

Petition to
Hon'ble Joint Electricity Regulatory Commission for
Approval of Aggregate Revenue Requirement ("ARR")
for 2012-13
of
ELECTRICITY DEPARTMENT, GOA
ARR PETITION & FORMATS

Submitted to
Joint Electricity Regulatory Commission,
Gurgaon

By



ELECTRICITY DEPARTMENT, GOVERNMENT OF GOA

PANAJI

DECEMBER 2011

**BEFORE THE JOINT ELECTRICITY REGULATORY COMMISSION FOR THE STATE OF GOA, &
UNION TERRITORIES, GURGAON**

Filing No.....

Case No.....

IN THE MATTER OF: Petition for Approval of the Aggregate Revenue Requirement (ARR) for FY 2012-13 for the Electricity Department of Goa under Section 45, 46, 61, 62, 64 and 86 of the Electricity Act, 2003

AND

IN THE MATTER OF: Electricity Department, Goa
Vidyut Bhavan, Panaji,
Goa
.....Petitioner

Electricity Department of Goa (hereinafter referred to as "ED-Goa"), files petition for approval of Annual Revenue Requirement (ARR) for FY 2012-13 under Section 45, 46, 61, 62, 64 and 86 of the Electricity Act, 2003

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AFFIDAVIT VERIFYING THE PETITION

I, **Shri Nirmal Braganza** son of **Charles Braganza**, aged 63 years residing at Taleigao, Goa, the deponent named above do hereby solemnly affirm and state on oath as under:-

1. That the deponent is the Chief Electrical Engineer of Electricity Department – Goa and is authorised to sign and submit the said petition, and is acquainted with the facts deposed to below.
2. I say that on behalf of ED-Goa, I am now filing this Petition under The Electricity Act, 2003 for approval of the Aggregate Revenue Requirement (“ARR”) for FY 2012-13 for its Licensee Area in FY 2012-13.

3. I further say that the statements made and financial data presented in the aforesaid Petition are as per records of the department and on the information received from the concerned officials and believed to be true to the best of my knowledge.
4. Further, to my knowledge and belief, no material information has been concealed in the aforesaid Petition.

**The Electricity Department of Goa
DEPONENT**

Place: Panaji, Goa

Dated: 30th December 2011

VERIFICATION

I, Shivprasad V. Manerkar Advocate and Notary having office at Panaji-Goa, do hereby declare that the person making this affidavit is known to me through the perusal of records and I am satisfied that he is the same person alleging to be deponent himself.

Advocate

Solemnly affirmed before me on this day of December 2011 by the deponent who has been identified by the aforesaid Advocate. I have satisfied myself by examining the deponent that he understood the contents of the affidavit which has been read over and explained to him. He has also been explained about section 193 of Indian Penal Code that whoever intentionally gives false evidence in any of the proceedings of the Commission or fabricates evidence for purpose of being used in any of the proceedings shall be liable for punishment as per law.



**BEFORE THE JOINT ELECTRICITY REGULATORY COMMISSION FOR THE STATE OF GOA, &
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IN THE MATTER OF: Petition for Approval of the Aggregate Revenue Requirement (ARR) for FY 2012-13 for the Electricity Department of Goa under Section 45, 46, 61, 62, 64 and 86 of the Electricity Act, 2003

AND

IN THE MATTER OF: Electricity Department, Goa
Vidyut Bhavan, Panaji,
Goa
.....Petitioner

PETITIONER, UNDER SECTIONS 45, 46, 61, 62 AND 64 OF THE ELECTRICITY ACT, 2003 FILES FOR INITIATION OF PROCEEDINGS BY THE HON'BLE COMMISSION FOR DECIDING ON THE MATTERS CONCERNING THE APPROVAL OF THE ANNUAL REVENUE REQUIREMENT OF ELECTRICITY DEPARTMENT OF GOA (herein after referred to as "ED-Goa") FOR FY 2012-13.

The Petitioner respectfully submits as under: -

1. The Petitioner, The Electricity Department – Goa (ED-Goa) has been allowed to function as Distribution Utility for the State of Goa.
2. Pursuant to the enactment of the Electricity Act, 2003, ED-Goa is required to submit its Annual Revenue Requirement (ARR) and Tariff Petition as per the procedures outlined in section 61, 62 & 64 of EA 2003, and the governing regulations thereof.
3. ED-Goa submitted its ARR and Tariff petition for determination of tariff for FY 2011-12 on 21st October 2011 on the basis of the principles outlined in the Tariff Regulations 2009 notified by the Hon'ble Commission. However, the matter is under process with the Hon'ble Commission.



4. ED-Goa hereby submits the present petition for ARR for FY 2012-13 based on the principles outlined in the Tariff Regulations 2009 notified by the Hon'ble Commission.
5. ED-Goa prays to the Hon'ble Commission to admit the attached petition for ARR Petition for FY 2012-13 and would like to submit that:

Prayers to the Commission:

- A. The petition provides, inter-alia, ED-Goa's approach for formulating the present petition, the broad basis for projections used, performance of ED-Goa in the recent past, and certain issues impacting the performance of ED-Goa in the Licensed Area.
- B. Broadly, in formulating the ARR for the FY 2012-13, the principles specified by the Joint Electricity Regulatory Commission in the notified (Terms and Conditions of Tariff) Regulations 2009 ("Tariff Regulations") have been considered as the basis.
- C. In order to align the thoughts and principles behind the ARR and Tariff Petition, ED-Goa respectfully seeks an opportunity to present their case prior to the finalization of the Tariff Order. ED-Goa believes that such an approach would go a long way towards providing a fair treatment to all the stakeholders and may eliminate the need for a review or clarification.

The petitioner respectfully prays that the Hon'ble Commission may:

- Accept the Annual Revenue Requirement petition for the FY 2012-13 for ED-Goa formulated in accordance with the guidelines outlined as per the regulation of Joint Electricity Regulatory Commission relating to Distribution Licensee and the principles contained in Tariff Regulations;
- Approve the total projected ARR of FY 2012-13;
- Allow the Petitioner to submit the tariff proposal to meet the revenue gap for FY 2012-13 upon issuance of the Tariff Order for FY 2011-12 by the Hon'ble Commission which is under process.



- Examine the proposal submitted by the petitioner as detailed in the enclosed proposal for a favourable dispensation.
- The delay in filing this ARR Petition may please be condoned and the Hon'ble Commission is requested to accept this Petition and process the same. The delay in filing is on account of following issues
 - Most of the staff of ED-Goa was required to be deputed on Election duty;
 - The senior officers of ED-Goa were also involved in interviews for new recruitments of Station Operators, Meter Readers & Line Staff and training programmes to the new recruited 30 Junior Engineers in the month of October & November 2001;
- Pass suitable orders with respect to the ARR for FY 2012-13 for the expenses to be incurred by ED - Goa for serving its consumers;
- ED – Goa may also be permitted to propose suitable changes to the ARR and Tariff Petition and the mechanism of meeting the revenue on further analysis, prior to the final approval by the Hon'ble Commission;
- Condone any inadvertent omissions/errors/shortcomings and permit ED – Goa to add/change/modify/alter this filing and make further submissions as may be required at a future date.
- Pass such further, as the Hon'ble Commission may deem fit and appropriate keeping in view the facts and circumstances of the case.

Electricity Department of Goa

Petitioner

Place: Panaji

Dated: __ December 2011

**TABLE OF CONTENTS**

CHAPTER 1. INTRODUCTION	7
1.1 HISTORICAL PERSPECTIVE	7
1.2 JERC FORMATION	11
1.3 FILING OF ARR AND TARIFF PETITION FOR THE YEAR FY 2011-12	12
1.4 FILING OF ARR AND TARIFF PETITION FOR THE YEAR FY 2012-13	12
CHAPTER 2. OVERALL APPROACH FOR PRESENT FILING	14
2.1 ANNUAL REVENUE REQUIREMENT AND TARIFF PETITION FOR FY 2012-13	14
2.2 APPROACH FOR FILING	14
CHAPTER 3. REVIEW FOR FY 2011-12	15
3.1 BACKGROUND TO FY 2011-12 PETITION	15
3.2 REVIEW FOR FY 2011-12	15
CHAPTER 4. ANNUAL REVENUE REQUIREMENT FOR FY 2012-13	17
4.1 ENERGY REQUIREMENT	17
4.2 POWER PURCHASE COSTS	25
4.3 FUEL & POWER PURCHASE PRICE ADJUSTMENT (FPPPA) FORMULA	32
4.4 OPERATION AND MAINTENANCE (O&M) EXPENSES	32
4.5 CAPITAL EXPENDITURE & CAPITALISATION	36
4.6 INTEREST ON LOAN & INTEREST DURING CONSTRUCTION (IDC) CALCULATION	41
4.7 GROSS FIXED ASSETS	45
4.8 DEPRECIATION	46
4.9 INTEREST AND FINANCIAL CHARGES	47
4.10 RETURN ON CAPITAL BASE/ NET FIXED ASSETS	49
4.11 NON-TARIFF INCOME	49
4.12 REVENUE FROM SALE OF SURPLUS POWER	50
4.13 SUMMARY OF ANNUAL REVENUE REQUIREMENT	50
4.14 REVENUE FROM EXISTING TARIFF	51
CHAPTER 5. PROPOSAL TO MEET ARR FOR FY 2012-13	52
5.1 REVENUE GAP AT EXISTING TARIFF	52
5.2 TARIFF PROPOSAL	52



LIST OF TABLES

Table 1-1: Present Power Allocation of Central Sector Stations (WR+SR) 8

Table 1-2: Future Power Allocation from MOP 11

Table 1-3: PPA Executed with Central Sector Power Projects 11

Table 3-1: Summary of ARR for FY 2011-12 16

Table 4-1: Projected Energy Sales, Consumer and Load – FY 2012-2013 19

Table 4-2: Western Region – 52 weeks losses 21

Table 4-3: Energy Availability from Central Sector Stations 23

Table 4-4: Energy Requirement – FY2012-13 24

Table 4-5: Total Charges – Central Sector (FY2012-13) 26

Table 4-6: Power Purchase Cost for Co-Generation 27

Table 4-7: Cost for Renewable Energy 29

Table 4-8: Transmission Charges – Part A (FY 2012-13) 30

Table 4-9: Transmission Charges – Part B (FY 2012-13) 30

Table 4-10: Total Transmission Charges (FY 2012-13) 31

Table 4-11: Summary of Power Purchase Expenses for FY 2012-13 31

Table 4-12: Breakup of No of Employees FY 2012-13 33

Table 4-13: Employee Expenses – Contract Basis FY 2012-13 33

Table 4-14: A&G Expenses for FY 2012-13 34

Table 4-15: R&M Expenses for FY 2012-13 35

Table 4-16: O&M Expenditure – FY 2012-13 35

Table 4-17: Capital Expenditure & Capitalisation FY 2012-13 39

Table 4-18: Details of Capital Works-in-Progress 41

Table 4-19: IDC Computation 44

Table 4-20: Details of Gross Fixed Assets FY 2012-13 45

Table 4-21: Depreciation for FY 2012-13 46

Table 4-22: PFC Loan Statement till FY 2012-13 47

Table 4-23: PFC Loan & Interest Details – FY 2012-13 48

Table 4-24: Interest on Security Deposit 49

Table 4-25: Revenue from Sale of Surplus Power 50

Table 4-26: ARR for FY 2012-13 50

Table 4-27: Revenue from Existing Tariff 51



LIST OF FIGURES

Figure 1: Existing EHV Infrastructure9

LIST OF ANNEXURES

Annexure I: Power Allocation Statements

Annexure II: Tariff Schedule

TARIFF FILING FORMATS.....



Chapter 1. Introduction

1.1 Historical Perspective

1.1.1 Background of Goa

Goa, a tiny emerald land on the west coast of India, the 25th State in the Union of States of India, was liberated from Portuguese rule in 1961. It was part of Union territory of Goa, Daman & Diu till 30 May 1987 when it was carved out to form a separate State. Goa covers an area of 3702 square kilometres and comprises two Revenue district viz North Goa and South Goa. Boundaries of Goa State are defined in the North Terekhol River which separates it from Maharashtra, in the East and South by Karnataka State and West by Arabian Sea.

