



सत्यमेव जयते

**GUJARAT ELECTRICITY REGULATORY COMMISSION
(GERC)**

AHMEDABAD

**TARIFF ORDER
FOR
Gujarat Energy Transmission Corporation Limited
(GETCO)**

Case No. 944 of 2008

17 January 2009

C O N T E N T S

Chapter	Title	Page
1	Introduction	1
2	Summary of GETCO's Tariff Petition	4
3	Brief outline of objections raised, response from GETCO and Commission's comments	6
4	Transmission system of GETCO and its performance	16
5	Analysis of ARR and Determination of Annual Transmission Charges for the control period	26
6	Compliance of Directives and Fresh Directives	49
	ORDER	55

List of Tables

Table	Title	Page
2.1	Annual Transmission costs (2008-09 to 2010-11)	4
2.2	Proposed Transmission Tariff	5
4.1	Transmission system of GETCO – 2007-08	16
4.2	Network addition during the control period	16
4.3	Sub stations addition during the control period	16
4.4	Transmission capacity 2006-07	17
4.5	Transmission capacity additions during 2007-08 and the control period (2008-10)	17
4.6	Transmission capacity during the control period	17
4.7	Load to be handled by GETCO from various generating stations and sources – 2007-08	18
4.8	Load to be handled by GETCO from various generating stations and sources – 2008-09	20
4.9	Additional Load to be handled by GETCO from various generating stations and sources – 2009-10	21
4.10	Additional Load to be handled by GETCO from various generating stations and sources – 2010-11	21
4.11	Total loading on GETCO transmission system during the control period 2008-11	22
4.12	Availability of GETCO Transmission system 2001-02 to 2006-07	22
4.13	Availability of GETCO Transmission system 2007-08 and 2008-09 to 2010-11	23
4.14	Transmission loss profile of GETCO system	23
4.15	Transmission loss trajectory 2007-08 to 2010-11	23
5.1	Employee expenses projected for the control period 2008-10	27
5.2	Employee expenses approved for the control period	28
5.3	Repair and Maintenance expenses for the control period 2008-10	29
5.4	R&M expenses during 2005-06 to 2007-08	29
5.5	R&M expenses approved for the control period (2008-11)	30
5.6	A&G expenses projected by GETCO	30
5.7	A&G expenses 2005-06 to 2007-08	30
5.8	A&G expenses approved by the Commission	31
5.9	O&M charges for the control period	31
5.10	ULDC charges projected by GETCO	32
5.11	Details of Capex for FY 2007-08 and for the control period 2008-11	32
5.12	Proposed funding of Capex for 2007-08 and control period	35
5.13	Proposed Interest and Finance Charges for GETCO	36

Table	Title	Page
5.14	Approved Interest and Finance Charges for control period 2008-11	37
5.15	Depreciation claimed by GETCO for the control period 2008-11	37
5.16	Assets capitalization and depreciation approved by the Commission during the control period	38
5.17	Advance Against Depreciation claimed by GETCO	39
5.18	Advance Against Depreciation approved by the Commission	39
5.19	Interest on working capital	40
5.20	Working capital and interest on working capital approved by the Commission	40
5.21	Return on Equity	41
5.22	Return on equity approved by the Commission	41
5.23	Other income	42
5.24	Annual Transmission costs approved by the Commission	43
5.25	Transmission Tariff	43

Annexure

5.1	Capital Expenditure Plan	44
-----	--------------------------	----

BEFORE THE GUJARAT ELECTRICITY REGULATORY COMMISSION AT AHMEDABAD

Case No.944 / 2008

Date of Order: 17.01.2009

CORAM

Dr. P K Mishra, Chairman

Shri K P Gupta, Member

Dr. Man Mohan, Member

ORDER

1. INTRODUCTION

1.1 Background

The Government of Gujarat unbundled and restructured the Gujarat Electricity Board with effect from 1st April 2005. The Generation, Transmission & 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.



1.1.2 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) have been considered by the Commission in line with the Financial Restructuring Plan (FRP) as approved by Government of Gujarat.

1.1.3 **Commission's order for 2007-08**

GETCO filed its ARR petition for the FY 2007-08 on 28.12.2006 in accordance with the Regulation notified by GERC on Terms and Conditions of Tariff. The Commission, in exercise of the powers vested in it under section 61 and 62 of the Electricity Act, 2003 and all other powers enabling it in this behalf and after taking into its consideration the submissions made by GETCO, the objections by various stakeholders, response of GETCO, issues raised during the public hearing and other relevant material, issued the order for the year 2007-08 on 31st March 2007.

1.2 **Multi Year Tariff (MYT) Regulations**

The Commission issued Multi Year Tariff (MYT) Framework Regulations for generation, transmission and distribution of electricity vide notification dated 20th December 2007 specifying the Terms and Conditions for Determination of Tariff for generation, transmission and distribution of electricity under MYT Framework through consultation and public hearing process.

1.3 **MYT Tariff petition for control period FY 2008-09 to 2010-11.**

GETCO filed the MYT petition for approval of Aggregate Revenue Requirement and determination of Transmission charges for the control period (2008-09 to 2010-11) on 31st July 2008.

1.4 **Admission of petition and public hearing process**

1.4.1 The Commission conducted a preliminary analysis of the petition submitted by GETCO and admitted the ARR petition of GETCO for the control period (Case No.944 of 2008) on 14th August 2008.

In accordance with section 64 of the Electricity Act, 2003 the Commission directed GETCO to publish its application in the abridged form and manner to ensure public participation.

A public notice was issued by the GETCO inviting objections / suggestions from stakeholders on or before 22.09.2008, which was published in the following newspapers on 22.08.2008.

Sr.No.	Name of the newspaper	Language
1.	Indian Express	English
2.	Gujarat Samachar	Gujarati
3.	Sandesh	Gujarati

Meanwhile, the Commission received requests for extending the time limit for filing objections/ suggestions from some consumers / consumer organizations. With a view to giving some time for obtaining views of the stakeholders, the Commission positively



considered the request and extended the time limit upto 13.10.2008. The GETCO was asked to give public notice to this effect, which was published on the same newspapers on 20.09.2008.

- 1.4.2 The Commission has received 8 objections / suggestions to the petition filed by GETCO. The Commission considered the objections received and sent communication to the objectors inviting them to take part in public hearing process by presenting their views in person before the Commission. Each objector was provided with a time slot on the days of public hearing from 10th November 2008 to 20th November 2008 for presenting his / her views on GETCO petition before the Commission in the Commission's office in Ahmedabad. The names of persons and organizations who filed their objection and the objectors who appeared at the public hearing and presented their objections are given below:

1	Gondal Chamber of Commerce and Industry, Gondal
2	Laghu Udhog Bharti, Ahmedabad
3	Consumer Education & Research Society, Ahmedabad
4	Shri Hasmukh Shah, Ex-Chairman, IEEE Power and Energy Society of India (India Council)
5	Indian Wind Energy Association
6	Suzlon Power Infrastructure Pvt. Ltd.
7	Shri Ghanshyam R. Darji
8	Torrent Power Limited

A short note on the main issues raised by the objectors at the public hearings in respect of this petition along with the response of the GETCO is briefly given in Chapter-3.

- 1.4.3 The Commission obtained further information and clarification from GETCO. GETCO has also furnished supplementary information / data as required by the Commission.

GETCO gave a presentation on its proposal to the Commission on 5th November 2008.

- 1.4.4 Taking into account the fact that the MYT framework Regulations were issued by the Commission in December 2007 and the time required by GETCO to prepare the MYT petition for the first time with projections for a three year time frame, the Commission condones the delay in filing the MYT petition.

1.5 State Advisory Committee Meeting

A meeting of the State Advisory Committee (Constituted under Section 67 of the Electricity Act, 2003) was convened on 7th October 2008 and members were briefed on the MYT petition of GETCO.



Chapter 2

Summary of GETCO's Tariff Petition

2.1 Aggregate Revenue Requirement (ARR)

Gujarat Energy Transmission Corporation (GETCO) submitted the petition on 31st July 2008 seeking approval for Annual Revenue Requirement and determination of Transmission charges for the control period 2008-09 to 2010-11. The transmission charges are to be recovered mostly from the Gujarat Urja Vikas Nigam Limited (GUVNL). GUVNL purchases power from GSECL, Central Sector Generating Stations, IPPs and other sources and supplies to the Distribution companies and licensees in Gujarat. GUVNL has an agreement with the GETCO for transmission of power from GSECL generating stations, IPPs, input points of Power Grid Corporation and other interconnecting points for supply to DISCOMs and licensees. The transmission charges are also recoverable from the other users of the Transmission network of GETCO.

GETCO has projected a Revenue Requirement of Rs.109,111 lakhs for the year 2008-09, Rs.129,860 lakhs for the year 2009-10 and Rs.159,325 lakhs for the year 2010-11 as detailed in Table 2.1 below:

Table 2.1
Annual Transmission costs (2008-09 to 2010-11)

(Rs. Lakhs)

Sl. No.	Particulars	Projected			
		2007-08	2008-09	2009-10	2010-11
1.	Employee cost	29939	32933	36226	39,848
2.	Repairs and Maintenance	8665	9965	11459	13178
3.	Admn. & General Expenses	3277	4749	5110	5506
4.	ULDC charges	1536	1536	1536	1536
5.	Depreciation	16092	17241	18739	21454
6.	Advance against depreciation	5254	4045	5959	11720
7.	Interest and finance charges	20121	22195	28801	36954
8.	Interest on working capital	2751	3055	3526	4208
9.	Return on equity	24207	26525	31649	38065
10.	Total Fixed cost	111844	122244	143005	172471
11.	Less: Expenses capitalized	8632	8632	8632	8632
12.	Total Transmission costs	103212	113612	134374	163839
13.	Less: other income	4315	4501	4514	4514
14.	Net Annual Transmission costs	98897	109111	129860	159325

The projected transmission charges per MW per day based on capacity to be handled would be as under:



Table 2.2
Proposed Transmission Tariff

Transmission Tariff	Unit	2008-09 Proj.	2009-1 Proj.	2010-11 Proj.
Annual Transmission Charges	Rs. in Lakhs	109,111	129,860	159,325
Total MW Allocation	MW	11776	13704	14329
Transmission Tariff	Rs./MW/day	2538	2596	3046
MU Transfer at 80% PLF	MU	82530	96037	100421
Transmission Tariff	Paise/unit	13.22	13.52	15.87

The ARR indicated above is exclusive of income tax, incentives, any statutory taxes, levies, duties, cess, any other surcharges etc.

GETCO requested the Commission -

1. To admit this petition
2. To approve the ARR for the first control period as requested in Para 2.2 of the petition and to allow its recovery.
3. To approve methodology for recovery of net annual transmission charges as given in Para 4.6 of the petition.
4. To approve capital expenditure as proposed in chapter 5 of petition.
5. To grant any other relief as the Commission may consider appropriate to allow further submissions, addition and alteration to this Petition as may be necessary from time to time.
6. To allow fair recovery mechanism to recover normal wheeling charges & losses from the consumers who use the wheeled energy from wind generators.
7. 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 comments

3.1 FILING OF MYT 2008-09 TO 2010-11 PETITION

Consumer Education and Research Society and Shri Hasmukh Shah submitted that the MYT Petition 944 of 2008 has to be filed before the Commission by 31/03/2008. The GETCO has not requested any extension of time, but filed the petition before the Commission on 21/08/2008, which is to be rejected as per Section 64(3) (b) of Act 2003. The new tariff needs to be implemented with prospective date and not retrospective date as demanded by GETCO.

Response of GETCO

The GETCO has made an exercise to file the tariff petition with the existing GERC(Terms and Condition of Tariff) Regulations 2005 for the year 2008-09. Meanwhile GERC communicated the MYT regulations 2007 on 20th December 2007. GETCO collected the required information for filing the MYT Petition for the control period 2008-09 to 2010-11, which took considerable time and the GETCO regrets the delay in filing the petition and has prayed for condoning the delay in filing ARR /Tariff petition under MYT framework and for accepting the present ARR / Tariff petition. Regarding new tariff from prospective date, GETCO has stated that it is better that the Commission decides the matter.

Commission's view

GETCO has filed MYT Petition for the first time for the control period of 2008-09 to 2010-11 for which Regulations were issued in December 2007. The Commission felt it reasonable to condone the delay and admitted the petition under 944 of 2008 for processing the Tariff Order. The new tariff would be implemented from prospective date.

3.2 ANNUAL TRANSMISSION CHARGES

The Laghu Udhog Bharati, Ahmedabad submitted that there is no need to make any changes in transmission charges, if the ARR projections are made on realistic basis, by GETCO.

The Consumer Education and Research Society, Ahmedabad submitted that the transmission charges are to be determined on commercial business principles as per Act 2003. The recovery of charges need to be determined for different voltage levels. The annual transmission charges are approved as Rs. 91651 lakhs for FY 2007-08 and the petitioner has estimated annual transmission charges as Rs. 98897. This over-spending of Rs. 7246 lakhs amounting to increase of 7.9%. The petitioner has further demanded increase of 19.0% for FY 2008-09 which should be rejected.

Shri Hasmukh Shah submitted that, the details of transmission charges recovered from GUVNL are required.

M/S Torrent Power Ltd requested that transmission charges are to be fixed voltage wise.

Response of GETCO

There has been a sizeable increase under the head Employee costs, R&M costs and return on equity for the year 2007-08. The proposed transmission charges are fairly reasonable in the present scenario to run the system. Transmission charges proposed are lower compared to the prevailing charges in other states.

The annual transmission charges approved by GERC and estimated for FY 2007-08 are:

(Rs. lakhs)

2005-06	2006-07	2007-08 (Approved)	2007-08 (Estimated)
56234.37	68025.25	91651.00	98897.00

Commission's view

The Commission has considered the suggestions of stakeholders and response of GETCO and determined the transmission charges for the control period after due scrutiny of the proposal of GETCO.

