BIHAR ELECTRICITY REGULATORY COMMISSION

Case No. TP- 41 of 2012

Order on

Truing up for FY 2011-12 &
Review for FY 2012-13 of erstwhile BSEB

And

Determination of Multi Year Aggregate Revenue Requirement (ARR) for FY 2013-14 to 2015-16 and Tariff for FY 2013-14

of

1. Bihar State Power Generation Company Limited (BSPGCL)
2. Bihar State Power Transmission Company Limited (BSPTCL)
3. North and South Bihar Power Distribution Companies Limited (NBPDCL & SBPDCL)

Effective from 1st April, 2013

(Issued on 15th March, 2013)

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Abbreviations

A&G	Administration and General
ABT	Availability Based Tariff
Act	Electricity Act. 2003
AG	Auditor General
ARR	Aggregate Revenue requirement
BERC	Bihar Electricity Regulatory Commission
BHEL	Bharat Heavy Electrical Limited
BSHPS	Bihar State hydro Power Station
BSEB	Bihar State Electricity Board
BSPHCL	Bihar State Power (Holding) Company Limited
BTPS	Barauni Thermal Power Station
CAGR	Compounded Annual Growth Rate
CAPEX	Capital expenditure
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
CGS	Central Generating Station
Ckt Km	Circuit kilometers
CMD	Contract Minimum Demand
CPSU	Central Public Sector Undertaking
D/C	Double Circuit
DPS	Delayed Payment Surcharge
DS	Domestic Service
DSM	Demand Side Management
DT	Distribution Transformer
EA 2003	Electricity Act, 2003
ERLDC	Eastern Region Load Despatch Centre
ERPC	Eastern Region Power Committee
FC	Fixed Charges
FPPCA	Fuel and Power Purchase Cost Adjustment
FY	Financial Year
GFA	Gross Fixed Asset
HT	High Tension
HTSS	High Tension Specified Service
KBUNL	Kanti Bijlee Utapadan Nigam Limited
kCal	Kilo Calorie
KJ	Kutir Jyoti
KL	Kilo Litre
KVA	Kilo Volt Ampere

KVAH	Kilo Volt Ampere Hour
Kwh	Kilo Watt Hour
LT	Low Tension
ml	Millilitre
MMC	Monthly Minimum Charge
MoP	Ministry of Power
MT	Metric Tonne
MU	Million Unit
MVA	Mega Volt Ampere
MW	Mega Watt
MYT	Multi-Year Tariff
NDS	Non Domestic Service
NEP	National Electricity Policy
NFA	Net Fixed Asset
NHPC	National Hydro Power Corporation
NTPC	National Thermal Power Corporation
O&M	Operation and Maintenance
O/H	Over Head
PGCIL	Power Grid Corporation of India Limited
PLF	Plant Load Factor
PWW	Public Water Works
R&M	Repair and Maintenance
RE	Revised Estimates
REA	Regional Energy Accounting
RGGVY	Rajiv Gandhi Grameen Vidyutikaran Yojna
RLDC	Regional Load Despatch Centre
RoE	Return on Equity
S/C	Single Circuit
SAC	State Advisory Committee
SERC	State Electricity Regulatory Commission
SS	Sub-station
ToD	Time of Day
TPS	Thermal Power Station
UI	Unscheduled Interchange

Bihar Electricity Regulatory Commission

Ground Floor, Vidyut Bhawan – II

Jawahar Lal Nehru Marg, Patna – 800 021

Case No. TP-41 of 2012

In the matter of:

Determination of Multi Year Aggregate Revenue Requirement (ARR) and Generation Tariff of Bihar State Power Generating Co. Ltd., Transmission Tariff of Bihar State Power Transmission Co. Ltd. and Retail Tariff for sale of electricity by the North Bihar Power Distribution Co. Ltd. and South Bihar Power Distribution Co. Ltd. to the consumers for the financial year 2013-14 in the State of Bihar

And

Bihar State Power (Holding) Company ---------------------------- Petitioner

Present:

U.N. Panjiar - Chairman

S.C. Jha - Member

ORDER

(Passed on 15th Day of March, 2013)

The Bihar State Electricity Board (hereinafter referred to as erstwhile BSEB) was constituted under section 5 of Electricity (Supply) Act, 1948 on 1st April, 1958. It was a deemed licensee in terms of Section 14 of the Electricity Act, 2003. Bihar State Electricity Board was engaged in the business of generation, transmission and distribution of electricity in the State of Bihar. In terms of Section 172 of the Act, the Board constituted under the repealed laws is to be deemed as the State Transmission Utility and a licensee under the provisions of the Act for a period of one year from 10th June, 2003 i.e. the appointed date. Subsequently it has been mutually agreed by the Central Government and the Government of Bihar to authorize the Board to continue to function as a State Transmission Utility and Licensee.

The erstwhile Bihar State Electricity Board (BSEB) is restructured on functional basis with effect from 1st November, 2012 into five successor companies under Bihar State Electricity Reforms Transfer Scheme 2012 vide Notification No. 17 dated 30.10.2012 issued by Energy Department, Government of Bihar, namely,

- Bihar State Power Holding Company Limited (BSPHCL)
- Bihar State Power Generation Company Limited (BSPGCL)
- Bihar State Power Transmission Company Limited (BSPTCL)
- North Bihar Power Distribution Company Limited (NBPDCL) and
- South Bihar Power Distribution Company Limited (SBPDCL)

As per directive of the Commission, the erstwhile BSEB was finalizing the petition for True-up of expenses and revenues for FY 2011-12, Review of expenses and revenues for FY 2012-13 and determination of Multi Year ARR for FY 2013-14, 2015-16 and 2016-17 and Tariff with effect from 01.04.2013. However, the State Government restructured erstwhile BSEB with effect from 01.11.2012. Hence, the BSPHCL, the holding company, has filed the petition on behalf of the successor generation, transmission and two distribution companies on 14th November, 2012. The Petition contains ARR for generation and transmission companies separately and the ARR for two distribution companies together for the MYT period. This is the first MYT Petition to be filed for the control period of three years FY 2013-14 to FY 2015-16 for ARR and Tariff separately for Generation, Transmission and Distribution utilities. The ARR for the two distribution companies is filed together. The Commission has accepted the petition for consideration.

In exercise of the powers vested in Bihar Electricity Regulatory Commission under section62 (1)(d) read with Section 62(3) and Section 64 (3)(a) of the Electricity Act, 2003 and Bihar Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff) Regulations 2007 (hereinafter referred to as 'Tariff Regulations') and other enabling provisions in this behalf, the Commission issues this order for truing up of the Aggregate Revenue Requirement (ARR) and revenues for financial year (FY) 2011-12, Reviewing of ARR and revenues for FY 2012-13 and approval of the ARR for the years FY 2013-14 to FY 2015-16 and determination of the Retail Tariff for the Financial Year 2013-14 for supply of electricity by the North Bihar and south Bihar Power Distribution Companies to the consumers in the State of Bihar. Tariff Regulations specify that the Distribution Licensee shall file Aggregate Revenue Requirement (ARR) and the Tariff Petition complete in all respects along with requisite fee as specified in the Commission's Fees, Fines and charges, Regulation on or before 15th November of the preceding year. Accordingly, BSPHCL, the successor entity of erstwhile BSEB filed the ARR and Tariff Petition for the control period FY 2013-14 to FY 2015-16 along with the petitions for truing up for FY 2011-12 and review of ARR for FY 2012-13.

Regulation 22 of the Tariff Regulations, 2007, provides that the Commission shall undertake a review along with next Tariff Order, of the expenses and revenue approved by the Commission in the current year's Tariff Order. After audited accounts of the year are made available, the Commission shall undertake a similar exercise based on the final actual figures as per the audited accounts. Accordingly BSPHCL, the successor entity of BSEB along with petition for determination of ARR for the years FY 2013-14 to FY 2015-16 and retail tariff for FY 2013-14, has also submitted petitions for truing up of ARR and revenue for FY 2011-12 based on the audited annual accounts for the year and for review of the ARR for FY 2012-13.

Regulation 6(5) of the Tariff Regulations provides for giving adequate opportunities to all stakeholders and general public for making suggestions/objections on the tariff petition as mandated under section 64(3) of the Electricity Act, 2003. Accordingly, the Commission directed BSPHCL vide letter no. 1180 dated 30th November 2012 to publish the ARR and tariff petition for the control period FY 2013-14 to FY 2015-16 in an abridged form as public notice in newspapers having wide circulation in the State inviting suggestions/objections on the tariff petition. Accordingly BSPHCL published the tariff petition in the abridged form as public notice in various newspapers and the tariff petition was also placed on the website of BSPHCL. The last date of submission of suggestions/objections was fixed as 24th December, 2012.

The Commission, to ensure transparency in the process of tariff determination and for providing proper opportunity to all stakeholders and general public for making suggestions/objections on the tariff petition and for convenience of the consumers and general public across the state, decided to hold the public hearing at the divisional headquarters of the State and accordingly the Commission held public hearing at Darbhanga on 20th December 2012, Muzaffarpur on 21st December 2012, Munger on 4th January 2013, Bhagalpur on 5th January 2013, Saharsha on 19th January 2013, Purnea on 20th January 2013, Chapra on 29th January, 2013, Gaya on 1st February, 2013 and Patna on 7th & 8th February, 2013.

The proposal of BSPHCL was also placed before the State Advisory Committee in its meeting held on 14.12.2012 and various aspects of the petition were discussed by the Committee. The Commission took the advice of the State Advisory Committee on the ARR and tariff petition of BSEB for the years FY 2013-14 to FY 2015-16 during the meeting of the Committee.

The Commission took into consideration the facts presented by the BSPHCL in its petition and subsequent various filings, the suggestions/objections received from stakeholders, consumer organizations, general public and State Advisory Committee and response of the BSPHCL to those suggestions/objections.

The Commission, taking into consideration all the facts which came up during the public hearing and meeting of the State Advisory Committee, has trued up the ARR and revenue for FY 2011-12, reviewed the ARR and revenue for FY 2012-13 of erstwhile BSEB and approved the ARR for the years FY 2013-14 to FY 2015-16 for the generation company (BSPGCL), Transmission company (BSPTCL) and the two distribution companies namely NBPDCL and SBPDCL and determined the generation and transmission tariffs for the control period FY 2013-14 to FY 2015-16 and retail tariff of the two distribution companies for FY 2013-14.

The true up of ARR and revenue for FY 2011-12 has indicated a surplus of Rs. 170.33 crore against a deficit of Rs. 1537.82 crore claimed by BSPHCL. The review of ARR and revenue for FY 2012-13 has also indicated a surplus of Rs.950.32 crore against a deficit of Rs. 1889.29 crore projected by BSPHCL.

The State Government has been giving resource gap grant to erstwhile BSEB which has been used for reducing the revenue gap of erstwhile BSEB. This treatment of resource gap has had the effect of reducing the average tariff of all categories of consumers across the state till FY 2011-12.

The State Government vide letter No. 4208 dated 19th September,2011 clarified that the resource gap grant being provided to the erstwhile BSEB shall be used first for compensating erstwhile BSEB for the financial loss incurred by erstwhile BSEB on account of disallowed power purchase due to difference in the actual T&D loss and the T&D loss as approved by the Commission and the balance amount of resource gap grant shall be used towards subsidies to the agricultural and rural consumers.

Further, the State Government vide its letter no. 1223 dated 4th March, 2013 has also informed that according to the budget provision proposed by the State Government, a resource gap grant of Rs. 2160 crore has been provided for the FY 2013-14. The resource gap grant of Rs. 2160 crore for the FY 2013-14 is first adjusted towards disallowed power purchase cost amounting to Rs. 1588.02 crore due to difference in the actual T&D loss and the T&D loss approved by the Commission and the balance amount of Rs. 571.98 crore has been considered to subsidise the BPL, agricultural and rural consumers. The Commission has approved a net revenue gap of Rs. 1167.64 crore at the existing tariff for FY 2013-14. After adjusting the Government subsidy to Kutir Jyoti, rural and agricultural consumers amounting to Rs. 571.98 crore, the net gap at existing tariff is Rs. 595.66 crore. As a result, the revenue gap for FY 2013-14 is reduced to Rs.595.66 crore against Rs. 3427.72 crore projected by BSPHCL. In order to avoid Tariff shock to the consumers, a modest increase in Tariff for all consumers to realize additional revenue of Rs.241.18 crore, is considered by the Commission and the balance revenue gap of Rs.354.48 crore is approved as regulatory asset to be amortised/ adjusted along with admissible carrying cost during next three years. The surplus of Rs. 950.32 crore in review for FY 2012-13 is not proposed to be carried forward and considered for FY 2013-14, as the surplus is based on six month revenue which may materially change as experience has shown earlier. The surplus/deficit during FY 2012-13 will be considered after Truing up of FY 2012-13 based on audited accounts is done in FY 2014-15.

BSPHCL in this Tariff Petition has proposed Transmission and Distribution loss projection for the control period FY 2013-14 to FY 2015-16 at 38% for FY 2013-14, 34.0% for FY 2014-15 and 28.5% for FY 2015-16. Commission has, however, fixed the loss trajectory at 26% for FY 2013-14, 24.5% for FY 2014-15 and 24.0% for FY 2015-16. The financial loss caused to BSPHCL due to difference between the actual T&D loss as proposed by BSPHCL and T&D loss approved by the Commission has been compensated from the resource gap grant provided by the State Government.

The Commission has made an attempt to workout voltage-wise cost of supply for FY 2013-14 in accordance with the methodology indicated by Hon'ble APTEL in its order dated 10th May, 2012. BSPHCL has not conducted detailed system studies to arrive at voltage –wise technical losses as indicated in the methodology given by APTEL. BSPHCL has furnished voltage-wise technical losses based on limited studies on its 132 KV, 33 KV, 11 KV and LT system. BSPHCL has proposed total T&D loss of 38% for FY 2013-14 and the Commission has approved T&D loss of 26% for FY 2013-14. In the absence of data on voltagewise technical and commercial or non-technical losses in the transmission and distribution network of the State, the Commission has not apportioned the T&D loss of26% into technical and non-technical or commercial loss. The Commission has considered the voltage-wise technical loss level at a well-managed T&D system with 26% total T&D loss approved as follows:

132 kV	4%
33 kV	5%
11 kV	6%
LT	7%

This is considered as target for voltagewise technical losses within total loss level of 26% for F 2013-14.

The voltage-wise cost of supply arrived at based on the assumed voltage-wise technical losses as above is considered reasonable and the Tariffs now proposed for different categories of consumers would have reduced levels of cross subsidy element compared to the existing level of cross subsidy and cross subsidy will be nearer to ±20% of cost of supply. For most of the consumer categories, cross subsidy will be within ±20% of cost of supply except for some categories for which tariff subsidy from State Government will be available. These could be fine-tuned when more realistic voltage-wise technical losses are available. The detailed calculation of cost of supply is given in chapter-9.

To encourage the consumers to avail power under ‘Open Access’ from other sources, the Commission has reduced the cross subsidy surcharge by about 50% (fifty percent) in its Tariff Order for FY 2011-12 which the Commission has retained during 2013-14 also. As a result, the consumers have to pay cross subsidy surcharge at the rate of about 50% of the rate approved in Tariff Policy 2006.

The Commission has brought out Regulations on Fuel and Power purchase cost adjustment (FPPCA) on 31.03.2012 and the formula given in the regulations has to be applied to arrive at FPPCA in future by generation and distribution companies to claim Fuel and Power Purchase cost adjustments with prior approval of the Commission on a monthly basis.

The Commission scrutinized the petitions filed by generating company and the transmission company and determined the generation tariff and the transmission tariff for the control period FY 2013-14 to FY 2015-16 in this tariff order.

Against the net ARR proposed by BSPGCL of Rs. 410.35 crore., 647.39 crore and 1179.24 crore the Commission approved Rs. 348.97 crore, 501.16 crore and 518.02 crore for FY 2013-14, FY 2014-15 and FY 2015-16 respectively. The Commission also approved net generation cost at Rs. 5.46, Rs. 4.13 and Rs. 4.27 per unit against Rs. 6.87, Rs. 5.45 and Rs. 6.34 per unit projected by the generating company.

Similarly, against the net ARR projected by BSPTCL of Rs. 263.59 crore, 317.56 crore and Rs. 352.65 crore the Commission approved Rs. 212.84 crore, 262.32 crore and Rs. 304.16 crore for FY 2013-14, FY 2014-15 and FY 2015-16 respectively and allowed the transmission company to recover the approved transmission charges on monthly basis from the two power distribution companies at the rate of Rs. 17.74 crore per month for FY 2013-14, at Rs. 21.86 crore per month for FY 2014-15 and Rs. 25.35 crore per month for FY 2015-16.

The Commission has reviewed the directives issued earlier in the tariff orders for FY 2006-07 to FY 2012-13 and noted that some of the directives issued are complied and some are partially attended. The Commission as dropped the directives complied with and the remaining directives are consolidated as "Fresh Directives" to the North Bihar Power Distribution Co. Ltd. and South Bihar Power Distribution Co. Ltd..

This order is in fourteen chapters which include True up for FY 2011-12, Review for FY 2012-13 and detailed analysis of the Aggregate Revenue Requirement (ARR) for the period FY 2013-14 to FY 2015-16 for Generation, Transmission, and two Distribution companies separately and Tariffs for FY 2013-14 for these companies.

The net Annual Revenue Requirement (ARR) approved for FY 2013-14 for the two power distribution companies is Rs.6663.71 crore and the net revenue gap at existing tariff after adjusting the surplus of Rs.170.30 crore of FY 2011-12 is Rs. 1167.64 crore. After adjusting the Government subsidy of Rs.571.98 crore towards tariff subsidy, the revenue gap at existing tariff as determined by the Commission is

Rs.595.66 crore. To avoid sharp increase in tariff rates, the Commission has approved a moderate increase of 6.9% in average tariff which will fetch an additional revenue of Rs.241.18 crore. The existing average tariff is Rs. 4.92 per unit which has now been increased to Rs.5.24 per unit. In order to avoid further increase in tariff, the revenue gap of Rs.354.48 crore is being approved as regulatory asset which will be recovered along with carrying cost in the subsequent financial years after true up for FY 2012-13 and review of the ARR for FY 2013-14 along with determination of ARR and retail tariff for FY 2014-15.

As directed by the Commission, BSPHCL has submitted the business plans for generation, transmission and distribution companies for the period FY 2013-14 to FY 2015-16 along with the ARR and Tariff Petition which has been approved with certain modifications as indicated in the relevant chapters of this order.

The Bihar State Power Holding Company should ensure implementation of the order from the effective date after issuance of a Public Notice, in such a font size which is clearly visible, in two daily newspaper having wide circulation in the various parts of State within a week and compliance of the same shall be submitted to the Commission by the BSPHCL.

This order shall be effective from 1st April 2013 and shall remain in force till 31st March, 2014 or till the next tariff order of the Commission.

This order will be placed on the website of the Commission and a copy will be sent to BSPHCL, Department of Energy, Government of Bihar, Central Electricity Regulatory Commission and all State/Joint Electricity Regulatory Commissions.

Sd/-	**Sd/-**
(S. C. Jha)	**(U. N. Panjiar)**
Member	**Chairman**

1. Introduction

1.1 Bihar Electricity Regulatory Commission (BERC)

The Bihar Electricity Regulatory Commission (hereinafter referred to as "Commission" or "BERC") was constituted by the Government of Bihar under Section 17 of the Electricity Regulatory Commission Act, 1998 vide Government of Bihar notification No.1284 dated 15th April 2002. The Electricity Regulatory Commission Act, 1998 along with Indian Electricity Act, 1910 and Electricity (Supply) Act, 1948 was repealed by Section 185 (1) of the Electricity Act, 2003 (hereinafter referred to as the "Act"). The first proviso of Section 82 (1) has ensured continuity of the Bihar Electricity Regulatory Commission by laying down that the State Electricity Regulatory Commission established by the State Government under Section 17 of Electricity Regulatory Commission Act, 1998 and functioning as such, immediately before the appointed date, shall be the State Electricity Regulatory Commission for the purpose of the Act.

1.2 Functions of BERC

1.2.1 As per Section 86 of the Electricity Act 2003, the State Commission shall discharge the following functions, namely

a) determine the tariff for generation, supply, transmission and wheeling of electricity, wholesale, bulk or retail, as the case may be, within the State: Provided that where open access has been permitted to a category of consumers under section 42, the State Commission shall determine only the wheeling charges and surcharge thereon, if any, for the said category of consumers;
b) regulate electricity purchase and procurement process of distribution licensees including the price at which electricity shall be procured from the generating companies or licensees or from other sources through agreements for purchase of power for distribution and supply within the State;
c) facilitate intra-state transmission and wheeling of electricity;
d) issue licenses to persons seeking to act as transmission licensees, distribution licensees and electricity traders with respect to their operations within the State;
e) promote co-generation and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person, and also specify, for purchase of electricity from such

sources, a percentage of the total consumption of electricity in the area of a distribution licence;

f) adjudicate upon the disputes between the licensees, and generating companies and to refer any dispute for arbitration;
g) levy fee for the purposes of this Act;
h) specify State Grid Code consistent with the Indian Electricity Grid Code specified with regard to grid standards;
i) specify or enforce standards with respect to quality, continuity and reliability of service by licensees;
j) fix the trading margin in the intra-state trading of electricity, if considered, necessary; and
k) discharge such other functions as may be assigned to it under this Act.

1.2.2 The State Commission shall advise the State Government on all or any of the following matters, namely

a) promotion of competition, efficiency and economy in activities of the electricity industry;
b) promotion of investment in electricity industry;
c) reorganization and restructuring of electricity industry in the State;
d) matters concerning generation, transmission, distribution and trading of electricity or any other matter referred to the State Commission by State Government.

1.3 Background and Brief History

1.3.1 Background

The Bihar State Power (Holding) Company Limited (herein after referred to as BSPHCL or Petitioner) has filed its Petition on behalf of (i) Bihar State Power Generation Company Limited (ii) Bihar State Power Transmission Company Limited (iii) North Bihar Power Distribution Company Limited and (iv) South Bihar Power Distribution Company Limited on 14th November, 2012 under Section 62 of the Electricity Act, 2003, read with Bihar Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff) Regulations, 2007 (hereinafter referred as 'BERC Tariff Regulations, 2007') for provisional truing up for FY 2011-12, based on unaudited accounts for FY 2011-12, Annual Performance Review for FY 2012-13, Aggregate Revenue Requirement (ARR) for the control period FY 2013-14 to FY 2015-16 and determination of Tariff for FY 2013-14. Subsequently, the petitioner filed revised True up petition for FY 2011-12, alongwith audited accounts on 24.12.2012.

The petitioner also submitted revised Tables No. 128, 131, and 132 of MYT Petition on 20.12.2012.

1.3.2 Bihar State Power (Holding) Company Limited (BSPHCL)

The Government of Bihar unbundled and Restructured the Bihar State Electricity Board with effect from 1st November, 2012. The Generation, Transmission and Distribution Businesses of the erstwhile Bihar State Electricity Board are transferred to four successor companies. The four successor companies are listed below:

Generation	: Bihar State Power Generation Company Limited
Transmission	: Bihar State Power Transmission Company Limited
Distribution	: (i) North Bihar Power Distribution Company Limited
	(ii) South Bihar Power Distribution Company Limited

Bihar State Power (Holding) Company Limited (BSPHCL), a holding company is responsible for purchase of electricity from various sources and supply of electricity to Distribution companies and other activities including trading of electricity. The BSPHCL has filed the Petition for truing up of FY 2011-12, Annual Performance Review for FY 2012-13 and MYT Petition for the control period FY 2013-14 to FY 2015-16 on behalf of the above mentioned four companies.

The Government of Bihar vide notification dated 30th October, 2012, notified the provisional opening Balance Sheet of the transferee companies as on 1st April, 2011. The value of assets and liabilities stands transferred from the erstwhile Bihar State Electricity Board to the transferee companies, including the Bihar State Power (Holding) Company Limited. Assets and liabilities (gross block, loans and equity) as on the date mentioned in the notification, have been considered by the Commission in line with the Financial Restructuring Plan (FRP) as approved by the Government of Bihar.

1.4 Commission's Orders issued earlier

The chronology of the filing of tariff petitions and issue of Tariff Orders from FY 2006-07 are listed below:

1.4.1 The BSEB had submitted its first Aggregate Revenue Requirement (hereinafter referred to as "ARR") and tariff petition for the FY 2006-07 on 10th April, 2006. The Commission passed the Tariff Order on that petition on 29th November, 2006.

1.4.2 The BSEB submitted its ARR and tariff petition for FY 2007-08 on 18th December, 2007. As the tariff petition for FY 2007-08 was filed very late, the Commission vide letter no. BERC.Tariff-9/07-03 dated 2nd January 2008 directed the BSEB to file the ARR and tariff petition for FY 2008-09 along with data as specified by the Commission in the BERC (Terms and Conditions for Determination of Tariff) Regulations, 2007 by 31st January 2008.

1.4.3 The BSEB submitted its ARR and tariff petition for FY 2008-09 on 14th February, 2008. The Tariff Order for FY 2008-09 was passed by the Commission on 26th August, 2008. The Commission also undertook the "Review" of ARR for FY 2006-07 along with Tariff Order for FY 2008-09.

1.4.4 The BSEB filed on 9th October 2009 the petition for determination of ARR and approval of retail tariff for FY 2009-10. However, due to delay in filing of the ARR/ tariff petition for FY 2009-10, the Commission directed the BSEB to file the ARR and tariff petition for the FY 2010-11. In view of the same, there was no approval of the ARR for FY 2009-10.

1.4.5 The BSEB submitted its ARR and tariff petition for FY 2010-11 before the Commission on 3rd February, 2010. The Commission passed the Tariff Order for FY 2010-11 on 6th December, 2010. The Commission also undertook the "Review" of ARR for FY 2008-09 along with the Tariff Order for FY 2010-11.

1.4.6 The BSEB submitted its ARR and tariff petition for FY 2011-12 before the Commission on 17th February, 2011. The Commission passed the Tariff Order for FY 2011-12 on 1st June, 2011, effective from 1st May 2011.

1.4.7 The True-up petition for FY 2006-07, FY 2007-08 and FY 2008-09, based on the audited annual accounts of BSEB, was filed by the BSEB on 01st September 2011. The addendum to this True-up petition was filed by BSEB on 17th October 2011. The Commission passed its first truing up order for FY 2006-07, FY 2007-08 and FY 2008-09 on 4th January 2012.

1.4.8 Subsequently, the BSEB filed the Truing up petition for FY 2009-10 on 13th October, 2011. The truing up order for FY 2009-10 was issued by the Commission on 27th January 2012.

1.4.9 BSEB also submitted a petition on 13th October, 2011 vide letter No. Com/ FPPCA-136/2011-1659 for the review of ARR for FY 2010-11 based on their Audited Annual

Accounts. The Commission vide its Order dated 3rd November, 2011 directed BSEB to submit its petition for review of the expenses and revenues for the FY 2010-11 along with tariff petition for FY 2012-13. Commission also directed BSEB that, if the final audited accounts for the FY 2010-11 are made available to the Commission along with the petition or during the hearing of tariff petition for FY 2012-13, a final true up of the expenses and revenues for the FY 2010-11 shall be considered by the Commission.

1.4.10 The Board filed its ARR and tariff petition for FY 2012-13 on 15th November 2011. In this petition the Board also carried out review exercise for FY 2011-12 projecting the revised estimates for FY 2011-12 based on the provisional annual accounts of BSEB for FY 2010-11. A Supplementary petition for determination of ARR & retail tariff petition for FY 2012-13 was subsequently filed by the Board vide letter No. Com/ Tariff-152/ 2011-(Part-I) -017 on 2nd January 2012.

1.4.11 Further, BSEB vide letter No. Com/ Tar-132/ 2011-392 dated 2nd March, 2012 submitted the audited annual accounts for FY 2010-11 along with the audit certificate issued by CAG to the Commission. Subsequently, BSEB vide letter No. Com/ Tar-132/ 2011-451 dated 16th March, 2012 submitted the truing up petition of BSEB for FY 2010-11 based on the audited annual accounts for FY 2010-11.

1.4.12 The BSEB filed petition for truing up for FY 2010-11, Performance Review for FY 2011-12 and determination of ARR and Tariff for FY 2012-13. The Commission issued the Tariff Order on 30th March, 2012 effective from 1st April, 2012.

1.5 Admission of Current Petition and Public Hearing Process

1.5.1 The BSPHCL filed the Petition on behalf of Generation, Transmission and Distribution Companies for provisional truing up of FY 2011-12 along with provisional Annual Accounts for FY 2011-12, Performance Review for FY 2012-13 and MYT Petition for determination of ARR for FY 2013-14 to FY 2015-16 and determination of tariff for FY 2013-14 on 14th November, 2012 vide their letter no. Com/Tariff petition-160/2012/2857 dated 12.11.2012. This order is for approval of True up for FY 2011-12, APR for FY 2012-13, ARR for FY 2013-14 to FY 2015-16 and determination of Tariff for FY 2013-14.

On preliminary verification of the Petition, the Commission has admitted the Petition (Case No.T.P.No.41 of 2012) on 29th November, 2012 and in accordance with section 64 of the Electricity Act, 2003 and sub-clause 6 (5) of the BERC (Terms and Conditions of Determination of Tariff) Regulations, 2007, the Commission directed the BSPHCL to publish its application in the abridged form in at least two daily newspapers, one in English and the other in Hindi, having wide circulation in the State inviting objections and suggestions from its stakeholders on the ARR and Tariff Petition filed by it.

The public notice was published in the following newspapers as given below:

Sl. No.	Name of the news paper	Language	Date of Publication
1	Dainik Jagran	Hindi	6.12.2012
2	Times of India, Patna	English	7.12.2012 and 11.12.2012
3	Hindustan	Hindi	11.12.2012

The tariff petition was also placed on the website (htpp:/www.bseb.bih.nic.in / notice.htm) of erstwhile BSEB for inviting objections and suggestions on the petition and copies of the petition along with Annexures were also made available for sale in the office of the Chief Engineer (Commercial), BSPHCL, Patna and in the offices of all Area General Managers-cum-Chief Engineers and all Superintending Engineers in-charge of supply circles of Distribution companies.

The interested parties / stakeholders were asked to file their objections / suggestions on the Petition on or before 24th December, 2012.

The proposal of BSPHCL was also placed before the State Advisory Committee (SAC) in its meeting held on 14.12.2012 and various aspects of the petition were discussed by the Committee. The Commission took the advice of the State Advisory Committee on the ARR and tariff petition of BSEB for the years FY 2013-14 to FY 2015-16 during the meeting of the Committee. The minutes of the meeting are given in Annexure-I.

BSPHCL was also directed to publish the schedule for Public Hearings along with the public notice inviting objections/suggestion.

The Commission received written objections / suggestions from 51 consumers / consumer organisations. The Commission directed BSPHCL to submit the replies / response to the suggestions/ objections to the Commission vide letters Nos. as mentioned below:

BERC Letter No.	Date	No. of objection/ suggestion sent to BSPHCL	Date of submission of reply by BSPHCL
1330	28.12.2012	17	Lr.No.375/5.2.2013
91	23.01.2013	19	Lr.No.658/8.3.2013
136	06.02.2013	6	Lr.No.652/7.3.2013
209	21.02.2013	9	Lr.No.652/7.3.2013

Separate, communications were sent to the objectors to take part in the public hearing process for presenting their views in person before the Commission. The public hearing was conducted across the State for convenience of electricity consumers and general public at nine (9) divisional headquarters on scheduled dates and places as given below:

Sl.No.	Place	Date of Public Hearing
1	Darbhanga	20.12.2012
2	Muzaffarpur	21.12.2012
3	Munger	04.01.2013
4	Bhagalpur	05.01.2013
5	Saharsa	19.01.2013
6	Purnea	20.01.2013
7	Chhapra	29.01.2013
8	Gaya	01.02.2013
9	Patna	07.02.2013 & 8.02.2013

The names of consumers / consumer organisations who filed their objections and the list of objectors participated in the public hearing for presenting their objections / suggestions are given in Annexure-II.

A note on the main issues raised by the objectors in the written submissions and also in the public hearing in respect of the petition, along with the response of BSPHCL and the Commission’s views on the response, are given in Chapter-3.

1.6 Approach of this order

The BERC (Terms and Conditions for Determination of Tariff) Regulations, 2007 provides for truing up of previous year (FY 2011-12), Annual Performance Review (APR) for the current year (FY 2012-13) and determination of ARR for the three years of the control period FY 2013-14 to FY 2015-16.

The BSPHCL has now approached the Commission with the present Petition for truing up of FY 2011-12 based on Audited Annual Accounts for FY 2011-12, the Annual Performance for the FY 2012-13 and determination of ARR for the control period FY 2013-14 to FY 2015-16 and determination of tariff for FY 2013-14.

