TARIFF ORDER

Determination of
Aggregate Revenue Requirement & Retail Tariff
for
FY 2012-13

For
Electricity Department, Andaman & Nicobar Islands

JOINT ELECTRICITY REGULATORY COMMISSION

For the State of Goa and Union Territories

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04th June 2012

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List of Abbreviations

Abbreviation		Full Form
A&G	:	Administration & General Expenses
Act	:	The Electricity Act, 2003
ARR	:	Aggregate Revenue Requirement
CAGR	:	Compound Annualized Growth rate
Capex	:	Capital Expenditure
CEA	:	Central Electricity Authority
CERC	:	Central Electricity Regulatory Commission
COD	:	Commercial Operation Date
Commission/JERC	:	Joint Electricity Regulatory Commission for the state of Goa and union territories
CKt. Km	:	Circuit Kilometer
DISCOM/A&N	:	Electricity Department, UT of Andaman & Nicobar Island
D/C	:	Double Circuit
DS	:	Domestic Supply
EA 2003	:	The Electricity Act, 2003
FC	:	Fixed Charges
FY	:	Financial Year
GFA	:	Gross Fixed Assets
HP	:	Horse Power
HSD	:	High Speed Diesel Engines
HT	:	High Tension
JERC	:	Joint Electricity Regulatory Commission for the state of Goa and union territories
KVA	:	Kilo Volt Ampere
KWh	:	Kilo Watt Hour
LPS	:	Late Payment Surcharge
LT	:	Low Tension
MU	:	Million Unit
MW	:	Mega Watt
MYT	:	Multi Year Tariff
NDS	:	Non Domestic Supply
O/H	:	Over head

Abbreviation		Full Form
O&M	:	Operation & Maintenance
PLF	:	Plant Load Factor
RoE	:	Return on Equity
RPO	:	Renewable Purchase Obligation
R&M	:	Repair & Maintenance
SCL	:	Sanctioned Connected Load
S/C	:	Single Circuit
SBI PLR	:	SBI Prime Lending Rate
SPCL	:	Suryachakara Power Corporation Limited
T&D	:	Transmission & Distribution
UoM	:	Unit of Measurement
VAR	:	Volt Ampere Reactive
VC	:	Variable Charges

Before the

Joint Electricity Regulatory Commission for the State of Goa and Union Territories

Gurgaon

CORAM[1]

Dr. V K Garg (Chairperson)

Petition No. 65/2012

In the matter of

Aggregate Revenue Requirement (ARR) and Retail Tariff for the Financial Year 2012-13 for the Electricity Department, Union Territory of Andaman & Nicobar Islands

And in the matter of

Electricity Department, Union Territory of Andaman & Nicobar Islands…………………………………………………………………………………………………..Petitioner

ORDER

Date: 04th June 2012

1. INTRODUCTION

1.1 JERC Formation

In exercise of the powers conferred by Section 83 of the Electricity Act, 2003 the Central Government constituted a two member (including Chairperson) Joint Electricity Regulatory Commission for all Union Territories except Delhi to be known as "Joint Electricity Regulatory Commission for Union Territories'' with headquarters at Delhi as notified vide notification no.

[1] As per section 93 of the Electricity Act, 2003; No act or proceedings of the Appropriate Commission shall be questioned or shall be invalidated merely on the ground of existence of any vacancy or defect in the constitution of the Appropriate Commission. Therefore due to vacancy of the position of Hon'ble Member in the Joint Electricity Regulatory Commission for the state of Goa and the UTs, the Hon'ble Chairperson constitutes Coram.

23/52/2003 – R&R dated May 2’ 2005. Later on 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 May 30’ 2008. The Joint Electricity Regulatory Commission for the State of Goa and Union Territories (Andaman & Nicobar Islands, Chandigarh, Dadra and Nagar Haveli, Daman & Diu, Lakshadweep and Puducherry) started functioning with effect from August 2008. Office of the Commission is presently located in the district town of Gurgaon, Haryana.

1.2 Electricity Department, UT of Andaman & Nicobar Islands

The Electricity Department, UT of Andaman & Nicobar Islands herein called ED A & N, is responsible for power supply in the Union Territory.

The Department of Electricity of Andaman & Nicobar Administration (ED A & N) is responsible for power supply in the Union Territory. Power requirement is met by own generating stations and power purchase from M/s Suryachakra Power Corporation Limited (SPCL).

Andaman & Nicobar Islands is cluster of islands scattered in the Bay of Bengal. These islands are isolated from rest of India by more than 1000 kms. The total area of the territory is 8249 sq. kms having population of 379944 as per 2011 Census provisional records & average growth rate is 6.68%. The tempo of economic development has tremendously accelerated along with all-round expansion in the areas/sectors viz. (i) Shipping Services, (ii) Civil Supplies, (iii) Education, (iv) Fisheries, (v) Tourism & Information Technology, (vi) Health, (vii) Industries, (viii) Rural Development, (ix) Social Welfare, (x) Transport, (xi) Increase in District Headquarters (xii) Central Government Department, (xiii) Public Undertaking & other offices, (xiv) Services & Utilities, (xv) Defence Establishment (xvi) Commercial organisations/Business Centres etc. Thus, these islands have reached at the take off stage of total economic transformation. All these economic and infrastructure developments requires power as a vital input & to play a key role for achieving overall transformations.

Prior to independence a small steam driven reciprocating DG Generator of 100 KW Capacity was installed by the British at Ross Island in 1926. Direct current DG Set of 100 KW Capacity was installed at Port Blair during 1929. After independence, two steam turbine generating sets of 550 KW each were established during 1951 in the power house at Chatham Island. The boilers were operated on wood fuel and saw dust, which were the waste product of Chatham Saw Mill and later on switched over to Mangrove wood as fuel. This was the start of alternating current power supply at Port Blair. Due to the geographical & topographical peculiarities of these islands including separation by sea over great distances there is no single power grid for the entire electrified island and instead number of Diesel Generating sets installed at different power houses to independently caters to the power requirements of area/island. The Electricity Department has so far installed 135 no. of Diesel Generating Sets with capacity ranging from 12 KVA to 2500 KVA at 43 Power houses located in over 29 Islands including one hydro-electric power generating station having capacity of 5.25 MW. The Electricity Department had also installed Solar Power Plant having capacity of 100 KW at Niel and Havelock Island having capacity of 50 KW each. Besides this the Electricity Department has been purchasing Energy from M/s Surya Chakara Power Corporation Limited (SPCL), an Independent Power Producer since 22nd April 2003 having capacity of 20 MW with 4 units of 5 MW Diesel Generating Sets to meet their Energy requirement.

1.3 Filing of Petition

Electricity Department, UT of Andaman & Nicobar Islands has filed its petition for determination of Aggregate Revenue Requirement (ARR) & Retail Tariff for distribution and retail sale of electricity for FY 2012-13 as per the procedures outlined in section 61, 62 & 64 of the Electricity Act, 2003. ED A&N has submitted its ARR and Tariff petition for FY 2012-13 on dated 29th November, 2011.

The Electricity Department, UT of Andaman & Nicobar Islands has prayed to the Hon'ble Commission to permit the petitioner to:-

a) Accept the ARR and Tariff Petition for the FY 2012-13 for ED A&N formulated in accordance with the guidelines outlined as per the regulation of JERC relating to Distribution Licensee and the principles contained in Tariff Regulations;

b) Approved the Recovery of the ARR of FY 2012-13 through the tariffs being proposed to be made applicable to the consumers for FY 2012-13;

c) Approve the category wise tariff including fixed/ demand charges submitted by ED A&N to meet revenue requirement for FY 2012-13; and

d) Approve the tariff philosophy suggested by ED A&N.

1.4 Admission of Petition

On submission of ARR & Tariff Petition filed by ED A&N on November 29' 2011, the Commission's office had pointed out defects in the ARR petition vide letter dated December 07' 2011. Pending removal of defects by the petitioner, the Commission's office had published the '**notice for hearing'** to be conducted on January 23'2012 at 2 PM on admission of petitions filed by the Petitioner, in the 'The Daily Telegrams (English/Hindi) – Port Blair edition on January 14' 2012. Accordingly pre-admission hearing of the petition was conducted on January 23' 2012 at 2 PM. The petitioner presented the salient features of the Petition. After initial scrutiny/analysis of the submissions furnished by the petitioner during the hearing, the Commission observed that the submission furnished by the petitioner in the admission hearing were incomplete. The Commission had pointed out the defects/data gaps vide letter dated December 07'2011 is enclosed as **Annexure 1** to this Order. The Commission's office requested the petitioner to immediately furnish the required information to consider their petition for admission. The petitioner requested for time up to Feb. 28' 2012 for submitting the information to fill the data gaps as pointed out earlier during hearing. Accordingly the Commission directed vide Order dated January 23'2012 to submit such information as stated above by February 28'2012. A copy of the Order dated January 23' 2012 is enclosed as **Annexure 3** to this Order.

The petitioner explained the strategic location of the island, difficult topography and logistics constraints and had submitted some of the information as stated during the hearing vide affidavit no. 00AA 150535 dated February 18'2012, received at the Commission's office on February 23'2012. In terms of the JERC (Terms and Conditions of determination of tariff) Regulations, 2009, the Commission should not entertain the tariff petition, if the same is not in conformity with the various JERC Regulations. But looking at the fact that the petitioner is a deemed licensee Government (Govt.) Department acting as an integrated utility, having Govt. system of accounting and CAG audit, the petition suffered from lot of infirmities. The Commission had two options:-

(i) To reject the petition as it is strictly not as per JERC (Terms and Conditions of determination of tariff) Regulations, 2009, alternately

(ii) To entertain the petition and get the infirmities removed to the extent possible and issue directions to align the petition to the requirement of various Regulations in subsequent filings.

Considering the objective of evolving the regulatory process to maturity in the Union Territories Power department acting as integrated deemed licensees in general and the Island Territories like Andaman & Nicobar and Lakshadweep in particular, Commission considered all pros and cons of both the alternatives and decided to admit the petition. Accordingly the Commission admitted the petition vide its Order dated February 28' 2012 and directed the Petitioner to issue public notice in accordance with the Electricity Act 2003 & JERC (Terms and Conditions for Determination of Tariff) Regulations 2009 in the given format. The admission order issued on February 28'2012 is enclosed as **Annexure 4** to this Order.

1.5 Interaction with the petitioner

This Order has referred at numerous places to various actions taken by the "Commission". It is pertinent to mention for the sake of clarity, that the term "Commission" unless otherwise specified in most of the cases refers to the Staff of the Commission for carrying out the technical due diligence & validation of data of the petitions filed by the utilities, obtaining and analyzing information and clarifications received from the utilities and submitting relevant issues for consideration of the 'Commission'.

The Commission's Staff held discussions with the Petitioner/Petitioner's representative, obtained information/clarifications wherever required and carried out technical validation with regard to the information provided.

Commission's staff interacted regularly with the Petitioner to seek clarifications and justification on various issues essential for the analysis of the tariff petition. The Commission's staff and the Petitioner also discussed key issues related to the petition, which included Power purchase cost, estimated sales and revenue submitted to the Commission, etc.

The Petitioner submitted its replies, as shown below, in response to the queries raised by the Commission's office, which have been considered for computation of the ARR and the resultant tariff thereof, of the Petitioner.

Table 1.5.1: List of Submissions made by the Petitioner

S.No.	Date of Receipt	Subject
1.	04.01.2012	Clarification/Information as asked by the Commission's office vide their letter dated December 07'2011.
2.	23.02.2012	Information/documents as stated during the admission hearing vide affidavit no. OOAA 150535 dated February 18'2012.
3.	17.05.2012	Clarification and additional information submitted vide affidavit no. OOAA 146137 dated May 14'2012.

1.6 Public hearing process

Commission specified to the petitioner to publish the summary of the ARR and Tariff proposal in the abridged form and manner as approved in accordance with section 64 of the Electricity Act 2003 to ensure public participation.

The public notice was published by the Petitioner for inviting objections/ suggestions from its stakeholders on the tariff petition in the leading newspapers as detailed below:-

Table 1.6.1 : Details of public notice published by the Petitioner

S.No.	Date	Language	Name of Newspaper
1.	10.03.2012	English	The Daily Telegrams
2.	12.03.2012	English	The Island Mirror

S.No.	Date	Language	Name of Newspaper
3.	14.03.2012	English	The Daily Telegrams
4.	15.03.2012	English	The Daily Telegrams

The petitioner also uploaded the petition on Electricity Department, A&N website (http:\\electricity.and.nic.in) for inviting objections and suggestions on their petition.

Interested parties / stakeholders were requested to file their objections / suggestions on the petition on or before March 30' 2012. The copies of paper cutting of public notice are attached as **Annexure 5** to this order.

1.7 Notice for public hearing

Commission also published public notices in the leading newspapers giving due intimation to stake holders, consumers, objectors and the public at large about the public hearing to be conducted by the Commission as per the mentioned schedule:

Table 1.7.1 : Schedule of Public hearing at Port Blair & Havelock Island

S.No.	Date	Venue of Hearing	Time & Category of Consumers
1.	10.04.2012	Dr. B.R. Ambedkar Auditorium, Municipal complex, **Port Blair**	11:00 AM to 2:00 PM for all consumers
2.	10.04.2012	Panchayat Hall, Govind Nagar, **Havelock**	10:30 AM to 12:30 PM For all consumers

Table 1.7.2 : Details of public notice published by Commission

S.No.	Date	Language	Name of Newspaper
1.	02.04.2012 & 09.04.2012	English	Eco of India (Port Blair)
2.	02.04.2012 & 09.04.2012	English	Andaman Express (Port Blair)
3.	02.04.2012 & 09.04.2012	Hindi	Rajasthan Patrika (Kolkatta)
4.	02.04.2012 & 09.04.2012	Tamil	Thanti (Chennai)
5.	02.04.2012 & 09.04.2012	Bengali	Vartman (Chennai)

Commission published public notice for the public hearing in the above newspapers on April 02'2012 and again on April 09'2012 to remind the public for better participation in the public hearing

The copies of public notice published by the Commission for intimation of public hearing are attached as **Annexure 6** to this order.

Commission received only one written objection / suggestion on the petition, by the last date for filing objections/suggestions i.e. March 30'2012. The Commission forwarded that to the Petitioner for communicating their reply to the objections raised by the objector. It was confirmed by the Commission at the beginning of the hearing that the objector has received the replies to their objection, even though, the objector did mention that they received the reply but they want to be heard again before the Hon'ble Commission. Stakeholders who raised their concerns on the spot were replied to by the officers of the utility orally on the spot.

During the public hearing, each objector was provided an opportunity to present his views on the petition filed by the Petitioner. All those present in the hearing, irrespective of whether they had given a written objection or not, were given equal opportunity to express their views. The list of objectors is attached at **Annexure 7** to this order. The list includes the objectors who gave their written objections; those who gave their written/oral objections & presented before the Commission; and other stakeholders who did not give their written objection or prior intimation, but participated in the hearing on the spot.

The issues and concerns expressed by stakeholders have been examined by the Commission. The major issues discussed during the public hearing, the comments/replies of the utility and the views of the Commission thereon, have been summarized in section 4 of this order.

2. BRIEF SUMMARY OF ARR & TARIFF PETITION FOR FY 2012-13

2.1 Introduction

In exercise of powers conferred on Joint Electricity Regulatory Commission for the Goa and Union Territories under Section 61 read with Section 181 of the Electricity Act, 2003 (36 of 2003) and all other powers enabling it in this behalf, the Joint State Electricity Regulatory Commission for the State of Goa and Union Territories notified the (Terms and Conditions for Determination of Tariff) Regulations, 2009. These regulations came into force from the date of their publication in the official Gazette i.e. February 8' 2010. These Regulations were applicable to the State of Goa and the Union Territories of Andaman and Nicobar Islands, Chandigarh, Dadra and Nagar Haveli, Daman and Diu, Lakshadweep and Puducherry.

The Commission conduct the Public hearing of the Electricity Departments of the State of Goa and Union Territories on February 09'2011 in the matter of compliance of JERC for the State of Goa and UTs (Terms and Conditions for Determination of Tariff) Regulations 2009 on suo-moto basis and issued the order on the same date. The order is attached as **Annexure 2** to this order. The excerpts of the order dated February 09'2011 are mentioned below:

"On the onset the Commission emphasized the importance of regularly submitting the ARR and tariff petition in accordance with the JERC regulations by the due date. This will not only give the licensee their rightful returns regularly, the increase in tariff rates for consumers shall also be modest and gradual, avoiding tariff shocks. They were also explained that for the Commission to analyze their tariff petitions quickly and smoothly, they should provide full data as required in the formats attached with the JERC regulations. The licensee should therefore take advance action to ensure above.

2) Electricity Department, Andaman & Nicobar

Andaman and Nicobar have requested that the extension for submission of their tariff petition for the year 2010-11 be allowed to them up to 30th November, 2011.

The Commission observed that if they have to file tariff petition by 30th November 2011, in that their ARR and tariff petition should be for the financial year 2012-13 as per JERC regulation.
"

In order to comply with the directions given by the Commission in their order dated February 09' 2011. Electricity Department, UT of Andaman & Nicobar Islands has filed its **first** petition for determination of Aggregate Revenue Requirement and Tariff for FY 2012-13 to the Commission on November 28' 2011 in accordance with section 61, 62 & 64 of the Electricity Act, 2003 and relevant provisions mentioned in JERC (Terms and Conditions for Determination of Distribution Tariff) Regulations, 2009.

After initial scrutiny & analysis of the additional information as stated during the admission hearing, submitted by the petitioner on February 23' 2012; the petition was admitted on February 28' 2012 subject to removal of infirmities to the extent possible and to align the petition to the requirements of various Regulations in the subsequent filings to be submitted by the Petitioner as and when required. The Commission has taken the petition bearing no. 65/2012 on record on February 28'2012.

2.2 About Electricity Department of Andaman & Nicobar

The Department of Electricity of Andaman & Nicobar Administration ("ED A&N") is responsible for power supply in the union territory. Power requirement of ED A&N is met by own generation station and power purchase from SPCL. The total area of the territory is 8249 sq. kms having population of 379944 as per 2011 Census provisional records & average growth rate is 6.68%. These islands have reached at the takeoff stage of total economic transformation. All these economic and infrastructure developments requires power as a vital input & to play a key role for achieving overall transformations.

Due to the geographical & topographical peculiarities of these islands including separation by sea over great distances there is no single power grid for the entire electrified island and instead a power house caters independently to the power requirements of area/islands. There are 43 diesel power houses at different locations in these islands having DG sets Capacity ranging from 6 KW to 5000 KW(including 20 MW IPP) and one Hydro Power Station having 5.25 MW Capacity at Kalpong North Andaman. The aggregate installed capacity is 81.21 MW as on 31.03.2011 and firm capacity of 49.61 MW.

In 2010-11, the total of 233 MU were generated and out of 233 MU, 187 MUs were sold to the consumers of ED A&N with an aggregate peak demand of 43 MW and T&D loss level of 19.77%. The revenue realized by the UT was Rs. 76.06 Crores from the consumer base of 99,068 with an average realization rate of Rs. 4.07 per KWh and per capita consumption of 471 KWh. The T&D loss level estimated by EDA&N for FY 2011-12 is 19.47%.

2.3 Summary of the Petition for Aggregate Revenue Requirement for FY 2012-13

The Petitioner has submitted the ARR & tariff petition for FY 2012-13 based on the actual performance during FY 2009-10, FY 2010-11 and FY 2011-12 (upto 08.2011) with supporting rationales. Based on the estimates and projections for FY 2012-13, the ARR for ED A & N for FY 2012-13 has been proposed at Rs. 394.82. The brief summary of their proposal is presented below:

Table 2.3.1 : Brief Summary of Aggregate Revenue Requirement for FY 2012-13 submitted by the petitioner

Particulars	Unit of Measurement	Projected FY 12-13
Proposed Generation (self & SPCL)	MU	267.71
Cost of Fuel	Rs. Crores	93.22
Power Purchase cost	Rs. Crores	154.68
Other cost	Rs. Crores	148.93
Non-Tariff Income	Rs. Crores	2
Aggregate Revenue requirement	Rs. Crores	394.83
Revenue at existing tariff	Rs. Crores	87.07
Cumulative Gap/(Surplus)	Rs. Crores	307.76
Proposed Units to be Sold	MU	216.02
Average Cost of Supply	Rs. per unit	18.28
Average revenue realized	Rs. per unit	4.03
Gap per unit	Rs. per unit	14.25
Tariff increase required	%	353%
Tariff increase proposed	%	40%
T&D losses proposed	%	19.16%

2.4 Summary of the Tariff Proposal for FY 2012-13

The Petitioner has submitted the proposal for 40% increase in the existing tariff applicable from March 1' 2008. Further the petitioner has also proposed the proposal of tariff rationalization in the Commercial category by which the sub-category 'Hostel' in Commercial category is proposed to be deleted and a new slab '501 & above' is proposed to be introduced to charge higher from the consumers of commercial category having higher consumption. The minimum charges are also applicable in the UT of Andaman & Nicobar, the petitioner has not proposed any change in the minimum charges applicable in the UT of Andaman & Nicobar.

Table 2.4.1 : Brief Summary of Tariff Proposal for FY 2012-13 submitted by the petitioner

Category	Energy Charge (Rs./unit/pm)		% increase
	Existing	Proposed	
Domestic			
0-100 units	1.70	2.10	24%
101-200 units	3.20	4.00	25%
201 units & above	4.40	5.50	25%
Commercial			
Hostel			
Upto 200 units	3.90	deleted	
201 units & above	5.10		
Others			
Upto 200 units	4.50	5.45	21%
201 units to 500 units	5.70	7.70	35%
501 units & above	5.70	8.70	53%
Industrial			
0-500 units	3.70	5.50	49%
501 units & above	4.10	6.25	52%
Irrigation Pumps & Agriculture	1.00	1.50	50%
Bulk supply	7.70	11.70	52%
Public Lighting	3.50	5.95	70%

2.5 Prayer to the Hon'ble Commission

The petitioner respectfully prays that Hon'ble Commission may:

- Accept the Annual Revenue Requirement and Tariff petition for the FY 2012-13 for EDA&N 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 recovery of ARR of FY 2012-2013;
- Approve the category-wise tariff including fixed/ demand charges submitted by EDA&N to meet revenue requirement for FY 2012-2013;
- Approve the tariff philosophy suggestions requested by ED A&N;
- Condone any inadvertent delay/ omissions/ errors/ rounding off differences/shortcomings and EDA&N may please be permitted to add/change/ modify/ alter the petition;
- Permit EDA&N to file additional data/ information as may be necessary;
- Pass such further and other orders, as the Hon'ble Commission may deem fit and proper, keeping in view the facts and circumstances of the case.

3. APPROACH OF THE ORDER FOR DETERMINATION OF ARR & TARIFF FOR FY 2012-13

3.1 Introduction

As discussed in earlier section of this order, Electricity Department of UT of Andaman & Nicobar Islands has filed its **first** petition for determination of Aggregate Revenue Requirement and Tariff for FY 2012-13 to the Commission on November 28' 2011 in accordance with section 61, 62 & 64 of the Electricity Act, 2003 and relevant provisions mentioned in JERC (Terms and Conditions for Determination of Distribution Tariff) Regulations, 2009.

After initial scrutiny & analysis of the additional information as stated during the admission hearing, submitted by the petitioner on February 23' 2012; the petition was admitted on February 28' 2012 subject to removal of defects in the petition to the extent possible and align the petition to the requirements of various Regulations in the subsequent filings to be submitted by the Petitioner as and when required. The Commission has taken the petition bearing no. 65/2012 on record on February 28'2012.

3.2 Approach for Determination of ARR & Retail Tariff for FY 2012-13

In this regard various provisions of the JERC's Tariff Regulations 2009 pertaining to business of the integrated utility are relevant and Commission is guided by the principles contained in Section 61 of the Act among other things to examine the Sales forecast, Power purchase quantum, Self-generation and other income & expenditure.