3.3 O&M CHARGES

Consumer Education and Research Society submitted that GETCO has proposed 48% raise in O&M charges in one year as indicated below:

O&M cost	2007-08		2008-09	
	GERC	Estimated	Projected	Raise
Employee cost	21888	29939	32933	10%
R&M expenses	5858	8665	9965	15%
A&G expenses	3683	3277	3277	10%
Total O&M expenses	31429	41881	46503	48%

Shri Hasmukh Shah submitted that A&G expenses are exorbitant which need to be as per actuals.

Response of GETCO

Respondent has compared total O&M cost projected for the FY 2008-09 with the approved O&M cost by GERC for the FY 2007-08. There is considerable increase in O&M cost due to provision of Rs. 61 crores towards wage revision of 6th pay Commission award from 1-1-2006. The R&M expenses also increase due to vintage assets, which require periodical and higher repairs.

Commission's view

Commission has analysed the required Employee costs, R&M charges and A&G expenses in detail and allowed to the extent allowable.

3.4 PARALLEL OPERATION CHARGES (POC)

Consumer Education and Research Society submitted that the GETCO is collecting the parallel operation charges illegally from M/s Essar and its group of companies, indicating dues, if any, since January 2007.

Shri Hasmukh Shah asked for details of the parallel charges collected from M/s Essar and its group of companies indicating dues if any, since January 2007.



Response of GETCO

The number of CPPs availing grid support has increased and the trend appears to be accelerating. The coordinating company, GUVNL, has discussed with all CPPs on POC and POC is charged with the concurrence of CPPs.

There are 50 CPPs connected to the grid of GETCO and 10 CPPs are connected to the grid conditionally and CPPs are paying parallel operation charges regularly. These charges are shown as revenue and accordingly the tariff recoverable from distribution licensees is reduced.

Commission's view

The objections and response of GETCO are noted. The matter is sub-judice.

3.5 TRANSMISSION LOSSES

The Gondal Chamber of Commerce and Industry submitted that GETCO is functioning well as per their planning of electricity transmission system but the T&D losses remain above normal level, which need to be controlled by quality infrastructure on transmission system.

M/S Torrent Power Limited requests for measurement of transmission losses, feeder-wise, voltage-wise.

The Laghu Udhog Bharati submitted that the transmission loss for FY 2006-07 has been approved as 4.27%. GETCO has not achieved the loss reduction to the approved level of GERC. Reduction in losses can be achieved by taking energy audit study of the whole system.

The Consumer Education and Research Society submitted that GETCO has proposed the transmission loss as 5% as against national average loss level of 4.3%. The transmission losses of the system are 4.06% during 2006-07 and so there is no justification of demanding Transmission loss at 5%.

Response of GETCO

The Commission has approved the transmission loss at 4.35% for the year 2007-08. According to GETCO, though GETCO succeeded to achieve a level less than that of approved loss level, it would be difficult to reduce transmission losses below 4.35% on a sustainable basis. The GETCO losses are much lower than in Uttar Pradesh i.e. 4.97% and Andhra Pradesh 6.02%.

Commission's view

The Commission has examined the proposals of GETCO and the loss trajectory is fixed taking the relevant factors into consideration.

3.6 ENERGY AUDIT

The Laghu Udhog Bharati submitted that energy conservation at every level is required to be done. GETCO should itself seek accreditation as certified energy auditors and establish its own energy audit wing. The Commission should allow expenses for implementation of energy audit.

Response of GETCO

The energy audit is being done and corrective action is being taken wherever needed. However it is planned to have an establishment for making a systematic energy audit.

Commission's view

The Commission has advised GETCO to establish an energy audit cell for proper accounting of energy and suggest loss reduction measures.

3.7 POWER FACTOR

The Gondal Chamber of Commerce and Industry submitted that all main Power grid lines of long distance, 132kV, 220 kV, 400 kV etc. and the receiving sub-stations should be equipped with required shunt capacitors or synchronous condensers of 5 MVAR or as per capacity to maintain power factor and stability. Shri G.R. Darji submitted that power injected by IPP / Wind Farms is at poor power factor.

Response of GETCO

The GETCO is taking care to provide shunt capacitor banks at the load side at 66 KV, 132 KV and 220 KV sub-stations identifying load centres to improve the voltages and the Power factor. According to GERC order No. 2/2006 dt 11-8-2006, penalty clause relating to reactive power drawal from Wind farms has been notified.

Commission's view

The suggestions and response is considered and appropriate action is taken by the Commission by giving suitable directive to GETCO.

3.8 CAPITAL EXPENDITURE

Shri Hasmukh Shah had requested GETCO to provide information on expenditure incurred for connectivity system with details of revision of estimates and reasons for revision.

M/s Suzlon Power Infrastructure Pvt. Ltd submitted that GETCO and DISCOMs should file a detailed investment plan to meet the requirement of R&M, load growth, reduction of T&D losses, and reliability of supply with cost benefit analysis.

The Laghu Udyog Bharati submitted that there is proposal of high expenses and progress shown is less

Response of GETCO

The GETCO has prepared investment plans to meet the future expansion plans to evacuate power including the wind energy generated by developers and for upgrading the transmission system wherever needed in five-year plans.

Commission's view

The Commission has noted the objections and response of GETCO. Investments are required to build the transmission system for evacuation of power from generating stations and upgrading the system to meet the load demand. The investments are approved on due scrutiny and will be monitored by the Commission.



3.9 PRORATA CHARGES

Consumer Education and Research Society submitted that GETCO is recovering the pro-rata charges from HT consumers without approval from the Commission.

Response of GETCO

GETCO submitted that the GERC has Notified Regulations called Gujarat Electricity Regulatory Commission (Licensees Power to recover expenditure incurred in providing supply and other miscellaneous charges) Regulations, 2005, wherein chapter-V of the said Regulations deals with provision for high tension and EHT supply. According to clause number (ii) of chapter V, the pro-rata charges are allowed to be collected from the new connection or in case of increased demand by existing consumer.

Commission's view

The issue will be examined and appropriate decision shall be taken.

3.10 DATA ACQUISITION SYSTEM (DAS)

Shri Has Mukh Shah desired to know the need for collecting data and objectives and cost benefit analyses on expenses.

Response of GETCO

The objective to have Data Acquisition system, is to measure active, reactive power accurately, to calculate T&D losses accurately, to store data on substation operations, to make energy meter data available circle, zone and company wise for study of load management and generation planning, to have feeder wise energy sent out to generate MIS returns required for circle, zone and corporate offices and to improve creditability of the company. GETCO has incurred Rs. 1599.13 lakhs for DAS project.

The benefits are: accurate measurement of energy, determination of T&D losses, and detection of imbalance in load. A single meter can be used for multiple uses. Monitoring of load-sheddings and power supply can be done.

The technical details of load management can be obtained with less manpower, with accuracy, without loss of time. This can also be used as a part of SCADA system.

Commission's view

The Commission considers that the installation of such facility is necessary to develop proper data base to take appropriate decisions and also to make reliable data available.

3.11 TRANSMISSION PLANS TO EVACUATE WIND ENERGY

The Suzlon Power Infrastructure Pvt. Limited (SPIPL) and Indian Wind Energy Association have requested for information on detailed transmission plan to evacuate the wind energy generated by the wind energy developers.

Response of GETCO

GETCO has carried out system study for evacuation of 1400 MW, [900 MW (New) + 500 MW (Existing)]. GETCO has carried out the study of 400 KV Halwad sub-station (SS) and proposed 400 kV Halwad SS as the injection point and onward transmission from Halwad to Ranchhodpura (Vedavi) and the same was communicated to SPIPL. Detailed investment

plans for the control period are incorporated in the petition for the benefit of all stakeholders. The cost benefit analysis in line with CEA criteria is carried out. The same is to be approved by the Commission.

Further, GETCO has the approved plans to evacuate about 2000 MW of Wind Energy out of which 1200 MW WEG is already connected to the Grid. Approvals are also given to various Wind Farm Developers for 855 MW for which estimated amount is also paid by the developers and the work is under progress. The total approval given for wind energy evacuation is 2855 MW. This is quite adequate for the present system and that proposed.

Commission's view

The wind energy developers and GETCO should coordinate and arrange to evacuate the wind energy produced. The Commission approves the investments to be made to develop transmission system required to evacuate wind energy.

3.12 TRANSMISSION TARIFF

Gondal Chamber of Commerce and Industry has submitted that, increase of tariff will affect the society, industry, trade and public.

Laghu Udhog Bharati submitted that there is no need for change of tariff as per facts and figures.

Consumer Education and Research Society submitted that GETCO has proposed transmission charges of 13.22, 13.52 and 15.87 paise / kWh for control period of 2008-09 to 2010-11. The GETCO has additional income on open access charges from consumers, wheeling charges and wind energy plans. Therefore further burdening of the DISCOM consumers in Gujarat is not justified.

Shri Hasmukh Shah submitted that transmission charges and gross energy transmitted should be furnished.

Response of GETCO

GERC is empowered to determine the Transmission Tariff. The additional income from OA/ CPPs / wheeling and wind energy plant mentioned by petitioner are being collected by GETCO, as a GETCO revenue. The transmission charges recoverable from Discoms / OA consumers / CPPs are reduced to that extent of such charges.

Commission's view

The Commission has examined the proposal of GETCO and the objections raised and transmission charges have been determined on due scrutiny of GETCO proposal and on taking the relevant factors into consideration.

3.13 MULTI YEAR TARIFF FRAMEWORK

Consumer Education and Research Society submitted that proposal is for revision of MYT tariff for three years at 6%, 4% and 2%, which is not justified. The Commission has to approve tariff for the first year 2008-09 only as per provision no 4.2 of MYT Framework Regulations.



Response of GETCO

The GETCO has not made any tariff revision at 6%, 4% & 2%. The exercise of preparation of proposal of MYT petition is on the basis of past data. The Commission will undertake truing up exercise and pass appropriate tariff orders for the successive years.

Commission's view

The Commission has approved the transmission charges for 2008-09 only and this will be reviewed when the proposal for 2009-10 is received and appropriate decision will be taken in determining charges for 2009-10 based on the review of performance during 2008-09.

3.14 DEBT AND EQUITY

Shri Hasmukh Shah requested for the debt and equity details from 2004-05 to 2007-08 and the methodology involved.

Response of GETCO

It is stated that, GETCO is an unbundled independent commercial operation company w.e.f 01/04/2005. The debt and equity of the company are as furnished below:

(Rs. lakhs)

	2004-05	2005-06	2006-07	2007-08
Equity	45	158933.2	171731.26	190159.87
Debt	75.82	233638.5	214068.64	221512.71

Commission's view

The Commission has duly verified debt-equity ratio of investments proposed during the control period and they are as per norms.

3.15 GROSS ENERGY RECEIVED BY GETCO

Shri Hasmukh Shah requested for gross energy received by GETCO and cross subsidy details.

Response of GETCO

The gross energy sent out by GETCO, and the gross transmission charges approved are as furnished below:

	2005-06	2006-07	2007-08
Energy Sent Out (MU)	51170	53698	58051
Transmission Charges (Rs.lakhs)	56234	68025	91651

Commission's view

Transmission charges to be recovered by GETCO are those determined by the Commission.

3.16 POWER TRANSFORMER FAILURES

Shri Hasmukh Shah desired the details of failures of power transformer and steps taken to monitor the reduction in transformer failures.

Response of GETCO

The power transformer failures are detailed below.

		2006-07	2007-08
GETCO reply	400kV	Nil	Nil
	220 kV	6	7
	132 kV	8	2
	66 kV	29	33
	Total	43	42
	%	2.17	2.08

Commission's view

The rate of power transformer failure has got reduced and more effective steps are essential to bring down failure rate to below 1.0%.

3.17 UNIFIED LOAD DISPATCH CHARGES (ULDC)

Shri Hasmukh Shah desires the SLDC charges and ULDC charges spent from 2006 to 2008.

Response of GETCO

The ULDC charges are paid as indicated below at Rs. 128 lakhs per month

2006	Rs.15.36 crore
2007	Rs.15.36 crore
2008	Rs.15.36 crore

While SLDC charges are notified, the operation of SLDC in the state as separate entity may be implemented in the next year and these SLDC charges shall come into force.

Commission's view:

ULDC charges are paid as determined by CERC.

3.18 PRIVATE FINANCIAL ADVISOR

Shri Hasmukh Shah desired to know the expenditure on the financial advisor and benefits.

Response of GETCO

Rs. 10.5 lakhs are spent upto 23/10/2008 for the consortium of M/s Nexgen Financial Solutions Pvt. Limited, & M/s Tip sons Financial Solutions Pvt. Ltd, and M/S Almondz Global Securities Ltd, who are appointed as financial advisors to raise resources of GETCO. Loan of Rs 50 crores at 11% is arranged.

Commission's view

Appointment of such consultants to assist the company to raise resources etc., may be necessary at times.

3.19 CREATION OF HIGH LEVEL POSTS

Shri Hasmukh Shah desires to know the high-level post creation and expenditure.



Response of GETCO

Company is planning to provide better services to the users of network and optimizing the resources and manpower strength by facilitating better administrative functions. The company has achieved 99.5% availability and has taken a number of cost saving measures to limit the A&G expenses. This is approved by GERC. The salary expenses are met at higher level, they are as per Government norms only.

Commission's view

Management has to create appropriate posts to manage the affairs of the company efficiently and effectively.

3.20 e- Urja Project

Shri Hasmukh Shah desired to know the e Urja Project details.

Response of GETCO

The 'e Urja Project is the implementation of end to end IT solutions (ERP) on seven companies of erstwhile GEB i.e., GUVNL, GETCO, GSECL, MGVL, DGVCL, PGVCL & UGVCL. The cost involved at the GUVNL level for all companies through centralized solution for all functions of generation transmission, distribution, trading are as below.

1. The date of operation is 1.1.08
2. Total cost of installation Rs. 16878.78 Lakhs
3. Total cost of ancillary Rs. 2673.81 Lakhs
4. Total cost of Vhf / Radio Rs. 1800.00 Lakhs
5. O&M charges of each year Rs. 2609.00 Lakhs

Breakup

- (a) Administrative charges Rs. 1809.00 Lakhs
- (b) Rental charge Rs. 800.00 Lakhs.