The Commission has examined the Petition and observed that certain additional data / information and clarifications are required for taking up detailed analysis of the Petition. The Commission directed BSPHC Ltd. to submit the additional data / information and clarifications vide letter no. 1159 dated 27.11.2012 and 1278 dated 19.12.2012. The BSPHC Ltd. submitted additional information/data/clarification vide their letter No. 3123 dated 20.12.2012 and 195 dated 18.01.2013. The BSPHC Ltd. filed true up petition for FY 2011-12 based on audited annual accounts for FY 2011-12 along with copies of the audited annual accounts for FY 2011-12 vide their letter no. Com/True-up/179/2012/3138 dated 24.12.2012. BSPHC Ltd. has also submitted Revised Estimate for FY 2012-13 based on actual of first five months (from April to August, 2012) and Budget Estimate for FY 2013-14 on 24.1.2013. During the process, BSPHC Ltd. also furnished category-wise revenue and energy sale from April 2012 to October 2012.

The Commission has undertaken 'truing up' of the FY 2011-12 based on Audited Annual Accounts and Annual Performance Review for the FY 2012-13 based on the data submitted by the BSPHC Ltd. after prudence check.

While considering the truing up of the ARR for FY 2011-12, the Commission has been primarily guided by the following principles:

1. Controllable parameters have been considered at the level approved under the Tariff Order for FY 2011-12 unless the Commission considers there are valid reasons for revising the same.
2. Uncontrollable parameters have been revised, based on the actual performance observed.

The truing up for the FY 2011-12 and Annual Performance Review for FY 2012-13 and the determination of ARR for FY 2013-14 to FY 2015-16 and the tariff for FY 2013-14 have been considered based on the BERC (Terms and Conditions for Determination of Tariff) Regulations, 2007.

1.7 Business Plan

The erstwhile BSEB now BSPHC Ltd. had submitted the Business Plan for Bihar State Power Generation Company Limited, Bihar State Power Transmission Company and two nos. of Bihar Power Distribution companies Ltd. on 20.09.2012 vide its letter no. 2458 dated 20.09.2012 in accordance with the directive of the Commission in the Tariff Order for FY 2012-13. As the Business Plan was not complete in all respect, the erstwhile BSEB was directed to resubmit the Business Plans after attending to the comments of the Commission. BSPHCL has resubmitted the Business Plan for generation, transmission and distribution companies on 14th November 2012 vide its letter no. Com/BP/Transmission-108/2012-2862. Even the resubmitted Business Plan was not complete in all respects. The Commission again directed BSPHCL to attend to all the deficiencies pointed out vide letter no. 1290 dated 21.12.2012 and to resubmit the Business Plans in line with MYT petition for FY 2013-14 to FY 2015-16. BSPHCL submitted revised Business Plan for generation, transmission and distribution business on 04.01.2013 vide its letter no. 43 dated 03.01.2013 for Transmission Business Plan, letter no. 42 dated 03.01.2013 for Generation Business Plan and 49 dated 04.01.2013 for Distribution Business Plan.

The revised Business Plan for generation, transmission and distribution companies had been approved with certain modifications in chapters 6, 7 and 8 of this order.

1.8 Contents of this order

The order is divided into fourteen chapters for Generation Company, Transmission Company and the two Distribution Companies.

1. The **First Chapter** provides a background of the Petitioner (BSPHCL), Commission's orders for the earlier years, the Petition and details of public hearing process, the approach adopted for this order and Business Plans.
2. The **Second Chapter** contains a summary of BSPHCL MYT Petition.
3. The **Third Chapter** provides brief account of the public hearing process, including the objections raised by stakeholders, BSPHCL response and Commission's views on the same.
4. The **Fourth Chapter** deals with the Truing up for the FY 2011-12.
5. The **Fifth Chapter** deals with Annual Performance Review for FY 2012-13.
6. The **Sixth Chapter** deals with the Aggregate Revenue Requirement (ARR) of Bihar State Power Generation Company Limited for FY 2013-14 to FY 2015-16.
7. The **Seventh Chapter** deals with the Aggregate Revenue Requirement (ARR) for Bihar State Power Transmission Company FY 2013-14 to FY 2015-16.
8. The **Eighth Chapter** deals with ARR for FY 2013-14 to FY 2015-16 and tariff for retail supply of electricity for FY 2013-14 for North and South Bihar Power Distribution Companies
9. The **Ninth Chapter** deals with voltage-wise cost of supply.
10. The **Tenth Chapter** deals with Tariff Philosophy / design for Retail supply Tariffs approved by the Commission.
11. The **Eleventh Chapter** contains Compliance of earlier directives and issue of fresh directives.

12. The **Twelfth Chapter** contains the provisions for Fuel and Power Purchase Cost Adjustment
13. The **Thirteenth Chapter** deals with computation of wheeling charges.
14. The **Fourteenth Chapter** deals with Renewable Purchase Obligations

2. Summary of Petition for True up for FY 2011-12, Review for FY 2012-13 and Determination of ARR and Tariff for FY 2013-14 to FY 2015-16

2.1 The summary of Aggregate Revenue Requirement (ARR) approved in Tariff Order for FY 2011-12, approved in Annual Review in Tariff Order for FY 2012-13 and now claimed by BSPHCL in true up for FY 2011-12 is as given in the Table below:

Table2.1: ARR approved in Tariff Order for FY 2011-12 and now claimed in true up for FY 2011-12

(Rs. crore)

Sl. No.	Description	Approved in Tariff Order for FY 2011-12	Approved in Review for FY 2011-12 in Tariff Order FY 2012-13	BSPHCL proposal in truing-up for FY 2011-12
1.	Power Purchase Cost	3328.00	4156.89	4393.43
2.	Own Generation Cost	80.00	72.04	79.36
3.	Repair & Maintenance Expenses	95.00	100.62	83.46
4.	Employees' Cost	798.00	641.41	923.18
5.	Admin & General Expenses	52.00	70.72	45.22
6.	Depreciation	117.00	108.42	37.32
7.	Interest & Finance Charges	149.00	94.56	74.06
8.	Interest on Working Capital	86.00	104.82	143.06
9.	Return on Equity	-	-	204.12
10.	Other Debits and extraordinary Items	-	-	691.01
11.	Less: Prior Period Credits / (Charges)	-	-	(284.76)
12.	**Total Revenue Requirement**	**4706.00**	**5349.47**	**6958.97**
13.	Less: Expenditure disallowed due to higher T&D losses	-	841.70	1076.39
14.	Less: Non-Tariff Income	168.00	122.28	193.12
15.	Net Revenue Requirement	4538	4385.49	5689.46
16.	Revenue from approved tariff	2769.00	2385.69	3107.80
17.	Revenue from sale to Nepal	224.00	258.63	
18.	Revenue from sale to UI	-	102.36	
19.	Revenue from sale additional power	220.00	54.23	
20.	Revenue through FPPPA	-	790.91	
21.	**Gap**	**1325.00**	**793.69**	**2581.60**
22.	Less: Resource gap grant from State Govt.	1080.00	1080.00	1043.85
23.	Less: Additional resource gap available with BSEB	-	388.30	-
24.	**Net gap/surplus**	**(245.00)**	**(674.63)**	**1537.82)**

2.2 The summary of Aggregate Revenue Requirement (ARR) and Revenue gap approved in Tariff Order and now claimed in Review for FY 2012-13 (RE) is as given in the Table below:

Table 2.2: ARR approved in Tariff Order for FY 2012-13 and now claimed in Review for FY 2012-13 (RE)

(Rs. crore)

Sr. No.	Particulars	Approved in T.O. for FY 2012-13	FY 2012-13 (RE)			
			Generation	Transmission	Distribution	Total
1	Net Power Purchase Cost	5181.71	--	--	4127.92	4127.92
2	Fuel Cost	103.52	--	--	--	--
3	Interest Cost	191.19	18.16	23.23	122.22	163.60
4	Depreciation	159.77	6.74	55.98	58.90	121.62
5	O&M cost	920.41	128.39	160.19	872.14	1160.72
6	Interest on Working Capital	146.99	8.19	10.35	145.28	163.82
7	RoE	--	53.32	36.43	123.06	212.81
8	Total ARR	6703.59	214.81	286.17	5449.52	5950.50
9	Less: Non Tariff Income	127.16	0.42	0.42	106.31	107.15
10	**Net ARR**	**6576.43**	**214.38**	**285.75**	**5343.21**	**5843.34**
11	Less: Revenue from approved tariff	3906.06			3023.61	3023.61
12	Funding of disallowed PP cost (Grant)	1006.52			811.78	811.78
13	Gap at existing tariff	1663.85				2007.95
14	Additional: Recovery / (Surplus) of previous revenue Gap	(822.69)				845.76
15	Cumulative Gap	841.16				2853.71
16	Subsidy Support for Agriculture/Rural Consumers	683.90				964.42
17	Additional Revenue Subsidy Remaining	--				923.80
18	**Net Gap**	**157.26**				**965.49**

2.3 The summary of Aggregate Revenue Requirement (ARR) projected for MYT control period for FY 2013-14 to 2015-16 for Generation, Transmission and Distribution Companies is as given below:

Generation:

2.3.1 Annual Revenue Requirement (ARR) proposed for the Generation Company for MYT control period of FY 2013-14 to FY 2015-16 is as given in the Table below:

Table 2.3: Proposed ARR for the Generation Company for the control period

(Rs. crore)

Sl. No.	Particulars	Projections for Control Period		
		FY 2013-14	FY 2014-15	FY 2015-16
1.	Fuel Cost	216.11	410.02	629.14
2.	O&M Cost			
3.	Repair and Maintenance Expenses (1)	8.95	9.78	10.69
4.	Employee Expenses (2)	69.20	82.45	99.97
5.	A&G Expenses (3)	6.93	7.11	7.31
6.	O&M cost (=1+2+3)	85.08	99.35	117.97
7.	Interest & Financing charges	27.79	37.31	190.21
8.	Interest on working capital	17.93	29.47	48.93
9.	Depreciation	10.62	18.53	140.40
10.	ROE	53.32	53.32	53.32
11.	Total costs	410.86	648.00	1179.97
12.	Less: Non-tariff income	0.51	0.61	0.73
13.	**Net Revenue Recoverable from Generation**	**410.35**	**647.39**	**1179.24**
14.	Gross Generation (MU)	728.11	1349.04	2113.44
15.	Auxiliary Consumption (MU)	131.06	161.88	253.61
16.	Net Generation (MU)	597.05	1187.16	1859.83

Break-up of Fixed and Variable Cost

Sl. No.	Particulars	Projections for Control Period		
		FY 2013-14	FY 2014-15	FY 2015-16
1	Energy Charge (Rs. Cr.)	216.11	410.02	629.14
2	Annual Fixed Charge (Rs. Cr.)	194.24	237.37	550.09
3	Revenue Recoverable – Generation (Rs. Cr.)	410.35	647.39	1179.24
4	Energy charge (Rs./unit) at gross generation	2.97	3.04	2.98
5	Fixed charge (Rs./unit) at gross generation	2.67	1.76	2.60
6	Generation cost (Rs/unit) at gross generation	5.64	4.80	5.58
7	Generation cost (Rs/unit) at net generation	6.87	5.45	6.34

Transmission:

2.3.2 ARR proposed for the Transmission Company for MYT Control Period FY 2013-14 to FY 2015-16 is as given in the Table below:

Table 2.4: Proposed ARR for the Transmission Company for the control period

(Rs. crore)

Sl. No.	Particulars	Projections for Control Period		
		FY 2013-14	FY 2014-15	FY 2015-16
1	Depreciation	72.95	81.51	81.51
2	Interest & Finance Charges	54.04	78.18	86.43
3	Interest on Working Capital	9.72	12.27	14.62
4	**O&M Cost**	**90.96**	**109.78**	**134.39**
5	Employee Cost	76.25	93.7	116.83
6	R&M Cost	9.58	10.47	11.44
7	A&G Cost	5.13	5.61	6.12
8	Return on Equity	36.43	36.43	36.43
9	**Total**	**264.1**	**318.17**	**353.38**
10	Less: Non-Tariff Income	0.51	0.61	0.73

11	Net: Aggregate Revenue Requirement	263.59	317.56	352.65
12	Energy available for Transmission	15396.25	22862.22	29088.59
13	Transmission losses assumed	4%	4%	4%
14	Energy delivered to Distribution	14780	21948	27925
15	Transmission tariff (Ps/unit)	17.83	14.47	12.63

Distribution Companies:

2.3.3 ARR and Revenue Gap proposed for the two Distribution Companies for MYT Control Period of FY 2013-14 to FY 2015-16

Table 2.5: Proposed ARR and Revenue Gap at Existing Tariff for the control period

(Rs. crore)

Sl. No.	Particulars	Projections for Control Period		
		FY 2013-14	**FY 2014-15**	**FY 2015-16**
1	Net Power Purchase Cost	6070.96	7467.45	9399.14
2	Interest Cost	237.27	462.34	699.29
3	Depreciation	133.13	245.15	334.97
4	O&M Cost	533.14	633.36	763.05
5	Interest Cost on WC	188.05	241.53	323.14
6	**RoE**	**123.06**	**123.06**	**123.06**
7	**Total ARR**	**7285.61**	**9172.89**	**11642.64**
8	Less: Non-Tariff Income	110.68	122.45	136.00
9	**Net ARR (A)**	**7174.93**	**9050.44**	**11506.64**
10	Revenue from Sale of Power at existing tariff **(B)**	3632.70	4249.12	5050.76
11	Gap at existing Tariff **(C=A-B)**	3542.23	4801.32	6455.88
12	Gap for Previous Year with grant & subsidy **(D)**	965.49	3427.72	7149.04
13	Cumulative Gap **(E=C+D)**	4507.72	8229.04	13604.92
14	Expected Grant & Subsidy during the year **(F)**	1080.00	1080.00	1080.00
15	Net gap with grant and subsidy **(G=E-F)**	3427.72	7149.04	12524.92

Table 2.6: Proposed ARR and Revenue Gap at Proposed Tariff

(Rs. crore)

Sl. No.	Particulars	Projections for Control Period		
		FY 2013-14	**FY 2014-15**	**FY 2015-16**
1	**Net Annual Revenue Requirement (A)**	**7174.93**	**9050.44**	**11506.64**
2	Revenue from Sale of Power at proposed tariff **(B)**	5754.1	6899.0	8397.3
3	Gap at proposed Tariff **(C=A-B)**	1420.8	2151.4	3109.3
4	Gap for Previous Year with grant & subsidy **(D)**	965.49	1306.34	2377.75
5	Cumulative Gap **(E=C+D)**	2386.34	3457.75	5487.07
6	Expected Grant & Subsidy during the year **(F)**	1080.00	1080.00	1080.00
7	Net gap with grant and subsidy **(G=E-F)**	1306.34	2377.75	4407.09

2.4 Request to the Commission

The BSPHCL requested the Commission to;

1. Examine the proposal submitted by the BSPHCL for a favorable dispensation as detailed in the petition.

2. Consider the submissions and approve the true-up petition for FY 2011-12 of erstwhile BSEB, Review petition for FY 2012-13 and Multi Year Tariff (MYT) Petition for Generation, Transmission and two Distribution Companies of BSPHCL for the control period FY 2013-14 to FY 2015-16.

3. Pass suitable orders with respect to the proposed ARR as a whole as well for Generation, Transmission and Distribution functions separately of the erstwhile BSEB as proposed in this petition.

4. Approve the terms and conditions of tariff and various other matters as proposed in this petition and the proposed changes therein.

5. Pass such further order, as the Commission may deem fit and proper keeping in view the facts and circumstances of the case.

3. Stakeholders' Suggestions / Objections Received Petitioner's submission and Commission's Observations

3.0 Introduction

3.1.1 The Tariff petition evoked response from several stakeholders. In response to the public notice inviting objections / suggestions of the stakeholders on the Petition, a number of consumers / consumer organization filed their submissions in writing. Some of these persons also participated in the public hearing held on the 20th & 21st December, 2012 and 4th, 5th of January, 2013 and 19th, 20th and 29th of January, 2013, and 1st, 7th and 8th February, 2013. Submission and responses, pertaining to specific aspects of Tariff proposal, have been taken into account in the determination of ARR, formulation of an equitable tariff, balancing the interests of various stakeholders, even if they do not find place in the suggestions / objections of the stakeholders.

3.1.2 The public hearing were held at various locations across the State to ensure maximum public participation wherein stakeholders put forth their comments and suggestions before the Commission in the presence of the Petitioner. There were 152 members of the public who took part in the public hearing process. The list of the participants is attached as Annexure – II to this order. In course of public hearings, the Commission also allowed persons/representatives of entitles who had not submitted prior written representations to express their views on the ARR / tariff Petition for the MYT period FY 2013-14 to FY 2015-16.

3.1.3 The Commission has examined the issues and concerns voiced by various stakeholders in their written comments as well as in the public hearing and also the response of the Petitioner thereon. The comments/suggestions submitted by various stakeholders in response to the tariff petition, the replies given by the petitioner and the views of the commission have been summarised under various sub-heads as below.

3.2 Stakeholders Suggestions / Objections, BSEB's Response and Commission's Views

(A) True up for FY 2011-12

3.2.1 Issue: Admissibility of the petition

The Bihar Industries Association and Dina Iron & Steel Limited have submitted that the erstwhile BSEB was bifurcated into companies and all these companies are now separate legal entities and separate Tariff Petitions should have been filed by each of the companies. A copy of the Board's reply on this issue may be given to enable additional written submission at the time of public hearing.

Petitioner's submission:

The petition is filed by BSPHCL on behalf of the successor companies. However, the ARR of transmission and generation companies are treated separately and the ARR of each of the year in control period is determined separately. In case of distribution companies, the ARR is determined in combined manner. The petition was to be filed before 15th November and restructuring of the Board was notified at the time of filing the petition. Due to inadequate time, the petition was filed on behalf the successor companies.

Commission's Observations:

As submitted by the petitioner the unbundling of erstwhile BSEB has become effective from 1st November, 2012 while the MYT petition was being finalized. Hence, Bihar State Power Holding Company Limited (BSPHCL) has filed the petition on behalf of successor companies. The Commission has accepted the petition.

3.2.2 Issue: Power Purchase Cost vis-à-vis revenue from sale of power

The Bihar Chamber of Commerce and Industries, Patna, The Eastern Bihar Chamber of Commerce & Industries, the North Eastern Bihar Industries Association have submitted that the actual power purchase cost claimed by the holding company in the true up for FY 2011-12 is Rs. 4352.58 Crore as against the revised estimate of Rs. 4156.89 Crore inspite of the fact that the power purchase cost remained the same approximately at Rs. 3.68 per unit and the quantum of power purchase was also the same. On the other hand the revenue from sale of power has decreased from Rs. 3591.82 crore to Rs. 3108.88 crore proposed in True up for FY 2011-12 in actual projection. The net power purchase cost has increased by almost 5% and the net revenue from sale of power has decreased by 15% from the projected cost. This reflects the inefficiency of the licensee.

Petitioner's submission:

The drop in the revenue from sale of power in true up Vis-a-Vis the RE figures approved is due to various reasons including uncontrollable factors. The Company does its best to predict the sales and power purchase but, , due to dynamism of the sector, such variances in actual vs. projected values become inevitable, especially uncontrollable variables.

Commission's Observations:

The petitioner's submission is vague. It should be possible to assess the revenue more realistically. The petitioner should get investigated the reduction in revenue category-wise with reference to estimated sales and take remedial measures.

1. The Bihar Chamber of Commerce and Industries and the North Eastern Bihar Industries Association have stated that:

a. The Commission approved the employee cost at Rs. 641.41 crore for FY 2011-12 (RE), whereas the BSPHCL claimed Rs. 920.13 Crore in the True-up exercise. While determining the tariff in its order for FY 2012-13, the Commission has considered the 6th pay commission recommendations and the additional cost due to appointment of additional employees. The terminal benefits claimed amounting to Rs. 570.27 Crore is unreasonable and abnormally high. Further as per the annual accounts of the Board, the terminal benefits were only Rs. 203 Crore in FY 2010-11. Hence before concluding the True-up exercise, proper investigation is to be done by the Commission.

b. The licensee did not furnish the employee cost in formats 8 to 10 of Appendix D of the BERC Regulations. The licensee should be directed to furnish the employee costs as per Tariff regulation and they may be supplied to BCC to submit its comments.

c. Any cost or method, which is not considered in tariff order and is not as per regulations, should not be allowed in True up.

2. M/s Kalyanpur Cements limited has submitted that the Commission approved Rs. 641.41 Cr as employee cost for FY 2011-12 in March 2012, which is as under.

Employee Cost	Rs. 650.09 Cr
New Employee Cost	Rs. 11.07 Cr
Less: Capitalization	Rs. 20.40 Cr
Net Employee Cost	Rs. 641.36 Cr

The Commission has, time and again, asked the licensee to create separate trust for making payment of terminal benefits in its various Tariff order (eg. Para 5.7.6 of Tariff order – 2012-13 (Page 122). The licensee in its annual accounts for Fy 2011-12 has not made any provision for capitalization of employee cost. The Board in its annual account for FY 2011-12 has not made any provision for capitalization of employee cost even though huge amount has been invested in capital work. The objector has therefore requested for deduction of the amount of terminal benefits of Rs. 510.27 Cr and to reduce a suitable amount of employee cost against capitalization, which may be retained as Rs. 20.40 Cr and the employee cost would then work out to Rs. 392.51 Cr, which may be approved.

Petitioner's submission:

The BSPHCL submitted that it has duly filed the formats Nos. 8,9 and 10 which are available in MYT Petition. As per Schedule 9 of the un-audited accounts for FY 2011-12, the employee cost of Rs. 920.13 crore is mentioned and this includes Rs. 510.27 Cr as terminal benefits. However, as per audited annual accounts for 2010-11, the terminal benefits constitute Rs. 203.32 Cr. This substantial increase in terminal benefits is due to change in methodology. Till FY 2010-11, the terminal benefits were valued according to Bihar Service rules.. However, from FY 2011-12 the terminal benefits are estimated using actuarial valuation. The details are given below:

Sl.No.	Particulars	Amount (Rs)
1	Contributing Pension Scheme	3,49,58,335
2	Ex-Gratia	55,000
3	Gratuity	17,68,12,292
4	Pension	4,88,80,06,139
5	PF Board Contribution	29,49,854
6	Total	5,10,27,81,620

Commission's Observations:

On due scrutiny, the Commission has allowed only Rs.8.95 crore towards terminal benefits under 2012-13 (RE). As per the transfer scheme for unbundling of erstwhile BSEB, the State Government has taken over the unfunded liability upto 1st November, 2012, on account of terminal benefits of the effective date from 1st November, 2012 towards the liability of terminal of existing employees with the respective companies.

3.2.4 Issue: Subsidies / Government Grants

Bihar Chamber of Commerce and Industries has submitted that the Commission has observed in its Tariff order for FY 2012-13, that the Commission has not considered the BSEB proposal for post facto adjustment of revenue resource gap during Truing up exercise for FY 2006-07 to FY 2010-11 and that the same approach would be continued while Truing up of ARR for FY 2011-12. The proposal of the BSPHCL for utilization of State Government grant received during FY 2011-12 is not in line with the decision of the Commission. The objector has also submitted that the amount of Rs. 1054.02 crore of disallowed power proposed by the BSPHCL for adjustment by State Government grant requires verification from the Energy Department, Government of Bihar and that the Commission has to take into consideration the actual amount received from the government under various heads like purchase of power, resources gap, subsidy, plan investment and payments towards adjustments of MMC in demand and energy charges made in lieu of the adjustment given to the consumers, including the amount of Rs. 2120.24 Cr received from the Government as disclosed in clause 2.62 of the True up Petition for FY 2011-12 filed by the BSPHCL.

Petitioner's submission:

The Government grants have been treated in the same manner as per the last tariff order. The following section from the Tariff order of FY 2012-13 is as below:
"Treatment of Grant/ revenue subsidy from State Government as per Tariff order for FY 2012-13 based on State Government Letter dated 19th September. 2011.

In tariff order for FY 2012-13, the Hon'ble Commission analyzed that treatment of resource gap grant received from the State Government for FY 2012-13 is as per the priority set by Energy Department, Government of Bihar vide letter no. 4208 dated 1909/2011. Accordingly, the State Government grant has been used to compensate the financial losses caused to BSEB on account of additional power purchase due to difference in the actual T&D loss and the T&D loss as determined / approved by the Commission and the remaining portion of the grant has been used as subsidy to agriculture and rural consumers.

Commission's Observations:

The State Government grant towards revenue gap is adjusted as per priority indicated in State Government order. The grant is first to be adjusted towards disallowed power purchase due to difference in actual T&D losses and T&D losses *approved by the Commission and the balance amount towards subsidy to BPL and other rural consumers and agricultural consumers.*

3.2.5 Issue: Truing up not to be taken up

The Dina Iron & Steel Ltd has submitted the audited accounts for FY 2011-12 have not been submitted and hence the BERC should not to take up Truing up for the year.

Petitioner's submission:

The Audited Accounts with the audit certificate of the erstwhile Board for FY 2011-12 is now available and has been uploaded on company's website (www. bseb.bih.nic.in) and the same has been submitted to the Commission and a revised true up petition was submitted reflecting the values of the Audited Annual Accounts.

Commission's Observations:

BSPHCL has subsequently submitted the audited annual accounts for FY 2011-12 and the truing up for FY 2011-12 has been done as per the audited accounts.

3.2.6 Issue: Transmission & Distribution Loss (T&D Loss)

(a) The Bihar Chamber of Commerce and Industries and the North Eastern Bihar Industries Association have submitted that the Commission has fixed T&D loss of 29% in FY 2011-12 whereas the BSPHCL has projected 44.5% approximately which should not be allowed and that the loss at higher rate has been proposed with a view to misuse the quantum of State Government Grant for Resources Gap. The objector has also stated that any extra loss over and above the norm fixed by the Commission is not proper, justified and not in the interest of the general public. The objector has, therefore, suggested that the Commission should consider the above facts, which is also in line with the judgment of the Hon'ble APTEL in appeal nos. 126/2008 of 128/2008 in respect of reduction of T&D losses.

(b) The Eastern Bihar Chamber of Commerce & Industries has stated that the BSPHCL has proposed 17% extra transmission loss over the norm fixed by the Commission, which is not justified and is misuse of public wealth.

(c) M/s Kalyanpur Cements limited has submitted that as against a target of 29% of T&D loss approved by the Commission, the actual T&D loss was 46.69% during FY 2011-12 and Hon'ble APTEL in appeal. Nos. 128/2008 and 126/2008 (Bihar Industries Association) VS BERC & Others – reported in 2009 ELR (APTEL) 0171 observed that the T&D losses of over 46% is nothing but criminal wastage of scares energy source and is therefore deprecated. Hence the BSPHCL has to be forced to bring down T&D losses to the level of 29% as the Commission & other stakeholders cannot be a party to such wastage of natural resources.

Petitioner's submission:

The loss trajectory during FY 2012-13 and MYT control period is as shown below:

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
T&D Loss	42%	38%	34%	28.50%

The loss reduction activities are capital intensive as the network of the State is in dilapidated condition and requires upgradation and replacement. In addition various consumer centre activities like improvement in metering, billing, collection and vigilance will help in reducing commercial losses.

The company is planning to invest close to Rs. 20,000 crore in distribution assets alone by FY 2015-16 to achieve these goals. These investments will increase the fixed assets by almost four times. The company expects that the investments will help to bring down the loss of the Discoms considerably.

Failure to achieve the targets as mentioned above will naturally penalize the holding company by way of increased revenue gap.

The Shunglu panel report on financial performance of distribution utilities observes that

"Fixing of T&D losses on normative T&D losses ignoring actual T&D losses results in denial of revenue to the distribution utilities and further rocks their financial health"

The BSPHCL has projected significant improvement in reducing T&D losses in the control period.

The Commission has restricted the norms of un-metered consumption for Kutir Jyoti Connections from 30 units to 18 units per month and agricultural connections from 2000 units per annum to 1485 units per annum. Such restricted consumption norms are not reflection of the actual consumption by these categories and is adding to the T&D losses of the BSEB.

On account of high-level T&D losses and the disallowance of costs in the previous tariff order issued by the commission, the erstwhile BSEB incurred substantial financial loss and consequently it was unable to meet the power purchase and other

O&M expenses. This adversely effects the BSPHCL's ability to undertake network improvement/extension and loss reduction work. Accordingly DISCOMS ability to reduce losses in FY 2011-12 and FY 2012-13 has been restricted and the losses have remained at 44% level as recorded in FY 2010-11.

Commission's Observations:

The Commission had fixed T&D loss trajectory in the tariff order for FY 2012-13 as below:

FY 2012-13	*27.5%*
FY 2013-14	*26.0%*

The energy required and power purchase is regulated as per T&D loss fixed by the Commission. The cost of additional power due to difference in losses fixed by the Commission and actual loss which is not billed to the consumer, is adjusted from the grant released by the State Government. BSPHCL shall intensify its efforts to reduce the loss to the level fixed by the Commission.

3.2.7 Issue: Return on Equity (RoE)

1. The Bihar Chamber of Commerce and Industries and the Eastern Bihar Chamber & Industries have submitted that the Board's Capital Structure is constituted wholly of debts taken from State Government, GoI, LIC, REC, PFC, and Commercial banks etc. Since the BERC has categorically rejected the plea of the Board / licensee, no return is payable on notional equity. This may be taken into consideration.
2. M/s Kalyanpur Cements Limited has submitted that the licensee has claimed an amount of Rs. 204.12cr as return on equity. As per the clause 1.3 of the transfer scheme, the scheme came in to force on 01.11.2012. Hence the claim of Rs. 204.12 Cr would come down to Rs. 85 Cr (204.12 ÷12x5). Unless the un-bundled companies start earning profit, there is no question of any provision for return on equity. Since the licensee has claimed huge deficit during FY 2011-12, the Commission may reject the claim.

Petitioner's submission:

The following section with regard to RoE is provided in MYT petition.

Generation:

3.90 As per new' Bihar State Electricity Reforms Transfer Scheme 2012', the BSEB has been unbundled into five companies and an amount of Rs. 344 crore has been invested as Equity Capital in the Generating Company. The details about the equity capital as on 1^{st} April 2011 is given in schedule 'B' part – II of Bihar State Electricity Reforms Transfer Scheme 2012 (see Annexure XII). The Petitioner has proposed the RoE at the rate of 15.5% as per the CERC Tariff Regulations, 2009.

Transmission:

4.73 As per new 'Bihar State Electricity Reforms Transfer scheme 2012', the BSEB has been unbundled into five separate companies and an amount of RS. 235 crore has been invested as equity capital in the Transmission Company. The details about the equity capital as on 1^{st} April, 2011 is given in the Schedule 'A' Part – II of Bihar State Electricity Reforms Transfer Scheme 2012(Annexure – XII). The Petitioner has proposed the base rate of RoE at 15.5% as per the CERC Tariff regulations,2009.

Distribution:

5.104 As per 'Bihar State Electricity Reforms Transfer Scheme 2012, the BSEB has been unbundled into five companies and amount of Rs. 879 crore has been invested as Equity Capital in the Two distribution companies. The Petitioner has proposed the ROE at the rate of 14% on amount invested as equity in the Company.

Based on the equity infusion by the state government, the holding company has filed for Return on Equity.

Commission's Observations:

The Commission has to allow return on equity as provided by the State Government to each of the successor companies in the opening balance sheet. Since the unbundling became effective from 1^{st} November, 2012, the return on equity for FY 2012-13 is allowed at the rate of 14% for 5 months (November, 2012 to March 2013)

3.2.8 Issue: Carrying Cost

Bihar Chamber of Commerce and Industries, the Eastern Bihar Chamber Commerce & Industries and the North Eastern Bihar Industries Association have submitted that since there will be surplus, there is no scope for charging carrying costs.

Petitioner's submission:

The carrying cost is applicable to recover the gap.

Commission's Observations:

Carrying cost is allowed as per order of APTEL. If there is surplus, carrying cost is not allowed.

(B) Review Petition for FY 2012-13 and Multi Year Tariff (MYT) for the period from FY 2013-14 to FY 2015-16

3.2.9 Issue: Power Purchase Cost vis-à-vis revenue from sale of power

(a) The Bihar Industries Association, the Eastern Bihar Industries Association, the Purnea Chamber of Commerce, the Central Bihar Chamber of Commerce, Uttar Bihar Udyamee Sangh and the South Bihar Industries Association have submitted that the actual average power purchases rates for April, 12 to September, 12 is Rs. 3.39 per unit against Rs. 3.67 allowed in the last Tariff order. As the international and Indian coal prices are decreasing, the current rate of Rs. 3.39 per unit should be taken for estimating the power purchase costs for next three years. In case of unanticipated power increase in fuel costs, the licensee can claim FPPCA. The Eastern Bihar Chamber of Commerce & Industries and the North Eastern Bihar Industries Association have submitted that the power purchase cost per unit remaining constant, the overall power purchase cost was 5% above the RE and though the quantum of power purchase also remaining constant, the net revenue from sale of power is almost 15% higher as seen from the projection.

(b) M/s Kalyanpur Cement ltd has submitted that the average cost of power purchase cannot remain constant for all the voltage level systems. This has to be corrected.

(c) M/s Dina iron & Steel Limited has submitted that the average power purchase cost is Rs. 3.39 per unit. Without providing any justification, the BSPHCL has asked massive escalation of 10% of this cost. The power purchase cost shall be allowed as on actual basis after comparison with similar costs of neighboring States. Any finance costs, penalty, UI etc. shall be excluded.

