difference between the actual tax paid for FY 2008-09, FY 2009-10 and that approved by the Commission in the truing up for FY 2009-10 in response to the claim for additional tax by GETCO. In the truing up for FY 2009-10 the Commission had approved the income tax at Rs. 16.50 Crore.



Thus the Commission approves the additional income tax at Rs. 51.47 Crore for the determination of transmission charges for the FY 2012-13 as given in the table 4.43 below:

Table 4.43: Additional Tax Approved

(Rs Crore)	
Particulars	Amount
Income Tax paid in FY 2008-09	43.07
Income Tax paid in FY 2009-10	24.90
Total Income tax paid	67.97
Less: Income Tax approved in Truing up for FY 2009-10	16.50
Net Additional Income Tax	51.47



Chapter 5

Determination of Transmission Charges for FY 2012-13

5.1 Introduction

This chapter deals with the projected Capital Expenditure and determination of the transmission charges for the FY 2012-13 for GETCO. The Commission has considered the ARR approved in the MYT order dated 31st March, 2011 for FY 12-13 and the adjustment on account of true up for FY 2010-11 including previous year recoveries while determining the transmission tariff for FY 2012-13.

The detailed approach of the Commission and the computation of the previous year recoveries appear in the respective sections of this Order.

Before determining the transmission tariff for FY 2012-13, the projected capital expenditure and MW loading for FY 2012-13 is detailed below as given by GETCO in its petition.

5.2 Projected Capital Expenditure and MW Loading

This section deals with the expected capital expenditure and loading in FY 2012-13. The same has not been considered by GETCO to revise the ARR for FY 2012-13 in line with the provisions of the MYT regulations, 2011.

5.2.1 Expected loading on GETCO system in FY 2012-13

The total expected loading on GETCO system for FY 2012-13 is given in Table 5.1 below:

Table 5.1: Expected Total Loading of GETCO System (in MW) in FY 2012-13

Sr. No.	Stations	FY 2012-13 (Approved)	FY 2012-13 Revised Estimate
A	GSECL Plants	5478	5527



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Sr. No.	Stations	FY 2012-13 (Approved)	FY 2012-13 Revised Estimate
B	IPPs	6711	5887
C	Share from Central Sector	5306	5393
D	CPP Wheeling	84	203
E	Wind Power capacity	2691	2847
F	Solar power capacity	727	535
G	Biomass power capacity	60	21
H	Mini Hydro power capacity	6	6
	Total loading in MW	21063	20419

5.2.2 Expected Capital Expenditure in FY 2012-13

The revised estimates of expected network addition in the GETCO system in FY 2012-13 is given in Table 5.2 below:

Table 5.2: Expected Network Addition in FY 2012-13

Voltage Class	Substation (Nos.)		Transmission Line (Ckt km)	
	FY 2012-13 (Approved)	FY 2012-13 (Revised Estimate)	FY 2012-13 (Approved)	FY 2012-13 (Revised Estimate)
765 kV	-	0	-	-
400 kV	-	0	1,998	953
220 kV	-	6	783	1,698
132 kV	-	2	134	39
66 kV	60	52	1,487	534
Total	60	60	4,402	3,224



5.3 Expected Capital Expenditure in FY 2012-13

(Rs. Crore)		
Particulars	FY 2012-13 (Approved)	FY 2012-13 (Revised Estimate)
New Projects		
400 KV Substations	212	211
400 KV Lines	1,076	724
220 KV Substation	20	208
220 KV Lines	244	394
132 KV Lines	-	11
132 KV Substation	-	12
66 KV Substation	180	249
66 KV Lines	179	376
Bus Reactor/Shunt Capacitor	15	69
Augmentation of Sub-stations/lines	-	77
City Development Plan	-	17
Total of New Projects	1,926	2,347
R&M		
Renovation and Modernization	298	258
Vadodara City Development Plan	54	27
Total of R&M	352	285
Total	2,278	2,632

The project wise details of proposed capital expenditure for FY 2012-13 are given in Annexure I.

There seems to be some inconsistency in respect of the details given in Table 5.3 when compared with that given in Table 5.2. For example, in case of 66 kV lines the physical target has been reduced from 1487 ckt. Kms. to 534 ckt. Kms., whereas the expected capital expenditure has been revised upwards from Rs. 179 crores to Rs. 376 crores. There are other such inconsistencies also. GETCO should reconcile the figures and furnish a report to the Commission by 30th June, 2012.



5.3 Determination of Transmission Tariff for FY 2012-13

The table below summarizes the Annual Revenue Requirement as approved by the Commission for the FY 2012-13 in the MYT Order dated Mar 31, 2011. Detailed analysis of each expense head has already been provided in the MYT Order.

Table 5.4: Approved ARR for 2012-13

(Rs. Crore)		
Sr. No	Particulars	FY 2012-13
1	Operation & Maintenance Expenses	801.19
2	Depreciation	576.79
3	Interest & Finance Charges	397.09
4	Interest on Working Capital	39.65
5	Return on Equity	444.68
6	Total Fixed Costs	2,259.39
7	Less: Expenses Capitalized	176.00
8	Add: Provision for Tax	15.37
9	Total Transmission Charges	2,098.76
10	Less: Other Income	103.00
11	Aggregate Revenue Requirement	1,995.76
12	Add: Incentive for achieving target availability	0.00
13	Total Revenue Requirement	1,995.76

The Petitioner has submitted transmission tariff for FY 12-13 based on proposed true up of FY 2010-11 and the past period recoveries. Accordingly, the Commission has determined the revenue gap/surplus based on the true-up of FY 2010-11 along with true up of 2008-09 and 2009-10. The petitioner's proposal and the Commission's approved transmission tariff for FY 2012-13 are given in the Table 5.5 below.

Table 5.5: Transmission Tariff for FY 2012-13

Sr. No	Particulars	Unit	FY 2012-13	FY 2012-13
			Proposed	Approved
1	Approved ARR for FY 2012-13 as per the Tariff order dated 31-3-2011	Rs. Crore	1995.76	1,995.76



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Sr. No	Particulars	Unit	FY 2012-13	FY 2012-13
			Proposed	Approved
2	Add: Revenue gap/(surplus) for FY 2010-11 as per True up	Rs. Crore	34.91	(230.68)
2.1	Carrying cost for Gap/(Surplus) for FY 2010-11	Rs. Crore	3.58	-
3	Add: Revenue gap/(surplus) for FY 2009-10 approved in the MYT Order dated 31-3-2011	Rs. Crore	(2.76)	109.57*
3.1	Carrying cost for Gap/(Surplus) for FY 2009-10	Rs. Crore	(0.59)	-
4	Add: Gap/(Surplus) for FY 2008-09	Rs. Crore	7.14	(45.95)
4.1	Carrying cost for Gap/(Surplus) for FY 2008-09	Rs. Crore	2.43	-
5	Additional Tax paid for previous years	Rs. Crore	48.04	51.47
6	Total Recoveries gap/(surplus) for Past Period (2+2.1+3+3.1+4+4.1+5)	Rs. Crore	92.74	(115.59)
7	ARR for 2012-13 including adjustment for the previous years	Rs. Crore	2088.50	1,880.17
8	Total MW Allocation as per MYT Order dated 31-3-2011	MW	18510	18510
9	Transmission Tariff	Rs./MW/day	3091	2780**

* Revised as per the Review Order No. 1112/2011 dated 19th December, 2011

**Tariff charge has been rounded off to the nearest ten

It is pertinent to mention that the existing regulations do not provide for any carrying cost. So the Commission has decided not to allow the carrying cost as claimed by the petitioner.



Chapter 6

Compliance of Directives

6.1 Compliance of Directives issued by the Commission

The Commission in its MYT order dated 31st March 2011 and Tariff Orders dated 14th December 2009 and 31st March 2010 had issued various directives some of which had been complied with. GETCO has submitted a report on compliance of the directives issued by the Commission. The comments of the Commission on the submission/compliance of the GETCO are given below:

Directive 1: Transmission System Availability

GETCO has furnished the transmission system availability figures in its ARR and Tariff petition for Truing up for FY 2009-10 and Performance Review for FY 2010-11. The availability is required to be supported by detailed calculations as required by GERC Regulations, 2005. The detailed calculation for the availability of transmission system for FY 2009-10 and FY 2010-11 shall be furnished by April 2011. The claim of incentive for FY 2011-12 to FY 2015-16 shall be supported by detailed calculation as per GERC (MYT) Regulations, 2011. These calculations shall be submitted to the Commission within three months after the end of the relevant year.

Compliance / Action Taken:

In compliances to the above directive, percentage availability for the FY 2009-10 & FY 2010-11 for EHV lines & Sub-stations is given in the tables given below.

Table 6.1: Calculation of Transmission Availability for FY 2009-10 and FY 2010-11

Availability of Transmission Lines and Substations for the FY 2009-2010														
	Unit	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Average
System Availability														
Lines														
66 KV	%	99.61	99.58	99.57	99.73	99.83	99.8	99.69	99.77	99.76	99.78	99.77	99.74	99.72
132 KV	%	99.28	99.32	99.37	99.47	99.58	99.52	99.58	99.64	99.6	99.48	99.5	99.43	99.48



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Availability of Transmission Lines and Substations for the FY 2009-2010														
	Unit	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Average
System Availability														
220 KV	%	98.79	99.13	98.22	99.27	98.87	99.58	99.43	99.3	99.47	99.47	99.35	99.06	99.16
400 KV	%	98.98	99.47	98.85	99.91	98.91	99.79	99.4	99.54	99.95	99.48	99.58	99.6	99.46
Overall	%	99.29	99.4	99.1	99.56	99.47	99.7	99.58	99.6	99.66	99.63	99.6	99.49	99.51
Sub-stations	%	99.69	99.69	99.72	99.86	99.88	99.76	99.79	99.85	99.78	99.8	99.71	99.85	99.78
Transmission System Availability														99.64
Availability of Transmission Lines and Substations for the FY 2010-2011														
	Unit	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11	Average
System Availability														
Lines														
66 KV	%	99.64	99.67	99.64	99.8	99.8	99.82	99.78	99.8	99.77	99.78	99.74	99.84	99.76
132 KV	%	99.43	99.4	99.72	99.6	99.55	99.58	99.73	99.48	99.01	99.47	99.38	99.41	99.48
220 KV	%	98.91	99.08	99	99.55	99.61	99.46	99.47	99.5	99.53	99.34	99.35	99.18	99.33
400 KV	%	99.13	98.89	99.23	99.64	99.17	99.18	99.68	99.33	99.85	99.25	99.5	99.36	99.35
Overall	%	99.36	99.42	99.44	99.69	99.67	99.64	99.67	99.65	99.6	99.58	99.56	99.56	99.57
Sub-stations	%	99.7	99.75	99.84	99.91	99.92	99.88	99.75	99.77	99.74	99.82	99.77	99.92	99.81
Transmission System Availability														99.69

Commission's Comments

Action taken is noted. The same should be made available as per the timelines prescribed by the Commission.

Directive 2: Transmission Loss

- GETCO has projected in its petition a transmission loss of 4.2% for the FY 2010-11. However, according to the latest information provided by GETCO in March 2011, the transmission loss up to Feb 2011 works out to 3.85%. GETCO should furnish, by the end of April 2011, the actual transmission loss for the year 2010-11 supported with energy accounting (Energy input to the system less energy supplied to the beneficiaries).



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Compliance / Action Taken:

In compliance to the above directive, the computation of the Transmission losses calculated based on the conventional methodology by SLDC energy accounting and revised methodology approved by the Commission for the FY 2009-10 and FY 2010-11 are given below.

Table 6.2: Calculation of Transmission Loss for FY 2009-10 and FY 2010-11

Year 2009-2010

Sr. No.	Month	As per SLDC energy accounting				As per approved methodology			
		Energy Injected	Energy Supplied	Loss	% losses	Energy Injected	Energy Supplied	Loss	% losses
1	Apr-09	5225.84	5008.61	217.24	4.16	5650.25	5433.02	217.24	3.84
2	May-09	5176.76	4970.38	206.37	3.99	5612.02	5405.64	206.37	3.68
3	Jun-09	4932.63	4655.77	276.86	5.61	5413.56	5136.70	276.86	5.11
4	Jul-09	4040.83	3889.25	151.58	3.75	4630.39	4478.81	151.58	3.27
5	Aug-09	5196.59	4883.71	312.89	6.02	5839.46	5526.57	312.89	5.36
6	Sep-09	5472.61	5154.73	317.88	5.81	6017.78	5699.89	317.88	5.28
7	Oct-09	5434.18	5156.36	277.82	5.11	6121.07	5843.24	277.82	4.54
8	Nov-09	5211.11	4979.76	231.35	4.44	5617.79	5386.45	231.35	4.12
9	Dec-09	5268.49	5031.72	236.77	4.49	5903.40	5666.63	236.77	4.01
10	Jan-10	5101.43	4883.09	218.34	4.28	5897.70	5679.36	218.34	3.70
11	Feb-10	4627.23	4438.57	188.66	4.08	5257.26	5068.60	188.66	3.59
12	Mar-10	5454.33	5163.23	291.10	5.34	6148.30	5857.20	291.10	4.73
Overall		61142.02	58215.18	2926.84	4.79	68108.97	65182.13	2926.84	4.30



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Year 2010-2011

Sr. No	Month	As per SLDC energy accounting				As per approved methodology			
		Energy Injected	Energy Supplied	Loss	% losses	Energy Injected	Energy Supplied	Loss	% losses
1	Apr-10	5566.73	5298.98	267.75	4.81	6038.04	5770.3	267.75	4.43
2	May-10	5687.67	5427.66	260.01	4.57	6003.98	5743.97	260.01	4.33
3	Jun-10	5027.08	4809.68	217.41	4.32	5406.48	5189.07	217.41	4.02
4	Jul-10	4367.78	4180.15	187.63	4.3	4859.09	4671.45	187.63	3.86
5	Aug-10	4201.99	4056.17	145.82	3.47	4729.44	4583.62	145.82	3.08
6	Sep-10	4383.16	4179.43	203.73	4.65	4622.69	4418.96	203.73	4.41
7	Oct-10	5977.43	5744.3	233.13	3.9	6251.55	6018.41	233.13	3.73
8	Nov-10	4579.59	4424.72	154.88	3.38	4719.14	4564.26	154.88	3.28
9	Dec-10	5272.82	5073.53	199.29	3.78	5557.22	5357.93	199.29	3.59
10	Jan-11	5466.46	5243.99	222.47	4.07	5972.19	5749.72	222.47	3.73
11	Feb-11	5122.62	4924.09	198.53	3.88	5476.04	5277.51	198.53	3.63
12	Mar-11	5690.12	5454.17	235.94	4.15	6056.5	5820.56	235.94	3.9
Overall		61343.44	58816.86	2526.58	4.12	65692.34	63165.76	2526.58	3.85

- b. The transmission loss for the various years of the control period FY 2011-12 to FY 2015-16 shall be supported by system studies and submitted along with the business plan.