Commission's view

Such a system is required to create proper data base for efficient management. The Commission approves the investment.

3.21 HANDING OVER OF 66 KV SYSTEM TO DISCOMS

Torrent Power Limited requested to examine the feasibility of handing over the 66 KV system to DISCOMs as per GERC directive No. 6 in the Tariff Order for FY 2007-08. TPL also submitted that the cost of 66 KV network and losses pertaining to DISCOMs which ideally should have been the integral part of DISCOMs network to get clubbed with the transmission network and the users of transmission network are required to pay for the same through 66 KV network which is not being used by them. The operation of electrical business should be carried out on commercial principles and determination of tariff on cost of supply

Response of GETCO

GETCO is having well qualified and experienced team of engineers and other staff in the cadre of CE to JE level for testing purposes which is essential for maintaining all 66 KV sub-stations very effectively. GETCO has very efficiently maintained these sub-stations due to which, the availability of 66 kV system is about 99.6% against the target availability of 98%, the transmission losses are about 4.06% despite having a large network of 66 kV system, due to excellent and scheduled periodical maintenance, the failure rate of costly equipment such as power transformers etc., has reduced drastically to the extent of 1.5%.

GETCO further submitted that about 40% of the existing 66 KV sub-stations are very old aging more than 25 years which required R&M activities, as 66 KV is integral part all aspects including reactive power requirement and location of substations are taken into account while carrying out system study and network expansion and sub-stations with voltage level of 33 KV and below are considered as distribution network in other States maintained by DISCOMs.

Commission's view

The response of GETCO justifying the need to retain to 66 KV system with GETCO will be examined by the Commission.



Chapter 4

Transmission system of GETCO and its performance

4.1 Transmission System

GETCO owns and operates EHV Transmission system of voltages comprising 66kV to 400 kV in the state. The transmission system of GETCO consists of the following transmission lines and sub-stations as given in Table 4.1 below.

Table 4.1

Transmission system of GETCO – 2007-08

S.N	Voltage	EHV lines (Ckt Km)	Sub station (Nos.)
1.	400 kV	1911.55	9
2.	220 kV	12019.68	67
3.	132 kV	4553.16	48
4.	66 kV	17834.53	805
5.	33 kV	69.00	1
	Total	36387.92	930

4.2 GETCO proposes to add the following Network (transmission lines) and substations during the control period 2008-09 to 2010-11 as given in Table 4.2 and 4.3 below.

Table 4.2

Network addition during the control period

S.N	Voltage	2008-09	2009-10	2010-11	Total addition
1.	400 kV	240	1367	1317	2924
2.	220 kV	758	781	1165	2704
3.	66 kV	843	709	424	1976
	Total	1841	2857	2906	7604

(Ckt Km)

Table 4.3

Sub-stations addition during the control period

S.N	Voltage	2008-09	2009-10	2010-11	Total addition
1.	400 kV	-	2	-	2
2.	220 kV	-	3	1	4
3.	66 kV	60	50	30	140
	Total	60	55	31	146

(Nos.)

4.3 Transmission system capacity

GETCO has furnished in the MYT petition the capacity of the transmission system at the end of the year 2006-07, additional transmission capacity added during the year 2007-08 and the capacity if proposes to add during the control period, as given in Tables- 4.3 and Table 4.4 below:

Table 4.4
Transmission capacity 2006-07

S.N	CIRCLE	MVA Cap
1.	NAVSARI	2013.0
2.	BHARUCH	794
3.	JAMBUVA	1578.5
4.	NADIAD	2149.5
5.	MEHSANA	2126.5
6.	PALANPUR	2310.0
7.	ANJAR	1055
8.	AMRELI	1544.5
9.	GONDAL	1692.5
10.	JUNAGADH	1273.0
11.	CHORANIA	12.0
12.	ASOJ	13.0
	Grand Total	16561.5

Table 4.5
Transmission capacity additions during 2007-08 and the control period (2008-11)

S.N.	CIRCLE	(MVA)			
		2007-08	2008-09	2009-10	2010-11
1.	NAVSARI	10	60	10	0
2.	BHARUCH	0	0	0	0
3.	JAMBUVA	50	20	0	10
4.	NADIAD	70	50	50	10
5.	MEHSANA	20	30	20	60
6.	PALANPUR	50	70	50	40
7.	ANJAR	20	30	20	10
8.	AMRELI	90	140	50	20
9.	GONDAL	80	100	240	60
10.	JUNAGADH	30	70	50	60
11.	SURENDRANAGAR	50	30	10	30
12.	CHORANIA	0	0	0	0
13.	ASOJ	0	0	0	0
	GRAND TOTAL	470	600	500	300

The total transmission capacity of GETCO transmission system by end of 2007-08 and each year of the control period is envisaged as in Table 4.6 below.

Table 4.6
Transmission capacity during the control period

Details	2007-08	2008-09	2009-10	2010-11
Transmission lines total Ckt Km	36388	38229	41086	43992
Sub station (Nos.)	930	990	1045	1076
Capacity in MVA	17032	17632	18132	18432



It is stated by GETCO that the capacity indicated is the transformation capacity at 66 kV level at which the power is delivered to Distribution companies.

The transmission capacity is planned as per guidelines issued by the Central Electricity Authority (CEA) for transmission planning.

4.4 Loading of transmission system

It is submitted by GETCO that the GETCO system has been mainly connected to the following sources of power supply.

- GSECL generation
- Independent Power Producers (IPPs)
- Central sector Power Stations (PGCIL input points)
- Captive Power Plants
- Diu, Daman and Dadra Nagar Haveli capacity
- CPP wheeling
- Wind energy

It is submitted by GETCO that Diu, Daman & Dadra Nagar Haveli (DD & DNH) get allocation of power from central sector generating stations which is routed / transmitted through the GETCO system and hence the capacity is required to be added to the GETCO system for loading calculations.

The power injected into the GETCO system from various generating stations / sources is supplied to GUVNL (for supply to the four distribution companies, TPL and Kandla Port Trust) and captive power users. The power allocated to Diu, Daman and Dadra Nagar Haveli from central generating stations is partly transmitted and delivered through the GETCO system.

As per the details furnished by GETCO in the MYT Petition, the stations / sources connected to the system and the load to be handled are given in Table 4.7 to 4.10 below.

Table 4.7

Load to be handled by GETCO from various generating stations and sources – 2007-08

S.N.	Stations	Rated Capacity	Gujarat share	Aux. Cons. (%)	Transmi-ssion Losses	Total MW on GETCO System
1	2	3	4	5	6	7
A	GSECL PLANTS					
	Ukai TPS	850	850	9.00	0	774
	Ukai HPS	305	305	0.56	0	303
	Gandhinagar 1 to 4 TPS	660	660	11.12	0	587
	Gandhinagar 5 TPS	210	210	8.50	0	192
	Wanakbori 1-6 TPS	1260	1260	9.00	0	1147
	Wanakbori 7 TPS	210	210	8.50		192



S.N.	Stations	Rated Capacity	Gujarat share	Aux. Cons. (%)	Transmission Losses	Total MW on GETCO System
1	2	3	4	5	6	7
	Sikka TPS	240	240	10.70	0	214
	Kutch Lignite TPS	215	215	12.25	0	189
	Dhuvaran TPS - Old	220	220	11.50	0	195
	Kadana Hydro	242	242	1.11	0	239
	Utran Gas Based	135	135	4.94	0	128
	Dhuvaran Gas Based - Stage-I	107	107	4.80	0	102
	Dhuvaran Gas Based - Stage-II	113	113	4.00	0	109
	TOTAL GSECL PLANT		4767			4370
B	IPPs					
	ESSAR	515	300	2.80	0	292
	GPEC	655	655	2.90	0	636
	GIPCL Stage-II	160	160	2.90	0	155
	GIPCL-SLPP	250	250	10.00	0	225
	GSEG	156	156	2.90	0	151
	GIPCL Stage-I	145	145	2.90	0	141
	GMDC - Akrimota	250	250	10.00	0	225
	TOTAL IPPs PLANT		1916			1825
C	SHARE FROM CENTRAL SECTOR					
	NPC - Tarapur- 1&2	320	160	10.00	5	137
	NPC - Kakrapar	440	125	12.50	5	104
	NPC - Tarapur- 3&4	1080	274	10.00	5	234
	NTPC - KORBA	2100	360	7.93	5	315
	NTPC - VINDHYACHAL-I	1260	230	9.00	5	199
	NTPC - VINDHYACHAL-II	1000	239	7.50	5	210
	NTPC - VINDHYACHAL-III	1000	266	7.50	5	234
	NTPC - KAWAS	656	187	3.00	5	172
	NTPC - JHANOR	657	237	3.00	5	218
	SSNNL - Hydro	1450	232	0.50	5	219
			2310			2042
D	FIRM CAPTIVE CAPACITY					33
E	DD & DNH LOADING					527
F	CPP WHEELING					721
G	*Wind Farm Capacity					1185
	Total for FY 2007-08, MW					10704



Table 4.8

Load to be handled by GETCO from various generating stations and sources–2008-09

S.N.	Stations	Rated Capacity	Gujarat share	Aux. Cons. (%)	Transmission losses	Total MW on GETCO System
A	GSECL PLANTS					
	Ukai TPS	850	850	9.00	0	774
	Ukai HPS	305	305	0.56	0	303
	Gandhinagar 1 to 4 TPS	660	660	11.12	0	587
	Gandhinagar 5 TPS	210	210	8.50	0	192
	Wanakbori 1-6 TPS	1260	1260	9.00	0	1147
	Wanakbori 7 TPS	210	210	8.50	0	192
	Sikka TPS	240	240	10.70	0	214
	Kutch Lignite TPS	290	290	12.25	0	254
	Dhuvaran TPS – Old	220	220	11.50	0	195
	Kadana Hydro	242	242	1.11	0	239
	Utran Gas Based	135	135	4.90	0	128
	Dhuvaran Gas Based - Stage-I	107	107	4.80	0	102
	Dhuvaran Gas Based - Stage-II	112	113	4.00	0	108
	TOTAL GSECL PLANT		4842			4435
B	IPPs					
	ESSAR	300	300	2.80	0	292
	GPEC	655	655	2.90	0	636
	GIPCL Stage-II	160	160	2.90	0	155
	GIPCL-SLPP	250	250	10.00	0	225
	GSEG	156	156	2.90	0	151
	GIPCL Stage-I	145	145	2.00	0	142
	GMDC - Akrimota	250	250	10.00	0	225
	GIPCL SLPP Extension	125	125	9.50		114
	TOTAL IPPs PLANT		2041			1940
C	SHARE FROM CENTRAL SECTOR					
	NPC - Tarapur- 1&2	320	160	10.00	5	137
	NPC – Kakrapar	440	125	12.50	5	104
	NPC - Tarapur- 3&4	1080	274	10.00	5	234
	NTPC – KORBA	2100	360	7.93	5	315
	NTPC - VINDHYACHAL-I	1260	230	9.00	5	199
	NTPC - VINDHYACHAL-II	1000	239	7.50	5	210
	NTPC - VINDHYACHAL - III	1000	266	7.50	5	234
	NTPC – KAWAS	656	187	3.00	5	172
	NTPC – JHANOR	657	237	3.00	5	218
	NTPC – Kahalgaon	1500	166	7.50	5	146
	NTPC Sipat Stage - I	1980	360	7.50	5	316
	NTPC Sipat Stage – II	1000	273	7.50	5	241
	SSNNL - Hydro	1450	232	0.50	5	219
			3109			2745
	TOTAL		9992			9120
D	FIRM CAPTIVE CAPACITY					33
E	DD & DNH LOADING					527
F	CPP WHEELING					711
G	*Wind Farm Capacity					1385
	Total for FY 2008-09, MW					11776

* As per GERC order against petition No. 902/07 the 10 MW CPP wheeling of M/S Nirma Ltd. is not considered.



Table 4.9**Additional Load to be handled by GETCO from various generating stations and sources – 2009-10**

S.N.	Stations	Rated Capacity	Gujarat share	Aux. Cons. (%)	Transmission Losses	Total MW on GETCO System
A	GSECL PLANTS					
	Utran CCPP Gas based Extension	374.6	374.6	4.90	0	356
	TOTAL GSECL PLANT					356
B	IPPs					
	GIPCL Expansion	125	125	9.50		113
	Adani Power					1000
	Aryan Coal Beneficiation Private Limited					100
	TOTAL IPPs					1213
C	SHARE FROM CENTRAL SECTOR					
	Sipat Stage-I	1980	180	7.50	5	158
	NTPC-Barh-Unit-1	1980	0	7.50	5	0
	TOTAL FROM CENTRAL SECTOR		180			158
	*Wind Farm Capacity					200
	ADDITION OF LOADING IN FY 2009-10, MW					1927

Table 4.10**Additional Load to be handled by GETCO from various generating stations and sources – 2010-11**

S.N.	Stations	Rated Capacity	Gujarat share	Aux. Cons. (%)	Transmission Losses	Total MW on GETCO System
A	GSECL PLANTS					
	TOTAL GSECL PLANT					0
B	IPPs					
	GSPC-GPCL-Pipavav	15.00				15
	Aryan Coal Beneficiation Private Limited	100				100
	<i>GSEG Extension Phase I</i>	14.58				15
	TOTAL IPPS					130
C	SHARE FROM CENTRAL SECTOR					
	North Karanpura	1980	77	7.50	5	68
	NTPC –Barh-Unit 2	1980	260	7.50	5	228
	TOTAL FROM CENTRAL SECTOR		337			296
	*Wind Farm Capacity					200
	ADDITION OF LOADING IN FY 2010-11 (MW)					626



The total loading from various stations / sources during each of the years 2007-08 to 2010-11 are given in Table 4.11 below:

Table 4.11

Total loading on GETCO transmission system during the control period 2008-11

(mw)

S.N	Stations	2007-08	Control period		
			2008-09	2009-10	2010-11
A	GSECL PLANTS	4370	4435	4791	4791
B	IPPS	1825	1940	3153	3283
C	SHARE FROM CENTRAL SECTOR	2042	2745	2903	3199
D	FIRM CAPTIVE CAPACITY	33	33	33	33
E	DD & DNH LOADING	527	527	527	527
F	CPP WHEELING	721	711	711	711
G	Wind Farm Capacity	1185	1385	1585	1785
	Total loading in MW	10704	11776	13704	14329

GETCO transmission system should be able to transmit the power from the existing generating stations and other sources and the stations / sources likely to come up during the control period. All the new stations indicated are likely to be commissioned during the control period / eleventh plan, though there could be some slippage. However the transmission lines shall be positioned, well in time to evacuate / transmit power from the stations / sources.