Goa, for the purpose of revenue administration is divided into district viz. North and South Goa with headquarters at Panaji and Margao respectively. The entire State comprises 11 talukas. For the purpose of implementation of development programmes the State is divided into 12 community development blocks. As per 2011 census, the population of the State is 14,58,000. Administratively the State is organised into two districts North Goa comprising six talukas with a total area of 1736 sq. Kms. and South Goa comprising five talukas with an area of 1966 sq. kilometres. In all there are 383 villages of which 233 are in North Goa district and 150 in South Goa district. As per the 2001 census, there are 44 towns of which 14 are Municipalities and remaining are census towns.

A very striking feature of Goa is the harmonious relationship among various religious communities, who have lived together peacefully for generations. Though a late entrant to the planning process, Goa has emerged as one of the most developed States in India and even achieved the ranking of one of the best states in India with regards to investment environment, infrastructure and tourism.

1.1.2 Background of Electricity Department

The Electricity Department was formed in January 1963 under the Government of Goa, Daman & Diu. It is the only licensee operating in the State of Goa for transmission and distribution of Electrical Energy. The Electricity Department of Goa does not have its own generation. The majority of the power requirement for the State of Goa is met through its share from Central Sector Power Stations of the National Thermal Power Corporation as allocated by the Central Government. The total central sector firm allocation of power is **414.17** MW and from unallocated capacity is **28.96** MW as on 1st November 2011 during peak hours. In addition, the department also purchases power from Co-generation, IPP and Trader. The firm and infirm allocation of power from Central Sector Stations for peak and off-peak hours is provided in the table below:

**Table 1-1: Present Power Allocation of Central Sector Stations (WR+SR)**

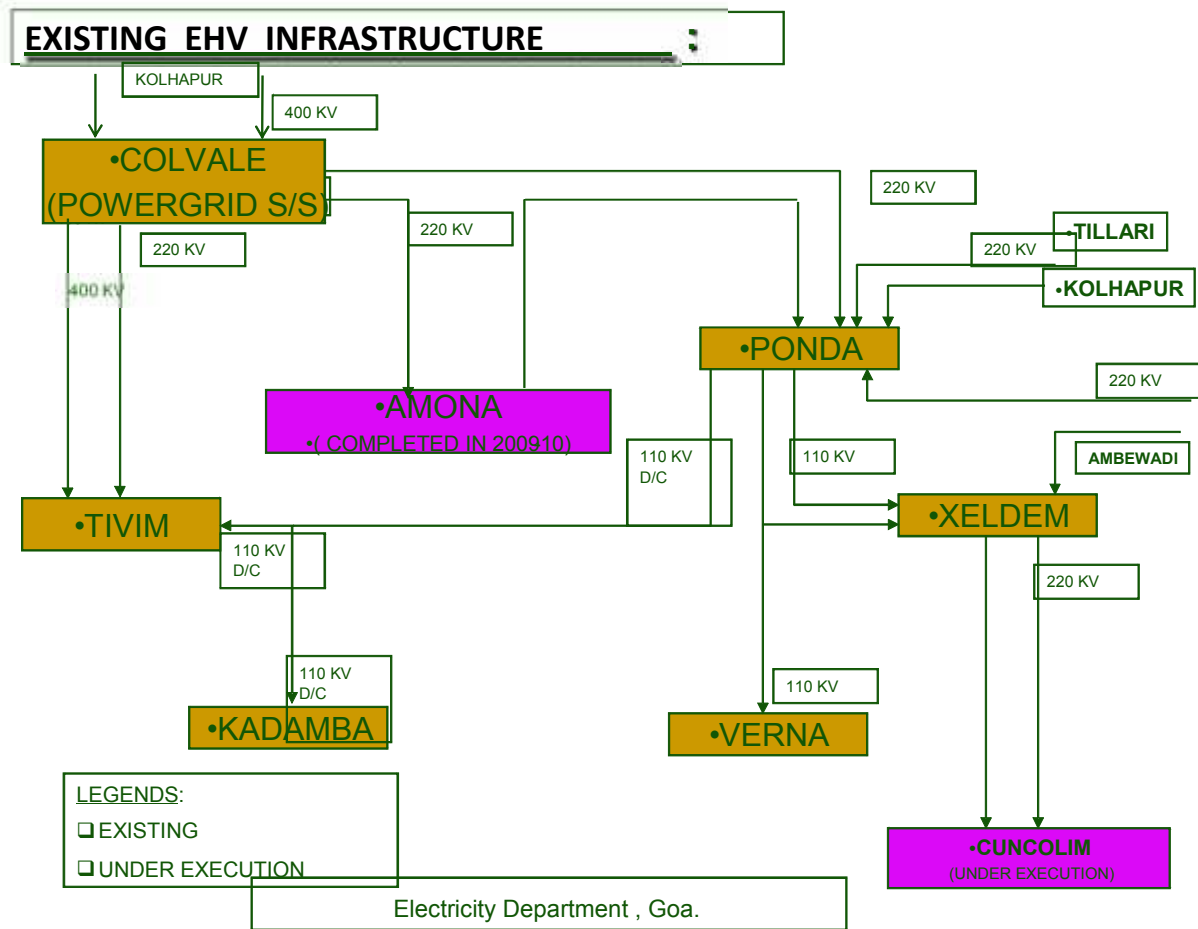
Generating Station	Peak Hours (1800 to 2200 hours)		Off-Peak Hours (0000 to 1800 & 2200 to 2400 hours)	
	Share from Firm Allocation (MW)	Share from Unallocated Allocation (MW)	Share from Firm Allocation (MW)	Share from Unallocated Allocation (MW)
KSTPS	210.00	0.75	210.00	2.97
VSTPS-I	35.00	0.56	35.00	2.22
VSTPS-II	12.00	0.45	12.00	1.79
VSTPS-III	10.00	0.46	10.00	1.81
KGPP	-	12.37	-	12.37
GGPP	-	12.63	-	12.63
SIPAT - II	10.00	0.46	10.00	1.81
KAPP	15.00	0.14	15.00	0.54
TAPP-3 & 4	11.00	0.50	11.00	1.98
KSTPS-7	4.50	0.28	4.50	1.09
SIPAT Stage-I	6.67	0.36	6.67	1.44
Total - WR	314.17	28.96	314.17	40.65
RSTPS - SR	100.00	-	100.00	-
Total (WR + SR)	414.17	28.96	414.17	40.65

The allocation statement is provided at **Annexure I: Power Allocation Statements**. Further as can be seen the more than 75% demand of ED-Goa is met from two major sources viz Korba (KSTPS) and Ramagundam (RSTPS). If there is any forced outage/ event in any of these power stations, it severely affects power position of ED-Goa and it needs to resort to short term power procurement from Traders & UI Pool to the extent of permissible limit and grid frequency norms.

There are no direct link lines between the generating station of central sector and Goa and hence this power is wheeled through the Grids of the neighbouring State of Maharashtra and Karnataka. Electricity Department pays wheeling charges to MSETCL & KPTCL for using their line network for wheeling of power from central sector stations to Goa. The power from the Western region is wheeled from the MSETCL's 400 kV Sub-Station at Kolhapur to the 400 kV Sub-Station at Colvale in Goa. The power from these lines is transmitted at 220 kV level to Ponda and Tivim substations of the Department. Similarly the Southern region power is transmitted from Nagjhari to Ponda. The Department has adopted Voltages of 220 kV, 110 kV and 33 kV for sub transmission and 11 kV and 440 volts for distribution purpose. The Department has adopted overhead line system for transmission and distribution except for Panaji town where part of the area is covered by underground system. The remaining parts of Panaji and Margao town are now being provided with underground network. The Existing EHV Infrastructure is represented in the diagrammatic format as below:



Figure 1: Existing EHV Infrastructure



All the towns and villages of Goa are electrified and any intending consumer can avail power supply by submitting requisition in the prescribed form to the appropriate office of the Department subject to fulfilling the required conditions and payment of charges as per conditions of supply of Electrical Energy and miscellaneous charges. The power supply to the new consumers is released on single phase, 230 Volts for connected load up to 3KW and on three phase, 400 volts for connected loads above 3KW but less than 70 KVA/HP connected for a single consumer. The power supply for connected loads / contract demands above 70 KVA but less than 100KVA is released at a voltage of 11KV and above 1000KVA the same is released at 33KV voltage. The Chief Electrical Engineer has however discretionary powers to release power supply at other voltages irrespective of connected load.

ED-Goa is under control of State Government and the maintenance of the accounts or Income and expenditure statement is on “cash” basis unlike other utilities/ licensees where it is being maintained on “accrual” basis.



The present unrestricted demand for the State of Goa is about 500 MW which is being met by power from various Central Sector Power Stations and generating stations within state. The Electricity Department of Goa caters to around 6 Lacs consumers with an annual energy consumption of approx 2940 MUs. The Consumers of the Electricity Department of Goa are classified as under:

- Domestic (25% of consumption)
- Commercial (11% of consumption)
- Industrial (61% of consumption)
- Agriculture (0.70% of consumption)
- Public Water Works (0.77% of consumption)
- Public Lighting (1.40% of consumption)

As seen from the above classification, the energy consumption of industrial consumers is the highest (61%) amongst all these categories.

1.1.3 Measures to Increase Power Availability

Allocations of power have been obtained from the Ministry of Power (MoP) against the demand made by the State from Central Sector Generating Stations;

- Another allocation of 200 MW has been decided by Secretary (Power), Ministry of Power, Government of India, from the Ultra Mega Project of Chhattisgarh Surguja Power Ltd. (Erstwhile Akaltara) in Chhattisgarh and for which as a commitment advance a sum of ₹ 2.00 Crores has been paid. For meeting the peak hour power requirement, power is obtained to some extent from the U.I. (unscheduled interchanges) pool depending upon permissible grid frequency and also from trader.
- The Government has obtained an allocation of the Gare Pelma, Sector III Coal Block at Chhattisgarh from the Government of India. This Coal Block has a generating capacity of 1800 MW. An Agreement has been entered into with a developer who would provide minimum power of 15% i.e. around 270 MW. The State also has the first right of refusal for another 10% power i.e. around 180 MW. The power plant has been scheduled to come up in the next 3 to 4 years as per GIDC.
- A MoU has also been signed with GAIL for laying a gas pipeline from Gokak to Goa for the transportation of gas to Goa. This pipeline is scheduled to be completed by the December 2012. The Government of Goa is exploring the possibility of setting up of a gas power plant for which NTPC has been requested to carry out a feasibility study for setting up a gas based station in Goa.



The future power allocation from the Ministry of Power is as under:

Table 1-2: Future Power Allocation from MOP

Sr.No.	Power Projects	Capacity
1	Sipat I & II *	13 MW
2	Ratnagiri (Dabhol) – Stage I	19.67 MW
3	Subansari (lower)	8 MW
4	Kameng	2 MW
5	Kakrapar Atomic Power Project (Unit 3 & 4)	15.68 MW
6	Mauda I	11.20 MW
7	Vindhyachal IV	11.20 MW
8	Mauda Stage - II	14.50 MW

* Total allocation is 30 MW out of which approx 17 MW is available and balance 13 MW is expected to be declared as availability by NTPC by end of FY2011-12.

In addition to the power allocation from **Table 1-2**, the State of Goa has executed the PPAs from following central sector power projects:

Table 1-3: PPA Executed with Central Sector Power Projects

Sr.No.	Power Projects	Installed Capacity	Likely COD
1	Vindhyachal V	500 MW	End of XII th Plan
2	Lara STPP – I & II	4000 MW	End of XII th Plan
3	Barh – II	1320 MW	April-Oct 2013
4	Solapur TPP	1320 MW	End of XII th Plan
5	Khargone STPP	1320 MW	End of XII th Plan
6	Gadarwara STPP	2640 MW	End of XII th Plan
7	Dhuvaran STPP	1980 MW	End of XII th Plan
8	Ratnagiri (Dabhol) – Stage II	2100 MW	End of 2015

1.2 JERC Formation

In exercise of the powers conferred by the Electricity Act 2003 the Central Government constituted a Joint Electricity Regulatory Commission for all Union Territories to be known as “Joint Electricity Regulatory Commission for Union Territories” as notified on 2nd May 2005. Later with the joining of the State of Goa, the Commission came to be known as “Joint Electricity Regulatory Commission for the State of Goa and Union Territories” as notified on 30th May 2008.