Compliance / Action Taken:

The summary of calculation of transmission loss for year FY 2011-12 to FY 2015-16 based on system study is as under:



Table 6.3: Transmission Loss from FY 2011-12 to FY 2015-16 as per System Studies

Summary of Results 12	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Total Real Power Generation(MW)	16013.615	16515.485	17981.44	19737.257	28389.423
Total Reactive Power generation(MVAR)	1450.219	1371.343	1748.70	3758.167	3902.754
Total Shunt Reactor Injection(MVAR)	-1367.386	-2705.284	-2884.429	-2953.193	-3626.826
Total Shunt Capacitor Injection(MVAR)	3310.350	2703.675	2648.578	1998.139	3125.402
Total Real Power Load (MW)	15322.420	15994.990	17433.976	19120.305	27392.828
Total Reactive Power Load(MVAR)	6521.611	6443.485	6429.319	7884.855	7685.282
Load pf	0.92	0.928	0.938	0.924	0.924
Total Real Power Loss(MW)	691.129	664.053	743.454	795.60	1179.292
Percentage Real Loss (%)	4.316	4.021	4.135	4.03	4.154
Total Reactive Power Loss(MVAR)	-2063.948	-3391.397	3052.818	-3269.68	-2032.922

Further the projected transmission loss from FY 2011-12 to FY 2015-16 as provided by GETCO through letter dated 01.07.2011 and 23.01.2012 has been given from Annexure II to Annexure VI of this order.

Commission's Comments

Action taken is noted by the Commission.

Directive 3: Cost Benefit Analysis for the Transmission projects for the control period FY 2011-12 to FY 2015-16

GETCO has submitted Transmission Plan for the Control Period FY 2011-12 to FY 2015-16 covering about 16063 Ckt. Km. of transmission lines and 378 sub-stations at 400 kV, 220 kV and 66 kV voltages at a total cost of over Rs.10723 crore. Though the Commission has provisionally approved, this requires to be support by detailed cost-benefit analysis to justify such massive investment.

GETCO is directed to submit a detailed cost-benefit analysis for each of the schemes or a group of schemes with detailed justification for each of the lines and sub-



stations. The analysis shall be duly supported by system studies based on realistic generation programme and the load profile for each year of the control period.

Compliance / Action Taken:

GETCO has submitted its Transmission Plan for the Second Control period i.e. FY 2011-12 to 2015-16. The Plan comprises of the following vital schemes/projects:

1. Power evacuation Projects/schemes.
2. New class KV wise Sub-stations & EHV lines
3. System strengthening schemes to cater 12 hours power supply to AG sector.
4. Renovation & Modernization schemes
5. Schemes for providing Reactive compensation
6. City Development Plan.
7. Infrastructure development projects for upcoming RE sources.

All of the above elements covered under Transmission Plan are vital to build robust, reliable and optimum transmission system to maintain the system availability and to minimize the Transmission losses in future considering the scenario of growth in the State Power sector.

Cost benefit analysis to justify these investments is as mentioned below.

1) Cost benefit based on reduction in system losses:

The petitioner has submitted cost benefit based on system studies carried out under peak load condition for FY 2011-12 to FY 2015-16 in its letter dated 01.07.2011, 23.01.2012 and the details submitted along with the petition. The study results reveal that there is a significant reduction in overall transmission losses (due to system strengthening schemes only) owing to good voltage profile and normalization of the power flow on critically loaded network. The pay-back period for the various years is shown in the table below:



Table 6.4: Cost-Benefit for Investments – Reduction in Transmission Losses

Sr. No.	Particulars		FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
1	Reduction in loss(MW)		89.34	46.63	23.77	41.84	14.82
2	Savings in units per annum(MU)	Sr. No. (1)x8760Hours	782.62	408.47	208.22	366.52	129.82
3	Revenue earned in Rs. Considering Rs. 3.00 per unit for FY 11-12 & FY 12-13 and Rs. 4.30 per unit for FY 13-14 onwards(Rs. Crore)	Sr. No. (2) x Sr. No. (3) x0.1	234.79	122.54	895.37	157.60	55.82
4	Project cost (without inflation) (Rs. Crore)		2034.71	1009.9	5646.20	1067.38	1017.01
5	Pay-back period(years)	Sr. No. (4) ÷Sr. No. (3)	8.67	8.24	6.31	6.77	18.22

Cost benefit analysis for various groups of planned transmission schemes is outlined in Annexure-VII.

2) Cost benefit based on increase in load handled and profits thereof

GETCO has submitted cost benefit based on increase in business quantum and profit thereon considering improvement in power handling capacity year on year in its letter dated 01.07.2011, 23.01.2012 and the details submitted along with the petition. The cost benefit by way of profit is worked out considering 10 % of the total revenue earned by catering additional load as profit for DISCOMs. Based on the proposed evacuation and system strengthening schemes GETCO has envisaged additional capability of handling energy and thereby increase in the business quantum of DISCOM as tabulated below:

Table 6.5: Cost-Benefit for Investments – Increase in Profits

Sr. No.	Particulars		FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
1	Additional load catered(MW)		4500	2800	1470	1760	8860
2	Additional energy catered per annum(MU)	Sr. No. (1) x 8760 Hours	39420	24528	12877.20	15417.60	75861.60



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Sr. No.	Particulars		FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
3	Revenue earned per annum in Rs. considering Rs. 3.00 per unit FY 11-12 & FY 12-13 and Rs. 4.30 per unit for FY 13-14 onwards(Rs. Crore)	Sr. No. (2) x Sr. No. (3) x0.1	1182.6	7358	5537.19	6629.57	3262.05
4	Assuming 10% as profit(Rs. Crore)	Sr. No. (3) x 10%	118.26	735.8	553.72	662.96	326.20

3) Other benefits:

- a. To facilitate the evacuation of power from up-coming power stations,
- b. System strengthening schemes for further transfer of power to the load centres,
- c. To meet the load growth expected in Gujarat,
- d. Strengthening of network in urban and industrial areas,
- e. Creation of 66 KV substations to reduce the length of 11 KV feeders thereby reducing the losses of distribution,
- f. To handle the contingencies without grid operation constraints,
- g. Availability of Adequate transformation capacity up to 66/11 KV level,
- h. Uniform spread of transmission network throughout Gujarat resulting in good voltage profile,
- i. Integration of renewable energy i.e. wind / solar power,
- j. Improvement in power quality & availability.

Commission's Comments

Commission appreciates the efforts made by GETCO to undertake the cost benefit analysis of various projects. Though there is scope for further refinement, it is a very good beginning which can enable GETCO to appraise and identify projects in a more rational manner. It will also be an example for other utilities in Gujarat to follow. The GETCO should adopt the practice of such cost benefit analysis prior to taking up any new project.



Directive 4: Outsourcing of operation and maintenance of EHV substations

GETCO has stated that the operation and maintenance of some of the EHV substations are being outsourced. GETCO is directed to provide justification for outsourcing the O&M of sub-stations with cost-benefit analysis. GETCO is also directed to furnish the following and other relevant information on outsourcing of O&M of sub-station.

- i) Voltage class of sub-stations that are outsourced.
- ii) System of monitoring, whether the Agency is providing adequate number of persons with required qualifications as provided in the contract.
- iii) The experience so far on outsourcing.

Compliance / Action Taken:

- i) Voltage-Class wise number of sub-stations for which O&M/Maintenance is outsourced:

Table 6.6: Number of Substations with Outsourced O&M

Class KV wise Substation	Purpose	Nos.
66 KV	Operation & Maintenance	286
220 KV	Maintenance	10
400 KV	Maintenance	2
	Total	298

- ii) System of Monitoring whether the agency is providing adequate number of persons with required qualifications as provided in the contract.

GETCO has submitted that the outsourcing agency is providing adequate number of persons with required qualifications. Checking method is devised as under:

- Documentary proof of qualifications, experience is obtained.
- Posting of In Charge Engineer for 220 KV /400 KV Substation
- Posting of Engineer/Supervisor for group Substation for 66KV Substation
- Identity card & Muster roll for verifying presence of persons on duty are in place



- Staff's salaries Register is maintained
- Details of Deduction of Provident Fund from staff salary are maintained
- Details regarding Labour license and group insurance are maintained
- Inspection by Divisional head and Circle head periodically

GETCO has further submitted the justification for outsourcing the O&M of sub-stations with cost-benefit analysis is as follows:

1) GETCO has following challenges in grid Operation & Maintenance:

- Optimization of costs in Operation & Maintenance.
- Enhance System Availability
- Realizing expected life of assets in Operation by effective supervision
- Condition monitoring of various equipments for preventing pre-mature failure
- Safety in operation

In view of above, GETCO planned to bring expertise through private participation, particularly in the area of Operation & Maintenance of EHV class Substations

2) Cost benefit by outsourcing of operation & maintenance of substation:

- GETCO has benefits in terms of man power cost for operation & maintenance when Cost to company components like Gratuity, Earn leave, Provident fund, Medical etc. which form approximately 27% of the CTC are considered
- Capital cost of testing equipments, tools tackles & respective man power & transportation cost is saved
- GETCO aims to efficiently Update & maintain assets by bringing expertise through public/private participation. These targets are expected to be achieved over a period of time.

iii) Experience of outsourcing:

GETCO has highlighted the following points as experience in outsourcing of O&M of substations:



- All parties are carrying out routine operation regularly as per requirements
- Maintenance and Testing are being done as per requirements
- Outage for maintenance work is arranged satisfactorily
- Training to staffs is given for operations as per GETCO safety policy
- Scope for improvement in break down maintenance is anticipated where support from GETCO is required.
- Performance audit of the agencies has been done by GETCO and some improvement suggested to the agencies.

The Commission had asked GETCO vide letter no. GERC/Tech/MYT 11-16/2086 dated 02.12.2011 to submit the below mentioned details with regard outsourcing of the substation.

- I. Cost benefit envisaged with detailed calculations and justifications for assumption made therein for outsourcing.
- II. What is the scope of work of the contractile organ?
- III. A comparative study, since the substation outsourced, showing the actual cost incurred on account of outsourcing the substations vice versa the cost that may have been incurred if these substations are operated by GETCO Staff.

GETCO vide letter dated 23.01.2012 has submitted as given below:

Response to point no I & III:

The detailed calculation of cost benefit analysis is included in Annexure-VIII, Annexure-IX & Annexure-X for 66 KV, 220 KV & 400 KV substations respectively. For 66 KV operations and maintenance, work is outsourced, whereas for 220 KV & 400 KV substations only maintenance work is outsourced. An abstract showing cost benefit per year & in % age is as under:



Table 6.7: Cost Benefit per year & in % age

Sr No	Voltage Class of Substation	No. of New substations outsourced till 10.01.12	Operation & Maintenance Cost per year per substation		Total Operation & Maintenance Cost per Year		Cost Benefit per Year (6-5) (Rs. Lacs)	Cost Benefit in %
			Outsourcing (Rs. Lacs)	GETCO staff (Rs. Lacs)	Outsourcing (3X2) (Rs. Lacs)	GETCO staff (4X2) (Rs. Lacs)		
	1	2	3	4	5	6	7	8
1	66KV	298	13.14	18.94	3915.72	5644.12	1728.4	30.62%
2	220KV	10	27.05	31.95	270.5	319.5	49.00	15.34%
3	400KV	2	37.3	39.84	74.6	79.68	5.08	6.38%

Assumptions made for calculation of above cost-benefit analysis are as under:

- Maintenance cost including testing cost for 66KV substation is considered as Rs. 5 lacs per substation per year.
- Post of 1 JE has been considered per 4 nos. of 66 KV substations.
- Salary of employee considered as an average of pay scale of respective category.
- Outsourcing cost of 66 KV substation O&M contract is considered as an average cost received against 7 nos tenders.
- Outsourcing cost of 220 KV substation maintenance contract is considered as an average cost received against tender for 10 nos. of 220KV substations.
- Outsourcing cost of 400 KV substation maintenance contract is considered as an average cost received against tender for 02 nos. of 400KV substations.
- As there is no separate account head available for identifying actual cost incurred for above outsourcing contract, the calculation is considered based on tender estimate and awarded cost.

II. Scope of work for Outsourcing:

- Round the clock monitoring of system and data logging
- Safety and security of assets



- Regular up keeping of substation premises
- Routine and periodical maintenance of substation equipments
- Testing of equipments
- Break down maintenance
- Maintenance of building, switch yard, road, lighting, quarter, etc

Commission's Comments

Action taken by GETCO is noted. However, performance audit of the agency should be done on a regular basis and GETCO should take proper measures regarding safety of employees of the agency.

Directive 5: Business Plan

GETCO has submitted a "Business Plan" for the control period of five (5) years 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 made by GETCO 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 during the control period, the projections for various components of ARR in the "Business Plan" should be as per the provisions of the Regulations.

The GETCO is directed to revise the "Business Plan" for the control period from FY 2011-12 to FY 2015-16 in line with the provisions of the above Regulations and submit the same by July, 2011.