4.5 Availability of the transmission system

It is submitted by GETCO that it is operating and maintaining its entire transmission system at an exceptionally high level. The availability of the GETCO system has remained at more than 98.5% since year 2001-02. The higher transmission availability is comparable to the best of the transmission utilities in the country.

The availability of the system at different voltages is given in Table 4.12 below for the year 2001-02 to 2006-07.

Table 4.12

Availability of GETCO Transmission system 2001-02 to 2006-07

Description	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07
400 kV lines	98.99%	98.70%	99.04%	99.10%	99.05%	99.35%
220 kV lines	98.46%	97.89%	98.73%	98.90%	98.86%	98.72%
132 kV lines	98.83%	98.56%	98.98%	99.24%	98.79%	98.85%
66 kV lines	99.18%	98.98%	99.51%	99.67%	99.57%	99.56%
Sub stations	99.61%	99.21%	99.84%	99.84%	99.67%	99.81%
GETCO system availability	99.01%	98.67%	99.22%	99.35%	99.19%	99.26%



GETCO has also submitted that the availability during 2007-08 and projections for the control period 2008-09 to 2010-11 are as given in Table 4.13 below.

Table 4.13

Availability of GETCO Transmission system 2007-08 and 2008-09 to 2010-11

Description	2007-08	2008-09	2009-10	2010-11
	Projections			
400 kV lines	98.37%	99.38%	99.39%	99.40%
220 kV lines	98.80%	98.87%	98.94%	99.00%
132 kV lines	98.88%	98.91%	98.94%	98.98%
66 kV lines	99.58%	99.62%	99.66%	99.70%
Sub stations	99.83%	99.87%	99.89%	99.94%
GETCO system availability	99.29%	99.33%	99.36%	99.40%

Commission's view

The GETCO operates only A.C. system and the availability of its system is over 99% and is higher than the norm of 98% specified by the Commission. The reliability is considered good.

4.6 Transmission loss

GETCO has submitted the historical transmission loss profile of its transmission system over a six year period 2001-02 to 2006-07 as given in Table 4.14 below.

Table 4.14

Transmission loss profile of GETCO system

Year	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07
Transmission loss	4.30%	4.44%	4.34%	4.41%	4.39%	4.35%	4.06%

GETCO has also submitted the transmission loss trajectory for the years 2007-08 to 2010-11 as given in Table 4.15 below

Table 4.15

Transmission loss trajectory 2007-08 to 2010-11

Description	2007-08	2008-09	2009-10	2010-11
Loss trajectory (%)	4.10	4.09	4.04	3.99

It is submitted by GETCO that the following measures are taken to reduce the loss levels.

- Installation of additional sub-stations and transmission lines
- Conversion of system from 132/66 and 66/11 kV to 132/11 kV
- Running of all double circuit lines in parallel
- Upgradation of transmission system to a higher level voltage, i.e 400 kV, 220 kV and 132 kV
- Installation of shunt capacitor banks at 11, 22 & 66 kV level
- Replacement of old ACSR conductors (in a deteriorated condition) by new ones



- Upgrading the line capacity by higher capacity ACSR conductors to avoid over loading.
- GETCO has also submitted the data on energy input and energy delivered and the system losses for 2006-07 & 2007-08 as below.

Particulars	2006-07 (MU)	2007-08 (MU)
Total MUs received	53698	58051
Gross energy sent out	51518	55818
Transmission losses	2180	2233
Transmission loss (%)	4.06	3.85

Commission's view

Against the actual transmission loss of 4.06% during 2006-07 and 3.85% during 2007-08, the company has projected the loss trajectory of 4.09%, 4.04% and 3.99% for the years 2008-09, 2009-10 and 2010-11 respectively.

The Commission has approved the loss level of 4.27% for 2006-07, but the company had achieved 4.06% and it has achieved loss level of 3.85% during 2007-08 against the level of 4.35% approved by the Commission.

In normal course the increase in loss level from 4.06% during 2006-07 and 3.85% during 2007-08 to 4.09% during 2008-09 is not justified. But it is explained by GETCO that the loss level in the system has gone up from June 2008 onwards due to supply of power to the Union Territory (Diu, Daman and Dadra Nagar Haveli) mainly by PGCIL system resulting in the off take from GETCO getting reduced. South Gujarat being a low loss area with concentrated generation, less power supply in this area resulted in the power flow to other areas, thus resulting in higher loss. This could be a reason for higher overall loss in transmission system during 2008-09. It is stated that the energy of about 350 MU was being transmitted by a 220 kV line of about 40 KM in which the losses are very little. After Daman and Diu load is being fed by PGCIL the flow on the 220 kV line has come down to about 140 MU resulting in the balance 200 MU flowing out of Southern Gujarat to other areas in Gujarat resulting in increased losses. GETCO has furnished the energy received and delivered from April to September 2008 to the entire system. The transmission losses have gone up from 3.57% during April 2008 to 4.43% during September 2008. While accepting the loss trajectory projected by the GETCO, GETCO is directed separately to provide monthly data on energy received and delivered to establish the fact that less supply in South Gujarat leads to increase in transmission loss.

The Commission approves the transmission loss trajectory for the control period as below.

Year	Transmission loss (%)
2007-08 (actuals)	3.85
Projected	
2008-09	4.09
2009-10	4.04
2010-11	3.99

GETCO shall take all the measures that were taken earlier to reduce the transmission loss further from the target fixed now.

Summing up:

GETCO is planning transmission capacity during the control period for evacuation of power from various generating stations of GSECL, IPPs, CPPs coming up with in the State and share from Central Generating Stations from PGCIL input points. The transmission capacity of the system would be 17632 MVA by 2008-09, 18132 MVA by 2009-10 and 18432 MUA by 2010-11. The transmission system availability is about 99.29% and proposes to improve it to 99.40% by 2010-11.

The transmission loss trajectory would be 4.09% by 2008-09, 4.04% by 2009-10 and 3.99% 2010-11.

GETCO shall take the required measures to reduce the transmission losses further.



Chapter 5

Analysis of ARR and Determination of Annual Transmission Charges for the Control Period

5.1 Aggregate Revenue Requirement

The Aggregate Revenue Requirement (Annual Transmission Costs) for a Transmission Company cover the fixed annual costs which include –

- Operation and Maintenance expenses
 - Employee cost
 - Repair and Maintenance expenses
 - Administration and General expenses
 - State Load Despatch Center costs
- Interest on loans
- Depreciation and Advance Against Depreciation
- Interest on working capital
- Return on equity
- Taxes, if any

GETCO has projected the net annual transmission costs for the control period 2008-09 to 2010-11 as under:

2008-09	Rs. 109111 lakhs
2009-10	Rs. 129860 lakhs
2010-11	Rs. 159325 lakhs

GETCO has submitted the actuals for the year 2006-07, based on annual accounts, estimated expenses for the year 2007-08 and projections for the years 2008-09, 2009-10 and 2010-11, the control period. The annual transmission costs have to be recovered by GETCO through transmission charges from the users of its transmission system.

The transmission costs projected by GETCO are analysed and discussed in this chapter.

5.1.1 Operation and Maintenance expenses

GETCO has claimed the Operation and Maintenance expenses under the following heads:

- Employee cost
- Repair and Maintenance expenses
- Administration and General expenses

GETCO has not claimed the O&M expenses as per the norms specified in GERC (Terms and Conditions of Tariffs) Regulations 2005 as it considers the charges are on higher side compared to the actual expenses of GETCO, but has claimed an increase of 10% on a year

to year basis over the actuals expenses for the year 2006-07 in the case of Employee cost and Administration and General expenses and 15% in the case of Repair and Maintenance expenses. The claim of GETCO under various heads of O&M charges are discussed below.

Employee expenses

Employee expenses include salaries, bonus, other benefits like reimbursement of medical expenses, LTA and terminal benefits in the form of pension, gratuity, leave encashment, staff welfare etc.

GETCO has projected the employee expenses for the control period as detailed in the Table 5.1 below.

Table 5.1
Employee expenses projected for the control period 2008-10

(Rs. Lakhs)

Particulars	2006-07	2007-08	2008-09	2009-10	2010-11
Employee expenses	32305	29939	32933	36226	39848
% increase	-	-	10%	10%	10%

GETCO has projected the employee expenses with 10% increase per annum over 2007-08 during the control period of 3 years 2008-09 to 2010-11.

It is submitted by GETCO that the employee expenses have been estimated considering trends of past years, increase in dearness allowance, its merger and its impact on other allowances such as HRA, field allowances, Pf and CPF etc.

GETCO has also submitted that the employee pay revision is due and it will be revised in line with 6th Pay Commission recommendations. Therefore the impact of revision of pay scales due to adoption of 6th Pay Commission has been considered while projecting the employee expenses during the control period. In addition the normal increase in salary due to regular increments as well as promotion has also been considered.

Considering the above, an increase of 10% has been considered by GETCO on a year to year basis during the control period.

It is also submitted by GETCO that there is an increase of 62.7% in employee cost for the year 2006-07 over the employee cost incurred during 2005-06. The sudden increase in employee cost during 2006-07 is stated to be due to payment of arrears of salary revised due to merger of DA of earlier years amounting to Rs.21.46 crores, provision for leave encashment liability of Rs.33.96 crores. Further provision of Rs.61.00 crore towards wage revision due from 1st April 2006 is also made as per requirement of Company's Act 1956. As the payment of salary, leave encashment liabilities were of earlier years, their effect have been deloaded while calculating estimated employee cost for the year 2007-08 and onwards.

Commission's view

The Commission has examined and analyzed the actual employees expenses of GETCO for the year 2004-05 to 2006-07. The employee expenses over the above period are as below:



Particulars	2004-05 (Actuals)	2005-06 (Actuals)	2006-07 (Actuals)	2007-08 (Actuals)
Employee expenses	18784	19853	32305	29939
(%) increase		(5.69)	(62.72)	

As mentioned by GETCO the employee expenses during 2006-07 is on the high side (62.72%) due to payment of arrears of salary revised, leave encashment liability etc. GETCO in its tariff petition for 2007-08 had projected an increase of 5% per annum in employees cost for 2006-07 & 2007-08 over the actuals for 2005-06 and the Commission had approved this.

GETCO has projected 10% increase year to year for the control period 2008-10 over the expenses of 2007-08 against 5% during 2006-07 & 2007-08. The 10% increase per annum has been projected considering the likely impact of implementation of 6th Pay Commission Recommendations and pay revision. This revision of pay scales has not taken place yet but likely to be implemented during 2008-09. The Commission has considered providing 60% of the amount during 2008-09 and balance 40% during 2009-10 and the expenditure is accordingly regulated. This will be reviewed during the next tariff determination period 2009-10. As per Annual Accounts of 2007-08 the employees cost is Rs.30746 lakhs including Rs.7538 lakhs towards interim relief. Since interim relief is not yet paid, it is not considered by the Commission. The employees cost excluding interim relief works out to Rs.23208 lakh for 2007-08 and is considered as base for projections for the control period. Any payment of arrears on implementation of 6th Pay Commission recommendations and consequent increase in salaries would be considered during review of 2008-09 expenses. As discussed above 60% of the amount of Rs.7538 lakhs (Rs.4523 lakhs) is allowed during 2008-09 and balance Rs.3015 lakhs.

It is observed the increase per annum in employees cost covering increments, promotions, revision of DA, terminal benefits etc. is about 5 to 6% per annum. An increase of 6% is approved year to year during the control period 2008-10 as it is considered reasonable and is being adopted by most of the SERCs.

The Commission approves the employee expenses during the control period as in Table 5.2 below:

Table 5.2
Employee expenses approved for the control period

(Rs. Lakhs)

Particulars	2007-08 (Actuals)	2008-09	2009-10	2010-11
Employee expenses	23208	29123 (23208x1.06+4523)	29092 (24600X1.06+3015)	27642

Repair and Maintenance (R&M) Expenses

The R&M expenses include expenses on repair and maintenance of transmission lines, sub-station equipment, other plant & machinery, buildings, other civil works, vehicles, office equipment etc. GETCO has projected the R&M expenses for the control period 2008-10 as in Table 5.3 below:



Table 5.3
Repair and Maintenance expenses for the control period 2008-10
(Rs. Lakhs)

Particulars	2007-08 (Actuals)	2008-09	2009-10	2010-11
Repair and Maintenance expenses	8665	9965	11459	13178
% increase		15%	15%	15%

It is submitted by GETCO that the R&M expenses are directly related to the age of assets, their wear and tear during the period and that the expenditure will increase substantially due to GETCO's system availability and vintage of assets which require periodical and higher repairs. It is also submitted that GETCO establishes about 40 to 50 sub-stations in a year, which also require normal maintenance apart from operational expenses. It is stated that GETCO started outsourcing of O&M of the newly commissioned sub-stations. Currently fifty-one 66 kV sub-stations are outsourced for both operational manpower and maintenance. It is further expected that O&M of many of the new sub stations shall be outsourced and accordingly the expenditure has been estimated / escalated. It is submitted that the R&M expenses are at lower level in the range of 1.75% to 2.15% of gross fixed asset during 2007-08 and the control period.