Petitioner's submission:

The higher power purchase cost of FY 2011-12 was on account of one time charges (arrears) charged by the central generating stations. Since one time charges are not reflected in power bills of FY 2012-13, the per unit costs have dropped. During the

MYT control period, the power purchase costs are expected to rise. The following section from the MYT Petition highlights the approach of BSPHCL to project power purchase cost.

"5.53 Based on the trends of actual per unit Power Purchase cost from annual accounts of erstwhile BSEB from FY 2008-09 to FY 2011-12 and FY 2012-13 (on the basis of data available from April '12 to Sept '12)the five years CAGR has been calculated.

5.54 It can be seen that the escalation of per unit cost of plants under others category has increased by 21.9% mainly due to short term power purchases. During the MYT control period Discoms are expecting sufficient allocations from central and private generators. Hence, the short term power purchase will decrease.

5.55 The power purchase costs for the MYT period (FY 2013-14 to FY 2015-16) is projected by escalating the per unit costs at CAGR of 5 years as shown in the table. The per unit rate of new plants is escalated at 5%"

Commission's Observations:

The Commission has considered the power purchase cost based on the cost billed during April to September, 2012 with increase of 5% on power purchased from NTPC to cover probable increases in the case of coal and railway freight and in the case of purchase from IPPs, the costs are considered as per power purchase agreement. An increase of 5% is also considered in the case of power purchased through PTC Tala and Chuka projects of Bhutan. The marginal increase is considered on actual price paid during April-September 2012 to reduce the likely impact of FPPCA.

3.2.10 Issue: Power Generation Cost

The Bihar Chamber of commerce and Industries, the Eastern Bihar Industries association, North Eastern Bihar Industries Association, Central Bihar Chamber of Commerce and the South Bihar Industries Association, Bihar Industries Association, Dina Iron & Steel Ltd and Bihar Steel Manufacturers Association have submitted that net power generation cost per unit is projected to be Rs. 6.87 per unit for FY 2014-15 (Table 55/ Page 57) whereas the average cost of power purchase at present is Rs. 3.39 per unit for Power generating companies like NTPC, NHPC, PTC etc. As the generating companies of the BSPHCL are now separate legal entities, the distribution companies of the State should purchase power from generating companies at Rs. 3.39 per unit and the increase in power purchase cost should not be passed to the consumers.

Petitioner's submission:

The generating company is expected to start its commercial operation in FY 2013-14 after R&M of units 6 and 7. The higher power purchase cost from generation company has very little impact on the overall cost as the contribution of the units generated to overall units purchased is low. After stabilization of operation and availability of new units, the generation cost will come down and the impact of power purchased from BTPS on overall average power purchase will be as under:

Particulars	FY 2014	FY 2015	FY 2016
Without BTPS	4.12	4.48	4.92
With BTPS	4.23	4.53	5.01

The per unit power purchase cost is projected to increase from Rs. 4.23 per unit in FY 2013-14 to Rs. 5.01 in FY 2015-16. Comparing with the past trend, the power purchase cost has increased from Rs. 2.18/ unit in FY 2008-09 to Rs. 3.68/Unit in 2011-12. This shows a rise of about 68% in the period. However, for the duration FY 2012-13 to end of control period in FY 2015-16, the power purchase price has increased from Rs. 3.59/unit to Rs. 5.01/unit, this is an increase of about 36%. Hence, compared to the past the projected rise in power purchase cost during MYT control period is less.

Similar trend is observed in other states.

- In Odisha, the Power purchase cost has risen from Rs. 1.17 per unit in FY 2005-06 to Rs. 2.91 in FY 2010-11. this is an increase of about 148% in 6 years. (Source: http://www.orierc.org/Odisha Power Sector n Tariff for FY 2012-13 – Final.pdf) The lower per unit cost of the State is due to the lower generation cost of various Hydro Power Stations in Odisha. The rise in power purchase cost is mainly attributable to the rising power purchase cost of the thermal power stations.
- Tariff order for WB shows (Source: http://wberc.org/wberc/WBSEDCL2001-12TO2013-14.pdf) that the power purchase cost for Thermal CGS is Rs. 3.8 per unit for FY 2013-14.

***Commission's Observations**:*

The cost of generation at BTPS is expected to come down to about Rs.4.13 by FY 2014-15 after R&M of units 6 and 7. It may further come down with improved efficiency. The allocation of power from NTPC and other central generating stations *will be limited and will not be adequate to meet the demand of the State. It is desirable that Bihar State Power Generation Company or BSPHCL puts up its own generating stations and run them efficiently to minimize the risk of purchase of power from other sources. The cost of power from outside will go up in course of time as explained by the petitioner.*

3.2.11 Issue: Subsidy / Government Grant

1. The Bihar Chamber of Commerce and Industries has submitted that BSPHCL while filing petition for review for FY 2012-13 and determination of Tariff for MYT period has projected a receipt towards grant and subsidy of only Rs. 1080 crore in FY 2013-14 onwards. It has been observed that the State government has been increasing grant to BSPHCL and it is projected that during FY 2012-13, it will be Rs. 2700 crore as compared to Rs. 720 crore 3 to 4 years back. The Commission is therefore, requested to incorporate this expected increase received from the State Government.
2. (i) The Bihar Industries Association, the Eastern Bihar Industries Association, Dina Iron Steel Limited, the Purnea Chamber of Commerce, the Central Bihar Chamber Commerce, the South Bihar Industries Association and the Uttar Bihar Udyamee Sangh have submitted that as per the projections, Government Grant in 2012-13 is expected to be Rs. 2700 Cr. Without any explanation / justification the BSPHCL is suddenly reducing it to Rs. 1080 Cr for next 3 years, a difference of nearly Rs. 5000 Cr. If the government grant is taken at the same level as FY 2012-13, massive decrease in Tariff is possible.

   (ii) The Eastern Bihar Chamber of Commerce & Industries has requested the Commission to incorporate the increasing trends of subsidies granted by the State Government.
3. M/s Kalyanpur Cements Ltd has submitted that the BSPHCL , in sheet No. 5 of its submission, has shown Rs. 2119.7 Cr as grants of State Government for both cost of power purchase as well as network cost and made the following assumption.

i)	Disallowable Power Purchase cost (This has been apportioned in the ratio of power consumed at the given voltage level system)	Rs.842.20 crore
ii)	Subsidies allowed to LT consumers	Rs.1278.50 crore
	Total	Rs.2120.70 crore

The adjustments shown by the BSPHCL is unlawful as the Commission has not approved these adjustments and the accounts of the BSPHCL for FY 2011-12 have been approved by the competent authority, i.e AG, Bihar, and the Commission.

The determination of average cost of supply by incorporating grants payable by the State Government is totally wrong and illegal and in contravention of the directives contained in the judgment dated 10.05.2012 of the Hon'ble Tribunal in Appeal No. 27 of 2011 of the objector.

4. M/s Dina Iron & Steel Limited has submitted that as per the Bihar Governments Statement, final decision on using Government Grant is still awaited and a decision is likely to be taken shortly. Till the Government decision is received, all consumers are entitled to the grant in an equitable manner and the old system of appropriating the Government grant should continue.

The Bihar Chamber of Commerce & Industries has submitted that in the meeting of the State Advisory committee held on 14.12.2012, the representatives of the Energy Department have informed that the decision for utilization of grant will be communicated to the Chairman, BERC soon and the Chairman, BERC requested that the decision of the government should be communicated at the earliest, preferably within one month, to enable the Commission to take decision on Tariff Petition. In view of this, the Commission may consider that whatever amount is received from government should be reduced from the ARR including FY 2012-13 and onwards also.

Petitioner's submission:

The Government grants have been treated in the same manner as per the last tariff order as indicated below:

Treatment of Grant/Revenue subsidy from State Government as per Tariff order for FY 2012-13 based on State Government Letter dated 19th September 2011.

In Tariff order for FY 2012-13, the Hon'ble Commission analyzed the treatment of resource gap grant received from the State Government for FY 2012-13 is as per the priority set by Energy Department, Government of Bihar vide letter no. 4208 dated 19/09/11. Accordingly the State Government grant has been used to compensate the financial losses caused to BSEB on account of additional power purchase due to difference in the actual T&D loss and the portion of the grant has been used as subsidy to agriculture and rural consumers.

BSPHCL has applied the same methodology for the MYT control period and if any change is notified by the State Government, the same will be applicable during the

MYT control period. Due to lack of any firm commitment from the Government for support, the amount is taken as Rs. 1080 Cr (Rs 90 Cr per month). In case of further confirmation by the Government, the gap will be treated accordingly.

Commission's Observations:

The State Government has since committed to provide support of Rs.2160 crore towards cost of purchase of additional power to the adjusted against disallowed power purchase on account of the difference between the T&D losses approved by the Commission and actual losses and balance amount of grant is also used as tariff subsidy to BPL, rural and agricultural consumers during FY 2013-14.

BSPHCL shall reduce the State Government support for purchase of additional power by reducing the losses to the loss level fixed by the Commission. This will also reduce average cost of supply.

3.2.12 Issue: Transmission & Distribution Losses (T&D Loss)

a. (i) Bihar chamber of commerce and Industries, the North Eastern Bihar Industries Association, Purnea Chamber of Commerce, Central Bihar Chamber of Commerce, the South Bihar Industries Association and Eastern Bihar Industries Association have stated that the BSPHCL has projected the T&D loss as 44.5% for FY 2011-12, 42% for FY 2012-13 and 38% for FY 2013-14 as against T&D loss of 29% for FY 2011-12, 27.5% for FY 2012-13 and 26% for FY 2013-14 respectively approved by the Commission. The T&D losses at higher rates have been proposed with a view to misuse the quantum of Government grant for resource gap. It is not justifiable to allow such higher rate resulting in misuse of public money. Hence the rates of T&D losses as approved may be continued, which is in accordance in the judgment of the Hon'ble APTEL in Appeal Nos. 126/2008 on reduction of T&D loss. The JERC has also directed to bring the T&D losses at 15% in FY 2016-17.

(ii) The Bihar Chamber of Commerce & Industries has stated that compulsory and comprehensive energy audit should be undertaken to pinpoint the reasons for extra- ordinary T&D losses and that the BERC and State Government should fix responsibility at field level to bring down T&D losses.

b. The Bihar Industries Association, Dina Iron and Steel Ltd and the Laghu Udyog Bharati have submitted that, apart from the submission made by the

Bihar Chamber of commerce, even in 2015-16 the expected T&D Loss is 28.5% and any further dilution in the trajectory approved by the BERC may be in violation of law and all tariff norms. The objector has also suggested that instead, the BSPHCL should be allowed only 17% T&D loss for FY 2012-13 and directed to bring it down further to 15% for 2016-17 as done by Jharkhand.

c. M/s Kalyanpur Cements Ltd has submitted that the BSPHCL has stated that according to certain field units, the technical loss in respect of 132 KV, 33 KV, and 11 KV and LT feeders is 3.1%, 5.1%, 7.4% and 13.7% respectively but did not furnish data for verification.

The Objector has stated that in regard to commercial losses the Hon'ble Tribunal has given the following direction.

a. "The commercial losses of the distribution system will have to be borne by all the consumers of the distribution licensee.

b. The difference between the losses allowed in the ARR and the determined by the system studies may have to be apportioned to different voltage levels in proportion to the annual gross energy consumption at the respective voltage level. The Annual gross energy consumption at a voltage level will be the sum of energy consumption of all consumer categories at that voltage plus the technical losses corresponding to that voltage level as worked out by the system subsidies."

Based on the above direction, the objector has worked out the voltage wise apportionment of commercial losses as shown below.

Apportionment of Losses

Voltage Systems	Power Input in MU	Power sold in MU	System Losses						Energy sent out in MU	Loss Factor
			Technical Losses		Commercial Losses		Total			
			MU	%	MU	%	MU	%		
1	2	3	4	5	6	7	8	9	10	11
132 KV	10360	1006	321.16	3.1	88.56	0.85	409.72	3.95	8944.28	0.9605
33 KV	8944.28	872	451.64	5.0	76.76	0.86	528.40	5.86	7543.88	0.9414
11 KV	7543.88	967	570.48	7.4	85.13	1.13	655.61	8.53	5922.27	0.9147
LT	5922.27	4666	845.53	13.7	410.74	6.93	1256.27	20.63		0.7937
Total		7511	2188.81	21.12	661.19	6.38	2850	27.50		

c. The Bihar Steel Manufacturers Association and Uttar Bihar Udyami Sangh have submitted that T&D losses for HT consumers are the lowest and not more than 8% whereas the T&D loss was approved at 27.5% for FY 2012-13. In view of the approval of T&D loss by more than 21% of what is actual for the HT consumers, it has resulted in indirect cross – subsidy and imposing additional burden on a particular class of consumers and this was deprecated by the Supreme Court in a number of cases including the case of WBERC versus CESC Ltd wherein it was held that

"If the State Government so chooses to subsidise the supply of energy to any particular class of consumers, the same can be done provided all gross burden of loss suffered by the company is borne by the State Government and not imposed on any other class of consumers."

The objector has stated that the question of allowing any T&D loss over and above the rates already approved does not and cannot arise which will be against the spirit of the Act.

Petitioner's submission:

The loss trajectory projected during FY 2012-13 and MYT control period is as follows:

Year	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
T&D Losses	42%	38%	34%	28.50%

The Commission has restated norms of un-metered consumption for Kutir Jyoti connections from 30 units per month to 18 units per month and Agriculture connections from 2000 units per units per annum to 1485 units per annum. Such restated consumption norms are not reflective of the actual consumption by these categories and is adding to the T&D losses of the BSEB.

On account of the high level of T&D losses and the disallowances of costs in the previous tariff order issued by the Hon'ble Commission, erstwhile BSEB incurred substantial financial loss. Consequently it was unable to meet the power purchase and other O&M expenses. This also adversely affects the Holding Company's ability to undertake network improvement/extension and loss reduction works. Accordingly, Discoms' ability to reduce losses in the FY 2011-12 and FY 201213 has been restricted and the losses have remained at the 44% level as recorded in FY 2010-11.

Further, the Discoms are making all efforts to reduce distribution losses by metering of consumers, undertaking network up-gradation/improvement projects, undertaking R-APDRP projects. Various capital projects are being implemented and various improvements in metering, billing and collection process are being carried out which will lead to simultaneous reduction of technical and commercial losses.

The Shunglu Panel Report on financial performance of distribution utilities observes that.

“ Fixing of T&D losses on normative T&D Losses ignoring actual T&D losses results in denial of revenue to the distribution utilities and further rocks their financial health.

The BSPHCL has projected significant improvement in reducing T&D losses in the control period.

Commission’s Observations:

Since the metering of all consumers and the feeders is yet to be completed, the energy audit at 33 kV and below is yet to be conducted. BSPHCL has conducted energy audit for transmission and the transmission loss as per energy audit is about 4.0%. The technical loss levels will be known only on completion of energy audit on transmission and distribution network. This may take some time. However, the Commission has worked out technical T&D losses at different voltage levels; based on sample studies done by BSPHCL in limited number of feeders. As mentioned in the petitioner’s submission, BSPHCL is investing substantial amount for strengthening and expansion of distribution network to reduce the losses and to serve additional consumers.

3.2.13 Issue: Monthly Minimum Consumption (MMC) Charges

1. The Bihar Chamber of Commerce and Industries and the Eastern Bihar chamber of Commerce, the Central Bihar Chamber of Commerce and South Bihar Industries Association, Uttar Bihar Udyanee Sangh and Laghu Udyog Bharati have stated that as per Tariff order for FY 2012-13 on the issue of MMC, the Commission is of the view that it needs to be gradually phased out and accordingly the Commission has not allowed to levy minimum monthly consumption charges. But the BSPHCL in its Tariff Petition has again proposed both the charges i.e demand and monthly minimum consumption charges ignoring the earlier direction and orders of the Commission. The objectors have suggested levy of monthly minimum consumption charges should be removed for all consumers. The objector also stated that in other States the provision of MMC has been phased out.
2. The Bihar Industries Association, Eastern Bihar Industries Association and Purnea Chamber of Commerce have stated that MMC / Fixed charges should be abolished and only unit charges should be allowed. The objectors have also stated that the demand charges, if any, can be allowed only to the extent of interest on usable fixed assets and the MMC or demand charges should not be treated as a source of revenue.

3. The Bihar Industries Association, the Central Bihar Chamber of Commerce, the South Bihar Industries Association and Bihar Steel Manufacturers Association have submitted that there is no provision under (BERC) Regulations, 2007 for determination of demand charges and Section 45(2)(a) does not suggest imposition of MMC and therefore considering the decision of the Commission the levy of MMC for any type of consumers does not arise.

The objectors including the Eastern Chamber of Commerce & Industries) and Uttar Bihar Udyanee Sangh have also suggested that HT consumers should be charged maximum of 75% of contracted demand. At present HT consumers are charged 85% of contracted demand while HTSS consumers are charged 100% in Bihar. Only 75% contracted demand has been allowed in Jharkhand as MMC. Since the total transmission capacity is 2400 MW at 220 KV load and 1400 MW at 33 KV load and the connected load is 5804 MW, there is no reason to levy any demand charges or MMC.

4. The Eastern Bihar industries Association and the Purnea Chamber of Commerce, the Central Bihar Chamber of Commerce and the South Bihar Industrial Association have submitted that the HTSS tariff shall be made optional to any HT consumer to avail.

The Bihar Steel Manufacturers Association has strongly objected to the proposal of recovery of MMC from HTS - I, HTS – II and HTS – III consumers, as it is against the decision of the Commission in the earlier Tariff order.

Petitioner's submission:

The Minimum monthly consumption is a means to recover the fixed costs of the network. The following section with regard to the MMC is provided in the petition:

7.20 It goes without saying that the licensees are authorized under sec 46 of EA 2003 to recover its expenses reasonably for providing electric line or plant used for giving electricity supply to the consumers. In view of the fact it is evident that the licensees are justified in demanding MMC from all categories to recover its fixed charges.

7.21 From the data and figures provided in Annexure IX, it will transpire that the revenue collected under MMC was not sufficient to meet the fixed expenses of erstwhile BSEB.

7.22 Now with the abolition of MMC for HT consumers, this gap has widened. Whereas, under section 46 of EA 2003, the licensees requires to be duly *compensated so as to fulfill the widening gap. As such the provision of recovery of MMC should be restored so as to remove the distortion set in the tariff structure in Tariff Order of FY 2012-13.*

7.23 Basically the consumers remain unaffected on this account in view of the fact that under Industrial Incentive Policy 2011, most of the consumers get the difference amount of the MMC payable by them and amount actually payable by them on account of their actual consumption. With abolition of MMC for HT consumers, this mode of funding by way of Government grant is blocked to the licensee whereas the Government is ready to bridge the gap by its Fiscal Policy.

Due to removal of MMC from HT consumers there has been under recovery. The company would like the reinstate that the MMC charges are recoverable from the State Government and does not put additional burden on most of the industrial consumers.

Commission's Observations:

After considering all aspects the Commission had taken a decision to discontinue levy of minimum charges for HT consumers in addition to demand charges in the tariff order for FY 2012-13. The Commission is of the view that monthly minimum charges should gradually phased out for other categories of consumers also after completion of metering of all consumers. The fixed costs are collected mainly through demand charges / fixed charges and balance through energy charges.

3.2.14 Issue: Premium Tariff

1. The Bihar chamber of Commerce and Industries and the Eastern Bihar Chamber of Commerce & Industries have submitted that the Commission in its Tariff for FY 2012-13 has allowed 10% premium surcharge over normal Tariff rates for making supply close to 24 hours and to meet the infrastructure and keep ready operational staff round the clock to lodge complaints and to attend the complaints and such areas are to be notified by the licensee with the approval of the Commission. The BSPHCL has again proposed 10% surcharge over the Tariff determined by the Commission, which is not in accordance with law, as it is obligatory on the part of the licensee to supply 24 hours to all consumers under the provision of the Act. The BSPHCL distorted its proposal ignoring the previous orders of the Commission in its Tariff order for FY 2012-13 and if the premium Tariff is allowed it should be reflected in the projected revenue income of the BSPHCL.

2. The Bihar Industries Association, the Eastern Bihar Industrial Association and the Purnea Chamber of Commerce, the Central Bihar Chamber of consumers and the South Bihar Industries Association and the Uttar Bihar Udyami Sangh submitted that the restrictions imposed by the BERC for charging premium is proposed to be deleted and this should be disallowed.
3. The Bihar Steel Manufacturers Association has submitted that the BSPHCL, as an integrated utility and distribution licensee, has a statutory obligation to supply electricity continuously according to the need of the consumers and for which it cannot charge any premium under any circumstance. Further the BSPHCL has made a wrong reliance on Section, 23 of the Act, No provision can made for payment of premium without adequate checks. The objector is of the opinion that no premium Tariff should be allowed.
3. Sri Doman Singh, a resident of Patna, has submitted that premium charge of 10% for un – interrupted supply should be abolished and instead, penalty clause should be incorporated for deficiency.

Petitioner's submission:

The premium tariff provisions have been continued from Tariff order for FY 2012-13 and the observations of the Commission are as below:

The Commission has noted the views of objectors and response from the Petitioner. However, the Commission has already specified in the Tariff Order for FY 2011-12 that 10% premium on demand/fixed and energy charge and in MMC tariff shall be applicable to the consumers in the areas where BSEB intends to supply electricity close to 24 (twenty four) hours. Such areas shall be notified by BSEB and the premium shall be levied after notification of such area by BSEB.

Commission also clarifies that the Petitioner can charge premium over the normal tariff from consumers of such areas getting nearly 24 hours of supply from 33kV or 11 kV feeders to all LT categories and 11 kV categories except Kutir Jyoti and Agricultural consumers who will be subsided by the Government. The continuous supply shall mean the normal supply excluding the grid failure, any force Majeure condition, scheduled shut down and emergent breakdown

The BSPHCL has stated that the premium tariff is a means to recover both fixed and variable cost incurred by Discom to sustain continuous supply in the notified areas.

Commission's Observations:

The issue of charging premium tariff would be examined by the Commission and appropriate decision taken.

3.2.15 Issue: Kutir Jyoti Consumers

1. The Bihar Chamber of Commerce and Industries, the Bihar Industries Association, Eastern Bihar Industries Association, the Eastern Bihar Chamber of Commerce & Industries, Purnea Chamber of Commerce, the Central Bihar Chamber of Commerce, the South Bihar Industries association the Eastern Bihar Industries Association, Uttar Bihar Udyamee Sangh, Laghu Udyog Bharati and the Bihar Steel Manufacturers Association have submitted that the BSPHCL in its Tariff Petition has proposed to increase the consumption norm for un-metered Kutir Jyoti consumers from 18 units to 37 units per month. As per law no new un-metered connection can be granted and the BSPHCL has undertaken to do 100% metering by 31.03.2013, It is nor clear how the BSPHCL is projecting an annual growth of 25% in the un-metered consumer category and also to increase its total un-metered sales. No increase in un-metered consumption in Tariff should be allowed by the Commission under any circumstances.

   The Bihar Chamber of Commerce & Industries has also submitted that cross subsidy should be given in a transparent manner only after installing meters for all consumers. BSEB is able to hide its vast inefficiencies in the grants of un-metered consumers and the should be stopped.

2. The Dina Iron and Steel Ltd has submitted that in spite of specific undertaking of 100% metering by 31.3.2013, the BSPHCL has proposed to increase the number of consumers. In all meter-less connections, there is rampant theft in connivance with the company’s officials, which is the primary reason for extraordinary T&D losses. The objector requested the Commission not to fix any Tariff for meter-less supply and ask the Company to bear the entire loss due to this and also fix individual responsibility for checking theft and carrying out complete energy audit.

Petitioner’s submission:

The connections provided to the KJ consumers are with meter and the consumption billed to them will be through meter readings. The company has not assessed the consumption of the consumers as un-metered consumption. The specific consumption of 37 units/connection/month is estimated sales per connection based on the past trend and supply hours but the billing of the consumers will be strictly based on meter readings.

The Company has proposed 25% of the annual compounded growth of its KJ consumers and this is not the growth in un-metered consumers. The Discoms are making sincere efforts for providing meters to un-metered consumer.

The basis of assumption of specific consumption norm for KJ is as follows:

The rural electrification program in the State is progressing at a rapid pace, it is expected that the growth of KJ connections in the State will continue to rise. In addition due to increased availability of power, the supply hours in these areas is expected to improve. It is also observed that the actual connected load in the KJ households is higher than the specified load.

In light of the above, the Discoms have proposed to increase the specific consumption by 7 units a month (from 30 units/consumer/month for Urban feeders to 37 units/consumer/month) for estimating sales to these consumers. The norm of 37 units has been arrived on the assumption that KJ consumers in rural areas will be provided with 20 hours of supply and KJ consumers in urban areas will get at least 22 hours of supply using a connected load of 60 W.

Going forward, as the consumers are being metered, the sales to these consumers will be based on meter readings.

Commission's Observations:

The Commission had issued directive to erstwhile BSEB to provide meters to all consumers. The petitioner has committed that all consumers will be metered and billed based on metered consumption in future. The Commission has provided in its Tariff order that if a Kutir Jyoti consumer has connected load / consumption higher than the norms in the definition of KJ consumers, such consumers may be billed at DS-I/DS-II tariff as the case may be. Further in the absence of any credible study to estimate the consumption of KJ consumers the Commission has retained the norm of KJ consumption as determined in FY 2012-13.

3.2.16 Issue: Irrigation (IAS) Category Supply

1. The Bihar Chamber of commerce and Industries, the Bihar Industries Association, Eastern Bihar Industries Association, Purnea Chamber of Commerce, the Central Bihar Chamber of Commerce, the South Bihar Industries Association, the Eastern Bihar Industries Association, Uttar Bihar Udyog Sangh

and the Bihar Steel Manufacturers Association have submitted that the BSPHCL has proposed to increase the consumption norm from 1485 units/Kw/ per annum to 2000 Units.Kw/ per annum. Though the BSPHC has undertaken to do 100% metering by 31.03.2003, it is proposing to increase un-metered sales to such category of irrigation consumers from 416 million units to 2483 million units which means an increase of more than 500% without taking into consideration any law or tariff policy or Regulation or BERC orders /directions. As this is against public interest, this should not be allowed. Also, as the licensee has not issued any new connection under IAS category, there is no question of increasing any consumption under this category.

2. The Bihar Industries Association has further stated that the BERC should not fix any Tariff for un-metered connection from 2013-14 and if the BSPHCL fails to complete 100% metering, its entire sales under this category should be disallowed.
3. The Eastern Bihar Chamber of Commerce & Industries has stated that unnecessary subsidies in electricity supply charge is being granted to affluent revenue. The burden of this is passed on to the other consumers.

Petitioner's submission:

The high growth of IAS sales is due to the implementation of Krishi Road Map. The project aims to segregate the irrigation feeders from domestic/commercial feeders and the benefits of the project are (a) availability of energy for irrigation; and (b) improved quality of supply in domestic and irrigation feeders.

Due to implementation of the roadmap, there will be exponential addition of load and there is projected increase of about 2000 MUs during the control period. Only metered connection will be provided to the consumers under the scheme and the consumption liked to the consumers will be based on meter reading.

The specific consumption norm approved by the commission (BERC) is 1485 units/KW/annum and due to increased availability of power and implementation of Krish Roadmap during the central period, the supply hours in rural feeders, especially to IAS consumers, will improve resulting in more usage of pumps based on electric power. The Commission is therefore requested to increase the specific consumption norm of un-metered IAS from 1485 units/KW/annum to 2000 units/KW/annum.

Commission's Observations:

As mentioned earlier, under 'Kutir Jyoti', the petitioner has committed to provide meters to all consumers. Once metered, the Commission would consider only recorded consumption by meters. The Commission has considered only the norm of 1485 units/kW/annum for agricultural consumers. In the absence of any credible field study by the petitioner to support its contention that average consumption will increase, Commission cannot consider revision of consumption norm of agricultural consumers.

3.2.17 Issue: Revenue from Sale of Power

1. The Bihar Chamber of Commerce and Industries, the Eastern Bihar Industries Association, the North Bihar Industries Association, the Purnea chamber of Commerce the central Bihar Chamber of Commerce, the South Bihar Industries Association and the Bihar Industries Association have submitted that the BSPHC has increased the actual revenue between FY 2012-13 to FY 2015-16 by 67% to Rs. 5061 Cr against actual revenue of Rs. 3024 Cr for FY 2012-13 and the power purchase cost has been shown to increase disproportionately by 127% during the same period. There is no justification for such ambiguity.
2. The Eastern Bihar Chamber of Commerce & industries has stated that loss of revenue is due to inefficiency of the BSPHCL administration in the form of (a) power theft and (b) blockage of funds due to delay in payment and bad debts due to non-recovery. The objector requested the Commission not to pass on these costs to other consumers.

Petitioner's submission:

The power cost increase for the period from FY 2012-13 to FY 2015-16 is due to increase in per unit cost of power purchase. In addition, the power purchase cost of FY 2012-13 does not contain the ARR of transmission and generation companies whereas ARR of transmission and generation companies has been included in the power purchase cost for the control period.

The sales revenue at current tariff is expected to grow in proportion to the sales in MU and it should be noted that as the consumers in the subsidized category is expected to increase at a higher rate as compared to the rest of the consumer categorizes, this will further reduce the average billing rate for the consumers.

Commission observation:

Whereas the revenue projections for FY 2012-13 to FY 2015-16 are based on the current Tariff, the Power purchase cost projections are based on the estimated cost, from year to year based on the power available from different sources. Hence the revenue at current Tariff rates and the power purchase cost with an assumed increase cannot be compared. The Commission will approve projection of sale based on past trend and the strengthening and expansion of network under RGGVY and RAPDRP.

3.2.18 Issue: Other Expenditure

The Bihar Chamber of commerce & Industries, Eastern Bihar industries Association, the Eastern Bihar Chamber of Commerce & Industries , the North Eastern Bihar industries Association, the Purnea Chamber of Commerce, Uttar Bihar Udyamee Sangh and the Bihar Industries Association have submitted that since the increase in power purchase cost is the basis for most of the increases in other costs, a notional increase of 5% per year should be allowed under each head of expenditure in the ARR, as compared to BERC ARR for FY 2012-13.

Petitioner's submission:

The expenses projected are according to the norms provided in the Tariff Regulations, 2007.

Commission observation:

The other costs are approved as per Regulations, 2007 of the Commission and on prudence check.

3.2.19 Issue: Interest & Depreciation

The Bihar Chamber of Commerce & Industries, the Eastern Bihar industries Association, The Eastern Bihar Chamber of Commerce & Industries, the North Eastern Bihar Industries Association, the Purnea Chamber of Commerce, the Central Bihar Chamber of Commerce and the south Bihar Industries Association, the Bihar Industries Association, Uttar Bihar Udyamee Sangh and the Bihar Steel Manufacturers Association have submitted that the BSPHCL proposed huge capital expenditure on its distribution network and consequently interest is increasing by 472% to Rs. 699.72 Cr and depreciation by 468% to Rs. 334.72 Cr. But there is no consequential increase in revenue. In order to protect the consumer's interest, the BERC should allow only increase in these costs in proportion to the increase in revenues.

In respect of interest charges, M/s Kalyanpur Cements Limited has submitted that the BSPHCL has reduced interest charges from Rs. 191.19 Cr to Rs. 163.60 Cr during FY 2012-13 but the increase from Rs. 163.60 Cr (FY 2012-13) to Rs. 699.29 Cr in FY 2015-16 worked out to an increase by Rs. 535.69 Cr or an annual growth of 110% and in the past the BSEB has never achieved more 10% to 15% growth per annum in its debt liability.

In regard to depreciation, M/s Kalyanpur Cements Limited has submitted that the Commission has approved Rs. 159.77 Cr in Tariff order 2012-13 but in the RE, the BSPHCL has reduced amount to Rs. 121.62 Cr (less 25%). The provision of Rs. 131.13 Cr in FY 2013-14 seems to be achievable are very high by 84% and 37% respectively. The Commission may reduce these provisions.

Petitioner's submission:

Interest and Depreciation is increasing as there is large scale capital investment which is necessary to sustain the network and to supply power to the station. These investments will help the Discoms to bring down the T&D losses.

Commission observation:

BSPHCL has planned large capital investment for augmentation of transmission and distribution network to meet the growing demand of large number of additional consumers being connected, to improve the quality of supply and reduce T&D losses. The amount of depreciation and interest on loans depend on capitalisation and assets creation during the year. Though investment is large, considerable amount which comes as grants on which depreciation & interest are not allowed. The increase in revenue as a result of investment may not have seen immediately. It may take some time for revenue to increased from additional consumers to be connected and reduction of losses etc.

3.2.20 Issue: Details for Revenue Projection

1. The Bihar Chamber of commerce & Industries, the Eastern Bihar Industries Association, the Purnea Chamber of Commerce, the Central Bihar Chamber of Commerce, the South Bihar Industries Association, Uttar Bihar Udyamee Sangh and the Bihar Industries Association have submitted that the BSPHCL has not given detailed break up of the proposed revenue mentioned in the Table 126 and also justification there for.