The Commission, while determining the tariff is guided by the principles contained in Section 61 of the Act, namely

a) The principles and methodologies specified by the Central Commission for determination of the tariff applicable to generating companies and transmission licensees;

b) The generation, transmission, distribution and supply of electricity are conducted on commercial principles;

c) The factors which would encourage competition, efficiency, economical use of the resources, good performance and optimum investments;

d) Safeguarding of consumers' interest and at the same time, recovery of the cost of electricity in a reasonable manner;

e) The principles rewarding efficiency in performance;

f) Multi-year tariff principles;

g) That the tariff progressively reflects the cost of supply of electricity and also, reduces and eliminates cross-subsidies within the period to be specified by the Appropriate Commission;

h) The promotion of co-generation and generation of electricity from renewable sources of energy;

i) The National Electricity Policy and tariff policy;

j) Obligations for the Procurement of Renewable Energy

The Commission has considered the submission of the petitioner dated February 18’ 2012 (received on February 23’ 2012) due to the strategic importance of the territory. It is absolutely essential that the basic utility services such as transport, electricity etc. are provided in these areas notwithstanding the fact that the services may not be economically viable. The facts are illustrated as per office memo of Ministry of Home Affairs, Govt. of India dated August 05th, 1959 addressed to the Planning Commission, New Delhi. The copy of the same is made available by the petitioner with its additional submission dated February 18’2012. The copy is attached as **Annexure 8** to this Order.

The Commission has considered the actual unaudited figures of income & expenditure submitted by the Petitioner for FY 2010-11 and actuals for FY 2011-12 to form the basis for projection of income and expenditure for FY 2012-13. Further the Commission has relied on the actual data of FY 2011-12 (till Jan. 2012) provided by the petitioner during technical validation session on May 14’2012. The detailed analysis & treatment of each component is provided in Chapter 5 (Aggregate Revenue Requirement for FY 2012-13) of this Order.

4. BRIEF SUMMARY OF OBJECTIONS RAISED, RESPONSE FROM THE PETITIONER AND COMMISSION'S VIEWS

4.1 Public response to the Petition

On admitting the ARR & Tariff Petition for the FY 2012-13, the Commission directed the Petitioner to make copies of the petition available to the general Public, post the petition on the Website & also publish the same in newspapers in abridged form in the given format duly inviting Comments/Objections from public as per provision of the JERC (Conduct of Business) Regulations 2009.

4.2 Public Hearing

A public hearing was held at Port Blair and Havelock as per the below mentioned schedule:

Table 4.2.1 : Schedule of Public hearing at Port Blair & Havelock Island

S.No.	Date	Venue of Hearing	Time & Category of Consumers
1.	10.04.2012	Dr. B.R. Ambedkar Auditorium, Municipal complex, **Port Blair**	11:00 AM to 2:00 PM for all consumers
2.	10.04.2012	Panchayat Hall, Govind Nagar, **Havelock**	10:30 AM to 12:30 PM For all consumers

During the public hearing, those who had submitted the objection in writing earlier, also presented their Objection/Suggestion in person before the Commission. Other participants from general public, who had not submitted written objections earlier, were also given an equal opportunity to offer their views/suggestions in respect to the ARR & tariff proposal for FY 2012-13 of the ED A&N. The list of objectors is attached as an **Annexure 7** to this order. Commission had ascertained from the stakeholder during the hearing that they have received the reply to their written objection. Those stakeholders who did not give prior written objections/suggestions & expressed their views, objections, suggestions during the hearing were replied to verbally by the petitioner during the hearing itself.

4.3 Objections/Suggestions and response of Electricity Department, UT of Andaman & Nicobar Islands

PART 1: General Issues and Comments

4.3.1 Alternative Source of Power

Stakeholders Objections/Comments:

The main issues raised by the Govt. Employees Federation in brief are as under:

The stakeholders suggested that the distribution licensee should explore alternative sources of power and should not maintain their dependency on diesel, which is a scarce and costlier source.

Petitioner's submission:

The petitioner informed that one 50 KWp off-grid standalone SPV Power Plant was installed in April 2002 in Neil Island and another 50 KWp off-grid standalone SPV Power Plant was installed in Havelock Island in August 2004. Both of them are inoperative due to maintenance issues since 2010 & 2008 respectively. The efforts are being made by the department to put them in operation at the earliest.

The petitioners informed to the Hon'ble Commission that they had already initiated various schemes on renewable energy such as Biomass, Solar, Wind and small Hydro Projects and has submitted the status report of these schemes.

The petitioner proposed to add the following Power plants generating energy from renewable sources under NRSE during 12th five year plan.

Table 4.3.1.1 : Details of New Power plants generating energy from renewable sources

S.No.	Location	District	Capacity (in MW)	Type
1.	Port Blair	South Andaman	2.00	Biomass
2.	Little Andaman	South Andaman	1.50	Biomass
3.	Car Nicobar	Nicobar	2.00	Biomass
4.	Port Blair	South Andaman	5.00	Solar
5.	Rangat	N&M Andaman	1.00	Solar
6.	Other places	Andaman & Nicobar	1.00	Wind
7.	Other places	Andaman & Nicobar	0.91	Small Hydro
	Total		13.41	

Commission's views:

Commission appreciates the suggestions of stakeholders, it is clarified that the Petitioner in its submission has submitted that they have already initiated the work in this regard. It is true fact, that huge dependency on diesel not only increases the average cost of supply for the consumer but also impacts the utility's financial health. Therefore, it is inevitable for a distribution licensee to explore alternative sources of Power, and also consumer's contribution in this regard is required in terms of installation of roof top solar, wind or hybrid equipments to reduce the load on the existing power stations of the utility.

The Commission directs the petitioner to submit a quarterly progress report scheme wise for the initiatives taken in this regard, so as to speed up the process of execution.

4.3.2 Pending Applications of Electricity Connections

Stakeholders Objections/Comments:

The main point raised by Smt. Parimal Tara, Sh. Ajay Kumar, Sh. Ranjan Samadder, Sh. Subodh Mridha, Sh. Ashok Kumar Bishwas, Sh. Anil Kumar Das, Smt. Jayesh Kopila, Smt. Abala Samadder, Smt. Urmila Bishwas, in brief are as under:

The majority of the stakeholders have objected that they are not getting the electricity connection at their premises due to endless procedural formalities required by the utility. Some stakeholders submitted that they have been pursuing the cases of BPL consumers for 2 years, & since then no action has been taken by the utility in this regard. While some of the objectors did mention that even if the documentary evidence of legal heirs is there, the utility is not shifting their connection to new premises.

Petitioner's submission:

The petitioner orally submitted that they have received 250 applications and out of 250, they have already released 130 connections and rests are under process. The petitioner further submits that the main reason for the pendency of application is the issue of ownership and absence of documentary proofs of legal heirs after the death of the original allottee/owner of the premises. While in some cases, the required material is in short supply.

Commission's views:

Commission is not satisfied with the explanation given by the licensee. Commission directed the petitioner to find a way to dispose all pending application as per provision under section 43 of the Electricity Act, and relevant JERC Regulations, where cases are not pending due to lack of documentary evidence. Commission also directed to follow the Standard of Performance notified by the Commission strictly and the status report be submitted for all the connection's application pending with the reason for their pendency by **September 30'2012**. The petitioner is directed to promote and give publicity to the functioning of the Consumer Grievance Redressal Forum, so that each consumer could approach to CGRF, for redressal of their grievances regarding electricity unresolved complaints/concerns.

Commission also directed to circulate a pamphlet for the consumers highlighting the steps and necessary documents required by the utility to initiate the action on the following:

- Complaint against fast meters/defective meters
- Applying for Shifting of electricity connection
- Applying for New Connection
- Complaint against not getting the supply

Commission further directed to prepare monthly/ quarterly schedule for visit to different Islands by officers i.e. S.D.O., Ex. En., and SE of ED- A&N to hear and settle the public grievances and Consumers complaints of Electricity on the spot.

PART 2: Tariff related

4.3.3 General Comments

Stakeholders Objections/Comments:

The main points raised by the Port Blair Municipal Council, Government Employees Federation-A&N Islands, Sh. Ranjan Samadder – Panchayat Pradhan, Govind Nagar,Smt. Subodh Mridha, Sh. Ashok Sikdar, Sh. Anil Kumar Das, Smt. Abala Samadder, Sh. Kamal Sikder in brief are as under:

i. Port Blair Municipal Council (PBMC) furnished their objection regarding proposed enhancement of tariff for street light category from Rs. 3.50/- to Rs. 5.95/- per unit (KWh). PBMC submitted that there will be huge financial burden on council after the tariff hike. PBMC further submitted that they are the service provider to general public of Port Blair city and not charging anything for this and is in revenue deficit. They cannot meet additional liabilities due to tariff increase in street light category.

ii. Most of the objectors furnished their objections against tariff hike of domestic category. Some of the objectors submitted that they have no objections against tariff hike of commercial category.

Petitioner's submission:

1. The Petitioner submitted that the Electricity Tariff was previously revised in 2003; thereafter there was no revision for five years. The tariff was again revised in February 2008. Since 2008 the cost of fuel for High Speed Diesel Engines (HSD) has gone up by over 35%. Over and above there has been substantial escalation in other costs. On account of these costs, the average cost of supply is at Rs. 18.28 per unit for FY 2012-13. The proposed increase in tariff for public lighting does not cover even per unit cost of fuel of HSD. It is submitted to the Hon'ble Commission that the proposed tariff may kindly be allowed.
2. The Petitioner submitted that the tariff increase of 40% has been proposed to recover the gap of Rs. 35.29 Crores and even after recovery of Rs. 35.29 Crores, they still left with the revenue gap of Rs. 272.46 Crores.

Commission's views:

Commission noted that the suggestion of stakeholders and clarification furnished by the petitioner. Commission while deciding the matter has appropriately considered the views of the stakeholders.

4.3.4 Incentive for consumers using Solar Water Heaters

Stakeholders Objections/Comments:

The main points raised by the RMC Akshay Urja Shop, Port Blair in brief are as under:

The stakeholders have suggested that many state governments including Karnataka, Assam, West Bengal etc., have been encouraging the use of solar power in many ways, the concessional/subsidized rates have been charged from all those consumers who have been using

'Solar Water Heater' for domestic/commercial purposes. However ED A&N are not providing any such incentive,

If concession/subsidy be sanctioned then it saves a lot of precious fuel petrol/diesel.

Petitioner's submission:

Petitioner agrees with the proposal of stakeholders for introduction of incentive for use of solar water heater for domestic & commercial purpose, the petitioner has proposed a concession of Rs. 50/- per month in electricity bills from the consumers using solar water heater for Domestic and Commercial purpose.

Commission's views:

Commission agrees with the proposal of stakeholders for introduction of incentive for use of rooftop solar electricity generation, solar wind hybrid systems, cookers, lanterns and solar water heater for domestic & commercial purpose, as there is an inevitable need to promote use of alternate sources of energy. As regards, linking incentive with tariff as suggested by stakeholder, it was clarified that mere installation of such equipment does not quantify their actual usage and use of such system leads to decrease in consumption and generally it's not linked with tariff. However looking into the topography of the islands, its heavy dependence on the conventional energy for meeting its energy requirement and to promote the actual usage of alternative source of energy in the A&N islands, an appropriate incentive to promote the usage of alternative sources of energy has been approved in the tariff schedule of this order.

4.3.5 Separate Tariff for Military Engineer Service/Defense Establishment

Stakeholders Objections/Comments:

The written objection received from Rear admiral Karanbir Singh, Chief of Staff, Andaman & Nicobar Command in brief is as under:

The stakeholder in its written objection has raised their concern regarding treatment of MES and Defense establishments as a separate class bulk consumers and be awarded a concessional tariff. The stakeholder has further submitted that most of the states in the mainland have instituted a separate tariff category for MES and defense establishments. As per the Indian Electricity Act 2003, Ministry of Power letter no. 25/19/2004-R&R dated 26 July 2003, MES is considered a 'deemed licensee'. It is stated that the spirit behind these instructions is that concessional tariff is applicable to all Govt. establishments be it under licensee status or otherwise. No concessional tariff has been granted to Defense establishments in A&N islands. On the contrary, tariff charged from Defense establishments is at much higher rates as compared to any other Govt. Institutions on the islands.

Petitioner's submission:

The petitioner has submitted that Defense establishments are being charges at the rates applicable to *'Bulk'* category consumers, as they receive bulk supply at one point and maintain their own transmission facilities. The Administration has categorized them as bulk consumer like BSNL, Marine Workshop, Warf, Dock Yard, Fisheries, and Municipal Council etc. The A&N Command is insisting that they should not be considered as a bulk consumer and should be brought at par with other domestic consumers, wherever supply is provided for residential area for whom tariff rates are much less.

In this connection, it is stated that the Electricity Department is highly subsidized in these islands and we are able to realize only about 30% of the cost of generation from the consumers. As such reduction of tariff for the Defense establishment would further reduce the rate of recovery.

The petitioner further submitted that 'as per the directives of the Ministry of Power and Central Electricity Authority, the Defense establishments are required to pay as close as possible to the generation cost of the power'.

The Defense Department had raised this issue during the year 2003 and a meeting was held under the Chairmanship of Hon'ble Lt. Governor on 28.11.2003 in which officials from Administration and Defense establishment were present.

After detailed discussion, it was suggested that all the issues related with rationalization of tariff, "Deemed Licensee status to MES" etc., can only be decided by the Hon'ble Commission Joint Electricity Regulatory Commission (JERC).

Commission's views:

Commission examined the proposal of stakeholder and it is clarified that in most of the cases the defense establishments such as MES, Navy dockyard etc. receive Power in bulk at one point and thereafter distribute in its own premises through its own distribution network. The Ministry of Power had also clarified that defense establishments are deemed licensees within their jurisdiction and as such these establishments can procure power on their own from the generator. Since there is no other generator available in A&N islands except ED A&N and M/s

SPCL, ED A&N supply power at single point to meet its universal obligations. Hence such bulk consumer can only be supplied power at the rate near to the cost of supply. Further, the defense establishments in the Andaman & Nicobar Islands being considered as consumers under bulk category till such time they fulfill the requirement, for obtaining the status of deemed licensee.

5. AGGREGATE REVENUE REQUIREMENT OF FY 2012-13

5.1 Background

The petition for the determination of ARR & Tariff for the year FY 2012-13 has submitted the revised estimates for the year FY 2011-12 based on the actual performance of FY 2009-10, FY 2010-11 and pre-actuals of FY 2011-12 and the estimates for FY 2012-13 to be subject to the Commission's analysis for the determination of the ARR for FY 2012-13.

The Commission has taken into consideration the following for ARR and tariff determination for the year 2012-13:

i. Actual Performance in FY 2010-11 (Actual Un-audited Figures)

ii. Revised estimates for FY 2011-12 submitted by the petitioner alongwith the petition for FY 2012-13 and 10 months actuals of FY 2011-12.

5.2 Analysis of Aggregate Revenue Requirement of FY 2012-13

The determination of Aggregate Revenue Requirement requires assessment of quantum of energy sales, loss as well as various cost elements like power purchase cost, O&M expenses, interest cost and depreciation etc. Revised estimates/pre-actuals submitted by the petitioner as regards to various components of ARR of previous year, the Commission's analysis thereon and decision in respect of items given below as discussed in the following paras:

- Assessment of Energy Requirement
  - i. Sales Projections
  - ii. Loss Trajectory
  - iii. Energy Balance
  - iv. Power Purchase Sources
- Assessment of the Aggregate Revenue Requirement
  - i. Power Purchase Costs & Transmission Charges;
  - ii. Operation and Maintenance Expenses;
    - Employee Expenses

- Administration & General expenses
- Repairs & Maintenance Expenses

iii. Capital Expenditure and Asset Capitalization

iv. Gross Fixed Assets;

v. Depreciation;

vi. Interest on Long Term Loans;

vii. Interest on Working Capital & Security Deposits;

viii. Return on Capital Base/ Net Fixed Assets;

ix. Provision for Bad and Doubtful Debts

x. Other expenses.

xi. Non-Tariff Income

As per the regulation no. 13 of JERC Tariff regulations 2009,

"

1) *The Aggregate Revenue Requirement of the generating company or the licensee shall comprise of the following:*

   i. *Fuel Cost for own generation, if applicable.*

   ii. *Cost of Power Purchase, if any*

   iii. *Operation and Maintenance Expenses,*

   iv. *Depreciation, including Advance Against Depreciation,*

   v. *Interest and Cost of Finance,*

   vi. *Return on Equity,*

   vii. *Income Tax*

   viii. *Provision for Bad & Doubtful Debts*

   ix. *Other Expenses.*

2) The data should be provided for three years

i. Audited figures for the previous year; Information for the previous year shall be based on the audited accounts; in the absence thereof, the audited accounts for the immediately preceding year shall be filed along with the un-audited accounts for the previous year.

ii. 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.

iii. Forecasted figures for the ensuing year should be based on the current year figures with adjustments that reflect known and measurable changes expected to occur between them. These adjustments must be specifically documented and justified."

"

4) The Aggregate Revenue Requirement of the generating company or the licensee shall be worked out by adjusting the following in the revenue requirement computed under Clause (1) above:

i. Necessary adjustments under Regulation 9 'Review and Truing Up'.

ii. Income from surcharge and additional surcharge from Open Access Consumers, if any ;

iii. Transmission and/or Wheeling Charges recovered from the Open Access Customers, if any ;

iv. Authorized portion of Income/revenue from Other Business engaged in by the licensee for optimum utilization of assets, if any, in accordance. "

5.3 Assessment of Energy Requirement – Consumers, Connected load and Energy Sales

Petitioner's Submission

<u>Energy Sales</u>

The petitioner has stated that the consumer base of ED A&N consists of Domestic, Commercial and Industrial consumers. Sales mix is primarily dominated by Domestic consumers followed by Commercial consumers. The Energy Sale of the total Sale, to the consumers of Domestic and Commercial category is approximately 48% and 27% respectively. Thus, the sales forecast would completely depend on the sales expected in the Domestic & Commercial 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 have been taken as guiding factors in arriving at the requirement of demand and energy. The petitioner has considered the past growth trend over 5 years for projecting the sales for FY 2011-12 and FY 2012-13. The petitioner has considered the growth rate of 8% and 10% over the last year for domestic and commercial categories. Similar approach has been adopted for projecting the sales for rest of the categories including Industry & Bulk, Public Lighting & Agriculture. The petitioner has considered an overall growth rate of 7.5% on the estimated sales of FY 2011-12 for projecting the Energy sales for FY 2012-13.

The petitioner has considered the past trend for projecting the Energy Sales (MUs) and No. of Consumers based, as mentioned in the following table:

Table 5.3.1 : Details of Energy Sales during Past years

(Sales in Million Units)

S. No.	Category	FY 2006-07 Actuals	FY 2007-08 Actuals	FY 2008-09 Actuals	FY 2009-10 Actuals	FY 2010-11 Actuals	FY 2011-12 Petitioner's estimates
1	Domestic	64.47	72.16	75.49	83.96	90.20	97.42
2	Commercial	34.52	39.15	42.61	49.12	52.17	57.38
3	Industry	6.13	8.03	7.67	8.72	8.64	9.07
4	Bulk	23.32	22.44	25.40	25.99	26.02	26.54
5	Public Lighting	7.60	7.35	8.62	8.36	9.15	9.61
6	Irrigation Pumps & Agriculture	0.59	0.72	0.69	0.74	0.83	0.91
	Total	**136.63**	**149.85**	**160.48**	**176.89**	**187.01**	**200.93**

Source : Table 3.1 of the Petition submitted by ED A&N

The petitioner has considered the average growth rate (%) for projecting the Energy Sales (MUs) as mentioned in the following table:

Table 5.3.2 : Growth rate considered for FY 2012-13

(in %age)

S. No.	Category	Assumed Growth rate for FY 2012-13
1	Domestic	8%
2	Commercial	10%
3	Industry	5%
4	Bulk	2%

S. No.	Category	Assumed Growth rate for FY 2012-13
5	Public Lighting	5%
6	Irrigation Pumps & Agriculture	10%
	Total	**7.5%**

Source : Table 3.1 of the Petition submitted by ED A&N

The petitioner has submitted the actuals Energy Sales during first half of the FY 2011-12 vide their affidavit no. OOAA 146137 dated 14.05.2012 and has projected the Energy Sales (MUs) for FY 2012-13 considering the growth rate mentioned above in the petition. The details of Energy Sales in H1 for FY 2011-12 and projected sales for FY 2012-13 are mentioned in the following table:

Table 5.3.3 : Details of Energy Sales for FY 2011-12 (Actual – H1) and Estimates for FY 2012-13

(Sales in Million Units)

S. No.	Category	FY 2011-12	FY 2012-13
		April-Sept	Petitioner's estimates
1	Domestic	46.40	105.22
2	Commercial	25.81	63.12
3	Industry	4.58	9.52
4	Bulk	14.83	27.07
5	Public Lighting	4.64	10.09
6	Irrigation Pumps & Agriculture	0.43	1.00
	Total	96.69	216.02

Source : Table 3.1 of the Petition submitted by ED A&N and Annexure 12 of affidavit no. 00AA146137 dated 14.05.2012

Number of Consumers

The petitioner has estimated the number of consumers based on the past growth trend. However, the petitioner has considered the normalization for certain categories where an abnormal rise or reduction has been observed. The details of number of consumers of past years have been mentioned below:

Table 5.3.4 : Details of Number of Consumers during Past years

(in Numbers)

S. No.	Category	FY 2006-07	FY 2007-08	FY 2008-09	FY 2009-10	FY 2010-11	FY 2011-12
		Actuals	Actuals	Actuals	Actuals	Actuals	Petitioner's estimates
1	Domestic	62807	65282	67990	76479	81741	85828
2	Commercial	13861	14677	15160	15626	16131	16615
3	Industry	447	450	451	461	457	462
4	Bulk	41	40	46	44	48	48

S. No.	Category	FY 2006-07 Actuals	FY 2007-08 Actuals	FY 2008-09 Actuals	FY 2009-10 Actuals	FY 2010-11 Actuals	FY 2011-12 Petitioner's estimates
5	Public Lighting	342	346	375	434	505	556
6	Irrigation Pumps & Agriculture	154	161	211	177	186	195
	Total	77652	80956	84233	93221	99068	103704

Source : Table 3.2 of the Petition submitted by ED A&N

The petitioner has considered the growth rate (%) for projecting the number of consumers as mentioned in the following table:

Table 5.3.5 : Growth rate considered for FY 2012-13

(in %age)

S. No.	Category	Assumed Growth rate for FY 2012-13
1	Domestic	5%
2	Commercial	3%
3	Industry	1%
4	Bulk	0%
5	Public Lighting	10%
6	Irrigation Pumps & Agriculture	5%

Source : Table 3.2 of the Petition submitted by ED A&N

The petitioner has submitted the actual number of consumers during first half of the FY 2011-12 vide their affidavit no. OOAA 146137 dated 14.05.2012 and has projected the number of consumers for FY 2012-13 considering the growth rate mentioned above in the petition. The details of number of consumers in H1 for FY 2011-12 and projected number of consumers for FY 2012-13 are mentioned in the following table:

Table 5.3.6 : Details of Number of Consumers for H1 of FY 2011-12 and estimated for FY 2012-13

(in Numbers)

S. No.	Category	FY 2011-12 April-Sept.	FY 2012-13[2] Petitioner's estimates
1	Domestic	*82562*	90119
2	Commercial	*16221*	17113
3	Industry	*461*	466
4	Bulk	*50*	48
5	Public Lighting	*530*	611

[2] The petitioner in its petition has mentioned 'FY 2010-11' instead of 'FY 2012-13'. The Commission has considered the information mentioned in this column as the projected number of consumers for FY 2012-13.