The Hon'ble Commission is a two-member body designated to function as an autonomous authority responsible for regulation of the power sector in the State of Goa and Union Territories of Andaman & Nicobar, Lakshadweep, Chandigarh, Daman & Diu, Dadra & Nagar Haveli and Puducherry. The powers and the functions of the Hon'ble Commission are as prescribed in the Electricity Act 2003. The Head Office of the Commission presently is located in the district town of Gurgaon, Haryana and falls in the National Capital Region.

The Joint Electricity Regulatory Commission for the State of Goa and Union Territories started to function with effect from August 2008 with the objectives and purposes for which the Commission has been established. Presently the Hon'ble Commission is framing various regulations as mandated in the Electricity Act 2003 to facilitate its functioning. Some of the Regulations notified by the Hon'ble Commission include the following:

- JERC Conduct of Business Regulations, 2009
- JERC Establishment of Forum for Redressal of Grievances of Consumers Regulations 2009;
- JERC Appointment and Functioning of Ombudsman Regulations 2009;
- JERC Treatment of other businesses of Transmission Licensees and Distribution Licensees Regulations, 2009.
- JERC Standard of Performance Regulations, 2009.
- JERC State Advisory Committee Regulations, 2009.
- JERC Open Access in Transmission and Distribution Regulations, 2009.
- JERC Terms and Conditions for Determination of Tariff Regulation, 2009.
- JERC (Distribution Code) Regulations 2010 notified on 11th August 2011.

1.3 Filing of ARR and Tariff Petition for the year FY 2011-12

ED - Goa has submitted the ARR and Tariff Petition for the FY 2011-12 on 21st October 2011. While submitting the ARR and Tariff Petition for FY 2011-12; ED-Goa had considered 5 months actual data/ information for Power Purchase and sales for the purpose of projection for FY 2011-12. The ARR submitted for FY 2011-12 were based on actual performance of FY 2009-10 (actual un-audited figures) and actual performance of FY 2010-11 (actual un-audited figures).

1.4 Filing of ARR and Tariff Petition for the year FY 2012-13

Under the provisions of Electricity Act, 2003, Licensee is required to submit its ARR and Tariff Petition as per procedures outlined in section 61, 62 and 64 of EA 2003, and the governing regulations of JERC thereof.



ED-Goa has adopted the principles of Terms and Conditions for Determination of Tariff Regulations 2009 (Tariff Regulations 2009) notified by the Joint Electricity Regulatory Commission. Accordingly, ED-Goa is filing the present petition of Annual Revenue Requirement (ARR) for the FY 2012-13 as per Tariff Regulations 2009 for the approval of Hon'ble Commission.

The tariff formats as outlined in the Tariff Regulations 2009 and as applicable to ED-Goa are provided at the end of this petition.



Chapter 2. Overall Approach for Present Filing

2.1 Annual Revenue Requirement and Tariff Petition for FY 2012-13

ED-Goa is filing the petition for the determination of Annual Revenue Requirement Petition for the year FY 2012-13 based on the past performance and expected changes in each element of cost and revenue for the ensuing year. ED-Goa has studied the previous trends and taken cognisance of other internal and external developments to estimate the likely performance for FY 2012-13.

2.2 Approach for Filing

The present filing for the Annual Revenue Requirement for the FY 2012-13 is based on the principles enumerated by the Joint Electricity Regulatory Commission's (JERC) in the Terms and Conditions for determining of Tariff, Regulations 2009 notified in February 2010. The subsequent sections provide projection for various expenses, the proposed investment plan for the year and the expected revenue projections with existing tariff for FY 2012-13 based on the tariff notifications in force in the area of supply of ED-Goa.

Projections of various cost components required for determination of Aggregate Revenue Requirement for FY 2012-13 along with the rationale for estimation of such cost. Further, the philosophy adopted by ED-Goa for projecting sales, number of consumers and power purchase cost for FY 2012-13 has been covered in this section.

Further, ED - Goa is required to submit their projections for subsequent years to the Planning Commission for the budget approval. It is submitted that the data / information submitted for FY 2012-13 to the Planning Commission is also considered while projecting the ARR for FY 2012-13.



Chapter 3. Review for FY 2011-12

3.1 Background to FY 2011-12 Petition

ED - Goa had filed its first ARR and Tariff Petition for FY 2011-12 on 14th July 2011. Subsequent to the filing the Hon'ble Commission held a Technical Validation Session (TVS) on 19th September 2011. In the TVS held, the Hon'ble Commission directed ED - Goa to file a revised Petition considered change in tariff for central sector stations and also change in transmission charges mechanism. Complying with the directions of the Hon'ble Commission, ED - Goa filed the revised Petition on 21st October 2011. The Petition filed for ARR & Tariff determination for FY 2011-12 before the Hon'ble Commission is under process.

3.2 Review for FY 2011-12

Regulation 8 (1) of the Joint Electricity Regulatory Commission for the State of Goa and Union Territories (Terms and Conditions for Determination of Tariff) Regulations, 2009 states that,

"...The Commission shall undertake a review along with the next Tariff Order of the expenses and revenues approved by the Commission in the Tariff Order. While doing so, the Commission shall consider variations between approvals and revised estimates/pre-actuals of sale of electricity, income and expenditure for the relevant year and permit necessary adjustments/ changes in case such variations are for adequate and justifiable reasons. Such an exercise shall be called 'Review'..."

Further Regulation 13 (2) (ii) of the aforesaid regulations states that,

"...Estimated figures for the current financial year should be based on actual figures for the first six months and the estimated figures for the second six-months of the year. The estimated figures for the second half year of the current financial year should be based on the actual audited figures for the second half of the previous year with adjustments that reflect known and measurable changes expected to occur between them. These adjustments must be specifically documented and justified..."

ED-Goa submits that the Revised ARR Petition filed by ED - Goa was based on 5 months actual figures and 7 months estimated figures which is more or less in line with above regulations. Further for the scope of review, the approved figures are also unavailable as



the Hon'ble Commission is in the process of analyzing the petition submitted for ARR and Tariff for FY 2011-12 and the Tariff Order is yet to be issued.

However, for the purpose of ease of reference; the summary of ARR for FY 2011-12 submitted in the previous filing is reproduced hereunder:

Table 3-1: Summary of ARR for FY 2011-12

(₹ Crores)

Sr. No.	Item of expense	FY 2009-10 (Actual)	FY 2010-11 (Actual)	FY 2011-12 (Projected)
1	Cost of power purchase	651.72	794.95	957.68
2	Employee costs	124.29	123.51	125.89
3	R&M expenses	16.69	16.55	17.03
4	Administration and general expenses	20.18	17.84	19.31
5	Depreciation	29.69	35.37	3.32
6	Interest charges (incl interest on working capital & Interest on Security Deposit)	10.11	12.05	14.48
7	Other Expenses	0.10	0.07	0.21
8	Total Revenue Requirement	852.78	1,000.34	1,137.91
8	Less: Non Tariff Income	12.76	9.61	21.06
9	Less: Revenue from Sale of Power - UI Pool	70.77	74.61	23.61
10	Less: Revenue from Sale of Power-Exchanges	25.33	16.19	89.33
11	Less: Revenue from Sale / Banking of Power	-	-	8.71
12	Net Revenue Requirement (7-8-9-10-11)	743.92	899.92	995.20

ED - Goa submits that the data / information for the available period (say December 2011/ January 2012) will be submitted during the process of present petition for reference / validation.



Chapter 4. Annual Revenue Requirement for FY 2012-13

This Section captures the Annual Revenue Requirement of ED-Goa for FY 2012-13 which takes into consideration:

- i. Projections for FY 2012-13 based on the performance of past years and the data/information submitted to the Planning Commission;
- ii. Principles outlined in Tariff Regulations 2009 of JERC;

Past trends have been taken into cognizance in case of certain elements as deemed necessary. The present section has been structured in the following manner:

- Determination of Energy Requirement
 - Sales Projections
 - Loss Trajectory
 - Energy Balance
 - Power Purchase Sources
- Determination of the Annual Revenue Requirement
 - Power Purchase Costs & Transmission Charges;
 - Operation and Maintenance Expenses;
 - Employee Expenses
 - Administration & General expenses
 - Repairs & Maintenance Expenses
 - Proposed Capital Expenditure and capitalization
 - Scheme wise details
 - Capital Expenditure
 - Asset Capitalisation
 - Electricity Duty Fund Account
 - Gross Fixed Assets;
 - Depreciation;
 - Interest on Long Term Loans;
 - Interest on Working Capital & Security Deposits;
 - Return on Capital Base/ Net Fixed Assets;
 - Provision for Bad and Doubtful Debts;
 - Other expenses

4.1 Energy Requirement

The energy requirement of the license area is determined based on the expected sales in the area during the period under consideration and the expected distribution losses in the network. Accordingly, the energy requirement projected by Goa for the FY 2012-13 is



as given in the succeeding paragraphs.

4.1.1 Approach for Sales Projection FY 2012-13

The consumer base of Goa consists of HT Industry, LT Industry, Commercial and Domestic consumers. Sales mix is primarily dominated by HT Industry & LT Industry, followed by Domestic category. The total consumption for HT Industry is approximate 61 percent and Domestic category contributes to around 25 percent of total sales. The balance sales are contributed by other categories of consumers. Thus, the sales forecast would mostly depend on the sales expected in the HT Industry & Domestic Category.

The sales forecast is based on the trends observed in the sales pattern of various categories over the past years, new developments on account of Government Policies, Socio economic changes, industrial growth, etc. that would affect consumption across various categories of consumers. In addition to this, the growth trend in number of consumers and connected load approvals given have been taken as guiding factors in arriving at the requirement of demand and energy.

Considering past trend and CAGR of about 5%, the category wise sales are projected for FY 2012-13. Further the numbers of consumers are expected to grow by 2% over previous year. The projected energy sales, number of consumers and connected load of various categories of consumers for FY 2012-13 are given below:



Table 4-1: Projected Energy Sales, Consumer and Load – FY 2012-2013

Sr. No.	Consumer Category	2012-13		
		No. of Consumers at the end of the year (Nos.)	Connected Load at the end of the Year (KW/kVA)	Energy Sale/ Demand (MUs)
A	Low Tension Supply	609,902	1,451,910	1,233
1(a)	Tariff LTD/Domestic and Non - Commercial	459,325	718,042	733
1(b)	Tariff LTD/Low Income Group	14,790	5,610	5
1(c)	Tariff LTD/Domestic Mixed	51	111	2
2	Tariff LTC/Commercial	100,284	269,854	331
3	Tariff LTP/Motive Power	10,228	349,094	103
3(a)	Tariff-LTP/Mixed (Hotel Industries)	85	-	7
4	Tariff-LTAG/Agriculture	15,400	75,714	16
5	Tariff-LTPL/Public Lighting	9,180	12,670	33
6	Tariff-LT PWW/Public Water Works	559	20,815	3
		-	-	-
B	High Tension Supply *	780	644,353	1,691
7	Tariff HT-Mixed	201	79,775	145
8	Tariff HTI/Industrial	416	267,941	538
9	H.T.Industrial (Ferro	29	123,552	545
10	Tariff-HTAG/Agriculture	66	17,322	6
11	EHTI/Industrial	5	96,551	189
12	H.T. PW/Public Water Supply and	33	37,698	123
13	H.T. MES/Defence Establishments	11	9,339	84
14	H.T. Industrial (Steel Rolling)	11	8,093	55
15	Tariff HT-Industries (IT High Tech).	8	4,082	6
C	Temporary Supply	430	2,953	16
16	Tariff-LT/Temporary	430	2,953	16
17	Tariff-HT/Temporary	-	-	-
18	Total Demand/ Sale Within State (A+B+C)	611,112	2,099,215	2,940

* The load figures of HT consumer categories are in kVA

The figures of Number of Consumers, Connected Load and Sales for FY 2012-13 are provided in Format 1 of Tariff Filing Formats.