2. The Eastern Bihar Chamber of Commerce & Industries and Laghu Udyog Bharati have stated that the revenue projections of BSPHCL are arbitrary and without any justification. Hence it should not be allowed.

Petitioner's submission:

The detailed break up of revenue is provided in chapter 6 of the MYT petition, for current as well as proposed tariff, which are as detailed below:

Revenue from Sale of Power at current tariff)

Category	FY 2012-13 (RE)	FY 2013-14 (P)	FY 2014-15 (P)	FY 2015-16 (P)
KJ Total	**122.50**	**140.18**	**175.22**	**219.03**
D.S. -I	153.08	132.30	165.39	206.73
D.S. -II	533.75	709.02	884.47	1103.41
D.S. – III	0.24	0.30	0.37	0.46
Domestic total	**687.06**	**841.62**	**1050.23**	**1310.60**
N.D.S. -I	4.91	4.25	5.31	6.63
N.D.S. –II	388.23	481.76	585.42	713.09
N.D.S. –III	0.96	1.19	1.46	1.79
NDS Total	**394.10**	**487.19**	**592.18**	**721.51**
IAS-I Total	14.12	48.09	68.79	98.73
IAS-II Total	38.21	126.55	181.04	259.82
IAS Total	**52.33**	**174.64**	**249.84**	**358.54**
LT Industrial L.T.I.S. – I	73.21	84.80	95.03	103.70
LT Industrial L.T.I.S-II	64.32	75.06	84.29	90.58
Industrial LT-Total	**137.53**	**159.86**	**179.32**	**194.28**
Public Water work (PWW)	**37.35**	**36.98**	**39.43**	**41.61**
Street light –I (Metered)	2.55	3.22	4.02	5.03
Street Light –II (Unmetered)	15.45	15.95	17.55	20.79
Street Light Service Total	16.42	18.65	20.99	23.70
H.T.S – I	438.09	522.90	594.19	696.91
H.T.S. – II	113.40	134.07	148.84	173.63
H.T.S. – III	49.03	57.00	62.25	72.85
HT0- Total	**839.07**	**989.52**	**1096.35**	**1278.61**
R.T.S.- 25KV/132 KV	**306.27**	**339.57**	**376.62**	**408.14**
Total revenue	**2592.63**	**3188.20**	**3780.18**	**4556.02**
Revenue from Nepal	**430.98**	**444.50**	**468.94**	**494.74**
Grand Total	**3023.61**	**3632.70**	**4249.12**	**5050.76**

(Revenue from sale of power at Proposed tariff)

Category	FY 2013-14 (P)	FY 2014-15 (P)	FY 2015-16 (P)
KJ Total	**435.83**	**544.79**	**680.99**
D.S. -I	314.02	392.54	490.67
D.S. -II	1,215.57	1,516.99	1,893.23
D.S. – III	0.46	0.58	0.72
Domestic total	**1,530.06**	**1,910.11**	**2,384.62**
N.D.S. -I	11.88	14.85	18.55
N.D.S. –II	761.30	929.93	1,138.28
N.D.S. –III	2.24	2.77	3.42
NDS Total	**775.42**	**947.54**	**1,160.23**
IAS-I Total	368.68	527.42	756.90
IAS-II Total	168.74	241.39	346.42
IAS Total	**537.42**	**768.81**	**1,103.33**
LT Industrial L.T.I.S. – I	119.90	134.36	145.87
LT Industrial L.T.I.S-II	102.62	115.29	124.53
Industrial LT(LTIS)-Total	**222.52**	**249.65**	**270.40**
Public Water work (PWW) - Total	**45.08**	**48.00**	**50.63**

Street light –I (Metered)	3.96	4.95	6.19
Street Light –II (Unmetered)	20.18	22.20	24.42
Street Lighting - Total	**24.14**	**27.15**	**30.60**
H.T.S – I	651.70	737.19	863.43
H.T.S. – II	164.76	181.43	211.17
H.T.S. – III	69.93	75.58	88.27
H.T.S.S	453.63	497.48	578.99
Industrial HT - Total	**1340.02**	**1491.68**	**1741.85**
RTS- Total	**399.09**	**442.36**	**479.94**
Total Revenue from Retail Sales	**5309.58**	**6430.09**	**7902.58**
Add: Revenue from sale to Nepal	**444.50**	**468.94**	**494.74**
Grand Total	**5754.08**	**6899.04**	**8397.32**

Commission observation:

The petitioner has given the revenue projections based on the existing tariff for the years FY 2012-13 and 2013-14 to 2015-16 and proposed tariff for the control period FY 2013-14 to FY 2015-16.

The Commission has worked out the sales projections and the revenue based on existing tariff to arrive at the revenue gap and to work out proposed tariff.

3.2.21 Issue: Maximum Contract Demand:

The Bihar Chamber of Commerce & Industries, the Bihar Industries Association, the Bihar Steel Manufactures, Association of the Bihar Industries, the Purnea chamber of commerce, the Central Bihar Chamber of commerce and South Bihar Industries Association have suggested that, keeping in line with information and the policies followed in the neighboring State like Jharkand, all HT consumers must be charged maximum of 75% of contract demand, as presently, they are charged 100% (minimum) in HTSS and 85% in other HT categories of consumers.

Petitioner's submission:

There is no change proposed in the tariff schedule in regard to the terms and condition of the tariff. The provisions of tariff as approved in the last tariff are being proposed to continue in the control period.

Commission observation:

The Commission does not consider necessary to revise the maximum demand at 85% for all the HT Consumers and 100% for HTSS as energy charges are low.

3.2.22 Issue: Minimum Power Factor

The Bihar Chamber of Commerce & Industries the Eastern Bihar Industries Association, Eastern Bihar Chamber of Commerce & Industries and the Purnea Chamber of Commerce, the Central Bihar Chamber of Commerce, the South Bihar Industries Association and Uttar Bihar Udyami Sangh have submitted that low power factor of consumers is mostly due to frequent tripprings and inferior quality of power for no fault of the consumer and the JERC has fixed the minimum power factor @ 0.85 and West Bengal @ 0.80. The objectors have suggested the minimum power factor before attracting penalty should be 0.85.

Petitioner's submission:

There is no change proposed in the tariff schedule with regard to the terms and condition of the tariff and the provisions of tariff as approved in the last tariff order are being proposed to continue in the control period. The CEA regulations for the grid connectivity standards recommend power factor of 0.95 for the distribution systems and the relevant section id reproduced below:

"The Distribution licensee shall provide adequate reactive compensation to compensate the inductive reactive power requirement in their system so that they do not depend upon the grid for reactive power support. The power factor of the distribution system and bulk consumer shall not be less than 0.95."

Lowering the power factor to sub- optimum level will deteriorate the network further and will involve huge costs to maintain the system and this will further increase the tariff pressure on the consumers.

Commission observation

It is desirable to maintain high system power factor to improve the system voltage, to keep the loss levels low and avoid drawal of reactive power from the system.

The high power factor will also benefit the consumer though it involves some additional investments. The Commission does not consider it desirable to reduce the minimum power factor.

3.2.23 Issue: Load Factor Rebate

The Bihar Chamber of Commerce & Industries, Eastern Bihar Industries Association, Eastern Bihar Chamber of Commerce & Industries, the Purnea Chamber of Commerce, the Central Bihar Chamber of Commerce, the South Bihar Industries Association, the Bihar Industries Association and Uttar Bihar Udyami Sangh have suggested that the load factor rebate should be reintroduced to enable the consumers to run their operations at the highest efficiency level.

Petitioner's submission:

The induction of the load factor rebate will negatively impact the revenue stream of the companies and hence this is not proposed in the current petition.

Commission observation:

Industry is expected to work at high load factor. The Commission considers that there is no need to introduce rebate for high load factor.

3.2.24 Issue: Provision of Security deposit Norm

The Bihar Chamber of Commerce & Industries, Eastern Bihar Industries Association, Eastern Bihar Chamber of Commerce & Industries, the Purnea Chamber of Commerce, the Central Bihar Chamber of Commerce, and the South Bihar Industrial Association, the Bihar Industries Association and the Uttar Bihar Udyamee Sangh have submitted that some of the provisions of the security deposit, as stated in the Tariff order, are in conflict with the Bihar Electricity supply code. The objectors have requested the Commission to delete them from the future Tariff orders or make suitable changes to make them in line with the code.

Petitioner's submission:

The security deposit is a part of new connection and forms part of tariff schedule;

Commission's observation:

The issue will be examined and appropriate decision will be taken by the Commission.

3.2.25 Issue: TOD Tariff

1. The Bihar Chamber of Commerce & Industries, the Purnea Chamber of Commerce, the Central Bihar Chamber of Commerce, the South Bihar Industrial Association, the Bihar Industries Association and Uttar Bihar Udyamee Sangh have submitted that TOD Tariff should be beneficial to consumers and should be made more attractive.
2. The Eastern Bihar Chamber of Commerce & Industries has submitted that TOD tariff categories in HT may be merged and voltage wise rebate may be introduced as has been done in Jharkhand and other States.

Petitioner's submission:

The provisions of ToD are attractive and the following provisions of Tariff order for FY 2012-13 are proposed to continue.

The company would like to add that the current ToD structure is attractively designed. The following are the provisions of ToD tariff:

All HT consumers other than Railway traction, have the option to take ToD tariff instead of the normal tariff given in the schedule.

Under the Time of Day (ToD) Tariff, electricity consumption and maximum demand in respect of HT consumers for different periods of the day, i.e normal period by installing a ToD meter. The maximum demand and consumption recorded in different periods shall be billed at the following rates on the tariff applicable to the consumer.

Time of Use	Demand Charges	Energy Charges
(i) Normal period (5.00 am to 5.00 pm)	Normal Rate	Normal Rate of Energy Charges
(ii) Evening peak load period (5.00pm to 11.00 pm)	Normal Rate	120% of Normal Rate of Energy
(iii) Off-peak load period (11.00pm to 5.00 am)	Normal Rate	85% of Normal Rate of Energy

Applicability and Terms and Conditions of ToD tariff:

i. ToD tariff will be optional for all HT consumers having contract demand below 200 KVA. ToD tariff will be mandatory for all HT consumers having contract demand of 200 KVA and above.
ii. The facility of aforesaid ToD tariff shall not be available to HT consumers having captive power plants and/or availing supply from other sources through wheeling of power.
iii. The HT industrial consumers who have installed standby generating plants shall also be eligible for the aforesaid ToD tariff.
iv. After electing ToD tariff, if any industrial HT consumer on account of some reasons wants to go back to the earlier tariff according to the agreement, this facility shall be available to him only once in two years.
v. If the actual monthly consumption of such HT consumer, whose monthly minimum charges are based on units, is less than minimum consumption, then the difference (deficit) of units between the minimum consumption and actual consumption shall be billed at normal rate of energy charge prescribed for “ normal Period”.
vi. In the event of applicability of ToD Tariff to a consumer, the terms and conditions of the applicable tariff (such as monthly tariff minimum charge, etc.) shall continue to apply.
vii. In case, the consumer exceeds 110% of the contract demand, the demand in excess of contract demand shall be billed at twice the normal tariff applicable for the day time i.e 5.00am to 5.00 pm irrespective of the time of use.

Commission observation:

ToD Tariff is reasonable and provided a reasonable incentive to work during offpeak hours. There is no need to revise it at present.

3.2.26 Issue: Merger of all three Categories in HT

The Bihar Chamber of Commerce & Industries, Eastern Bihar Industries Association, Eastern Bihar Chamber of Commerce & Industries, the Purnea Chamber of Commerce, the Central Bihar Chamber of Commerce, the South Bihar Industrial Association, the Bihar Industries Association Uttar Bihar Udyami Sangh have suggested that all the three categories in HT may be merged and voltage rebate may be introduced as has been done in Jharkhand and other State.

Petitioner's submission:

HT consumers at a voltage level have their unique cost of supply and merging of HT categories from different voltage levels will impact determination of Voltage wise cost of supply and ultimate determination of tariff for each of the consumer categories.

Commission observation:

The three categories of HT consumers are served at different voltages – HT -I at 11/6.6 KV, HT-II at 33 KV, HT - III at 132 KV HTSS at 33/11 KV.

Normally the Tariff for consumers availing supply at higher voltage shall be marginally lower. The Tariffs HT –I, HT – II, HT – III are structured accordingly in Bihar

The demand and energy charges are as below.

Particulars	***Demand Charges (KVA)***	***Energy Consumer (Ps./unit)***
HT – I	*270*	*535*
HT – II	*270*	*520*
HT – III	*270*	*510*
HTSS	*700*	*270*

The Tariff for HTSS is structured differently as the nature of load is different. Hence the Tariff cannot be uniform for all three categories.

3.2.27 Issue: DPS

The Bihar Chamber of Commerce & Industries, Eastern Bihar Industries Association, Eastern Bihar Chamber of Commerce & Industries, the Purnea Chamber of Commerce, the Central Bihar Chamber of Commerce, the South Bihar Industrial Association and the Uttar Bihar Udyamee Sangh have submitted that DPS will be only on " balance" arrears as was the intension and this charge should be retrospective from 2006. The objectors also submitted that this should be allowed on the current bill but not on arrears or DPS.

Petitioner's submission:

The arrears are treated according to the guidelines provided in the Tariff Order and Tariff schedule.

Commission observation:

The Commission will examine the arrears on which the DPS is being collected and take appropriate decision.

3.2.28 Issue: Advance Payment of bills in lieu of security deposit

The Bihar Chamber of Commerce & Industries, Eastern Bihar Industries Association, Eastern Bihar Chamber of Commerce & Industries, the Purnea Chamber of Commerce, the Central Bihar Chamber of Commerce, the South Bihar Industrial Association and the Bihar Industries Association have suggested that advance payment of bills should be introduced as an option for security deposit and the interest on security deposit should be equal to DPS.

Petitioner's submission:

The advance payment is allowed under the Electricity Supply Code 2007.

Commission observation:

The consumer utilizes the power in advance and pays for it after about 1 or 2 months. Hence the consumer has to pay security deposit for utilizing power in advance . If there is any default, the security deposit is adjusted against the amount due . If it is advance payment of bills, it should be paid in 45 to 60 days in advance before State utilizing the power. It such proposal comes, this could be examined.

3.2.29 Issue: High cost of Genco

The Bihar Industries Association and Uttar Bihar Udyamee have stated hat the net power generation cost is projected to be Rs. 6.87 for FY 2013-14 while average power purchase cost for April to Sept 2012 is Rs. 3.39 Cr. Discoms should purchase power from Genco and at the average rate of Rs. 3.39 and the rest of the cost should not be passed to the consumer.

Petitioner's submission:

The Genco is implementing the following projects

1. R&M of Units 6 and 7
2. Strengthening of Infrastructure of BTPS

3. Ganga River Water Scheme
4. 2*250 MW BTPS extension

The schedule of the projects are shown in the table below:

Unit . No	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
1 to 5	Retired	Retired	Retired	Retired
6	Under R&M	Available After December,2013	Available	Available
7	Under R&M	Available After May, 2013	Available	Available
8	Under Construction	Under Construction	Under Construction	Target COD – September, 2015
9	Under Construction	Under Construction	Under Construction	Under Construction

The Holding company would like to add that during the stabilization period of the R&M Units there will be higher costs of generation and this is expected to go down once the extension plants are operational.

The following table shows the impact of power purchase from BTPS on overall power purchase cost for the Discoms.

Impact of BTPS on overall power purchase in Rs./Unit

Particulars	FY 2014	FY 2015	FY 2016
Without BTPS	4.12	4.48	4.92
With BTPS	4.23	4.53	5.01

Commission observation:

After R&M of units 6&7 of BTPS, the cost of generation will come down with better generation parameters, as submitted by the Petitioner. The cost of generation of units 6&7 after R&M will be of the order of Rs. 4.50 per unit. This could be further reduced with improved efficiency and reduction of operating cost . These costs cannot be compared with private sector projects with large units and captive coal mines etc.

3.2.30 Issue: Sales to Nepal

The Bihar Industries Association, Purnea Chamber of Commerce, the Central Bihar Chamber of Commerce, Uttar Bihar Udyamee Sangh and the South Bihar Industrial Association have submitted that BSPHCL has proposed to increase more than twice its sales from 6008 MU to 12413 MU in the next three years and as per its own data, the last 6 years CAGR is only 7.48%. The projected sales are unlikely to materialize and at the most 8% CAGR growth may be allowed. Even in 2012-13, the sales are only 6008 MU as against projection of 7313 MU.

Petitioner's submission:

Growth of energy sales at 25% CAGR is projected based on the following broad areas.

a) Large area of the State is still un-electrified and there is no access. As the rural electrification program is underway, these groups of consumers will be added to the network and will increase energy consumption. The company sees this growth in the sales as "inorganic" i.e. the growth is fuelled by external factors. As the rural electrification program will reach near completion there will be " stable" or "organic" growth in consumption as witnessed in past. This growth is naturally dependent on the efficiency of project execution and implementation of the rural electrification programme.

b) The State's per capita consumption is very low (121 units per capira per year) as compared to national average (780 units per capita per year) . Due to the lower value of the baseline, high rate of growth is observed.

c) During the MYT period, the company has adequate allocations from the Central generating stations and other independent power producers. This will enable the company to supply more power and it is expected that the supply hours will improve in the rural as well as urban areas.

Hence, as a result of the above three factors the Discoms are expected to supply and bill higher quantum of energy resulting in overall 25% growth of the sales. Due to change in these factors, it is not appropriate to compare the past sales growth with the growth expected in the control period.

Commission observation:

Large number of villages is being electrified in the State under RGGVY programme with 90% grant from Government of India and 10% loans. Under the programme infrastructure is being developed in each village to extend electricity to all consumers. One transformer is being provided in each village and BPL families are connected without any cost to them. Similarly other consumers in the village are being provided electricity. As such, there is large potential for growth. The estimated growth of consumption at 25% is achievable.

3.2.31 Issue: Categorization of consumers connected to BSPHC Grid

1. Dina Iron & Steel Industries Ltd has submitted that all the consumers directly connected to the BSPHCL grid, such as HTS – II, HTSS, HTS – III, RTS – I and RTS – II, shall be treated as transmission wing customers and for determination

of their tariff, T&D losses and general expense of transmission wing only shall be taken and no cost being incurred by the BSPHCL network shall be incurred.

2. The Eastern Bihar Industries Association, the Purnea Chamber of Commerce, the Central Bihar Chamber of Commerce and the South Bihar Industries Association have submitted that the BSPHCL did not propose any new tariff categories or change in terms and conditions and that ideally no terms and conditions should be stated in the tariff (order) to present conflict and confusions with the supply code.

Petitioner's submission:

Transmission business is viewed as a natural monopoly and in order to promote completion in distribution and generation . Sections 40(c) of 1E Act, 2003 does not allow the transmission licensee to undertake distribution and generation of power. As a result, the HT consumers are mandatorily served by the distribution licensee.

Commission's observation:

All consumers are to be supplied electricity by the distribution licensee. Even though the consumers are connected to the transmission network, they are consumers of Distribution Company only. Transmission Companies cannot serve consumers directly as they are not licensed to supply electricity to consumer.

3.2.32 Issue: Tariff to be on par with the Tariff of neighboring state for Industrial Ltd in Bihar

1. The Dina Iron & Steel Ltd has suggested that presently, substantial portion of the BSPHCL revenue is coming from Industrial consumers and if the Tariff is not rationalized, industries would collapse resulting in erosion of BSPHCL revenue. The objector has suggested that the Tariff should be similar to that in neighboring States to enable the industrial units in Bihar to face All India Competition.
2. The Eastern Bihar Industrial Association, the Purnea Chamber of Commerce, the Central Bihar Chamber of Commerce and the South Bihar Industries Association stated that it is important to improve the tariff condition of paying consumer to make BSPHCL viable and if industries are made overburdened and made sick, all paying consumers will disappear and the BSPHCL Petition will become works.
3. The Bihar Chamber of Commerce & Industries and Uttar Bihar Udyamee Sangh have submitted that the electricity tariff, particularly industrial tariff, should be competitive and comparable to that of neighboring States to safe guard their competitiveness. Also the category wise and voltage wise costs of supply should be determined.

Remarks of BSPHCL:

The Tariff rate proposed in the Tariff Petition is rationalized and in the current structure, the cross subsidy is kept between the prescribed limits of the National Tariff policy.

Commission's observation:

The Commission would scrutinize all the components of ARR and approve them only after prudence check. Apart from projected costs, the grant element from State Government which is provided for purchase of power is partly used towards subsidization of power supply to poor rural and agriculture consumers, and partly to meet the cost of disallowed power. Any need for tariff increase will be decided on net revenue gap.

3.2.33 Issue: Fuel Price Adjustment

The Bihar Steel Manufacturers Association, the Central Bihar Chamber of Commerce and South Bihar Industries Association have submitted that any cost increase shall be taken up in annual tariff fixation and added to the next year's ARR. As a formula for FPPCA has been laid down under Tariff Regulations, suitable amendment should be made in the Tariff order. Some glaring errors are in FPPCA formula, which require rectification.

The Dina Iron & Steel Ltd has stated that a retrospective levy by of fuel surcharge or any other levy cannot be borne by the consumers as they have already completed the commercial transactions.

The Bihar Chamber of Commerce & Industries has stated that time to time levy of retrospective fuel surcharges has caused immense financial difficulties for all consumers, particularly industrial consumers and if the Electricity Boards incur any extra expenditure on account of power purchase or any other head, it should be passed on only in the next annual tariff revision by way of extra revenue.

Petitioner's submission:

The Company is not misusing the FPPCA formula prescribed by BERC to avoid proper heads by the BERC. Further, the formula has been prescribed by BERC and orders are passed by the BERC after prudence check of all energy bills submitted by the erstwhile Board.

Commission observation:

The realization of FPPCA from consumer is now streamlined and FPPCA is claimed by the distribution companies. As per APTEL orders, the FPPCA has to be passed on to the consumers on monthly or quarterly basis. This is being done where FPPCA become due.

3.2.34 Issue: ARR for FY 2012-13

Bihar Steel Manufacturers Association has submitted that the Tariff Petition of BSPHCL is flawed and against the interest of the consumers and requires to be summarily rejected for the following reasons**.**

i) The Commission approved ARR for FY 2012-13 at Rs. 6576 Cr and within six months the BSPHCL has projected Rs. 5843 Cr as per its version:

ii) BSHPCL projected net ARR for FY 2013-14 to FY 2015-16 at Rs. 7175 Cr to 11506 Cr, which is in excess of 22% to 100% what has been approved by the Commission.

iii) As per BSPHCL statements (Par 5.78, 5.8 to Page 81), last 5 years CAGR for no. of consumers is 14.15% while the energy sold is 7.48%.

Petitioner's submission:

The future projections for energy sales is based on the increased availability and increase in specific consumption. In addition the petitioner has compared the ARR of FY 2013-14 and FY 2015-16 to approved ARR of FY 2012-13 and remarked that the ARR has been shown as 22% to 100% higher than approved ARR. The rise in ARR is due to the following factors.

a) Rise in power purchase quantum and rate. The Power purchase volume is expected to increase due to increased demand.

b) Rise in Interest and Finance charges and depreciation. The rise in these figures are a result of increase in Capex expenditure to improve network condition. The Discoms are expected to add assets worth Rs. 20,000 Cr during the period FY 2012-13 to FY 2015-16.

c) Rise in other fixed costs like O&M and Interest on Working Capital.

Commission observation:

There is total change in power scenario in the State. The future cannot be compared with the past. Earlier a large number of villages had no electricity. Large number of house holds are not electrified and no power was available for even for limited number of villages and house holds. Now large number of villages are being *electrified and infrastructure is being built in each village to connect all house holds with electricity connections. All BPL families are connected free of cost and adequate quantum of power is being procured to make the State power surplus. In addition, BSPHCL is also investing huge amounts on transmission and distribution to meet the demand, connect additional consumers, improve quality of supply and reduce losses. Hence ARR of future cannot be compared with the past. However, the Commission has done prudence check while approving the ARR for MYT period.*

3.2.35 Issue: Power Purchase From Other Sources

The Bihar Steel Manufacturers Association has submitted that the purchase of power from other sources as indicated in Table – 101 of the Petition cannot be accepted automatically unless the Tariff thereon has been determined by the Commission in respect of sale of energy to the Board and that earlier the Commission came to a decision that prudent checks including bills of central generating units shall be taken while approving purchase cost. The objector has therefore stated that the power purchase cost on actuals and after prudent checks and in conformity with the provision of Regulation 26 of the Regulation, 2007 can be approved by the Commission.

Petitioner's submission:

The Tariffs for the other stations and central generating stations are determined by either (a) Central Electricity Regulatory Commission or (b) Price discovery by competitive bidding. In case IPPS in the State, the PPAS are approved by the Commission.

Commission observation:

For central generating stations, CERC has to determine the tariff. The tariff of Adani, Essar and GMR are based on competitive bidding. The Commission has approved the prices for power from other sources. The Petitioner has furnished details of actual power purchase from various sources from April to September, 2012 and these prices are taken as basis for arriving at power purchase cost. The marginal increase to cover increases in such purchases and transport charges is allowed. The cost in Table 101 is not considered and approved. The approved prices will be basic prices for claiming FPPCA.

3.2.36 Issue: Additional Purchase expenses

The Bihar Steel Manufacturers Association has submitted that the Commission has decided in the earlier Tariff orders that the financial burden on account of additional power purchase cannot be passed on to the consumers. It can either to be borne by the BSPHCL or it can seek the State Government support.

Petitioner's submission:

During the MYT period, there is no projection of short-term power purchase. This will help to bring down the average power purchase cost.

Commission observation:

The additional power purchase due to difference in T&D losses as approved by the Commission and T&D loses as projected by BSPHCL along with sales projections is supported by the State Government as grant. The cost of additional power over and above the additional power mentioned above is sold outside at an average power cost to neutralize impact of purchase of additional power. Hence the cost of additional power is not passed on to the consumers.

3.2.37 Issue: Government Grant to Cover Extra T&D Losses

Bihar Steel Manufacturers Association, the Eastern Bihar Industries Association, the Central Bihar Chamber of Commerce, the South Bihar Industries Association and the Uttar Bihar Udyamee Sangh have submitted that the proposal of the BSPHCL to use Government Grants to cover extra T&D losses should not be allowed due to:

a) As per section 65 of the Act, the government can give any amount to BSEB as subsidy to any class of consumers.
b) In the last State Advisory Committee, the Energy Secretary has indicated that the issue of government grant has not been finally decided and that in view of this, the old method should be followed till a decision is taken.
c) The State Government has categorically stated, through budget presentation, that government grant is due to increase in power purchase cost due to import of coal by NTPS and that this policy statement can not be changed by a mere executive order.
d) Government can not use public money to finance inefficiency and theft, as this will lead to higher inefficiency and the propose of Tariff fixation will be defeated.

ii) There should be no restriction of 600 KV per for existing units as it is not applicable to new units. In Tariff order partial relief given to the existing units that the clause 600 KVA per would not apply if they set up new furnace should be removed. This has been pointed out also by the Purnea Chamber of Commerce, the Central Bihar Chamber of Commerce and the South Bihar Industries Association.

iii) Government grant of Rs. 2700 Cr for FY 2012-13 has been crashed down to Rs. 1080 Cr for the next three years without any explanation. The Government grant shall be taken at the same level for the next three years as for FY 2012-13.

iv) No review of ARR shall be made for FY 2011-12. Except for other than regular increases in ARR based on the multi year Tariff already approved by the Commission, which should not be more than 10% of what has been allowed in earlier Tariff orders, the ARR may be allowed for FY 2012-13.

Petitioner's submission:

i) The Decision of the Hon'ble Commission and Government will be abiding for the Holding Company. The Company is making ali-out sincere efforts to reduce the losses and improve efficiency of its operation.

In addition the company submits that the treatment of grants is as per the methodology applied in Tariff order for FY 2012-13.

ii) The company has not proposed any changes to the tariff schedule. This ia a matter of previous Tariff order.

The method of billing for HTSS consumers is based on the decision taken at the time of creation of this category with mutual consent of the BSEB and the representatives of Bihar Steel Manufacturers Association.

This matter was raised during earlier tariff proposals and was settled in the last Tariff order of the BERC. The contract demand on the basis of 600 KVA/MT capacity was the original basis taken into consideration for creating new category of HTSS and the same method is in use for more than 10 years. However, new HTSS units have been allowed to have contract demand as per technical specification of the machineries.

The Commission has already agreed to follow the practice of other SEBs to fix the contract demand as per technical specifications in respect of new units. Conditions of other States vastly differ especially in respect of generation and power purchase mix, deficit/surplus in power, consumer mix and cost mix. The Tariff rates are therefore not comparable with rates in other States without consideration of sector inputs.

iii) Due to lack of any firm commitment from the Government for support, the amount is taken as Rs. 1080 Cr (90 Cr per month). In case of further confirmation by the Government the gap will be treated accordingly.

iv) No Remarks.

Commission observation:

The State Government is providing additional support for purchase of additional power to meet the difference in loss level approved by the Commission and the actual loss level and also subsidy to low income household needs and agricultural consumers to avoid tariff hike. The government has committed to provide support of Rs. 2880 Cr for FY 2012-13 and Rs. 2160 Cr for FY 2013-14.

Objections / Suggestions by East Central Railway's against proposed Tariff for the Control period FY 2013-14 to 2015-16.

The CEE, East Central Railway, Hajipur has submitted:

3.2.38 Issue: Tariff

(a) **Supplying power to Railway Traction Load**: The load factor of traction substations varies from 28 to 62%.

(b) BSPHCL's Tariff for railway traction has been unreasonably and disproportionately high - during FY 2011-12, East Central Railway consumed 463 MU, which constitute 4.68% of BSPHCL 's net revenue requirement. While payment of Rs. 247 Cr by ECR constitution 5.04% if net Revenue Requirement.

(c) BSPHCL revised traction tariff 6 times since 2001, which has since risen by 50% till date and will raise to 64%, as shown below.

Table

S.No	Date of revision of Tariff	Demand charges (Rs/KVA/ month)	Energy Charges (Rs/ Kwh)	FCA Charges (Rs/Kwh)	Basic Energy Cost (Rs/Kwh)	Rise w.r.t April, 01
1	April, 2011	140.00	1.94/2.00	2.4401	4.44	
2	November, 2006	160.00	4.38/4.44	0.00	4.84	9%
3	September, 2008	180.00	4.33/4.43	0.00	4.78	7.66%
4	December, 2010	180.00	4.38/4.43	0.00	4.79	7.88%
5	May, 2011	220.00	4.75/4.90	Extra	7.07	59.23%
6	April, 2012	240.00	5.20/5.35	Extra	6.66	50%
7	Proposed	260.00	6.20	Extra	7.30	64%

The proposed tariff will be 9.61% more than the existing tariff

(d) The average cost per unit of BSPHCL for the year FY 2012-13 (April to October) is higher than in other States as below.

BSPHCL	JSEB	UPPCL	DVC
6.31	5.59	5.05	4.05

(e) Comparison between existing and Proposed Tariff is as below.

Month	Average Cost per unit as per existing Tariff	Average cost as per units as per proposed Tariff
April, 2012	6.48	7.48
May, 2012	6.28	7.27
June, 2012	6.19	7.18
July, 2012	5.97	6.96
August, 2012	5.58	6.87
September, 2012	7.41	8.41
October, 2012	5.93	6.93
Average cost per unit of seven month	6.31	7.30

Issues raised on the BSPHCL's Proposed Railway traction Tariff:

(a) The present and proposed Tariff for Railways is unreasonably high requiring reduction to a reasonable level. The BSPHCL has proposed to increase energy charges from Rs. 5.20/ 5.35 per Kwh to Rs. 6.20 / 6.35 Per Kwh for both the traction service i.e 132 KV and 25 KV supply to Railway Traction.

(b) BSPHCL will benefit in not investing money on equipments of 25 KV and on maintenance, if railway takes power at 132 KV system.

(c) The need for rational and reasonable Tariff based on cost of supply has been incorporated in sections 61(d) and (g) of the Act. The Traction Tariff charged by BSPHCL is not in accordance with these provisions.

(d) The Railway is installing 1000MW TPS at Nabinagar with NTPC and is likely to be commissioned in March, 2013. and 10% share has to be given to BSPHCL which will meet shortage of power to BSPHCL.

(e) The Railway traction tariff is to be on the basis of cost of purchase from the Central Government agencies in view of following.

i. Eastern Central Railway is expected to provide transport infrastructure at affordable prices for masses and also bulk transport of the goods for social need.

ii. Traction fuel bill forms a high percentage of Railways working expenses.

iii. Unreasonable high traction tariff makes the operation of the electric traction costlier than diesel traction, which is against National interest.

iv. The Committee of Secretaries made a suggestion in August, 1988 that the Tariff charged to railways should be at a reasonable rate so that electric traction does not prove costlier than diesel traction. The PAC of the 9th Lok Sabha (1990 – 91) in its 12th reported reiterated this.

v. A suitable tariff should be offered to railway traction based on the their purchase cost from CGA plus wheeling charges, a reasonable profit and some cross subsidy.

vi. The spirit of constitution (Art, 287) provides that the power tariff for the Railways should not be very different from the actual cost incurred by the supply companies.

vii. ECR is the largest consumer of electricity at EHT voltage and has been paying bills regularly and promptly.

viii. ECR contributes on production / realization of electrical energy by using 3phase locomotives through regeneration (391 lakh/ kwh) in FY 2010-11.