Compliance/Action taken/initiated:

GETCO has submitted the revised business plan for the second control period from FY 2011-12 to FY 2015-16 in line with the provisions of the MYT Regulations vide their letter no. GETCO/ACE(R&C)/Reg/Business Plan/2607. The Commission studied the revised Business plan and asked GETCO to submit Financing Plan, details of on-going projects that will spill over into the Control Period, and new projects (along with justification) that will commence in the Control Period but may be completed within or beyond the Control Period as a part of the revised business plan as per GERC (MYT)



Regulations, 2011. GETCO has submitted the compliance to the query of the Commission vide their letter dated 23.01.2012 as under:

About financing Plan, GETCO is intending to take loans from banks & financial institutions for Capex funding requirement. For equity contribution towards Capex, GETCO has planned to manage it through internal accruals, subsidies & grants towards the cost of capital assets & consumers contribution. In case further funds are required, GETCO will approach GUVNL/GoG for equity contribution.

The details of on-going projects i.e. the amount expended towards physical work that has been spilled over into the entire Control Period is attached hereto as Annexure – XI. GETCO has mentioned that the Commission may consider capital expenditure for the MYT period from FY 2011-12 to FY 2015-16 as approved in tariff order dated 31st March 2011.

GETCO has stated that the projects considered during the control period are incorporated after system study and assessment of actual necessity of load growth considering the financial provision to be made for particular project or scheme of projects.

Commission's Comments

Action taken by GETCO is noted. The revised business plan submitted by GETCO is in line with the MYT Regulations, 2011.

Directive 6: Reactive Compensation:

The Commission has taken note of the submission made by the Petitioner. The Commission observes that the pace of installation of 11 kV capacitors is slow. The Commission therefore directs the Petitioner to expedite this work and to submit a status report on the work in progress (quarterly).

Compliance/Action taken/initiated:

GETCO has stated that orders are placed on EPC basis to three vendors to install total 233 Nos. of 11KV Capacitor banks at identified Sub-stations for installation of 630 MVAR & work shall be completed within 6 month period. The quarterly progress report submitted to the Commission is as under:



Table 6.8: Status of Installation of Capacitor Bank

Work Planned	Status as on June 2011	Status as on Oct 2011
233 Nos of 11KV Class Capacitor Banks. (630 MVAR)	<ul style="list-style-type: none"> ❖ 50 Nos. of Banks are commissioned. ❖ Status of balance 183 banks: <ul style="list-style-type: none"> - 39 Nos. of Banks are ready for Elect. Inspection. - 144 Nos. of Banks' civil work has completed - 100 Nos. of Banks' erection work has completed. ❖ Target for completion of balance 183 banks: <ul style="list-style-type: none"> - 40 Nos. shall be completed by June 2011 - 50 Nos. shall be completed by July 2011 - 55 Nos. shall be completed by August 2011 - 38 Nos. shall be completed by September 2011 	<ul style="list-style-type: none"> ❖ 128 Nos. of Banks are commissioned. ❖ Status of 105 banks: <ul style="list-style-type: none"> - 3 Nos. of Banks are ready for commissioning - 21 Nos. of Banks' are ready for Elect. Inspection. ❖ Target for completion of balance 105 banks: <ul style="list-style-type: none"> - 30 Nos. shall be completed by Nov 2011 - 40 Nos. shall be completed by Dec 2011 - 35 Nos. shall be completed by Jan 2012
72 Nos. of 11KV Class Capacitor Banks (180 MVAR)	Tender under process.	Tenders have been opened and are under scrutiny.

The commission through a letter dated 02.12.2011 asked the petitioner to submit the planning and progress of the installation of balance 1846 MVAR 11 kV capacitors, progress of installation of balance 375 MVAR 11 kV capacitors awarded on turnkey basis and 555 MVAR of bus/line reactors which is planned as per the compliance submitted along with petition No. 990/2010.

In this regard, the petitioner has submitted that during the year 2006-07 i.e. last year of 10th Five Year Plan, various transmission schemes for 11th Five Year Plan were planned considering anticipated generation capacity addition of around 7300 MW



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and load of around 14400 MW by March-2012. Accordingly, 2476 MVAR shunt capacitor addition was planned considered this huge MW loading scenario in Gujarat and the present status of which is as under:

Table 6.9: Status of Installation of Capacitor Bank (as on 10.01.2012)

Sr. No.	Particular	MVAR
1	Total Proposed addition of shunt capacitor during 11th FYP	2476 MVAR
2	A Planned Installation of 11KV Shunt Capacitor on turnkey basis (Under Progress)	630 MVAR (214 Nos. of Banks of 2.5 MVAR & 19 Nos. of Banks of 5 MVAR)
	B Installed till Sep 2011	255 MVAR (101 Banks)
	C Balance to be installed as on 10.01.2012 (a-b)	375 MVAR (132 Banks)
	D Installed from Oct 2011 to 10th Jan 2012	162.5 MVAR (62 Banks)
	E Total Installed till 10.01.2012 (b+d)	417.5 MVAR (163 Banks)
	F Installation work under progress out of 375 MVAR to be installed (c-d)	212.5 MVAR (70 Banks)
	G Planning for installation of balance 212.5 MVAR (70 Banks)	Upto Jan-12 - 10 Banks
		Upto Feb-12 - 20 Banks
		Upto Mar-12 - 20 Banks
		Upto Apr-12 - 20 Banks
3	Balance shunt capacitor to be Installed (1-2)	1846 MVAR
4	Already Installation of 132 KV Shunt Capacitor during 2009-10	100 MVAR (20 Nos. of 5 MVAR)
5	Balance shunt capacitor to be Installed (3-4)	1746 MVAR
6	Planned for Installation of 11KV Shunt Capacitor on turnkey basis for Year 2011-12-13 (Tender under Process)	180 MVAR (72 Banks of 2.5 MVAR each)
7	Balance shunt capacitor to be installed (5-6)	1566 MVAR *

* Note: Balance to be installed 1566 MVAR is scale down to 800 MVAR.

GETCO has further submitted that many IPPs have planned their power projects in Gujarat (Adani-Mundra-2640 MW, Essar-Vadinar-1200 MW, TATA-UMPP-Mundra-4000 MW, GPPC-Pipavav-700 MW, BECL-Padva-500 MW, GSEG-Hazira-350 MW, GIPCL-SLPP-Mangrol-250 MW etc) and have signed PPA with GUVNL, which were not considered during earlier studies. Considering this huge generation capacity addition and EHV network addition (i.e. evacuation and system strengthening schemes), it is observed that the voltage profile of EHV network across the Gujarat State has improved tremendously.

It is also observed that the load growth in Gujarat is less than the anticipated growth considered in 17th EPS (Say for the FY 2009-10, max. demand catered was 9883 MW



against anticipated demand of 11625 MW & for the FY 2010-11, max. demand catered as 10461 MW against anticipated demand of 12915 MW).

Under these circumstances/conditions, the capacity of 517.5 (417.5 +100) MVAR so far installed meeting the network requirement is capable of maintaining a good voltage profile. A few remaining pockets of low voltage noted from the Data Acquisition System (DAS) are also being attended with the proposed 180 MVAR capacity under award, therefore the capacity of 2476 MVAR planned in 11th FYP is technically scale down to 800 MVAR.

Under this changed scenario, planning for installation of 800 MVAR shunt capacitor during 12th FYP (i.e. around 200 MVAR per year for 2013-14 to 2016-17) is considered. However, the actual quantum of required shunt capacitors along with its locations will be identified on YoY basis on real time data i.e. low voltage scenarios and low PF substations during peak load conditions.

GETCO has further submitted that out of the total 455 MVAR Bus Reactor, 100 MVAR Bus Reactors are in procurement stage.

Table 6.10: Status of Installation of Bus Reactors (as on 10.01.2012)

Sr. No.	Name of Substation	MVAR	Status
1	400 kV Kasor	125	Installed & Commissioned
2	400 kV Soja	80	Installed & Commissioned
3	400 kV Kosamba	50	Procurement Under Progress
4	400 kV Varsana	50	Installed & Commissioned
5	400 kV Halvad	50	Procurement Under Progress
6	220 kV Anjar	25	Installed & Commissioned
7	220 kV Nanikhakhar	25	Installed & Commissioned
8	220 kV Nakhatrana	25	Installed & Commissioned
9	220 Panandhro	25	Installed & Commissioned
Total		455	355 MVAR (Installed & Commissioned)

* In case of installation of Line Reactor (400 kV Zerda):-Erection is under progress – (200 MVAR)

Commission's Comments

Action taken by GETCO is noted.



6.2 New Directive

Directive 1: Inconsistency in Revised Capex

There seems to be some inconsistency in respect of the details given in Table 5.3 when compared with that given in Table 5.2. For example, in case of 66 kV lines the physical target has been reduced from 1487 ckt. Kms. to 534 ckt. Kms., whereas the expected capital expenditure has been revised upwards from Rs. 179 crores to Rs. 376 crores. There are other such inconsistencies also. GETCO should reconcile the figures and furnish a report to the Commission by 30th June, 2012.

COMMISSION'S ORDER

The Commission approves the components of transmission charges and the Transmission tariff for FY 2012-13, as shown in the tables below:

(Rs. Crore)

Sr. No	Particulars	Approved for FY 2012-13
1	Operation & Maintenance Expenses	801.19
2	Depreciation	576.79
3	Interest & Finance Charges	397.09
4	Interest on Working Capital	39.65
5	Return on Equity	444.68
6	Total Fixed Costs	2,259.39
7	Less: Expenses Capitalized	176
8	Add: Provision for Tax	15.37
9	Total Transmission Charges	2,098.76
10	Less: Other Income	103
11	Aggregate Revenue Requirement	1,995.76
12	Add: Incentive for achieving target availability	0
13	Total Revenue Requirement	1,995.76
14	Add: Revenue gap/(surplus) for FY 2010-11 as per True up	(230.68)
15	Add: Revenue gap/(surplus) for FY 2009-10 approved in the MYT Order dated 31-3-2011	109.57
16	Add: Gap/(Surplus) for FY 2008-09	(45.95)
17	Additional Tax paid for previous years	51.47
18	ARR for 2012-13 including adjustment for the previous years	1,880.17

Transmission Tariff

S.No	Particulars	Unit	FY 2012-13
1	Transmission Tariff	Rs./MW/day	2780*

*Tariff charge has been rounded off to the nearest ten

The order shall come into force with effect from 1st April, 2012.

Sd/-

DR. M.K. IYER
Member

Sd/-

SHRI PRAVINBHAI PATEL
Member

Sd/-

DR. P.K. MISHRA
Chairman

Place: Ahmedabad
Date: 07/04/2012



ANNEXURE I

Project wise details of proposed capital Expenditure for FY 2012-13

Sr. No.	Name of Project	Name of S/S &Transmission line	Work Involved	Estimated Cost (Rs in Crores)	Proposed Capex for FY 2012-13 (Rs in Crores)
A. 400/220/132/66KV Sub Stations					
1	400KV Halvad s/s	400/220 KV Halvad s/s	400/220KV s/s with 2x315 MVA X'mer, 400KV FB - 6, 220KV FB - 6 400 KV, 63MVAR Bus Reactor 220/66 KV system & 100 MVA ICT and 3 nos of 66KV FB	105	14
		400KV D/C Vadavi-Halvad line	400KV line (D/C) (120)	110	53
		400KV FB - 2 Nos. at Vadavi	400KV FB	8	5
		400KV s/c Adani-Hadala LILO at Halvad	400KV line (D/C) (55)	51	9
		220KV D/C Dhrangadhra - Halvad LILO at 400KV Halvad	220KV line (D/C) (5)	2	0
		66 KV interconnection from 400 KV Halvad substation	66 KV D/C line - Panther	7	3
Total A1.				283	83
2	400 KV Bhogat, Dist: Jamnagar	400 KV substation for upcoming generation	400/220 KV, 1x315 MVA X'mers GIS with 4 Nos. 400 KV FB	120	24
		400 KV D/C Bhogat - Kalavad line	400 KV D/C line (120 RKM)	253	25
Total A2.				373	49
3	400 KV Kalavad substation, Dist: Rajkot	400/220/66 KV Kalavad s/s	400/220 KV, 2x315 MVA X'mers, 400 KV FB - 6, 220 KV FB - 6	92	27
			220/66 KV, 1 x 100 MVA Xmer, 66 KV FB - 6	9	3
		LILO of one 400 KV D/C Essar - Hadala line at Kalavad substation	400 KV line (D/C) (2x25 RKM)	46	4
		220 KV D/C Kalavad - Kangasiali line	220 KV line (D/C) (80 RKM)	45	13
		220KV FB - 2 Nos. at Kangasiali	220 KV FB	3	1
		66 KV D/C interconnection lines and bays for Kalavad substation	66KV line (D/C-Panther) (40 RKM)	9	3
			66 KV FB - 6 Nos.	2	1
Total A3.				205	51



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Sr. No.	Name of Project	Name of S/S &Transmission line	Work Involved	Estimated Cost (Rs in Crores)	Proposed Capex for FY 2012-13 (Rs in Crores)
4	400 KV Keshod substation, Dist: Junagadh	400/220 KV Keshod s/s	400/220 KV, 2x315 MVA X'mers, 400 KV FB - 4, 220 KV FB - 6	78	14
		400 KV D/C Kalavad - Keshod line	400 KV line (D/C) (110 RKM)	232	41
		400 KV FB - 2 Nos. at Kalavad	400 KV FB - 2	8	3
		220 KV D/C Keshod (400 KV) - Keshod line	220 KV line (D/C) (5 RKM)	3	1
		220 KV D/C Keshod (400 KV) - Timbdi line	220 KV line (D/C) (70 RKM)	39	7
		220 KV D/C Keshod (400 KV) - Visavadar line	220 KV line (D/C) (60 RKM)	34	6
		220 KV FB - 2 Nos. each at Keshod, Timbdi and Visavadar substations	220 KV FB - 6 Nos.	8	3
Total A4.				403	74
5	400 KV Fedra substation, Dist: Ahmedabad	400/220 KV Fedra s/s	400/220 KV, 2x315 MVA X'mers, 400 KV FB - 6, 220 KV FB - 6	87	15
		LILO of proposed 400 KV D/C Kasor - Amreli line at Fedra	400 KV line (D/C) (2x20 RKM)	84	15
		400 KV D/C Kosamba - Fedra line instead of earlier approved 400 KV D/C Kosamba - Chorania line	400 KV line (D/C) (260 RKM)	37	6
		220 KV D/C Fedra - Botad line	220 KV line (D/C) (60 RKM)	34	6
		LILO of 220 KV S/C Kasor - Vartej line at Fedra substation	220 KV line (D/C) (10 RKM)	4	1
		LILO of 220 KV S/C Karamsad - Vartej line at Fedra substation	220 KV line (D/C) (10 RKM)	4	1
		220 KV FB - 2 Nos. at Botad	220 KV FB - 2 Nos.	3	1
Total A5.				252	45
6	400 KV Sankhari substation, Patan	400/220 KV Sankhari s/s	400/220 KV, 2x315 MVA X'mers, 400 KV FB - 8, 220 KV FB - 6	95	17
		LILO of proposed 400 KV D/C Adani, Mundra - Zerda line at Sankhari	400 KV line (D/C) (2x50 RKM)	92	16