4.1.2 Distribution Losses

The execution of the works under APDRP has drastically reduced the outages and the AT&C losses. The bifurcation of the feeders, new Sub-Stations has helped in improving the voltage profile and reliability of power supply. Augmentation of the capacities of the Sub-Stations has helped in releasing additional loads to the consumers and consequent increase in revenue. The underground conversion works in Panaji and Margao has reduced the interruptions even during the rainy season improving the quality of service to the consumers. The underground conversion of the HT feeders in the coastal feeders has helped the tourism industry by ensuring reliability in power supply.

The distribution losses considered for FY 2012-13 are **12.50%**. It may be noted that the distribution losses for the State of Goa are comparatively lower than many other state utilities and also competitive. ED-Goa expects that post completion of R-APDRP activities; it would be in a better position to reduce losses further. The AT&C loss for ED-Goa has been lower and hovering around 15% for the past 3 years and the year under consideration. ***The figures of AT&C loss for FY 2012-13 are provided in Format 2 of Tariff Filing Formats.***

4.1.3 Loss Reduction / Demand Side Management Measures for FY 2012-13

ED-Goa submits that apart from normal / routine measures to reduce the losses, following measures are planned under Loss Reduction Programme/ DSM for FY 2011-12:

1. Replacement of conventional energy meters provided to consumers by State of Art Electronic Meters which has resulted in about 15% loss reduction on the consumption of these consumers;
2. Use of Energy Efficient Star Rated transformers and other equipments;
3. Implementation of various energy efficient schemes through Bureau of Energy Efficiency (BEE):
 - a. Bachat Lamps Yojana; wherein a provision of providing 15 lakhs of CFL to households and other states has been made. The work has already been awarded in consultation with BEE;
 - b. LED demonstration scheme on National Highway-17 being implemented in consultation with BEE;
 - c. Replacement of 250 Watts HPSV fixtures by Energy Efficient T-5 fixtures;
 - d. Conducting investment grade energy audit of 11 Government buildings in the State;
4. Re-conductoring of feeders have been carried out and some feeders have also been bifurcated;



5. New Substations and Renovation and modernization of Sub stations have also been carried out;
6. Dedicated feeders have been provided for single/group of bulk power consumers with metering at sending end for energy audit;
7. State of Art Electronic Energy meters with downloading facility is provided for all H.T. consumers;
8. Special sealed metering cubicles with CT/PTs housed inside are provided to bulk H.T. consumers;
9. Special Vigilance squads are set up which carry out surprise raids.

4.1.4 Transmission losses for FY 2012-13

The transmission losses of western region for past 52 weeks work out to **3.59%** which are considered for the purpose of energy balance and to arrive at the quantum of energy required at the State periphery.

Table 4-2: Western Region – 52 weeks losses

Week No.	Week	Actual Loss
FY-2010-11		
41	030111-090111	3.60%
42	100111-160111	3.60%
43	170111-230111	3.40%
44	240111-300111	3.40%
45	310111-060211	3.40%
46	070211-130211	3.50%
47	140211-200211	3.90%
48	210211-270211	3.80%
49	280211-060311	3.80%
50	00311-130311	3.80%
51	140311-200311	3.60%
52	210311-270311	3.80%
FY-2011-12		
1	280311-030411	3.60%
2	040411-100411	3.80%
3	110411-170411	4.10%
4	180411-240411	3.90%
5	250411-010511	3.80%
6	020511-080511	4.10%
7	090511-150511	4.00%
8	160511-220511	3.90%
9	230511-290511	3.40%



Week No.	Week	Actual Loss
10	300511-050611	3.80%
11	060611-120611	4.00%
12	130611-190611	4.30%
13	200611-260611	4.00%
14	270611-030611	4.10%
15	040711-100711	4.20%
16	110711-170711	3.80%
17	180711-240711	3.90%
18	250711-310711	3.80%
19	010811-070811	3.92%
20	080811-140811	3.50%
21	150811-210811	3.80%
22	220811-280811	3.64%
23	290811-040911	3.40%
24	050911-110911	3.30%
25	120911-180911	3.20%
26	190911-250911	3.38%
27	260911-021011	3.00%
28	031011-091011	2.78%
29	101011-161011	2.52%
30	171011-231011	2.50%
31	241011-301011	2.40%
32	311011-061111	3.50%
33	071111-131111	2.74%
34	141111-201111	3.08%
35	211111-271111	2.88%
36	281111-041211	3.30%
37	051211-111211	3.42%
38	121211-181211	4.16%
39	191211-251211	4.28%
40	261211-010112	4.00%
Average of 52 Weeks		3.59%

4.1.5 Energy Requirement & Sources of Power Purchase

The energy requirement has been met from Central Sector Stations, Co-generation, IPPs etc. Due to the dynamic load profile & urgency in the system, ED-Goa may be required to purchase power from pool depending upon permissible frequency and also from traders. During off-peak hours there is surplus available with ED-Goa and also due to unpredictable changes in demand which is accounted in UI Pool and also sold on power



exchange.

4.1.5.1 Power purchase from Central Sector Stations

Since the Load Generation Balance Report is unavailable for FY 2012-13, the energy availability from central sector stations is computed based on availability of around 90-95% and minimum annual overhaul for 25-30 days. The table below provides the power availability from central sector as projected by ED-Goa for FY 2012-13:

Table 4-3: Energy Availability from Central Sector Stations

Source	Capacity (MW)	Allocation to Licensee		Gross Purchase (MU)
		%	MW	
NTPC	14,221		450	3,299
KSTPS	2,100	10.04%	211	1,583
VSTPS - I	1,260	2.82%	36	278
VSTPS - II	1,000	1.25%	12	101
VSTPS -III	1,000	1.05%	10	86
KGPP	656	1.89%	12	57
GGPP	657	1.92%	13	57
SIPAT	1,000	1.05%	10	126
RSTPS	2,100	4.76%	100	734
KORBA - III	500	0.96%	5	42
SIPAT - Stage I	1,980	1.07%	21	99
RGPPL	1,967	1.00%	20	136
NPCIL	1,520		27	193
KAPS	440	3.44%	15	109
TAPS	1,080	1.06%	11	84
Total	15,741		477	3,492

It is submitted that the above power is available to ED-Goa on Round the Clock (RTC) basis and in case of less requirement for the State in projection period, ED-Goa will schedule less power from high cost power stations such as Kawas and Gandhar to reduce power purchase burden on consumers.

4.1.5.2 Power purchase from Co-Generation

ED-Goa has power purchase agreement with Goa Energy Private Limited (GEPL) and Goa Sponge & Power Limited (GSPL). Further ED-Goa is also in process of entering into PPA with Sesa Goa Ltd for which approval will be sought from Hon'ble Commission. The power purchase projected from GEPL, GSPL & Sesa Goa for FY 2012-13 is **171.60** MUs respectively.



4.1.5.3 Power purchase from IPPs

ED-Goa has power purchase agreement with Reliance Infrastructure. The capacity of the plant is 48 MW and the share of ED-Goa is to the extent of 14 MW. The power purchase projected for FY 2012-13 from Reliance is **108.00** MUs which is considering actual power purchase from April 2012 to March 2013.

4.1.5.4 Surplus Energy

As mentioned earlier, ED-Goa has power purchase agreements with Central Sector Stations, Co-generation, IPPs and Traders on Round the Clock (RTC) basis and due to dynamic load profile, there is some surplus in the State during off-peak hours and due to unpredictable changes in demand. ED-Goa diverts/ sells the surplus energy to UI Pool and Exchanges. The energy projected to be diverted to UI Pool is **55.00** MUs and energy projected to be sold to exchanges/ open market is **231.73** MUs for FY 2012-13 based on the past actual trend.

4.1.6 Energy Balance

Based on the above discussion on energy available sources, the estimated energy balance for FY 2012-13 is as given below:

Table 4-4: Energy Requirement – FY2012-13

Energy Balance	Total for FY 2012-13
Energy Requirement	
LT Sales	1,249
HT Sales	1,691
Total Sales	2,940
Distribution Loss (%)	12.5%
Distribution Loss (Mus)	420
Total Energy Required at State Periphery (MUs)	3,360
Transmission Loss (%)	3.59%
Transmission Loss (Mus)	125
Total Energy Requirement (MUs)	3,485
Power Purchase from CGS	3,492
Power Purchase from Co-gen	172
Power Purchase from IPP	108
Total Energy Availability	3,772
Energy Surplus sold/ diverted to	287
<i>Sale to Pool/ UI</i>	55
<i>Sale to Power Exchange</i>	232



The figures of Energy Balance for FY 2012-13 are provided in Format 3 of Tariff Filing Formats.

Annual Revenue Requirement for Goa

Based on the provisions of the Tariff Regulations, the estimate for the Annual Revenue Requirement (ARR) would consist of the following elements:

- Power Purchase Costs
- Transmission Charges
- Operation and Maintenance Expenses
- Depreciation
- Interest charges
- Interest on working capital
- Interest on security deposit
- Return on Capital Base/ NFA
- Provision for Bad and Doubtful Debts
- Less: Non Tariff Income

4.2 Power Purchase Costs

ED-Goa meets its total energy requirement from its allocation from the Central Generating Stations (CGS), Private Generators like Reliance Infrastructure Ltd, State based Co-generation facilities etc. ED-Goa receives power from CGS like NTPC and NPCIL as per allocation from time to time. Further, to cater to the increasing demand of its consumers, ED-Goa is pursuing with Ministry of Power for higher allocations from future power projects as discussed in earlier sections.

4.2.1 Assumptions for Power Purchase Cost Projections

The merit order dispatch principles are typically adopted when determining the power purchases from various generating stations. However, in case of ED-Goa since most of the power is tied-up through long term PPAs it has to purchase all the power that is available at its disposal. It is submitted that the above power is available to ED-Goa on Round the Clock (RTC) basis and in case of less requirement for the State in projection period, ED-Goa will schedule less power from high cost power stations such as Kawas and Gandhar to reduce power purchase burden on consumers. Also, in the obligation of meeting requirement, as maximum power of CGS is scheduled and there are other commitments of Co-gen & IPPs, the department is surplus during off-peak hours which is diverted again to pool / sold to power exchanges.

Power Purchase cost is a function of the energy requirement and price of available power from the different sources for meeting the energy requirement. Power purchase cost for FY 2012-13, is determined on the following parameters:



- The quantum of power allocated to ED-Goa from central generating station is based on the allocation declared by MOP (Allocation w.e.f 1st November 2011);
- Power purchases from the CGS stations are accounted at the plant Ex-bus;
- Fixed cost have been considered as per latest CERC orders;
- Energy charges have been considered based on the average of last 3 months from August 2011 to October 2011;
- Power purchase from Co-Generation and IPPs have been considered as per PPAs;
- Further ED-Goa has considered an amount of ₹ 40 Crores towards arrears for the period 2004-2009 which is to be paid in FY 2012-13 as per CERC final truing up orders.