(f) The Railway distribution loss is only 5.7% whereas the average network loss is 22.5%. The BSPHCL should thrust upon minimizing the T&D losses, which is more than 40% in spite of increasing the rate.

Remarks of the BSPHCL:

Tariff Hike proposed by BSEB for all the consumer categories is about 67%. However the hike proposed for Railways is about 16% based on the calculations submitted by Objector. (Page No. 12 of the objections). In addition the tariff proposed for the railways is based on the results of voltage wise cost of supply. The approach for determining the Voltage wise cost of supply is provided in chapter 7 of the MYT Petition.

According to the APTEL's observation on voltage-wise cost of supply, the commercial losses of the LT voltage level will be borne by the upstream voltage level. Due to this treatment the Tariff for the Railways has been proposed to be hiked by Re 1 in energy charges.

Commission's Observation:

The Commission appreciates the issues raised by East Central Railway and concern of Railway. The Commission has considered a marginal increase in tariff as part of additional resource mobilization to meet the increased power purchase cost and other expenditure.

3.2.39 Issue: Transformer Capacity:

(a) The Railways have designed to meet transformer capacity to meet the feed expansion of two traction substations and have standard designed RDSO specification No. ETI/PSI/ 118 (10/93) having minimum capacity of 21.6 MVA.

One transformer is always in service and the other is a standby to be operated in case of emergency.

b) Transformers Capacity, contract demand, average maximum demand in 2011-12, minimum contract demand on the basis of transformer capacity and billing demand is as under.

Sl. No.	Name of TSS (Rly. Owned Transformer	Transformer Capacity (in MVA)	Contract Demand (in MVA)	Average maximum demand in 2012-13 (in MVA)	Minimum Contract Demand on the basis of Transformer Capacity (in MVA)	Minimum billing demand 85% of CD (in MVA)	Extra Dema-nd to be Char-ged
1	Luckesarai	21.6	9.5	8.22	10.8	9.18	0.96
2	Khusroopur	21.6	7.0	6.48	10.8	9.18	2.7
3	Danapur	21.6	7.5	7.3	10.8	9.18	1.88
4	Ara	21.6	8.5	7.79	10.8	9.18	1.39
5	Dumraon	21.6	9.5	8.73	10.8	9.18	0.45
6	Jahanabad	21.6	2.0	6.09	10.8	9.18	3.09
7	Mokama	21.6	5.0	7.29	10.8	9.18	1.89
8	Japla	21.6	7.5	7.95	10.8	9.18	1.23
9	Kudra	21.6	13.0	17.58	10.8	9.18	--
10	Rafiganj	13.5	6.0	8.91	6.75	5.7375	--
11	Paharpur	13.5	9.0	9.68	6.75	5.7375	--
12	Jhajha	21.6	10.8	7.98	10.8	9.18	1.21
13	Hajipur	21.6	10.8	--	10.8	9.18	--

The Railway has to pay undue payment per month at 0.9 traction substation.

c) There is no possibility of any malpractice of 25 KV supply, as stipulated in the terms and conditions as,

- Meters are fixed at 132 KV side.
- Meter reading is executed jointly.
- A provision for inspection or surprise check of RTSS by BSPHCL Officials.

d) Monthly minimum Base Energy Charge has been proposed based on 25% of load factor and PF 90% on contracted demand. If contracted demand is fixed based on the basis of transformer capacity, Railway has to pay a huge amount per month for unconsumed energy.

e) ECR avails traction power from DVC, UPPCI and JSEB and no supply authority imposes such term and conditions to Railways.

f) The Commission is to exempt the RTS from the said terms & conditions and allow using the RDSO's standard designed Transformer capacity.

Petitioner's submission:

The Holding Company would like to add that no change is being proposed for the terms and conditions of tariff.

Relaxation in this regard has been already provided to Railways over conditions applicable to other HT categories. While consumers of other HT category cannot have transformer capacity more than 150% of contract demand, Railways can have transformer capacity equal to 200 % of contract demand. Further Railways are entitled to have a standby arrangement of equivalent capacity. If the Railways require transformer of higher capacity, then they can request BSEB for increase in contract demand.

Commission's Observations:

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

3.2.40 Issue: MMC

The BSPHCL has proposed to levy of minimum base charges - Load Factor of 25%: The Commission, in Tariff order dated 30.03.2012 for FY 2012-13, has done away with MMC on HT consumers. The Commission intends to gradually phase out the MMC in all consumer categories in the future Tariff orders.

Petitioner's submission:

The minimum monthly consumption is a means to recover the fixed costs of the network . The following section with regard to the MMC is provided in the Petition.

"7.20. It goes without saying that the licensees are authorized under Section 46 of EA 2003 to recover its expenses reasonably for providing electric line or plant used for giving electricity supply to the consumers. In view of the fact it is evident that the licensees are justified in demanding MMC from all categories of consumers to recover its fixed charges.

7.21. From the data and figures provided in Annexure IX, it will transpire that the revenue collected under MMC were not sufficient to meet the fixed expenses of erstwhile BSEB.

7.22. Now with the abolition of MMC for HT consumers, this gap has widened, whereas, under section 46 of EA 2003, the licensee is required to be duly compensated so as to fulfill the widening gap. As such the provision of recovery of MMC should be restored so as to remove the distortion set in the tariff structure in Tariff order of FY 2012-13.

7.23. Basically the consumers remain unaffected on this account in view of the fact that under Industrial Incentive Policy 2011, most of the consumers get the difference amount of the MMC payable by them and amount actually payable by them on account of their actual consumption . with abolition of MMC for HT consumers this mode of funding by way of Government Grant is blocked to the licensee whereas the Government is ready to bridge the gap by its Fiscal Policy".

Due to removal of MMC from HT consumers there has been under recovery. The holding Company would like to restate that the MMC charges are recoverable from the State Government and does not put additional burden on most of the industrial consumers.

Commission's Observations:

This will be examined and appropriate decision would be taken.

3.2.41 Issue: Contract Demand

a) BSPHCL is pressing to enhance the contract Demand on the basis of transformer capacity since Tariff order of December, 2010, through the Railways is availing traction power since 50 years with various capacities of transformers and this type of issue did not arise.

b) The Commission, in Tariff order for FY 2012-13 has opened in Para 8.4.41 that the contract demand should not be linked with installed transformer capacity. Hence the Commission may direct the BSPHCL to fix / revise the contract Demand on the basis of actual load.

Remarks of the BSPHCL:

The Holding Company would like to add that no change in such terms and conditions of tariff have been proposed in the Tariff Petition. The provisions of FY 2012-13 order have been considered.

Relaxation in this regard have been already provided to Railways over conditions applicable to other HT categories, while consumers of other HT category cannot have transformer capacity more than 150% of contract demand whereas Railways can have transformer capacity equal to 200% of contract demand. Further Railways are entitled have a standby arrangement of equivalent capacity. If the Railways require transformer of higher capacity then they can request BSEB for increase in contract demand.

Commission's Observations:

A direction will be issued separately to BSPHCL not to linkup M.D with transformer capacity as against 8.4.41 of Tariff order for FY 2012-13

3.2.42 Issue: Billing Demand

In Tariff order dated 26.08.2008, the Commission changed the minimum billing demand of Railways traction from 75% of CD to 85% of CD. The traction load by its very nature is a fluctuating on based on the number of trains in the section. Hence it is very difficult to maintain the maximum demand within the limit of 85% to 100% of CD. DVC and UPPCL Impose 75% of CD or actual recorded demand for billing. The

Commission is requested to restore the earlier limit of 75% CD or actual recorded demand for billing and provide a suitable tolerance for exceeding contracted demand in the Railway traction tariff.

Remarks of the BSPHCL:

The provisions of contract demand have been proposed to remain same as in the last Tariff order for FY 2012-13. Railway Traction is treated at par with other HT consumers.

Commission's Observations:

The Commission does not propose to bring any changes in the tariff structure in the order. However this will be examined and appropriate decision will be taken.

3.2.43 Issue: Rebate to Newly Electrified Scheme

The objector has submitted that States like Rajasthan and Kerala offer rebate in tariff for newly electrified sections of Indian Railways. The Commission is requested to grant rebate for minimum of 3 years for newly electrified section such as actual maturating.

Remarks of the BSPHCL:

The current Tariff Petition has no proposal for such rebate. Any rebate allowed will burden other consumers.

Commission's Observations:

The tariff approved by the Commission for the Railway Traction in the State one cannot have separate tariff for separate sections. Even Railways must be considered the total cost of purchase of electricity for the entire company and not section wise.

4. Truing-up for FY 2011-12

4.1 Background

The Commission issued the Tariff Order for FY 2011-12, determining the Annual Revenue Requirement (ARR) and Retail Supply Tariff for FY 2011-12 for the erstwhile BSEB on 1st June 2011. The Commission carried out the 'Review' exercise for FY 2011-12 in the Tariff Order for FY 2012-13 dated 30th March, 2012, based on the revised estimates submitted by the erstwhile BSEB.

The Bihar State Power Holding Company Limited (BSPHCL) submitted the petition for truing-up for FY 2011-12 on 15th November 2012, along with Un-Audited Annual Accounts for FY 2011-12, on behalf of the erstwhile BSEB and submitted the revised petition for truing-up for FY 2011-12 along with the audited annual accounts for FY 2011-12, on behalf of the erstwhile BSEB on 24th December 2012.

The Regulation 22 (1) & 2 of the BERC (Terms and Conditions for Determination of Tariff) Regulations, 2007 is reproduced below:

> *"The Commission shall undertake a review along with next Tariff Order of the expenses and revenues approved by the Commission in the current year Tariff Order. While doing so, the Commission shall consider variations between approvals and revised estimates / pre-actuals of the sale of electricity, income and expenditure for the relevant year and permit necessary adjustments / changes in case such variations are for adequate and justifiable reasons. Such an exercise shall be called Review."*
>
> *After audited accounts of the year are made available, the Commission shall undertake a similar exercise as in sub-clause (1) above based on the final actual figures as per the audited accounts. This excise based on the audited accounts shall be called 'Truing-up'. The Truing-up excise for any year shall not ordinarily be considered after more than one year gap after "Review".*

Accordingly, the "Truing-up" exercise for FY 2011-12 has been undertaken by the Commission on the basis of audited annual accounts for FY 2011-12, and BERC (Terms and Conditions for determination of Tariff) Regulations 2007. However, wherever deemed necessary, the Commission has considered expenses based on prudency check and after taking into account efficiency parameters like T&D losses, generating stations plant operating parameters, etc.

4.2 Truing-up of ARR for FY 2011-12

The BSPHCL, in its petition for truing-up for FY 2011-12, has furnished the actual energy sales, expenditure and revenue for FY 2011-12, based on the audited annual accounts for FY 2011-12. Accordingly the revised ARR, revenue and consequent gap for the FY 2011-12, have been claimed by the Petitioner. The Commission has analysed the components of actual energy sales, expenses, revenue and gap under truing-up for FY 2011-12 in the subsequent paragraphs.

4.3 Category wise energy sales

Petitioner's submission:

The BSPHCL has submitted the actual energy sales of 6694.93 MU for FY 2011-12 on the basis of audited annual accounts, as given in the Table below:

Table 4.1: Category-wise actual energy sales proposed for FY 2011-12

(MU)

Sl. No.	Category Name	Actual energy sales for FY 2011-12 as per Audited Accounts
1	Kutir Jyoti	342.00
2	Domestic	2026.00
3	Commercial	520.70
4	Public Lighting	23.00
5	Irrigation & Agriculture	363.00
6	Public Water Works	44.90
7	Industrial LT	202.90
8	Industrial HT	1470.50
9	Railway Traction	537.40
10	Inter-State & UI	1164.40
	Total Sales	6694.90

Commission's analysis:

The Commission, in the Tariff Order dated 1st June, 2011 for FY 2011-12, had approved the energy sales of 7378 MU for FY 2011-12. In the Tariff Order dated 30th March 2012 for FY 2012-13, the Commission had approved the revised estimated sales for FY 2011-12 as 6947.75 MU.

The total Kutir Jyoti connections were only 8,89,252 during FY 2011-12, as furnished in Format-1 of the petition. The actual sales of Kutir Jyoti for FY 2011-12 have been shown as 342.20 MU, which works out to about 32 units/month/connection. While approving the energy sales of Kutir Jyoti, the Commission has adopted a norm of 18 units / month for Kutir Jyoti (Rural) and 30 units / month for Kutir Jyoti (Urban). The Petitioner has not furnished the number of connections for Kutir Jyoti (Rural) and Kutir Jyoti (Urban) separately. Even after considering a maximum Urban Kutir Jyoti connections at 3571 (as per table 98 of Tariff Order for FY 2012-13), the Rural Kutir Jyoti connections will work out to be 8,85,681. In its petition for determination of ARR and tariff for FY 2011-12, erstwhile BSEB had projected a consumption of 30 units per month by Kutir Jyoti consumers however the Commission in its tariff order passed on 1st June, 2011 had observed as follows:

"*BSEB has tried to provide theoretical conjectures to substantiate its claim of 30 units/month. In spite of a standing direction and repeated reminders of the Commission to submit concrete evidences in the form of field data/studies in this regard, BSEB till date has failed to provide any such study/data. The Commission has also taken into consideration the verification report submitted by the third party independent consultant which has also substantiated consumption pattern of 18 units per month. The comparison drawn with other states has to be viewed in the context that the all India per capita consumption is 774 units as against 107 units in Bihar. In view of the above observations, the Commission finds no reason to revisit its stated position on consumption norm for this consumer category. The Commission shall continue to use consumption norm of 18 Units/month for unmetered rural and 30 Units/month for unmetered urban Kutir Jyoti consumers. The Commission would like to emphasis once again that if BSEB desires Commission to revisit the norms for unmetered categories, it has to provide sufficiently credible evidence and at the same time meter such unmetered consumers.*"

In the "TARIFF SCHEDULE FOR RETAIL TARIFF RATES AND TERMS AND CONDITIONS OF SUPPLY FOR FY 2011-12" given at Annexure 5-1 of the tariff order for FY 2011-12, the Commission had defined Kutir Jyoti connection on the consumption norm for Kutir Jyoti consumer and had also directed that in case it is detected that norms prescribed for consumption are violated, the Kutir Jyoti tariff shall immediately become inoperative and rates applicable to DS-I and DS-II category as the case may be, with appropriate charge shall apply in such cases.

In the absence of metering and billing on the basis of actual consumption the Commission has no reason to change the consumption norm of 18 units per month for Kutir Jyoti (Rural) and 30 units per month for Kutir Jyoti (Urban) consumers. Based on the already approved norm of 18 units / month and 30 units / month for Rural and Urban Kutir Jyoti connections respectively, the total Kutir Jyoti consumption works out to 192.60 MU.

The consumption of un-metered Irrigation and Agriculture (IAS-I) connections, furnished as 200 MU for FY 2011-12, has been verified and found that the same has been estimated as per the norm of 1485 units/kW/annum, as approved by the Commission in the Tariff Order for FY 2011-12.

For other categories, the actual energy sales furnished as per the audited accounts are considered reasonable and accepted.

Table 4.2: Summary of Category-wise sales approved for FY 2011-12

(MU)

Sl. No.	Category Name	Approved in Tariff order for FY 2011-12	Approved in review for FY 2011-12	As per actuals and Audited Annual Accounts for FY 2011-12	Now approved for FY 2011-12 in Truing-up
1	Kutir Jyoti (Rural and Urban)	263	324	342.20	192.60
2	Domestic (DS-I & DS-II)	2310	2142	2025.98	2025.98
3	Non-Domestic (NDS-I,NDS-II & NDS-III)	610	544	520.67	520.67
4	Public Lighting	38	34	23	23
5	Irrigation and Agriculture	398	439	362.98	362.98
6	Public Water Works	143	60	44.94	44.94
7	Industrial LT	277	266	202.88	202.88
8	Industrial HT	2291	1552	1470.46	1470.46
9	Railway Traction	496	567	537.39	537.39
10	Sale of Nepal	550	555	500.27	500.27
11	Sales to other state under UI	-	293	664.15	664.15
12	Additional Sales	-	171	--	--
	Total Sales	**7378**	**6947**	**6694.93**	**6545.32**

The Commission approves the category-wise energy sales for FY 2011-12 at 6545.32 MU in the truing up. The same would be used for approving the power procurement cost.

4.4 Transmission and Distribution Losses

Petitioner's submission:

The Table below summarises the overall T&D loss levels, as proposed by the Petitioner, for FY 2011-12.

Table 4.3: Proposed T&D losses for FY 2011-12

Particulars	Approved in Tariff Order for FY 2011-12	As per Audited Annual Accounts for FY 2011-12	Proposed by BSPHCL for Truing-up
T&D Losses (%)	29%	44.05%	29%

In FY 2011-12, the T&D losses, as per audited annual accounts, were 44.05%. The Petitioner, in its petition has proposed T&D losses at 29%, as approved in the Tariff Order for FY 2011-12 even though the actual losses as per audited accounts are 44.05%.

Commission's analysis:

The Commission had approved the target of T&D losses at 29% for FY 2011-12. The Commission is of the view that T&D losses is a controllable parameter and it is the responsibility of the distribution licensee to take appropriate steps to bring down the T&D losses. The Commission cannot allow the burden of higher T&D losses, due to non-achievement of T&D loss reduction trajectory, as approved by the Commission, to be passed on to the consumers. Accordingly, the Commission approves the Transmission and Distribution losses at 29% for truing-up for FY 2011-12. The same has been considered for computation of the power purchase cost for FY 2011-12.

The T&D losses level target set by the Commission, T&D losses, as per audited annual accounts of BSEB and the level approved by the Commission in the truing-up for FY 2011-12 is summarized in the Table below.

Table 4.4: Approved T&D Losses for FY 2011-12

Particulars	Approved by BERC in Tariff Order for FY 2011-12	As per Annual Accounts for FY 2011-12	Now approved in Truing-up of FY 2011-12
T&D Losses (%)	29%	44.05%	29%

4.5 Generating Stations of Bihar Power Generation Corporation Ltd.

Petitioner's submission:

The erstwhile BSEB owned and operated only one thermal generating plant, i.e. Barauni Thermal Power Station (BTPS), located at Barauni. The status of all the units of BTPS during FY 2011-12 is summarised in the Table below:

Table 4.5: Status of Units of BTPS During FY 2011-12

Unit	Capacity/de-rated Capacity	CoD	Present Status
1	15 MW	26.01.1966	Retired on 11.02.1983
2	15 MW	16.01.1963	Retired on 26.11.1985
3	15 MW	20.10.1963	Retired on 05.10.1985
4	50 MW	09.11.1969	Retired on 12.03.2012
5	50 MW	01.12.1976	Retired on 12.03.2012
6	110/105 MW	01.12.1984	Unit worked at de-rated Capacity & R&M work was planned
7	110/105 MW	31.03.2005	Under R&M

4.6 Operating Performance Parameters

The actuals of operating performance parameters furnished by BSPHCL and the views of the Commission are discussed hereunder:

Operating performance parameters such as PLF, Auxiliary Consumption, Station Heat Rate (SHR), Specific Oil Consumption and Transit loss of Coal, as approved in the Tariff order dated 1st June 2011 for FY 2011-12, considered for (RE) in the Tariff Order dated 30th March 2012; and actuals as furnished by BSPHCL in truing-up for FY 2011-12, are given in the Table below:

Table 4.6: BTPS Performance Parameters for FY 2011-12

Sl. No.	Item	Approved in the Tariff Order for FY 2011-12	Approved in RE for FY 2011-12	Actuals as furnished by BSEB for FY 2011-12
1	PLF (%)	32.62	10.98	9.08
2	Auxiliary Consumption %)	10	10	15.95
3	Station Heat Rate (kcal/Kwh)	4316	4000	3981
4	Specific Oil Consumption (ml./Kwh)	10	10	27.87
5	Coal Transit loss (%)	3.8	0	0

The BSPHCL has submitted that during the year FY 2011-12, only one unit (Unit No. 6) of the generating station was in operation at de-rated capacity of 105 MW. It is informed by BSPHCL in its letter dated 20th December, 2012 that the Unit was taken out for R&M on 17th March, 2012. Unit No. 7 was under shut down and undergoing Renovation & Modernization (R&M) for revival.

Based on the achieved performance parameters and considering the fact that the plant has exceeded its economic life, the Holding Company requested the Commission to approve the performance parameters of the station as per actuals mentioned in the Table above for FY 2011-12 and allow the generation cost accordingly.

Commission's analysis:

The PLF, and accordingly, the gross generation is approved as per actuals, taking into consideration the plea of BSPHCL.

In the case of SHR, the actual performance is better than the level approved in the Tariff order for FY 2011-12. However, in the case of auxiliary consumption and Specific Oil Consumption, the actual performance is higher than the approved values.

The Station Heat Rate is approved as per actuals as it is almost in line with the approved RE value, i.e., 4000 K.cal./Kwh.

As regards the auxiliary consumption and specific oil consumption, which are controllable parameters, the values were approved in the Tariff Order dated 1st June, 2011 for FY 2011-12 after due deliberation. Hence, the Commission approves the auxiliary consumption and specific oil consumption as mentioned in the Tariff Order dated 1st June 2011 for FY 2011-12 and in RE in the Tariff Order dated 30th March 2012.

The transit loss of coal, however is approved as per actuals.

The performance parameters approved by the Commission for FY 2011-12, for truing-up, are as given in the Table below:

Table 4.7: Approved Performance Parameters for FY 2011-12 for truing-up.

Sl. No.	Item	Approved in the Tariff Order for FY 2011-12	Actuals in FY 2011-12 as per Audited Annul Accounts	Approved for FY 2011-12 for truing-up
1	PLF (%)	32.62	9.08	9.08
2	Auxiliary Consumption (%)	10.0	15.95	10
3	Station Heat Rate (Kcal/Kwh)	4316.	3981	3981
4	Specific Oil consumption (ml/Kwh)	10.0	27.87	10
5	Transit loss of Coal (%)	3.8	0	0

Since auxiliary consumption and specific oil consumption are controllable, these parameters as approved in tariff order or actuals which are lower are approved.

4.7 Cost Parameters

The cost parameters such as GCV of coal and oil, price of coal and oil, are uncontrollable items. Hence, the Commission approves the same as per actuals, as furnished by BSPHCL. However auxiliary consumption and specific oil consumption are controllable parameters and therefore the Commission approves these parameters in the tariff order. The details are given in the Table below:

Table 4.8: Approved Cost Parameters for FY 2011-12 for truing-up

Sl.No.	Item	Approved in the Tariff Order for FY 2011-12	Actuals as per Annual Accounts	Approved for Truing-up
1	GCV of Coal(Kcal/Kwh)	4284	3714	3714.00
2	GCV of Oil (Kcal/Kwh)	10000	10153	10153.00
3	Price of Coal (Rs/MT)	2328	2939.30	2939.30
4	Price of Oil (Rs/KL)	30000	42781.50	42781.50

4.8 Fuel Cost of own generation

The BSPHCL furnished the actuals of fuel cost for FY 2011-12 at Rs. 68.82 crore, apart from other fuel related costs of Rs.10.55 crore as detailed in the Table below:

Table 4.9: BTPS performance parameters and break –up of costs for FY 2011-12

Sl. No.	Own Generation	Approved in Tariff order for FY 2011-12	Proposed by BSPHCL for FY 2011-12 as per audited annual accounts
1	Installed capacity (MW)	220	220
2	De-rated Capacity (Usable in MW)	210	210
3	Plant Load Factor (%)	32.62%	9.08%
4	Auxiliary Consumption (%)	10%	15.95%
5	SHR (Kcal/Kwh)	4316	3981
6	Calorific Value (CV) of Coal (Kcal/Kwh)	4284	3714
7	CV of Oil (Kcal/Kg)	10,000	10,153
8	Coal Transit Loss (%)	0.00%	0.00%

Sl. No.	Own Generation	Approved in Tariff order for FY 2011-12	Proposed by BSPHCL for FY 2011-12 as per audited annual accounts
9	Price of Coal	2328	2939.
10	Price of Oil (LDO&FO) (Rs./Kl)	30000	42,781.5
11	Specific Coal Consumption (Kg/Kwh)	1.03	0.9960
12	Specific Oil Consumption (ml/kwh)	10.00	27.87
13	Gross generation	300	167.04
14	Auxiliary consumption (MUs)	30	26.65
15	Net generation (MUs)	270	140.39
16	Coal consumption (MT)	310000	166,320
17	Oil consumption (KL)	3000	4656
18	Coal Cost (Rs.Cr)	71.46	48.90
19	Oil Cost (Rs.Cr)	9.00	19.92
20	**Total fuel cost (Rs.Cr)**	**80.46**	**68.82**
21	**Total fuel related costs (Rs.Cr)**	**-**	**10.55**
22	**Total variable cost (Rs.Cr)**	**80.46**	**79.36**
23	Total Fuel cost/gross generation (Rs./kwh)	2.68	4.75
24	Total fuel cost / Net generation (Rs.kwh)	2.68	5.65

Based on the approved generation performance parameters and cost parameters, the fuel cost approved in truing-up for FY 2011-12 is worked out, as given in the Table below:

Table 4.10: Approved Fuel Costs for FY 2011-12

Sl. No.	Item	Derivation	Unit	Approved for FY 2011-12
1	Generation (Gross)	A	MU	167.04
2	Heat Rate	B	Kcal/kWh	3981
3	Specific Oil Consumption	C	ml/kWh	10.00
4	Calorific Value of Oil	D	KCal/L.	10,153
5	Calorific Value of Coal	E	KCal/Kg.	3714
6	Overall Heat	F=(A * B)	G. Cal.	664986.24
7	Heat from Oil	G=(A*C*D)/1000	G.Cal	16959.57
8	Heat from Coal	H=(F-G)	G.Cal	648026.67
9	Actual Oil Consumption	I =A*C	KL	1670.40
10	Actual Coal Consumption	J=(H*1000/E)	MT	174482.14
11	Indigenous Coal including transit loss at 0%	J1=J*1.00/1.00	MT	174482.14
12	Cost of Oil	K	Rs./KL	42781.50
13	Cost Of Coal	L	Rs./MT	2939.3
14	Cost of Oil	$M=I*K/10^5$	Rs. Lakhs	714.62
15	Cost of Coal	$N=J1* L1 / 10^5$	Rs. Lakhs	5128.55
16	Total Fuel Cost	O = M + N	Rs. Lakhs	5843.17
17	Other Fuel related costs	P	Rs.Lakhs	1055.00
18	Total Fuel Costs, including Fuel related costs	Q = O+P	Rs.Lakhs	6898.17
19	Fuel cost / Unit Gross	Q/(A*10)	Rs/KWh	4.13
20	Auxiliary consumption (percent)	R	%	10.00
21	Auxiliary consumption	S = (A*P) / 100	MU	16.70
22	Net Generation	T = A - S	MU	150.34
23	Fuel cost / Unit Net	Q/(T*10)	Rs / KWh	4.59

The Commission approves the fuel cost at Rs. 58.43 crore as worked out in the above Table, as against Rs. 68.81 crore for FY 2011-12 furnished by BSPHCL as per the audited annual accounts.

On an enquiry from the Commission, BSPHCL furnished the details of ‘ other fuel related costs’ as below:

Particulars	Amount (Rupees)
Coal Handling Contract Charges	9003701.41
Coal Related Costs (Entry Tax)	19554830.24
Demurrage on coal wagons	2067270.00
Incentive to Coal un-loader	1539859.67
Other Coal Related Cost (Misc)	55153272.78
Stunting Charges	1039144.00
Siding Charges	3095151.00
Oil Related Cost (Entry Tax)	14049267.86
Total	105502496.96

The other fuel related cost of Rs.10.55 crore as per Audited Annual Accounts is approved for FY 2011-12.

The total fuel cost, including other fuel related cost of Rs. 10.55 crore, is approved at Rs.68.98 crore, as shown above in the truing-up for FY 2011-12.

4.9 Power Purchase

Petitioner’s submission:

The erstwhile BSEB had firm allocations of power from thermal power plants of NTPC, Hydel Power plants of NHPC, and the hydel plants of Chukka and Tala through PTC and hydel plants of BSPHCL and thermal power plants of Kanti BUNL. In addition, the erstwhile BSEB also purchased power from co-generation sources of sugar mills and other plants.

The BSPHCL had submitted the gross power purchase of 12144.46 MU from all sources in its Truing-up petition for FY 2011-12. The BSPHCL has requested the Commission to approve 12144.46 MU of power purchase for the FY 2011-12, which is as per the audited annual accounts.

Commission’s analysis:

The Commission recognises the sources of power purchase, as outlined by BSPHCL based on the audited annual accounts for FY 2011-12, and the costs associated with the purchase of power from these sources. However, the quantum of power purchase and the cost associated with the same would be approved after taking into cognisance the approved energy sales and the T&D loss trajectory approved by the Commission.

The Commission intends to use the same methodology for approval of the quantum of power purchase and cost associated with the same, based on the information available in the audited annual accounts for FY 2011-12 Commission approves the quantum of power purchase on the same principles, as was done earlier during the truing-up for FY 2006-07 to FY 2010-11.

The Summary of the approved power purchase quantum from various sources for the FY 2011-12 is given in the Table below:

Table 4.11: Source-wise Power Purchase Quantum for FY 2011-12

(MU)

Sl. No.	Particulars	Approved in Tariff Order FY 2011-12	As per Actuals and Audited Annual Accounts of FY 2011-12	Now approved in truing-up of FY 2011-12
	NTPC			
1	Farakka	2889	3029.29	3029.29
2	Kahalgaon	2670	2653.50	2653.50
3	Talcher	2449	2600.63	2600.63
4	KBUNL	321	176.11	176.11
	Sub Total (NTPC)	8329	8459.53	8459.53
	NHPC			
5	Rangit	119	119.42	119.42
6	Teesta	549	537.17	537.17
	Sub Total (NHPC)	668	656.59	656.59
	PTC			
7	Chukka	543	507.92	507.92
8	Tala	909	868.71	868.71
	Sub Total (PTC)	1453	1376.63	1376.63
	Others			
9	NVVNL		1367.58	1367.58
10	NEA – Adani	-	126.47	126.47
11	NEA – Motihari	4	2.70	2.70
12	BSHPCL	30	36.25	36.25
13	Sugar Mill	29	77.68	77.68
14	UI		41.02	41.02
15	Others including short term / long term	1418.03	-	-
	Grand Total	11931.09	12144.46	12144.46

The Commission approves the total quantum of power purchase at 12144.46 MU for the purpose of working out the energy balance and computation of the power purchase cost as part of the Truing-up exercise for FY 2011-12.

4.10 Energy Balance

Petitioner's submission:

The energy requirement for FY 2011-12 submitted by the Petitioner, based on the proposed sales and T&D losses, is as given in Table below:

Table 4.12: Proposed Energy Requirement & Energy Balance for FY 2011-12

(MU)

Sl. No.	Particulars	Unit	Approved in Tariff Order For FY 2011-12	As per actuals and Audited Annual Accounts of FY 2011-12	Proposed in Truing-up for FY 2011-12
1	Energy sales within the State	MU	6828	5530.51	5530.51
2	Energy sales outside the State (Nepal)	MU	550	500.27	500.27
3	Sale in bilateral trade /UI	MU	-	664.15	664.15
4	Total Sales	MU	7378	6694.93	6694.93
5	T&D Losses	MU	3013	5270.95	2463.28
	T&D Losses	%	29%	44.05%	29%
6	Energy Requirement	MU	10391	11965.88	9158.21
7	Energy Availability	MU			
8	Own Generation	MU	270	140.39	140.39
9	Total Purchase from long term sources	MU	11356	12144.46	12144.46
10	Transmission loss regional losses	%	2.43%	3.09%	3.09%
	Transmission loss regional losses	MU	258	318.97	318.97
11	Net Power Availability (8+9-10)	MU	11369	11965.88	11965.88
12	Additional Purchase (11-6)	MU	977		2807.67

The BSPHCL in its submission has recognised 2807.67 MU of additional power purchase on account of higher T&D losses and requested the Commission to consider the Energy Balance, as shown above, for FY 2011-12 and accordingly approve the power purchase cost.

Commission's analysis:

The Commission approves the energy requirement of the Petitioner, based on the approved sales and T&D losses. The T&D losses have not been considered on sales in bilateral trade/UI.

The energy balance for FY 2011-12 has been computed, based on the approved sales in true up during the year, considering the approved level of T&D losses and the power purchased/generated to meet the demand from the consumers. Accordingly the approved total power purchase requirement (Net) based on the approved sales to consumers and approved T&D losses is 8947.49 MUs. As against this, the net availability as per the approved generation parameters is computed as

11965.88 MUs. Thus the additional power purchase from long term sources over and above comes to 3109.7 MUs {=12144.46 (actual power purchase from long term sources as per annual accounts) – 9034.76 (actual power purchase from long term sources as approved by the Commission)}. Accordingly the Commission disallows power purchase quantum of 3109.7 MUs for FY 2011-12. The power purchase cost corresponding to same would be adjusted in the total power purchase cost approved for the year.