S. No.	Category	FY 2011-12 April-Sept.	FY 2012-13[2] Petitioner's estimates
6	Irrigation Pumps & Agriculture	*192*	205
	Total	100017	108562

Source : Table 3.2 of the Petition submitted by ED A&N and Annexure 12 of affidavit no. 00AA146137 dated 14.05.2012

Additionally the petitioner has also submitted the total energy sales of 163.79 million units for 10 months of FY 2011-12 & average number of consumers for 10 months of FY 2011-12 is 101055 vide their Annexure – 2 of affidavit no. OOAA 146137 dated 14.05.2012.

Commission's analysis

Energy Sales

The Commission has considered the actual figures of past 5 years and the estimates for FY 2011-12 (submitted by the petitioner), including actual data of for 10 months of FY 2011-12 for estimating the category wise energy sales for FY 2011-12. The Commission while projecting the sales for FY 2011-12 have considered the actual sales for the first 10 months of the year and have considered pro-rated sales for the remaining period. The modified CAGR (%) for a period of five years (FY 2010-11 over FY 2006-07) for different consumer categories and the growth rate has been adopted by the Commission on the estimates of FY 2011-12 (estimated by the Commission) to assess the Energy Sales for FY 2012-13. The details are given in the table below:

Table 5.3.7 : CAGR (%) considered by the Commission for estimation of Sales for FY 2012-13

(in percentage)

S. No.	Category	Modified CAGR 5 years : Base FY 2010-11
1	Domestic	8.76%
2	Commercial	10.87%
3	Industry	8.95%
4	Bulk	2.78%
5	Public Lighting	4.75%
6	Irrigation Pumps & Agriculture	8.82%
	Total	8.16%

Table 5.3.8 : Energy Sales approved by the Commission for FY 2012-13

(in Million Units)

S. No.	Category	FY 2011-12 Petitioner's estimates	FY 2011-12 Commission's estimates	FY 2012-13 Petitioner's estimates	FY 2012-13 Approved
1	Domestic	97.42	92.81	105.22	100.94

S. No.	Category	FY 2011-12 Petitioner's estimates	FY 2011-12 Commission's estimates	FY 2012-13 Petitioner's estimates	FY 2012-13 Approved
2	Commercial	57.38	51.62	63.12	57.24
3	Industry	9.07	9.16	9.52	9.98
4	Bulk	26.54	29.65	27.07	30.48
5	Public Lighting	9.61	9.29	10.09	9.73
6	Irrigation Pumps & Agriculture	0.91	0.86	1.00	0.93
	Total	200.93	193.39	216.02	**209.29**

Number of Consumers

The Commission has considered the actual figures of past 5 years and the estimates for FY 2011-12 (submitted by the petitioner), including actual data of first six months and average number of consumers during 10 months of FY 2011-12 for estimating the category wise number of consumers for FY 2011-12. The modified CAGR (%) for a period of five years (FY 2010-11 over FY 2006-07) for different consumer categories and the growth rate, accordingly adopted by the Commission on the estimates of FY 2011-12 (estimated by the Commission) to assess the number of consumers for FY 2012-13. The details are given in the table below:

Table 5.3.9 : CAGR (%) considered by the Commission for estimation of Consumers for FY 2012-13
(in percentage)

S. No.	Category	Modified CAGR 5 years : Base FY 2010-11
1	Domestic	6.81%
2	Commercial	3.86%
3	Industry	0.55%
4	Bulk	4.02%
5	Public Lighting	10.23%
6	Irrigation Pumps & Agriculture	4.83%
	Total	6.28%

Table 5.3.10 : Number of Consumers approved by the Commission for FY 2012-13
(in Numbers)

S. No.	Category	FY 2011-12 Petitioner's estimates	FY 2011-12 Commission's estimates	FY 2012-13 Petitioner's estimates	FY 2012-13 Approved
1	Domestic	85828	82562	90119	88184

S. No.	Category	FY 2011-12 Petitioner's estimates	FY 2011-12 Commission's estimates	FY 2012-13 Petitioner's estimates	FY 2012-13 Approved
2	Commercial	16615	16221	17113	16848
3	Industry	462	461	466	464
4	Bulk	48	50	48	52
5	Public Lighting	556	530	611	585
6	Irrigation Pumps & Agriculture	195	192	205	201
	Total	103704	100017	108562	106333

5.4 Transmission & Distribution Loss

Petitioner's Submission

The petitioner has submitted that the significant reduction has been achieved in distribution losses during recent years. The petitioner further submits that the system improvement works executed every year under the plan schemes which have also contributed to the reduction of distribution losses. However, it may also be noted that reduction of distribution losses may not be possible beyond a certain level due to topographical conditions and technical limitation. The distribution losses in the ED A&N distribution network have been in the range of approximately 19% to 20% in the past. For the purpose of ARR of FY 2012-13, the losses have been retained at 19.47% & 19.16% for the FY 2011-12 and FY 2012-2013 respectively.

Commission's Analysis

Commission observes the submissions made by the petitioner in the petition and have also noted the submission made in this regard vide affidavit no. OOAA 150535 dated February 18'2012. The petitioner submitted as follows:

"The T&D loss in A&N islands during the financial year 2010-11 is around 19.77%. The reason for this loss may be due to lengthy T&D lines in major islands and also due to corrosion of lines owing to salinity in the coastal atmosphere. The total length of HT line in A&N island is 1012 Kms and LT line is 3077 Kms. There are 751 Distribution transformers catering to the requirement of about 1,00,000 consumers. The longest T&D system of 1100 Kms exists in middle Andaman and in South Andaman (including Port Blair) it is around 800 Kms. In North Andaman, the T&D system of 850 Kms exists."

As per the regulation 15 of JERC Tariff regulations, 2009

"15. AT& C Losses

1. *The licensee shall give information of total AT&C losses in Previous Year and Current Year and the basis on which such losses have been worked out.*

2. *The licensee shall also propose a loss reduction programme for the Ensuing Year as well as for the next three years giving details of the measures proposed to be taken for achieving the same.*

3. *Based on the information furnished and field studies carried out and the loss reduction program proposed by the licensee, the Commission shall fix separate targets for reduction of Transmission and Distribution losses and for commercial efficiency for the period specified by the Commission:*

   Provided further that in the event of unbundling of the integrated utility, the Commission may fix separate transmission and distribution loss targets and commercial efficiency targets, as the case may be, for each successor licensee taking into account its area of operation, its consumer mix, state of the network, level of metering, metering initiatives planned, etc.

4. *The licensee shall conduct regular energy audit to substantiate its estimation of T&D losses. The licensee shall also furnish six monthly energy audit reports to the Commission.*

   The energy audit report for the first six months of the year shall be provided by November end of the same year. Similarly energy audit report for the last six months of the year shall be provided by May end of the next year.

5. *In the absence of energy audit, the Commission may not accept the claim of the licensee and may proceed to fix the loss levels on the basis of any other information available and its own judgment.*

The petitioner has not provided the energy audit report and neither any basis for reduction of T&D loss level from 19.77% in FY 2010-11 to 19.16% in FY 2012-13 except the petitioner has submitted that *'it may be noted that system improvement works executed every year under the plan schemes which have also contributed to the reduction of distribution losses'*.

However for the purpose of this order the Commission considering the coastal atmosphere and topography of these islands, **considers the proposed loss level of 19.16% as reasonable and approves the same for FY 2012-13.**

5.5 Energy Balance

Petitioner's Submission

The petitioner submits that considering the T&D losses of 19.16%, the energy requirement for the sale within the islands is 267.21 Million Units.

The energy requirement of EDA&N is mainly met from own generation and power purchase from M/s Surya Chakra Corporation Limited. There is no availability of power from Central Generating Stations or from other sources/ open market/ power exchanges, etc. Own generation accounts for around 41.08% & 40.80% of the total power requirement for FY 2009-10 & FY 2010-2011 respectively and power purchase accounts for around 58.92% & 59.20% of the total power requirement for FY 2009-10 & FY 2010- 2011 respectively and is estimated that approximately 41.93% & 58.07% of the total energy requirement for FY 2011-12 shall be met by own generation and power purchase from M/s SPCL respectively. The present scenario is likely to continue and is projected that approximately 43.06% & 56.94% of the total energy requirement for FY 2012-13 shall be met by own generation and power purchase respectively.

Commission's Analysis

Based on the approved energy sales of 209.29 million units and T&D losses of 19.16%, the energy requirement for sale within the islands is approved 258.89 million units.

The Commission has considered the net energy availability of 148.09 million units from M/s SPCL and has considered the net energy availability of 110.58 million units from own generation for FY 2012-13 as per the projections of the Commission. The detailed analysis of Power Purchase from M/s SPCL and own generation has been discussed in para 5.6. As stated by the petitioner, the energy requirement is mainly met from own generation and power purchase from M/s SPCL and it can also be observed that the energy requirement of 29 islands vary during the year and is mainly met from the generating sets installed at the islands. Based on the data available, the Commission has projected the net energy availability of 258.67 million units out of 258.89 million units approved for FY 2012-13. So hereby the net gap of 0.23 million units is left, which is likely to be met from units generated from solar power plant set up by the petitioner and proposed to be operational after rectification of defects in the equipments. However the petitioner has not provided the units generated or likely to be generated from the solar power plant for FY 2010-11 and FY 2011-12 (April-Jan).

The table below captures the values as submitted by the petitioner and that approved for FY 2012-13.

Table 5.5.1 : Energy Balance

Sr. No.	Particulars	Actuals (FY 2010-11)	Petitioner's estimates (FY 2011-12)	Commission's estimates (FY 2011-12)	Petitioner Submission (FY 2012-13)	Approved (FY 2012-13)
1	2	3	4	5	6	7
A)	**ENERGY REQUIREMENT** (in Mus)					
1	Energy sales within the State/UT (in Mus)	187.01	200.93	193.39	216.02	209.29
2	Energy sales to Agriculture consumers (included in total sales) (in Mus)	-	-		-	-
3	**Total sales within the State/UT**	**187.01**	**200.93**	**193.39**	**216.02**	**209.29**
4	**Transmission & Distribution losses**					
i)	%	19.77%	19.47%	19.47%	19.16%	19.16%
ii)	MU	46.08	48.58	46.76	51.20	49.60
5	**Energy required for Sale to Retail Consumers**	**233.09**	**249.51**	**240.14**	**267.22**	**258.89**
6	**Total Energy Requirement for State/UT (5)**	**233.09**	**249.51**	**240.14**	**267.22**	**258.89**
B)	**ENERGY AVAILABILITY / PURCHASED**					
1	**Net Generation after auxillary consumption (in MUs)**	**233.09**	**249.50**	**239.60**	**267.21**	**258.67**
a	IPP	138.00	144.90	136.96	152.14	148.09
b	Own Generation	95.09	104.60	102.64	115.07	110.58
5	**Energy Surplus/(Gap)**	**(0.00)**	**0.01**	**0.54**	**0.01**	**0.23**

Source: Table 3.3 of the Petition submitted by ED A&N

5.6 Power Purchase Quantum and Cost

Petitioner's Submission

Source of Power

The petitioner submits that ED A&N has 43 own generating stations and meets around 50% its total energy requirement from own generation. Balance requirement of power is met from purchase from SPCL. The electricity department has 42 Power houses at different locations in 29 electrified islands having 135 no. of installed Diesel Generating sets with capacity ranging from 12 KW to 2500 KW and one Hydro Power Station having 5.25 MW capacity at Kalpong North Andaman. The aggregate installed capacity is 81.21 MW as on 31.03.2011 (including IPP of 20 MW) and firm capacity of 49.21 MW. The details of 135 number of Diesel Generating sets is given below:

Table 5.6.1 : Details of D.G. sets of ED A&N

S.No	Name of Station	DG Size (KW)	No.	MW	Make
1.	Chatham	2500	5	12.5	Bergen
2.	Phoneix Bay	1000	2	2	Cummins
		1200	5	6	Cummins
3.	Raj Niwas	256	2	0.512	Cummins
4.	Secretarait	256	1	0.256	Cummins
5.	Neil Island	128	3	0.384	Greaves
		100	2	0.2	Cummins
		50	1	0.05	Cummins
6.	Havelock	256	5	1.28	Greaves
		50	1	0.05	Greaves
7.	RutLand	12	1	0.012	Cummins
8.	Baratang	256	1	0.256	Cummins
		256	1	0.256	Cummins
9.	Rangat	800	4	3.2	Cummins
		1000	5	5	Cummins
		248	7	1.736	Kirloskar
		100	1	0.1	Cummins
10.	Long Island	128	4	0.512	Greaves
		65	2	0.13	Greaves
		50	5	0.25	Ruston
11.	Strait Island	15	1	0.015	Cummins
12.	Hanspuri	12	1	0.012	Cummins
		15	1	0.015	Cummins
13.	Jagannath Dera	24	1	0.024	Cummins
		18.75	1	0.01875	Cummins
14.	Paschim Sagar	65	2	0.13	Cummins
		50	1	0.05	Cummins
15.	Smith Island	21	1	0.021	Ruston
		12	2	0.024	Ruston
16.	Sita Nagar	256	3	0.768	Cummins
		800	2	1.6	Cummins
17.	Hutbay	250	1	0.25	Cummins
		800	3	2.4	Cummins
		1000	4	4	Cummins

S.No	Name of Station	DG Size (KW)	No.	MW	Make
18.	Dugong Creek	16	2	0.032	Cummins
		15	1	0.015	Greaves
19.	Car Nicobar	256	7	1.792	Geaves Cotton
		128	1	0.128	Cummins
		1000	4	4	Cummins
20.	Kamorta	256	4	1.024	Cummins
21.	Pillpillow	24	1	0.024	Kirloskar
		32	1	0.032	Kirloskar
22.	Kakana	24	1	0.024	Kirloskar
		32	1	0.032	Kirloskar
23.	Champion	65	3	0.195	Greaves
		50	2	0.1	Ruston
24.	Katchal	250	3	0.75	Cummins
		50	3	0.15	Kirloskar
		12	2	0.024	Cummins
25.	Teressa	50	4	0.2	Kirloskar
		256	2	0.512	Cummins
		32	1	0.032	Cummins
		12	1	0.012	Kirloskar
26.	Chowra	50	2	0.1	Kirloskar
		32	2	0.064	Kirloskar
27.	Campbell Bay	800	3	2.4	Cummins
		256	1	0.256	Cummins
		50	1	0.05	Ruston
	Total	**15797.75**	**135**	**55.95**	

Out of total installed capacity of 55.96 MW of Diesel Generation, only 24.36 MW is firm capacity. Rests of the diesel generating sets are either standby or redundant due to wear & tear.

The ED A&N also generates electricity from one no. hydro power plant having capacity of 5.25 MW installed at Kalpong North Andaman with an annual generation of approximately 10 million units from this station during 10 months of FY 2011-12.

The ED A&N stated that no separate account for manpower engaged for operation & maintenance activities of plant has been maintained being an integrated utility, for carrying out generation function of the utility. Similarly the manpower engaged in the function of Sub-transmission and distribution network within these islands.

The Petitioner had entered into the Power Purchase Agreement with M/s Suryachakra Power Corporation Limited, Hyderabad for purchase of Power from Diesel generating units set by SPCL in the Bamboo flat, Port Blair having capacity of 20 MW. The PPA was signed on November 20th 1997 & Addendum – I to the PPA was incorporated on March 30th 1999. The Agreement is for the duration of 15 years from the date of commissioning of the plant i.e. April 22nd 2003. The entire electricity generated by M/s SPCL is being purchased by Electricity Department at the rate determined in accordance with the PPA.

The present power availability/allocation of EDA&N is as mentioned below:

Table 5.6.2 : Allocation of Power from different Sources

Generating Station	Share from Firm Allocation (MW)	Share from own generation (MW)	Total Allocation (MW)
Purchase			
SPCL	20		20
Own Generation			
Diesel		55.86	55.86
Hydro		5.25	5.25
Solar		0.10	0.10
Total	20	61.21	81.21

Source: Table 3.6 of the Petition submitted by ED A&N

Estimation of Power Purchase and Cost

The petitioner has submitted that utilization /purchase of the entire power available from all the possible sources during FY 2012-13 to meet the demand to the extent possible has been considered. The petitioner has further submitted that there is no single grid connection is possible as possible in mainland. Every island has its own generation, transmission and distribution system to meet their energy requirement. Therefore merit order principal is not applicable to the A & N islands. Since Islands are located in the deep sea of Bay of Bengal, therefore no grid connectivity is possible from the mainland.

The petitioner has projected the energy quantum of 267.21 million units from its own generating stations based on the units generated for FY 2009-10 and FY 2010-11. Based on the past trends, the petitioner has considered an increase of 10% over units generated in FY 2010-11 to estimate the generation for FY 2011-12. Similarly an increase of 10% has been considered over units estimated in FY 2011-12 for projecting the energy availability in FY 2012-13.

The petitioner has submitted the details of station wise gross generation, auxillary fuel consumption and plant load factor for FY 2010-11 and FY 2011-12 (April to Jan.) vide its submission dated May 14'2012 are attached to this order as Appendices A.

The petitioner has also the no. of hours for which the station is under operation or generating electricity for FY 2010-11 and FY 2011-12 (April to Jan.) vide its submission dated May 14'2012 are attached to this order as Appendices B.

Further petitioner has considered the past trends for projecting the energy availability from diesel generating unit of M/s SPCL.

Cost of Fuel

The petitioner has submitted that out of total generation of 99.24 MUs in FY 2010-11 from own diesel generating stations, 89.36 MUs were generated from Diesel power houses and only 9.88 MUs were generated from Hydro Power Station. Hence cost of fuel (HSD and lubricants) is a major component of the cost of generation.

The petitioner has estimated an increase of 10% in the cost of fuel for FY 2011-12 over FY 2010-11. Similarly for projecting the cost of fuel for FY 2012-13, an increase of 10% over FY 2011-12 has been considered. Further the petitioner have requested the Hon'ble Commission to allow any changes in the power purchase/generation expenses during the year to be recovered from the consumers through a Fuel and Power Purchase Cost Adjustment mechanism that may be notified by the Hon'ble Commission. This would ensure that such increased expenses do not affect the financial viability of the department and at the same time do not accumulate for true up at the end of the year as this can have a significant impact on the tariffs in the subsequent years. Such mechanisms are prevailing in states of Maharashtra and Gujarat and have also been envisaged in the Electricity Act 2003 (Section 62 (4)).

Table 5.6.3 : Power Purchase Quantum and Cost for FY 2012-13

Generating Station	Energy Received by the Licensee (MUs)	Cost of Fuel (in Rs. Crores)	Total Cost (in Rs. Crores)
Purchase			
SPCL	152.14	Included in total cost	154.68
Own Generation			
Diesel	103.57	93.21	
Hydro	11.50	-	165.00
Solar		-	

Generating Station	Energy Received by the Licensee (MUs)	Cost of Fuel (in Rs. Crores)	Total Cost (in Rs. Crores)
Total	**267.21**	**93.21**	**319.68**

Source: Table 3.4. 3.7, 3.8.2, 3.9 and format-4 of the Petition submitted by ED A&N

Further petitioner vide affidavit no. OOAA 150535 dated February 18'2012 submitted the justification for less generation by departmental power houses. The justification is as follows:

'The total generation during FY 2010-11 is 233.09 million units out of which IPP having capacity of 20 MW generate 138 million units and the remaining departmental generating capacity of 61.21 MW generates only 95.09 million units. Even though the installed capacity of departmental power house is 61.21 MW, the net effective capacity is around 35 MW only due to aging and deration of DG sets. The 35 MW (net effective capacity) DG sets are installed in 42 power houses located in 29 different islands. Due to remoteness and communication difficulties experienced in the out station power houses, the department is forced to keep additional generation capacity as stand by arrangement in order to meet any eventualities of break down etc. As such the full capacity of 35 MW could not utilize for generation resulting in low plant load factor (PLF).'

Commission's Analysis

<u>Power Purchase Quantum and Cost</u>

Diesel Generating Station – M/s SPCL

While estimating the energy availability and cost for FY 2012-13, prudence check is being carried out of the invoices issued by M/s SPCL to the ED A&N in order to verify HSD consumption and payment made thereof by the Electricity Department, The abstract of IPP invoices for FY 2011-12 including unit generation, auxillary consumption HSD and Lubricating oil consumption is verified is attached as Appendices C to this Order. The following has been considered for estimating the energy availability and cost for FY 2012-13 from M/s SPCL:

- Actual gross generation from Diesel generating unit of M/s SPCL verified from the power purchase bills submitted by the petitioner for full year of FY 2011-12 has been considered in order to estimate the energy availability for FY 2012-13. The average growth rate of 8.13% from FY 2011-12 over FY 2010-11 has been considered for arriving at the units generated for FY 2012-13.

- Auxillary Consumption of 2.83% verified from the power purchase bills submitted by the petitioner for full year of FY 2011-12 has been considered for FY 2012-13.

- HSD and Lubricating oil consumption has been calculated considering the following as per the power purchase bills of FY 2011-12:
    - For consumption & cost of HSD
        - Gross heat rate of 2010 Kcal/Kwh;
        - Average Calorific value and Density of HSD of FY 2011-12;
        - Actual Cost of HSD as on March 2012.
    - For consumption & cost of Lubricating Oil
        - Normative usage has been considered (1.1 gm per unit);
        - Average Density of Lub. Oil of FY 2011-12;
        - Actual Cost of Lub. Oil as on March 2012.
- Actual fixed cost as per the power purchase bills of FY 2011-12 has been considered after considering for FY 12-13.
- Rebate has been considered as calculated for previous year for maintaining the high PLF, considering that the same would also be applicable for FY 2012-13.

Table 5.6.4 : Details of HSD and Lub. Oil for FY 2011-12

S. No.	Particulars	Average of FY 2011-12
1	Wt. Avg. Calorific Value of 1 Kg. HSD (K.Cal./KWh)	10246.4300
2	Density of HSD (ambient) (Kg/m^3)	0.8245
3	Density of Lub. Oil (Kg/m^3)	0.8894
4	Cost of HSD (Rs. per Kilo litre) for March 2012	38345.17
5	Cost of Lub. Oil (Rs. per litre) for March 2012	169.22

Own Generation

Commission has analyzed the past trend of auxillary consumption and plant load factor (%) and justification submitted by the petitioner in this regard. Commission has also noted the growth rate considered by the petitioner in the petition for own generating power plants for estimating the energy availability for FY 2012-13.

While estimating the energy availability and cost for FY 2012-13, the following has been considered:

- Actual gross generation for 10 months from Diesel generating unit and hydro power plant as submitted by the petitioner for FY 2011-12. For estimating the generation for remaining two months, the generation has been pro-rated to arrive at the generation for FY 2011-12.The details are attached as Appendices D to this Order. The average growth rate of 8.13% from FY 2011-12 over FY 2010-11 in the loading factor of generating units of ED A&N has been considered.

- Auxillary Consumption of previous year (FY 2011-12) for each power house has been considered for FY 2012-13.