Commission's view

The Commission has examined the R&M expenses (actuals) during the years 2005-06 to 2007-08. The expenses as per Annual Accounts are given in Table 5.4 below:

Table 5.4
R&M expenses during 2005-06 to 2007-08

(Rs. Lakhs)

Particulars	2005-06 (Actuals)	2006-07 (Actuals)	2007-08 (Actuals)
R&M expenses	5022	6113	11656

It was submitted by GETCO in the tariff petition that the expenses during 2005-06 are more indicative as they have been arrived from erstwhile GEB accounts based on certain assumptions. The GETCO in its tariff petition for 2007-08 had projected an increase of 8% per annum for the years 2006-07 & 2007-08 and the Commission had approved the increase of 8%.

The Commission had approved R&M expenses at Rs. 5424 lakhs for 2006-07 and Rs. 5858 lakhs for 2007-08, against this the actual expenditure for 2006-07 is Rs. 6113 lakhs and it is Rs. 11656 lakhs for 2007-08 excluding ULDC charges. As per Annual Accounts there is an increase of 22% for 2006-07 and 90% for 2007-08 against 8% increase projected during 2007-08 and approved by the Commission. GETCO has explained that the increase is due to vintage of GETCO's assets which require periodical and higher repairs to maintain high system availability.

The expenditure during 2007-08 is normally considered as the base for the projection of expenses during the control period, but the expenses incurred during 2007-08 are abnormally high, an increase of 90% over 2006-07 expenses. This is limited to Rs.8665 lakhs for 2007-08 as projected by GETCO. Though this is more than what was approved



by the Commission for 2007-08, the high level of expenditure is considered, because GETCO has a large 66 kV system and requires proper maintenance to maintain overall availability over 98%.

An increase of 6% per year is allowed during the control period.

The Commission approves the R&M expenses for the control period as in Table 5.5

Table 5.5
R&M expenses approved for the control period (2009-10)

(Rs. Lakhs)

Particulars	2007-08	2008-09	2009-10	2010-11
R&M expenses	8665	9185	9736	10320

Administrative and General (A&G) Expenses

The A&G expenses mainly comprise rents, telephone and other communication expenses, professional charges, conveyance, training expenses, printing, stationery and traveling expenses etc.

GETCO has projected the expenses for the control period as in Table 5.6 below:

Table 5.6
A&G expenses projected by GETCO

(Rs.Lakhs)

Particulars	2006-07 (Actuals)	2007-08 (Estimated)	2008-09 (Projected)	2009-10 (Projected)	2010-11 (Projected)
A&G expenses	3121	3277	3605	3966	4362
% increase			10%	10%	10%
E-Urja charges			1144	1144	1144
Total			4749	5110	5506

It is submitted by GETCO that it has considered an increase at 10% on a year-to-year basis during the control period. It has also submitted that the GUVNL and its subsidiaries have established an end to end IT solutions i.e 'e' urja project, it is expected that after implementation of 'e' urja project transactions will be entered into the system with least human interference thereby leading to reliable and accurate data base. It is estimated that an amount of Rs. 11.44 crore per year will be expended for computerization and maintenance of the system as a part of A&G expenses.

Commission's view

The Commission has examined the expenses under the head during earlier years. The expenses incurred during the earlier years and approved for 2007-08 are as in Table 5.7 below:

Table 5.7
A&G expenses 2005-06 to 2007-08

(Rs. Lakhs)

Particulars	2005-06 (Actuals)	2006-07 (Actuals)	2007-08 (Actuals)
A&G expenses	3679	3121	4150



GETCO had projected the A&G expenses with an increase of 5% for 2006-07 & 2007-08 in the tariff petition for 2007-08 and the Commission had approved the increase. This is a controllable component as other O&M expenses. As per Annual Accounts for 2007-08, the actual expenses are Rs.4150 lakhs. This is substantially high compared to expenses during 2006-07. This appears to be due to increase in volume of business, the network size and related costs. The Commission considers an increase of 5% per annum during the control period over the actuals for 2006-07. The approved expenses for 2007-08 would be Rs.3277 lakhs. An increase of 5% is considered over 2007-08. It is observed that the general increase in A&G expenses is about 5 to 6% covering inflation.

The Commission also approves the charges of Rs. 1140 lakhs per annum during the control period for 'e' urja project and its maintenance. Since computerization and its maintenance is essential for online record of data and maintenance of proper data base, the Commission approves the A&G expenses as in Table 5.8 below for the control period.

Table 5.8
A&G expenses approved by the Commission

(Rs.Lakhs)

Particulars	2008-09	2009-10	2010-11
A&G expenses	3441	3613	3794
E'-urja charge	1144	1144	1144
Total	4585	4757	4938

Operation & Maintenance Charges

The O&M charges as projected by GETCO and approved by the Commission for the control period are given in Table 5.9 below:

Table 5.9
O&M charges for the control period

(Rs. Lakhs)

Particulars	Projected by GETCO			Approved by the Commission		
	2008-09	2009-10	2010-11	2008-09	2009-10	2010-11
Employees expenses	32933	36226	39848	29123	29092	27642
R&M expenses	9965	11459	13178	9185	9736	10320
A&G expenses including 'E'-urja	4749	5110	5506	4585	4757	4938
Total	47646	52795	58533	42893	43585	42900

The approved employees expenses for the years 2008-09 and 2009-10 include the arrears payable on implementation of 6th Pay Commission recommendations.

The payment of arrears on implementation of 6th Pay Commission recommendations which are not allowed fully would be reviewed in the tariff petition for the year 2009-10.

Unified Load Dispatch Centre (ULDC) charges

ULDC charges are the charges to be paid for 15 years at the rate of Rs. 128 lakhs per month to Power Grid Corporation India Limited (PGCIL) for participation in the Unified Load Dispatch Scheme executed by PGCIL. The charges are effective from 2005-06 and are determined by CERC.



The proposed ULDC charges for the control period are as in Table 5.10

Table 5.10
ULDC charges projected by GETCO

(Rs.Lakhs)

Particulars	2006-07	2007-08	2008-09	2009-10	2010-11
ULDC charges	1536	1536	1536	1536	1536

The Commission approves the ULDC (SLDC) charges at Rs. 1536 lakhs per year during the control period.

5.1.2 Capital Expenditure during control period

GETCO has projected capital expenditure of Rs. 390109 lakh during the control period 2008-10. The year-wise details of projects proposed and the capital expenditure planned are given in Table 5.11 below:

Table 5.11
Details of Capex for FY 2007-08 and for the control period 2008-10

(Rs. Lakhs)

Particulars (Rs.in Lakhs)	2007-08	2008-09	2009-10	2010-11	Total for FY 07-08 & Control period
	Estimated	Projection			
New Projects					
400 KV Substations	0	2424	8903	3382	14710
400 KV Lines	0	12191	68144	67875	148210
220 KV Substations	0	1596	6861	2125	10582
220 KV Lines D/C	0	14514	20259	24157	58930
66 KV Substations	12032	16446	14080	8602	51159
66 KV Lines	5151	7076	6132	3712	22071
Shunt Capacitors	0	496	2165	647	3308
400/220 kV (315 MVA), 220/66 kV (50 MVA) Transformer bay along with 400kV & 220kV Feeder / Transformer bays	0	11584	13659	12678	37921
Bus Reactor (80 & 125 MVA)	0	0	2200	0	2200
132 kV Lines	0	589	605	0	1194
Future Projects Anticipated	0	0	2200	2240	
Sub Total of New Projects	17183	66915	145207	125419	354725
R & M					
Renovation and modernization	6701	9240	8870	8678	33489
Rejuvenation & Refurbishment	3716	1800	600	1200	7316
Augmentation of sub stations/Lines	3774	6630	7750	7800	25954
Sub Total of R&M	14191	17670	17220	17678	66760
Total	31375	84585	162427	143097	421484

The projects programmed include new projects and R&M of existing system.

The details of the works programmed under Capex are given Annexure-5.1

The capital expenditure is mainly for establishment of new sub-stations along with associated transmission network for evacuation of power from the generating stations being established in public and private sectors in the state, to meet the existing and future load



demand, renovation and modernization (R&M), rejuvenation and refurbishment and augmentation of sub-stations / lines. GETCO was asked to review the status of generation projects coming up and give realistic assessment of capital works programme.

While confirming the capital investments programmed, GETCO has stated that the revised Capex in view of new capacity addition of wind energy generation, SEZ developments, the amount of the revised Capex is Rs.4304 crore.

The capital expenditure proposed by GETCO during the control period includes the following transmission lines for evacuation of power from the generating stations being set up by Adani Power Pvt Ltd (APPL) and Essar Power Limited (EPOL).

The details of transmission lines and their costs and phasing of expenditure is as below:

Sl. No.	Particulars	Voltage of Trans. Lines	Length (Ckt.km)	Total Cost (Rs. Lakhs)	Planning of Expenditure (Rs. Lakhs)		
					2008-09	2009-10	2010-11
Adani – 1000 MW (Bid-1)							
1.	Mundra-Varsana	220 kV (DC)	83	2870	2870	-	-
2.	Mundra-Varsana	400 kV (DC)	83	7636	6109	1527	-
Adani – 1000 MW (Bid-2)							
1	Mundra-Zerda	400 kV (2xDC)	331	30452	-	15226	15226
Essar-1000 MW (Bid-3)							
1	Vadinar-Hadala	400 kV (DC)	116	9275	-	4137	4637
Total					8979	21390	19863

The Commission in its order dated 17th November 2008 against Petition No.936/2008 filed by GETCO for approval of RFQ document to establish transmission system through tariff based competitive bidding process for 400 kV Mundra-Zerda Transmission lines and 400 kV Vadinar –Hadala Transmission lines had concluded as under:

“12.2 According to above approved documents, the delivery point for getting power supply from the bidder is the Generator – Gujarat STU Interconnection Point (at appropriate voltage) in case the Generator is connected to the Gujarat STU. However, on verification of the contentions raised in the petition and the RFQ documents, it is observed that the delivery point has deviated from the above approved parameters by the Commission. Neither the petitioner nor GUVNL have taken any approval from the Commission before proposing the same.

12.3 In the Bid Nos.1,2 and 3 for power procurement by GUVNL, the capacity of the power procurement from the developer is 1000 MW in each bid (i.e. 2000 MW from Adani Power Pvt. Limited and 1000 MW from Essar Power Limited). According to transmission planning criteria of the CEA and as per clause 8.1 (a) of Grid Code notified by the Commission, as and when power is evacuated for 1000 MW, the appropriate voltage level is 400 KV. Accordingly, the project developer has to deliver power at the nearby 400 KV



substation of GETCO and same was required to be considered by GUVNL and GETCO. Clause 8.1 of GERC Regulation on Grid Code states as follows:

For meeting a particular quantum of load, the number of required substations depends upon the choice of voltage levels, the MVA capacity and the number of feeders permissible etc. The number of EHT transformers, interconnecting transformers shall also be considered in planning to take care of planned / forced outages contingencies. The rupturing capacity of the circuit breakers shall have 20 percent margin to take care of increase in short circuit levels as the system grows. The following criteria can be adopted.

(a) The capacity of any single substation at different voltage levels shall not normally exceed:

400 kV	1000 MVA
220 kV	320 MVA
132 kV	150 MVA
66 kV	80 MVA

12.4 Thus, the 220 kV sub-station at Nanikhakher is not the appropriate delivery point for evacuation of 2000 MW from Adani Power Private Limited. It is the duty of the petitioner as a STU that he has to plan out for evacuation of power at appropriate level. The petitioner has proposed deviation in evacuation point (delivery point) than the approved bid documents by the Commission and hence it is not allowed. GETCO has proposed to establish one 400 kV Mundra-Zerda line by itself. GETCO has not given any proper justification as to why the same line was decided to remove from the competitive bid. Hence, the proposal of GETCO in this regard is not allowed.

[13] In view of the above, the petition for approval of deviation from BOO to BOOT model in the RFQ document submitted by the petitioner is not approved. Whomsoever may construct the transmission system as now proposed but (in accordance with the documents approved by the Commission in earlier Power Procurement Bid No.1,2 and 3) its transmission charges upto the appropriate delivery point of GETCO system should form part of the Generation tariff as quoted by the bidders. Therefore, the cost of transmission lines proposed for evacuation of power 1000 MW each from Essar / Adani Generation plants need not be duplicated in the consumer tariff. The petitioner is directed to submit a compliance report of this order to the Commission.

[14] We order accordingly”.

In view of the above order of the Commission, the capital expenditure proposed by GETCO for the above 220 kV and 400 kV transmission lines for the control period is disallowed provisionally.

The amount provisionally disallowed is as below:

Year	(Rs. Lakhs)
2008-09	8979
2009-10	21390
2010-11	19863

With the reduction of above amount, the capital expenditure for the control period works out to Rs.339877 lakhs and the yearly requirement would be as under:

Year	(Rs. Lakhs)
2008-09	75606
2009-10	141037
2010-11	123234

It is submitted by GETCO that the revised capex would be Rs.4304.00 crores against Rs.3901.09 crores submitted in the MYT petition during the control period including transmission lines for evacuation of Wind Energy generation and SEZ developments. The additional amount works out to Rs.403 crores. They have not given the phased expenditure for this in the control period. It is assumed to be equally spread out during the years 2009-10 and 2010-11 at Rs.200 crores and Rs.203 crores respectively.

The Commission approves the capex as under including transmission for evacuation of wind energy etc.

Year	(Rs. Lakhs)
2008-09	75606
2009-10	161037
2010-11	143534
Total	380177

GETCO is directed to submit the transmission scheme for evacuation of wind energy to the Commission.