4.2.2 Power purchase from Central Sector Stations

As mentioned in preceding paragraphs on energy availability from central sector stations, the computation of total charges including fixed charges, energy charges, supplementary charges for central sector stations for FY 2012-13 is given in the table below:

Table 4-5: Total Charges – Central Sector (FY2012-13)

Source	Allocation %	Annual Fixed Charges (Rs.Crs)	Share of Fixed Charges (Rs.Crs)	Gross Purchase (MUs)	Energy Charges (Paise/kWh)	Energy Charges (Rs.Crs)	Other Charges (Rs.Crs)	Supplementary Charges (Rs.Crs)	Total Charges (Rs.Crs)
NTPC			191.89	3,299		450.44	6.20	40.00	688.53
KSTPS	10.04%	846.43	84.94	1,583	96.0	151.97	3.60	-	240.51
VSTPS - I	2.82%	518.08	14.62	278	172.0	47.82	1.20	-	63.64
VSTPS - II	1.25%	523.39	6.52	101	162.0	16.36	0.50	-	23.38
VSTPS -III	1.05%	768.59	8.04	86	162.0	13.93	0.50	-	22.47
KGPP	1.89%	480.90	9.07	57	131.0	7.47	-	-	16.53
GGPP	1.92%	547.19	10.51	57	259.0	14.76	-	-	25.28
SIPAT	1.05%	841.65	8.80	126	105.0	13.23	0.25	-	22.28
RSTPS	4.76%	808.99	38.51	734	160.0	117.44	-	-	155.95
KORBA - III	0.96%	437.74	4.18	42	80.0	3.36	0.05	-	7.59
SIPAT - Stage I	1.07%	629.08	6.70	99	98.0	9.70	0.10	-	16.50
RGPPL	1.00%	-	-	136	400.0	54.40	-	-	54.40
Arrears (2004-09) as per CERC Order							-	40.00	40.00
NPICL		-	-	193		47.13	-	-	47.13
KAPS	3.44%	-	-	109	212.0	23.11	-	-	23.11
TAPS	1.06%	-	-	84	286.0	24.02	-	-	24.02
Total			191.89	3,492		497.57	6.20	40.00	735.66

The cost of power purchase from NTPC and NPCIL works out to ₹ **735.66** Crores for **3,492** MUs for FY 2012-13.

4.2.3 Power purchase from Co-Generation



ED-Goa has an existing Power Purchase Agreement (PPA) with M/s.Goa Energy Private Limited where power is received to the extent of around 14-21 MW and power received from M/s.Goa Sponge & Power Limited is 3 MW. Further ED-Goa is also in process of entering into PPA with Sesa Goa Ltd for which approval will be sought from Hon'ble Commission.

Table 4-6: Power Purchase Cost for Co-Generation

Source	MUs	Rate (Rs/kWh)	Total Rs.Crs
Goa Energy Private Limited	107.33	2.40	25.76
Goa Sponge & Power Limited	9.27	2.40	2.22
Sesa Goa	55.00	2.40	13.20
Total	171.60		41.18

The cost of power purchase from Co-generation works out to ₹ **41.18** Crores for **171.60** MUs for FY 2012-13.

4.2.4 Independent Power Producers (IPPs)

ED-Goa also has an agreement with Reliance Infrastructure Limited which supplies 12MW / 16 MW out of its total capacity of 48 MW. All weekdays except Sunday from 23.00 hours to 24.00 hours – 12 MW, from 00.00 hours to 9.00 hours & from 13.00 hours to 15.00 hours – 12 MW, from 9.00 hours – 13.00 hours and 15.00 hours - 23.00 hours - 16 MW. Further on Sunday all the 24 hrs, 16 MW of the power is received by ED-Goa. The power plant is based on naphtha fuel and the fuel price is also linked to foreign exchange variation rate; hence the p.u. cost varies from ₹ 8 p.u to ₹ 14 p.u. The estimated cost for **108.00** MUs works out to ₹ **108.31** Crores for FY 2012-13.

4.2.5 Power Purchase from Renewable Energy Sources

The Hon'ble Commission has issued Joint Electricity Regulatory Commission for state of Goa & Union Territories (Procurement of Renewable energy) Regulations, 2010 which mandates every distribution licensee to purchase minimum quantum of Renewable energy. The regulation specifying minimum quantum of Renewable Purchase Obligation is extracted for reference as under:

(1.1) Each distribution licensee shall purchase electricity (in kWh) from renewable energy sources, at a defined minimum percentage of the total consumption of all the consumers in its area during a year.

The defined minimum percentages are given below in the Table – 1.



Year	Minimum quantum of purchase (In %) from renewable energy sources (in kWh)		
	Total	Solar	Non-Solar
2010-11	1%	0.25%	0.75%
2011-12	2%	0.30%	1.70%
2012-13	3%	0.40%	2.6%

Further the Regulation 2.1 provides an alternate to purchase Renewable Energy Certificate in lieu of renewable energy. The relevant regulation is extracted for reference as under:

2.1 Subject to the terms and conditions contained in these regulations the Certificates issued under the Central Electricity Regulatory Commission (Terms and Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010 shall be the valid instruments for the discharge of the mandatory obligations set out in these regulations for the obligated entities to purchase electricity from renewable energy sources.

Provided that obligated entity fulfilling the renewable purchase obligation by purchase of certificates, the obligation to purchase electricity from generation based on solar as renewable energy source shall be fulfilled by purchase of solar certificates only, and the obligation to purchase electricity from generation based on renewable energy other than solar can be fulfilled by purchase of non –solar certificates.

Subject to such direction as the Commission may give from time to time, the obligated entity shall act consistent with the Central Electricity Regulatory Commission (Terms and Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010 notified by the Central Commission in regard to the procurement of the certificates for fulfillment of the Renewable Purchase Obligation under these regulations.

Further ED-Goa has considered the prices determined by CERC in the matter of Determination of Forbearance and Floor Price for the REC framework to be applicable from 1st April 2012 vide order dated 23rd August 2011. The relevant paragraph which has determined the Forbearance and Floor prices for Solar and Non-Solar is extracted from the order for reference as under:



18. Based on the above principles, the following forbearance price and floor price are prescribed for dealing in Certificates under the REC Regulations:

	Non solar REC (₹/ MWh)	Solar REC (₹/ MWh)
Forbearance Price	3300	13400
Floor Price	1500	9300

19. The above stated forbearance and floor prices shall remain valid for the control period upto financial year 2016-17

The renewable purchase obligation and the cost for the same projected by ED-Goa for FY 2012-13 is given in the table below:

Table 4-7: Cost for Renewable Energy

Particulars	Units	Solar	Non-Solar	Total
Obligation	%	0.40%	2.60%	3.00%
Consumption	MUs	2,940	2,940	2,940
Obligation	MUs	11.76	76.43	88.19
Floor Price	Rs/Mwh	9,300	1,500	-
Forbearance Price	Rs/Mwh	13,400	3,300	-
Average Price	Rs/Mwh	11,350	2,400	-
Cost of REC	Rs.Crs	13.35	18.34	31.69

CERC Order dated 23.8.2011 determining Forbearance and Floor Price for REC Framework wef 1.4.2012

The cost for meeting the obligation of renewable energy for FY 2012-13 is projected at ₹ **31.69** Crs for solar & non-solar.

4.2.6 Transmission & Other Charges

ED-Goa has considered the transmission charges payable to PGCIL and wheeling charges MSETCL, GETCO & KPTCL as per prevailing charges and as per new Point of Connection (POC) regime. As per new regime the transmission charges are levied per MW basis and for the energy drawn on per unit basis.

4.2.6.1 Transmission Charges

The Part-A transmission charges for drawal of power for Southern & Western Region is given in the table below:



Table 4-8: Transmission Charges – Part A (FY 2012-13)

Regions	Rates Rs/Mw/Month	Monthly Quantum (MW)	April 2012 to March 2013 (12 months) - MW	Total Charges (Rs.Crs)
Southern Region	80000	100	1,200	9.60
Western Region	70000	377	4,522	31.65
Total				41.25

The Part-B transmission charges payable based on the generation of energy corresponding to the share of ED-Goa for FY 2012-13 are projected as per prevailing charges.

Table 4-9: Transmission Charges – Part B (FY 2012-13)

Stations	Monthly Amount (Rs)	% Share *	Payable by Goa (Rs)
RSTPS	163681600	4.76%	7,791,244
<i>KSTPS</i>	173911656	10.13%	17,609,251
<i>VSTPS - I</i>	120393000	2.93%	3,531,849
<i>VSTPS - II</i>	98175443	1.36%	1,333,517
<i>VSTPS -III</i>	98175000	1.16%	1,139,026
<i>KGPP</i>	46783779	1.89%	881,921
<i>GGPP</i>	46868620	1.92%	900,440
<i>SIPAT</i>	98175000	1.16%	1,139,026
<i>KORBA - III</i>	35465719	1.29%	456,054
<i>KAPS</i>	29752800	3.52%	1,046,317
<i>TAPS</i>	103194000	1.18%	1,216,451
Total - (Rs.)			37,045,096
Total for 12 Months (Rs.Crs)			44.45

* Firm + Infirm

The other transmission charges payable to PGCIL, WRLDC, SRLDC are provided in the table below along with the above charges:

**Table 4-10: Total Transmission Charges (FY 2012-13)**

Particulars	Rs.Crs
Part - A Transmission Charges (April-Mar 2013)	41.25
Part - B Transmission Charges (April-Mar 2013)	44.45
SRLDC Fees & Charges (Apr-March 2013)	0.54
WRLDC Fees & Charges (Apr-March 2013)	0.75
WRTMPL, Mumbai (Solapur-Karad)	0.45
WRTGPL, Mumbai (Limbdi-Ranchodpura)	0.27
WRTMPL, Mumbai (Lonikhand-Kalwa)	0.11
Total Transmission Charges (April-Mar 2013)	87.83

The total transmission charges work out to ₹ 87.83 Crores for FY 2012-13.

4.2.6.2 Wheeling Charges

ED-Goa draws power from southern region i.e. Ramagundam Power Station of NTPC and hence liable to payable wheeling charges to KPTCL for utilising its transmission lines. The wheeling charges actually paid and payable for FY 2012-13 based on the energy purchase from Ramagundam @ 2.50 paise/kWh works out to ₹ 1.84 Crores.

4.2.6.3 Other Charges

The other charges payable by ED-Goa for reactive charges, open access charges etc estimated for FY 2012-13 are ₹ 0.10 Crores.

4.2.7 Summary of Power Purchase Expenses

The summary of total power purchase expenses for the above mentioned sources for FY 2012-13 is tabulated below:

Table 4-11: Summary of Power Purchase Expenses for FY 2012-13

Power Purchase Sources	FY 2012-13		
	MUs	Total Cost (Rs.Crs)	Average PP (Rs/kWh)
NTPC	3,299	689	2.09
NPCIL	193	47	2.44
Co-generation	172	41	2.40
Renewable Energy	-	32	-
IPPs	108	108	10.03
PGCIL & Other Charges	-	90	-
Total Power Purchase	3,772	1,007	2.67



The Hon'ble Commission is kindly requested to approve the total power purchase cost of ₹ 1,006.61 Crores including transmission charges for FY 2012-13. ***The details of the Power Purchase Expenses for FY 2012-13 are provided in Format 4 of Tariff Filing Formats.***

4.3 Fuel & Power Purchase Price Adjustment (FPPPA) formula

It is submitted that any changes in the power purchase expenses during the year may be allowed to be recovered by ED-Goa from its consumers through a FPPPA Mechanism that may be notified by the Hon'ble Commission. The formula is already proposed by ED-Goa in the previous petition.

4.4 Operation and Maintenance (O&M) Expenses

Operation & Maintenance expenses comprise of the following heads of expenditure viz.

- Employee Expenses
- Administration & General Expenses
- Repairs & Maintenance Expenses

As mentioned earlier in chapter 1, ED-Goa maintains its accounts on cash basis. Further ED-Goa does not maintain its accounts purely in the above categorisation of O&M heads. It has various heads such as salaries, medical treatment, domestic travelling, office expense, other charges towards supply materials, minor repair works etc which are categorised into O&M heads for the purpose of ARR.

4.4.1 Employee Expenses

The expense head of employee cost consists of salary and allowance, bonus, Leave Travel Concession (LTC) & Honorarium etc. It is submitted that apart from Leave encashment benefits others terminal benefits including pension, gratuity etc are paid by Directorate of Accounts, Government of Goa. ED-Goa has projected the employee cost for FY 2012-13 taking into consideration increase in the basic salary and related other remunerations on account of implementations of recommendations of Sixth Pay Commission and also corresponding increase due to additions during the year.