- Since the data provided in the power purchase bills of M/s SPCL is the only source of information for analyzing the past trend of quality of fuel received by the generating stations at A&N islands. Therefore Commission has considered the quality of HSD and Lubricating oil as per the power purchase bills of FY 2011-12 of M/s SPCL for estimating the consumption on the basis of units generated by each of the generating unit:

    - For consumption & cost of HSD

        - Gross heat rate of 2010 Kcal/Kwh;

        - Average Calorific value and Density of HSD of FY 2011-12;

        - Actual cost of HSD for March 2012;

    - For consumption & cost of Lubricating Oil

        - Normative usage has been considered (1.1 gram per unit);

        - Average Density of Lub. Oil of FY 2011-12;

        - Actual cost of Lub. Oil for March 2012;

- Further if the consumption would be estimated on the basis of Specific Fuel Consumption (estimated by the petitioner for FY 2010-11 and 10 months of FY 2011-12), the consumption will be higher for FY 2012-13. As can be noted from the justification provided by the petitioner regarding less generation by the departmental power houses. It is observed that the data provided by the petitioner does not account the actual consumption of fuel in their power houses. Therefore the petitioner is directed to conduct the audit of each generating unit and account the actual consumption per unit for at least six months and submit the same with the next ARR and Tariff petition. The specific fuel consumption estimated by the petitioner is the difference of the fuel sanctioned for usage and balance at the site instead of actual usage for generation of power. Moreover actual wastage during transportation of fuel to 29 different islands has also not been accounted in the same. Therefore Commission considers the fuel consumption estimates on the basis of quality of fuel as reasonable and appropriate till the energy audit report is submitted by the petitioner.

The estimated generation, fuel consumption, auxillary consumption and cost thereof for FY 2012-13 on the basis of above is attached as Appendices E to this Order.

Renewable Purchase Obligations

As per JERC (Procurement of Renewable Energy) Regulations 2010 clause 1 sub clause (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 petitioner has to purchase 3% of total consumption of all the consumers in its area as power purchase from renewable sources for FY 2012-13 including 0.40% for Solar and 2.60% for Non-Solar. The utility could not meet its RPO target of energy from Solar due to non-operation of Solar Power Plant; Commission assumes on the basis of initiatives taken by the petitioner to reinstate the operation of Power Plant, the petitioner would be able to meet its RPO targets from Solar Power for FY 2012-13. However, the Commission has assumed that the utility is meeting its overall RPO target of 3% of total consumption of all the consumers in its area during the year through the units generated by hydro-electric power plant of capacity 5.25 MW. The petitioner has not provided the cost of generating energy from hydro-electric plant. Commission has therefore considered the same in the analysis and not considered any cost attributed to the hydro-electric power plant. Further Commission directs the petitioner to submit the details of hydro-electric plant and its running cost in next ARR and tariff petition.

Summary of Total Approved Power Purchase Cost for FY 2012-13

While estimating the total power purchase cost, station wise energy availability and power purchase cost & fuel cost as discussed in earlier para has been considered. **Commission considers the total Power purchase cost including the fuel cost of own generating stations of Rs. 254.24 Crores for procuring 266.57 million units of energy as reasonable and approves the same for FY 2012-13** as against the total Power purchase cost including fuel cost of Rs. 247.9 Crores for procuring 267.21 million units of energy as projected by the petitioner in tariff petition submitted for FY 2012-13 and Rs. 319.68 Crores for procuring 267.21 million units of energy as mentioned by the petitioner in the format – 4 of the petition for FY 2012-13. The summary of total power purchase quantum and cost including own generation is mentioned below:

Table 5.6.5 : Summary of Power Purchase Cost including own generation for FY 2012-13

S. No.	Source	Gross Generation (MUs)	Auxillary Consumption	Net Energy available/sent out (MU)	HSD Cost (Rs. Crores	Lube Oil Cost (Rs. Crores)	Total Amount (Rs. Crores)	Rs./KWh
1	2	3	4	5	6	7	8	9
1	IPP - SPCL	152.40	4.31	148.09	139.04	3.19	159.20	10.45
2	Chatham	25.40	1.29	24.11	23.17	0.53	23.70	9.33
3	Phoneix Bay	20.04	0.46	19.58	18.28	0.42	18.70	9.33
4	Raj Niwas	0.08	0.00	0.08	0.08	0.00	0.08	9.33
5	Secretarait	0.01	0.00	0.01	0.01	0.00	0.01	9.33
6	Neil Island	0.93	0.03	0.91	0.85	0.02	0.87	9.33
7	Havelock	4.14	0.01	4.13	3.78	0.09	3.87	9.33
8	RutLand	0.03	0.00	0.03	0.03	0.00	0.03	9.33
9	Baratang	0.21	0.00	0.20	0.19	0.00	0.19	9.33
10	Rangat	22.51	0.51	22.00	20.54	0.47	21.01	9.33
11	Long Island	0.37	0.03	0.34	0.34	0.01	0.34	9.33
12	Strait Island	0.03	0.00	0.03	0.03	0.00	0.03	9.33
13	Hanspuri	0.02	0.00	0.01	0.02	0.00	0.02	9.33
14	Jagannath Dera	0.04	0.00	0.04	0.04	0.00	0.04	9.33
15	Paschim Sagar	0.08	0.00	0.08	0.07	0.00	0.08	9.33
16	Smith Island	0.05	0.00	0.04	0.04	0.00	0.04	9.33
17	Sita Nagar	0.56	0.01	0.55	0.51	0.01	0.52	9.33
18	KHEP**	12.33	0.19	12.14			0.00	0.00
19	Hutbay	9.58	0.40	9.18	8.74	0.20	8.94	9.33

S. No.	Source	Gross Generation (MUs)	Auxillary Consumption	Net Energy available/sent out (MU)	HSD Cost (Rs. Crores	Lube Oil Cost (Rs. Crores)	Total Amount (Rs. Crores)	Rs./KWh
1	2	3	4	5	6	7	8	9
20	Dugong Creek	0.03	0.00	0.03	0.03	0.00	0.03	9.33
21	Car Nicobar	8.70	0.47	8.24	7.94	0.18	8.12	9.33
22	Kamorta	2.00	0.01	1.99	1.83	0.04	1.87	9.33
23	Pillpillow	0.06	0.00	0.06	0.05	0.00	0.05	9.33
24	Kakana	0.06	0.00	0.06	0.05	0.00	0.05	9.33
25	Champion	0.27	0.01	0.27	0.25	0.01	0.26	9.33
26	Katchal	1.13	0.02	1.10	1.03	0.02	1.05	9.33
27	Teressa	0.72	0.02	0.71	0.66	0.02	0.68	9.33
28	Chowra	0.24	0.01	0.23	0.22	0.00	0.22	9.33
29	Campbell Bay	4.54	0.10	4.43	4.14	0.09	4.23	9.33
	Total	**266.57**	**7.90**	**258.67**	**231.94**	**5.32**	**254.24**	**9.05**

FPPCA formula is under finalization and will be separately notified. It is seen that in the case of A&N, majority of the generation is diesel based, making per unit cost of generation very high compared to other utilities. In view of this, the approved tariff is not covering the full cost of supply. Historically, there has been substantial gap between the actual cost of supply and revenue realized. This gap so far has been borne by the administration of A&N.

Keeping the above fact in view, the Commission is of the view that any variation is power purchase cost (including variation in cost of their own generation) should, for the time being, be borne by the utility. Further the utility is directed to propose a scheme for sharing of the increase in power purchase cost with the consumers for Commission's consideration and approval.

5.7 Operation and Maintenance Expenses

Petitioner's Submission

The petitioner has submitted that the Operation and Maintenance (O&M) expenses comprise of three components namely:

a) Employee cost
b) Repairs & Maintenance expenses and
c) Administrative and General Expenses

The petitioner has submitted the operation and maintenance cost of previous years for consideration by the Hon'ble Commission as mentioned below:

Table 5.7.1 : O&M expenses of previous years

Year	O&M Expenses (Rs. Crores)
2004-05	49.40
2005-06	53.60
2006-07	57.10
2007-08	60.70
2008-09	63.90
2009-10	68.70
2010-11	71.60
2011-12 (upto 08.2011)	32.39

Source: Table 3.12 of the Petition submitted by ED A&N

5.7.1 Employee Expenses

Petitioner's submission

The petitioner 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. Further the employee cost for FY 2012-13 is projected based on the actual salary expenses of FY 2010-11 & FY 2011-12 (upto 30.08.2011). Therefore petitioner requests the Hon'ble Commission to approve the employee expenses of Rs. 49.71 Crores for FY 2012-13.

Commission's Analysis

As per the regulation 27 of JERC tariff regulations 2009

"

27. Operation and Maintenance Expenses

1) *'Operation & Maintenance expenses' or 'O&M expenses' shall mean repair and maintenance (R&M) expenses, employee expenses and administrative & general (A&G) expenses including insurance.*

   While determining the O&M expenses for generation functions within the State, the Commission shall be guided, as far as feasible, by the principles and methodologies of CERC on the manner, as amended from time to time.

2) *While determining the O&M expenses for transmission functions within the State, the Commission shall be guided, as far as feasible by the principles and methodologies specified by CERC on the matter, as amended from time to time:*

   Provided further that the Commission may, if it considers it just, practical and proper considering the size of the total transmission system of, and the quantum of electricity handled by, an integrated utility, treat its transmission system as an integral part of its distribution system itself.

3) *O&M expenses for distribution functions shall be determined by the Commission as follows:*

   - *O&M expenses as approved by the Commission for the first time for a year shall be considered as base O&M expenses for determination of O&M expenses for subsequent years;*

   - *Base O&M expenses as above shall be adjusted according to variation in the rate of WPI per annum to determine the O&M expenses for subsequent year, where WPI is the Wholesale Price Index on April 1 of the relevant year;*

   - *In case of unbundling of the Electricity Department and formation of separate distribution companies, the Commission will make suitable assessment of base O&M expenses of individual distribution companies separately and allow O&M expenses for subsequent years for individual companies on the basis of such estimation and above principle.*

4) *O&M expenses of assets taken on lease/hire-purchase and those created out of the consumers' contribution shall be considered in case the generating company or the*

licensee has the responsibility for its operation and maintenance and bear O&M expenses.

5) *O&M expenses for gross fixed assets added during the year shall be considered from the date of commissioning on pro-rata basis.*

6) *O&M expenses for integrated utility shall be determined by the Commission on the norms and principles indicated above. "*

The Commission has considered the actual employee expenses of 72.15 crores for FY 2010-11 as a base for estimating the employee expenses for FY 2011-12 after applying escalation of 8.76% being the actual WPI increase for FY 2011-12 over FY 2010-11. The impact of sixth pay Commission has already been considered by the petitioner in FY 2010-11. Commission has considered the employee expenses for FY 2012-13 after escalating the estimated employee expenses of 78.47 Crores so arrived for FY 2011-12 by 8.76%. The latest WPI index till March 2012 has been used as available on the website of Economic Advisor, Ministry of Commerce and Industry for estimation of the increase in the average of WPI index from FY 2010-11 to FY 2011-12. The calculation for WPI index is given below:

Table 5.7.1.1 : Calculation for WPI index

Year	Average WPI index	%increase
FY 09-10	130.82	
FY 10-11	143.33	9.56%
FY 11-12	155.88	8.76%
Actual WPI increase for FY 2011-12 over FY 2010-11		8.76%

The petitioner has submitted that the employee expenses of Rs. 36.04 Crores will be capitalized as per the planned expenditure to be undertaken under FY 2012-13. So hereby considering the impact of capitalization on employee expenses of Rs. 85.34 Crores estimated by the Commission for FY 2012-13. The number of employees and employee expenses as submitted by the petitioner and considered is given below:

Table 5.7.1.2 : Number of employees submitted by the petitioner and approved for FY 2012-13

Sr. No.	Particulars	Actuals (FY 2010-11)	Petitioner's estimates (FY 2011-12)	Commission's estimates (FY 2011-12)	Petitioner Submission (FY 2012-13)	Approved (FY 2012-13)
1	2	3	4	5	6	7
1	Number of employees as on 1st April *	3,154	3,154	3,154	3,154	3,154
2	Number of employees on deputation	-	-	-	-	-
3	Posts filled during the year/to be recruited	-	-	-	-	-
4	Total number of employees (1+2+3) including deputation	**3,154**	**3,154**	**3,154**	**3,154**	**3,154**
5	Number of employees retired/retiring during the year	-	-	-	-	-
6	Number of employees at the end of the year (4-5)	**3,154**	**3,154**	**3,154**	**3,154**	**3,154**

Table 5.7.1.3 : Employee expenses submitted by the petitioner and approved for FY 2012-13

(in Rs. Crores)

Sr. No.	Particulars	Actuals (FY 2010-11)	Petitioner's estimates (FY 2011-12)	Commission's estimates (FY 2011-12)	Petitioner Submission (FY 2012-13)	Approved (FY 2012-13)
1	2	3	4	5	6	7
A	**Salaries& Allowances**					
1	Pay in Band	42.76	44.14	46.50	46.78	50.58
2	Dearness allowance	10.72	15.47	11.66	17.02	12.68
3	House rent allowance	3.54	4.32	3.85	4.75	4.19
4	Medical Reimburshment	1.01	1.45	1.10	1.59	1.19
5	General Incentive/Bonus	0.70	-	0.76	-	0.83
6	Special Allowance /other Allowance etc	12.46	13.32	13.55	14.65	14.74
7	Others	0.73	0.62	0.79	0.68	0.86
	Sub-Total – A	**71.92**	**79.32**	**78.22**	**85.47**	**85.07**
B	**Terminal Benefits**					
1	Leave encashment	0.23	0.25	0.25	0.28	0.27
	Sub-Total - B	**0.23**	**0.25**	**0.25**	**0.28**	**0.27**
C	**Other Salary payments**					

Sr. No.	Particulars	Actuals (FY 2010-11)	Petitioner's estimates (FY 2011-12)	Commission's estimates (FY 2011-12)	Petitioner Submission (FY 2012-13)	Approved (FY 2012-13)
1	2	3	4	5	6	7
1	Arrears on account of Vth Pay Commission	-			-	-
2	Contractual basis	-		-	-	-
	Sub-Total- C	**-**	**-**	**-**	**-**	**-**
	Total (A+B+C)	**72.15**	**79.57**	**78.47**	**85.75**	**85.34**
1	Less: Amount capitalized	30.64	34.00	34.00	36.04	36.04
2	Net amount	41.51	45.57	44.47	49.71	49.30
3	Add : prior period expenses	-	-	-	-	-
4	**Total Employee Expenses including the impact of sixth pay Commission**	**41.51**	**45.57**	**44.47**	**49.71**	**49.30**

Commission considers the employee cost of Rs. 49.30 Crores as reasonable and approves the same for FY 2012-13 after considering the capitalization of Rs. 36.04 Crores.

5.7.2 Administration and General Expenses

Petitioner's submission

The petitioner has submitted that the A&G expenses comprise of the following broad sub-heads of expenditure, viz.

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

The petitioner has submitted the A&G expenses for FY 2010-11 are Rs. 2.017 Crores and for the FY 2011-12 is estimated at Rs. 2.201 Crores which are escalated by 8% to arrive at expenses for FY 2012-13. The escalation is to absorb the normal inflationary increases in the costs. In recent past, EDA&N has been availing legal services & advisory assistance from consultants for various regulatory and other issues. The petitioner has therefore requested the Hon'ble Commission to kindly approve the A&G Expenditure of Rs. 2.386 Crores for the FY 2012-13. The Administration & General expense of previous years is presented below:

Table 5.7.2.1 : A&G expenses of previous years

Year	A&G Expenses (Rs. Crores)
2004-05	1.40
2005-06	1.51
2006-07	1.60
2007-08	1.69
2008-09	1.71
2009-10	1.88
2010-11	2.02
2011-12 (upto 08.2011)	1.05

Source: Table 3.13 of the Petition submitted by ED A&N

Commission's Analysis

Commission has considered the actuals administration & general expenses of 2.02 crores for FY 2010-11 as a base for estimating the administration & general expenses for FY 2011-12 after applying escalation equivalent to the increase in the WPI for FY 2011-12 over FY 2010-11 which works out to8.76%. Commission has estimated the administration & general expenses for FY 2012-13 after escalating the estimated administration & general expenses of 2.20 Crores for FY 2011-12 by 8.76%. The latest WPI index till March 2012 has been used as available on the website of Economic Advisor, Ministry of Commerce and Industry for estimation of the increase in the average of WPI index from FY 2010-11 to FY 2011-12.

Table 5.7.2.2 : A&G expenses as submitted by the petitioner and approved for FY 2012-13

(in Rs. Crores)

Sr. No.	Particulars	Actuals (FY 2010-11)	Petitioner's estimates (FY 2011-12)	Commission's estimates (FY 2011-12)	Petitioner Submission (FY 2012-13)	Approved (FY 2012-13)
1	2	3	4	5	6	7
1	Rent, rates & taxes	-	-	-	-	-
2	Domestic Travel Allowances/Conveyance & travel	0.10	0.12	0.11	0.13	0.12
3	Office Expenses	0.09	0.10	0.10	0.11	0.11
4	Insurance	-	-	-	-	-
5	Regulatory Expenses (License + Petition Fees)	-	-	-	-	-
6	Consultancy Fees and other professional fees	-	-	-	-	-
7	Electricity & Water Charges	-	-	-	-	-
8	Advertisement & Publicity	-	-	-	-	-
9	Legal, Professional & Special	-	-	-	-	-

Sr. No.	Particulars	Actuals (FY 2010-11)	Petitioner's estimates (FY 2011-12)	Commission's estimates (FY 2011-12)	Petitioner Submission (FY 2012-13)	Approved (FY 2012-13)
1	2	3	4	5	6	7
	Service Charges					
10	Expenses of CGRF (Office)	-	-	-	-	-
11	Others	1.18	1.27	1.28	1.35	1.40
12	Other material related expenses	0.65	0.72	0.71	0.80	0.77
13	**Total**	**2.02**	**2.21**	**2.20**	**2.39**	**2.39**
14	Add/Deduct share of others (to be specified)	-	-	-	-	-
15	**Total expenses**	**2.02**	**2.21**	**2.20**	**2.39**	**2.39**
16	Less: Capitalized	-			-	-
17	**Net expenses**	**2.02**	**2.21**	**2.20**	**2.39**	**2.39**
18	Add: Prior period	-	-		-	-
19	**Total A&G Expenses**	**2.02**	**2.21**	**2.20**	**2.39**	**2.39**

Commission considers the Administration & General expenses of Rs. 2.39 Crores as reasonable and approves the same for FY 2012-13.

5.7.3 Repair and Maintenance Expenses

Petitioner's submission

The petitioner has submitted that they have 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 R&M expenses for FY 2012-13 are escalated by 3.50 % over estimated expenses for FY 2011-12 to capture the inflationary increases in the costs. The petitioner has therefore requested the Hon'ble Commission to approve R&M expenses of Rs. 31.04 Crores for FY 2012-13

Commission's Analysis

Commission is of the view that adequate R&M expenses are necessary for maintenance of infrastructure and for ensuring proper Standard of Performance of the integrated utility. Commission has considered the actual repair & maintenance expenses of 29.05 crores for FY 2010-11 as a base for estimating the repair & maintenance expenses for FY 2011-12 after applying escalation equivalent to the increase in the WPI for FY 2011-12 over FY 2010-11 which works out to 8.76%. Commission has estimated the repair & maintenance expenses for FY 2012-13 after escalating the estimated repair & maintenance expenses of 31.59 Crores for FY 2011-12 by 8.76%. The latest WPI index till March 2012 has been used as available on the website of Economic Advisor, Ministry of Commerce and Industry for estimation of the increase in the average of WPI index from FY 2010-11 to FY 2011-12.

Table 5.7.3.1 : R&M expenses as submitted by the petitioner and approved for FY 2012-13

(in Rs. Crores)

Sr. No.	Particulars	Actuals (FY 2010-11)	Petitioner's estimates (FY 2011-12)	Commission's estimates (FY 2011-12)	Petitioner Submission (FY 2012-13)	Approved (FY 2012-13)
1	2	3	4	5	6	7
1	Plant & machinery *	27.95	29.87	30.40	31.04	33.06
2	Buildings (Electricity Residential & Non-Residential)	-	-	-	-	-
3	Hydraulic works & civil works	-	-	-	-	-
4	Line cable & network	-	-	-	-	-
	-EHV Lines	-	-	-	-	-
	- 33kV lines	-	-	-	-	-
	- 11kV lines	-	-	-	-	-
	- LT lines	-	-	-	-	-
	- Meters and metering equipment	-	-	-	-	-
	- Others	0.99	0.99	1.08	1.05	1.17
	Total	0.99	0.99	1.08	1.05	1.17
5	Vehicles	-	-	-	-	-
6	Furniture & fixtures	-	-	-	-	-
7	Office equipments	-	-	-	-	-
8	Minor R&M Works/Operating expenses	0.11	0.11	0.12	-	0.13
9	**Total**	29.05	30.97	31.59	32.09	34.36
10	Add/Deduct share of others (To be specified)	-	-	-	-	-
11	**Total expenses**	29.05	30.97	31.59	32.09	34.36
12	Less : Capitalized	-	-	-	-	-
						-
13	**Net expenses**	29.05	30.97	31.59	32.09	34.36
14	Add: prior period	-	-	-	-	
15	**Total R&M expenses**	**29.05**	**30.97**	**31.59**	**32.09**	**34.36**

Commission considers the repair & maintenance expenses of Rs. 34.36 Crores as reasonable and approves the same for FY 2012-13.

5.7.4 Summary of O & M Expenses

The overall summary of Operation & Maintenance expenditure estimated by the petitioner vis-à-vis approved by the Commission for FY 2012-13 is given below:

Table 5.7.4.1 : Summary of O & M expenses

(in Rs. Crores)

Sr. No.	Particulars	Petitioner Submission (FY 2012-13)	Approved (FY 2012-13)
1	2	3	4
1	Employee Expenses	49.71	49.30
2	Administration & General Expenses	2.39	2.39
3	Repair & Maintenance Expenses	32.09	34.36
4	Total O&M Expenses	**84.19**	**86.05**

5.8 Capital Expenditure and Capitalization

Petitioner's Submission

The petitioner has submitted the infrastructure inherited by ED A&N is insufficient to cater to the present load and hence to meet the increasing demand 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 EDA&N. The capital expenditure plan envisaged will also assist in reducing system losses. The petitioner proposes to incur the capital expenditure of Rs. 60.54 Crores for FY 2012-13. Out of total capital expenditure of Rs. 61.00 Crores, Rs. 30.00 Crores is to be capitalized during the FY 2012-13. Further, out of the above estimated capital expenditure for FY 2012-13 and capital work in progress on account of ongoing schemes, the petitioner based on the progress of the works proposes to capitalize assets amounting to Rs. 30.00 Crores.

Commission's analysis

Commission observes that the capital expenditure and the capitalization submitted by the petitioner for FY 2012-13 is required to meet the increasing demand.

As per the regulation 21 of JERC for the State of Goa and UTs (Terms and conditions for determination of Tariff), Regulation 2009 specifies that the licensee shall propose in their filings, a detailed capital investment plan, showing ongoing projects separately that will spill into the ensuing year and new projects (along with their justification) that will commence in the ensuing year. The petitioner has not submitted the capital investment plan as per the regulations. The petitioner had not submitted the capital investment plan as per the regulations and did not give the present status of the capital expenditure incurred/capitalised. However for the purpose of this ARR computation, Commission provisionally considers the capitalization of Rs. 22.14 Crores proposed by the petitioner for FY 2011-12 and **provisionally approves the capitalization of Rs. 30.00 Crores proposed by the petitioner for FY 2012-13.** Further, Petitioner is directed to submit the detailed statement of the capital expenditure incurred quarterly and asset capitalization during the year for review and true up.

This expenditure is being permitted as a special case to ensure the creation of infrastructure for adherence to Standard of Performance and Supply Code Regulations.

5.9 GFA and Depreciation

Petitioner's Submission

The petitioner has submitted that the value of gross fixed assets (GFA) for 2010-11 has been taken from fixed asset register as on 31.03.2011 and the additions during the FY 2011-12 have been considered from the estimated works to be capitalized. Thereafter, planned additions during 2012-13 have been added and accordingly GFA has been computed for FY 2012-13.