Funding

It is submitted by GETCO that the proposed capital expenditure during the control period shall be raised through the means of loan and equity with the debt equity ratio of 70:30 excluding the grant under TASP scheme funded by Government of Gujarat. The funding scenario in the control period proposed by GETCO is given in Table 5.12 below:

Table 5.12
Proposed funding of Capex for 2007-08 and control period

(Rs. Lakhs)

Particulars	2007-08	2008-09	2009-10	2010-11	Total
Estimated Capex for the year	31375	84585	162427	143097	421484
Debt	20142	57110	113699	100168	291119
Equity	8632	24476	48728	42929	124765
Grant (TASP Scheme)	2600	3000	0	0	5600

The funding is revised based on the capex approved by the Commission with debt and equity at 70:30 as below:

(Rs. Lakhs)

	2008-09	2009-10	2010-11	Total
Estimated capex:	75606	161037	143534	380177
Grant (TASP scheme)	3000	-	-	-
Debt (70%)	50824	112726	100474	266124
Equity (30%)	21782	48311	43060	114053



5.1.3 Loans and Interest on loans

GETCO has projected the interest on loans and guarantee charges to the State Government at Rs. 87950 lakhs for the control period of three years 2008-10.

GETCO has taken the basis of actual interest and financial expenses during the year 2006-07. The capital expenditure during the year 2007-08 and during the control period has been assumed to be undertaken at a normative debt-equity ratio 70:30 in accordance with the GERC (Terms and Conditions of Tariff) Regulations 2005 and outstanding loans for FY 2007-08 and the control period have thus been arrived at.

For the purpose of calculation of interest, the actual weighted average rate of interest is estimated based on the actual interest of 9.03% for existing loans and at 10.75% for future loans as per Capex for the year 2007-08 and the control period 2008-09 to 2010-11. For purpose of repayment of loan, average tenure of the loan has been assumed as 10 years for all GETCO loans and accordingly the interest has been calculated. The weighted average rate of interest works out to 9.36 to 9.98%.

GETCO has to pay guarantee charges to the State Government towards loans which have come from the erstwhile GEB. It is stated that no new loans are taken on the basis of Government Guarantee and hence there is no increase in the cost.

The interest and finance charges and guarantee charges arrived at by GETCO are given in Table 5. 13 below:

Table 5.13
Proposed interest and finance charges for GETCO

(Rs. Lakhs)

Particulars	2008-09	2009-10	2010-11
	Projected		
Opening Loans	212864	246982	331745
Addition during year	57110	113699	100168
Repayment during year	22992	28936	36365
Closing Loans	246982	331745	395548
Average Loans	229923	289363	363646
Interest on Loans	21515	28121	36274
Guarantee charges	680	680	680
Total Interest & Finance Charges	22195	28801	36954
Average tenor of the loan	10		
Cost of additional loans	10.75%	10.75%	10.75%
Weighted Average Rate of Interest	9.36%	9.72%	9.98%

Commission's view

The loans and interest calculation furnished by GETCO have been examined by the Commission. As discussed in para 5.1.2 the capex during the control period is reduced by Rs.50232 lakhs the revised Capex would be Rs. 380177 lakhs and the loan and equity at 70:30 is considered for calculating the debt and interest there on. The opening loans, the loan additions during each year are revised in line with the Capex programme approved by



the Commission. The average interest rates at 9.36%, 9.72% and 9.98% for the year 2008-09, 2009-10 and 2010-11 are considered.

The addition to the loans during and the control period 2008-10 are in line with the capital investment programme approved in para 5.1.2 above. The interest on loans during and the control period is approved by the Commission as in Table 5.14 below:

Table 5.14
Approved Interest and Finance Charges for control period 2008-11
(Rs. Lakhs)

Particulars		2008-09	2009-10	2010-11
Opening loans	A	212864	240696	324486
Addition during the year	B	50824	112726	100474
Repayment during year	C	22992	28936	36365
Closing loans	D: (A+B-C)	240696	324486	388595
Average loans	E: D+A/2	226780	282591	356541
Interest on loans	F: (EXI)	21227	27468	35583
Guarantee charges	G	680	680	680
Cost of additional loans	H	10.75%	10.75%	10.75%
Weighted average rate of interest	I	9.36%	9.72%	9.98%

The Commission approves the interest and finance charges for the control period at Rs. 21907 lakhs for 2008-09, Rs. 28148 lakhs for 2009-10 and Rs. 36263 lakhs for 2010-11.

5.1.4 Depreciation and Advance Against Depreciation

a) Depreciation

GETCO has claimed depreciation of Rs. 57434 lakhs for the control period. The amount claimed is given in Table 5.15 below:

Table 5.15
Depreciation claimed by GETCO for the control period 2008-11
(Rs. lakhs)

Particulars	2007-08	2008-09	2009-10	2010-11
	Estimated	Projected		
Gross Fixed Assets at the beginning of the year	486517	524159	558667	618214
Less: Accumulated Depreciation	107010	124521	142990	164444
New Additions during year	37642	34508	59547	110987
Net Fixed Assets	417149	434416	475224	564757
Capital Expenditure in Progress	51753	101831	204711	236820
Depreciation	16092	17241	18739	21454
Weighted average rate of depreciation	3.18%	3.18%	3.18%	3.18%

It is submitted by GETCO that it has considered actual position of assets as notified by the State Government in the opening balance sheet and the actual assets movement of FY



2006-07 to arrive at the estimated assets and depreciation during 2007-08 and the control period. 50% of the capital works in progress in a given year is assumed to be capitalized in the next financial year and also the capitalized expenses which are reduced from the respective year's operating expenses are also added to the total assets for the respective year.

It is submitted that the depreciation is calculated considering CERC norms for various blocks except for vehicles and SLDC assets for which depreciation has been provided as per company's Act Provisions.

It is stated the weighted average of 3.18% has been considered for the year 2007-08 and the control period based on the rate obtained for 2006-07.

Commission's view

The Commission has examined the depreciation claimed by GETCO in the Annual Accounts for 2007-08. The Commission considered the Gross Fixed Assets as provided in the Annual Accounts for the year 2007-08. The rates of depreciation claimed based on CERC / GERC norms for transmission assets are also approved. Based on the depreciation rates adopted, the depreciation is arrived at as given in Table 5.16 below:

Table 5.16

Assets capitalization and depreciation approved by the Commission during the control period

(Rs. Lakhs)

S.N	Particulars	2006-07	2007-08	2008-09	2009-10	2010-11
1	Gross fixed assets		486517	545706	580214	639761
2	New additional during the year		59189	34508	59547	110987
3	Fixed assets at the end of the year (1+2)		545706	580214	639761	750748
4	Average assets (1+3) / 2		516112	562990	609987	695254
5	Weighted average rate of depreciation	3.18%	3.18%	3.18%	3.18%	3.18%
6	Depreciation (4X5)		16412	17902	19398	22109

The Commission approves the depreciation at Rs. 17902 lakhs for 2008-09, Rs.19398 lakhs for 2009-10 and Rs. 22109 lakhs for the year 2010-11.

b) Advance Against Depreciation

In addition to allowable depreciation, the utility is entitled to advance against depreciation to facilitate the utility for repayment of loan.

As per Regulation 37 (ii) of GERC Regulations 2005 the Advance Against Depreciation is computed as under:

“AAD = Loan repayment amount as per regulation 36 (i) subject to a ceiling of 1/10th of loan amount as per regulation 35 minus depreciation as per schedule. Provided that Advance



Against Depreciation shall be permitted only if the cumulative repayment upto a particular year exceeds the cumulative depreciation upto that year.

Provided further that Advance Against Depreciation in a year shall be restricted to the extent of difference between cumulative repayment and cumulative depreciation upto that year.

In line with the Regulations referred above, GETCO claimed an amount of Rs. 21724 lakhs towards Advance Against Depreciation for the control period 2008-10 as given in Table 5.17 below:

Table 5.17
Advance Against Depreciation claimed by GETCO

(Rs. lakhs)

Particulars	2007-08	2008-09	2009-10	2010-11
	Estimated	Proposed		
1/10 th of the loan(s)	21407	21286	24698	33174
Repayment of the loans(s) as considered for working out interest on loan	21347	22992	28936	36365
Minimum of the above	21347	21286	24698	33174
Depreciation during the year	16092	17241	18739	21454
Advance against depreciation	5254	4045	5959	11720

Commission's view

The Commission has examined the requirement and the claim of GETCO for Advance Against Depreciation. The company has come into existence from 1st April 2005. The cumulative repayment is more than depreciation upto the year. The claim is justified and is in line with the regulations of GERC. The loan repayment during the control period is more than the depreciation during the control period. The Commission approves Advance Against Depreciation in Table 5.18 below:

Table 5.18
Advance Against Depreciation approved by the Commission

(Rs. Lakhs)

S.N	Particulars	2007-08	2008-09	2009-10	2010-11
1	Loan repayment	21347	21286	24070	32449
2	Depreciation during the year	16092	17902	19398	22109
3	Advance against depreciation (1-2)	5295	3384	4672	10340

The Commission approves the Advance Against Depreciation at Rs.3384 lakhs for 2008-09, Rs.4672 lakhs for 2009-10 and Rs.10340 lakhs for the year 2010-11.

5.1.5 Interest on working capital

GETCO has claimed an amount of Rs. 10789 lakhs for the control period 2008-10. it is submitted that the working capital is worked out on a normative basis and is based on



norms specified in the Commission's Regulations. The rate of interest on working capital is assumed at 10.50%.

The interest on working capital claimed by GETCO is given in Table 5.19 below:

Table 5.19
Interest on working capital

(Rs. Lakhs)

Particulars	Projections		
	2008-09	2009-10	2010-11
O&M expenses	3971	4400	4878
Maintenance spares	6186	6782	7892
Receivables	18935	22396	27307
Total working capital	29092	33577	40076
Rate of interest (%)	10.50	10.50	10.50
Interest on working capital	3055	3526	4208

Commission's view

The Commission has examined the working capital and interest on working capital claimed by GETCO. As per Regulation (V) of GERC Regulations 2005 the working capital shall be on normative basis and the interest shall be equal to the short term prime lending rate of SBI as on 01/04/2004 or on 1st April of the year in which the project or a part thereof (as in the case may be) is declared under commercial operation whichever is later. The short term PLR as on 01/04/2004 was 10.25%, the interest rate claimed by GETCO is considered at 10.25% and approved.

The working capital and interest on working capital approved by the Commission is given in Table 5.20 below:

Table 5.20

Working capital and interest on working capital approved by the Commission

(Rs. Lakhs)

Particulars	2008-09	2009-10	2010-11
O&M expenses (one month)	3574	3632	3575
Maintenance spares (1% of FA with 6% escalation)	6186	6782	7892
Receivables (2 months of total transmission charges)	17347	20394	24581
Total working capital	27107	30808	36048
Interest @ 10.25%	2778	3158	3695

The Commission approves the interest on working capital at Rs. 2778 lakhs for 2008-09, Rs. 3158 lakhs for 2009-10 and Rs. 3695 lakhs for 2010-11.

5.1.6 Return on equity

GETCO has claimed return on equity at Rs. 96239 lakhs for the control period 2008-10 as detailed in Table 5.21 below:



Table 5.21
Return on equity

(Rs. Lakhs)

Particulars	2007-08 (Estimated)	Projections		
		2008-09	2009-10	2010-11
Opening equity capital	168594	177227	201702	250430
Addition during the year	8632	24476	48728	42929
Closing equity	177227	201702	250430	293359
Average equity	172910	189464	226066	271895
Return on equity at 14% P.A.	24207	26525	31649	38065

It is submitted by GETCO that the equity provided in the opening balance sheet approved by the State Government is considered and return on equity earned during 2005-06, 2006-07, 2007-08 and the control period 2008-10 is added to meet Capex requirement. Average equity (average of opening and closing equity) is then considered to calculate the return on equity. The return on equity is claimed at 14% in line with the norms specified by the Commission.

Commission's view

The return on equity claimed by GETCO has been examined by the Commission. The equity in the opening balance sheet of GETCO as on 01/04/2005 was Rs. 155752 lakhs and the addition during 2005-06 was NIL. An addition of Rs. 7458 lakhs was approved by the Commission in the tariff order for 2007-08 with a closing equity of Rs. 163210 lakhs for 2006-07 which is the opening equity for 2007-08. Against this GETCO has indicated the opening equity of Rs.168594 lakhs for 2007-08 in the MYT Petition. The equity addition during the control period is in line with normative equity (30% of Capex) proposed during the control period. The reserves available, the return on equity during 2007-08 and the control period is adequate to meet the equity requirement of the Capex year to year. The return on equity is approved by the Commission is given as Table 5.22 below:

Table 5.22
Return on equity approved by the Commission

(Rs. Lakhs)

S.N	Particulars	2008-09	2009-10	2010-11
1	Opening equity	177227	201702	250430
2	Addition during the year	21782	48311	43060
3	Closing equity	199009	250013	293490
4	Average equity	188118	225858	271960
5	Return on equity (14%)	26336	31620	38074

The Commission approves return on equity at Rs. 26336 lakhs for 2008-09, Rs. 31620 lakhs for 2009-10 and Rs. 38074 lakhs for 2010-11.

5.1.7 Income tax and other taxes

GETCO has not claimed any amount towards income tax or any other tax. It is submitted that as per the terms and conditions of tariff, tax on the income streams of the transmission



licensee from its core business shall be computed as an expense and shall be recovered from beneficiaries. It is stated that GETCO is now paying taxes and it is proposing to recover the same.

GETCO may recover income tax through transmission charges based on tax paid.

Revenue from other income

The revenue from other sources includes interest on staff loans, interest on investments, income from sale of stores, etc. It is also submitted by GETCO that it receives contribution from consumers and grants towards capital assets. These are not reduced from the cost of capital assets, instead they are treated as deferred revenue and 10% of the year end balance of the same is transferred to profit and loss account by showing it as an income. According to annual accounts for 2006-07, the amount under this head is stated as Rs.8.0 crores and they have considered Rs.10.00 crores per year during 2007-08 and control period.