4.4.1.1 Number of Employees

The numbers of employees as on 31st March for FY 2012-13 are ***provided in Format 15 of the Tariff Filing Formats.*** However the break-up of the total number of employees into technical, non-technical & administrative staffs etc is given in the table below:



Table 4-12: Breakup of No of Employees FY 2012-13

Sr. No	Details of Staff/ Employees	Projected as on 31st March 2012	Projected as on 31st March 2013
1	Technical Engineering Staff	448	507
2	Non Engineering Technical	2,956	4,898
3	Administrative Staff	1,831	1,836
	Total No of Employees	5,235	7,241
4	Employees on Contract basis	922	57
	Total Staff	6,157	7,298

4.4.1.2 Salary Expenses – Regular Employment

It is submitted that in addition to normal strengthening of the electricity department, ED-Goa has also considered the Line helpers employee on contract basis under regular employment. Accordingly the salary expenses for **7,241** numbers of employees at the end of FY 2012-13 are projected at ₹ **165.25** Crores. It is submitted that ED-Goa has certain categories of employees on contractual basis of which most of them are made permanent employees i.e. most of Line Helpers. The details of

4.4.1.3 Salary Expenses – Contract Basis

It is submitted that ED-Goa has certain categories of employees on contractual basis of which most of them are made permanent employees i.e. most of Line Helpers. The details of expenses towards contractual salary for FY 2012-13 are provided in the table below:

Table 4-13: Employee Expenses – Contract Basis FY 2012-13

Sr.No	Category of Employees on Contract basis	FY 2012-13		
		Nos	Monthly Amount (Rs)	Total Yearly Amount (Rs.Crs)
1	Line Helper	0	3740	-
2	Lower Division Clerks	2	5340	0.01
3	Watchman/ Security Guards	50	3740	0.22
4	Peons	2	3740	0.01
5	Sweepers	1	3740	0.00
6	Junior Engineers	2	11000	0.03
	Total	57		0.28



4.4.1.4 Leave Encashment – Terminal Benefits

It is submitted that the employees who retire are eligible for terminal benefits of Leave Encashment which is projected based on the number of employees estimated to retire at the end of this financial year. The amount estimated for **125** employees work out to ₹ **9.42** Crores for FY 2012-13.

4.4.1.5 Total Employee Expenses

It is therefore kindly requested to Hon'ble Commission to approve the total employee expenses of ₹ **175.05** Crores for FY 2012-13. *The details of employee expenses for FY 2012-13 are provided in Format 16 of the Tariff Filing Formats.*

4.4.2 Administration and General Expenses

A&G expenses comprise of the following broad subheads of expenditure, viz.

- Domestic Travelling Expenses, Office Expenses
- Legal, Regulatory & Consultancy Fees
- Insurance etc

The details of A&G expenses estimated for FY 2012-13 are provided in the table below:

Table 4-14: A&G Expenses for FY 2012-13

(Rs. Crore)

Sr. No.	Sub-head	Ensuing year (FY 2012-13 Projection)
1	2	3
1	Rent, rates & taxes	0.36
2	Domestic Travel Allowances	0.71
3	Office Expenses	21.62
4	Regulatory Expenses (License + Petition Fees)	1.50
5	Advertisement & Publicity	0.38
6	Legal, Professional & Special Service Charges	0.21
7	Other A&G Charges	2.13
8	Registration Charges - PGCIL (WR & SR) & SCADA/ EMS Charges	0.32
9	Other material related expenses	-
10	Total	27.23
11	Add/Deduct share of others (to be specified)	-
12	Total expenses	27.23
13	Less: Capitalized	0.32
14	Net expenses	26.91
15	Add: Prior period	-
16	Total A&G Expenses	26.91



It is therefore kindly requested to Hon'ble Commission to approve the net A&G expenses of ₹ 26.91 Crores for FY 2012-13. *The details of the A&G expenses for FY 2012-13 are provided in Format 17 of the Tariff Filing Formats.*

4.4.3 Repairs and Maintenance Expenses

ED-Goa has been undertaking various Repairs and Maintenance activities as a step towards improvement of systems, reduction in breakdowns, reduction in response time and increasing preventive maintenance. The details of the R&M expenses for FY 2012-13 are given in the table below:

Table 4-15: R&M Expenses for FY 2012-13

Particulars	Rs.Crores
	Ensuing year (Projection) 2012-13
Plant & machinery	0.11
Buildings (Electricity Residential & Non-Residential)	2.75
Line cable & network	13.20
Meters and metering equipment	0.12
Minor R&M Works	6.66
Total R&M expenses	22.84

It is therefore kindly requested to Hon'ble Commission to approve the R&M expenses of ₹ 22.84 Crores for FY 2012-13. *The details of the R&M expenses for FY 2012-13 are provided in Format 14 of the Tariff Filing Formats.*

4.4.4 O&M Expenditure as a whole

The overall summary of O&M Expenditure for FY 2012-13 is estimated to be about ₹ 224.80 Crores and is tabulated below:

Table 4-16: O&M Expenditure – FY 2012-13

Elements of O&M Expenses	FY 2012-13
	Rs.Crs
Employee Expenses	175.05
A&G Expenses	
<i>Routine A&G</i>	25.73
<i>Regulatory Fees</i>	1.50
R&M Expenses	22.84
Sub-Total	225.12
Less: Expenses CaptId	0.32
Total O&M Expenses	224.80



It is submitted that Goa is now gearing up for meeting the operational requirement of servicing existing and additional new consumers in line with the Standards of performance which the licensees have to adhere to. Hence there would be an increase in O&M expenditure to support full-fledged distribution business operations.

4.5 Capital Expenditure & Capitalisation

4.5.1 Capital Expenditure & Capitalisation of Assets

The prevailing infrastructure of ED-Goa is insufficient to cater to the present load and hence to meet the increasing demand from HT and LT load, it is absolutely necessary to undertake significant capital expenditure.

The objective of incurring the capital expenditure is also to upgrade and strengthen the distribution network to meet the desirable standards of performance and provide better network reliability and sustainable performance to the consumers of Goa.

The various types of capital expenditure schemes carried by ED-Goa are as follows:

- a) **Normal Development Scheme** - The Scheme is for extending the HT and LT network and providing distribution transformer centres and releasing of service connections to all categories of consumers. The laying of underground cable for releasing connection to major consumers will also be taken up. Electrification of wadas/upcoming bastis and rural electrification works are also taken up.
 - i) Extension of 33 KV, 11 KV and LT lines for arranging power supply to individual and group of consumers;
 - ii) Erection of Transformer centres, metering structure, equipment for releasing of power supply to the intending consumers;
 - iii) Releasing of power supply and providing of metering to the intending consumers at different voltage levels.

- b) **Renovation and Improvement Scheme** - This System improvement scheme / Renovation and improvement Scheme is basically for the change of conductors, cross arms, insulators, metal parts & stay sets, etc. The conversion of LT line from 1 phase to 3 phase is also carried out under this scheme for improving the voltage profile, also enhancing the capacities of the distribution transformer centres and providing new transformer centres at load centre is taken up under this scheme. In Goa, some of the conductors have put in more than 25-30 years of service in the system and thus have become prone to interruptions due to overloading and



corrosion of the metal parts. Renovation of the old lines is essentially to be carried out in the State to ensure reliability of power supply to the end consumers and avoid electrical accidents. Following are the benefits of the scheme:

- i) To improve voltage at the tail end of each distribution system
 - ii) Better power transformation
 - iii) Less line losses
 - iv) Less electrical accidents and breakdowns
 - v) Avoiding overloading of transformers and lines
- c) **Construction of Staff Quarters and Office Buildings etc** - Under this scheme the construction of new office buildings/ extensions to existing buildings at various places and construction of staff quarters, taking up a number of works for enhancing the facilities at the quarters etc are carried out by the Civil Division No. XV attached to the Electricity Department.
- d) **Schedule Tribe Development Scheme** - This scheme has plan for Conversion of O/H HT network to underground cabling in Loutolim constituency, Conversion of O/H LT network to underground cabling in Raia, Loutolim, Conversion of O/H LT network to underground cabling in Nuvem, Verna etc
- e) **Erection and Augmentation of 33/11 kV S/S & Lines** – Under these schemes, major works such as Cavelossim S/S and 33 KV U/G cable link, Campal S/S, Ponda S/S, Shiroda S/S, IT Park Dona Paula S/S with 33 KV U/G cable link etc are carried out.
- f) **Infrastructure Development through Electricity Duty** – Government of Goa has issued notification on 28th May 2008 for collection of Electricity Duty from various consumer categories at various notified rates. Further the notification also provides that the duty amount such collected shall be transferred to separate reserve/ fund account for creation of required transmission & distribution infrastructure development for the State of Goa. There are various works being carried out under this scheme upon recommendation and approval of Technical Advisory Committee.
- g) **APDRP Schemes** – Under these schemes, the works such as Replacement of electromechanical meters with electronic meters, Conversion from overhead to underground cabling in the balance areas of Margao Municipal Council etc are carried out.



- h) **R-APDRP Schemes** – The Restructured Accelerated Power Development and Reforms Programme (R-APDRP) during the Eleventh Plan period has been put in place by the Government of India and the funding pattern has been restructured. It consists of Part A and Part B and it is mandatory to take up Part A, IT related works prior to taking up the Part B works. The Part A consists of Projects for establishment of baseline data and IT applications for energy accounting/auditing and IT based consumer service centres.

It includes preparation of Base-line data for the project area covering Consumer Indexing, GIS Mapping, Metering of Distribution Transformers and Feeders, and Automatic Data Logging for all Distribution Transformers and Feeders and SCADA / DMS system. It would include Asset Mapping of the entire distribution network at and below the 11Kv transformers and include the Distribution Transformers and Feeders, Low Tension lines, poles and other distribution network equipment.

It also includes adoption of IT applications for meter reading, billing & collection; energy accounting & auditing; MIS; redressal of consumer grievances; establishment of IT enabled consumer service centers etc. The base line data and required system shall be verified by an independent agency appointed by the Ministry of Power. DPRs for Part A had been prepared through appointment of IT consultant and the same was submitted to the Ministry of Power, for sanction of loan.

The Ministry of Power has sanctioned a total loan amounting to Rs. 104.89 crores for Goa. This loan could later be converted to grant on fulfilment of certain conditions.

The details of the capital expenditure and capitalization of major schemes are summarized as under:



Table 4-17: Capital Expenditure & Capitalisation FY 2012-13

Name of scheme	Estimated Cost (Rs.Crores) *	Capital Expenditure (Rs. Crores)	Capitalisation in FY 2012-13 (Rs. Crores)
1	2	3	4
Schedule Tribe Development Scheme & Scheduled castes development scheme(P)	Annual basis; ongoing schemes	40.00	34.00
Machinery and Equipments (Plan) Motor Vehicles	Annual basis; ongoing schemes	1.50	-
Infrastructure development through Electricity Duty (Plan)	As per Annexure	115.00	60.00
Erection and Augmentation of 33/11 KV S/S line (Plan)	Annual basis; ongoing schemes	7.00	3.50
Normal Development Schemes (Plan)	Annual basis; ongoing schemes	16.01	16.01
System Improvement Schemes (Plan)	Annual basis; ongoing schemes	6.00	3.00
Construction of staff quarters and office buildings (Plan)	Annual basis; ongoing schemes	2.90	2.70
Erection of 220/33 KV 1X50 MVA Sub-Station at Cuncolim	67.03	12.00	-
Erection of 220 KV line from Xeldem to Cuncolim	8.68	3.00	-
Erection of 220/33 KV1X50 MVA Sub-Station Amona	39.96	0.10	-
Strengthening of 220 KV Transmission Network	Annual basis; ongoing schemes	20.00	-
Accelerated Power Development Reforms Programme	260.00	-	-