Commission's analysis

The petitioner has submitted in the petition that the value of gross fixed asset for FY 2010-11 has been taken from fixed asset registers. But the petitioner could not produce the fixed asset registers during the technical validation session and it was found out that value of assets shown in the petition is grossed up from the planned expenditure mentioned under the expenditure registers. The expenditure registers used to record the planned expenditure incurred by the utility. As was observed by the Commission the fixed asset registers were last updated in 2001 before Tsunami and thereafter an expenditure register is maintained, which records the total planned expenditure during the year and other related particulars. Commission is of the view that fixed asset register records the asset wise details and various types of information can be extracted from the same including the aging schedule of the asset, present value and capital works in progress etc. As such in the absence of updated fixed asset registers, the opening value of fixed assets is on assumption basis. Further Commission has observed that the petitioner has not calculated the depreciation on the gross fixed assets at the end of the year. As a standard practice, and as per the Regulation 26 of the JERC (Terms and conditions for determination of Tariff), Regulation 2009, depreciation shall be computed on the average value of assets at the end of the year which is reasonable and appropriate method.

In the instant case, the Petitioner though stated in the petition that 'the value of gross fixed assets for FY 2010-11 has been taken from fixed asset register as on 31.03.2011' but had not used fixed asset register, instead had used expenditure register to arrive at the historical value of fixed assets. In absence of updated fixed asset registers, Commission is unable to allow the depreciation as proposed by the petitioner based on the assumed value of assets. Commission therefore directs the petitioner to update the fixed asset register to arrive at the actual historical value of assets and file the same along with the next ARR and tariff petition. In the absence of updated fixed asset registers to arrive at the historical value of assets, the Commission has considered the capitalization proposed by the petitioner for FY 2011-12 as the opening value of assets for FY 2012-13. As discussed in earlier para, Commission has provisionally considered capitalizing Rs. 22.14 Crores and Rs. 30 Crores during the FY 11-12 and FY 2012-13 respectively.

Regulation 26 of JERC (Terms and Conditions for Determination of Tariff) Regulations, 2009 specifies that depreciation for the assets shall be calculated annually at the rates specified by CERC from time to time. The effective rate of depreciation for assets linked to Plant & Machinery & Vehicles is 5.28%, Buildings is 3.34% and Furniture is 6.33% vide Appendix-III (Depreciation schedule of CERC (Terms and Conditions of Tariff) Regulations, 2009. The depreciation for the FY 2012-13 has been worked out at Rs. 2.03 Crores.

As discussed in earlier para, Rs. 22.14 Crores has been considered as capitalization for FY 2011-12. In view of above, Commission considers the depreciation of Rs. 2.03 Crores as reasonable considering Rs. 22.14 Crores as the opening value of assets at the beginning of the year as being the capitalization projected for FY 2011-12 by the petitioner is given below**:**

Table 5.9.1 : Depreciation submitted by the petitioner for FY 2012-13

(in Rs. Crores)

Sr. No.	Particulars	Opening GFA	Additions	GFA at end	Depn Rates (%)	Depreciation
1	2	3	4	5	7	8
1	Plant & Machinery	46.14	20.00	66.14	5.28%	3.49
2	Buildings	26.20	10.00	36.20	3.34%	1.21
3	Vehicles	4.83	-	4.83	5.28%	0.26
4	Furniture and Fixtures	0.73	-	0.73	6.33%	0.05

Sr. No.	Particulars	Opening GFA	Additions	GFA at end	Depn Rates (%)	Depreciation
1	2	3	4	5	7	8
5	Land	6.55	0.00	6.55	0.00%	-
6	Total	**84.45**	**30.00**	**114.45**	**4.05%**	**5.00**

Table 5.9.2 : Depreciation approved by the Commission for FY 2012-13

(in Rs. Crores)

Sr. No.	Particulars	Opening GFA	Additions	GFA at end	Average Assets	Depn Rates (%)	Depreciation
1	2	3	4	5	6	7	8
1	Plant & Machinery	22.14	20.00	42.14	32.14	5.28%	1.70
2	Buildings		10.00	10.00	10.00	3.34%	0.33
3	Vehicles		-	-	-	5.28%	-
4	Furniture and Fixtures		**-**	-	-	6.33%	-
5	Land		0.00	0.00	0.00	0.00%	-
6	Total	**22.14**	**30.00**	**52.14**	**42.14**	**4.05%**	**2.03**

The Commission therefore considers the depreciation of Rs. 2.03 Crores as reasonable and approves the same for FY 2012-13.

5.10 Interest and Finance Charges

5.10.1 Interest on Loan

Petitioner's Submission

The petitioner has submitted that the entire capital employed till date has been funded through equity infusion by the Central Government through Budgetary support without any external borrowings. ED A&N is now migrating to regulatory regime under the aegis of the Hon'ble Commission and will begin to function as a commercial utility under the Electricity Act, 2003. The petitioner has therefore taken 01.04.2011 as the base date for the above change and from 01.04.2011 onwards, ED A&N will be subjected to tariff determination under the provisions of the Tariff Regulations to be issued by the Hon'ble Commission.

Commission's analysis

Commission observes that the petitioner has not calculated the interest on normative loan as per the regulations.

As per the JERC tariff regulations 2009:

"25. Interest and Finance Charges on Loan
(1) For existing loan capital, interest and finance charges on loan capital shall be computed on the outstanding loans, duly taking into account the rate of interest and schedule of repayment as per the terms and conditions of relevant agreements.

(2) Interest and finance charges on loan capital for new investments shall be computed on the loans, duly taking into account the rate of interest and the schedule of repayment as per the terms and conditions of relevant agreements. The rate of interest shall, however, be restricted to the prevailing Prime Lending Rate of the State Bank of India.

(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 :

Provided that interest and finance charges of renegotiated loan agreements shall not be considered, if they result in higher charges:

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

(4) Interest charges on security deposits, if any, made by the consumers with a generating company/licensee, shall be equivalent to the bank rate or at the rate , if any, specified by the Commission whichever is higher.

(5) In case any moratorium period is availed of, depreciation provided for in the tariff during the years of moratorium shall be treated as repayment during those years and interest on loan capital shall be calculated accordingly.

(6) The Commission shall allow obligatory taxes on interest, commitment charges, finance charges and any exchange rate difference arising from foreign currency borrowings, as finance cost.

(7) Any saving in costs on account of subsequent restructuring of debt shall be passed on to the consumers."

The petitioner has claimed interest on the sum of 'Capital Work in Progress' and 'Gross fixed assets' at the end of the year and has not considered the debt equity ratio as per the regulations. The Petitioner has not borrowed any loans in the past upto 31st September 2011 and has not proposed to borrow any loan to meet the capital expenditure for FY 2012-13. Therefore in the absence of actual value of gross fixed assets and considering the petitioner's submission that 'the ED A&N being a Government Department, the entire capital employed till date has been funded through equity infusion by the Central Government through Budgetary support without any external borrowings.' The interest charges projected by the ED A&N for FY 2012-13 are on computed on the sum of 'Capital Work in Progress' & 'Assumed value of Gross Fixed Assets' without any external borrowings.

In the instant case, the licensee has not provided the actual value of fixed assets, Hence the servicing of assets in the form of interest on loan and return on assets is indeterminate at this stage on the opening GFA, hence not been considered on the assumed value of assets. The same shall be considered at true-up stage if full details are made available.

As discussed in para 5.8, 5.9, the Commission has now considered an opening normative loan of Rs. 15.50 Crores for FY 2012-13 (being 70% of Rs. 22.14 Crores provisionally considered to be capitalized during FY 2011-12) and added normative loan for FY 2012-13 of Rs. 21 Crores being 70% of capitalization considered for FY 2012-13 to calculate the interest on normative loan amount. Commission has considered the SBI PLR rate which is now substituted as SBI advance rate, at 14.75%[3] as on 1st April 2012 for FY 2012-13. The Commission approves the total interest charges for the year at Rs. 4.42 crores as given below:

Table 5.10.1.1 : Interest on Loans approved by the Commission for FY 2012-13

(in Rs. Crores)

Sr. No.	Particulars	Petitioner Submission (FY 2012-13)	Approved (FY 2012-13)
1	2	3	4
1	Opening Normative Loan/WIP	376.70	15.50
2	Add: Normative Loan during the year/GFA during the year	114.44	21.00
3	Less: Normative Repayment		1.55
4	Closing Normative Loan/GFA	**491.14**	**34.95**
5	Average Normative Loan		25.22
6	Rate of Interest (@SBI SBAR rate)	11.25%	14.75%
7	Interest on Normative Loan	55.25	4.42

5.10.2 Interest on Working Capital

Petitioner's Submission

The petitioner has submitted that Interest on Working Capital for FY 2012-13 is computed on normative basis. As per the JERC Tariff Regulations, for the purpose of computation of normative

[3] SBI advance rate notified on 14.02.2011; Thereafter four revisions in the SBI advance rate was notified in FY 2011-12 and are as under: 25.04.2011-13.25%; 12.05.2011-14% ; 11.07.2011-14.25%; 13.08.2011 – 14.75%. No revision has been notified

working capital and Interest on working capital, the components of working capital are as follows:

- Power Purchase Cost
- One month's employee costs
- Administration & General expenses
- One month's R&M Cost

The rate of interest on working capital has been considered as per SBI Prime lending rate as on 1st April of the respective year, which is 11.25% as on 1st April 2011. The interest on normative working capital for FY 2012-13 works out to Rs. 3.35 Crores

Commission's analysis

As per the regulation 29 of JERC tariff regulations

"

29. WORKING CAPITAL AND INTEREST RATE ON WORKING CAPITAL

1) For generation and transmission business, the working capital shall be as per CERC norms.

2) Subject to prudence check, the working capital for distribution business shall be the sum of one month requirement for meeting:

a. Power purchase cost.

b. Employees cost.

c. Administration & general expenses and

d. Repair & Maintenance expenses.

3) Subject to prudence check, the working capital for integrated utility shall be the sum of one month requirement for meeting :

a. Power purchase cost

b. Employees cost

c. Administration & general expenses

d. Repair & Maintenance expenses.

e. Sum of two month requirement for meeting Fuel cost.

4) *The rate of interest on working capital shall be equal to the short term Prime Lending Rate of State Bank of India on the 1st April of the relevant financial year. The interest on working capital shall be payable on normative basis notwithstanding that the generating company / licensee has not taken working capital loan from any outside agency or has exceeded the working capital loan amount worked out on the normative figures."*

Commission observes that the petitioner has not calculated the interest on working capital as per the regulations. As such the petitioner has calculated the working capital considering one month of fuel cost only, which as per the regulations the sum of two month requirement for meeting the fuel cost should be considered. Commission has considered the SBI PLR rate which is now substituted as SBI advance rate, at 14.75% as on 1st April 2012 for FY 2012-13 as per the regulations. Commission has computed the requirement of working capital based on the provisions of the regulations. Working capital has been reduced by the amount of Consumer Security Deposit/Misc. deposit available with the petitioner considering its usage for meeting part of working capital requirements.

Table 5.10.2.1 : Interest on Working Capital approved by the Commission for FY 2012-13

(in Rs. Crores)

Sr. No.	Particulars	Petitioner Submission (FY 2012-13)	Approved (FY 2012-13)
1	2	3	4
1	Fuel Cost for 2 months	7.77[4]	15.84
2	Power Purchase Cost for one month	12.89	13.27
3	Employee Cost for one month	4.14	4.11
4	A&G Expenses for one month	2.39	0.20
5	R&M Expenses for one month	2.59	2.86
6	**Total Working Capital for one month**	**29.78**	**34.94**
7	**Security Deposit of Consumers**	**1.34**	**1.34**
8	**Net Working Capital for one month after deducting security deposit considered by the Commission**	**28.44**	**33.60**
9	SBI PLR Rate	11.25%	14.75%
10	Interest on Working Capital	**3.35**	**4.96**

[4] Fuel cost of only one month has been considered

5.10.3 Interest on Security Deposit

Petitioner's Submission

The petitioner submits that the ED A&N collects deposits from consumers and contractors (as Earnest Money Deposit or security). While security deposit from consumers is taken at the time of providing the connection and has to be repaid to the consumers at the time of surrender of the connection; security deposit from contractors is adjusted subsequent to satisfactory completion of the contracted work. These deposits are in the form of Fixed Deposits Receipts (FDR)/ Bank Guarantee and in case of FDR the interest is directly paid to the consumer.

Commission's analysis

As can be observed, the petitioner has silently indicated that they have the security deposit of the consumers and the petitioner has not paid any interest on the security deposit from the consumers except fixed deposits where interest is directly paid to the consumers as stated by the petitioner.

As per Section 47(4) of the Electricity Act, 2003 and as specified in Regulation 25, of JERC Tariff Regulations 2009, *the distribution licenses shall pay interest on security deposit collected from the consumers, equivalent to the bank rate or more as may be specified by the Commission*.

On account of provisions mentioned in the Act and regulation, Commission directs the Petitioner to pay the interest on security deposit collected from the consumers with effect from April 1st 2012.

As per Clause 47(4) of the Electricity Act, 2003 and as specified in regulation 25 of JERC Tariff Regulations 2009, *the distribution licenses shall pay interest on security deposit collected from the consumers, equivalent to the bank rate or more as may be specified by the Commission*. On account of provisions mentioned in the Act and regulation, Commission directs the petitioner, that the petitioner must pay the interest on consumer security deposit for FY 2012-13 (at the Bank Rate i.e. 9.50[5]% per annum applicable as on 1st April 2012) with effect from 1st April 2012 to the consumers on their security deposit irrespective of petitioner's constraints and this needs to be explicitly indicated on the consumers bill, a sum of Rs. *(calculated amount)* as 'Interest on security deposit' at the rate of 9.50%[6] per annum for the FY 2012-13 in the consumer bill of April 2013. **Any non-compliance in this regard shall be viewed seriously by the Commission.**

[5] As per RBI circular no. RBI/2011-12/432, UBD.BPD. (PCB).Cir. No. 26 /16.11.00/2011-12 dated March 07'2012 on bank rate.

[6] As per RBI circular no. RBI/2011-12/432, UBD.BPD. (PCB).Cir. No. 26 /16.11.00/2011-12 dated March 07'2012 on bank rate.

Table 5.10.3.1 : Interest on Security Deposit approved by the Commission for FY 2012-13

(in Rs. Crores)

Sr. No.	Particulars	Petitioner Submission (FY 2012-13)	Approved (FY 2012-13)
1	2	3	4
1	Opening Security Deposit/Misc. Deposit	1.34	1.34
2	Add: Deposits during the Year	-	-
3	Less: Deposits refunded	-	-
4	**Closing Security Deposit**	**1.34**	**1.34**
5	**Bank Rate**		**9.50%**
6	**Interest on Security Deposit**		**0.13**

5.11 Return on Capital Base/Equity

Petitioner's Submission

The petitioner has estimated Rs. 2.19 Crores as the reasonable return on net fixed assets for FY 2012-13 as per the JERC regulations.

The petitioner has also estimated the return on equity of Rs. 2.03 Crores and has submitted that Distribution Business has always been perceived to be a business having a greater inherent risk than the Generation or Transmission Business due to various factors amongst which the direct interface with the retail consumers is the biggest risk. The same has been recognized by many Commissions across the country and they have proposed a higher rate of return on the equity invested in distribution business as compared to generation and transmission business. This has been demonstrated by the various Commissions by offering rate of return @16% for distribution business in their Tariff Regulations but has claimed only return on capital base in the Aggregate revenue requirement as per the JERC regulations applicable for integrated utility.

Commission's analysis

ED A&N being an integrated utility in its present form as defined in Regulation 2(9) of the JERC (Terms and Conditions for Determination of Tariff) Regulations, 2009 and ED A&N is not restructured and corporatized till date. As of now, it is an integrated utility and it is entitled to return on capital base under the provisions of Schedule VI of the repealed Electricity (Supply) Act, 1948 vide provision under Regulation 23 of JERC (Terms and Conditions for Determination of Tariff) Regulations, 2009. The basic requirement for consideration of either return on capital base or return on equity is the audited Annual Accounts and assets & depreciation registers. ED A&N has not been maintaining the adequate information.

As discussed in earlier para 5.8, 5.9, and 5.10; the Commission has considered Rs. 22.14 Crores as the gross block at the beginning of FY 2012-13 and accumulated depreciation of Rs. 1.17 Crores. Commission has therefore considered the reasonable return of 0.63 Crores at the rate of 3% on net fixed asset of Rs. 20.97 at the beginning of FY 2012-13.

Table 5.11.1 : Return on capital base approved by the Commission for FY 2012-13

(in Rs. Crores)

Sr. No.	Particulars	Petitioner Submission (FY 2012-13)	Approved (FY 2012-13)
1	2	3	4
1	Gross block at beginning of the year	84.45	22.14
2	Less accumulated depreciation	11.55	1.17
3	**Net block at beginning of the year**	72.90	20.97
4	Less accumulated consumer contribution	-	-
5	**Net fixed assets at beginning of the year**	**72.90**	**20.97**
6	**Reasonable return @3% of NFA**	2.19	0.63

In view of the above, Commission considers the Return on Net Fixed Assets of Rs. 0.63 Crores as reasonable and approves the same for FY 2012-13.

5.12 Non-Tariff Income

Petitioner's Submission

The petitioner has estimated Rs. 2.00 Crores based on the actuals of FY 2010-11 as the non-tariff income in the form of meter rent, late payment charges & misc. charges from various categories of consumers.

Commission's analysis

Commission observes the submission made by the petitioner for FY 2010-11 and FY 2011-12 and **has considered Rs. 2.00 Crores as reasonable and approves the same for FY 2012-13.**

5.13 Revenue at existing tariff for FY 2012-13

Petitioner's Submission

The petitioner has furnished the category-wise Revenue of Rs. 87.07 Crores from the existing Tariff for FY 2012-13 are given below. In absence of slab wise details of sales for previous year for domestic, commercial and industrial category; the petitioner has considered an average billing rate of FY 2010-11 for estimating the revenue for FY 2012-13.

Table 5.13.1 : Revenue at existing tariff for FY 2012-13 projected by the petitioner

S. No.	Category	Sales (MUs)	Average Billing Rate (Rs./unit)	at existing tariff (Rs. Crores)
1	Domestic	105.22	2.40	25.25
2	Commercial	63.12	5.32	33.58
3	Industry	9.52	3.95	3.76
4	Bulk	27.07	7.70	20.84
5	Public Lighting	10.09	3.50	3.53
6	Irrigation Pumps & Agriculture	1.00	1.00	0.10
	Total	216.02		87.06

Commission's analysis

Commission has estimated the revenue on the basis of approved sales for FY 2012-13. The petitioner has not submitted the slab wise sales and revenue in accordance with the existing Tariff schedule, the Commission therefore directs the petitioner to maintain slab wise details of sales and revenue and should submit the same in the next ARR and tariff petition. In absence of slab wise details of sales and revenue, Commission has therefore considered the average billing rate estimated by the petitioner of existing tariff for domestic, industrial and commercial category for calculation of revenue for FY 2012-13 at existing tariff.

Table 5.13.2 : Revenue at existing tariff for FY 2012-13 approved by the Commission

S. No.	Category	Sales (MU)	Average Billing Rate (Rs./unit)	at existing tariff (Rs. Crores)
1	Domestic	100.94	2.40[7]	24.22
2	Commercial	57.24	5.32[8]	30.45
3	Industry	9.98	3.95[9]	3.94
4	Bulk	30.48	7.70	23.47
5	Public Lighting	9.73	3.50	3.40
6	Irrigation Pumps & Agriculture	0.93	1.00	0.09
	Total	**209.29**		85.58

[7] Average billing rate as determined by the petitioner for FY 2011-12

[8] Average billing rate as determined by the petitioner for FY 2011-12

[9] Average billing rate as determined by the petitioner for FY 2011-12

5.14 Aggregate Revenue Requirement and Revenue Surplus/Deficit during FY 2012-13

Petitioner's Submission

The petitioner has submitted the estimates of Rs. 396.08 Crores as the net Aggregate Revenue Requirement for FY 2012-13 in ARR and tariff petition as discussed above.

Commission's analysis

The Commission has considered and approved the ARR for FY 2012-13 based on the items of expenditure discussed in the preceding sections and the same has been summarized in the table below.

Table 5.14.1 : Aggregate Revenue Requirement for FY 2012-13 approved by the Commission

(Rs. in Crores)

Sr. No.	Particulars	Petitioner Submission (FY 2012-13)	Approved (FY 2012-13)
1	2	3	4
1	Cost of fuel	93.22	95.03
2	Cost of power purchase for full year	154.68	159.20
3	Employee costs excluding arrears (arrears are included in FY 2010-11)	49.71	49.30
4	Repair & Maintenance Expenses	32.09[10]	34.36
5	Administration and general expenses	2.39	2.39
6	Depreciation	5.00	2.03
7	Interest and finance charges	55.25	4.42
8	Interest on working capital & Interest on Security Deposit	3.35	5.08
9	Return on NFA /Equity	2.19	0.63
10	Provision for Bad Debt	-	-
11	Advance Against Depreciation	-	-
12	**Total Revenue Requirement**	**397.88**	**352.45**
13	Less: Non-Tariff Income	2.00	2.00
14	Less: Revenue from Sale through UI	-	-
15	Less: Revenue from Sale of Power-Exchanges	-	-
16	**Net Revenue Requirement (12-13-14-15)**	**395.88**	**350.45**

The estimated revenue deficit for FY 2012-13 as given below:

[10] On verification, it has been found out that the petitioner has not considered the component of Rs. 1.05 for line cable and network in the calculations. After rectification of error, the total of R &M expenses has been corrected from Rs. 31.04 Crores to Rs. 32.09 Crores for FY 2012-13.

Table 5.14.2 : Approved Revenue Gap for FY 2012-13

(Rs. in Crores)

Sr. No.	Particulars	Petitioner Submission (FY 2012-13)	Approved (FY 2012-13)
1	2	3	4
16	**Net Revenue Requirement (12-13-14-15)**	**395.88**	**350.45**
17	Revenue from Retail Sales at Existing Tariff	87.06	85.58
18	**Net Gap (16-17)**	**308.82**	**264.87**
19	Gap for the previous year	-	-
20	**Total gap (18+19)**	**308.82**	**264.87**

As can be seen from the table mentioned above, there is a revenue gap of Rs. 264.87 at the end of FY 2012-13 as estimated by the Commission against the gap of Rs. 308.82 Crores furnished by the petitioner in the petition. The major reason for the reduction in gap for FY 2012-13 is the non-consideration of any escalation in fuel charges of generating stations, non-consideration of expenditure on Interest Charges, depreciation and return on equity, based on actual valuation of assets. It is expected that in future ARRs and True-ups, when the Petitioner submits the actual figures of revenue for FY 2012-13 and fixed asset registers, separate accounts of the cost of the generation from diesel generating sets, the gap assessed (as of now) in the revenue requirement on account of above shall be appropriately considered.

6. DIRECTIVES

6.1 Background

While examining the information and data submitted by the Petitioner in the proposed ARR and Tariff Petition for FY 2012-13, it has been observed that the distribution licensee has not been maintaining the required information and has used assumptions for computation of several components of ARR. ED A&N requires substantial improvement in maintenance of data relating to operational and financial parameters. Andaman & Nicobar being the cluster of 572 islands and out of these only 38 are permanently inhabited and over 29 islands are being electrified through 135 no. of Diesel Generating sets with capacity from 12 KVA to 2500 KVA at 43 power houses located in these 29 islands including one hydro-electric power generating station and solar power plant having capacity of 5.25 MW and 0.10 MW respectively. Besides this the Electricity Department has been purchasing Energy from M/s Surya Chakara Power Corporation Limited (SPCL), an Independent Power Producer since 22nd April 2003 having capacity of 20 MW with 4 units of 5 MW Diesel Generating Sets to meet their Energy requirement.