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Sr. No.	Name of Project	Name of S/S &Transmission line	Work Involved	Estimated Cost (Rs in Crores)	Proposed Capex for FY 2012-13 (Rs in Crores)
		LILO of proposed 400 KV D/C Vadavi - Zerda line at Sankhari (Reliance line - IPTC)	400 KV line (D/C) (2x25 RKM)	46	8
		LILO of proposed 220 KV D/C Sankhari - Jangral line at Sankhari (400 KV) substation	220 KV line (D/C) (2x25 RKM)	19	3
		LILO of 220 KV S/C Radhanpur - Mehsana line at Sankhari (400 KV) substation	220 KV line (D/C) (25 RKM)	9	2
Total A6.				260	46
7	400 KV Achhalia substation, Dist: Bharuch	400/220/66 KV Achhalia s/s	400/220 KV, 2x315 MVA X'mers, 400 KV FB - 6, 220 KV FB - 8, 63 MVAR Bus Reactor	99	30
			220/66 KV s/s with 2x100 MVA X'mer; 66 KV FB - 6	17	5
		LILO of 400 KV S/C SSP - Asoj & SSP-Kasor lines at Achhalia substation	400 KV D/C line - Twin Moose	37	11
		400 KV D/C Kosamba - Achhalia line	400 KV D/C line - Twin Moose	64	19
		400 KV FB - 2 Nos. at Kosamba	400 KV FB - 2	8	2
Total A7.				226	68
8	Augmentation of 400 KV substations	400/220 KV, 1 x 315 MVA ICT at Jetpur (without bay) due to declaration of 315 MVA ICT No.1 at Jetpur as failed	1 x 315 MVA ICT without bay	10	5
		400/220 KV, 1 x 315 MVA ICT (3 rd) at Vadavi (with bay) considering loading	1 x 315 MVA ICT with bay	14	7
		400/220 KV, 1 x 315 MVA ICT (2 nd) at Kosamba (with bay) considering reliability as initially only one ICT is proposed at Kosamba	1 x 315 MVA ICT with bay	14	0
Total A8.				39	12



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Sr. No.	Name of Project	Name of S/S &Transmission line	Work Involved	Estimated Cost (Rs in Crores)	Proposed Capex for FY 2012-13 (Rs in Crores)
9	220KV Shapur (Junagadh)	220KV Shapur (Junagadh) s/s	220/66KV s/s with 2x100 MVA X'mer; 220KV FB-2, 220KV BC bay-1, 220KV TBC - 1, 66KV FB - 14 & 220/132 KV, 1 x 100 MVA X'mer & 2 Nos. 132 KV FB	43	10
		220KV LILO of Jetpur - Keshod at Shapur (One Ckt.)	220KV line (D/C)	1	0
		66KV line (D/C) - Panther	66KV line (D/C) - Panther (T)	10	0
		LILO of 132 KV S/C Junagadh - Dhoraji line at Shapur	132 KV line (D/C) (20 RKM)	5	0
Total.A9				59	10
10	220KV Savadasana (Lunawada)	220KV Lunawada s/s	220/66KV s/s with 2x100 MVA X'mer; 220KV FB-2	32	5
		LILO of Godhra – Kadana line at 220KV Lunawad	220KV line (D/C) (2.5)	1	1
		66KV FB - 4 Nos. (2 nos. at Mota Khanpur, 1 No. at Malpur, 1 no. at Virpur)	66KV FB - 4	1	0
		66KV Movasa s/s	66/11KV s/s with 10 MVA X'mer	3	0
		66KV line (s/c) - Panther (HF)	S/C	11	0
		66KV line (D/C) - Dog	D/C	1	0
Total.A10				48	7
11	220 KV Jasdan substation, Dist: Rajkot	220/132/66 KV Jasdan s/s	220/66 KV s/s with 1x100 MVA X'mer; 220 KV FB-2, 220 KV BC bay-1, 220 KV TBC - 1, 66 KV FB - 6	25	5
			220/132 KV, 1 x 100 MVA X'mer & 2 Nos. 132 KV FB	10	1
		220 KV D/C Amreli - Jasdan line	220 KV line (D/C) (55 RKM)	31	6
		LILO of 132 KV S/C Jasdan - Gondal line at 220 KV Jasdan substation	132 KV line (D/C) (10 RKM)	3	0
		220 KV FB - 2 Nos. at Amreli	220 KV FB - 2 Nos.	3	0
		66 KV D/C interconnection lines and bays for Jasdan substation	66KV line (D/C-Panther) (40 RKM)	9	1
			66 KV FB - 6 Nos.	2	1



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Sr. No.	Name of Project	Name of S/S &Transmission line	Work Involved	Estimated Cost (Rs in Crores)	Proposed Capex for FY 2012-13 (Rs in Crores)
Total.A11				81	15
12	220 KV Sarla (Chotila) substation, Dist: Surendranagar	220/132/66 KV Sarla (Chotila) s/s	220/66 KV s/s with 1x100 MVA X'mer; 220 KV FB-4, 220 KV BC bay-1, 220 KV TBC - 1, 66 KV FB - 6	28	7
			220/132 KV, 1 x 100 MVA X'mer & 2 Nos. 132 KV FB	10	2
		220 KV D/C Halvad (400 KV) - Sarla line	220 KV line (D/C) (45 RKM)	25	4
		LILO of 220 KV S/C Chorania - Gondal line at 220 KV Sarla substation instead of Halvad (400 KV)	220 KV line (D/C) (20 RKM)	7	0
		LILO of 132 KV S/C Wankaner - Limdi line at 220 KV Chotila s/s	132 KV line (D/C) (15 RKM)	4	2
		220 KV FB - 2 Nos. at Halvad (400 KV)	220 KV FB - 2 Nos.	3	0
		66 KV D/C interconnection lines and bays for Sarla substation	66KV line (D/C-Panther) (40 RKM)	9	3
			66 KV FB - 6 Nos.	2	1
Total.A12				87	19
13	220 KV Bhatia, Dist: Jamnagar	220/132 KV Bhatia substation	220/132 KV substation with 2 x 100 MVA X'mers; 220 KV FB - 2 Nos., 132 KV FB - 2 Nos.	37	15
		220 KV D/C Bhatia - Kalavad line	220 KV line (D/C) (80 RKM)	45	35
		132 KV D/C Bhatia (220 KV) - Bhatia line	132 KV line (D/C) (10 RKM)	3	1
		132 KV FB - 2 Nos. at Bhatia	132 KV FB	2	1
Total.A13				85	51
14	220 KV Bhachau substation, Dist: Kutch	220/66 KV Bhachau s/s	220/66 KV s/s with 1x100 MVA X'mer; 220 KV FB-4, 220 KV BC bay-1, 220 KV TBC - 1, 66 KV FB - 6	25	11
		220 KV D/C Varsana - Bhachau line	220 KV line (D/C) (30 RKM)	17	5
		220 KV D/C Bhachau - Radhanpur line	220 KV line (D/C) (170 RKM)	95	38
		220 KV FB - 2 Nos. each at Varsana and Radhanpur substations	220 KV FB - 4 Nos.	6	4
		66 KV D/C interconnection lines	66KV line (D/C-Panther) (40 RKM)	9	3



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Sr. No.	Name of Project	Name of S/S &Transmission line	Work Involved	Estimated Cost (Rs in Crores)	Proposed Capex for FY 2012-13 (Rs in Crores)
		and bays for Bhachau substation	66 KV FB - 6 Nos.	2	1
Total.A14				154	62
15	220 KV Mokha substation, Dist: Kutch	220/66 KV Mokha s/s	220/66 KV s/s with 1x100 MVA X'mer; 220 KV FB-2, 220 KV BC bay-1, 220 KV TBC - 1, 66 KV FB - 6	22	2
		220 KV D/C Varsana - Mokha line	220 KV line (D/C) (55 RKM)	31	6
		220 KV FB - 2 Nos. at Varsana	220 KV FB - 2 Nos.	3	1
		66 KV D/C interconnection lines and bays for Mokha substation	66KV line (D/C-Panther) (40 RKM)	9	1
			66 KV FB - 6 Nos.	2	0
Total.A15				67	10
16	220 KV Suva substation near Dahej, Dist: Bharuch	220/66 KV Suva s/s	220/66 KV s/s with 1x100 MVA X'mer; 220 KV FB-2, 220 KV BC bay-1, 220 KV TBC - 1, 66 KV FB - 6	22	5
		LILO of one circuit of 220 KV D/C Kosamba - Mobha line at Suva substation	220 KV line (D/C) (30 RKM)	11	8
		66 KV D/C interconnection lines and bays for Suva substation	66KV line (D/C-Panther) (40 RKM)	9	5
			66 KV FB - 6 Nos.	2	1
Total.A16				44	20
17	220 KV substation near Bhestan, Dist: Surat	220/66 KV Bhestan s/s	220/66 KV s/s with 1x100 MVA X'mer; 220 KV FB-2, 220 KV BC bay-1, 220 KV TBC - 1, 66 KV FB - 6	22	11
		LILO of 220 KV S/C Navsari - Vav line at proposed substation near Bhestan	220 KV line (D/C) (25 RKM)	9	0
		66 KV D/C interconnection lines and bays for Bhestan substation	66KV line (D/C-Panther) (40 RKM)	9	6
			66 KV FB - 6 Nos.	2	2
Total.A17				43	19
18	220 KV Navera substation, Dist: Valsad (upgradation from 132 KV)	220/66 KV Navera s/s	220/66 KV s/s with 1x100 MVA X'mer; 220 KV FB-2, 220 KV BC bay-1, 220 KV TBC - 1, 66 KV FB - 6	22	3
		LILO of 220 KV S/C Navsari - Bhilad line at Navera	220 KV line (D/C) (30 RKM)	11	3



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Sr. No.	Name of Project	Name of S/S &Transmission line	Work Involved	Estimated Cost (Rs in Crores)	Proposed Capex for FY 2012-13 (Rs in Crores)
		66 KV D/C interconnection lines and bays for Navera substation	66KV line (D/C-Panther) (40 RKM)	9	2
			66 KV FB - 6 Nos.	2	0
Total.A18				44	8
19	220 KV Jarod substation, Dist: Vadodara	220/66 KV Jarod s/s	220/66 KV s/s with 1x100 MVA X'mer; 220 KV FB-4, 220 KV BC bay-1, 220 KV TBC - 1, 66 KV FB - 6	25	13
		Termination of one D/C line of 220 KV 2 x D/C Achhalia - Jambuva lines at Jarod	220 KV line (D/C) (30 RKM)	11	9
		LILO of one circuit of 220 KV D/C Wanakbori - Asoj line at Jarod	220 KV line (D/C) (10 RKM)	4	1
		66 KV D/C interconnection lines and bays for Jarod substation	66KV line (D/C-Panther) (40 RKM)	9	4
			66 KV FB - 6 Nos.	2	1
Total.A19				51	28
20	220/66 KV system at 400 KV Hadala substation	220/66 KV system along with 2 x 100 MVA ICT at Hadala substation	2 x 100 MVA ICTs with bay	15	8
		6 Nos. of 66 KV feeder bays at 400 KV Hadala substation	66 KV FB - 6 Nos.	2	1
		LILLO of 66 KV D/C Nyara - Navagam line (both ckt.) at Hadala substation	66 KV D/C line - ACSR Panther (2x11 Km)	5	2
		LILLO of 66 KV S/C Nyara - Popatpara - Navagam line at Hadala substation and termination of Hadala - Nyara line at Ghanteshwar substation through existing tap line	66 KV D/C line - ACSR Panther	2	1
		1 No. of 66 KV feeder bay at Ghanteshwar S/S	66 KV FB - 1 No.	0	0
Total.A20				25	12
21	220 KV Asodar substation, Dist: Anand	220/66 KV Asodar s/s	220/66 KV s/s with 1x100 MVA X'mer; 220 KV FB-2, 220 KV BC bay-1, 220 KV TBC - 1, 66 KV FB - 6	22	11
		LILLO of 220 KV D/C Jambuva - Karamsad line at Asodar	220 KV line (D/C) (2 x 1 RKM)	1	0



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Sr. No.	Name of Project	Name of S/S & Transmission line	Work Involved	Estimated Cost (Rs in Crores)	Proposed Capex for FY 2012-13 (Rs in Crores)
		substation			
		66 KV D/C interconnection lines and bays for Asodar substation	66KV line (D/C-Panther) (40 RKM)	9	4
			66 KV FB - 6 Nos.	2	1
Total.A21				34	17
22	132 KV Limkheda, Dist: Dahod (Upgradation from 66 KV)	132/66 KV Limkheda substation	132/66 KV substation with 2 x 50 MVA X'mer; 132 KV FB - 2 Nos., 66 KV FB - 5 Nos.	11	3
		LILO of one S/C line of 132 KV 2 x S/C Godhra - Dahod line at Limkheda substation	132 KV line (D/C) (5 RKM)	1	1
		66 KV D/C interconnection lines and bays for Limkheda substation	66KV line (D/C-Panther) (20 RKM)	4	4
			66 KV FB - 4 Nos.	1	1
Total.A22				18	9
23	132/66/11 KV Padavala substation	132/66/11 KV Padavala s/s	132/66 KV s/s with 2x50 MVA X'mer; 132 KV FB-2, 66 KV FB-7	11	5
			66/11 KV, 15 MVA ICT at Padavala substation	1	1
		LILO of 132 KV S/C Dhandhuka - Paliad - Vikram line at Padavala substation	132 KV D/C line - ACSR Panther	1	0
		LILO of 66 KV Hadmatla - Kotda'S' line at Padavala substation	66 KV D/C line - ACSR Panther	2	0
		66 KV D/C line from Padavala - one ckt. tap to 66 KV S/C Sardhar - Faddang line and 2nd ckt. To Tramba with 66 KV S/C line	66 KV D/C line - ACSR Panther	2	0
			66 KV S/C line - ACSR Panther	1	0
		1 No. of 66 KV feeder bay at Tramba S/S	66 KV FB - 1 No.	0	0
		66 KV, 630 sq.mm. (6+1) Padavala - Veraval-II u/g cable line	66 KV, 630 Sq.mm. (6+1) u/g cable	11	0
Total.A23				30	6
24	132/66/11 KV Padavala substation	66 KV, 630 sq.mm. (6+1) Veraval-II - Veraval u/g cable line	66 KV, 630 Sq.mm. (6+1) u/g cable	5	5