Name of scheme	Estimated Cost (Rs.Crores) *	Capital Expenditure (Rs. Crores)	Capitalisation in FY 2012-13 (Rs. Crores)
Augmentation of Kadamba S/S from 2x40 MVA to 4x40 MVA(Plan)	11.41	0.01	-
Erection of 2nd 100 MVA transformer at Xeldem 220/110 KV S/S	9.00	0.01	-
APDRP(State Schemes)	Annual basis; ongoing schemes	27.00	35.00
Restructured Accelerated Power Development and Reforms Programme	84.94	70.00	24.00
Investigation& Diesel/Bar gas power Generation		0.05	-
Research training and human research development		0.10	-
Erection of 220KV D/C line from Ponda-Verna-Xeldem		5.00	-
Erection of 220/110/33/11KV sub station at Verna(new)		10.00	-
Erection of 220/110/33/11KV sub station at Soccoro		1.00	-
Erection of 110 KV D/C line from Soccoro to Kadamba		0.01	-
Erection of 110 KV D/C line from Colvale to Soccoro		0.01	-
Power Vision 2020		0.10	-
Erection of 220/110 KV lines to Consumers		0.05	-
Total		336.85	178.21

ED-Goa proposes to incur an amount of ₹ 336.85 Crores towards capital expenditure, out of which the works proposed to be incurred from the Electricity Duty Reserve/ Fund Accounts are estimated to ₹ 60.00 Crores. The total capitalization of the assets from the above capital expenditure is projected at ₹ 178.21 Crores for FY 2012-13. ***The details of the Investment Plan/ Capital Expenditure are provided in Format 5 of the Tariff Filing Formats.***



4.5.2 Capital Works-in-progress

The details of the opening capital works-in-progress, investments during the year and investments capitalised for the year are summarised in the below table:

Table 4-18: Details of Capital Works-in-Progress

Sr. No.	Particulars	(Rs. Crore)
		Ensuing year (Projection) 2012-13
1	2	3
1	Opening balance	394.20
2	Add: New investments	336.85
3	Total	731.05
4	Less investment capitalized	178.53
5	Closing balance	552.53

The details of the Capital Works-in-progress for FY 2012-13 are provided in Format 8 of the Tariff Filing Formats.

4.6 Interest on Loan & Interest during Construction (IDC) Calculation

In this section, ED-Goa would like to apprise the Hon'ble Commission about the sources of funds used by ED-Goa for funding the capital expenditure. Further ED-Goa would also request the Hon'ble Commission to consider the principles and methodology discussed in the subsequent sections on computation of Interest on Loan and IDC.

4.6.1 Sources of Funding

ED-Goa submits that the funding for the capital expenditure is normally through the internal reserves/ equity contribution from Government of Goa. However for R-APDRP schemes there is a loan being facilitated by Power Finance Corporation (PFC) which later on gets converted to grant upon timely completion of projects and as per the terms and conditions laid down in the agreement.

As mentioned earlier in capital expenditure section, ED-Goa collects Electricity Duty and transfers to separate reserve account. It is submitted that in normal cases, the receipts of Electricity Duty amount are reimbursed back to the Government. However in the case of ED-Goa, the notification from Government of Goa dated 28th May 2008 provides to utilize the amount collected through Electricity Duty to be used for necessary infrastructure development works for the license area. ED-Goa undertakes Infrastructure



Development Works as advised by Technical Advisory Committee and approved by Government. Hence, ED-Goa would wish to submit that the Government of Goa is rolling back the electricity duty amount to Electricity Department as Equity Contribution for capital works and the same should be considered to be the addition to Regulated Equity for computation of Return on Equity subject to the provisions in the regulation 23(1) of Tariff Regulations 2009.

4.6.2 Normative Loan & Interest thereon

ED-Goa submits that majority of the capital assets are created out of equity contribution from Government of Goa and the actual borrowing of loan is only to the extent of APDRP schemes. Based on the explanation provided for sources of funding in Section 4.6.1, the actual equity contribution in the capital expenditure for the year FY 2011-12 works out to more than 30%. The Regulation 23(1) of Tariff Regulations 2009 provides that equity employed for capital expenditure in excess of 30% should be considered as normative loan. The same is extracted for reference as under:

*(1) For the purpose of determination of tariff, debt-equity ratio in case of existing, ongoing as well as new projects commencing after the date of notification of these Regulations shall be 70:30. **Where equity employed is more than 30%, the amount of equity for the purpose of tariff shall be limited to 30% and the balance amount shall be considered as loan.** Where actual equity employed is less than 30%, the actual debt and equity shall be considered for determination of tariff.*

Emphasis added

This being the first year of filing petition, the normative debt-equity ratio principle is also being discussed first time. The excess of equity over 30% has not been considered as normative loan in the books of account or in this petition for any of the years. The Regulation 23(2) further provides that debt-equity ratio computed in terms of regulation 23(1) shall be used for the purpose of determining interest on loan, return on equity etc. The same is extracted for reference as under:

(2) The debt and equity amounts arrived at in accordance with sub-regulation (1) above shall be used for all purposes including for determining interest on loan return on equity, Advance against Depreciation and Foreign Exchange Rate Variation:

Further the Regulation 25(3) of Tariff Regulation 2009 also provides for interest on normative loan. The relevant regulation is extracted for reference as under:



(3) The interest rate on the amount of equity above 30% treated as loan shall be the weighted average rate of interest on loan capital of the generating company / licensee:

As a principle, ED-Goa submits that the computation of debt ratio or computation of interest on loan (including normative loan) should be allowed on capital expenditure. ED-Goa in this petition has considered only actual loan transactions and interest on PFC loan for FY 2011-12. ED-Goa requests to Hon'ble Commission to kindly consider the above and accordingly allow for computation of debt-equity ratio on capital expenditure for computation of normative loan and interest on such normative loans.

4.6.3 Interest during Construction (IDC)

The Tariff Regulations 2009 also provides for Interest during Construction to be part of capital cost. The Regulation 22 (3) is extracted for reference as under:

(3) Scrutiny of the capital cost estimates by the Commission shall include the reasonableness, financing plan, interest during construction, use of efficient technology, gestation period and such other matters relevant for determination of tariff.

Further the 2nd proviso to Regulations 25 (3) also mentions of interest & finance charges on works in progress for consideration as part of capital cost.

Provided further that interest and finance charges on works in progress shall be excluded and shall be considered as part of the capital cost.

ED-Goa in the current petition has not considered any IDC on capital works in progress and accordingly submits the following methodology to Hon'ble Commission for consideration of IDC computation in APR/ True-up as the case may be.

- i. Computation of Interest During Construction Charges charges on (a) Opening CWIP for the entire year and (b) Investment during the year for half year and the same is included in Investment for the current year;
- ii. Capitalisation of this IDC for the year in the ratio of Capitalisation/(Opening GFA plus Investment During the Year);
- iii. Based on i and ii, the amount of IDC during the year not capitalized in that year will be included in the Closing WIP and will be capitalized in the future years when the asset is capitalised
- iv. No Interest during construction to be accounted for the schemes which get initiated and completed in the same year.

The same has been explained by way of sample calculation as under:



Table 4-19: IDC Computation

Particulars	(i)- Scheme Carried forward to the next year		(ii)- Scheme Capitalised during the year	
	<u>CWIP Movement during the year</u>			
Opening CWIP of the Scheme	a	100	a	100
Investment during the year	b	10	b	10
Capitalisation	c	0	c	110
Closing CWIP	d=a+b-c	110	d=a+b-c	0
<u>Interest Computation</u>				
<i><u>(a) Interest for the year on Opening CWIP</u></i>				
Rate of Interest	f	9%	f	9%
Principal for Interest	g=0.7xa	70	g=0.7xa	70
Time Period for Interest (Years)	h	1	h	0.5
Interest Amt	j=fxgxi	6.3	j=fxgxi	3.15
<i><u>(a) Interest for the year on Investment during the year</u></i>				
Rate of Interest	k	9%	k	
Principal for Interest	l=0.7xb	7	l=0.7xb	
Time Period for Interest (Years)	m	0.5	m	
Interest Amt	n=kxlxm	0.32	n=kxlxm	0
Total IDC for the year	o= j+n	6.62	o= j+n	3.15

4.6.4 Depreciation

As a general principle, the provision of depreciation expenses is allowed on the fixed assets to facilitate repayment of the loan taken for capital assets. However, ED-Goa has not considered normative loans and hence depreciation amount is higher than actual loan repayment amount projected in the ARR. ED-Goa requests that principle of loan repayment amount equal to depreciation may be allowed in APR/ True-up as the case may be and also allow Advance Against Depreciation (AAD) as per provisions of Tariff Regulations 2009.

ED-Goa requests Hon'ble Commission to allow computation of regulatory depreciation as per above methodology.

4.6.5 Summary on Normative Loan, IDC, Depreciation etc

This being the first year of ED-Goa in regulatory regime for filing the ARR & Tariff Petition, it requests Hon'ble Commission to consider the above discussed principles and allow the same for favorable dispensation during Annual Performance Review (APR)/ True-up as the case may be.



- Consideration of Debt-Equity Ratio of 70:30 on Capital Expenditure;
- Consideration of Equity in excess of 30% as Normative Loan;
- Consideration of Provision for Interest on Normative Loan at weighted average rate of interest on loan of ED-Goa (subject to ceiling of SBI PLR);
- Consideration of Provision for Computation of IDC as per suggested methodology;
- Consideration of Provision for Total Loan Repayment (including normative) equal to the depreciation during the year;

4.7 Gross Fixed Assets

As discussed in earlier sections of capital expenditure and capitalization, the additions to GFA estimated for FY 2012-13 are ₹ 178.53 Crores the details of which are provided in the table below:

Table 4-20: Details of Gross Fixed Assets FY 2012-13

(Rs. Crore)							
Sr. No.	Assets group	Value of assets at the beginning of previous year	Addition during previous year	Value of assets sold/ disposed off	Closing balance at the end of previous year	Addition during ensuing year	Closing balance at the end of ensuing year
		2011-12	2011-12	2011-12	2011-12	2012-13	2012-13
1	2	3	4	5	6	7	8
1	Land	4.68	126.00	-	877.10	178.53	1,055.63
2	Building	6.77					
3	Other Civil Works	10.76					
4	Plant & Machinery	100.39					
5	Transformers centres	91.60					
6	New Sub- Stations	22.43					
7	Static Machine Tools	2.42					
8	Vehicles(incl.Self propelled)	5.28					
9	Switch gear & S/S equip.	39.49					
10	Meters	52.05					
11	Furniture and Fixtures	1.55					
12	Office Equipments	1.20					
13	Overhead lines	174.97					
14	Lightening arrestors	8.47					
15	Batteries	0.27					
16	St. light fittings	21.58					
17	Service lines	17.81					
18	Underground cables	182.15					
19	Others	7.23					
20	Total	751.10	126.00	-	877.10	178.53	1,055.63



The details of the Gross Fixed Assets for FY 2011-12 & FY 2012-13 are provided in Format 7 of the Tariff Filing Formats.

4.8 Depreciation

The Regulation 22 (2) of JERC (Terms and Conditions for Determination of Tariff) Regulations, 2009 reads as follows:

“Investments made prior to and upto 31st March immediately preceding the date of the notification of these regulations or date of receipt of a petition of tariff determination whichever is earlier shall be considered on the basis of audited accounts or approvals already granted by the Commission”.

ED-Goa has completed the statutory audit of accounts till FY 2006-07 and the audit of accounts thereafter till FY 2009-10 is expected to be completed by March 2012. The depreciation computed for ED-Goa by auditors is based on Straight Line Method (SLM). Further it is confirmed that the depreciation on assets beyond 90% of the assets value is not provided / claimed by ED-Goa. Accordingly, ED-Goa at this moment is not claiming any depreciation on the opening balance of gross fixed assets and rather claiming it on the assets proposed to be capitalised and as may be approved by the Hon'ble Commission.

Further ED-Goa has claimed depreciation on assets added during the year for 6 months only, as addition date/month would be in first half or second half. The depreciation for the ensuing year has been computed on the basis of weighted average rate of previous year. It is submitted that ED-Goa would compute depreciation as per tariff regulations and as per the principle discussed in section 4.6 during the annual performance review / true-up process as the case may be. The table below provides the depreciation for FY 2012-13.