As such no separate accounts for various components of cost of each Diesel Generating Set (owned & maintained by the department), Hydro power generation, Solar power generation are being maintained and as stated above the petitioner has used assumptions for computation of several components of ARR. In spite of constraints, the petitioner has attempted to submit its first ARR and tariff petition for FY 2012-13. The Commission has therefore has taken a pragmatic view after looking at the operational constraints and hereby directed to comply with the following direction in order to evolve and develop an accounting mechanism in the larger interest of stakeholders.

1. **Directive 1: Filing of Review and True-up Petition for FY 2012-13:**
   As per the regulation no. 8 of JERC tariff regulations 2009, the petitioner is directed to submit the Review of FY 2012-13 along with the ARR and Tariff Petition for FY 2013-14 in line with JERC regulations as modified from time to time. 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 for FY 2012-13 during Review.

   After audited accounts of FY 2012-13 are made available, the Commission shall undertake similar exercise as mentioned above with reference to the final actual figures as per the audited accounts. This exercise with reference to audited accounts shall be called ‘Truing Up’, for which

True-up petition should be submitted along with audited accounts for consideration by the Hon'ble Commission.

2. **Directive 2: Fuel and Power Purchase Cost Adjustment Formula (FPPCA):**
   FPPCA formula is under finalization and will be separately notified. It is seen that in the case of A&N, majority of the generation is diesel based, making per unit cost of generation very high compared to other utilities. In view of this, the approved tariff is not covering the full cost of supply. Historically, there has been substantial gap between the actual cost of supply and revenue realized. This gap so far has been borne by the administration of A&N.

   Keeping the above fact in view, the Commission is of the view that any variation is power purchase cost (including variation in cost of their own generation) should, for the time being, be borne by the utility. Further the utility is directed to propose a scheme for sharing of the increase in power purchase cost with the consumers for Commission's consideration and approval.

3. **Directive 3: Preparation of Fixed Asset Register:**
   ED A&N has stated that the complete updated data of fixed assets is not available. Unless the function wise, asset wise data is updated, correct asset value and depreciation thereon cannot be ascertained.

   The petitioner is directed to submit the updated fixed asset register in line with JERC regulations as modified from time to time, with next ARR & Tariff Petition.

4. **Directive 4: Load Forecasting study:**
   The Petitioner is directed to conduct a detailed load forecasting study for short term (2-5 years), medium term (7-10 years) and long term (15-25 years) in order to understand the load requirements in their area at various periods and submits to Commission along with next tariff petition.

5. **Directive 5: Optimization of Fuel Cost**
   There are 135 no. of diesel generating sets excluding 4 DG sets of M/s SPCL located in 29 islands of Andaman & Nicobar catering to their electricity needs; the capacity of diesel generating sets of ED A&N varies from 12 KW to 2500 KW. The diesel is generally received in bulk in big tankers, thereafter it is transported to various islands in drums. Obviously, there are losses in transportation, storage and handling of which no assessment is available. It is understood that presently there is no system through which actual fuel consumption per generating station can be ascertained for generation of one unit of energy. In fact, there should also be proper accounting of generating unit wise fuel receipts & issues. The ED A&N is directed to evolve a

system of accounting of fuel received at port, dispatched island wise, actual quantity received on the islands and actual quantity consumed island wise for generating electricity; so that actual fuel consumption per unit generation along with the variation could be worked out. Accordingly the petitioner is directed to furnish such details along with the next filing.

6. **Directive 6: Bill Payment:**
   The Petitioner is directed to explore options for multiple payment points/gateways for online collection and status of existing system of bill payment be submitted within three months.

7. **Directive 7 : Collection of Arrears:**
   The Petitioner is directed to analyze the outstanding dues, bad debts etc. & construct a data base of such consumers including the particulars like amount, aging schedule and category. The Petitioner should identify those consumers having an outstanding of Rs. 50 thousand and above for more than six months from the due date.

8. **Directive 8: Rural Electrification:**
   The Petitioner is directed to submit the status of rural electrification in their area along with the detailed plan for rural electrification with the timeline proposed to achieve the complete electrification of rural area as per definition of electrification in the Rural Electrification Policy.

9. **Directive 9: Capital expenditure:**
   The Petitioner is directed to submit the detailed statement of capital expenditure incurred and capitalization for every quarter, within 15 days in the subsequent quarter.

10. **Directive 10 : Metering of consumer installations / replacement of Non-Functional or defective Meters:**
    Under Section 55 (1) of Electricity Act 2003, no licensee shall supply electricity after expiry of 2 years from the appointed date except through installation of correct meter in accordance with the regulation to be made in this behalf by the authority. Accordingly, metering is required to be done in line with CEA (installation and operation of meters) Regulations 2006 to all consumers. ED A&N is directed to submit an action plan regarding installation/replacement of meters by 30th October 2012.

11. **Directive 11: Strengthening of the Consumer redressal system:**
    The Commission directs the petitioner to find a way to dispose all pending application as per provision under section 43 of the Electricity Act, and relevant JERC Regulations, other than the

cases pending due to lack of documentary evidence of legal heirs after the death of original owner of the premises.

The Commission also direct to follow the Standard of Performance notified by the Commission strictly and the status report are submitted for all the new/shifting connection application's pending with the reason for their pendency by more than 45 days.

The petitioner is directed to promote and give publicity to the functioning of the Consumer Grievance Redressal Forum, so that each consumer could approach to CGRF, for redressal of their grievances regarding electricity unresolved complaints/concerns.

Commission directs the petitioner to publicize the benefit to consumers, highlighting the steps and necessary documents required & to initiate the action on the following:

- Complaint against fast meters/defective meters
- Application for Shifting of electricity connection
- Application for New Connection
- Complaint regarding no-supply.
- Any other complaints

Commission further directs to prepare monthly/ quarterly schedule for visit to different Islands by officers i.e. S.D.O., Ex. En., and SE A&N to hear and settle the public grievances and complaints of Electricity at spot so that no consumer is forced to visit to the Port Blair.

12. Directive 12: Demand Side Management and Energy Conservation:

The petitioner should focus on Demand Side Management and Energy Conservation particularly in context of Peak load. ED A&N is directed to conduct a detailed study on demand side management and energy conservation for efficient use of electricity by various means. An action plan for the same shall be submitted by ED A&N to the Commission by 30th October 2012.

13. Directive 13: Exploration of Alternative sources of Electrical Energy:

Commission observed that there is huge dependency on diesel for generating electricity, which not only increased the average cost of supply but also puts a burden on the utility's financial health. Commission has noticed that the Petitioner has taken few initiatives in this regard but the firm execution is required so as to speed up the process of their construction and achievement of commercial operation date in the given timelines. Therefore, it is inevitable for this distribution licensee to explore alternative sources of Power, and also consumer's contribution in this regard is required in terms of installation of roof top solar, wind or hybrid equipments to reduce their load on the existing power stations of the utility.

The petitioner is directed to submit a quarterly progress report for the initiatives taken in this regard so as to speed up the process of its execution.

14. Directive 14: Energy Audit:

The Petitioner is directed to get an Energy Audit conducted to assess actual technical and commercial losses. The Energy audit of generating stations is also required for an actual assessment of losses. Based on the studies, ED A&N shall propose reduction of losses in subsequent years along with the investment required for reduction of such losses and augmentation of transmission and distribution system. Effective technical and administrative measures shall be taken to reduce the commercial losses. The action plan for energy audit and loss reduction measures shall be furnished to the Commission by 30th October 2012.

15. Directive 15: Management Information System:

Commission observes that the petitioner is not maintaining the sales and revenue data in the regulatory formats specified in the JERC tariff regulations. The slab wise and category wise data is required to be maintained monthly for proper analysis of sales and revenue.

The Petitioner is directed to take steps to build credible & accurate and verifiable data base and management information system (MIS) to meet the requirements for filing ARR & Tariff Petition as per regulatory requirement of the Commission.

The ED A&N should conduct a study for a computerization of data and shall give a proposal for the same along with an action plan with target dates.

16. Directive 16: Annual Statement of Accounts:

Commission observes that the department of Andaman & Nicobar is not maintaining the separate accounts for the electricity business. The Petitioner is directed to segregate the accounts pertaining to Electricity business as per the Electricity Act 2003 and get them duly audited.

17. Directive 17: Statement of Cross-Subsidy :

As per the regulation 6 of JERC tariff regulations 2009:

"

(1) "Cross-subsidy for a consumer category" in the first phase (as defined in subregulation 2 below) means the difference between the average realization per unit from that category and the combined average cost of supply per unit expressed in percentage terms as a proportion of the combined average cost of supply. In the second phase (as defined in sub-regulation 2 below) means the difference between the average realization per unit from that category and the combined per unit cost of supply for that category expressed in percentage terms as a proportion of the combined cost of supply of that category.

(2) The Commission shall determine the tariff to progressively reflect the cost of supply of electricity and also reduce cross subsidies within a reasonable period. To this purpose, in the first phase the Commission shall determine tariff so that it progressively reflects combined average unit cost of supply in accordance with National Tariff Policy. In the second phase, the Commission shall consider moving towards the category-wise cost of supply as a basis for determination of tariff.

"

As per the regulation 6 of JERC Tariff regulations 2009 for Cross subsidy, the petitioner is directed to provide the detailed statement of cross-subsidy prevailing in the Andaman & Nicobar Islands as per the present arrangements and road-map for reduction of the cross-subsidies within a reasonable period to be submitted along with the next ARR and Tariff Petition. The road map shall be decided in the public hearing for next ARR and Tariff petition in consultation with stakeholders.

18. Directive 18: Cost of Power Generation:

Commission observes that the department of Andaman & Nicobar is not maintaining the separate accounts for their Diesel generating sets, Hydro and Solar plants. Commission directs the petitioner to provide separate details of cost of Power Purchase and final arrived tariff from the following stations/sets:

i. Power Purchase Cost and Tariff from each Diesel Generating set.

ii. Power Purchase Cost and Tariff from Hydro – Generating Station.

iii. Power Purchase Cost and Tariff from Solar Power Plant.

iv. Power Purchase Cost and Tariff from other Renewable Power Plants.

7. TARIFF PRINCIPLE AND DESIGN

7.1 Preamble

The Commission in determining the revenue requirement and retail supply tariff for the financial year 2012-13 has been guided by the provisions of the Electricity Act, 2003, the Tariff Policy, Regulations on Terms and Conditions of Tariff issued by the Central Electricity Regulatory Commission (CERC) and Regulations on Terms and Conditions of Tariff notified by the JERC under Section 61 of the Act which lays down the broad principles, which shall guide for determination of retail tariff.

Keeping view of the above, the tariff should be designed in such a way that cross subsidy between different categories of consumers remains within + / - 20% of average cost of supply and that even for BPL category consumers, tariff rates are close to 50% of the average cost of supply. However considering the average cost of supply at Andaman & Nicobar Island and assessed gap; the tariff could not be ascertained as per the principles referred above due to huge gap between the present tariff and the cost of supply. Commission has therefore taken a considerate view in this regard balancing the interest of the utility and the consumer, thus compensating the department with additional revenue and provides the reasonable hike in consumer's tariff.

7.2 Average Cost of Supply

The average cost of supply for FY 2012-13 is estimated at Rs. 16.74/KWh as against Rs. 18.33[11]/KWh projected by the petitioner in its tariff petition for FY 2012-13.

7.3 Tariff Proposal

Petitioner's submission

The petitioner has proposed a Tariff increase in the range of 23.53% to 70% for different categories affecting an aggregated increase of 40.45%. The category wise existing and proposed tariff submitted by the Petitioner are as under:

[11] The calculation error was found out in the calculation of R&M expenses submitted by the petitioner. The petitioner has submitted the average cost of supply of Rs. 18.28/unit which after rectification of error comes to Rs. 18.33/KWh.

Table 7.3.1: Existing and Proposed Tariff for FY 2012-13 proposed by the Petitioner (in Rs.)

S. No.	Category	Proposed Change in the Category	Existing tariff w.e.f. 1.3.08	Tariff proposed by the petitioner
		Petitioner's submission	Rs./unit	Rs./unit
1	Domestic			
	Upto 100 units		1.70	2.10
	101-200		3.20	4.00
	201 & above		4.40	5.50
2	Commercial			
	Hostels - Upto 200 units	upto 200 units	3.90	5.45
	Hostels - 201 & above	201 to 500 units	5.10	7.70
	Rest - Upto 200 units	501 units & above	4.50	8.70
	Rest - 201 & above		5.70	
3	Industry			
	Upto 500 units		3.70	5.50
	501 & above		4.10	6.25
4	Bulk		7.70	11.70
5	Public Lighting		3.50	5.95
6	Irrigation Pumps & Agriculture		1.00	1.50

Further the minimum charges are also applicable for all the categories of consumers as per the previous tariff structure though the petitioner has not proposed any change in the minimum charges.

Commission's analysis

The Commission has determined the retail tariff for FY 2012-13 in view of the guiding principles as stated in the Electricity Act, 2003 and Tariff Policy and keeping in view of the relevant directions given by the Hon'ble APTEL in the judgement in O.P. no. 1 of 2011 as mentioned below and the suggestions/objections of the stakeholders in this regard:

Directions given by the Hon'ble APTEL in the Judgement in O.P. no. 1 of 2011:

1) *Every State Commission has to ensure that Annual Performance Review, true-up of past expenses and Annual Revenue Requirement and tariff determination is conducted year to year basis as per the time schedule specified in the Regulations.*

2) *It should be the endeavour of every State Commission to ensure that the tariff for the financial year is decided before 1st April of the tariff year. For example, the ARR & tariff for the financial year 2011-12 should be decided before 1st April, 2011. The State*

Commission could consider making the tariff applicable only till the end of the financial year so that the licensees remain vigilant to follow the time schedule for filing of the application for determination of ARR/tariff.

3) *In the event of delay in filing of the ARR, truing-up and Annual Performance Review, one month beyond the scheduled date of submission of the petition, the State Commission must initiate suo-moto proceedings for tariff determination in accordance with Section 64 of the Act read with clause 8.1 (7) of the Tariff Policy.*

4) *In determination of ARR/tariff, the revenue gaps ought not to be left and Regulatory Asset should not be created as a matter of course except where it is justifiable, in accordance with the Tariff Policy and the Regulations. The recovery of the Regulatory Asset should be time bound and within a period not exceeding three years at the most and preferably within Control Period. Carrying cost of the Regulatory Asset should be allowed to the utilities in the ARR of the year in which the Regulatory Assets are created to avoid problem of cash flow to the distribution licensee.*

5) *Truing up should be carried out regularly and preferably every year. For example, truing up for the financial year 2009-10 should be carried out along with the ARR and tariff determination for the financial year 2011-12.*

6) *Fuel and Power Purchase cost is a major expense of the distribution Company which is uncontrollable. Every State Commission must have in place a mechanism for Fuel and Power Purchase cost in terms of Section 62 (4) of the Act. The Fuel and Power Purchase cost adjustment should preferably be on monthly basis on the lines of the Central Commission's Regulations for the generating companies but in no case exceeding a quarter. Any State Commission which does not already have such formula/mechanism in place must within 6 months of the date of this order must put in place such formula/ mechanism.*

The Commission has determined the tariff in such a way so as to move towards the average cost of supply. Since the gap between the present tariff and cost of supply is huge, it could not be met through the present tariff hike. As submitted by the petitioner, a minimum of 353% of average tariff hike is required to meet the revenue gap assessed by the petitioner. As such this could not be possible keeping in view the strategic location of the island and requirement of maintaining the essential services at the nominal price in the islands irrespective of its economic viability. At the same time considering the last tariff hike happened in 2008, the tariff hike is inevitable considering the requirement of funds at least to maintain reliable distribution network to provide a seamless supply of electricity and to keep the islands electrified. Historically, there has been substantial gap between the actual cost of supply and revenue realized. This gap so far has been borne by the administration of A&N. Therefore keeping this fact in view the assessed gap of Rs. 250.07 will be borne by the Administration of A&N through the Non-Planned funding in Annual Plan by the Govt. of India to the Electricity Department of the Andaman & Nicobar Islands. Commission has approved an average hike of **21.74%** and tariff rationalization proposal for commercial category as submitted by the petitioner is also accepted in order to charge higher tariff from consumers having higher consumption. The proposal for providing incentive for usage of alternative source of energy as submitted by the stakeholder is also accepted by the Commission, so as to decrease the dependence on fossil fuels by the consumers of Andaman & Nicobar islands. The Commission's approved tariff for FY 2012-13 is given below and minimum charges as applicable in the Andaman & Nicobar will remain applicable.

Table 7.3.2: Commission's Approved Tariff for FY 2012-13

(in Rs.)

S. No.	Category	Rate (Rs./unit)
1	Domestic	
	Upto 100 units	2.00
	101-200	3.70
	201 & above	5.10
2	Commercial	
	upto 200 units	5.40
	201 to 500 units	6.50
	501 units & above	7.25
3	Industry	
	Upto 500 units	4.45
	501 & above	5.00
4	Bulk	9.20
5	Public Lighting	4.50
6	Irrigation Pumps & Agriculture	1.25

7.4 Estimated Revenue and Surplus/Deficit at revised Tariff for FY 2012-13

The estimated Revenue at revised tariff for FY 2012-13 works out to be as under. The Commission has considered the average billing rate for Domestic, Commercial and Industrial categories after applying the average increase in the particular category. The average billing rate assessed by the petitioner includes the component of minimum charges. However the exact ratio of the same could not be ascertained. The petitioner has considered the average billing rate for calculation of revenue and therefore the Commission is forced to consider the same in the absence of slab wise data of sales for calculation of estimated revenue for FY 2012-13 as given below:

Table 7.4.1 : Total Revenue estimated by the Commission at revised tariff for FY 12-13 (in Rs. Crores)

S. No.	Category/ Consumption Slab	Energy Sales (in MUs) for FY 2012-13	Variable Energy (existing tariff applicable for April and May 2012) (Per KWh)	Revenue at existing tariff for 2 months of FY 2012-13 (Rs. Crores)	Variable Energy applicable from 1st June 2012 (Per KWh)	Revenue at revised tariff for 10 months of FY 2012-13 (Rs Crores)	Total Revenue for FY 2012-13[12] (Rs Crores)
1	2	3	4	5	6	7	8 = 5+7
1	Domestic		**2.40**[13]		**2.80**[14]		
	Upto 100 units	100.94	1.70	4.04	2.00	23.55	27.59
	101-200		3.20		3.70		
	201 & above		4.40		5.10		
2	Commercial		**5.32**[15]		**6.60**[16]		
	upto 200 units	57.24	4.50	5.08	5.40	31.48	36.56
	201 to 500 units		5.70		6.50		
	501 units & above		-		7.25		
3	Industry		**3.95**[17]		**4.78**[18]		
	Upto 500 units	9.98	3.70	0.66	4.45	3.97	4.63
	501 & above		4.10		5.00		
4	Bulk	30.48	7.70	3.91	9.20	23.37	27.28
5	Public Lighting	9.73	3.50	0.57	4.40	3.65	4.22
6	Irrigation Pumps & Agriculture	0.93	1.00	0.02	1.25	0.10	0.11
		209.29		**14.26**		**86.12**	**100.38**

#All figures mentioned are rounded off to next decimal places.

Note: For working out expected revenue for FY 2012-13, tariff at old rate for 2 month and tariff at revised rate for 10 months (applicable from 1st June 2012) has been considered.

12 For working out expected revenue for FY 2012-13, tariff at old rate for 2 month and tariff at revised rate for 10 months (applicable from 1st June 2012) has been considered.

13 Average billing rate estimated by the petitioner for previous year i.e. FY 2011-12.

14 Average billing rate considered by the Commission after applying a equivalent average increase in the category in consideration over the average billing rate estimated by the petitioner for previous year i.e. FY 2011-12.

15 Average billing rate estimated by the petitioner for previous year i.e. FY 2011-12.

16 Average billing rate considered by the Commission after applying a equivalent average increase in the category in consideration over the average billing rate estimated by the petitioner for previous year i.e. FY 2011-12.

17 Average billing rate estimated by the petitioner for previous year i.e. FY 2011-12.

18 Average billing rate considered by the Commission after applying a equivalent average increase in the category in consideration over the average billing rate estimated by the petitioner for previous year i.e. FY 2011-12.

The estimated gap/surplus after incorporating impact of revised tariff for FY 2012-13 from June 2012 is as under:

Table 7.4.2 : Estimation of ARR Gap/Surplus at revised tariff for FY 12-13 (in Rs. Crores)

Sr. No.	Particulars	Approved by the Commission (FY 2012-13) (Rs crores)
1	**Net Revenue Requirement**	**350.45**
2	Gap for the previous year	-
3	**Total Revenue Requirement (1+2)**	**350.45**
4	**Revenue from existing tariff**	85.58
5	Total Gap (3 -4)	264.87
6	**Additional Revenue expected at revised tariff (applicable from June 2012)**	**14.80**
7	**Net Gap/(Surplus) (5-6)**	**250.07**

As discussed in earlier para, **Historically, there has been substantial gap between the actual cost of supply and revenue realized. This gap so far has been borne by the administration of A&N, therefore** the assessed gap of Rs. 250.07 Crores shall be funded as per the present arrangements through non-planned funding in Annual Plan by the Govt. of India to the Electricity Department of Andaman & Nicobar. As such entire gap would be covered through the support by the Government, therefore revenue gap of Rs. 250.07 for FY 2012-13 will not be carry forward to next financial year 2013-14. In view of the above, the licensee has to take a call on the gap which is at present being funded by the Non-Planned funding in Annual Plan by the Govt. of India.

8. CONCLUSION OF COMMISSION's ORDER

Having considered the Petition no. 65/2012 of Electricity Department of Andaman & Nicobar for approval of Aggregate Revenue Requirement (ARR) and determination of retail tariffs for supply of energy and information provided on May 17' 2012. Commission approves the Aggregate Revenue Requirement (ARR) and the revised tariff schedule for ED Andaman & Nicobar.

1. The break-up of the Aggregate Revenue Requirement approved for ED Andaman & Nicobar for the year 2012-13 is given below.

Sr. No.	Particulars	Approved (FY 2012-13)
1	2	3
1	Cost of fuel	95.03
2	Cost of power purchase for full year	159.20
3	Employee costs excluding arrears (arrears are included in FY 2010-11)	49.30
4	Repair & Maintenance Expenses	34.36
5	Administration and general expenses	2.39
6	Depreciation	2.03
7	Interest and finance charges	4.42
8	Interest on working capital & Interest on Security Deposit	5.08
9	Return on NFA /Equity	0.63
10	Provision for Bad Debt	-
11	Advance Against Depreciation	-
12	**Total Revenue Requirement**	**352.45**
13	Less: Non-Tariff Income	2.00
14	Less: Revenue from Sale through UI	-
15	Less: Revenue from Sale of Power-Exchanges	-
16	**Net Revenue Requirement (12-13-14-15)**	**350.45**

2. The approved retail tariff (as given below) shall be in accordance with the tariff schedule specified in this order to meet the ARR of FY 2012-13.

S. No.	Category	Minimum Charges per connected load or part thereof per month (Rs./unit)	Rate (Rs./unit)
1	Domestic		
	Upto 100 units	Rs.30.00 per KVA	2.00
	101-200		3.70
	201 & above		5.10
2	Commercial		
	upto 200 units	Rs.50.00 per KVA	5.40
	201 to 500 units		6.50
	501 units & above		7.25
3	Industry		
	Upto 500 units	a. Rs.50.00 per H.P.	4.45
	501 & above	b. Rs.200.00 per month for Rice, Flour Millers of Rural areas who are having 15 HP capacity.	5.00
4	Bulk	Rs.50.00 per KVA	9.20
5	Public Lighting	Rs.60.00 per KVA	4.50
6	Irrigation Pumps & Agriculture	Rs.15.00 per KVA	1.25

3. The approved tariff shall come into force with effect from 1st June 2012, till it is amended by the Commission by a separate order. <u>All existing provisions which are not modified by this order, shall continue to be in force. The licensee shall publish the revised tariff structure and the salient features of tariff within one week in three daily newspapers in Hindi, Bengali and one in English, having wide circulation in their respective areas of supply. The distribution licensee shall also publish a booklet in Hindi, Bengali and English containing all details of tariff and its applicability for the benefit of consumers. It should be made available for sale to public at a nominal price.</u>

4. FPPCA formula is under finalization and will be separately notified. It is seen that in the case of A&N, majority of the generation is diesel based, making per unit cost of generation very high compared to other utilities. In view of this, the approved tariff is not covering the full cost of supply. Historically, there has been substantial gap between the actual cost of supply and revenue realized. This gap so far has been borne by the administration of A&N.
Keeping the above fact in view, the Commission is of the view that any variation is power purchase cost (including variation in cost of their own generation) should, for the time being, be borne by the utility. Further the utility is directed to propose a scheme for

sharing of the increase in power purchase cost with the consumers for Commission's consideration and approval.