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Sr. No.	Name of Project	Name of S/S &Transmission line	Work Involved	Estimated Cost (Rs in Crores)	Proposed Capex for FY 2012-13 (Rs in Crores)
		4 Nos. of 66 KV feeder bays at Veraval-II and 2 Nos. of 66 KV feeder bays at Veraval substations	66 KV FB - 6 No.	2	2
		66 KV, 630 sq.mm. (3+1) Padavala - Shapar u/g cable line	66 KV, 630 Sq.mm. (3+1) u/g cable	11	0
		1 No. of 66 KV feeder bay at Shapar S/S	66 KV FB - 1 No.	0	0
Total.A24				19	8
25	New 66 KV GIS substations at Nana Mava (Shastrinagar) and Mota Mava (Ambika Park)	66/11 KV, GIS substations at Nana Mava (Shastrinagar) & Mota Mava (Ambika Park)	66/11 KV, 15 MVA GIS substations	40	8
		66 KV, 630 sq.mm. (6+1) Mavdi - Nana Mava u/g cable line	66 KV, 630 Sq.mm. (6+1) u/g cable	12	4
		66 KV, 630 sq.mm. (6+1) Kangasiyali - Mavdi u/g cable line	66 KV, 630 Sq.mm. (6+1) u/g cable	19	3
		66 KV, 630 sq.mm. (6+1) Nana Mava - Mota Mava u/g cable line	66 KV, 630 Sq.mm. (6+1) u/g cable	13	5
		66 KV feeder bays - 2 Nos. at Mavdi and 1 No. each at Kangasiyali & Nana Mava substations	66 KV FB - 4 Nos.	1	1
Total.A25				86	21
26	New link lines for ring main system	66 KV, 630 sq.mm. (3+1) Kangasiyali - Vavdi u/g cable line	66 KV, 630 Sq.mm. (3+1) u/g cable	5	2
		66 KV, 630 sq.mm. (3+1) Vavdi - Punitnagar u/g cable line	66 KV, 630 Sq.mm. (3+1) u/g cable	6	3
		66 KV, 630 sq.mm. (6+1) GIDC-I - Aji GIDC-II u/g cable line	66 KV, 630 Sq.mm. (6+1) u/g cable	5	3
		66 KV, 630 sq.mm. (6+1) Aji GIDC-II - Dudhsagar u/g cable line	66 KV, 630 Sq.mm. (6+1) u/g cable	8	4
		66 KV feeder bays - 4 Nos. at Aji GIDC-II, 2 Nos. each at GIDC-I, Dudhsagar & Vavdi and 1 No. each at Kangasiyali & Punitnagar substations	66 KV FB - 12 Nos.	4	2



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Sr. No.	Name of Project	Name of S/S &Transmission line	Work Involved	Estimated Cost (Rs in Crores)	Proposed Capex for FY 2012-13 (Rs in Crores)
Total.A26				29	14
27	Strengthening of existing lines	Conversion of 66 KV Navagam - Dudhsagar H-frame line in 630 sq.mm (6+1) u/g cable	66 KV, 630 Sq.mm. (6+1) u/g cable	12	0
		66 KV, 630 sq.mm. (6+1) Kangasiyali - Punitnagar u/g cable line by dismantalling 66 KV D/C Vikram - Punitnagar line from Punitnagar end upto Vavdi substation	66 KV, 630 Sq.mm. (6+1) u/g cable	19	9
		66 KV, 630 sq.mm. (6+1) Ganteshwar - Raiyadhar u/g cable line	66 KV, 630 Sq.mm. (6+1) u/g cable	13	7
		Conversion of 66 KV D/C Nyara - Ganteshwar line from Dog to Panther conductor	Conversion of 66 KV D/C line from Dog to Panther	1	0
		Conversion of 66 KV Dudhsagar - Wankaner H-frame line in 630 sq.mm (3+1) u/g cable (1 to 20 Loc. From Dudhsagar)	66 KV, 630 Sq.mm. (3+1) u/g cable	10	0
		66 KV Dudhsagar - Sindhavadr line tap to Kuvadva substation	66 KV S/C line - Panther	2	1
		66 KV feeder bays - 2 Nos. each at Punitnagar, Ganteshwar & Raiyadhar and 1 No. each at Navagam, Dudhsagar & Kuvadva substations	66 KV FB - 9 Nos.	3	2
Total.A27				59	19
28	132 KV Link lines for 2nd Source	132 KV S/C Achhalia - Tilakwada line (ACSR Panther)	132 KV S/C - ACSR Panther	7	3
		132 KV S/C Tilakwada - Chhotaudepur line (ACSR Panther)	132 KV S/C - ACSR Panther	10	5
		132 KV feeder bays - 1 No. each at Achhalia & Chhotaudepur and 2 Nos. at Tilakwada substations	132 KV FB - 4 Nos.	3	2
Total.A28				19	10



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Sr. No.	Name of Project	Name of S/S &Transmission line	Work Involved	Estimated Cost (Rs in Crores)	Proposed Capex for FY 2012-13 (Rs in Crores)
29	Charanka Solar Park-1, (500 MW),	1C x 630 mm2 Under ground cable & laying	1C x 630 mm2 Under ground cable	164	49
		220/66 KV switchyard along with 8x100 MVA ICTs at Solar Park	220/66 KV s/s with 8x100 MVA X'mer; 220 KV FBs - 2 Nos. and 66 KV FBs - 30	107	32
		220 KV D/C pooling station – Jangral line (AL-59) with 2 Nos. of 220 KV feeder bays at Jangral substation	220 KV D/C line - AL-59	45	19
			220 KV FB - 2 Nos.	3	2
		400/220 KV switchyard along with 2x315 MVA ICTs at Solar Park	400/220 KV s/s with 2x315 MVA X'mer; 400 KV FBs - 2 Nos.	61	18
		400 KV D/C pooling station – Sankhari (proposed) line (Twin Moose) with 2 Nos. of 400 KV feeder bays at 400 KV Sankhari substation	400 KV D/C line - Twin Moose	92	16
400 KV FB - 2 Nos.	8		3		
Total.A29				480	138
30	66 KV substations		66/11KV s/s with 10 MVA X'mer; FB-1 & X'mer Bay-1		6
			66/11KV s/s with 10 MVA X'mer; FB-1 & X'mer Bay-1		0
Total.A30				0	6
Total.A1 to A30				3603	939
B.Transmission lines					
31	400 KV D/C Amreli - Kasor line		400 KV line (D/C) (200 RKM)	422	82
32	400 KV D/C Varsana - Halvad line		400 KV line (D/C) (110 RKM)	232	49
33	LILO of one ckt. Of 400 KV D/C Kosamba - Chorania line at Fedra	LILO of one ckt. Of 400 KV D/C Kosamba-Chorania line at Fedra instead of Termination of Kosamba-Chorania line at Fedra	400 KV D/C line	37	33
Total.B 31,32,33				691	164
34	220 KV lines	220 KV D/C Visavadar - Timbdi line	220 KV D/C line - AL-59	27	7
		220 KV D/C Chorania - Botad line	220 KV D/C line - AL-59	36	9
		LILO of 220 KV S/C Kangasiyali - Nyara line at Hadala substation	220 KV D/C line - ACSR Zebra	6	2



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Sr. No.	Name of Project	Name of S/S &Transmission line	Work Involved	Estimated Cost (Rs in Crores)	Proposed Capex for FY 2012-13 (Rs in Crores)
		220 KV D/C Chikhli - Bhilad line	220 KV D/C line - AL-59	38	10
		220 KV feeder bays - 2 Nos. each at Visavadar, Timbdi, Chorania, Botad, Hadala, Chikhli & Bhilad substations	220 KV FB - 14 Nos.	20	5
Total.B34				127	32
35	New link lines	LILO of 66 KV Bopal - Sanand line at Vadavi and Santej substations	66 KV D/C line - ACSR Panther	8	4
		66 KV D/C Khatraj - Santej line	66 KV D/C line - ACSR Panther	1	0
		LILO of Salejada - Bavala line to Juval Rupavati substation instead of existing tap	66 KV S/C line - ACSR Panther	0	0
		66 KV FBs - 4 Nos. at Santej, 2 Nos. each at Vadavi & Khatraj and 1 No. at Juval Rupavati substations	66 KV FB - 9 Nos.	3	2
Total.B35				12	6
36	66 KV lines		66KV associated line (15 CKM per S/S)	6	0
			66 KV S/C line	2	2
			66 KV D/C line	2	2
		New 66 KV lines - 762.5 CKM			
		U/g cable line - 2 CKM		0	0
		66 KV line conductor strengthening - 436 CKM		0	0
		66 KV feeder bays - 77 Nos.		0	0
Total.B36				10	4
37	Tentative investment required for integration of total 716 MW Solar Power Capacity into Grid		66 KV lines & feeder bays	120	48
38	66 KV substations, approved under R-APDRP scheme Part-B for PGVCL	4 GIS + 3 AIS substations	66 KV Substation	99	50
		300mm2 (3+1) U/G cable	66 KV U/G Cable	36	18
		S/C line - Dog	66 KV S/C line	0	0
39	Tentative investment required for integration of total 274 MW Solar Power Capacity into GETCO Grid from 20 Nos. developers under GoG Phase-II located outside solar park		66 KV lines & feeder bays	58	23
Total.B 37,38,39				313	139



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Sr. No.	Name of Project	Name of S/S & Transmission line	Work Involved	Estimated Cost (Rs in Crores)	Proposed Capex for FY 2012-13 (Rs in Crores)
Total.B 30 to 39				1153	345
C. Evacuation Schemes					
40	Utran CCPP Extn. - 360 MW	220KV Utran - Kosamba (2xD/C)	220KV line (2xD/C) (2x43)	32	0
		220KV Kosamba-Mobha (D/C)	220KV line (D/C) (87.6)	33	0
		220KV Kosamba - Zagadia (D/C)	220KV line (D/C)	15	0
		220KV Gavasad - Salejada (D/C) (Instead of Gavasad-Waghodia line)	220KV line (D/C) - AL-59	43	27
		220KV LILO of Vav - Zagadia at Kosamba s/s	220KV line (D/C)	2	0
		220KV FB - 4 Nos. at Mobha, 2 Nos. at Zagadia & 2 Nos. at Salejada s/s	220KV FB	11	0
		Total.C 40		135	27
41	Sikka Extn. 3 & 4, 2x250 MW	220KV LILO D/C Jamnagar - Jetpur at Sikka	220KV line (2xD/C)(59.8+57.2)	43	33
		220KV Sikka - Motipaneli	220KV line (D/C)	42	17
		220KV FB - 2 Nos. at Motipaneli	220KV FB	3	0
		Total.C 41		88	50
42	Ukai Extn, 490 MW (09/10)	400 KV Kosamba s/s	400/220KV s/s with 315 MVA X'mer, 400KV FB-5, CVT Bay-2, 400KV Reacor -2, 220KV FB-10, B/C Bay-1, B/T Bay-1	75	0
		400KV Ukai - Kosamba	400KV S/C on D/C tower	55	0
		400KV Kosamba - Choraniya	400KV line (D/C)	239	40
		400KV LILO of Asoj - Ukai at Kosamba s/s	400KV line (D/C)	29	0
		400KV FB - 2 Nos. at Chorania	400KV FB	8	0
		Total.C 42		407	40
43	Dhuvaran CCPP - III, 360 MW	220KV LILO of Karmsad - Vartej at Dhuvaran	220KV line (D/C)	11	11
		220KV LILO of Kasor - Vartej at Dhuvaran	220KV line (D/C)	11	11
		Total.C 43		22	21
44	Adani Project, Mundra - Bid -II (1000 MW)	400KV Adani - Zerda 2 (2xD/C) (2x331)	400KV line (D/C)	305	56



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Sr. No.	Name of Project	Name of S/S & Transmission line	Work Involved	Estimated Cost (Rs in Crores)	Proposed Capex for FY 2012-13 (Rs in Crores)
		400KV FB - 4 Nos. at Zerda	400KV FB	16	6
		400KV X'mer Bay - 1 No. at Zerda	400KV X'mer Bay	4	2
		400KV X'mer - 1 No. at Zerda	400KV X'mer. - 315 MVA	10	7
Total.C 44				335	71
45	ESSAR Power, Vadinar - 1000 MW	400KV Essar-Hadala line (2xD/C) (2nd. line thro' IPTC) (Actual cost)	400KV line (1xD/C)	93	0
		400KV FB - 4 Nos. at Hadala	400KV FB	16	0
		400KV X'mer Bay - 1 No. at Hadala	400KV X'mer bay	4	4
		400KV X'mer - 1 No. at Hadala	400KV X'mer. - 315 MVA	10	9
Total.C 45				123	13
46	BECL, Padva, (2x300 MW)	220KV Padva - Botad	220KV line (D/C)	41	20
		220KV Padva - Palitana	220KV line (D/C)	20	18
		220KV LILO of Savarkundla - Vartej at Padva (Single ckt)	220KV line (D/C)	11	10
		220KV FB (2-Botad, 2-Palitana)	220KV FB - 4 Nos.	6	5
Total.C 46				78	54
47	GSPC, Pipavav, (2x350 MW)	220KV Pipavav - Dhokadva	220KV line (D/C)	19	0
		220KV Mahuva (otha) - Palitana (sagapara)	220KV line (D/C)	18	9
		220KV LILO of Savarkundla - Mahuva at Pipavav (Both ckt)	220KV line (2 x D/C)	26	0
		220KV FB (2-Dhokadva, 2-Palitana, 2-Mahuva)	220KV FB - 6 Nos.	8	0
Total.C 47				70	9
48	Adani Project Bid -II	400KV Adani - Zerda (2xD/C)	400KV D/C line	305	89
49	ESSAR Power, Vadinar - 1000 MW	400KV Essar - Amreli line (D/C)	400KV D/C line	138	53
Total.C 48,49				443	142
50	GSECL, Wanakbori TPS, expansion Unit No.8	400 KV D/C Wanakbori TPS (Unit No.8) - Soja line	400 KV D/C line - Twin Moose	92	18