The details of other income as projected by GETCO are given in Table 5.23 below:

Table 5.23
Other income

(Rs. in lakhs)

Sl.No.	Particulars	2007-08	2008-09	2009-10	2010-11
1.	Interest on staff loans and advances	177.1	177.1	177.1	177.1
2.	Income from investments / deposits	0.0	0.0	0.0	0.0
3.	Interest on advance to others	2.7	2.7	2.7	2.7
4.	Interest from Banks (Others than of Fixed Deposits)	0.0	0.0	0.0	0.0
5.	Income from Trading stores, scrap etc.	270.1	270.1	270.1	270.1
6.	Income from Staff welfare activities	0.0	0.0	0.0	0.0
7.	Gain on sale of fixed assets	364.6	364.6	364.6	364.6
8.	Miscellaneous Receipts	2500.9	2686.7	2699.4	2699.4
9.	Contributions and Grants towards cost of capital assets	1000.0	1000.0	1000.0	1000.0
	Total	4315.4	4501.2	4513.9	4513.9

Commission's view

The other income projected by GETCO is examined by the Commission and considered reasonable. A transmission company has limited sources of other income, when it does not have open access consumers.

The other income is approved by the Commission at Rs.4501 lakhs for 2008-09, Rs.4514 lakhs for 2009-10 Rs.4514 lakhs for the year 2010-11.

5.2 Annual Transmission Cost

Based on the above analysis, the annual transmission costs for the control period from FY 2008-09 to FY 2010-11 are arrived as is Table 2.24 below:

Table 5.24
Annual Transmission costs approved by the Commission

(Rs. lakhs)

Sl. No.	Particulars	2008-09	2009-10	2010-11
1.	O&M Expenses	42893	43585	42900
	- Employees Cost	29123	29092	27642
	- Repairs and Maintenance	9185	9736	10320
	- Administration and General expenses	4585	4757	4938
2.	ULDC charges	1536	1536	1536
3.	Depreciation	17902	19398	22109
4.	Advance against depreciation	3384	4672	10340
5.	Interest and Finance costs	21907	28148	36263
6.	Interest on working capital	2778	3158	3695
7.	Return on equity	26336	31620	38074
8.	Total fixed chares	116736	132117	154917
9.	<i>Less: Expenses capitalized</i>	<i>8632</i>	<i>8632</i>	<i>8632</i>
10.	Total transmission costs	108104	123485	146285
11.	<i>Less: Other income</i>	<i>4501</i>	<i>4514</i>	<i>4514</i>
12.	Net Annual transmission costs	103603	118971	141771

The net annual transmission costs are approved by the Commission for the control period is as below:

Year	Rs. Lakhs
2008-09	103603
2009-10	118971
2010-11	141771

5.3 Transmission Tariff

The transmission charges approved are to be recovered from the users of the transmission system as in Table 5.25 below:

Table 5.25
Transmission Tariff

Sl. No.	Transmission Tariff	Unit	2008-09	2009-10	2010-11
1.	Annul transmission charges	Rs. lakhs	103603	118971	141771
2.	Total MW Allocation	MW	11776	13704	14329
3.	Transmission tariff (Rs./MW/Day)	(Rs./MW/Day)	2410	2378	2711
4.	MU Trans. For at 80% PLF	MU	82526	96037	100418
5.	Transmission tariff	Paise / unit	12.55	12.39	14.12

5.4 Recovery of transmission / wheeling charges from purchasers/ users of renewable energy

The recovery of transmission / wheeling charges from purchasers/ users of renewable energy shall be in accordance with the Order of the Commission from time to time.



Capital Expenditure Plan

11th Five Year Plan (2007-2012) for Transmission Network:

The off line system study is carried out for formulation of 11th five year plan. The system parameters are simulated for the plan period for additional generation capacity, 400 KV sub stations, 220 KV sub stations, 400 KV transmission lines and 220 KV transmission lines. The 66 KV sub stations as proposed by various DISCOMS together with load growth are simulated appropriately at 220 KV substation.

[A] GENERATION:

1. The capacity addition up to 2012 is considered as 7348 MW.
2. New Transmission Sub Stations and lines for evacuation of power of GSECL Power Stations viz. Dhuvaran CCPP (113 MW); Panandhro (75 MW); Utran CPP (300 MW); Sikka Phase-II (500 MW) and Ukai Extension (500 MW) which are scheduled to be commissioned up to March 2012 have been considered.

[B] TRANSMISSION:

1. It is proposed to establish 1 No. of 400 KV sub station at Kosamba; 2 Nos of 220 KV sub stations at Lakhani (spill over of 10th FYP) and Bhat (Bavla) & 200 Nos of 66 KV sub stations as proposed by various DISCOMS.
2. It is proposed to lay 670 CKMs of 400 KV D/C; 1190 CKMs of 220 KV D/C & 2800 CKMs of 66 KV Single Circuit lines.
3. It is proposed to provide 50 Nos of 220/66 KV, 50 MVA Transformers at existing 220 KV substations to cater the load growth of DISCOMS through new 66 KV sub stations.
4. It is proposed to install 2476 MVAR Shunt Capacitors in the Network during the Plan period.

Additional Projects:

1) System study for evacuation scheme for 1000 MW of contracted power from M/s. Essar Power Limited (EoPL) at Vadinar, Dist: Jamnagar as per PPA vide Bid-03.

M/s. EPoL have executed PPA with GUVNL for supply of 1000 MW under Bid-03. The scheduled commercial operation date for 500 MW under Bid-03 is up to Feb-2011 and for balance 500 MW under Bid-03 is up to Aug-2011. To evacuate the power of 1000 MW into the GETCO grid, various possibilities had been evaluated and the best option has been finalized considering techno economical aspects and considering that the evacuation point will be at bus bar of M/s. EPOL generating station.

The transmission system required for evacuating the contracted power from M/s. EPoL has to be created well in advance so as to match with the synchronizing schedule of their generating units.

Evacuation Scheme for 1000 MW (PPA with GUVNL under Bid-03) by M/s. Essar Power Limited at Vadinar:

As per BID-03: (1000 MW): COD: 25.08.2011

Sl. No.	KV	Name of line / transformer	CKM	Conductor
1	400	Essar, Vadinar – Hadala (2 x D/C) (RKm: 116 KM)	464	ACSR Twin Moose
2	400/220	1 x 315 MVA, Transformer at Hadala		

2) System study for evacuation scheme for contracted power of 2000 MW from M/s. Adani Power Private Limited (APPL) at Mundra, Dist: Kutch as per PPA vide Bid-01 (1000 MW) and Bid-02 (1000 MW).

M/s. APPL have executed PPAs with GUVNL for supply of 1000 MW each under Bid-01 and Bid-02 i.e. total 2000 MW. The scheduled commercial operation date for 1000 MW under Bid-01 is up to Feb-2010 and for 1000 MW under Bid-02 is up to Feb-2012. To evacuate the power of 2000 MW (1000 MW each under Bid-01 & 02) in to the GETCO grid, various possibilities had been evaluated and the best option has been finalized considering techno-economical aspects and considering that the evacuation point will be bus bar of M/s. APPL generating station. The transmission system required for the evacuating the contracted power from M/s. APPL has to be created well in advance so as to match with the synchronizing schedule of their generating units.

Evacuation Scheme for 2000 MW (PPA with GUVNL) by M/s. APPL at Mundra:

As per BID-01: (1000 MW): COD: 05.02.2010

Sl. No.	KV	Name of line / transformer	Circuit	CKM	Conductor
1	220	Adani-Varsana	D/C	170	ACSR Zebra
2	220	Varsana-Morbi (System Strengthening)	D/C	210	
3	220	Hadala – Halvad (System Strengthening)	D/C 160	160	
4	400	Adani – Hadala D/C with one circuit LILO at Varsana		400	ACSR Twin Moose
5	400/220	2 x 315 MVA, Transformer at Varsana			

As per BID-02: (1000 MW): COD: 01.02.2012

Sl. No.	KV	Name of line / transformer	Circuit	CKM	Conductor
1	400	Adani-Zerda	2xD/C	1320	ACSR Twin Moose
2	400/220	1 x 315 MVA, ICT # 4 at Zerda			

3) Evacuation scheme for Dhuvaran Combined Cycle Power Plant (CCPP), Stage – III, 368.8 MW (GTG-240 MW + STG-128.8 MW) by M/s. Gujarat State Electricity Corporation Limited (GSECL) at Dhuvaran.



M/s. GSECL is planning for an expansion of the CCPP project by installing CCPP, Stage - III at Dhuvaran having an installed capacity of 368.8 MW (GTG – 240 MW + STG – 128.8 MW). The commissioning schedule for Dhuvaran CCPP – III is December – 2009. To check the feasibility of evacuation of power from CCPP – III into GETCO grid, system study has been carried out and evacuation scheme is finalized for Dhuvaran CCPP – III.

While preparing the detailed project scheme for Dhuvaran CCPP – III, M/s. GSECL have declared that evacuation of Dhuvaran CCPP – III should be at 220 KV level as the generation would be stepped up to 220 KV. After taking this into consideration and assuming that Dhuvaran TPS would be generating around 250 MW, system studies with various contingencies were conducted. After analyzing the results, evacuation scheme for Dhuvaran CCPP – III is finalized as under:

1. LILO of 220 KV Karamsad – Vartej S/C line (Moose) at Dhuvaran CCPP – III (LILO distance 30 RKM)
2. LILO of 220 KV Kasor – Vartej S/C line (Moose) at Dhuvaran CCPP – III (LILO distance 30 RKM)

4) Creation of 220/66 KV, 50 MVA Botad substation, Taluka: Botad, District: Bhavnagar by making LILO of 220 KV Kasor – Vartej S/C line

A system study is carried out in this regard by making LILO of 220 KV Kasor – Vartej S/C line at proposed 220/66 KV, 50 MVA substation near Botad with 100 CKM (2 x 50 CKM) of the LILO lines. The results of the study reveal a better voltage profile with consideration of the future load growth in the area. The creation of 220/66 KV substation would be beneficial in overcoming various prevalent problems such as:

- Overloading of 132/66 KV Paliad substation.
- Overloading of 132 KV Dhandhuka – Paliad line.
- Catering load of proposed 66 KV substations from 132/66 KV Paliad substation.
- Catering the industrial load growth and agricultural load.
- Low voltage problems at 132 KV Paliad and adjoining substations.

The details of work are as under:

- Creation of 220/66 KV, substation with 50 MVA transformer at Botad.
- 50 KM D/C lines to connect proposed 220 KV Botad sub-station by making LILO of 220 KV Kasor – Vartej S/C line.
- 66 KV 5 KM, D/C lines with Panther conductor to connect existing 66 KV Botad substation with proposed 220/66 KV Botad substation.

5) Bus Reactor requirement at 400 KV Kasor and Soja substations:

M/s. PGCIL have carried out off-peak system studies for Western region and identified many high voltage buses under light load conditions. For GETCO, they have identified requirement of 125 MVAR and 80 MVAR Bus Reactors at 400 KV Kasor and Soja substations respectively.

6) Creation of new 220 KV substation at Kangasiyali (Near 132 KV Vikram Substation) at Taluka: Rajkot Dist: Rajkot by making LILO of 220 KV S/C Gondal – Rajkot line with installed capacity of 2 x 100 MVA Transformers.

Loading on 132 KV Vikram substation is increasing beyond its installed capacity of 150 MVA (132/66 KV, 3 x 50 = 150 MVA) because of tremendous industrial growth of Rajkot Urban and surrounding industrial area. At present GETCO is temporarily transferring loads on 220 KV Gondal and 132 KV Wankaner substations.

To avoid critical overloading of 220 KV Gondal, 132 KV Vikram and Wankaner substations in future due to industrial and other load growth in surrounding area of Rajkot city, it is proposed to create a 220/66 KV substation at Kangasiyali (Near 132 KV Vikram Substation) by making LILO of 220 KV Gondal – Rajkot S/C line.

A system study is carried out in this regard by making LILO of 220 KV Gondal – Rajkot S/C line at proposed 220/66 KV, 2 x 100 MVA substation at Kangasiyali (Near 132 KV Vikram Substation) with 24 CKM of the LILO lines.

The results of the study reveal that creation of 220/66 KV substation at Kangasiyali will -

- Cater the future load growth with better bus voltage profile in the adjoining area of Rajkot City.
- Result in substantial reduction of 4.27 MW in system losses which would, in turn, result in financial savings of around Rs. 9.0 crores.

7) Evacuation scheme for 350 MW (Extension) Combined Cycle Power Plant of Gujarat State Energy Generation Ltd, Hazira.

GSEG is planning for an expansion of the existing Combined CCPP project by installing additional 350 MW Combined Cycle Power Plant (CCPP) at Hazira. The commissioning schedule for GESEG CCPP is scheduled in the year 2010-11. The system study has been carried out to check the feasibility for evacuation of power from GSEG CCPP into GETCO's grid. The evacuation scheme is finalized as follows:

Sr. No.	Name of Generators	Installed Capacity in MW	Year	Evacuation lines from Generation	CKM
1	M/s Gujarat State Energy Generation Ltd., (GSEG) at Hazira (Extension)	350	2010-11	1. 220 KV 2 x D/C to Kosamba	260

The proposed transmission system has to be created well in advance so as to match with the synchronizing schedule for the evacuation of the proposed 350 MW power from GSEG generating units.

8) Evacuation scheme for 700 MW Combined Cycle Power Plant of GSPC Pipavav Power Co. Ltd (GPPL) at Pipavav.

M/s. GPPL have executed PPA with GUVNL for supply of 700 MW. The commissioning schedule for GSEG CCPP is scheduled in the year 2010-11. The system study has been



carried out to check the feasibility for evacuation of power from GSEG CCPP into GETCO's grid. The evacuation scheme is finalized as follows:

Sr. No.	Name of Generators	Installed Capacity in MW	Year	Evacuation lines from Generation	CKM
1	M/s. GSPC Pipavav Power Co. Ltd. (GPPL), at Pipavav	700	2010-11	1. 220 KV D/C to Dhokadva 2. 220 KV D/C Mahuva-Palitana 3. LILO of 220 KV D/C Savarkundla-Mahuva at Pipavav	100 100 140 LILO

The proposed transmission system has to be created well in advance so as to match with the synchronizing schedule for the evacuation of the proposed 700 MW power from GSEG generating units.