5. Copy of this order may be sent to petitioner, CEA and Administration of UT of Andaman & Nicobar Islands. It shall be placed on the website of the Commission.

(Dr. V K Garg)
Chairman

Place: Gurgaon
Date: 04th June, 2012

9. TARIFF SCHEDULE

1. DOMESTIC SUPPLY (DS)

APPLICABILITY

This schedule shall apply for single delivery point including light, fan, domestic pumping sets and household appliances in the following premises:

a) Single private house/flat.

b) Housing colonies and multi storied flats/buildings as defined in Electricity Supply Code Regulations notified by the JERC.

NOTES:

i. Where a portion of the dwelling is used for the mixed load purposes the connection shall be billed for the purpose for which the tariffs are higher.

TARIFF

Consumption range	Minimum Charge per connected load or part thereof per month	Energy charge Rs./KWh
Upto 100 units	Rs.30.00 per KVA connected Load or part thereof per Month	2.00
101-200		3.70
201 & above		5.10

2. COMMERCIAL

APPLICABILITY

This schedule shall apply to all consumers, using electrical energy for light, fans appliances like pumping sets, motors of rating upto 3 HP used for commercial purpose, central air conditioning plant, lift ,welding set, small lathe, electric drill, heater, battery charger, embroidery machine, printing press, ice candy, dry cleaning machines, power press, small motors in commercial establishments/ non-residential premises such as Printing Press, Hotels, Rest Houses, Restaurants ,Hostels, Nursing Homes, Bus-stand, clubs, Auditorium, Communication, Cinema Theatre, Opera, Circus, Exhibition, All India Radio, SCI, Fisheries, Survey of India, Bakeries & Grinders & installations for private gains etc. Commercial supply shall also be applicable to multi consumer complex including commercial complexes as defined in the Electricity Supply Code Regulations notified by the JERC.

This schedule shall also apply to the Places of Worship, like Temples, Mosques, Churches, Gurudwaras, Buddhist Pongi Chung (not for residential or shopping complex only for pooja places) Public Pooja celebration and religious ceremonies.

No separate circuit/connection for power load including pumping set/central air conditioning plant, lifts etc. is permitted.

TARIFF

Consumption range	Minimum Charge per connected load or part thereof per month	Energy Charges Rs./KWh
upto 200 units	Rs.50.00 per KVA connected Load or part thereof per Month	5.40
201 to 500 units		6.50
501 units & above		7.25

3. INDUSTRIAL SUPPLY

APPLICABILITY

The schedule shall apply for supply of energy for lighting , fan and power to Industrial establishments & Industries such as wood based, cottage, small scales, medium scales, finishing shell based and any other establishments/organizations engaged in the manufacturing and processing goods for sale, rice mills, flour mills, workshops, Drydock, factories base repair organization, Public water works & Gem cutting units.

TARIFF

Consumption range	Minimum Charge per connected load or part thereof per month	Energy Charges Rs./KWh
Upto 500 units	a) Rs.50.00 per H.P. connected load or part thereof. b) Rs.200.00 per month for Rice , Flour Millers of Rural areas who are having 15 HP capacity.	4.45
501 & above		5.00

POINT OF SUPPLY

The above mentioned tariff is based on the supply being given through a single delivery and metering point and at a single voltage.

4. IRRIGATION, PUMPING & AGRICULTURE

APPLICABILITY

This schedule shall apply to all consumers for use of electrical energy for irrigation and agricultural purposes including animal husbandry.

TARIFF

Consumption range	Minimum Charge per connected load or part thereof per month	Energy Charges Rs./KWh
Upto 500 units	Rs.15.00 per KVA connected Load or part thereof per month	1.25

POINT OF SUPPLY

The above mentioned tariff is based on the supply being given through a single delivery and metering point and at a single voltage.

5. PUBLIC LIGHTING (PL)

APPLICABILITY

This tariff schedule shall apply for lighting on public road, footpath, streets & through fares in parks & markets etc. Cost of spares, materials and labour required for maintenance to be borne by respective Panchayati Raj Institutions/Local Bodies.

TARIFF

Consumption range	Minimum Charge per connected load or part thereof per month	Energy Charges Rs./KWh
Public lighting system managed by Municipal Corporation, Panchayat and Street lights maintained/outsourced to an external agency	Rs.60.00 per KVA connected Load or part thereof per month	4.50

6. BULK SUPPLY

APPLICABILITY

This tariff schedule shall apply to general or mixed loads receiving supply of energy through a bulk energy meter either at HT or LT supply and distribution is maintained by them. For dedicated transformer the complete cost of Technical transmission lines of transformers sub-station, switch gear & installation is to be borne by the consumer.

TARIFF

Consumption range	Minimum Charge per connected load or part thereof per month	Energy Charges Rs./KWh
Bulk category	Rs.50.00 per KVA connected Load or part thereof per month	9.20

POINT OF SUPPLY

The above mentioned tariff is based on the supply being given through a single delivery and metering point and at a single voltage.

7. TEMPORARY SUPPLY

APPLICABILITY

The supply may be given for a period of not more than three months. For any extension a fresh connection has to be obtained on proper fresh application. The temporary connection can only be for maximum period of six months. Rate shall be the three times the rate applicable to the relevant category of consumers.

GENERAL CONDITIONS FOR LT & HT SUPPLY

The above mentioned LT/HT Tariffs are subjected to the following conditions, applicable to all category of consumers.

1) Additional charges for exceeding contracted load/contracted maximum demand,

If in any month the consumer exceeds his contracted load/contracted demand the portion of the load/demand in excess of the contracted load/demand will be dealt as per the provisions made in JERC(Electricity Supply Code), 2010.

This will not be applicable to the consumers who has self-declared their connected load as the provision under regulation 4.13 (2) of Supply Code Regulations, 2010 as amended from time to time.

2) Power Factor Incentive

The monthly average power factor of the plant and apparatus installed by the consumer should be maintained at better than 90% lagging. The monthly average power factor shall mean the ratio expressed as percentage of total kWh to total kVAh supplied during the month. The ratio shall be rounded up to two figures.

In case the monthly average power factor is above 95%, consumer shall get a rebate at a rate of 1% on billed energy charges for each 1% increase in monthly average power factor above 95%.

For example, if the average power factor in a month is 97%, then the consumer shall be given rebate of 2% on the billed energy charges for that month.

3) Incentive for usage of alternative (Renewable) Sources of Energy:

A concession of Rs. 50/- (Rupees Fifty only) per month in electricity bill will be given to the consumers using solar water heater in domestic/commercial establishments on one-time verification of original invoice of its purchase and verification of the installation of equipment by the Engineer in charge of the area. The concession will be given to the consumers on the basis of the ownership of equipment; concession will be divided amongst the consumers, if they are sharing common equipment of solar water heater.

The concession of Rs. 1.00 per KWh over the units generated per month by the equipment generating energy using renewable energy including roof-top solar equipment, solar wind hybrid systems. The actual units generating will be verified from the energy meter to be installed in such systems for recording the electricity generated. The concession will be given to the consumers on the basis of the ownership of equipment; concession will be divided amongst the consumers, if they are sharing the equipment of roof-top solar or solar wind hybrid systems.

The incentive will be reviewed in next ARR and tariff order based on the reduction in the drawl of units of conventional power substituted by Renewable Power is based on the data from June-December 2012.

4) Late Payment Surcharge

For the existing connections, if the payment is made after the due date (as mentioned on the bill), the consumer is liable to pay additional charges on delayed amount at the rate of 2% per month. However for disconnected consumers, additional amount at the rate of 10% per annum on the outstanding amount shall be charged.

5) Taxes & Duties

The tariff does not include any tax or duty etc. on electricity energy that may be payable at any time in accordance with any law then in force. Such charges, if any, shall be payable by the consumer in addition to the tariff charges.

ANNEXURE – 1

ANNEXURE - 2

ANNEXURE – 3

ANNEXURE - 4

ANNEXURE – 5

ANNEXURE – 6

ANNEXURE - 7

ANNEXURE - 8

APPENDICES - 1

APPENDICES - 2

APPENDICES – 3

APPENDICES - 4

APPENDICES - 5

Source : Annexure - D of additional information submitted vide affidavit dated 14.05.2012

SFC of HSD Fuel Consumption and Auxilliary Fuel Consumption in respect of Diesel Generating stations separately for each stations for the year 2011-12.

Sl. No.	Particulars	Total Installed capacity			Power House wise installed capacity	Make	Unit Generation	HSD Consumption	HSD Consumption per Kwh (SFC)	Auxilliary Unit Consumption	Auxilliary HSD Consumption	Auxilliary HSD Consumption per Kwh (SFC)
		DG size	Qty.	Total								
		KW	Nos.	MW	MW		Kwh	Ltrs.	Ltrs.	Kwh	Ltrs.	Ltrs.
1	2	3	4	5	6	7	8	9	10	11	12	13
1	IPP	5000	4	20.000	20.000	Mak-Catterpillar	119491200	28484377	0.24	3329440	793674	0.24
2	Chatham	2500	5	15.000	15.000	Bergen	19576300	5630041	0.29	994068	285889	0.29
3	Phoneix Bay	1000	2	2.000	8.000	Cummins	15447850	4324827	0.28	358960	100496	0.28
		1200	5	6.000		Cummins						
4	Raj Niwas	256	2	0.512	0.512	Cummins	64615	29840	0.46	0	0	0.46
5	Secretarait	256	1	0.256	0.256	Cummins	7780	3275	0.42	0	0	0.42
6	Neil Island	128	3	0.384	0.634	Greaves	719188	295680	0.41	20989	8629	0.41
		100	2	0.200		Cummins						
		50	1	0.050		Cummins						
7	Havelock	256	5	1.280	1.330	Greaves	3191856	1007448	0.32	7776	2454	0.32
		50	1	0.050		Greaves						
8	RutLand	12	1	0.012	0.012	Cummins	22568	8575	0.38	845	321	0.38
9	Baratang	256	1	0.256	0.512	Cummins	158196	94360	0.60	1266	755	0.60
		256	1	0.256		Cummins						
10	Rangat	800	4	3.200	10.036	Cummins	17350825	4921729	0.28	848684	240737	0.28
		1000	5	5.000		Cummins						
		248	7	1.736		Kirloskar						
		100	1	0.100		Cummins						
11	Long Island	128	4	0.512	0.892	Greaves	284582	145370	0.51	25975	13269	0.51
		65	2	0.130		Greaves						
		50	5	0.250		Ruston						
12	Strait Island	15	1	0.015	0.015	Cummins	23436	8528	0.36	0	0	0.36
13	Hanspuri	12	1	0.012	0.027	Cummins	13690	4947	0.36	2179	787	0.36
		15	1	0.015		Cummins						
14	Jagannath Dera	24	1	0.024	0.043	Cummins	33969	18166	0.53	2340	1251	0.53
		18.75	1	0.019		Cummins						
15	Paschim Sagar	65	2	0.130	0.180	Cummins	62151	42828	0.69	2585	1781	0.69
		50	1	0.050		Cummins						
16	Smith Island	21	1	0.021	0.045	Ruston	35438	15737	0.44	1363	605	0.44
		12	2	0.024		Ruston						
17	Sita Nagar	256	3	0.768	2.368	Cummins	429907	176065	0.41	6230	2551	0.41
		800	2	1.600		Cummins						
18	KHEP **	1750	3	5.250	5.250		10278790			159874		0.00
19	Hutbay	250	1	0.250	6.650	Cummins	7382872	2073285	0.28	307797	86437	0.28
		800	3	2.400		Cummins						
		1000	4	4.000		Cummins						
20	Dugong Creek	16	2	0.032	0.047	Cummins	24607	11442	0.46	424	197	0.46
		15	1	0.015		Greaves						

Sl. No.	Particulars	Total Installed capacity DG size	Qty.	Total	Power House wise installed capacity	Make	Unit Generation	HSD Consumption	HSD Consumption per Kwh (SFC)	Auxilliary Unit Consumption	Auxilliary HSD Consumption	Auxilliary HSD Consumption per Kwh (SFC)
		KW	Nos.	MW	MW		Kwh	Ltrs.	Ltrs.	Kwh	Ltrs.	Ltrs.
1	2	3	4	5	6	7	8	9	10	11	12	13
21	Car Nicobar	256	7	1.792	5.920	Geaves Cotton	6706248	1875275	0.28	360094	100693	0.28
		128	1	0.128		Cummins						
		1000	4	4.000		Cummins						
22	Kamorta	256	4	1.024	1.024	Cummins	1542996	464561	0.30	6692	2015	0.30
23	Pillpillow	24	1	0.024	0.056	Kirloskar	45335	15163	0.33	746	250	0.33
		32	1	0.032		Kirloskar						
24	Kakana	24	1	0.024	0.056	Kirloskar	44417	15135	0.34	1106	377	0.34
		32	1	0.032		Kirloskar						
25	Champion	65	3	0.195	0.295	Greaves	211707	80150	0.38	4550	1723	0.38
		50	2	0.100		Ruston						
26	Katchal	250	3	0.750	0.924	Cummins	867303	266415	0.31	18257	5608	0.31
		50	3	0.150		Kirloskar						
		12	2	0.024		Cummins						
27	Teressa	50	4	0.200	0.756	Kirloskar	558210	195719	0.35	9080	3184	0.35
		256	2	0.512		Cummins						
		32	1	0.032		Cummins						
		12	1	0.012		Kirloskar						
28	Chowra	50	2	0.100	0.164	Kirloskar	183770	66182	0.36	6570	2366	0.36
		32	2	0.064		Kirloskar						
29	Campbell Bay	800	3	2.4	2.706	Cummins	3495695	1040205	0.30	79402	23627	0.30
		256	1	0.256		Cummins						
		50	1	0.05		Ruston						
Grand Total			142	83.710	83.710		208255501	51315325		6557292	1679677	

Source : Annexure - D of additional information submitted vide affidavit dated 14.05.2012

SFC of HSD Fuel Consumption and Auxilliary Fuel Consumption in respect of Diesel Generating stations separately for each stations for the year 2010-11.

Sl. No.	Particulars	Total Installed capacity			Power House wise installed capacity	Make	Unit Generation	HSD Consumption	HSD Consumption per Kwh (SFC)	Auxilliary Unit Consumption	Auxilliary HSD Consumption	Auxilliary HSD Consumption per Kwh (SFC)
		DG size	Qty.	Total								
		KW	Nos.	MW	MW		Kwh	Ltrs.	Ltrs.	Kwh	Ltrs.	Ltrs.
1	2	3	4	5	6	7	8	9	10	11	12	13
1	IPP	5000	4	20.000	20.000	Mak-Catterpillar	142140600	34001071	0.24	4143800	994512	0.24
2	Chatham	2500	5	15.000	15.000	Bergen	19676300	5581718	0.28	1270230	355664	0.28
3	Phoneix Bay	1000	2	2.000	8.000	Cummins	17633350	4757551	0.27	432880	116878	0.27
		1200	5	6.000		Cummins						
4	Raj Niwas	256	2	0.512	0.512	Cummins	95006	40220	0.42	0	0	0.00
5	Secretarait	256	1	0.256	0.256	Cummins	10810	3982	0.37	0	0	0.00
6	Neil Island	128	3	0.384	0.634	Greaves	1053477	388530	0.37	26301	9731	0.37
		100	2	0.200		Cummins						
		50	1	0.050		Cummins						
7	Havelock	256	5	1.280	1.330	Greaves	3641044	1137581	0.31	9887	3065	0.31
		50	1	0.050		Greaves						
8	RutLand	12	1	0.012	0.012	Cummins	2615	1085	0.41	175	0	0.00
9	Baratang	256	1	0.256	0.512	Cummins	336516	108252	0.32	3957	1266	0.32
		256	1	0.256		Cummins						
10	Rangat	800	4	3.200	10.036	Cummins	21965355	5728594	0.26	1172879	304949	0.26
		1000	5	5.000		Cummins						
		248	7	1.736		Kirloskar						
		100	1	0.100		Cummins						
11	Long Island	128	4	0.512	0.892	Greaves	509294	178255	0.35	36000	12600	0.35
		65	2	0.130		Greaves						
		50	5	0.250		Ruston						
12	Strait Island	15	1	0.015	0.015	Cummins	12484	4091	0.33	0	0	0.00
13	Hanspuri	12	1	0.012	0.027	Cummins	15078	5868	0.39	2175	848	0.39
		15	1	0.015		Cummins						
14	Jagannath Dera	24	1	0.024	0.043	Cummins	46001	22162	0.48	1381	663	0.48
		18.75	1	0.019		Cummins						
15	Paschim Sagar	65	2	0.130	0.180	Cummins	105850	52087	0.49	3202	1569	0.49
		50	1	0.050		Cummins						
16	Smith Island	21	1	0.021	0.045	Ruston	50711	19451	0.38	2010	764	0.38
		12	2	0.024		Ruston						
17	Sita Nagar	256	3	0.768	2.368	Cummins	458045	144480	0.32	2660	851	0.32
		800	2	1.600		Cummins						
18	KHEP **	1750	3	5.250	5.250		9875730					
19	Hutbay	250	1	0.250	6.650	Cummins	8281152	2258604	0.27	320918	89857	0.28
		800	3	2.400		Cummins						
		1000	4	4.000		Cummins						
20	Dugong Creek	16	2	0.032	0.047	Cummins	29851	12897	0.43	493	212	0.43
		15	1	0.015		Greaves						

Sl. No.	Particulars	Total Installed capacity			Power House wise installed capacity	Make	Unit Generation	HSD Consumption	HSD Consumption per Kwh (SFC)	Auxilliary Unit Consumption	Auxilliary HSD Consumption	Auxilliary HSD Consumption per Kwh (SFC)
		DG size	Qty.	Total								
		KW	Nos.	MW	MW		Kwh	Ltrs.	Ltrs.	Kwh	Ltrs.	Ltrs.
1	2	3	4	5	6	7	8	9	10	11	12	13
21	Car Nicobar	256	7	1.792	5.920	Geaves Cotton	6919900	2039311	0.29	313461	106577	0.34
		128	1	0.128		Cummins						
		1000	4	4.000		Cummins						
22	Kamorta	256	4	1.024	1.024	Cummins	1967210	611135	0.31	9221	2859	0.31
23	Pillpillow	24	1	0.024	0.056	Kirloskar	71363	24427	0.34	1715	583	0.34
		32	1	0.032		Kirloskar						
24	Kakana	24	1	0.024	0.056	Kirloskar	74154	25128	0.34	1861	633	0.34
		32	1	0.032		Kirloskar						
25	Champion	65	3	0.195	0.295	Greaves	243885	99385	0.41	6490	2661	0.41
		50	2	0.100		Ruston						
26	Katchal	250	3	0.750	0.924	Cummins	1127693	348911	0.31	30397	10031	0.33
		50	3	0.150		Kirloskar						
		12	2	0.024		Cummins						
27	Teressa	50	4	0.200	0.756	Kirloskar	595610	225388	0.38	12060	4342	0.36
		256	2	0.512		Cummins						
		32	1	0.032		Cummins						
		12	1	0.012		Kirloskar						
28	Chowra	50	2	0.100	0.164	Kirloskar	220368	74450	0.34	4810	1635	0.34
		32	2	0.064		Kirloskar						
29	Campbell Bay	800	3	2.4	2.706	Cummins	4218993	1273755	0.30	104776	31433	0.30
		256	1	0.256		Cummins						
		50	1	0.05		Ruston						
Grand Total			142	83.710	83.710			59168369		7913739	2054182	

Source : Annexure - 4 of additional information vide affidavit dated 14.05.2012

Auxillary Consumption and Plant Load Factor of Power House for Financial Year 2011-12 (till January 2012)

S.No.	Name of the Power House	Total Capacity	Total Capacity	Total Generation	Auxillary Consumption	Plant Load Factor
		MW	KW	KWh	KW	
1	2	3	4	5	6	7
1	Chatham	15.000	15000	19576300	994068	14.90
2	Phonix Bay	8.000	8000	15447850	323920	22.04
3	Raj Niwas	0.512	512	64615	0	1.44
4	Secretariat	0.256	256	7780	0	0.35
5	IPP	20.000	20000	119491200	3329440	68.20
6	Rut Land	0.012	12	22568	845	21.47
7	Neil Island	0.634	634	719188	20989	12.95
8	Havelock	1.330	1330	3191856	7776	27.40
9	Dugong Creek	0.047	47	24607	424	5.98
10	Hutbay	6.650	6650	7382872	307659	12.67
11	Strait Island	0.015	15	23436	181	17.84
12	Baratang	0.512	512	158196	1266	3.53
13	Rangat Bay	10.036	10036	17350825	780188	19.74
14	Long Island	0.892	892	284582	25975	3.64
15	Hunspuri	0.027	27	13690	1724	5.79
16	Jagannath Dera	0.043	43	33969	2340	9.02
17	Paschim Sagar	0.180	180	62151	2273	3.94
18	Smith Island	0.045	45	35438	1184	8.99
19	Sita Nagar	2.368	2368	429907	4528	2.07
20	KHEP (Kalpong)	5.250	5250	10278790	159814	22.35
21	Car Nicobar	5.920	5920	6706248	360031	12.93
22	Kamorta	1.024	1024	1542996	6692	17.20
23	Pilpillow	0.056	56	45335	746	9.24
24	Kakana	0.056	56	44417	1106	9.05
25	Champion	0.295	295	211707	4550	8.19
26	Katchal	0.924	924	867303	18137	10.72
27	Chowra	0.164	164	183770	6570	12.79
28	Teressa	0.756	756	558210	9080	8.43
29	Campbell Bay	2.706	2706	3495695	79402	14.75
	Grand Total	83.710	83710	208255501	6450908	28.40

Source : Annexure - 4 of additional information vide affidavit dated 14.05.2012

Auxillary Consumption and Plant Load Factor of Power House for Financial Year 2010-11

Sl. No.	Name of the Power House	Total Capacity	Total Capacity	Total Generation	Auxillary Consumption	Plant Load Factor
		MW	KW	KWh	KW	
1	2	3	4	5	6	7
1	Chatham	15.000	15000	19676300	1270230	14.97
2	Phoneix Bay	8.000	8000	17633350	432880	25.16
3	Raj Niwas	0.512	512	95006	0	2.12
4	Secretarait	0.256	256	10810	0	0.48
5	IPP	20.000	20000	142140600	4143800	81.13
6	RutLand	0.012	12	2615	175	2.49
7	Neil Island	0.634	634	1053477	26301	18.97
8	Havelock	1.330	1330	3641044	9887	31.25
9	Dugong Creek	0.047	47	29851	493	7.25
10	Hutbay	6.650	6650	8281152	320918	14.22
11	Strait Island	0.015	15	12484	0	9.50
12	Baratang	0.512	512	336516	3957	7.50
13	Rangat	10.036	10036	21965355	1172879	24.98
14	Long Island	0.892	892	509294	36000	6.52
15	Hanspuri	0.027	27	15078	2175	6.37
16	Jaganath Dera	0.043	43	46001	1381	12.21
17	Paschim Sagar	0.180	180	105850	3202	6.71
18	Smith Island	0.045	45	50711	2010	12.86
19	Sita Nagar	2.368	2368	458045	2660	2.21
20	KHEP(Kalpong)	5.250	5250	9875730	373258	21.47
21	Car Nicobar	5.920	5920	6919900	313461	13.34
22	Kamorta	1.024	1024	1967210	9221	21.93
23	Pillpillow	0.056	56	71363	1715	14.55
24	Kakana	0.056	56	74154	1861	15.12
25	Champion	0.295	295	243885	6490	9.44
26	Katchal	0.924	924	1127693	30397	13.93
27	Chowra	0.164	164	220368	4810	15.34
28	Teressa	0.756	756	595610	12060	8.99
29	Campbell Bay	2.706	2706	4218993	104776	17.80
	Grand Total	83.710	83710	241378445	8286997	32.92

15.13

12.78

Appendices - 2

Source : Annexure - E of additional information submitted vide affidavit dated 14.05.2012

No. of hours for which the station is under operation or generating electricity for FY 2010-11 and FY 2011-12 (April to Jan.)