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Sr. No.	Name of Project	Name of S/S & Transmission line	Work Involved	Estimated Cost (Rs in Crores)	Proposed Capex for FY 2012-13 (Rs in Crores)
		2 Nos. of 400 KV feeder bays at Soja substation	400 KV FB	8	2
		400 KV D/C unit No.8 switchyard - existing switchyard at Wanakbori TPS (interlink between switchyards)	400 KV D/C line - Twin Moose	1	0
		LILO of existing 400 KV S/C Wanakbori – Soja line at 400 KV Dehgam (PGCIL) substation	400 KV D/C line - Twin Moose	13	3
		2 Nos. of 400 KV feeder bays at Dehgam (PGCIL) substation	400 KV FB	8	2
		400 KV D/C Soja - Zerda line	400 KV D/C line - Twin Moose	129	26
		2 Nos. of 400 KV feeder bays each at Soja & Zerda substations	400 KV FB	16	3
Total.C 50				267	53
51	EPGL, Salaya Phase-II, (3240 MW), 800 MW	400 KV D/C EPGL generating station - Halvad line	400 KV D/C line - Twin Moose	161	32
		2 Nos. of 400 KV feeder bays at Halvad substation	400 KV FB - 2 Nos.	8	2
Total.C 51				169	34
52	Shapoorji Pallonji, Kodinar, (2x660 MW), 800 MW	400 KV D/C Shapoorji Pallonji generating station - Amreli line	400 KV D/C line - Twin Moose	101	20
		2 Nos. of 400 KV feeder bays at Amreli substation	400 KV FB - 2 Nos.	8	2
Total.C 52				109	22
Total.C40 to 52				2247	535
D. Power Transformer Augmentation					
53	220/66 KV, Trans. along with Bay B.R. No. 36.11/391 dtd. 30.11.06			306	19
Total.D 53				306	19
E. System Strengthening and Upgradation works					
54	System Upgradation works	220KV s/c Vadavi - Viramgam line (Strengthening)	220KV line (53)	6	3
		220KV s/c Vadavi - Chhatral line (Strengthening)	220KV line (13)	2	1
Sr.	Name of Project	Name of S/S	Work Involved	Estimated Cost (Rs in	Proposed Capex for FY 2012-13



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No.		&Transmission line		Crores)	(Rs in Crores)
		220KV s/c Choraniya - Viramgam line	220KV line (71)	9	4
		(Strengthening)			
		220KV Nanikhakhar - Varsana - Chitrod lines	220KV line (145)	35	17
		(D/C) (Strengthening)			
		Total.E 54		51	26
F. City Development Plan					
55	City Development Plan	Bhavnagar		33	6
		Jamnagar		35	7
		Ahmedabad		2	0
		Baroda		22	4
		Rajkot		2	0
Total.F 55				94	17
G. R & M Works					
56	R & M			840	181
	Vadodara City Development Plan			232	27
Total.G 56				1072	208
H. Strengthening of network around Morbi area					
57(a)	New 66 KV substations	44 Nos. of new 66 KV substations under Morbi (O&M) area	66/11KV s/s with 10 MVA X'mer; FB-1 & X'mer Bay-1	132	0
		Associated transmission lines (15 Km per substation)	66 KV S/C line - ACSR Dog	35.64	0
			66 KV D/C line - ACSR Dog	39.6	0
		Conversion of approved 66 KV Vasant Baug substation from AIS to GIS	66 KV GIS substation	20	10
Total. H(a)				227.24	10
(b)	220 KV Sartanpar substation	220/66 KV Sartanpar s/s	220/66 KV s/s with 2x100 MVA X'mer; 220 KV FB-4, 220 KV BC bay-1, 220 KV TBC - 1, 66 KV FB - 13	36.87	11.06
		LILO of both circuits of 220 KV D/C Hadala - Halvad line (under construction) at Sartanpar substation	220 KV D/C line - ACSR Zebra - 2 x 12 RKM	8.88	2.66
		66 KV D/C Sartanpar (220KV S/S) - Sartanpar (existing) line	66 KV D/C line - ACSR Panther	0.44	0



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		LILO of 66 KV S/C Sartanpar - Lakaddhar line at 220 KV Sartanpar substation	66 KV D/C line - ACSR Panther	0.44	0
		66 KV D/C Sartanpar (220KV S/S) - Dungarpur line with one circuit LILO at proposed Manekwada S/S	66 KV D/C line - ACSR Panther	3.08	1.54
		66 KV D/C Sartanpar (220KV S/S) - Rafleshwar line	66 KV D/C line - ACSR Panther	1.32	0.66
		66 KV D/C Sartanpar (220KV S/S) - proposed Rajgadh line	66 KV D/C line - ACSR Panther	2.64	1.32
		66 KV D/C Sartanpar (220KV S/S) - Kalikanagar line with one circuit LILO at proposed Ratavirda S/S	66 KV D/C line - ACSR Panther	1.1	0.55
		Conversion of 66 KV S/C Sartanpar (existing) - Lakaddhar line into D/C line	Conversion of 66 KV S/C (Panther) into D/C (Panther) line	0.45	0.22
		66 KV feeder bays: 3 Nos. at Sartanpar (existing), 2 Nos. each at Dungarpur, Rafleshwar, Rajgadh (proposed), Kalikanagar and 1 No. at Lakaddhar substations	66 KV FB - 12 Nos.	4.2	2.1
Total. H(b)				59.42	20.11
c)	220 KV Charadava substation	220/66 KV Charadava s/s	220/66 KV s/s with 2x100 MVA X'mer; 220 KV FB-4, 220 KV BC bay-1, 220 KV TBC - 1, 66 KV FB - 10	35.82	10.74
		Termination of LILO of one circuit of 220 KV D/C Halvad - Morbi line to Bhimasar (PG) at Charadava substation	220 KV D/C line - ACSR Zebra	1.85	0
		220 KV D/C Halvad (400 KV) - Charadva line	220 KV line (D/C) (30 RKM)	13.5	6.75
		220 KV FB - 2 Nos. at Halvad (400 KV)	220 KV FB - 2 Nos.	2.8	1.4

Sr. No.	Name of Project	Name of S/S & Transmission line	Work Involved	Estimated Cost (Rs in Crores)	Proposed Capex for FY 2012-13 (Rs in Crores)
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					Crores)
		66 KV D/C (Panther) link line from 220 KV Charadava s/s to existing Charadava, Dungarpur, Morbi - Charadava lilo line, proposed Mathak, Ishwarnagar & Sarambhada s/s	66 KV D/C line - ACSR Panther	1.54	0.77
		66 KV S/C (Panther) link line from 220 KV Charadava s/s to existing Charadava - Chupani line and from Ishwarnagar tap to Ishwarnagar & Sarambhada s/s	66 KV S/C line - ACSR Panther	3.76	1.88
		66 KV S/C Ishwarnagar - Devlia line	66 KV S/C line - ACSR Panther	0.78	0.39
		66 KV S/C Sarambhada - Sundaribhavani line	66 KV S/C line - ACSR Panther	1.25	0.62
		66 KV S/C Khareda - proposed Unchi Mandal line	66 KV S/C line - ACSR Panther	1.25	0.62
		66 KV feeder bays: 2 Nos. each at Charadava (existing), Ishwarnagar, Sarambhada & Mathak (proposed) and 1 No. each at Devalia, Khareda, proposed Sundari Bhavani and Unchi Mandal substations	66 KV FB - 12 Nos.	4.2	2.1
Total. H(c)				66.75	25.27
(d)	220 KV Shapar substation	220/66 KV Shapar s/s	220/66 KV s/s with 2x100 MVA X'mer; 220 KV FB-4, 220 KV BC bay-1, 220 KV TBC - 1, 66 KV FB - 10	35.82	10.74
		LILLO of 220 KV S/C Chorania - Sarla and Sarla - Gondal lines (due to LILLO of 220 KV S/C Chorania - Gondal line at Sarla substation) at Shapar substation	220 KV D/C line - ACSR Zebra (2 x 10 RKM)	7.4	0

Sr.	Name of S/S	Estimated	Proposed Capex for
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No.	Name of Project	&Transmission line	Work Involved	Cost (Rs in Crores)	FY 2012-13 (Rs in Crores)
		66 KV D/C Shapar - Than line (one circuit to be extended to Than and other circuit to be terminated to proposed Than-II substation)	66 KV D/C line - ACSR Panther	4.4	0
		66 KV, 630mm ² (3+1) u/g cable for termination of line from Shapar at Than substation	66 KV, 630mm ² (3+1) u/g cable	3.2	0
		66 KV S/C Shapar - Chotila line	66 KV S/C line - ACSR Panther	2.19	0
		LILLO of 66 KV S/C Chotila - Thikariyali line at Shapar substation	66 KV D/C line - ACSR Dog	2.25	0
		Conversion of 132 KV Sitagadh substation into 66 Kv level along with 66/11 KV, 2 x 15 MVA ICTs	66/11 KV, 2 x 15 MVA ICTs	2.4	0
		66 KV D/C Shapar - Sitagadh line	66 KV D/C line - ACSR Panther	1.1	0
		LILLO of 66 KV S/C Wankaner - Than - Tarnetar line at Than-II substation	66 KV D/C line - ACSR Dog	0.45	0
		66 KV feeder bays: 3 Nos. at Than-II (proposed), 2 Nos. at Sitagadh and 1 No. each at Than and Chotila substations	66 KV FB - 7 Nos.	2.45	0
Total. H(d)				61.66	10.74
(e)	220 KV Tankara substation	220/66 KV Tankara s/s	220/66 KV s/s with 2x100 MVA X'mer; 220 KV FB-4, 220 KV BC bay-1, 220 KV TBC - 1, 66 KV FB - 8	35.12	0
		LILLO of 220 KV S/C Morbi - Hadala line at Tankara substation (instead of earlier approved 220 KV D/C Morbi - Tankara - Chorania line)	220 KV D/C line - ACSR Zebra	4.44	0
		LILLO of one circuit of 220 KV D/C Hadala - Sartanpar - Halvad line at Tankara substation	220 KV D/C line - ACSR Zebra	9.25	0

Sr.	Name of Project	Name of S/S	Work Involved	Estimated Cost (Rs in Crores)	Proposed Capex for FY 2012-13
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No.		&Transmission line		Crores)	(Rs in Crores)
		LILO of 66 KV S/C Tankara - Bangavadi line at Tankara (220 KV S/S)	66 KV D/C line - ACSR Panther	1.1	0
		LILO of 66 KV S/C Tankara - Lajai line at Tankara (220 KV S/S)	66 KV D/C line - ACSR Panther	1.1	0
		66 KV D/C Tankara - Chachapar line	66 KV D/C line - ACSR Panther	2.64	0
		66 KV D/C Chachapar - proposed Amrapar line	66 KV D/C line - ACSR Panther	1.32	0
		66 KV feeder bays: 4 Nos. at Chachapar and 2 Nos. proposed Amrapar substations	66 KV FB - 6 Nos.	2.1	0
Total. H(e)				57.07	0
(f)	220 KV Navlakhi substation	220/66 KV Navlakhi s/s (SIR-Zone)	220/66 KV s/s with 2x100 MVA X'mer; 220 KV FB-2, 220 KV BC bay-1, 220 KV TBC - 1, 66 KV FB - 6	31.62	0
		LILO of 220 KV S/C Tappar - Hadala line at Navlakhi substation	220 KV D/C line - ACSR Zebra	1.85	0
		66 KV D/C interconnection lines and bays for Navlakhi substation	66 KV D/C line - ACSR Panther	8.8	0
			66 KV FB - 6 Nos.	2.1	0
Total. H(f)				44.37	0
(g)	New link lines for ring main system	66KV Transmission line		59.57	47.65
(h)	Strengthening of existing lines	66 KV transmission lines		23.78	11.89
Total. H(g&h)				83.35	59.54
Total H 57				599.86	125.66
58.I. Strengthening scheme for Tatkal-2010 & Special Agriculture connections					
a)	Augmentation of Sub-station			57.2	45.76
b)	Transmisison Line strenthning			77.8	62.24
Total.I(a&b)				135	108
c)	New Sub-station				
C.i.	220 KV substation near Gondal	220/66 KV s/s near Gondal	220/66 KV s/s with 2x100 MVA X'mer; 220 KV FB-2, 220 KV BC bay-1, 220 KV TBC - 1, 66 KV FB - 6	31.62	0