Table 4-21: Depreciation for FY 2012-13

Particulars	FY 2012-13 (Rs Crs)
Opening Gross Fixed Assets	877.10
Add: Assets Added during the year	178.53
Less: Assets retired during the year	-
Closing Gross Fixed Assets	1,055.63
Opening Accumulated Depreciation	181.86
Add: Depreciation for the year	4.71
Less: Depreciation on Retired Assets	-
Closing Accumulated Depreciation	186.57
Weighted Average Depreciation Rate	5.28%



The Hon'ble Commission is requested to kindly approve the depreciation amount of ₹ **4.71** Crores for FY 2012-13. *The details of the computation of Depreciation on Gross Fixed Assets for FY 2012-13 are provided in Format 12 of the Tariff Filing Formats.*

4.9 Interest and Financial Charges

The Interest and Finance costs have been estimated for following heads:

- Interest on Debt/ Long term loans
- Interest on Working Capital
- Interest on Security Deposit

4.9.1 Interest on Long Term Loans

ED-Goa has been taking various loans from Power Finance Corporation (PFC) for APDRP schemes. The loan amount sanctioned by PFC on 27th February 2009 under Part-A of R-APDRP for various projects amounts is ₹ 104.89 Crores.

The year wise details of loans taken from PFC and details of repayments and interest are provided in the table below:

Table 4-22: PFC Loan Statement till FY 2012-13

(Rs. in Lakhs)

Year	Opening Balance	Receipts	Payments		Balance Outstanding
			Interest	Principal	
1997-98	0	9.00	0	0	9.00
1998-99	9.00	372.00	5.48	2.50	378.50
1999-00	378.50	983.68	48.87	20.18	1342.00
2000-01	1342.00	849.28	212.16	123.86	2067.42
2001-02	2067.42	1020.12	276.64	229.04	2858.50
2002-03	2858.50	2124.48	428.52	250.64	4732.34
2003-04	4732.34	1728.79	584.45	502.04	5959.09
2004-05	5959.09	1690.00	667.64	582.90	7066.19
2005-06	7066.19	306.65	693.32	674.47	6698.37
2006-07	6698.37	0.00	563.90	906.54	5791.83
2007-08	5791.83	1363.00	481.76	906.54	6248.29
2008-09	6248.29	3792.68	572.46	1076.91	8964.06
2009-10	8964.06	0.00	910.12	1051.66	7912.40
2010-11	7912.40	4618.19	1031.28	1279.27	11251.32
2011-12	11251.32	0.00	1026.81	1197.00	10054.32
2012-13	10054.32	0.00	817.00	1282.00	8772.32
TOTAL		18857.87	8320.41	10085.55	



The details of loan draws, interest rates and repayments for last two years alongwith FY 2011-12 as per loan schedule & agreement are given in the table below:

Table 4-23: PFC Loan & Interest Details – FY 2012-13

PFC LOAN ACCOUNT (In Rs. Lacs)					
Loan No.	Loan Amount	Date of Sanction	Rate of Interest	Repayments Made	
				2012-13	
				Principal	Interest
18018001	60	04-03-98	9.50%		
18018002	392	19-03-99	9.50%		
18018003	1,150	19-03-99	14.50%		
18006001	483	13-03-00	9.00%		
18009001	445	07-03-01	9.00%	13	-
18003001	970	23-01-02	10.50%	97	6
18003002	1,992	05-03-02	10.50%	199	18
18021001	2,119	20-09-03	9.00%	212	60
18021002	1,363	12-06-04	9.00%	303	143
	-		13.00%		
18003003	4,141	20-03-09	11.75%	335	430
	-		12.75%		
18003004	1,471	13-05-09	11.75%	123	160
Total	14,527			1,282	817
R.A.P.D.R.P					
18233001	416	27-02-09	11.50%		
18233002	2,189	27-02-09	11.50%		
18233003	432	27-02-09	11.50%		
18233004	109	27-02-09	11.50%		
Total	3,147				
	3,147				
Grand Total				1,282	817

The Hon'ble Commission is kindly requested to approve the interest on loan amounting to ₹ 8.17 Crores for FY 2012-13. Further the Letter of Credit Charges for claiming rebates on power purchase are estimated at ₹ 0.80 Crores. *The details of each loan, interest rates, interest expenses and loan repayments are provided in Format 10 and Annexure 10 of the Tariff Filing Formats for FY 2012-13.*

4.9.2 Interest on Working Capital

The Tariff Regulations 2009 provide for claiming normative interest on working; however in absence of any actual borrowings in the past for such requirement, ED-Goa for the present filing has decided not to claim any interest on working capital.



4.9.3 Security Deposit

ED-Goa does collect security/ miscellaneous deposits from consumers. The regulation 25 (4) of Tariff Regulations 2009 provide for Interest on security deposits if made by the consumers with licensee or electricity department. The provision of interest on security deposits is to be made at the bank rate. The prevailing bank rate of Reserve Bank of India is 6% p.a.

The details of security deposits held by Electricity Department of Goa and the interest provision therein is given in the table below:

Table 4-24: Interest on Security Deposit

Sr. No.	Particulars	Amount (Rs. Crore)
		Ensuing year (FY 2012-13)
1	2	5
1	Opening Security Deposit	62.57
2	Add: Deposits during the Year	9.19
3	Less: Deposits refunded	1.52
4	Closing Security Deposit	70.24
5	Bank Rate	6.00%
6	Interest on Security Deposit	3.98

The Hon'ble Commission is kindly requested to approve the interest on security deposit of ₹ 3.98 Crores for FY 2011-12. *The details of Interest on Security Deposit for FY 2012-13 are provided in Format 19-A of the Tariff Filing Formats.*

4.10 Return on Capital base/ Net Fixed Assets

The proviso of Regulation 23 (2) and Regulation 24 of Tariff Regulations 2009 provides for entitlement for Returns on Capital Base/ Net Fixed Assets by utility / licensee. However as mentioned earlier, ED-Goa is in process of finalisation of past accounts and in line with the stand taken for depreciation, the return on net fixed assets is also not claimed in this present petition.

4.11 Non-Tariff Income

The Non-Tariff Income estimated for FY 2012-13 is ₹ 22.53 Crores which comprises of proceeds from sale of dead stock, waste paper & other miscellaneous receipts. *The details of non tariff income for FY 2012-13 are provided in Format 21 of the Tariff Filing Formats.*



4.12 Revenue from Sale of Surplus Power

ED-Goa in its previous petition has elaborated in detail about the surplus available during off-peak period which is diverted/ sold in grid / exchanges/ open markets.

Table 4-25: Revenue from Sale of Surplus Power

Particulars	FY 2012-13		
	MUs	Rate (Rs/kWh)	Total (Rs.Crs)
Power Diversion to Grid (UI)	55	2.49	13.70
Sale to Exchanges/ Open Markets	232	4.46	103.35
Total	287	4.08	117.05

The total revenue from sale of such surplus power through exchanges and UI Pool is estimated at ₹ **117.05** Crores for **287** MUs of power.

4.13 Summary of Annual Revenue Requirement

The net annual revenue requirement of ED-Goa for FY 2012-13 is provided in the table below:

Table 4-26: ARR for FY 2012-13

Sr. No.	Item of expense	Rs Crore
		FY 2012-13 (Projected)
1	Cost of power purchase	1,006.61
2	Employee costs	175.05
3	R&M expenses	22.84
4	Administration and general expenses	26.91
5	Depreciation	4.71
6	Interest charges (incl interest on working capital & Interest on Security Deposit)	12.95
7	Other Expenses	-
8	Total Revenue Requirement	1,249.08
9	Less: Non Tariff Income	22.53
10	Less: Revenue from Sale of Power - UI Pool	13.70
11	Less: Revenue from Sale of Power-Exchanges	103.35
12	Net Revenue Requirement (8-9-10-11)	1,109.50
13	Revenue from Retail Sales at Existing Tariff	884.70
14	Net Gap (12-13-14)	224.80
15	Energy sales (MU)	2,940



The net ARR required by ED-Goa for FY 2012-13 to be met from the revenue from sale of power is ₹ 1,109.50 Crores.

4.14 Revenue from Existing Tariff

The revenue from sale of power from existing retail tariffs for FY 2012-13 compute to ₹ 884.70 Crores. The category wise revenue from sale of power is tabulated below:

Table 4-27: Revenue from Existing Tariff

Sr. No.	Category of Consumer	2012-13		
		Energy Sale/ Demand (MUs)	Revenue (Rs Crore)	Average Revenue (Rs/kWh)
A	Low Tension Supply	1,233	259.35	2.10
1(a)	Tariff LTD/Domestic and Non-Commercial	733	112.38	1.53
1(b)	Tariff LTD/Low Income Group	5	0.35	0.71
1(c)	Tariff LTD/Domestic Mixed	2	0.49	2.43
2	Tariff-LTC/Commercial	331	104.44	3.16
3	Tariff-LTP/Motive Power	103	30.14	2.93
3(a)	Tariff-LTP/Mixed (Hotel Industries)	7	2.45	3.50
4	Tariff-LTAG/Agriculture	16	1.60	1.00
5	Tariff-LTPL/Public Lighting	33	6.60	2.00
6	Tariff-LT PWW/Public Water Works	3	0.90	3.00
B	High Tension Supply	1,691	614.15	3.63
7	Tariff HT-Mixed	145	61.45	4.24
8	Tariff HTI/Industrial	538	209.69	3.90
9	H.T.Industrial (Ferro Metallurgical/ Steel Melting/ Power Intensive)	545	185.56	3.41
10	Tariff-HTAG/Agriculture	6	0.75	1.25
11	EHTI/Industrial	189	74.08	3.92
12	H.T. PW/Public Water Supply and Sewage	123	43.56	3.55
13	H.T. MES/Defence Establishments	84	25.20	3.00
14	H.T. Industrial (Steel Rolling)	55	11.78	2.14
15	Tariff HT-Industries (IT High Tech).	6	2.08	3.47
C	Temporary Supply	16	11.20	7.00
16	Tariff-LT/Temporary	16	11.20	7.00
17	Tariff-HT/Temporary	-	-	-
	Total Demand/ Sale Within State	2,940	884.70	3.01

ED-Goa respectfully submits that the existing tariffs may be retained for FY 2011-12 which is provided at **Annexure II: Existing Tariff Schedule**.



Chapter 5. Proposal to meet ARR for FY 2012-13

5.1 Revenue Gap at Existing Tariff

As can be discussed in earlier section, the net annual revenue requirement for FY 2012-13 is ₹ **1,109.50** Crores which is proposed to be met through revenue at existing tariffs. The revenue gap at existing tariff works out to ₹ **224.80** Crores for FY 2012-13.

5.2 Tariff Proposal

ED-Goa respectfully submits that ARR & Tariff Petition for FY 2011-12 is under process by the Hon'ble Commission and requests the Hon'ble Commission to allow filing of Tariff Proposal to meet the above gap after the issuance of tariff order for FY 2011-12.



Annexure I: Power Allocation Statements



Annexure II: Existing Tariff Schedule



TARIFF FILING FORMATS

FOR FY 2012-13

ELECTRICITY DEPARTMENT, GOA

Format-8

ELECTRICITY DEPARTMENT - GOA
ANNUAL REVENUE REQUIREMENT FOR 2012-13
Works-in-Progress

(Rs. Crore)

Sr. No.	Particulars	Ensuing year (Projection)
		2012-13
1	2	3
1	Opening balance	394.20
2	Add: New investments	336.85
3	Total	731.05
4	Less investment capitalized	178.53
5	Closing balance	552.53

Format-9

ELECTRICITY DEPARTMENT - GOA
ANNUAL REVENUE REQUIREMENT FOR 2012-13
Interest Capitalized #

(Rs. Crore)

Sr. No.	Interest Capitalized	Ensuing year (Projection)
1	2	5
1	WIP*	
2	GFA* at the end of the year	
3	WIP+GFA at the end of the year	
4	Interest Rate	
5	Interest (excluding interest on WCL)	
6	Interest Capitalized	

*WIP:Works-in-Progress; GFA:Gross Fixed Assets; WCL:W