Table 4.13: Approved Energy Requirement for FY 2011-12

(MU)

Sl. No.	Particulars	Unit	Approved in Tariff order for FY 2011-12	Actuals as per Audited Annual Accounts for FY 2011-12	Approved in Truing-up for FY 2011-12
1	Energy Sales within the State	MU	6828	5530.51	5380.90
2	Energy sale outside the State (Nepal)	MU	550	500.27	500.27
3	Sale in bilateral trade / UI	MU	-	664.15	664.15
4	Total Sales	MU	7378	6694.93	6545.32
5	T&D losses	MU	3013	5270.95	2402.17
	T& D losses	%	29%	44.05%	29%
6	Energy Requirement	MU	10391	11965.88	8947.49
7	Energy Availability		-		
8	Own Generation	MU	270	140.39	150.34
9	Total Purchase from long term sources	MU	11356	12144.46	9034.76
10	Transmission loss in the regional system, excluding local purchase	%	2.43%	3.09%	2.63%
11	Transmission loss in the regional system	MU	258	318.97	237.61
12	Net Power Availability	MU	11369	11965.88	8947.49
13	Additional purchase disallowed	MU	977	0.00	3109.7

The total purchases from long term sources has been worked out considering the impact of average regional transmission losses (2.63=318.97MU÷12144.46MU) applicable on the total actual power purchase by erstwhile BSEB in FY 2011-12. The reason for applying the average regional transmission losses is that the power purchase quantum by erstwhile BSEB also includes sources of power on which regional transmission losses are not applicable e.g. Nepal (NE), BSHPC, sugar mills, etc. Accordingly, the gross purchase required to be done in FY 2011-12 was 9034.76MU with a regional transmission loss of 237.61MU {(9034.76MU = (8947.49–150.34)÷(1–2.63%)}.

The Commission disallows the power purchase quantum equivalent to 3109.7 MU for the FY 2011-12 as part of truing-up process, based on the principle that excess power purchase on account of higher T&D losses, i.e., over and above the approved losses, shall not be permitted.

4.11 Power Purchase Cost

Petitioner's submission:

The BSPHCL has submitted the gross power purchase cost at Rs.4393.43 crore from all sources including intra-state and UI, and PGCIL transmission charges, for FY 2011-12 for truing-up.

The Petitioner has claimed the total transmission charges (PGCIL charges) of Rs 180.67 crore for the power purchased from outside the State during FY 2011-12.

The Petitioner has submitted the source–wise break-up of total power purchase cost and unit cost, the details of which are given in Table below:

Table 4.14: Proposed Power Purchase Cost for FY 2011-12

Sl. No.	Power Plant	Power Purchase for FY 2011-12		Proposed average rate for FY 2011-12
		(MU)	Amount \ (Rs. crore.)	Average cost (Ps. / Kwh)
	NTPC			
1	Farakka	3029.29	1300.28	4.29
2	Talcher	2600.63	803.45	3.09
3	Kahalgaon	2653.50	1065.98	4.02
4	KBUNL	176.11	84.50	4.80
	Sub Total (NTPC)	8459.53	3254.22	
	NHPC			
5	Rangit	119.42	46.15	3.86
6	Teesta	537.17	133.14	2.48
	Sub Total (NHPC)	656.59	179.29	
	PTC			
7	Chukka	507.92	95.05	1.87
8	Tala	868.71	175.88	2.02
	Sub Total (PTC)	1376.63	270.93	
	Others			
9	NVVNL	1367.58	579.96	4.24
10	Adani	126.47	50.	4.02
11	NEA _ Mothihari	2.70	1.21	4.49
12	BSHPC	36.25	9.09	2.49
13	Sugar Mill	77.68	34.20	4.40
14	UI	41.02	13.77	3.36
15	Others	-	-	-

Sl. No.	Power Plant	Power Purchase for FY 2011-12		Proposed average rate for FY 2011-12
	Sub Total Others	1651.71	689.00	
	Transmission charges			
16	PGCIL Charges *			
	Grand Total	**12144.46**	**4393.43**	**3.72**

** Transmission charges on transmission of energy amounting to Rs. 180.67 crore (Given in Schedule 6 of the Audited Annual accounts for FY 2011-12) have been apportioned on Power Purchase from NTPC (excluding KBUNL), NHPC and PTC.*

Commission's analysis:

The Commission has approved the power purchase cost of Rs. 3328 crore for purchase of 11356 MU for FY 2011-12 in the Tariff Order dated 1st June, 2011 and revised the power purchase cost to Rs 4157 crore for purchase of 11931 MU for FY 2011-12 in the "Review" in the Tariff order for dated 30th June, 2012, as per the revised estimate submitted by the erstwhile BSEB in the Tariff Petition for FY 2012-13.

The Commission has computed the source – wise power purchase cost and average power purchase cost per Kwh excluding the PGCIL charges component. The source-wise power purchase cost from different sources and PGCIL charges for FY 2011-12 based on the actual power purchase cost as per audited annual accounts is given in the Table below.

Table 4.15: Approved Power Purchase Cost for FY 2011-12

	Power Plant Name Plant Name	Now approved in the truing–up of FY 2011-12 in Truing-up of FY 2010-11		
		MU	Amount (Rs.Cr)	Average Rate (Ps./kWh)
	NTPC			
1	Farakka	3029.29	1247.23	4.12
2	Talcher	2600.63	757.91	2.92
3	Kahalgaon	2653.50	1019.51	3.84
4	KBUNL	176.11	84.50	4.80
	Sub Total (NTPC)	8459.53	3109.15	
	NHPC			
5	Rangit	119.42	44.06	3.69
6	Teesta	537.17	123.73	2.30
	Sub Total (NHPC)	656.59	167.79	
	PTC			
7	Chukka	507.92	86.15	1.70
8	Tala	868.71	160.67	1.85
	Sub Total (PTC)	1376.63	246.82	
	Others			

	Power Plant Name Plant Name	Now approved in the truing–up of FY 2011-12 in Truing-up of FY 2010-11		
		MU	Amount (Rs.Cr)	Average Rate (Ps./kWh)
9	NVVNL	1367.58	579.96	4.24
10	Adani	126.47	50.82	4.02
11	NEA _ Mothihari	2.70	1.21	4.48
12	BSHPC	36.25	9.03	2.49
13	Sugar Mill	77.68	34.21	4.40
14	UI	41.02	13.77	3.36
15	Others	-	-	-
	Sub Total Others	1651.71	689.00	
16	PGCIL Charges		180.67	
	Grand Total	**12144.46**	**4393.43**	**3.62**

The Commission approves the power purchase cost at Rs.4393.43 crore for purchase of 12144.46 MU for the FY 2011-12 in truing-up.

4.12 Disincentive for non-achievement of T&D losses reduction target

The difference in the actual power purchase and the power purchase requirement approved by the Commission is disallowed at the average power purchase rate and is treated as “Disincentive for non-achievement of T&D loss targets”.

As per the trajectory, the maximum permissible T&D losses level for FY 2011-12 was set at 29%, which the Petitioner was not able to achieve. Accordingly, the Commission has computed the disincentive for non-achievement of T&D losses reduction target at Rs. 1156.12 crore, for FY 2011-12, as shown in Table below:

Table 4.16: Disincentive: Non-achievement of T&D loss reduction target for FY 2011-12

Sl. No.	Particulars	Unit	FY 2011-12
1	Net Power Purchase Dis-allowed	MU	3109.70
2	Gross Power Purchase Dis-allowed (Grossed up at Average Regional Transmission loss @ 2.63%)	MU	3193.69
3	Average Power purchase cost	Rs./kwh	3.62
4	Cost of Power Purchase Dis-allowed	Rs. crore	1156.12

4.13 Employee cost

Petitioner’s submission:

Employee expenses comprise of salaries, dearness allowance, bonus, terminal benefits in the form of pension & gratuity, leave encashment and staff welfare expenses. The Petitioner submitted that the employee expenses, as per audited annual accounts of the erstwhile BSEB for FY 2011-12, were Rs. 923.13 crore and the employee cost was not capitalised and requested to allow the employee cost of Rs. 923.13 crore, as per the audited annual accounts for FY 2011-12.

Commission's analysis:

The Commission had approved the employee cost for FY 2011-12 at Rs. 798 crore in the Tariff Order dated 1st May 2011 and approved Rs. 661.76 crore in the review for FY 2011-12 (RE) in the Tariff Order dated 30th March 2012. The Commission has noted that Rs. 510.27 crore has been provided towards terminal benefits in the annual accounts for FY 2011-12. On a query from the Commission, BSPHCL in their letter dated 20.12.2012 submitted that the increase in terminal benefits was due to change in methodology. Till FY 2010-11, the terminal benefits were valued according to Bihar Service Rules and from FY 2011-12, the terminal benefits are estimated using Actuarial Valuation, the details of which for FY 2011-12 are as given below:

Particulars	**Amount (in Rs.)**
Contributory Pension Scheme	3,49,58,337
Ex-gratia	55,000
Gratuity	17,68,12,292
Pension	4,88,80,06,139
Board's contribution to PF	29,49,854
Total	5,10,27,81,620

The Commission noted that the Government of Bihar has approved Bihar State Electricity Reforms Transfer Scheme 2012 vide Notification No. Proc./Board No.31/2008/17/ Patna dated 30.10.2012, wherein clause 6.14 provides that the liability in respect of existing pensioners of the Board (based on actuarial valuation as on 31.3.2011) shall be the liability of the State Government. Further, the liability as assessed on actuarial valuation, in respect of the retirement dues of existing employees as on the effective date (i.e., 01.11.2012), to the extent they are un-funded, shall also be the liability of the State Government. Relevant extract of Bihar State Electricity Reforms Transfer Scheme 2012 is quoted below:

"6.14 The liability in respect of existing pensioners of the Board (based on actuarial valuation as on 31.03.2011) shall be the liability of the State Government. Further the liability, as assessed on actuarial valuation, in respect of the retiral dues of the existing employees, as on the effective date, to the extent they are unfunded, shall also be the liability of the State Government. As per actuarial valuation carried out by registered actuary, the net present value of the total terminal benefit liabilities is Rs. 4613 crores (discounted at 8% per annum) out of which total unfunded liability is approximately Rs. 4438 Crores as on 31.03.2011.

6.15 The unfunded liabilities accumulated in respect of terminal benefits of the employees, covered under State Govt.'s policies and directions, will be borne by the State Govt. The unfunded liability upto the cut off date will be treated as covered under State Govt. policies and directions. The energy department will obtain the detailed statement in respect thereof from the Board/holding Company and will submit after due analysis for decision of the State Govt. and thereafter on this point the transfer scheme will be considered final. The above unfunded terminal benefit liability will be determined on yearly basis by the actuary considering the impact of inflation, pay revisions etc. After the effective date, the liability on account of service in the subsequent periods shall be borne by the respective successor companies. The disbursal of terminal benefits will be through a master trust administered by the holding company. The contribution from the State Govt. will be paid in advance in two installments every year i.e. by 31st May and 30th November and the successor companies will be contributing on monthly basis by 7th of the following month. The State Government and the transferee shall be jointly and severally liable for payments arising thereon till such notification, establishment of master trust and proper funding."

According to the accounting policy of the erstwhile BSEB, the provisions for terminal benefits in accounts and ARR are made on accrual basis. This implies that the provision for the payments made during FY 2011-12 would have been made in years prior to 2011-12. So far as the provision of FY 2011-12 is concerned, as per the State Government notification on Bihar State Electricity Reforms Transfer Scheme 2012, the entire terminal benefit of the existing pensioners based on the actuarial valuation as on 31.03.2011 shall be the liability of the State Govt. The Transfer Scheme further states that the entire terminal benefit of the existing employees till the effective date (1st November, 2012) based on actuarial valuation shall also be the liability of the State Govt. Therefore, whatever provision for terminal benefit was made in the accounts for FY 2011-12 shall be liability of the State Government.

Thus, the amount of Rs. 510.28 crore on account of terminal benefits based on actuarial valuation as on 31.03.2011 is already covered by the State Govt. scheme in the aforesaid notification.

In view of the commitment given by the State Government in "Bihar State Electricity Reforms Transfer Scheme 2012" amount of Rs. 510.27 crore claimed in true up petition for FY 2011-12 by BSPHC Ltd., is not required to be included in the employee cost of that year.

Accordingly, the Commission approves the employee cost at Rs. 412.90 crore for FY 2011-12 in the truing-up as indicated in the table below :-

Table 4.17: Approved Employee Cost for FY 2011-12

(Rs. crore)

Particulars	Approved in Tariff Order for FY 2011-12	Approved in FY 2011-12 (RE)	Now Approved in truing-up for FY 2011-12
Employee Cost	798	661.76	412.90

4.14 Repairs and Maintenance (R&M) Expenses

Petitioner's submission:

The BSPHCL has submitted that the repair and maintenance expenses go towards day-to-day upkeep of generation, transmission and distribution functions of the erstwhile BSEB and form an integral part of the Company's efforts towards providing reliable and quality power supply to its consumers and reduction of losses in its system.

BSPHCL submitted that the Commission, in its Tariff Order for FY 2008-09 dated 26th August, 2008, directed the erstwhile BSEB to include water charges and miscellaneous charges under the R&M expenses head and exclude these from the fuel cost head. In this petition, BSPHCL has included actual water charges and miscellaneous charges under this head and not under the fuel cost head. Accordingly, the total figure in the annual account of the erstwhile BSEB under the R&M expenses is Rs. 81.37 crore. Further, if other operating expenses of the power plant of Rs. 2.09 crore are also included under this head, the total R & M expenses for the year amount to Rs. 83.46 crore for FY 2011-12.

BSPHCL requested the Commission to allow the actual R & M expenses of Rs. 83.46 crore for FY 2011-12.

Commission's analysis:

The Commission, in the Tariff Order for FY 2008-09 dated 26th August 2008, directed the BSEB to include water charges and miscellaneous charges under the head R&M expenses and exclude the same from the head fuel cost. Based on the above, the Commission approves the R&M expenses at Rs 83.46 crore for the FY 2011-12. This includes Rs. 2.09 crore on account of water charges and other miscellaneous charges, which were shifted from fuel costs to R&M expenses.

The summary of the R&M expenses as per audited annual account and now approved for FY 2011-12 is given in Table below:

Table 4.18: Summary of approved R&M expenses for FY 2011-12

(Rs. crore)

Sl. No.	Particulars	As per Annual Accounts for FY 2011-12	Now approved in truing-up for FY 2011-12 FY 2010-11
1	Plant & Machinery	48.38	48.38
2	Building	2.70	2.70
3	Hydraulic works	0.04	0.04
4	Civil Works	1.91	1.91
5	Line cable & network	28.11	28.11
6	Vehicles	0.07	0.07
7	Furniture & fixtures	0.03	0.03
8	Office equipment	0.12	0.12
9	Total expenses	81.37	81.37
10	Cost of water & Other Misc. Charges	2.09	2.09
11	**Total R&M Expenses**	**83.46**	**83.46**

The Commission, based on the audited annual accounts, approves the R&M expenses at Rs.83.46 crore for the FY 2011-12 in the truing-up.

4.15 Administrative & General (A&G) Expenses

Petitioner's submission:

The BSPHCL has submitted that the Administrative and General expenses mainly comprise of: rents, telephone and other communication expenses, professional charges, conveyance and travelling allowances, and other debits not clear.

BSPHCL has requested that the A&G expenses of Rs 45.22 crore for FY 2011-12 be allowed , as per audited annual accounts of the erstwhile Board.

Commission's analysis:

The Commission approves the A&G expenses, claimed by BSPHCL for FY 2011-12, as per the audited annual accounts, which are within the approved level.

The summary of the A&G expenses as per audited annual accounts and now approved are shown in Table below:

Table4.19: Summary of approved A&G expenses for FY 2011-12

(**Rs. crore)**

Sl. No..	Particulars	As per Annual Accounts for FY 2011-12s	Now approved-in Truing-up for FY 2011-12
1	Rent, rates & taxes	0.34	0.34
2	Insurance	0.26	0.26
3	Telephone, postage &Telegrams	0.66	0.66

Sl. No..	Particulars	As per Annual Accounts for FY 2011-12s	Now approved-in Truing-up for FY 2011-12
4	Legal Charges	1.04	1.04
5	Audit Fees	3.28	3.28
6	Consultancy fees	0.004	0.004
7	Technical fees	0.002	0.002
8	Other professional charges + Meter reading Bill distribution	2.95	2.95
9	Conveyance & travel expenses	5.88	5.88
10	Others (sum of a. to l., as given below)		
a.	Fees and Subscription	3.45	3.45
b.	Books and Periodicals	0.06	0.06
c.	Printing and Stationary	0.68	0.68
d.	Advertisements	1.26	1.26
e.	Water Charges	0.02	0.02
f.	Electricity Charges	1.65	1.65
g.	Entertainment Charges	0.18	0.18
h.	Computer Billing	10.61	10.61
i.	Home Guards/ Security Guards	4.20	4.20
j.	Franchisee Commission	5.53	5.53
k.	Franchisee Incentive	1.24	1.24
l.	Miscellaneous Expenses	1.86	1.86
	Sub total	30.75	30.75
11	Freight	0.05	0.05
12	Total A & G expenses	45.22	45.22
13	Less: A&G expenses capitalised	-	-
14	**Net A & G expenses**	**45.22**	**45.22**

The Commission approves the A&G expenses at Rs. 45.22 crore, as reflected in the audited annual accounts for FY 2011.12, in the truing-up.

4.16 Operation and Maintenance (O&M) Costs

Based on the above approvals, the summary of the total O&M costs approved by the Commission for FY 2011.12, as part of the Truing-up process, is outlined in Table below:

Table 4.20: Summary of approved O&M expenses for FY 2011-12

(Rs. crore)

Sl. No.	Particulars	Approved in Tariff Order for FY 2011-12	Actuals as per audited annual accounts for FY 2011-12	Now approved in truing-up for FY 2011-12
1	Employee cost	798.00	923.18	412.90
2	Repair and Maintenance (R&M) Expenses	95.00	83.46	83.46
3	Administrative & General (A&G) Expenses	51.97	45.22	45.22
4	Total O&M Cost	944.97	1051.86	541.58

4.17 Capital Expenditure

As mentioned by the Commission during the truing-up for the FY 2010-11, the Capital Expenditure undertaken by the erstwhile BSEB was a very critical aspect of its business as it supported the growth of business and helped the distribution licensee in sustaining its operational performance.

As per para 51 of Chapter 5 of BERC (Grant of Licence for Distribution of electricity) Regulations, 2007, the Petitioner is required to seek prior approval of the Commission for making investment in the licensed business. In the absence of the prior approval by the Commission, the Commission may disallow corresponding depreciation and interest cost. As can be seen, the availability of capital expenditure-related information was a basic requirement for grant of the distribution licence to the erstwhile BSEB.

BSPHCL, in its Truing-up Petition for FY 2011-12, has not submitted any information regarding the actual capital expenditure undertaken by it during the year and the capitalisation of assets on account of projects/schemes getting commissioned during the year.

The information relating to the capital expenditure provided by BSPHCL in the formats submitted along with the petition also is not in a clear and unambiguous manner for the Commission to utilize for necessary decision-making.

While submitting the petition for provisional truing-up for FY 2011-12 along with the un-audited annual accounts of FY 2011-12, the capital expenditure in progress for FY 2011-12 was shown as Rs. 1592.48 crore. Accordingly, the opening CWIP for

Generation, Transmission and Distribution businesses for FY 2012-13 (RE) were considered at Rs. 757.30 crore, Rs. 138 crore and Rs. 697 crore respectively.

In para 6 of the Statement – 5 of Audited Annual Accounts of FY 2011-12 submitted along with the revised Truing-up Petition for FY 2011-12, the following has been stated:

> "*In this connection, it is pertinent to mention that REC Ltd. has released a sum of Rs. 3861.81 crore as loan/grant for execution of projects under RGGVY directly to executing agencies i.e. PGCIL, NHPC Ltd. and BSEB. The state Govt. has made repayment of principal and interest thereon. In the preceding year, the amount of loan only to extent of details of assets created by PGCIL and NHPC under this scheme has been reflected in the accounts of the Board. But, during the year as suggested by AG Bihar in draft comment, the left over amount to the extent of details of assets not handed over by the M/s PGCIL / NHPC out of fund made available directly by M/s REC under RGGVY has been taken into account as advance to M/s PGCIL / M/s NHPC under RGGVY scheme and corresponding as grant towards cost of capital and loan from REC under RGGVY scheme*"

Accordingly, the capital expenditure in progress was shown as Rs 3865.48 crore in the audited annual accounts of FY 2011-12.

Accordingly, based on the limited information available with the Commission from the audited annual accounts, the Commission has estimated the actual capital expenditure incurred by the erstwhile BSEB in FY 2011-12. The same is outlined in the Table below:

Table 4.21: Estimation of CWIP

(Rs. core)

Particulars	Now approved in truing-up for FY 2011-12
Opening balance – CWIP	1282.04
Add: New investments during the year	3776.65
Total	5058.69
Less: Net Investment capitalization during the year	1193.21
Closing balance – CWIP	3865.48

As can be seen from the above, the net investment capitalised during the FY 2011-12 is Rs. 1193.21 crore. The same is computed based on the other information, which is available in the audited annual accounts, e.g., Opening and Closing CWIP and the assets capitalised during the year.

The same can also be derived by tracking the movement in the quantum of Gross Fixed Assets and CWIP over the year. The same can also be corroborated from the "Statement 7: Sources and Uses of Funds" available in the audited annual accounts for FY 2011-12. The details are as illustrated in Table below:

Table 4.22: Estimated Capital expenditure for FY 2011-12

(Rs. crore)

Sl. No.	Particulars	Now approved in Truing-up for FY 2011-12
1	Opening GFA	3856.07
2	Opening CWIP	1282.04
3	Closing GFA	5049.28
4	Closing CWIP	3865.48
5	Net change in GFA/ CWIP {(3+4) – (1+2)}	3776.65

The Commission directs BSPHCL to ensure that the information like capital expenditure and the related capitalisation of assets, etc., should be available with it as it is a basic information required by the Commission to approve expenditure related to funding costs incurred. In the absence of such information, the Commission will be constrained to adopt normative capital expenditure related costs and may also not allow such expenditure at all, since such expenditure cannot be passed on to the consumers without proper prudence check.

Based on the information available in the audited annual accounts, the capital assets to the tune of Rs. 1193.21 crore have been capitalised in the FY 2011-12. The Commission now approves the same for computation of the interest expenses.

The Commission approves the Gross Fixed Assets as per the audited annual accounts of the erstwhile BSEB. The position of the Gross Fixed Assets during FY 2011-12 is as shown in Table below:

Table 4.23: Gross Fixed Assets for FY 2011-12

(Rs. crore.)

Particulars	Now approved in Truing-up
Opening GFA (As on 1st April 2011)	3856.07
Additions to GFA during the year	1196.93
Deductions to GFA during the year	3.72
Re-classification during the year	-
Closing GFA (as on 31st March 2012)	5049.28

4.18 Depreciation

Petitioner's submission:

BSPHCL has submitted that the actual depreciation as per audited annual accounts of erstwhile Board for FY 2011-12 is Rs. 148.48 crore. However, the depreciation on the assets created out of 'grants towards cost of capital assets 'has been deducted to arrive at the net depreciation charge for the purpose of ARR / Tariff. The Petitioner further stated that the computation of the depreciation on the assets created out of grant towards capital assets based on the average of ratio of 'Grant towards capital assets' and 'GFA' for the period FY 2011-12.

Table 4.24: Net depreciation proposed for FY 2011-12

Sl. No.	Particulars	Depreciation (Rs. crore)	Grants towards cost of capital assets and consumer contribution (Rs. crore)	Closing GFA	Ratio
1	As per audited annual accounts	143.48	3736.06	5049.28	0.74
2	Net depreciation proposed by BSPHCL	37.32			

Commission's analysis:

The Commission approves the depreciation charges at Rs. 143.48 crore based on Schedule 19 of the Audited Annual Accounts of FY 2011-12. However, the depreciation on the assets created out of consumer contribution and grants has been deducted from the gross depreciation to arrive at the net depreciation charge. The computation of the depreciation on the assets created out of consumer contribution and grant is based on the proportion of 'Grant and contribution' and 'GFA' for FY 2011-12. Same methodology for computation of depreciation has been adopted in the True up order for FY 2010-11.

In Schedule 34 of the Annual Accounts for FY 2011-12, the total contribution, grants and subsidies towards cost of capital assets at the end of 2011-12 is Rs. 3775.01 crore out of which the amount of Rs. 13.15 crore for restructuring of BSEB and grant of Rs. 0.63 crore on account of subsidy against loss due to flood/cyclone are of revenue nature and has therefore been excluded from the total grant and subsidies towards cost of capital assets.

Table 4.25: Approved Depreciation for FY 2011-12

(Rs. crore)

Sl. No.	Particulars	Approved in Tariff Order for FY 2011-12	As per BSPHCL petition for FY 2011-12	Now approved in truing-up for FY 2011-12
1	Closing GFA			5049.28
2	Depreciation	117.29	37.32	143.48 (gross)
3	Grants and contribution for creation of capital assets (schedule 34 of annual accounts)	-	-	3761.23
4	Depreciation on the assets created out of Grant, consumer contribution (3/1x2)	-	-	106.88
5	Net Depreciation (2-4)			36.60

Accordingly, the Commission, approves depreciation expenses at Rs. 36.60 crore for FY 2011-12 in the truing-up.

4.19 Interest and Finance Charges

Petitioner's submission:

The BSPHCL submitted that as per Tariff Regulations, 2007, the licensee can claim interest and finance charges on loans used for creating usable assets and in the Truing-up petition for FY 2011-12, it has considered the following while calculating the total interest and finance charges:

1. Interest on REC Loan (Normal / RMNP)
2. Interest on REC Loan (RGGVY)
3. Interest on PFC Loan

BSPHCL also submitted that, as a result of unbundling of the erstwhile Board, all State Government loans and interest as on 31st March 2011 have been waived off. Thus, interest & finance charges on those loans have not been considered, while filing the Truing-up for FY 2011-12.

The Petitioner in the Format – 18 of the petition, furnished, the opening and closing loans for FY 2011-12 and the interest actually paid during FY 201-12 as given in the Table below:

Table 4.26: Proposed opening and closing loans for FY 2011-12

(Rs. crore)

Sl. No.	Particulars	Amount
1	Opening Loan as on 01.04.2011	515.00
2	New Loans during the year	503.30
3	Closing Loans	1018.30
4	Average Loan	766.65
5	Total Interest and Finance charges claimed as per accounts for FY 2011-12	74.06
6	Weighted average rate of interest	9.69%

Break-up of Interest and Finance charges for FY 2011-12, loan-wise, has been given in the Table 10 of the petition.

BSPHCL requested the Commission to approve the interest and finance charges of Rs. 74.06 crore for FY 2011-12, as detailed in above Table.

Commission's analysis:

The Commission has approved Interest & Finance charges of Rs. 149.01 crore for FY 2011-12 in the Tariff Order dated 1st June 2011 and Rs. 94.56 crore for FY 2011-12(RE) in the Tariff Order dated 30th March 2012.

On scrutiny of the petition, additional information submitted by BSPHC Ltd. in the Annual Accounts of erstwhile BSEB for FY 2011-12, the Commission observes that the loan amount also included the payments due on capital liabilities which are created on account of default in repayments done by BSEB in the past. The Commission observes that this burden on account of default in making repayments should not be passed on to the consumers.

Further the Commission also taken into cognizance the fact that the interest booked by the erstwhile BSEB under the head "Interest and Finance Charges" may also include the penal or additional interest incurred by the erstwhile BSEB for defaulting on making timely repayments.

In the absence of adequate data/information with erstwhile BSEB and now BSPHC Ltd. regarding the details of the capital expenditure incurred during the year for the creation of usable assets, its funding and capitalization, etc. the Commission has adopted the same methodology as was applied in the truing up for FY 2010-11. The Commission has used the normative closing balance of loan (Rs.471.91 crore) as arrived in truing up for FY 2010-11 as the opening outstanding loans used for creation of usable assets as on 1st April, 2011 for the purpose of computation of interest and finance charges for FY 2011-12.

The Commission has also outlined the methodology adopted for estimating the additional borrowing for FY 2011-12 for funding the assets got capitalized during the order after considering the amount available in form of consumer security deposit and contribution, grants/subsidy towards cost of capital asset during the year.

In the absence of adequate data with erstwhile BSEB and now BSPHC Ltd., the Commission has considered the repayment during the year as deemed depreciation, as per the Central Electricity Regulatory Commission (Terms and Conditions for Tariff) Regulations 2009 reproduced below:

> "The repayment for the year of tariff period 2009-14 shall be deemed to be equal to the depreciation allowed for that year:"

Based on the above methodology, the opening loan as on 1st April, 2011 considered for computing interest cost for FY 2011-12 has been taken equal to closing normative loan of Rs. 471.49 crore arrived in the true up order for FY 2010-11 issued by the Commission. In para 4.15.18 Table-32 of the Tariff Order for FY 2012-13 issued on 30th March, 2012.

The BERC Tariff Regulations provide for recovery of interest and finance charges on loans which have been utilized to create assets and are eligible for recovery only after the assets have been put to use. The normative outstanding loan as on 1st April, 2011 is considered to be used for creation of assets which have been put to use till that date and hence the interest against this loan is considered for recovery from consumers. In addition to this, there will be certain additional loans which will be eligible for recovery on account of capitalization of assets achieved during FY 2011-12.

The assets capitalized during the year comprise of assets created out of CWIP at the beginning of the year and the part of the assets out of investments done during the year itself this break-up is not available in the Annual Accounts. While it is desirable to have the bifurcation of these assets created out of capitalization of CWIP at the beginning of the year and those created through capitalization of investment done during the year, the same is not possible from the information made available by the petitioner.

Therefore, the Commission has considered the assets capitalized during the year as being first funded through consumer contribution and grant/subsidy towards capital assets received during FY 2011-12 and the remaining portion of the assets getting capitalized during the FY 2011-12 is assumed to be funded through additional loans received during FY 2010-11. If any amount of consumers' contribution and grant/ subsidy towards capital assets remain available after this adjustment, the same will be considered as funding creation of assets to be capitalized in the subsequent years. While the Commission understands that this methodology has its own limitation, the Commission has no other option to adopt this methodology till the time BSPHC Ltd. is able to improve the availability of information to enable the Commission to approve the interest expenses based on actual information.

Assumption of loan against assets getting capitalized during FY 2011-12 is given below:

Particular	Amount (Rs. in crore)
Total assets capitalized during the year (A)	1193.20
Grants/subsidies towards cost of capital assets during FY 2011-12 (B)	3761.23
Estimated funding through loans	0

It can be seen from the table above that out of total assets capitalized during the year for 2011-12 (1193.20 crore) has been funded by contribution, grants and subsidies towards cost of capital assets and the balance assets. Since even after funding of total assets capitalized during FY 2011-12, a balance of Rs. 2568.03 crore of contribution, grant and subsidies remains which will be considered for funding of assets capitalized during subsequent years.

The effective interest rate for computing interest and finance charges has been computed using the same methodology as was used in true up for FY 2010-11. The average of all the opening and closing balance of loans from different sources during FY 2011-12 and total interest accrued / paid during the year have been considered for arriving at the effective average rate of interest for the purpose of computing interest charges as indicated in table below :

Table 4.27: Computation of effective rate of interest for FY 2011-12

(Rs. crore)

Source of loan	Opening balance (as on 1.4.2011)	Additions during FY 2011-12	Repayment due and during the year	Closing loans	Interest accrued	Average loan during the year	Average rate of interest
REC (RGGVY)	173.27	356.61	38.06	491.81	9.73		
PFC	268.56		35.63	232.94	34.41		
IDBI	0.06		0.06				
Total	441.89		73.75	724.75	44.14	583.32	7.57%

As per CERC (Terms and Conditions for Determination of Tariff) Regulations 2009, the repayment during the year has been considered to be equal to the depreciation allowed for the year.

On the basis of the aforesaid methodology, the Commission approves the interest and finance charges for FY 2011-12 as given in the table below:

Table 4.28: Approved interest and finance charges for FY 2011-12

(Rs. crore)

Particular	Amount (Rs. crore)
Opening balance of loan (as per the closing balance in the true up order for FY 2010-11)	471.49
Additions to loan during the year	-
Repayment during the year	36.60
Closing balance	434.89
Average loan during the year	453.19
Interest rate	7.57%
Interest and finance charges	34.31

4.20 Return on Equity

Petitioner’s submission:

The BSPHCL submitted that, as per new “Bihar State Electricity Reforms Transfer Scheme 2012”, the BSEB has been unbundled into five companies and an amount of Rs. 1458 crore has been invested as Equity Capital in the unbundled utilities. The details about the equity capital, as on 1st April 2011, are given in Annexure XII of the MYT petition. The petitioner has proposed the ROE at the rate of 14% on the amount invested as equity. The Table below shows the details of ROE claimed during the FY 2011-12. BSPHCL has projected Rs. 204.12 crore as Return on Equity for the FY 2011-12.