Sr.	Name of Project	Name of S/S	Work Involved	Estimated Cost/Rs in	Proposed Capex for FY 2012-13
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Gujarat Energy Transmission Corporation Limited
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No.		&Transmission line		Crores)	(Rs in Crores)
		220 KV D/C Jasdan (proposed substation) - Gondal line	220 KV line (D/C) (50 RKM) : AL-59 conductor	22.5	0
		220 KV FB - 2 Nos. at Jasdan (400 KV)	220 KV FB - 2 Nos.	2.8	0
		66 KV D/C interconnection lines and bays for proposed substation	66KV line (D/C-Panther) (30 RKM)	6.6	0
			66 KV FB - 6 Nos.	2.1	0
Total. I.C.i.				65.62	0
C.ii	220 KV substation near Khambhalia	220/66 KV s/s near Khambhalia	220/66 KV s/s with 2x100 MVA X'mer; 220 KV FB-4, 220 KV BC bay-1, 220 KV TBC - 1, 66 KV FB - 6	34.42	3.44
		LILO of 220 KV D/C Bhatia - Kalavad - Kangasiyali line at proposed substation	220 KV line (D/C) (2x10 RKM) : AL-59 conductor	9	0
		66 KV D/C interconnection lines and bays for Charadva substation	66KV line (D/C-Panther) (30 RKM)	6.6	0
			66 KV FB - 6 Nos.	2.1	0
Total.I.C ii				52.12	3.44
C. iii	New 66 KV substations	50 Nos. of new 66 KV substations under Morbi (O&M) area	66/11KV s/s with 10 MVA X'mer; FB-1 & X'mer Bay-1	150	150
		Associated transmission lines (15 Km per substation)	66 KV S/C line - ACSR Dog	40.5	40.5
			66 KV D/C line - ACSR Dog	45	45
Total.I C iii				235.5	235.5
d)	Control room extension			3.03	3.03
e)	Additional 66 KV substations - DISCOM's requirement				
	New 66 KV substations	67 Nos. of new 66 KV substations under Morbi (O&M) area	66/11KV s/s with 10 MVA X'mer; FB-1 & X'mer Bay-1	201	0
		Associated transmission lines (15 Km per substation)	66 KV S/C line - ACSR Dog	54.27	0
			66 KV D/C line - ACSR Dog	60.3	0
Total.I.e				315.57	0
Total.I.58				806.84	349.97
59 J. Bus Reactor					

Sr.	Name of S/S	Estimated	Proposed Capex for
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Gujarat Energy Transmission Corporation Limited
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No.	Name of Project	&Transmission line	Work Involved	Cost (Rs in Crores)	FY 2012-13 (Rs in Crores)
a	400 KV, 1 x 125 MVAR switchable bus reactor at 400 KV Chorania, Hadala, Zerda and Varsana substations			44	35.2
b	400 KV, 1 x 80 MVAR switchable bus reactor at 400 KV Amreli, Vadavi and Kosamba substations			31.5	25.2
c	400 KV, 1 x 63 MVAR switchable bus reactor at 400 KV Jetpur substation			10.2	8.16
Total.J 59				85.7	68.56
Total A1 to 30, B30 to 41, C42 to 52, D53, E54, F55, G56, H 57, I58, J59				10018	2632



ANNEXURE II

Transmission loss for FY 2011-12 as per System Studies

March-2011 condition

Total Generation - 11499

MW

Wind Installation - 2094 MW

Solar Installation - 5 MW

DGVCL	MGVCL	UGVCL	PGVCL	SEC+AEC	Gujarat Total	Export+ DD+DNH	Grand Total	Loss	Loss+Load
1727	1221	2310	2965	1425	9648	1335	10983	516.03 (4.49%)	11499

March-2012 condition

GSECL, Ukai - 500 MW

GSEG, Hazira - 350 MW

GPPC, Pipavav - 700 MW

Adani, Mundra - 660 MW

Essar, Vadinar - 1200 MW

UMPP, Mundra - 1600 MW

Ukai-Kosamba + KosambaSS + Kosamba-Chorania + Ukai-Asoj LILO at Kosamba

GSEG-Kosamba & GSEG-Mota lines

GPPC-Dhokadva+Savarkundla-MahuvaDC LILO at GPPC + Mahuva-Sagapara line

Adani-Zerda 1xD/C + Zerda ICT

Essar-Hadala + Essar-Amreli + Hadala ICT

UMPP-Bhachau-Vadavi line + UMPP-Chorania line + Bhachau (PG) substation

400 KV D/C Chorania - Vadavi line

400 KV D/C Vadavi - Zerda

line

400 KV D/C Kasor - Rajgarh line

220 KV D/C Kosamba - Zagadia line

220 KV D/C Kosamba - Gavasad line

220 KV D/C Gavasad - Salejada line

220 KV D/C Hadala - Halvad line

LILO of 220 KV D/C Halvad - Morbi line at Bhachau (PG) substation.

Total Generation - 15951

MW

Wind Installation - 2530 MW

Solar Installation - 550.5 MW (inclusive of 125 MW in Solar Park)

DGVCL	MGVCL	UGVCL	PGVCL	SEC+AEC	Gujarat Total	Export+ DD+DNH	Grand Total	Loss	Loss+Load
1984	1426	2571	3262	1694	10937	4234	15171	780.47 (4.89%)	15951

Case	Description	Total Loss (MW)	Reduction in Loss (MW)
1	March-2012 – Basecase	780.47	-
Case-1	In basecase, 220 KV Kangasiali substation and associated lines added.	777.18	3.29
Case-2	In case-1, 220/132 KV & 220/66 KV Shapur substation + 220/132 KV system at Botad along with associated lines added.	769.64	7.54
Case-3	In case-2, 220 KV Lunawada, Vyankatpura (Jarod) and 132 KV Limkheda substations along with associated lines added.	763.00	6.64
Case-4	In case-3, 400/220 KV Halvad substation along with 220/66 KV, 100 MVA ICT and associated lines added.	751.81	11.19



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Case-5	In case-4, 220 KV Lalpar, Sadla and Sartanpar substations along with associated lines added.	739.33	12.48
Case-6	In case-5, 220/132 KV & 220/66 KV Jasdan substation with associated lines added.	735.84	3.49
Case-7	In case-6, 220 KV Bhatia, Kalavad and 132 KV Bhomiavadar substations along with associated lines added.	728.43	7.41
Case-8	In case-7, 220 KV Bhachau and Mokha substations along with associated lines added.	715.51	12.92
Case-9	In case-8, 220 KV Rahiyad (Suva), Popda (Bhestan) and Navera (Atul) substations along with associated lines added.	713.96	1.55
Case-10	In case-9, 400 KV D/C Amreli - Kasor (Quad) line added.	706.18	7.78
Case-11	In case-10, 400 KV D/C Varsana - Halvad (Quad) line added.	701.00	5.18
Case-12	In case-11, 220 KV D/C lines added : (i) Sankhari-Jangral, (ii) Deodar-Tharad, (iii) Tharad-Dhanera, (iv) Kheralu-Mathasur, (v) Nakhatrana-Varsana & (vi) Pirana-Bhat.	691.13	9.87
	Total reduction in losses (MW) ...		89.34

DGVCL	MGVCL	UGVCL	PGVCL	SEC+AEC	Gujarat Total	Export+DD+DNH	Grand Total	Loss	Loss+Load
1994	1442	2619	3332	1701	11088	4234	15322	691.13 (4.32%)	16013



ANNEXURE III

Transmission loss for FY 2012-13 as per System Studies

March-2012 condition

Total Generation - 13718 MW

Wind Installation - 2955 MW (20% injection)

Solar Installation - 320 MW (20% injection)

DGVCL	MGVCL	UGVCL	PGVCL	SEC+AEC	Gujarat Total	Export+ DD+DNH	Grand Total	Loss	Loss+Load
2135	1205	2140	2965	1595	10040	3132	13172	546.08	13718

March-2013 condition

GSECL, Sikka - 250 MW

Sikka-Motipaneli + LILO of both ckt. of 220 KV D/C Jamnagar - Jetpur line at Sikka

UMPP, Mundra - 3x800 MW

400 KV D/C UMPP-Jetpur line

Other STU lines associated with power evacuation:

400 KV D/C Ukai - Kosamba line

400 KV D/C Kosamba - Chorania line

400 KV D/C Essar, Vadinar - Amreli line

400 KV D/C Adani, Mundra - Zerda line (2nd line)

220 KV D/C GSEG - Mota line

220 KV D/C GPPC - Dhokadava line

220 KV D/C Kosamba - Gavasad line

220 KV D/C Gavasad - Salejada line

220 KV D/C Otha - Sagapara line

220 KV D/C Hadala - Halvad line

Other CTU network addition in Gujarat:

400/220 KV Navsari (PG) substation

400 KV D/C Jhanor - Navsari - Boisar
line

400 KV D/C Kasor - Rajgarh line

LILO of both circuit of 220 KV D/C Kawas - Navsari line at Navsari (PG) substation

Total Generation - 16515 MW

Wind Installation - 4300 MW (20% injection)

Solar Installation - 600 MW (inclusive of 200 MW in Solar Park) (20% injection)

DGVCL	MGVCL	UGVCL	PGVCL	SEC+AEC	Gujarat Total	Export+ DD+DNH	Grand Total	Loss	Loss+Load
2320	1310	2290	3285	1920	11125	4680	15805	710.68	16516

Case	Description	Total Loss (MW)	Reduction in Loss (MW)
1	March-2013 – Basecase	710.68	-
Case-1	In basecase, 220 KV Rahiyad (Suva) substation and associated lines added.	707.51	3.17
Case-2	In case-1, 220 KV Vyankatpura (Jarod) substation and associated lines added.	704.59	2.92
Case-3	In case-2, 220 KV Popda (Bhestan) and associated lines added.	703.34	1.25
Case-4	In case-3, 220/132 KV Bhatia substation along with 220/66 KV, 100 MVA ICT and associated lines added.	700.26	3.08



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Case-5	In case-4, 220 KV Sadla substation and associated lines added.						695.14	5.12
Case-6	In case-5, 220 KV Vondh (Bhachau) substation with associated lines added.						686.88	8.26
Case-7	In case-6, 132 KV Limkheda substation and associated lines added.						684.16	2.72
Case-8	In case-7, 132 KV Padavala substation and associated lines added.						681.42	2.74
Case-9	In case-8, 400 KV D/C Amreli - Kasor (Quad) line added.						664.05	17.37
	Total reduction in losses (MW) ...							46.63

DGVCL	MGVCL	UGVCL	PGVCL	SEC+AEC	Gujarat Total	Export+ DD+DNH	Grand Total	Loss	Loss+Load
2330	1320	2300	3300	1920	11170	4680	15850	664.05	16514



ANNEXURE IV

Transmission loss for FY 2013-14 as per System Studies

March-2013 condition

Total Generation - 16514MW

Wind Installation - 4300 MW (20% injection)

Solar Installation - 600 MW (20% injection)

DGVCL	MGVCL	UGVCL	PGVCL	SEC+AEC	Gujarat Total	Export+ DD+DNH	Grand Total	Loss	Loss+Load
2330	1320	2300	3300	1920	11170	4680	15850	664.05	16514

March-2014 condition

[1] BECL, Bhavnagar - 270 MW (220KV D/C BECL-Palitana + 220KV D/C BECL-Botad + 220KV S/C BECL-Vartej)

[2] Dhuvaran CCPP-3 : 336 MW (LILO of 220KV Karamsad-Vartej + LILO of 220KV Kasor-Botad)

[3] OPG, Anjar : 300MW (400KV D/C OPG-Varsana)

Other STU lines associated with power evacuation:

[1] 220KV D/C Charankha Solar Park-Jangral line

Other CTU network addition in Gujarat:

[1] 400KV D/C Varsana-BhachauPG line

Total Generation - 17957 MW

Wind Installation - 4700 MW (20% injection)

Solar Installation - 720 MW (inclusive of 250 MW in Solar Park) (20% injection)



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DGVCL	MGVCL	UGVCL	PGVCL	SEC+AEC	Gujarat Total	Export+ DD+DNH	Grand Total	Loss	Loss+Load
2333	1461	2465	4333	1918	12510	4680	17190	767.22	17957

Case	Description	Total Loss (MW)	Reduction in Loss (MW)
1	March-2014 – Basecase	767.22	-
Case-1	In basecase, 400KV D/C Halvad-Vadavi line	761.56	5.66
Case-2	In Case-1, 400KV Kalavad with Essar-Hadala LILO at Kalavad, 220KV Bhatia-Kangsyali LILO at Kalavad lines and associated lines added	753.72	7.84
Case-3	In Case-2, 220KV Mokha and associated lines added	752.22	1.50
Case-4	In Case-3, 220KV Atul and associated lines added	746.17	6.05
Case-5	In Case-4, 220KV Jasadn and associated lines added	744.76	1.41
Case-6	In Case-5, 220KV Sartanpur and associated lines added	743.45	1.31
Total reduction in losses (MW) ...			23.77

DGVCL	MGVCL	UGVCL	PGVCL	SEC+AEC	Gujarat Total	Export+ DD+DNH	Grand Total	Loss	Loss+Load
2339.66	1463.96	2472.90	4361.80	1918.69	12557.03	4680.95	17237.98	743.45 (4.135%)	17981.43



ANNEXURE V

Transmission loss for FY 2014-15 as per System Studies

March-2014 condition

Total Generation - 17981 MW

Wind Installation - 4700 MW (20% injection)

Solar Installation - 720 MW (20% injection)

DGVCL	MGVCL	UGVCL	PGVCL	SEC+AEC	Gujarat Total	Export+ DD+DNH	Grand Total	Loss	Loss+Load
2339.66	1463.96	2472.90	4361.80	1918.69	12557.03	4680.95	17237.98	743.45	17981

March-2015 condition

[1] NTPL, Bharuch : 135MW with 220KV D/C NTPL-Rahiyad line

[2] Wanakbori : 800MW with 400KV Wanakbori-Soja line & tie line of new generator bus to 400KV Wanakbori

Other CTU network addition in Gujarat:

[1] 220KV D/C Navsari(PG) - Bhestan (Popda) line

Total Generation - 19770.59 MW

Wind Installation - 4900 MW (20% injection)

Solar Installation - 1000 MW (inclusive of 250 MW in Solar Park) (20% injection)

DGVCL	MGVCL	UGVCL	PGVCL	SEC+AEC	Gujarat Total	Export+ DD+DNH	Grand Total	Loss	Loss+Load
2455.91	1744.63	3027.96	4811.50	1963.92	14003.92	4875.23	18879.15	837.45	19716.59