Sl. No.	Particulars	Total Installed capacity			Power House wise installed	Make	No.of Running Hours (April-Jan)	No.of Running Hours (full year)	Per month	Per month
		DG size	Qty.	Total						
		KW	Nos.	MW	MW		FY 2011-12	FY 2010-11	2011-12	2010-11
1	2	3	4	5	6	7	8	9	10	11
1	IPP	5000	4	20.000	20.000	Mak-Catterpillar	7344	8760	734	730
2	Chatham	2500	5	15.000	15.000	Bergen	7344	8760	734	730
3	Phoneix Bay	1000	2	2.000	8.000	Cummins	7344	8760	734	730
		1200	5	6.000		Cummins				
4	Raj Niwas	256	2	0.512	0.512	Cummins	1389	2176	139	181
5	Secretariat	256	1	0.256	0.256	Cummins	4553	2743	455	229
6	Neil Island	128	3	0.384	0.634	Greaves	7312	7952	731	663
		100	2	0.200		Cummins				
		50	1	0.050		Cummins				
7	Havelock	256	5	1.280	1.330	Greaves	7340	8134	734	678
		50	1	0.050		Greaves				
8	RutLand	12	1	0.012	0.012	Cummins	2928	372	293	31
9	Baratang	256	1	0.256	0.512	Cummins	4730	1991	473	166
		256	1	0.256		Cummins				
10	Rangat	800	4	3.200	10.036	Cummins	6575	8760	658	730
		1000	5	5.000		Cummins				
		248	7	1.736		Kirloskar				
		100	1	0.100		Cummins				
11	Long Island	128	4	0.512	0.892	Greaves	7343	8760	734	730
		65	2	0.130		Greaves				
		50	5	0.250		Ruston				
12	Strait Island	15	1	0.015	0.015	Cummins	4180	1447	418	121
13	Hanspuri	12	1	0.012	0.027	Cummins	1814	2175	181	181
		15	1	0.015		Cummins				
14	Jagannath Dera	24	1	0.024	0.043	Cummins	3642	4200	364	350
		18.75	1	0.019		Cummins				
15	Paschim Sagar	65	2	0.130	0.180	Cummins	4351	4360	435	363
		50	1	0.050		Cummins				
16	Smith Island	21	1	0.021	0.045	Ruston	3413	3950	341	329
		12	2	0.024		Ruston				
17	Sita Nagar	256	3	0.768	2.368	Cummins	3280	3483	328	290

Appendices - 2

Source : Annexure - E of additional information submitted vide affidavit dated 14.05.2012

No. of hours for which the station is under operation or generating electricity for FY 2010-11 and FY 2011-12 (April to Jan.)

Sl. No.	Particulars	Total Installed capacity			Power House wise installed	Make	No.of Running Hours (April-Jan)	No.of Running Hours (full year)	Per month	Per month
		DG size	Qty.	Total						
		KW	Nos.	MW	MW		FY 2011-12	FY 2010-11	2011-12	2010-11
1	2	3	4	5	6	7	8	9	10	11
17	Sita Nagar	800	2	1.600	2.308	Cummins				
18	KHEP **	1750	3	5.250	5.250		6411	7378	641	615
19	Hutbay	250	1	0.250	6.650	Cummins	6988	8760	699	730
		800	3	2.400		Cummins				
		1000	4	4.000		Cummins				
20	Dugong Creek	16	2	0.032	0.047	Cummins	3672	4186	367	349
		15	1	0.015		Greaves				
21	Car Nicobar	256	7	1.792	5.920	Geaves Cotton	7344	8760	734	730
		128	1	0.128		Cummins				
		1000	4	4.000		Cummins				
22	Kamorta	256	4	1.024	1.024	Cummins	6536	8452	654	704
23	Pillpillow	24	1	0.024	0.056	Kirloskar	1863	2415	186	201
		32	1	0.032		Kirloskar				
24	Kakana	24	1	0.024	0.056	Kirloskar	1679	2685	168	224
		32	1	0.032		Kirloskar				
25	Champion	65	3	0.195	0.295	Greaves	3852	8760	385	730
		50	2	0.100		Ruston				
26	Katchal	250	3	0.750	0.924	Cummins	6473	8760	647	730
		50	3	0.150		Kirloskar				
		12	2	0.024		Cummins				
27	Teressa	50	4	0.200	0.756	Kirloskar	7344	8760	734	730
		256	2	0.512		Cummins				
		32	1	0.032		Cummins				
		12	1	0.012		Kirloskar				
28	Chowra	50	2	0.100	0.164	Kirloskar	4083	5104	408	425
		32	2	0.064		Kirloskar				
29	Campbell Bay	800	3	2.4	2.706	Cummins	7612	8760	761	730
		256	1	0.256		Cummins				
		50	1	0.05		Ruston				
Grand Total			142	83.710	83.710		148739	169563	14874	14130

Source : IPP Invoices - Annexure B

APPENDICES - 3

Abstract of IPP invoices for FY 2011-12 including unit generation, auxillary consumption HSD and Lubricating oil consumption after verification

S. No.	Particulars	April	May	June	July	August	September	October	November	December	January	February	March
	Readings	**30**	**31**	**30**	**31**	**31**	**30**	**31**	**30**	**31**	**30**	**29**	**31**
1	At Generation Point	12181800	12476600	11490700	11318500	11817300	11858800	12309700	11621200	12194700	12221900	11387800	10069200
2	At Delivery Point	11847400	12150480	11170240	10989960	11475160	11532560	11963480	11287240	11851960	11893560	11061280	9733200
3	Auxillary Consumption	334400	326120	320460	328540	342140	326240	346220	333960	342740	328340	326520	336000
4	Auxillary Consumption (%)	2.75	2.61	2.79	2.90	2.90	2.75	2.81	2.87	2.81	2.69	2.87	3.34
	PLF & Availability												
1	Installed Capacity	14400000	14880000	14400000	14880000	14880000	14400000	14880000	14400000	14880000	14400000	13920000	14880000
2	Operating PLF for month	84.60%	83.85%	79.80%	76.07%	79.42%	82.35%	82.73%	80.70%	81.95%	84.87%	81.81%	67.67%
3	No. of Hours	725.00	744.00	720.00	744.00	744.00	720.00	744.00	720.00	744.00	744.00	696.00	744.00
4	Product (No. of Hours X capacity)	14141.00	14781.00	14081.00	13124.00	13880.00	14287.00	14751.00	14364.00	14827.00	14719.00	13417.00	11295.00
5	Average Capacity (in MW)	19.50	19.87	19.56	17.64	18.66	19.84	19.83	19.95	19.93	19.78	19.28	15.18
6	% age availability	97.52%	99.33%	97.78%	88.20%	93.28%	99.22%	99.13%	99.75%	99.64%	98.92%	96.39%	75.91%

S. No.	Particulars	April	May	June	July	August	September	October	November	December	January	February	March
1	Billing Units (KWh)	12181800	12476600	11490700	11318500	11817300	11858800	12309700	11621200	12194700	12221900	11387800	10069200
2	Total K. Cal @2010 K.Cal/KWh	2.4485E+10	2.5078E+10	2.3096E+10	2.275E+10	2.3753E+10	23836188000	2.4742E+10	2.3359E+10	2.4511E+10	2.4566E+10	2.2889E+10	2.0239E+10
1	Wt. Avg. Calorific Value of 1 Kg. HSD	10263.55	10260.86	10265.5	10258.49	10255.79	10256.2	10260.15	10257.79	10108.69	10254.78	10259.23	10256.13
2	HSD Consumption (in Kgs) (2/3)	2385668	2444041	2249896	2217693	2316035	2324076	2411514	2277158	2424780	2395568	2231111	1973365
2	Density of HSD (ambient)	0.8316814	0.821077	0.8207117	0.8229027	0.8258516	0.8266357	0.8238517	0.8234929	0.8251486	0.8258901	0.8251049	0.8217976
3	HSD Consumption (in Litres) (4/5)	2868487.3	2976628.67	2741396.23	2694964.23	2804420.83	2811487.543	2927121.66	2765243.43	2938597.69	2900588.87	2704032.8	2401279.09
4	Wt. Avg. Cost of HSD/KL (Rs.)	34985.17	34985.17	35134.27	37927.96	38298.29	38340.68	38344.79	38345.16	38345.17	38345.17	38345.17	38345.17
5	Cost of HSD consumed (in Rs.)	100354516	104137860	96316955.4	102214496	107404522	107794344.2	112239866	106033702	112681028	111223573	103686598	92077454.9

	Lube Oil Payment Calculation												
1	Billing Units (KWh)	12181800	12476600	11490700	11318500	11817300	11858800	12309700	11621200	12194700	12221900	11387800	10069200
2	Total Consumption in Kgs @1.1 gm	13399.98	13724.26	12639.77	12450.35	12999.03	13044.68	13540.67	12783.32	13414.17	13444.09	12526.58	11076.12
3	Density of Lube Oil	0.8894231	0.8894231	0.8894231	0.8894231	0.8894231	0.8894231	0.8894231	0.8894231	0.8894231	0.8894231	0.8894231	0.8894231
4	Lube Oil Consumption (in Litres)	15065.92	15430.52	14211.20	13998.23	14615.13	14666.45	15224.10	14372.60	15081.88	15115.52	14083.94	12453.15
5	Cost of Lube Oil/Litre (Rs.)	136.66	140.45	140.56	140.63	143.32	144.16	144.43	144.51	153.82	165	168.19	169.22
6	Cost of Lube Oil consumed (in Rs.)	2058909.05	2167216.39	1997526.34	1968571.22	2094639.75	2114315.525	2198817.38	2076984.03	2319894.36	2494060.31	2368777.57	2107322.18

Estimated generation by the Commission for FY 2011-12

S. No.	Source	Installed Capacity (in KWh)	Gross Generation/Billing Units (KWh)			Availability / PLF (in %)	Auxillary Consumption (%)	Net Energy available/sent out (MU)	HSD Consumption (in liters)	Lube Oil Consumption (in liters)	HSD Cost (Rs. Crores	Lube Oil Cost (Rs. Crores)	Fixed Charges (Rs. Crores)	Total Amount including Rebate(Rs.	Rs./KWh
			April-Jan	Feb. & March	Total										
1	IPP - SPCL	175200000	119491200	21457000	140948200	80.45%	2.83	136.96	33532144	174319	125.62	2.60	17.42	145.19	10.30
	Own Generation														
2	Chatham	109500000	19576300	3915260	23491560	21.45%	5.08	22.30	5589054	29053.34	21.43	0.49	0.00	21.92	9.33
		17520000													
3	Phoneix Bay	52560000	15447850	3089570	18537420	26.45%	2.32	18.11	4410377	22926.28	16.91	0.39	0.00	17.30	9.33
4	Raj Niwas	4485120	64615	12923	77538	1.73%	0.00	0.08	18448	95.90	0.07	0.00	0.00	0.07	9.33
5	Secretarait	2242560	7780	1556	9336	0.42%	0.00	0.01	2221	11.55	0.01	0.00	0.00	0.01	9.33
		3363840													
		1752000													
6	Neil Island	438000	719188	143837.6	863025.6	15.54%	2.92	0.84	205329	1067.35	0.79	0.02	0.00	0.81	9.33
		11212800													
7	Havelock	438000	3191856	638371.2	3830227.2	32.88%	0.24	3.82	911278	4737.06	3.49	0.08	0.00	3.57	9.33
8	RutLand	105120	22568	4513.6	27081.6	25.76%	3.74	0.03	6443	33.49	0.02	0.00	0.00	0.03	9.33
		2242560													
9	Baratang	2242560	158196	31639.2	189835.2	4.23%	0.80	0.188	45165	234.78	0.17	0.00	0.00	0.18	9.33
		28032000													
		43800000													
		15207360													
10	Rangat	876000	17350825	3470165	20820990	23.68%	2.27	19.80	4953678	25750.50	18.99	0.44	0.00	19.43	9.33
		4485120													
		1138800													
11	Long Island	2190000	284582	56916.4	341498.4	4.37%	9.13	0.31	81248	422.35	0.31	0.01	0.00	0.32	9.33
12	Strait Island	131400	23436	4687.2	28123.2	21.40%	0.00	0.03	6691	34.78	0.03	0.00	0.00	0.03	9.33
		105120													
13	Hanspuri	131400	13690	2738	16428	6.95%	15.92	0.01	3909	20.32	0.01	0.00	0.00	0.02	9.33
		210240													
14	Jagannath Dera	164250	33969	6793.8	40762.8	10.88%	6.89	0.04	9698	50.41	0.04	0.00	0.00	0.04	9.33
		1138800													
15	Paschim Sagar	438000	62151	12430.2	74581.2	4.73%	4.16	0.07	17744	92.24	0.07	0.00	0.00	0.07	9.33
		183960													
16	Smith Island	210240	35438	7087.6	42525.6	10.79%	3.85	0.04	10118	52.59	0.04	0.00	0.00	0.04	9.33
		6727680													
17	Sita Nagar	14016000	429907	85981.4	515888.4	2.49%	1.45	0.51	122739	638.03	0.47	0.01	0.00	0.48	9.33
18	KHEP**	45990000	10278790	2055758	12334548	26.82%	1.56	12.14					0.00	0.00	0.00
		2190000													
		21024000													
19	Hutbay	35040000	7382872	1476574.4	8859446.4	15.21%	4.17	8.49	2107817	10956.98	8.08	0.19	0.00	8.27	9.33
		280320													

Estimated generation by the Commission for FY 2011-12

S. No.	Source	Installed Capacity (in KWh)	Gross Generation/Billing Units (KWh)			Availability / PLF (in %)	Auxillary Consumption (%)	Net Energy available/sent out (MU)	HSD Consumption (in liters)	Lube Oil Consumption (in liters)	HSD Cost (Rs. Crores	Lube Oil Cost (Rs. Crores)	Fixed Charges (Rs. Crores)	Total Amount including Rebate(Rs.	Rs./KWh
			April-Jan	Feb. & March	Total										
20	Dugong Creek	131400	24607	4921.4	29528.4	7.17%	1.72	0.03	7025	36.52	0.03	0.00	0.00	0.03	9.33
21	Car Nicobar	15697920 1121280 35040000	6706248	1341249.6	8047497.6	15.52%	5.37	7.62	1914641	9952.80	7.34	0.17	0.00	7.51	9.33
22	Kamorta	8970240	1542996	308599.2	1851595.2	20.64%	0.43	1.84	440527	2289.97	1.69	0.04	0.00	1.73	9.33
23	Pillpillow	210240 280320	45335	9067	54402	11.09%	1.65	0.05	12943	67.28	0.05	0.00	0.00	0.05	9.33
24	Kakana	210240 280320	44417	8883.4	53300.4	10.87%	2.49	0.05	12681	65.92	0.05	0.00	0.00	0.05	9.33
25	Champion	1708200 876000	211707	42341.4	254048.4	9.83%	2.15	0.25	60443	314.20	0.23	0.01	0.00	0.24	9.33
26	Katchal	6570000 1314000 210240	867303	173460.6	1040763.6	12.86%	2.11	1.02	247616	1287.17	0.95	0.02	0.00	0.97	9.33
27	Teressa	1752000 4485120 280320 105120	558210	111642	669852	10.11%	2.27	0.66	159370	828.44	0.61	0.01	0.00	0.63	9.33
28	Chowra	876000 560640	183770	36754	220524	15.35%	3.58	0.21	52467	272.73	0.20	0.00	0.00	0.21	9.33
29	Campbell Bay	21024000 2242560 438000	3495695	699139	4194834	17.70%	2.27	4.10	998024	5187.99	3.83	0.09	0.00	3.91	9.33
	Total	711397410	208255501	39209860.2	247465361	16.12%	3.15	239.60	55939837.33	290799.92	211.54	4.57	17.42	233.09	9.42

Appendices - 5

Estimated generation, fuel consumption, auxillary consumption and cost thereof for FY 2012-13

S. No.	Source	Capacity (in MW)			Installed Capacity (in KWh)	Estimated Availability/ PLF (in %)- FY 12-13	Gross Generation (Mus)	Auxillary Consumption (%)	Net Energy available/sent out (MU)	HSD Consumption (in liters)	Lube Oil Consumption (in liters)	HSD Cost (Rs. Crores	Lube Oil Cost (Rs. Crores)	Fixed Charges (Rs. Crores)	Total Amount including rebate (Rs. Crores)	Rs./KWh
		DG Size (KW)	No.s	MW												
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	IPP - SPCL	5000	4	20	175200000	86.99%	152.40	2.83	148.09	36258891	188483.08	139.04	3.19	17.42	159.20	10.45
	Own Generation															
2	Chatham	2500	5	12.5	109500000	23.19%	25.40	5.08	24.11	6042209	31408.97	23.17	0.53	0.00	23.70	9.33
		1000	2	2	17520000											
3	Phoneix Bay	1200	5	6	52560000	28.60%	20.04	2.32	19.58	4768416	24787.46	18.28	0.42	0.00	18.70	9.33
4	Raj Niwas	256	2	0.512	4485120	1.87%	0.08	0.00	0.08	19961	103.76	0.08	0.00	0.00	0.08	9.33
5	Secretarait	256	1	0.256	2242560	0.45%	0.01	0.00	0.01	2423	12.60	0.01	0.00	0.00	0.01	9.33
		128	3	0.384	3363840											
		100	2	0.2	1752000											
6	Neil Island	50	1	0.05	438000	16.80%	0.93	2.92	0.91	222023	1154.13	0.85	0.02	0.00	0.87	9.33
		256	5	1.28	11212800											
7	Havelock	50	1	0.05	438000	35.55%	4.14	0.24	4.13	985467	5122.71	3.78	0.09	0.00	3.87	9.33
8	RutLand	12	1	0.012	105120	27.85%	0.03	3.74	0.03	6966	36.21	0.03	0.00	0.00	0.03	9.33
		256	1	0.256	2242560											
9	Baratang	256	1	0.256	2242560	4.57%	0.21	0.80	0.20	48806	253.70	0.19	0.00	0.00	0.19	9.33
		800	4	3.2	28032000											
		1000	5	5	43800000											
		248	7	1.736	15207360											
10	Rangat	100	1	0.1	876000	25.60%	22.51	2.27	22.00	5355510	27839.32	20.54	0.47	0.00	21.01	9.33
		128	4	0.512	4485120											
		65	2	0.13	1138800											
11	Long Island	50	5	0.25	2190000	4.73%	0.37	9.13	0.34	87843	456.63	0.34	0.01	0.00	0.34	9.33
12	Strait Island	15	1	0.015	131400	23.14%	0.03	0.00	0.03	7234	37.60	0.03	0.00	0.00	0.03	9.33
		12	1	0.012	105120											
13	Hanspuri	15	1	0.015	131400	7.51%	0.02	15.92	0.01	4229	21.98	0.02	0.00	0.00	0.02	9.33
		24	1	0.024	210240											
14	Jagannath Dera	18.75	1	0.01875	164250	11.76%	0.04	6.89	0.04	10482	54.49	0.04	0.00	0.00	0.04	9.33
		65	2	0.13	1138800											
15	Paschim Sagar	50	1	0.05	438000	5.11%	0.08	4.16	0.08	19186	99.74	0.07	0.00	0.00	0.08	9.33
		21	1	0.021	183960											
16	Smith Island	12	2	0.024	210240	11.67%	0.05	3.85	0.04	10942	56.88	0.04	0.00	0.00	0.04	9.33
		256	3	0.768	6727680											
17	Sita Nagar	800	2	1.6	14016000	2.69%	0.56	1.45	0.55	132874	690.71	0.51	0.01	0.00	0.52	9.33
18	KHEP**	1750	3	5.25	45990000	26.82%	12.33	1.56	12.14					0.00	0.00	0.00
		250	1	0.25	2190000											
		800	3	2.4	21024000											
19	Hutbay	1000	4	4	35040000	16.45%	9.58	4.17	9.18	2279341	11848.60	8.74	0.20	0.00	8.94	9.33

Estimated generation, fuel consumption, auxillary consumption and cost thereof for FY 2012-13

S. No.	Source	Capacity (in MW)			Installed Capacity (in KWh)	Estimated Availability/ PLF (in %)- FY 12-13	Gross Generation (Mus)	Auxillary Consumption (%)	Net Energy available/sent out (MU)	HSD Consumption (in liters)	Lube Oil Consumption (in liters)	HSD Cost (Rs. Crores	Lube Oil Cost (Rs. Crores)	Fixed Charges (Rs. Crores)	Total Amount including rebate (Rs. Crores)	Rs./KWh
		DG Size (KW)	No.s	MW												
		16	2	0.032	280320											
20	Dugong Creek	15	1	0.015	131400	7.75%	0.03	1.72	0.03	7594	39.48	0.03	0.00	0.00	0.03	9.33
		256	7	1.792	15697920											
		128	1	0.128	1121280											
21	Car Nicobar	1000	4	4	35040000	16.78%	8.70	5.37	8.24	2070484	10762.91	7.94	0.18	0.00	8.12	9.33
22	Kamorta	256	4	1.024	8970240	22.32%	2.00	0.43	1.99	476286	2475.86	1.83	0.04	0.00	1.87	9.33
		24	1	0.024	210240											
23	Pillpillow	32	1	0.032	280320	11.99%	0.06	1.65	0.06	13995	72.75	0.05	0.00	0.00	0.05	9.33
		24	1	0.024	210240											
24	Kakana	32	1	0.032	280320	11.75%	0.06	2.49	0.06	13718	71.31	0.05	0.00	0.00	0.05	9.33
		65	3	0.195	1708200											
25	Champion	50	2	0.1	876000	10.63%	0.27	2.15	0.27	65348	339.70	0.25	0.01	0.00	0.26	9.33
		250	3	0.75	6570000											
		50	3	0.15	1314000											
26	Katchal	12	2	0.024	210240	13.90%	1.13	2.11	1.10	267776	1391.97	1.03	0.02	0.00	1.05	9.33
		50	4	0.2	1752000											
		256	2	0.512	4485120											
		32	1	0.032	280320											
27	Teressa	12	1	0.012	105120	10.93%	0.72	2.27	0.71	172239	895.34	0.66	0.02	0.00	0.68	9.33
		50	2	0.1	876000											
28	Chowra	32	2	0.064	560640	16.60%	0.24	3.58	0.23	56730	294.90	0.22	0.00	0.00	0.22	9.33
		800	3	2.4	21024000											
		256	1	0.256	2242560											
29	Campbell Bay	50	1	0.05	438000	19.14%	4.54	2.27	4.43	1079343	5610.70	4.14	0.09	0.00	4.23	9.33
	Total	22547.75	142	81.20975	711397410	17.35%	266.57	3.15	258.67	60486313.96	314423.49	231.94	5.32	17.42	254.24	9.54