Table 4.29: Proposed RoE for FY 2011-12

(**Rs. crore)**

Sl.No	Particulars	Amount
1	Equity capitalised as on 1st April, 2011	1458
2	Rate of RoE	14%
3	RoE during the year	204.12

Commission's analysis:

The Commission had considered in the Tariff order for FY 2011-12 that the entire asset base is funded through loans and grants and accordingly interest has been allowed on loans used for creation of capital assets. Return on equity is admissible only on equity actually deployed for creation of assets. The erstwhile BSEB has been reorganized into five companies with effect from 01.11.2012, i.e., in the year 2012-13 and equity has been provided for these companies by the State Government.

Therefore, no Return on Equity is payable for FY 2011-12.

4.21 Non-Tariff Income

Petitioner's submission:

The BSPHCL has submitted that the Non-tariff income as per audited annual accounts is Rs. 193.12 crore for FY 2011-12, as given in Table below:

Table 4.30: Proposed Non-Tariff income for FY 2011-12

(RS. CRORE)

Particulars	**Amount**
Meter Rent	25.47
Misc. charges from consumers	15.28
Other income	152.36
Net Non-Tariff income	193.12

The details of Non- Tariff Income furnished by the Petitioner in the Format – 20 of the Petition are as given in the Table below:

Table 4.31: Non- Tariff Income Claimed for FY 2011-12

(RS. CRORE)

Sl. No.	**Particulars**	**Claimed for FY 2011-12 in true up**
1	Meter Rent	25.47
2	Miscellaneous Charge from Consumers	15.28
3	Interest on Staff Loan & Advances	0.00
4	Income from Investment (Fixed deposit)	-
5	Interest on Loans & advances to licensee	-
6	Delayed Payment surcharges from Consumers	114.53
7	Interest on Advances to Suppliers/Contractors	1.68
8	Interest form banks (Other then Fixed Deposit)	2.87
9	Income from Trading	6.94

Sl. No.	Particulars	Claimed for FY 2011-12 in true up
10	Income from Staff welfare Activities	-
11	Miscellaneous Receipts	10.34
12	Rebate and Discount Received	3.51
13	Incentive for timely payment of power purchase bills	12.03
14	Incentive for timely payment for installment against Loan to PFC	0.36
15	Total	193.12

The Petitioner requested for approval of Non-tariff income of Rs. 193.12 crore for FY 2011-12, as given in the above Table.

Commission's analysis:

The Commission had approved Rs. 168.23 crore as Non–Tariff income for FY 2011-12 in the Tariff Order dated 1st June 2011. As per the audited annual accounts for FY 2011-12, the other income received during the year is Rs. 152.36 crore and Meter Rent / service line rental received is Rs. 40.76 crore, summing up, the total non-tariff income received is Rs. 193.12 crore.

The Commission has adopted the approach on Non-Tariff income in line with the recent judgment of Hon'ble appellate Tribunal for Electricity (APTEL) dated 12.07.2011 in case no. 142 & 147 of 2009.

The relevant extracts of the Judgment are reproduced below:

> *"The normative working capital compensates the distribution company in delay for the 2 months credit period which is given to the consumers. The late payment surcharge is only if the delay is more than the normative credit period. For the period of delay beyond normative period, the distribution company has to be compensated with the cost of such additional financing. It is not the case of the Appellant that the late payment surcharge should not be treated as a non- tariff income. The Appellant is only praying that the financing cost is involved due to late payment and as such the Appellant is entitled to the compensation to incur such additional financing cost. Therefore, the financing cost of outstanding dues, i.e the entire principal amount, should be allowed and it should not be limited to late payment surcharge amount alone. Further, the interest rate which is fixed as 9% is not the prevalent market Lending Rate due to increase in Prime Lending Rate since 2004-05. Therefore, the State Commission is directed to rectify its computation of the*

financing cost relating to the late payment surcharge for the FY 2007-08 at the prevalent market lending rate during that period keeping in view the prevailing Prime Lending Rate".

As per audited annual accounts of the erstwhile Board for FY 2011-12, the Non-Tariff income is Rs. 193.12 crore out of which, Delayed Payment Surcharge from consumers is Rs. 114.53 crore. As the Petitioner charge DPS @ 18% per annum (1.5% per month), the principal amount on which DPS has been charged will be Rs. 636.28 crore.

As prevailing SBI PLR as on 1st April, 2011 was 13%, the Commission has allowed the financing cost for DPS @ 12.50%. The financing cost approved by the Commission is shown in Table below.

Table 4.32: Funding of DPS

(Rs.crore)

Sl.No	Particulars	FY 2011-12
1	DPS as per audited annual accounts for FY 2011-12 (@ 1.5% per month) (A)	114.53
2	Principal amount on which DPS was charged (B=A/18%)	636.28
3	Interest Rate for funding of Principal of DPS	12.50%
4	Interest on funding of Principal amount of DPS	79.54

Accordingly, the Commission has computed the amount of Non -Tariff Income as summarized below:

Table 4.33: Trued-up Non-tariff Income for FY 2011-12

(Rs. crore)

Sl.No.	Particulars	Amount
1	Total Non - tariff Income	193.12
2	Less: Financing cost of principal amount of DPS	79.54
3	Net Non-tariff income	113.58

Therefore, the Commission approves Rs. 113.58 crore as Non-Tariff Income for FY 2011-12, against the Petitioners claim of Rs. 193.12 crore as given in the Table below:

Table 4.34: Non-Tariff Income approved for FY 2011-12

(Rs. crore)

Particulars	Petitioner's Submission	Now approved in true up for FY 2011-12
Non-Tariff Income for FY 2011-12	193.12	113.58

4.22 Interest on working Capital

Petitioner's submission:

The BSPHCL has submitted that the BERC (Terms and Conditions for Determination of Tariff) Regulations, 2007provide for recovery of the interest on working capital from the consumers on a normative basis. The principles for this normative computation have been specified in the tariff regulations and are different for generation function and transmission & distribution functions.

BSPHCL has submitted that it has calculated the interest on working capital based on the normative principles outlined by the Commission in its Tariff Regulations, 2007 and sought for approval of the same from the Commission.

The Petitioner has considered the following components for calculating the interest on working capital requirements:

Table 4.35: Proposed Interest on Working Capital for FY 2011-12

(Rs. crore)

Sl. No.	Particulars	FY 2011-12 (Actuals)
1	Two (2) months of fuel cost (Primary & Secondary)	13.23
2	One month O&M Expenses of BSEB	87.65
3	Receivables for 2 months of fixed and variable charges of erstwhile BSEB	948.24
4	Maintenance Spares at 1% of opening GFA	51.30
5	**Total Working Capital Requirement**	**1100.43**
6	Interest Rate (SBI PLR as on 1st April 2011	13%
7	Interest on Working Capital	143.06

Commission's analysis:

The BSPHCL has included the resource gap grant received from the State Government in the form of payment of part of power purchase cost to NTPC as receivable for the purpose of calculation of working capital

The State Government makes the payment of power purchase cost directly to NTPC on receipt of the bill every month. Only the balance amount of the power purchase received from NTPC is paid by erstwhile BSEB from its working capital and receivables. The erstwhile BSEB does not have to arrange working capital for payment to NTPC the amount which is paid directly by the State Government to NTPC. Therefore, the payment made by the State Government directly to NTPC should not be included in two months receivables of BSEB as part of the working capital requirement.

Accordingly, based on the principles prescribed in the BERC Terms and conditions of Tariff Regulations 2007, the information available in the audited annual accounts and the observation of the Commission, the Commission approves the interest on Working Capital of Rs. 83.29 crore as against that of Rs. 143.06 crore claimed BSPHCL for FY 2011-12 as shown in the Table below:

Table 4.36: Summary of approved Interest in working capital for FY 2011-12

(Rs. crore)

Sl. No.	Particulars	Now approved in true up for FY 2011-12
1	Two (2) months of Fuel cost (Primary and Secondary)	11.50
2	One month O&M expenses of BSEB	45.13
3	Receivables (two (2) months of fixed and variable charges of BSEB)	874.87
4	Maintenance spares (@1% of GFA escalated at 6% per annum)	40.87
5	Total Working Capital	972.37
6	Less: Two months power purchase cost paid by State Govt.	355.00
7	Net total Working Capital	617.37
8	Interest Rate (SBI PLR as on 1st April, 2011)	13.00%
9	Interest on working Capital	80.26

Therefore, the Commission approves Rs. 80.26 crore as the interest on working capital for FY 2011-12 in the truing up.

4.23 Other Debits

Petitioner's submission:

The BSPHCL has submitted that the expenses incurred under head of other debits and extraordinary items by erstwhile BSEB for FY 2011-12 are Rs. 691.01 crore is given in Table below:

Table 4.37: Proposed other debits for FY 2011-12

(Rs. crore)

Particulars	Actual as per audited annual accounts	Proposed by BSPHCL for truing-up
Bad and Doubtful debts written off/ provided for	690.53	690.53
Miscellaneous losses and write-offs	0.43	0.43
Sundry Expenses	0.05	0.05
Total	**691.01**	**691.01**

The Petitioner requested for approval of the other debits as proposed in the above Table.

Commission analysis:

The Commission had not approved any expenses under this head in the Tariff Order for FY 2011-12. The Petitioner requested for allowance of Rs. 691.01 crore as other debits in the truing-up for FY 2011-12, which includes provision of Rs. 690.53 crore for bad debits as depicted in the Audited Annual Accounts.

As per the Regulation 85(ii)(18) of BERC Tariff Regulations, 2007, bad debts actually written-off subject to Commission's clearance shall only be allowed as expense for ARR. In the present case erstwhile BSEB has only made a provisioning of Rs. 690.53 crore in the accounts and has not actually written off the amount. Secondly, as per the Regulation, approval of the Commission is required for writing off the bad debts. In this case the approval of the Commission has not yet been taken. Thirdly, writing off bad debts is a major decision which requires due diligence in each case of bad debts before writing it off. The erstwhile BSEB or BSPHC Ltd. does not seem to have undertaken this exercise and has not also submitted any details with reasons for making provisions for bad debts. Hence, the provision of Rs. 690.53 crore towards bad debts is not allowed to be passed on to the consumers. However, if the distribution licensee undertakes the exercise of identifying bad debts after examining its non recoverability with due diligence and submit to the Commission a self contained proposal for writing off such debts giving full justification, the Commission will consider the proposal of writing off of bad debts on merit.

Miscellaneous losses and write offs proposed at Rs. 0.43 crore and sundry expenses proposed at Rs. 0.05 crore are considered by the Commission.

Accordingly, other debits of Rs. 0.48 crore is approved in the truing-up for FY 2011-12.

4.24 Net Prior Period Credits / Charges

Petitioner's submission:

The BSPHCL has submitted that the Commission has started issuing Tariff Orders from FY 2006-07 and hence any expenses / income incurred / accrued and not accounted for in the respective year but discovered in future years as the earlier period's credits / (charges) should be adjusted while calculating ARR. As the Commission had issued the first Tariff Order in FY 2006-07, BSPHCL has only considered expense / income, incurred / accrued after 1st April 2006.

Earlier BSPHCL had proposed net prior period charges of Rs. 198.0 crore for FY 2011-12. Subsequently, in its revised true up petition BSPHCL has proposed Rs. 284.76 crore as the net prior period charges for FY 2011-12 and requested the Commission to approve the same for FY 2011-12.

Commission's analysis:

The Petitioner had initially not furnished the details of prior period income/expenses separately for each component and the period for which the income and expenses related to, and nature of income/expenses etc. On a query from the Commission, the Petitioner provided the detailed transactions of net prior period credits/ charges of Rs. 284.76 crore for FY 2011-12 as shown below:

Table 4.38: Prior period credits/charges for FY 2011-12 proposed by BSPHC Ltd.

(Rs. crore)

Particulars	**Amount**
Income Relating to previous Year (Credits)	**1979770910**
Interest on Fixed Deposit	(-)1841243101
Establishment Cost	182739379
Interest on saving account	227015
Sale of Power	3638047617
Income Relating to Previous Year	1979770910
Fuel Related losses	73476537
Regulatory assets w/off	600000000
Power Purchase	2890043822
Interest on Fixed Deposit	385150152
Sale of Power	121164393
Interest & Finance Charges	64571101
Depreciation Underprovided	625504770
Establishment Cost	67426147
Prior Period Expenses/losses	4827336922
Net Prior Period Credits/(Charges)	**2847566011**

The petitioner has claimed Rs. 60 crore as prior period other charge (Regulatory) and Rs. 62.55 crore towards depreciation underprovided as prior period debit. The Commission had approved regulatory assets of Rs. 60 crore in the tariff order for FY 2006-07. However in the true up order for FY 2006-07, a deficit of Rs.6.11 crore has been approved and passed on along with carrying cost to ARR for FY 2012-13. Therefore provision of Rs. 60 crore as prior period other charge (Regulatory) is not required. As regards claim of depreciation for prior period, Commission has already approved depreciation in earlier years based on data of annual accounts submitted by the licensee. Therefore consideration of underprovided depreciation as prior period debit is not prudent at this stage without year-wise details of under provisioning and reason there for. Accordingly the Commission approves net prior period charge of Rs. 162.21 crore after excluding regulatory asset of Rs. 60 crore and under-provision of depreciation of Rs. 62.53 crore included in the proposal.

4.25 Revenue from Sale of Power at existing Tariff for FY 2011-12

Petitioner's submission:

The BSPHCL has reported revenue from sale of power at Rs. 3107.80 crore for the FY 2011-12, as per audited annual accounts, and requested for considering the revenue from sale of power at Rs. 3107.80 for FY 2011-12 in the Truing-up.

Commission's analysis:

The Commission has approved the revenue from sale of power, as stated below, in the Tariff Order dated 30th March 2012 for FY 2011-12(RE).

Table 4.39: Estimated Revenue from Sale of Power for FY 2011-12 (RE)

(Rs. crore)

Sl.No	Particulars	Amount
1	Revenue from sale of power at existing tariffs	2385.69
2	Sale of power to Nepal	258.63
3	Sale of power through bilateral / UI	102.36
4	Sale of additional power	54.23
5	Revenue through FPPCA	790.91
6	**Total**	**3591.82**

Against the above estimated revenue, the erstwhile BSEB has achieved the performance as stated below, as per the Audited Annual Accounts for FY 2011-12.

Table 4.40: Actual Revenue received as per the Annual Accounts for FY 2011-12

(Rs. crore)

Sl.No	Particulars	Amount
1	Revenue from sale of power within the State	2687.06
2	Revenue from sale of power to Nepal	210.78
3	Revenue from UI	209.95
4	**Total**	**3107.79**

The Audited Annual Accounts do not reveal any revenue from sale of additional energy specifically.

The Commission approves the revenue from sale of power at Rs. 3107.79 crore for FY 2011-12, as per audited annual accounts in truing-up.

4.26 Resource gap funding received from the State Government for FY 2011-12

Petitioner's submission:

The BSPHCL has submitted that since the erstwhile BSEB was a Government of Bihar entity, the un-bridged expenditure gap has to be met either by revenue income from the tariff fixed by the Commission for the different categories of consumers, or as subsidy/resource gap funding by the Government of Bihar, as rightly observed by the Commission in its Tariff Order for FY 2011-12 dated 1st June, 2011 in para 4.3.3.

BSPHCL stated that the actual expenditure has always remained more than the revenue collected due to higher T&D losses, as compared to T&D loss trajectory allowed by the Commission. This revenue gap cannot be carried forward un-bridged and has to be accounted for by some means. Accordingly, the erstwhile BSEB had approached the Government of Bihar for financial assistance to bridge the resource gap arising out of increased T&D losses. The total subsidy and grant received by the erstwhile BSEB in FY 2011-12 amounted to Rs. 2120.24 crore.

The BSPHCL further stated that the Energy Department had, in its letter no. 4208 dated 19/09/11, clarified priorities for use of this resource gap funding. This resource gap funding will be first used to fulfill financial losses arising on account of actual T&D losses as against approved T&D losses. The remaining amount of resource gap funding will be used for Agriculture and Rural area consumers.

The BSPHCL also submitted that it has worked out likely disallowance in the power purchase cost of Rs. 1076.39 crore because of higher T&D losses, as compared to the approved trajectory by the Commission and has reduced the same amount from the Aggregate Revenue Requirement. At the same time, it has also reduced resource gap funding to the same tune and only the remaining amount of Rs. 1043.85 crore is considered as available for reducing the Aggregate Revenue Requirement to arrive at the revenue gap for FY 2011-12 as detailed in Table 3.33 below.

Table 4.41: Projected details of subsidy and grant received during FY 2011-12.

(Rs. crore)

Particulars	FY 2011-12
Actual subsidy and grant received	2120.24
Disincentive for non-achievement of T&D loss reduction target	1076.39
Resource gap available to erstwhile BSEB	1043.85

BSPHCL requested that Rs 1043.85 crore be considered as the resource gap funding for reducing the Aggregate Revenue Requirement to arrive at the revenue gap for FY 2011-12.

Commission's analysis:

The Commission issued the Tariff Order dated 1st June 2011 for FY 2011-12, in which the Resource Gap Assistance was considered at Rs. 1080 crore. In chapter 7 of the Tariff Order for FY 2012-13, the Commission discussed the treatment of Grant / Revenue Subsidy from the State Government in detail. Para 7.4.4 of the above Tariff Order is reproduced below:

"7.4.4 The Commission is of the view that letter from State Government after

the issue of Tariff Orders cannot be used to withdraw the effect of government grant already passed on the consumers on a retrospective basis. Therefore, the Commission has not considered the BSEB proposal for post-facto adjustment of the revenue resource gap during the Truing-up exercise for FY 2006-07 to FY 2010-11. The Commission is of the view that the same approach would be continued while truing-up of ARR for FY 2011-12, since the Tariff Order for FY 2011-12 had already been issued before such decision was taken by the State Government."

Accordingly, out of Rs.2120.24 core of resource gap assistance received for the year FY 2011-12, Rs.1080 crore is treated as resource gap grant for reducing ARR gap approved in the Truing up for FY 2011-12 leaving balance resource gap assistance of Rs. 1040.24 crore. The Commission in paragraph 4.12 has disallowed an amount of Rs.1144.12 crore towards power purchase cost for the year. The balance resource gap assistance of Rs.1040.24 crore is now adjusted against the power purchase cost disallowance of Rs.1156.12 crore leaving an unadjusted power purchase disallowance of Rs.115.88 crore on account of financial loss caused due to higher T&D loss to be absorbed by the BSPHCL.

The details of adjustment of resource gap assistance are given below:

Table 4.42: Details of state Government resource Gap Assistance

(Rs. crore)

Sl. No.	Particulars	Amount
1	Resource gap assistance for State Government	2120.24
2	Less: Resource gap grant for reducing ARR gap as per tariff order for FY 2011-12	1080.00
3	Less: Resource gap grant towards part of disallowed power purchase cost on account of high T&D loss with respect to BERC target	1040.24

4.27 Approved ARR and Revenue Gap for FY 2011-12

Based on the above analysis, the annual revenue requirement, along with the revenues at existing tariffs and revenue gap for FY 2011-12, is as shown below:

Table 4.43: Summary of Trued up ARR and Revenue gap for FY 2011-12

(Rs. crore)

Sl. No.	Description	Approved in Tariff Order for FY 2011-12	As per BSEB truing-up petition	Now approved in truing-up for FY 2011-12
25.	Power Purchase Cost	3328.00	4393.43	4393.43
26.	Own Generation Cost	80.00	79.36	68.98
27.	Repair & Maintenance Expenses	95.00	83.46	83.46
28.	Employees' Cost	798.00	923.18	412.90
29.	Admin & General Expenses	52.00	45.22	45.22
30.	Depreciation	117.00	37.32	36.60
31.	Interest & Finance Charges	149.00	74.06	34.31
32.	Interest on Working Capital	86.00	143.06	80.26
33.	Return on Equity		204.12	-
34.	Other Debits and extraordinary Items		691.01	0.48
35.	Less: Prior Period Credits / (Charges)		(284.76)	162.21
36.	**Total Revenue Requirement**	**4706**	**6958.97**	**5317.85**
37.	Less: Expenditure disallowed due to higher T&D losses		1076.39	1156.12
38.	Less: Non-Tariff Income	168.00	193.12	113.58
39.	**Net Revenue Requirement**	**4538**	**5689.46**	**4048.15**
40.	Revenue from sale of Power	2732	3107.80	3107.79
41.	Grant from Govt. and subsidy	1080.00	1043.85	1080.00
42.	**Total Surplus**	**726.00**	**1537.82**	**139.64**

The Trued up revenue surplus as approved by the Commission for FY 2011-12 amounts to Rs.139.64 crore, as against revenue gap of Rs.1537.82 crore projected by the Petitioner in the Truing up Petition for FY 2011-12.

The BERC Tariff Regulations, 2007 provide for revenue gap of the following year to be adjusted as a result of truing-up exercise for FY 2011-12. While approving adjustments towards revenue / expenses in subsequent years, arising out of review / truing-up exercise, the Commission will allow this surplus during FY 2011-12.

Accordingly, the revenue surplus arising out of the truing up for FY 2011-12 is to be adjusted in the ARR for FY 2013-14. The Commission approves interest for one and half year (for the entire FY 2012-13 and for half of the FY 2013-14 assuming that the recovery would have been done over the year) amounting to Rs. 30.60 crore on the revenue surplus for FY 2011-12 arising on account of the truing-up exercise.

Table 4.44: Summary of the interest on revenue surplus of FY 2011-12 permitted to be carried forward to ARR of FY 2013-14

(Rs. crore)

Sl. No.	Particulars	Approved surplus truing up for FY 2011-12
1.	Revenue surplus approved for FY 2011-12 to be carried forward	139.64
2.	Interest for FY 2012-13 (SBI PLR @ 14.75%)	20.60
3.	Interest for six (6) months during FY 2013-14 (SBI PLR @ 14.45%)	10.09
4.	**Total surplus with interest**	**170.33**

The trued up revenue surplus, as approved by the Commission for FY 2011-12, amounts to Rs. 170.33 crore, as against revenue gap of Rs. 1764.65 crore (including carrying cost) proposed by the Petitioner in the truing-up petition of FY 2011-12. Accordingly, the gap would be carried forward to the ARR of the FY 2013-14 for adjustment.

The net revenue surplus to be carried forward in FY 2013-14, after the truing-up exercise for FY 2011-12 is Rs. 170.33 crore.

5. Review of FY 2012-13

5.1 Background

5.1.1 The Commission issued the tariff order for FY 2012-13, determining the Annual Revenue Requirement (ARR) and Retail Supply Tariff for FY 2012-13 for erstwhile BSEB on 30th March, 2012. The approval was based on the estimates presented by the erstwhile BSEB for costs to be incurred and revenue likely to be generated during the year after prudence check. BSPHCL has submitted the present Petition based on the revised estimates of sale of energy and expenses for 'Review' of its ARR for FY 2012-13. BSPHCL has subsequently submitted the audited annual accounts for FY 2011-12, through the letter dated 24.11.2012. The BSPHCL has stated that it has projected the energy sales etc., and number of consumers for FY 2012-13 (RE) using three months actuals (April to June 2012). In the revised estimates submitted on 24.1.2013 it has provided the actuals for the first seven months of FY 2012-13 (from April to October, 2012-13).

In the review, the performance of FY 2012-13 (revised estimate) is compared with the ARR approved for FY 2012-13 in the Tariff Order dated 30th March, 2012.

The Commission has anlaysed the energy sales and components of expenditure and revenue claimed in the review by BSPHCL for FY 2012-13 in this chapter.

5.2 Category-wise energy sales

Petitioner's submission:

The BSPHCL, in its Petition, has estimated the revised energy sales for FY 2012-13 using the three months (April to June, 2012) data of erstwhile BSEB.

BSPHCL has submitted that it proposes to increase the consumption by Kutir Jyoti consumers at 37 units/consumer/month on an average as the supply hours have increased from 20 hours to 22 hours in a day and actual connected load in Kutir Jyoti households is higher than specified load. Hence, the sales of 740 MU are estimated in the revised estimate for 2012-13 as against the sales of 456 MU approved in the Tariff order for FY 2012-13.

Commission's analysis:

In paragraph 6.4 of the Tariff Order for FY 2012-13, the Commission has discussed in detail about the Kutir Jyoti specific consumption and approved a norm of 18 units per month for Kutir Jyoti (Rural) and 30 units per month for Kutir Jyoti (Urban) categories. The Commission had also taken into consideration the verification report submitted by the consultant appointed by the Commission for the purpose. The consultant has recommended 18 units / month / Kutir Jyoti rural consumers. The Commission has also discussed this issue in detail in chapgter-4, paragraph 4 in this Tariff Order.

Therefore, in the absence of metering and billing on the basis of actual consumption, the Commission has no reason to change the consumption norm of 18 units per month for Kutir Jyoti (Rural) and 30 units per month for Kutir Jyoti (Urban) consumers. Based on the already approved norm of 18 units / month and 30 units / month for Rural and Urban Kutir Jyoti connections respectively.

The Petitioner has projected the total Kutir Jyoti consumers at 1500583 for FY 2012-13. The Petitioner has not separately projected the number of Kutir Jyoti (Urban) consumers. Assuming Kutir Jyoti (Urban) consumer at about 10% of total Kutir Jyoti consumers the estimated consumption of Kutir Jyoti category for FY 2012-13 would work out to 341 units.

As mentioned earlier, BSPHCL has submitted that it has projected the consumption and number of consumers in other categories based on three months data. BSPHCL has since provided the category-wise consumption and revenue for seven months (April to October, 2012) vide letter dated 11th February, 2013. Based on the actual category-wise energy consumption for the 7 months (April to October, 2012) energy consumption for the year 2012-13 (RE) is computed.

This energy consumption for FY 2011-12 (actual), approved in Tariff Order for FY 2012-13, revised consumption projected by BSPHCL for FY 2012-13, energy computed for FY 2012-13 based on 7 months actuals and category-wise consumption now approved by the Commission are given in Table below:

Table 5.1: Energy sales for FY 2012-13 (RE)

(MU)

Sl. No.	Category	Actuals for FY 2011-12 as per Annual Accounts	Approved in Tariff Order for FY 2012-13	Projected by BSPHCL FY 2012-13 (RE)	Computed consumption based on 7 months data	Now Approved by the Commission for FY 2012-13 (RE)
1	**2**	**3**	**4**	**5**	**6**	**7**
1	Kutir Jyoti (U&R)	342	457	740	593.31	341
2	**Domestic Service**					
	Domestic - I	784	1048	553	550.57	551
	Domestic - II	1241	1425	1531	1556.39	1556
	Domestic - III	1	1	1	0.73	1
	Sub-total	**2026**	**2474**	**2085**	**2107.70**	**2107**
3	**Non-Domestic (Commercial)**					
	NDS-I	19	22	15	14.60	15
	NDS-II	500	582	624	724.84	725
	NDS-III	2	18	2	1.88	2
	Sub-total	**521**	**622**	**641**	**741.31**	**742**
4	**Industrial (LT)**					
	LTIS-I	116	197		143.22	143
	LTIS-II	87	127		96.80	97
	Sub-total	**203**	**324**	**246**	**240.03**	**240**
5	**Irrigation & Agriculture Service**					
	IAS-I	200	272	272	228.00	272
	IAS-II	163	317	144	139.49	144
	Sub-total	**363**	**589**	**416**	**367.51**	**416**
6	**Street Light Service**					
	STL-I	6	7	4	8.48	8
	STL-II	17	33	16	42.68	43
	STL-III	-	2		0.20	0
	Sub-total	**23**	**42**	**21**	**51.36**	**51**
7	**Public water works**					
	LTS-III	45	160	53	54.08	54
	Sub-total	**45**	**160**	**53**	54.08	**54**
8	**HT**					
	HTS - I	657	967	628	367.71	628
	HTS - II	268	426	149	184.38	184
	HTS - III	151	221	70	161.67	162
	HTSS	395	447	458	**440.02**	**440**
	Sub-total	**1470**	**2061**	**1305**	**1153.79**	**1414**
9	**Railway Traction Service**					
	RTS-I		785		287.40	287
	RTS - II				205.78	206
	Sub-total	**537**	**785**	**501**	**493.19**	**493**
10	Sale from additional power availability	-	266	-	-	-
11	**Total Sales Within the State**	**5531**	**7778**	**6008**	**5802.27**	**5859**
12	Nepal	1164	848	1023	1297.51	555
13	UI Sales					468
13	**Grand Total**	**6695**	**8626**	**7031**	**7099.78**	**6882**

The consumption of Kutir Jyoti and Agricultural consumption is assessed based on norm approved by the Commission. The projection of BSPHCL for the consumption of NDS-II, STL-I, STL-II, HTS-II and HTS-III consumers is considered low and even 7 months actual consumption is also low. BSPHCL has to get investigated the reasons for low consumption by HT industry and other categories mentioned above. Therefore, the Commission has considered the consumption of these consumers on the basis of first 7 months actual consumption during FY 2012-13.

The Commission has considered the revised energy sales of 6707 MU including sales to Nepal and UI for FY 2012-13 (RE).

5.3 Transmission and Distribution (T&D) losses

Petitioner's submission:

The BSPHCL has projected Transmission and Distribution (T&D) losses at 42.00% for FY 2012-13 (RE) as against 27.5% approved by the Commission for FY 2012-13 in the Tariff Order dated 30th March, 2012. It is submitted by BSPHCL that the T&D losses are higher than target set by the Commission. The losses have increased due to addition of rural network and sales. As the RGGVY programme is underway, rural households will continue to be added, and it has also become challenging job to field staff to control pilferage and theft.

Commission's analysis:

The Commission has dealt the issue of T&D losses exhaustively in the Tariff Order for FY 2012-13. Considering all aspects the Commission has fixed the T&D loss trajectory for FY 2012-13 and FY 2013-14 as given below:

FY 2012-13 27.5%
FY 2013-14 26.0%

The Commission does not see any justification to revise the loss trajectory of 27.5% for FY 2012-13. Hence the Commission retains the T&D loss at 27.5% for FY 2012-13 and approves the T&D loss for FY 2012-13 (RE) at 27.5%.

5.4 BSEB's own generation

The erstwhile BSEB has only one generating station i.e. BTPS with two Units (units 6 and 7) each of 110 MW in operation and both the Units are under R&M. Unit 6 is expected to be put back in service in December, 2013 and unit 7 in May, 2013.

Hence, BSPHCL has not projected any generation from this station during FY 2012-13 (RE).

5.5 Energy Requirement

Petitioner's submission:

Based on the revised energy sales and energy losses projected in paragraph 5.2 and 5.3 above, the BSPHCL has computed the total energy requirement as given in Table below:

Table 5.2: Energy requirement projected by BSPHCL for 2012-13 (RE)

Sl. No.	Particulars	Unit	Approved in Tariff order for FY 2012-13	Projected for FY 2012-13 (Revised)
1.	Energy sales within the State	MU	7778	6008
2.	Sale to Nepal + UI	MU	848	1023
3.	Total sales	MU	8626	7031
4.	T&D loss	MU	3161	5091
5.	T&D loss	%	27.5%	42%
6.	Energy requirement	MU	11786	12122

Commission's analysis:

The BSPHCL has computed the energy requirement with transmission and distribution losses of 42% in FY 2012-13 (RE). The T&D losses approved by the Commission for FY 2012-13 are 27.5%. The T&D losses have not been considered on sale in UI as energy sold in UI does not enter the transmission and distribution network of erstwhile BSEB. The energy requirement is computed by the Commission for FY 2012-13 based on approved energy sales and T&D losses as shown in the Table below:

Table 5.3: Energy requirement considered by the Commission for FY 2012-13 (RE)

Sl. No.	Particulars	Unit	FY 2012-13 Now considered in Review
1.	Energy sales within the State	MU	5859
2.	Sale to Nepal + UI	MU	1023*
3.	Total sales	MU	6882
4.	T&D loss	MU	2433
5.	T&D loss	%	27.50%
6.	Energy requirement	MU	9315

* sale to Nepal is considered at 555 MU as per Tariff Order.

The Commission considers the energy requirement of 9315 MU in the review for FY 2012-13 (RE).

5.6 Power purchase

Petitioner's submission:

BSPHCL has projected the power purchase of 12459 MU at a total cost of Rs.4130.60 crore in the revised estimate for FY 2012-13.