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Case	Description	Total Loss (MW)	Reduction in Loss (MW)
1	March-2015 - Basecase	837.45	-
Case-1	Base-Case with 400KV Sankhari & associated lines added	831.52	5.92
Case-2	Case-1 with 400KV Charankha & associated lines added	827.43	4.09
Case-3	Case-2 with 400KV Keshod & assoicated lines added	811.63	15.80
Case-4	Case-3 with 400KV Varsana-halvad line	795.61	16.02
	Total reduction in losses (MW) ...		41.84

DGVCL	MGVCL	UGVCL	PGVCL	SEC+AEC	Gujarat Total	Export+ DD+DNH	Grand Total	Loss	Loss+Load
2459.43	1749.46	3051.09	4838.62	1966.90	14065.50	4876.052	18941.5545	795.61 (4.03%)	19737.16



ANNEXURE VI

Transmission loss for FY 2015-16 as per System Studies

March-2015 condition

Total Generation - 17981 MW

Wind Installation - 4700 MW (20% injection)

Solar Installation - 720 MW (20% injection)

DGVCL	MGVCL	UGVCL	PGVCL	SEC+ AEC	Gujarat Total	Export+ DD+DNH	Grand Total	Loss	Loss+ Load
2459.43	1749.46	3051.09	4838.62	1966.90	14065.50	4876.052	18941.55	795.607	19737.1 6

March-2016 condition

[1] Shapporji Pallonji : 1200 MW (2 x 600) with 400 KV D/C Shapporji Pallonji - Amreli + 400 KV D/C Shapporji Pallonji - Pirana(PG)

[2] Essar Salaya Ph-II : 1320 MW (2 X 660) with 400 KV D/C Essar Salaya - Halvad + 400 KV D/C Essar Salaya - Bhachau (PG)

[3] GSECL Maniyari - Patan : 1200 MW with 400 KV D/C Maniyari - Sankhari + LILO of 400 KV D/C Soja - Zerda Line

[4] GSECL Bhododara - banaskantha : 1200 MW with 400 KV D/C Bhododara - Zerda Line

[5] GSECL Dhuvaran NTPC : 1000 MW (3 X 660) with 400 KV D/C Dhuvaran - Kheda Line

[6] GSECL Gandhinagar : 1372 MW (2 X 228) with 400 KV D/C gandhinagar - kheda Line

[7] GSECL Sikka : 457 MW (2 X 228)

[8] GSECL Dhuvaran : 457 MW (2 X 228)

[9] NPCIL Kakrapar : 1400 MW (2 X 700)

Other CTU network addition in Gujarat:

[1] 765KV Vadodara s/s with associated lines



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Total Generation - 28385.32 MW

Wind Installation - 5745 MW (20% injection)

Solar Installation - 1000 MW (inclusive of 250 MW in Solar Park) (20% injection)

DGVCL	MGVCL	UGVCL	PGVCL	SEC+A EC	Gujarat Total	Export+ DD+DNH	Grand Total	Loss	Loss+Lo ad
2693.42	1928.81	3460.00	5323.67	2222.37	15628.27	11562.93	27191.21	1194.11	28385.3 2

Case	Description	Total Loss (MW)	Reducti on in Loss (MW)
1	March-2016 - Basecase	1194.11	-
Case-1	Base-Case with 400KV Fedra and associated lines added	1189.84	4.27
Case-2	Case-1 with 400KV Pipavav and associated lines added	1188.79	1.05
Case-3	Case-2 with 400KV Chhara and associated lines added	1183.04	5.75
Case-4	Case-3 with 400KV Bhogat and associated lines added	1179.29	3.75
	Total reduction in losses (MW) ...		14.82

DGVCL	MGVCL	UGVCL	PGVCL	SEC+A EC	Gujarat Total	Export+ DD+DNH	Grand Total	Loss	Loss+Lo ad
2694.76	1929.81	3461.29	5338.37	2222.73	15646.97	11563.16	27210.1282	1179.29 (4.15%)	28389.4 2



ANNEXURE VII

Payback period calculation - Proposed projects for year 2012-13

Sr. No.	Transmission Elements	Loss Reduction (MW)	Savings in Rs. Crores (Rs.3/- per unit) per Annum	Project cost (without inflation) in Rs. Crores	Payback period (Year)
1	(a) 220/66 KV, 1 x 100 MVA Rahiyad (Suva) substation, (b) associated 220 KV and 66 KV lines.	3,170	8.33	44.40	5.33
2	(a) 220/66 KV, 1 x 100 MVA Vyankatpura (Jarod) substation, (b) associated 220 KV and 66 KV lines.	2,920	7.67	50.90	6.63
3	(a) 220/66 KV, 1 x 100 MVA Popda (Bhestan) substation, (b) associated 220 KV and 66 KV lines.	1,250	3.29	42.55	12.95
4	(a) 220/132 KV, 2 x 100 MVA Bhatia substation with 220/66 KV, 1 x 100 MVA ICT, (b) associated 220 KV, 132 KV and 66 KV lines.	3,080	8.09	132.90	16.42
5	(a) 220/66 KV, 2 x 100 MVA Sadla substation, (b) associated 220 KV and 66 KV lines.	5,120	13.46	79.85	5.93
6	(a) 220/66 KV, 2 x 100 MVA Vondh (Bhachau) substation, (b) associated 220 KV and 66 KV lines.	8,260	21.71	153.70	7.08
7	(a) 132/66 KV, 2 x 50 MVA Limkheda substation, (b) associated 132 KV and 66 KV lines.	2,720	7.15	18.10	2.53



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	(a) 132/66 KV, 2 x 50 MVA				
8	Padavala substation, (b) associated 132 KV and 66 KV lines.	2,740	7.20	49.37	6.86
9	(a) 400 KV D/C Amreli - Kasor line (Quad Moose).	17,370	45.65	438.12	9.6
Total...		46,630	122.54	1,009.89	8.24



ANNEXURE VIII

Cost Benefit Analysis of O&M work of 66KV Substation

O&M Cost by Outsourcing Contract

Sr No.	Tender No.	Cost/SS (in Lacs)
1	T-1	12.29
2	T-2	15.92
3	T-3	14.75
4	T-4	14.19
5	T-5	11.2
6	T-6	11.59
7	T-7	12.05
	Avg. Cost/SS	13.14

Cost estimate per year per 66KV Substation maintained by GETCO Staff

Sr. No.	Designation	No. of posts	Average Pay Scale	27% addl. Benefit	Financial Implication per month	Financial Implication per year
1	Junior Engineer*	0.25	27955	699	7163	85961.63
2	S.B.O.	4	13985	350	57339	688062.00
3	Helper	4	12620	316	51742	620904.00
Employee Cost Rs.						1394927.63
Maintenance Cost including testing Rs.						500000.00
Total O&M Cost of 66KV Substation Rs.						1894927.63

*Considering 1 Junior Engineer for each 4 nos. of substations



ANNEXURE IX

Cost benefit analysis of maintenance work of 220KV Substations

Maintenance cost by outsourcing contract

Rs. In
Lacs

Sr No	Name of 220KV S/s	Cost awarded
1	Bala	27.01
2	Rajpar	23.86
3	Dudhrej	23.86
4	Vagra	22.00
5	Bhat	35.15
6	Lakhani	27.43
7	Tappar	27.04
8	Kukma	27.32
9	Botad	26.09
10	Kangshiyali	30.78
	Average Cost per s/s	27.05

Cost estimate per year per 220KV Substation maintained by GETCO Staff

Sr. No.	Designation	Post	No. of Person	Average Pay Scale	27% Addl Benefit	Financial Implication per month	Annual
1	2	3	4	5	6=5*27%	7=5+6	8=4*7
1	Maintenance Engineer	D.E	1	31600	8532	40132	481584
2	Astt. Maintenance Engineer	J.E	1	27955	7548	35503	426034
3	Supervisor	L.I /	1	22450	6062	28512	342138



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		L.M					
4	Skilled labour	ALM	1	15705	4240	19945	239344
5	Semi-skilled labour	Helper	1	12620	3407	16027	192329
6	Electrician	Electrician	1	15705	4240	19945	239344
7	Assistance for Operation work	Helper	4	12620	3407	16027	192329
8	Security Staff	Security	4	8520	2300	10820	129845
A	Total Employee Cost		14				2242947
B	Per Bay cost (For Transformer)					34000	
	Per Bay cost (For line)					12000	
	Total Bay Maintenance cost						46000
C	Estimated cost of Tools & tackles.						75000
D	Estimated cost of Consumables.						50000
E	Total Cost for Maintenance Works.(A+D)						2413947
F	Supervision / Administrative charges @ 10 %						241395
G	Profit of company @ 10 %						241395
H	Service Tax 10.3 %						298364
I	Total Maintenance Cost in Rs.						3195100



ANNEXURE X

Cost benefit analysis of maintenance work of 400KV Substations

Maintenance cost by outsourcing contract

Rs. In Lacs

Sr No	Name of 400KV S/s	Cost awarded
1	Kosamba	38.81
2	Varsana	35.78
	Average Cost per s/s	37.30

Sr. No.	Designation	Post	No. of Person	Average Pay Scale	27% Addl Benefit	Financial Implication per month	Annual
1	2	3	4	5	$6=5 \times 27\%$	$7=5+6$	$8=4 \times 7$
1	Senior Maintenance engineer	EE	1	35855	9680.85	45535.85	546430.2
2	Maintenance Engineer	D.E	1	31600	8532	40132	481584
3	Astt. Maintenance Engineer	J.E	1	27955	7548	35503	426034.2
4	Supervisor	L.I / L.M	1	22450	6062	28512	342138
5	Skilled labour	ALM	2	15705	4240	19945	239344.2
6	Semi-skilled labour	Helper	2	12620	3407	16027	192328.8
7	Electrician	Electrician	1	15705	4240	19945	239344.2
8	Assistance for Operation work	Helper	4	12620	3407	16027	192328.8
9	Security Staff	Security	8	8520	2300	10820	129844.8
A	Total Employee Cost		12				2789377
B	Per Bay cost (For Transformer)					34000	
	Per Bay cost (For line)					12000	



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	Total Bay Maintenance cost	46000
C	Estimated cost of Tools & tackles.	100000
D	Estimated cost of Consumables.	75000
E	Total Cost for Maintenance Works.(A+D)	3010377
F	Supervision / Administrative charges @ 10 %	301037.7
G	Profit of company @ 10 %	301037.7
H	Service Tax 10.3 %	372082.6
I	Total Maintenance Cost in Rs.	3984535



ANNEXURE XI

Spill-Over Projects of FY 2010-11 (Amount in Rs Lacs)

Amount toward the physical work which is spilled over

Sr. No.	Name of S/S & Name of line	Spill-over of 2010-11		
		S/S	Line	Total
A	Navsari Circle			
1	400KV Ukai - Kosamba line (P)	0	197	197
2	220KV GSEG, Hazira - Mota line (P)	0	743	743
3	220/66KV Bhestan s/s (P)	626	0	626
4	66KV D/C interconnection lines for 220KV Bhestan (P)	0	246	246
5	66KV FB - 6 Nos. (P) at 220 KV Bhestan	59	0	59
6	220/66KV Navera s/s (P)	878	0	878
7	66KV D/C interconnection lines for 220KV Navera s/s (P)	0	246	246
8	66KV FB - 6 Nos. (P) at 220 KV Navera	59	0	59
	Total	1622	1431	3054
B	Bharuch TR Circle			
1	400KV Kosamba - Chorania line (P)	0	3781	3781
2	220KV Kosamba - Mobha line (P)	0	455	455
3	220KV FB at Kosamba - 2 Nos. for 220KV GSEG (Hazira) - Kosamba line	280	0	280
4	66KV D/C interconnection lines for 220kv Suva s/s (P)	0	246	246
5	66KV FB - 6 Nos. (P) at Suva	59	0	59
	Total	339	4482	4821
C	Jambuva TR Circle			



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1	220KV Savadasana (Lunawada) s/s + line (P)	1771	0	1771
2	220KV LILO of Godhra - Kadana line at Lunawada (P)	0	52	52
3	220/66KV Jarod s/s (P)	423	0	423
4	132KV Limkheda s/s (P)	400	0	400
5	LILO of one s/c line of 132KV 2xs/c Godhra-Dahod line at Limkheda s/s (P)	0	10	10
6	66KV D/C interconnection lines for Limkheda s/s (P)	0	246	246
7	66KV FB 4Nos. for Limkheda s/s (P)	78	0	78
	Total	2672	308	2980
D	Mehsana TR Circle			
1	400KV Vadavi s/s - 2 nos. (P) (FB for 400KV Vadavi-Halvad line)	441	0	441
	Total	441	0	441
E	Gondal TR Circle			
1	400KV Vadinar - Amreli instead of (Hadala) line - 2 (P)	0	959	959
2	220/66KV Jasdan s/s (P) & 2 nos of 220KV FB	499	0	499
3	220/132 KV Bhatia s/s (P)	500	0	500
	Total	999	959	1958
F	Jamnagar			
1	220KV Sikka - Motipaneli line (P)	0	144	144
	Total	0	144	144
G	Amreli TR Circle			
1	400KV FB - 2 Nos. at Amreli s/s (P)	226	0	226
	Total	226	0	226
H	Junagadh TR Circle			



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1	220KV Shapur s/s (P)	1600	0	1600
2	66 KV D/C Outlet at shapur	0	163	163
3	132/66KV Bhomiavadar s/s	224	0	224
	Total	1823	163	1987
I	Anjar TR Circle			
1	400 KV Mundra - Zerda line 2	0	1645	1645
2	220/66KV Bhachau s/s (P)	499	0	499
3	220/66KV Mokha s/s (P)	499	0	499
	Total	998	1645	2643
J	Surendranagar TR Circle			
1	400/220/66KV Mansar (Halvad) s/s	3664	0	3664
2	400KV FB at Chorania s/s for 400KV Kosamba - Chorania line - 2 Nos.	-661	0	-661
3	400KV FB - 2 Nos. Halvad s/s for Varsana - Halvad line (P)	451	0	451
4	220/66KV Chotila s/s (P)	800	0	800
5	66KV D/C interconnection lines for 220KV Chotila s/s (P)	0	493	493
6	66KV FB - 6 Nos. (P)	118	0	118
	Total	4372	493	4865
	Total EHV Projects	13492	9626	23118