9) Evacuation scheme for 600 MW Lignite Power Plant of Bhavnagar Energy CO. Ltd (BECL) at Padva.

BECL is planning for installation of 600 MW Lignite Power project at Padva Dist, Bhavnagar. The commissioning schedule for BECL is scheduled in the year 2011-12. The system study has been carried out to check the feasibility for evacuation of power from BECL into GETCO's grid. The evacuation scheme is finalized as follows :

Sr. No.	Name of Generators	Installed Capacity in MW	Year	Evacuation lines from Generation	CKM
1	M/s. Bhavnagar Energy Co. Ltd. (BECL), at Padva	600	2011-12	1. 220 KV D/Cto Botad 2. 220 KV D/C to Palitana 3. LILO of 220 KV S/C Savarkundla-Vartej at Padva	220 220 60

Chapter 6

Compliance of Directives and Fresh Directives

6.1 Compliance of earlier Directives

The Commission in its Tariff Order dated 31st March 2007 for the year 2007-08 had issued various Directives to GETCO.

GETCO has submitted the compliance of the Directives issued earlier.

Commission's comments on the status of Compliance of the Directives by GETCO are given below.

The Commission is now giving specific directives to the licensee wherever required.

Directive 1: Energy Audit

The need for energy audit in the transmission system is reiterated.

Action is initiated by GETCO in providing high accuracy meters on feeders to arrive at feeder-wise losses etc. is noted.

The metering on balance feeders may be completed early and feeder-wise and voltage-wise losses arrived at. This will help in identifying the high loss feeders and in taking effective steps for loss reduction.

Compliance / Action Taken:

The installation of high precision static meters on the feeders at all Sub-stations is completed. The common polling software for automatic polling of the meter data into the computer system at sub-stations is completed at all the sub-stations. The performance of common polling software for automatic polling data is found satisfactory. The updated status and installation of static meters of DAS System is as under:

Status and installation of static meters for DAS System

Sr. No.	Name of Circle	No. of Sub stations	No. of Meters installed	No. of PC installed
1.	Navsari	73	1354	73
2.	Bharuch	43	857	43
3.	Jambuva	93	1639	93
4.	Nadiad	106	1843	106
5.	Mehsana	106	1917	106
6.	Palanpur	123	2156	123
7.	Amreli	86	1450	86
8.	Gondal	90	1782	90
9.	Junagadh	73	1342	73
10.	Anjar	60	1056	60
	Total	853	15396	853



The output of the DAS is furnished every month to the DISCOMs, namely power factor, transient tripping/ sustained fault and overloading for improvement of distribution network.

Commission's comments:

The progress on Energy Audit is noted.

Directive-2: Transmission Losses

GETCO could not bring down losses to 4.27% during 2006-07 as directed by the Commission and requested for loss level of 4.35% for 2006-07 and 2007-08. The reason for increase of the loss level has also not been given to ascertain the justification. Load flow studies should be done to establish the reason for such an increase. It must be possible to reduce the loss level by effective energy audit on all feeders.

Energy audit helps in identifying the feeders where the losses are high and remedial measures can concentrate on such feeders. Attempt shall be made to bring down the losses to 3% level *gradually as indicated by GETCO.*

Compliance / Action Taken:

GETCO has submitted that transmission loss is effectively under control for the last several years due to the following steps taken by the company.

- Installation of additional transmission lines of 1152 KM and 42 sub-stations are commissioned in 2006-07. Further, about 1120 KM lines and 50 sub-stations will be completed in 2007-08.
- Shunt capacitors of 2.5 MVAR are installed at 66 kV sub-station in 2006-07 and in 2007-08 they are reshuffled as per system requirement at three sub-stations.
- Replacement of 15396 old electromechanical meters by computer compatible static meters is completed at 853 substations with installation of computers.
- All Double Circuit lines are operated in parallel.
- The old ACSR conductor in a deteriorated condition replaced by new ones for 77 KM of 132 KV line and 227 KM of 66 KV line.
- Year wise Transmission loss and Transmission loss profile upto F.Y. 2006-07 are as under:

Historical Data on transmission losses for GETCO

Year	Loss (%)
2003-04	4.41
2004-05	4.39
2005-06	4.35
2006-07	4.06
2007-08	4.1 (expected)

Commission's Comments:

The GETCO had achieved transmission loss of 3.85% during 2007-08, but estimated that the loss would increase to 4.09% during 2008-09. GETCO shall take all possible steps to reduce the losses.



Directive – 3: Intra-State ABT and Interface Metering

The Commission has already issued orders for implementation of intra-state ABT and action is already initiated by the utilities. It is understood that trial operations are being conducted. Identification of interface points and proper monitoring and control mechanism should be in position for effective implementation of ABT and for avoiding overdrawl from Regional system and consequent heavy UI charges.

Action taken for effective implementation of Intra-State ABT should be reported.

Compliance / Action Taken:

Intra-State ABT is under advanced stage of implementation in the State of Gujarat and the status on the key activities being performed by GETCO is as follows:

- Gujarat is the first State in India to start the implementation of Intra-State-ABT.
- In the process of implementation of Intra-State ABT on time, 643 number of meters have been installed at identified interface locations of distribution licensees.
- Weekly data are being received every Monday at SLDC through email from all the ABT meters installed at sub-stations.
- Mock exercise of Intra-State ABT is under progress in order to familiarize the Intra-State ABT process and proactively resolve the likely issues of Intra-State ABT.
- State Energy Account has already been prepared upto Dec 2007 and circulated to all the beneficiaries.
- UI account has also been prepared upto Dec 2007 and placed on website of SLDC.
- Monthly Energy accounting meeting is being held by GETCO regularly to resolve doubts.

Preparedness at State Load Dispatch Center:

- Day ahead scheduling activities commenced w.e.f. Oct-2006.
- Real-time Round the clock scheduling activities have already been commenced.
- Database associated with meter is configured for computation.
- Monthly state energy account has been prepared and circulated.
- Energy accounting review committee has been formed.
- Long/Short term open access procedure has been finalized.
- Scheduling of bilateral transactions has commended.
- Infrastructure for STOA has been developed at SLDC and LTOA at GETCO Corporate Office.
- For hosting SLDC web site, an independent web server is under procurement.
- GETCO has filed a petition before the GERC submitting a report on mock exercise carried out by GETCO regarding implementation of Intra-State ABT and review of GERC order no 3 of 2006 regarding Intra-State ABT.

Commission's Comments:

Providing of interface metering etc., for implementation of Intra-State ABT is noted. The present status of implementation may be reported.



Directive – 4: Reactive Compensation

It is reported that in accordance with WREB study additional reactive compensation is not required for Gujarat System during 2006-07. Since load growth is a continuous process, action should be taken to get the studies conducted and provide reactive compensation required for the system in coordination with DISCOMs so as to improve the voltage levels and reduce losses.

Compliance / Action Taken:

GETCO has taken up the following reactive compensation measures in the system as on 31.03.2006.

- Installation of Shunt Capacitor – 3922.5 MVAR
- Installation of Bus Reactor – 350 MVAR
- Installation of Line Reactor – 200 MVAR

In addition to the above, the procurement action for providing 4x25 MVAR bus reactors has already been initiated. These bus reactors will be installed at 220 KV bus as Pannandhro, Nakhtrana, Nani Khakhar and Anjar to control voltage during low load condition. GETCO has initiated actions for procurement of 20 MVAR, 132 KV capacitor bank each at Samakhiyali, Vallabhipur, Haripur and 40 MVAR at Junagadh sub stations.

Availability of shunt capacitors has improved from 90.6% to 94.52%.

Commission's Comments:

Action taken is noted. A study on the adequacy of reactive power compensation may be conducted and report submitted to the Commission.

Directive – 5: Transmission Plan

It is stated that the Transmission Plan for XIth Plan is under preparation. This needs to be finalized early and submitted to the Commission along with cost benefit analysis.

Compliance / Action Taken:

The 11th Five Year Plan is finalized as per Annexure – I (Page 44 to 48).

Commission's Comments:

Action taken noted.

Directive –6: Handing Over of 66 kV Transmission System of GETCO

At present GETCO manages the transmission system comprising 66, 132, 220 & 400 KV voltage levels. The 66 KV system is fairly large consisting of 721 number 66 / 11 KV sub-Stations and 16,555 ckt. km. of Transmission lines. It is proposed to add 91 sub-stations and about 900 ckt. km Transmission lines, during 2006-07 and 2007-08. It would become too large for effective management. Further, 66 kV is almost at distribution voltage. In most of the States, system at 33 kV and below is considered as distribution voltage. Gujarat does not have 33 kV and in its place it has 66 kV. It is considered desirable to hand over 66 kV to Distribution companies for better coordination and for taking prompt action in attending to outages, etc and to have proper planning.

Action Taken / Compliance:

The Commission issued directives to check the feasibility of handing over of 66 KV system to DISCOMs for better coordination, for taking prompt action in attending to outages and to have a proper planning.

However, The Commission may consider the following:

At present GETCO manages transmission system comprising of 66 KV, 132 KV, 220 KV, and 400 KV voltage levels. As on 31st March 2007, there were 756 number of 66/11 KV substations and 16807 CKM of 66 KV lines. It is planned to add more than 200 number of 66 KV substations and 3000 CKMs of 66 KV transmission lines during 11th FYP.

GETCO is maintaining these substations and lines very effectively and availability of 66 KV system is about 99.6% against the target availability of 98%.

The transmission losses is about 4.06% which is comparatively very low with respect to other utilities despite having a large network of 66 KV system. Statistics of equipment failure rates show that GETCO is maintaining and managing 66 KV system very effectively and efficiently.

It is suggested that 66 KV system comprising of 66/11 KV substations and 66 KV transmission lines is to be retained with GETCO keeping in view of following points:

1. All new 66/11 KV substations are equipped with static and microprocessor based relays with efficient energy accounting DAS meters, which require skilled technical persons for maintenance.
2. GETCO is having well-qualified and experienced team of engineers and other staff in the cadre of CE to JE level for testing purposes which is essential for maintaining all 66 KV substations very effectively.
3. Every year, GETCO is planning to construct and commission about 60 number of 66 KV substations and 900 CKMs of 66 KV transmission lines and has got adequate in-house expertise and technical know-how in the field of awarding contracts, engineering and procurement of quality equipment and materials.
4. About 40% of existing 66/11 KV substations are very old aging more than 25 years and require R&M activities. GETCO is having vastly experienced technical personnel for upgrading and renovating these 66/11 KV substations.
5. Due to excellent and scheduled periodical maintenance, the failure rate of costly equipments such as power transformers etc. has reduced drastically to the extent of 1.5%.
6. While carrying out system study and network expansion, 66 KV is integral part and all aspects including reactive power requirement and location of substations to optimize losses are taken into account.
7. The Commission has rightly stated that substations with voltage level of 33 KV and below are considered as distribution network in other states and maintained by DISCOMs. The 66 KV voltage level is considered as EHV class and is an integral part of GETCO transmission network in term of operation, maintenance, R&M and future network expansion. It may not be appropriate to equate 33 KV voltage level with 66 KV



(considering that there is no 33 KV level in Gujarat State). The above listed operational performance parameters and technical aspects shall have to be considered in the decision making process to sustain reliable supply to consumers and to optimize human and financial resources.

Considering the above aspects, the GERC is requested to review their directive.

Commission's Comments:

The points put forward by the GETCO will be examined by the Commission and further directives will be issued if it considered necessary.

Fresh Directives

Directive 1: Filing of separate ARR for SLDC

Ministry of Power, Government of India has initiated action for establishment of SLDCs as independent entities. This is already discussed with the states and a directive may be issued shortly. Separate ARR for SLDC may have to be filed for 2009-10. GETCO may initiate action to compile the data for filing separate ARR petition for SLDC for 2009-10.

Directive 2: Transmission loss

It is stated by GETCO that one of the reasons for increase in transmission loss during 2008-09 is due to direct feeding of Daman, Diu etc. loads directly from PGCIL network resulting in lower drawal from the system in South Gujarat. The consumption in South Gujarat may further reduce with the commissioning of SUGEN Power Plant of TPL which will feed Surat loads. GETCO may get a study conducted to establish the impact on Transmission loss due to reduced drawal from the system in South Gujarat.

COMMISSION'S ORDER

The Commission approves the Transmission cost for GETCO for the control period 2008-09 to 2010-11 and Transmission tariff as below:

(Rs. lakhs)

Sl. No.	Particulars	2008-09	2009-10	2010-11
1.	O&M Expenses	42893	43585	42900
	- Employees Cost	29123	29092	27642
	- Repairs and Maintenance	9185	9736	10320
	- Administration and General expenses	4585	4757	4938
2.	ULDC charges	1536	1536	1536
3.	Depreciation	17902	19398	22109
4.	Advance against depreciation	3384	4672	10340
5.	Interest and Finance charges	21907	28148	36263
6.	Interest on working capital	2778	3158	3695
7.	Return on equity	26336	31620	38074
8.	Total fixed costs	116736	132117	154917
9.	<i>Less: Expenses capitalized</i>	8632	8632	8632
10.	Total transmission costs	108104	123485	146285
11.	<i>Less: Other income</i>	4501	4514	4514
12.	Net Annual transmission costs	103603	118971	141771

Transmission Tariff

Sl. No.	Transmission Tariff	Unit	2008-09
1.	Annul transmission charges	Rs. lakhs	103603
2.	Total MW Allocation	MW	11776
3.	Transmission tariff (Rs./MW/Day)	(Rs./MW/Day)	2410
4.	MU Trans. For at 80% PLF	MU	82526
5.	Transmission tariff	Paise / unit	12.55

The order shall come into force with effect from 1st February 2009.

Sd/-

DR. P K MISHRA
Chairman

Sd/-

K P GUPTA
Member

Sd/-

DR. MANMOHAN
Member

Date: 17 January 2009
Ahmedabad

Government Central Press, Gandhinagar.