The Petitioner has submitted that the cost of power from each source for the year 2012-13 has been projected based on the actual costs incurred / bills received for the period April 2012 to September, 2012. BSPHCL has escalated the actual cost / unit at CAGR of 5 year. Based on the above, the projected energy purchase from long-term sources and the cost is summarised in the Tables below:

Table 5.4: Source-wise power purchase projected by the Petitioner for FY 2012-13 (RE)

(MU)

Sl. No	*Station*	Estimated by BSHPCL for 2012-13
I	**NTPC**	**8081**
1	Farakka 1,2&3	2834
2	Talchar	2585
3	Kahalgaon 1&2	2662
II	**NHPC**	**863.08**
4	Rangit	136.88
5	Teesta	726.2
III	**PTC**	**1702**
6	Chukka	580.03
7	Tala	1122
IV	**Others**	**2772**
8	Adani	1254
9	NEA + Short term	1518
V	**BSHPC**	**56.75**
VI	**Sugar Mills**	**53.66**
	Total	**13528.49**
VII	***Less UI sale***	**1069**
VIII	***Net purchase***	**12459**

Table 5.5: Power purchase cost projected by the Petitioner for FY 2012-13 (RE)

Sl.No.	Station	Rs. crore
1	NTPC	2770.26
2	NHPC	211.2
3	PTC	407.27
4	Others	741.87
	Total	**4130.6**
5	**Less: surplus power**	**2.67**
6	**Net power purchase**	**4127.92**

The Petitioner has provided the details of actual power purchase during the April 2012 to September 2012 as detailed in the Table below:

Table 5.6: Power purchase cost from April 2012 to September 2012

Sl. No.	Source	Energy Purchased (MU)	Power Purchase Cost (Rs. crore))	Average Cost (Rs/Kwh)
1	Adani (medium term)	627	271	4.32
2	Bharat Sugar	13.9	5.9	4.23
3	BHPC	28.4	7.3	2.57
4	Chukha (PTC)	290	57.7	1.99
5	Farakka I and II	1259.6	487.7	3.87
6	Farakka III	157.3	75.5	4.8
7	Harinagar Sugar Mill	11.6	5.3	4.57
8	HPC/ Bio-fuels /Luriya	(-)0.4	(-)0.2	4.57
9	HPC/Bio-fuels /Sugauli	(-)0.1	0	4.53
10	Kahalgaon – I	1046	337	3.22
11	Kahalgaon - II	285.2	97.4	3.42
12	Kanti (KBUNL)			
13	NEA Purchase	0.7	0.3	4.9
14	NEA Sales	(-)236.1	(-)88.9	3.77
15	NHPC (Ranggit)	68.4	25.3	3.69
16	NHPC (Teesta)	363.1	73	2.01
17	NS Sugar Mill	1.3	0.5	4.18
18	NVVNL Short Term	758.2	324.9	4.28
19	Tala (PTC)	561.2	131.5	2.34
20	Talcher	1292.6	318.9	2.47
21	Transmission Charges		90.4	
22	UI Purchase	16.9	0.6	0.33
23	UI Sale	(-)451.3	(-)155.7	3.45
24	**Grand Total**	**6093.5**	**2065.3**	**3.39**

Commission's analysis:

The Commission considers the proposal for purchase of 12459 MU as the proposed purchase is from the sources with which the erstwhile BSEB / BSPHCL had committed to purchase.

As verified from the above Table BSPHCL has incurred Rs.2065.3 crore towards power purchase cost during April 2012 to September 2012 including transmission charges of Rs.90.40 crore for purchase of 6093.5 MU. NHPC has revised the prices of power from Rangit from April 2012. They have claimed the revised prices for power supply during April – September 2012 and this has reflected in the total cost for FY 2012-13. NHPC has also claimed an amount of Rs.33.14 crore towards past arrears. This is considered in the review for FY 2012-13. Based on the source-wise average cost / unit during April 2012 to September 2012 the power purchase cost for FY 2012-13 (RE) is computed for purchase of 12459 MU by the Commission as detailed in the Table below:

Table 5.7: Power purchase cost for FY 2012-13 (RE)

Sl. No.	Station	Energy Purchased (MU)	Average cost (Rs./kWh)	Power Purchases cost (Rs. crore)
I	**NTPC**	**8081**	**3.25**	**2631.41**
1	Farakka 1,2&3	2834	3.97	1125.1
2	Talchar	2585	2.47	638.5
3	Kahalgaon 1&2	2662	3.26	867.81
II	**NHPC**	**863.08**	**2.27**	**196.48**
4	Rangit	136.88	3.69	50.51
5	Teesta	726.2	2.01	145.97
III	**PTC**	**1702.03**	**2.22**	**377.98**
6	Chukka	580.03	1.99	115.43
7	Tala	1122	2.34	262.55
IV	**DVC**	**100**	**3.83**	**38.3**
V	**Others**	2772	4.63	**1191.43**
8	Adani	1254	4.32	541.73
9	NEA+ Short term	1518	4.28	649.7
VI	**BSPHCL**	**56.75**	**2.57**	**14.58**
VII	**Sugar Mills**	**53.66**	**4.18**	**22.43**
	Total	**13528.49**	**3.31**	**4472.61**
VIII	**Less: UI**	**1069**	**-**	**-**
	Transmission charges (PGCIL)			**180**
IX	**Total Power purchase cost**	**12459**	**3.31**	**4123.93**
X	**Transmission charges (PGCIL)**			**180.00**
XI	**Total power purchase cost including transmission charges**	**12459**	**3.45**	**4303.93**
XII	**Arrears claimed by NHPC for power supply from Ranjit HEP**			**33.14**
	Total			**4347.07**

The Commission considers the power purchase of 12459 MU from different sources with which BSPHCL has an agreement / arrangement at a cost of Rs.4347.07 crore including transmission charges for FY 2012-13 and arrears to NHPC in the review. This is subject to true up for FY 2012-13 as and when actual power purchase cost based on the audited accounts for FY 2012-13 will be submitted by the Petitioner for FY 2012-13.

5.7 Energy Balance

Petitioner's submission:

The energy balance depicts the balance between the total energy requirement (energy sales + T&D losses) and energy available from own generation and power purchase from various generation sources. BSPHCL has considered the transmission loss of 3.09% in the regional transmission system.

The energy balance approved by the Commission in Tariff order for FY 2012-13 and revised estimate proposed by the BSPHCL for FY 2012-13 (RE) are detailed in Table below:

Table 5.8: Projected Energy Balance for FY 2012-13 (RE)

Sl. No.	Category	FY 2012-13 Approved in Tariff order for FY 2012-13	FY 2012-13(RE) proposed by BSPHCL
A	**Energy Requirement**		
1	Energy Sales (MU)	7512	6008
2	Sale from additional Power availability (MU)	266	-
3	Sale out side state (Nepal)	555	1023
4	Total Sales within state (MU)	8333	7031
5	Sale in Bilateral Trade (MU)	293	-
6	Total Sales within state (MU)	8626	7031
7	T & D Loss %	27.50%	42%
8	T & D Loss on (4) (MU)	3161	5091
9	Energy Requirement (MU)	11786	12122
B	**Energy Availability**		
10	Own Generation	279	-
11	Total Power Purchase	14142	12459
12	Transmission Loss %	2.51%	3.09%
13	Transmission Loss of (11,000 MU)	296	329
14	Net Power Available	14125	12130
15	**Disallowable Power Purchase (14-9)**	**2338**	**8**

Commission analysis:

The energy balance is worked out based on energy sales considered by the Commission and T&D losses approved by the Commission as detailed in Table below. The transmission loss in the regional transmission system is considered at 2.73% as ascertained from Eastern Regional Power Coordination Committee / ERLDC.

Table 5.9: Energy Balance for FY 2012-13 (RE) considered by the Commission

(MU)

Sl. No.	Category	Proposed by BSPHCL FY 2012-13 (RE)	Now considered by the Commission for FY 2012-13
A	**Energy Requirement**		
1	Energy Sales (MU)	6008	5859
2	Sale from additional Power availability (MU)	-	-
3	Sale out side state (Nepal) + UI	1023	1023
4	Total Sales within state (MU)	7031	6882
5	Sale in Bilateral Trade (MU)	1069	-
6	Total Sales within state (MU)	7031	6882
7	T & D Loss %	42%	27.50%
8	T & D Loss on (4) (MU)	5091	2433
9	Energy Requirement (MU)	12122	9315
B	**Energy Availability**		
10	Own Generation	-	-
11	Total Power Purchase	12459	9568
12	Transmission Loss %	3.09%	2.73%
13	Transmission Loss of (MU) (for 10746 MU)	329	261

Sl. No.	Category	Proposed by BSPHCL	Now considered by the
14	Net Power Available	12130	9307
15	Surplus energy (14-9)	8	2891

The total purchases from long term sources has been worked out considering the impact of average regional transmission losses (2.64=329 MU÷12459 MU) applicable on the total actual power purchase by erstwhile BSEB in FY 2012-13. The reason for applying the average regional transmission losses is that the power purchase quantum by erstwhile BSEB also includes sources on power on which regional transmission losses are not applicable e.g. UI power, Nepal (NE), BSHPC, sugar mills, etc. Accordingly, the gross purchase required to be done in FY 2012-13 was 9568 MU with a regional transmission loss of 261MU {(9568 MU = 9315÷(1–2.73%)}.

The Commission disallows the power purchase quantum equivalent to 3109.7 MU for the FY 2011-12 as part of truing-up process, based on the principle that excess power purchase on account of higher T&D losses, i.e., over and above the approved losses, shall not be permitted.

5.8 Fixed Costs

5.8.1 Operation and Maintenance (O&M) costs

O&M costs comprise of Employee cost, R&M expenses and Administration and General expenses. The Commission approved total O&M cost at Rs. 920.42 crore for FY 2012-13 as against Rs.1120.78 crore in the Tariff Order for FY 2012-13 claimed by erstwhile BSEB.

5.8.2 Employee Costs

Petitioner’s submission:

BSPHCL has submitted that the employee cost comprises of salaries, dearness allowance, bonus, terminal benefits in the form of pension and gratuity, leave encashment, and staff welfare expenses. As per Audited Accounts for FY 2011-12, the employee cost is Rs.923.18 crore which includes terminal benefits of Rs.510.27 crore against Rs.203.32 crore during FY 2010-11.

BSPHCL has submitted that the employee cost is increased at 9.25% based on CPI index for three years i.e 2009 -10 to 2011-12. It is further submitted that effect of new employees addition is expected to be Rs.10 crore for each year. As per transfer scheme, Government support is expected towards payment of terminal benefits of the employees during MYT period. BSPHCL has requested that the employees cost is approved as proposed. The employee cost approved by the Commission in its Tariff Order dated 30.3.2012 and estimated by the BSPHCL under FY 2012-13 (RE) are furnished in Table below:

Table 5.10: Proposed Employee Cost for FY 2012-13 (RE)

(Rs. crore)

Sl. No.	Station	FY 2012-13 Approved by Commission	FY 2012-13 (RE) projected by BSPHCL
1	Generation	39.19	121.74
2	Transmission	87.47	146.72
3	Distribution	608.71	754.15
4	Effect of new employee		
5	Total	735.37	1022.61
6	Terminal Benefits		
7	Total employee cost including Terminal benefits	735.37	1022.61

Commission analysis:

As verified from the annual accounts for FY 2011-12, the actual employee cost depicted for the year is Rs.923.18 crore of which Rs.510.27 crore being terminal benefits. The Commission has sought clarification from BSPHCL on the increase and reasons for increase in terminal benefits from Rs.203.32 crore in FY 2010-11 to Rs.510.00 crore in FY 2011-12 and also details for Rs.510.27, the Petitioner has clarified as under"

> *"The substantial increase in terminal benefits is due to change in methodology. Till FY 2010-11 the terminal benefits were valued according to Bihar Service Rules. However, from fY 2011-12 the terminal benefits are estimated using actuarial valuation. The details of the same are given below:*

Contributory pension scheme	3,49,58,335
Ex-Gratia	55,000
Gratuity	17,68,12,292
Pension	4,88,80,06,139
PF Board's Contribution	29,49,854
Total	510,27,81,620

The State Government in its Transfer Scheme dated 30.12.2012 has committed that the liability in respect of existing pensioners of the Board (based on actuarial valuation as on 31.3.2011) shall be the liability of the State Government. Further the liability, as assessed on actuarial valuation, in respect of the existing employees as on the effective date, to the extent they are unfunded shall also be the liability of the State Government. Hence BSPHCL is asked to furnish the details of State

Government support against terminal benefits for FY 2010-11, FY 2011-12 and FY 2012-13.

BSPHCL in its letter dated 1.3.2013 has clarified that the Terminal benefits of Rs.510.18 crore to retired and working employees for FY 2011-12 are as follows:

- Retired employees Rs.488.81 crore
- Working employees Rs.21.48 crore

It is further informed that similar information for FY 2012-13 is currently unavailable. In view of the clarification of BSPHCL the Commission has considered the terminal benefits of working employees at an increase of 9.25% (CPI) over the terminal benefits of Rs.21.48 crore for FY 2011-12 and limited the terminal benefits for working employees for 5 months from the cutoff date (November 2012 to March 2013) which works out to Rs.8.95 crore. The employee cost other than terminal benefits is considered based on the employee cost approved in truing up for FY 2011-12 at Rs.412.90 with escalation at 9.25% and adding Rs.10 crore towards new employee expenses.

Based on the above the employee cost for FY 2012-13 is arrived at as given in Table below:

Table 5.11: Employee Cost for FY 2012-13 (RE) considered by the Commission

(Rs. crore)

Sl. No.	Station	FY 2012-13 Approved by the Commission	RE furnished by BSPHCL	Now considered by Commission
1	Generation	39.19	121.74	53.7
2	Transmission	87.47	146.72	64.72
3	Distribution	608.71	754.15	332.68
4	Effect of new employee		10	10
5	Total	735.37	1022.61	461.10
6	Terminal Benefits	-		8.95
7	**Total employee cost including terminal benefits**	**735.37**	**1022.61**	**470.05**

The Commission, accordingly, considers the revised employee cost at Rs. 470.05 crore including terminal benefits for the year 2012-13 as detailed in the above Table. The revised employee cost considered is subject to true up as and when the Audited Annual Accounts and actual employee cost will be submitted by the Petitioner for FY 2012-13.

5.8.3 Repairs and Maintenance (R&M) Expenses

Petitioner's submission:

BSPHCL has projected the revised R&M cost at Rs.88.93 crore for FY 2012-13. It is submitted that the assets are old and require regular maintenance to ensure uninterrupted operations. The actual expenses during 2011-12 are escalated at 9.25% being the increase in WPI and estimated at Rs.88.93 crore for the FY 2012-13 (RE). The R&M expenses approved by the Commission in the tariff order and now estimated by the BSPHCL in FY 2012-13 (RE) are furnished in the Table below:

Table 5.12: Proposed R&M expenses for FY 2012-13 (RE)

(Rs. crore)

Sl. No.	Station	Approved for FY 2012-13	FY 2012-13 (RE)
1	Generation	17.25	4.89
2	Transmission	14.05	8.8
3	Distribution	78.96	75.24
4	**Total**	**110.26**	**88.93**

Commission's analysis:

As verified from the Audited Annual Accounts for FY 2011-12, the actual expenditure under R&M is Rs.81.37 crore and water charges are Rs.2.09 crore with escalation at 9.25%, the R&M charges for FY 2012-13 (RE) would be Rs.88.90 crore and adding Rs.2.09 crore towards water charges, the total R&M cost for FY 2012-13 (RE) are Rs.90.99 crore. The Commission consider the R&M costs for FY 2012-13 (RE) at Rs.90.99 crore which is subject o true up, as and when the actual R&M cost will be submitted by the Petitioner for FY 2012-13.

5.8.4 Administration and General (A&G) Expenses

Petitioner's submission

Administration and General expenses comprise of rents, telephone and other communication expenses, professional charges, conveyance and traveling expenses etc.

The BSPHCL has estimated the A&G expenses at Rs. 49.22 crore in RE for FY 2012-13 with an increase of 9.25% over the actual expenditure during 2011-12. The Administrative and General expenses approved by the Commission in the tariff order and revised estimate submitted by BSPHCL are furnished in Table below:

Table 5.13: Proposed Administration and General Expenses for FY 2012-13

(Rs. crore)

Sl. No.	Station	Approved for FY 2012-13	FY 2012-13 (RE)
1	Generation	1.36	1.77
2	Transmission	5.06	4.7
3	Distribution	68.36	42.75
4	**Total**	**74.78**	**49.22**

Commission analysis:

As verified from the Audited Annual Accounts for FY 2011-12, the actual A&G expenses for FY 2011-12 are Rs.45.22 crore with escalation at 9.25% the A&G expenses for FY 2012-13 would be Rs.49.40 crore. The Commission considers the A&G for FY 2012-13 (RE) at Rs.49.40 crore, which is subject o true up, as and when the actual A&G expenses will be submitted by the Petitioner for FY 2012-13.

Operations and Maintenance expenses

Table 5.14: Revised estimates of O&M cost considered by the Commission for FY 2012-13 (RE)

(Rs. crore)

Sl. No.	Particulars	Approved for FY 2012-13	FY 2012-13 (Revised estimate)	Now Approved for FY 2012-13 (RE)
1	Employee Cost	735.37	1022.61	470.05
2	Repair and Maintenance (R&M) Expenses	110.26	88.93	90.99
3	Administrative and General (A&G) Expenses	74.78	49.22	49.40
4	**Total O&M cost**	**920.41**	**1160.76**	**610.44**

The Commission considers the revised O&M costs at Rs.610.44 crore for FY 2012-13. The revised O&M cost for FY 2012-13 (RE) considered by the Commission is subject to true up as and when the actual O&M cost will be submitted by the Petitioner for FY 2012-13.

5.9 Capital Expenditure

Petitioner's submission:

BSPHCL has submitted that the erstwhile BSEB had taken up R&M of units 6 and 7 at BTPS under RSVY scheme sanctioned by Planning Commission, BTPS Extension (2x250 MW) and connected works, augmentation and expansion of transmission network to meet the growing demand and implementation of a number of schemes for strengthening of the distribution network, additional transformers, substations etc., to meet the demand, to improve quality of supply and reduce distribution loss and extend supply to new consumers to be connected in the newly electrified villages and metering of all consumers, etc. BSPHCL has projected function-wise / scheme-wise details of proposed capital expenditure for FY 2012-13 (RE).

The capital expenditure approved by the Commission in the Tariff Order dated 30th March, 2013 and revised estimate furnished by the Commission are furnished in the table below:

Table 5.15: Capital Investment and Funding during FY 2012-13 furnished by BSPHCL

(Rs. crore)

Sl. No.	Station	FY 2012-13 Approved	FY 2012-13 (RE)
A	**Capital Expenditure**		
(i)	Generation	295	750
(ii)	Transmission	611.77	876
(iii)	Distribution	2148.57	1598
(iv)	**Total**	**3055.34**	**3224**
B	**Funding**		
(I)	**Generation**		
a	Grant	295	
b	Loan		750
(ii)	**Transmission**		
(a)	Grant	500	454
(b)	Loan	111.77	423
(iii)	**Distribution**		
(a)	Grant	250	824
(b)	Consumer contribution	66	
(c)	Loan	1832.57	774
C (I)	**Total Grant**	**1045**	**1278**
(ii)	**Total Consumer contribution**	**66**	
(iii)	**Total Loan**	**1944.34**	**1947**
	Total	**3055.34**	**3225**

Commission's analysis:

The capital investment mainly covers R&M of units 6 and 7 at BTPS, units 8 and 9 at BTPS extension (new project), strengthening of infrastructure at BTPS and water supply from Ganges river under generation, augmentation of transmission system for evacuation of power from upcoming generating stations and other sources, extension and strengthening of distribution system for improving quality of supply and reduce T&D losses and rural electrification etc. Since the works are on hand and are required for augmentation of generation capacity, strengthening the transmission and distribution systems to meet the demand, extend supply to consumers to consumers in newly electrified villages, improve quality of supply and reduce distribution losses, BSPHCL has taken an amount of Rs.41 crore both under CWIP and new investment under transmission. Commission has rectified this. The Commission considers the investment and pattern of funding. The capital investment and corresponding grant and loan considered by the Commission are furnished in Table below:

Table 5.16: Capital Investment for FY 2012-13 (RE) considered by Commission

(Rs. crore)

Sl. No.	Station	RE furnished by BSPHCL	Now considered by Commission
A	***Capital Expenditure***		
(I)	Generation	750	750
(ii)	Transmission	876	835
(iii)	Distribution	1598	1598
(iv)	**Total**	**3224**	**3183**
B	**Funding**		
(I)	**Generation**		
A	Grant		
B	Loan	750	750
(ii)	**Transmission**		
(a)	Grant	454	437
(b)	Loan	423	398
(iii)	**Distribution**		
(a)	Grant	824	824
(b)	Consumer contribution		
(c)	Loan	774	774
C (I)	**Total Grant**	**1278**	**1261**
(ii)	**Total Consumer contribution**		
(iii)	**Total Loan**	**1947**	**1922**
	Total	**3225**	**3183**

5.9.1 Capitalisation Schedule

Petitioner's submission:

The BSPHCL has proposed capitalization schedule as detailed in Table below:

Table 5.17: Capitalisation Schedule furnished by BSPHCL

(Rs. crore)

Sl.No.	*Particulars*	1 Year	2 Year	3 Year
A	**For New Schemes**			
1	Generation	50%	50%	0
2	Transmission	40%	40%	20%
3	Distribution	50%	50%	
B	**For Opening CWIP for all function**	30%	30%	40%
C	**For R&M**			
1	Generation	100%		
2	Transmission	60%	40%	0

The Petitioner has assumed in the revised estimate for FY 2012-13 that the drawal of loan/grant during the year equivalent to capitalization of assets in the same year as detailed in Table below:

Table 5.18: Investment Capitalization for FY 2012-13 (RE) projected by BSPHCL

(Rs. crore)

Sl. No.	Particulars	Generation	Transmission	Distribution	Total
A	**CWIP**				
1	Opening CWIP	757.3	138	697	1592
2	Add New Investment	750	835	1598	3183
3	**Total**	**1507.3**	**973**	**2295**	**4775**
4	Less: CWIP Capitalised	227.19	41	209.1	477.3
5	Less: Investment capitalised		374	799.24	1173
6	Total capitalisation	227.19	415	1008.34	1651
7	Closing CWIP (3-6)	1280.11	558	1286.66	3125
B	**Funding for Capitalisation**				
8	Grant for Investment capitalised		175	671.58	846.6
9	Grant for CWIP capitalised	128.06	17	69.18	214.2
10	Total grant for capitalisation	128.06	192	740.76	1061
11	Loan for investment capitlised		199	127.65	326.7
12	Loan CWIP capitalised	99.13	25	139.92	264.1
13	Total Loan for capitalisation	99.13	224	267.57	590.7

Commission's analysis:

The Commission is of the view that based on previous experience the capitalisation schedule as proposed by BSPHCL may not be achieved. The Commission has revised the schedule as given below:

Table 5.19: Capitalisation Schedule considered by the Commission for the MYT control period

(Rs. crore)

Sl.No.	Particulars	FY 2012-13	FY 2013-14	FY 2014-15
1	**CWIP, New Schemes and R&M**			
1	Generation	30%	30%	40%
2	Transmission	30%	30%	40%
3	Distribution	30%	30%	40%

The BSPHCL has arrived at capitalisation based on capitalisation schedule proposed by it and as per provisional accounts. The Commission has considered the capitalisation schedule as per Audited Accounts and as per capitalisation schedule approved by the Commission above.

As per the audited accounts for FY 2011-12, the closing balance of CWIP as on 31.3.2012 as furnished by BSPHCL is as follows:

Generation Rs. 764 crore

Transmission Rs. 139 crore

Distribution Rs. 2962 crore

Total Rs. 3865 crore

The revised CWIP is considered by the Commission for generation and transmission, and distribution as per audited accounts. The CWIP under distribution covers advance paid to PGCIL, NTPC and contractors of BSEB on account of RGGVY works being executed by them, which is mostly grants. BSPCL in its petition stated that the funding of CWIP capitalized during the year has been considered on the ratio of amount borrowed towards capital assets and closing GFA for FY 2011-12. The capitalisation and funding considered by the Commission is given below:

Table 5.20: Investment Capitalisation for FY 2012-13 (RE) considered by the Commission

(Rs. crore)

Sl.No.	Station	Generation	Transmission	Distribution	Total
1	Opening CWIP	764	139	2962	3865
2	Investment	750	835	1598	3183
3	Funding				0
(a)	Grant	-	437	824	1261
(b)	Loan	750	398	774	1922
4	Capitalization	229.00	292	1368	1889
(a)	CWIP	229.00	42	889	1160
(b)	Investment		250	479	729
5	Funding				0
(a)	CWIP	229.00	42	889	1160
(i)	Grant	129.00	17	699	845
(ii)	Loan	100.00	25	199	315
(b)	Investment		250	479	729
(I)	Grant		131	247	378
(ii)	Loan		119	232	351
	Total Grant	**129.00**	**148**	**946**	**1223**
	Total Loan	**100.00**	**144**	**422**	**666**
6	**Closing CWIP**	**1285.00**	**682**	**3192**	**5159**

5.10 Depreciation

Petitioner's submission:

BSPHCL has submitted that it has computed depreciation for FY 2012-13 (RE) based on straight-line method by applying weighted average rate of depreciation on the closing GFA. The Petitioner has removed the depreciation on assets created out of grants and consumer contribution from gross depreciation to arrive at net depreciation. The computation of depreciation is based on the actual ratio of "Grant and Consumer contribution" / GFA. The depreciation projected by the Petitioner is given in Table below:

Table 5.21: Depreciation projected by BSPHCL for FY 2012-13 (RE)

(Rs. crore)

Sl. No.	Particulars	Generation	Transmission	Distribution	Total
1	Opening GFA	334.28	1252	3505	5091.29
2	Audition GFA during the year	233.63	430	1036	1699.63
3	Closing GFA (1+2)	567.92	1682	4541	6790.92
4	Weighted average rate of depreciation	4.99%	5.12%	5.22%	
5	Gross depreciation for the year	28.36	86	237	351.36
6	Amount borrowed for asset addition / GFA	23.8%	65%	25%	
7	Net depreciation (5x6)	6.75	56	59	121.75

Commission's analysis:

The Petitioner has computed depreciation on closing GFA. It has to be computed based on average of opening and closing Gross fixed assets during the year. To a query from the Commission the BSPHCL has furnished break up for opening grants and consumer contribution as on 1.4.2012. As per audited accounts (Schedule 34) the grants of Rs.3775.01 crore include an amount of Rs.13.78 crore for restructuring of BSEB and subsidy against loss due to flood / cyclone which are not related to capital works. Hence the Commission has not considered under grants for distribution. The opening grants from consumer contribution on the GFA created out of above during FY 2012-13 have been deducted to arrive at net GFA created out of loans and depreciation is worked out at the weighted average rate of depreciation projected by the Petitioner.

Detailed computation of depreciation by the Commission is given in the Table below:

Table 5.22: Depreciation computed by the Commission for FY 2012-13 (RE)

(Rs. crore)

Sl. No.	Particulars	Generation	Transmission	Distribution	Total
1	Opening GFA*	334.28	1255.13	3459.36	5049.27
2	Less: grants	264.20	531.31	2979.50	3775.01
3	Net opening GFA (1-2)	70.08	723.82	480.36	1274.28
4	Addition GFA during the year	229.19	292.00	1368.00	1889.19
5	Less: Grants during the year	128.06	148.00	939.00	1215.06
6	Net addition during the year (4-5)	101.13	144	429	674.13
7	Net closing GFA	171.21	867.82	909.36	1948.41
8	Average GFA (3+7)/2	120.65	795.82	694.86	1611.35
9	Weighted average rate of depreciation	4.99%	5.12%	5.22%	
10	Depreciation	6.02	40.75	36.27	83.04

**As per Audited Accounts for FY 2011-12.*

Commission considers depreciation for FY 2012-13 (RE) at Rs.83.04 crore as given in the Table above. The revised depreciation is subject to true up, as and when the actual depreciation will be submitted by the Petitioner for FY 2012-13.

5.11 Interest and Finance Charges

Petitioner's submission:

The interest and finance charges for FY 2012-13 approved by the Commission in its tariff order dated 30.3.2012 and revised estimate furnished by the BSPHCL are furnished in Table below:

Table 5.23: Interest and finance charges for FY 2012-13 (RE) estimated by BSPHCL

(Rs. crore)

Sl. No.	Station	Approved by FY 2012-13	Revised estimate FY 2012-13
1	Generation	41.14	18.16
2	Transmission	28.68	23.27
3	Distribution	121.37	122
4	**Total**	**191.19**	**163.43**

The BSPHCL has stated that as a result of unbundling of erstwhile BSEB all the state Government loans and interest as on 31.3.2011 have been waived off and Rs. 1475 crore have been converted into equity of which Rs. 1458 crore have been distributed across the Generation, Transmission and Distribution companies.

In respect of the two DISCOMs, the loan amount of Rs. 515 crore shown in the opening balance sheet of the DISCOMs as per transfer scheme as on 1.4.2011 has been taken and the loan amount during 2011-12 has been added and arrived at the opening loan amount for FY 2012-13. Repayment is considered to be equal to depreciation allowed and estimated the interest and finance charges for FY 2012-13 have been estimated as detailed in Table below:

Table 5.24: Revised Interest and Finance Charges for FY 2012-13 estimated by BSPHCL

(Rs. crore)

Sl. No.	Station	Generation	Transmission	Distribution	Total
1	Opening Loan	141.72	86.98	729	**957.7**
2	Addition during year		238.56	460	**698.56**
3	Repayment during year	6.74	55.32	59	**121.06**
4	Closing loan (1+2-3)	134.98	270.22	1130	**1535.2**
5	Average loan (1+4)/2	138.35	178.6	929.5	**1246.45**
6	Rate of Interest	13%	13%	13%	**13%**
7	Interest	17.99	23.22	120.84	**162.04**

Commission analysis:

In the absence of loan schedule for the year 2011-12 in Annual Accounts, the opening loan as proposed by BSPHCL has been considered for the FY 2012-13 in respect of Transmission and Distribution functions. In respect of Generation the opening loan as on 1.4.2012 is NIL as per opening balance sheet and there are no additions to GFA during 2011-12. As such it is construed that there is no investment during 2011-12. Hence opening loan as on 1.4.2012 is considered NIL. Opening loan in respect of transmission and distribution functions are considered as proposed by BSPHCL. Additional loan during the year as worked out in the Table 5.20 supra has been considered. Regarding repayment of loan depreciation for the year as considered in Table 5.20 is adopted and interest worked out as detailed in Table below:

Table 5.25: Interest and Finance charges for FY 2012-13 (RE) considered by Commission

(Rs. crore)

Sl. No.	Station	Generation	Transmission	Distribution	Total
1	Opening Loan	-	86.98	729	**815.98**
2	Addition during the year	101.13	144.00	429.00	**674.13**
3	Repayment during year*	6.02	40.75	36.27	**83.04**
4	Closing loan (1+2-3)	95.11	190.23	1121.73	**1407.07**
5	Average loan (1+4)/2	47.56	138.61	925.37	**1111.53**
6	Rate of Interest	13%	13%	13%	13%
7	Interest	6.18	18.02	120.30	**144.50**

** Considered equal to depreciation allowed in the year.*

The Commission considers the revised interest and finance chargers at Rs. 144.50 crore for FY 2012-13 (RE) as given in the Table above. The revised interest and finance charges is subject to true up, as and when the actual interest and finance charges will be submitted by the Petitioner for FY 2012-13.

5.12 Interest on Working Capital

Petitioner's submission:

The BSPHCL has proposed Interest on working capital in accordance with the applicable regulations notified by the Commission and the rate of interest is projected at short-term prime lending rate of SBI as on 1.4.2012 at 14.75% for computing interest on working capital. The details of working capital and the interest arrived at are as detailed in Table below:

Table 5.26: Interest on Working Capital estimated by BSPHCL for FY 2012-13 (RE)

(Rs. crore)

Sl. No.	Particulars	Generation	Transmission	Distribution	Total
1	2 month primary fuel & secondary fuel	*			
2	1 month O&M	10.7	13.35	72.68	96.73
3	Receivables	35.73	41.63	870.03	947.39
4	Maintenance Spares	9.12	15.17	42.24	66.53
5	Total WC Requirement	55.54	70.15	984.95	1110.64
6	Interest Rate (SBI PLR as on Apr'12)	14.75%	14.75%	14.75%	14.75%
7	Interest On Working Capital	8.19	10.34	145.28	163.81

**The station is not in operation during FY 2012-13.*

Commission analysis:

The BSPHCL has included the resource gap grant received from the State Government in the form of payment of part of power purchase cost to NTPC as receivable for the purpose of calculation of working capital.

The State Government makes the payment of power purchase cost directly to NTPC on receipt of the bill every month. Only the balance amount of the power purchase received from NTPC and others is paid by erstwhile BSEB from its working capital and receivables. The erstwhile BSEB does not have to arrange working capital for payment to NTPC as the amount is paid directly by the State Government to NTPC. Therefore, the payment made by the State Government directly to NTPC should not be included in two months receivables of BSEB as part of the working capital requirement.

Based on the revised costs considered by the Commission the interest on working capital is worked out as detailed in Table below:

Table 5.27: Interest on work capital for FY 2012-13 (RE) considered by Commission

Sl. No.	*Particulars*	Generation	Transmission	Distribution	Total
1	2 Months primary fuel	0.00	-	-	0.00
2	2 Months secondary fuel	0.00	-	-	0.00
3	1 Month O&M	3.79	4.93	42.15	50.87
4	Receivables (2 month)	47.18	54.97	785.89	888.04
5	Maintenance spares at 1% of opening GFA	3.54	13.30	36.67	53.51
6	Total Working Capital	56.71	78.74	856.93	992.42
7	Less 2 months power purchase costs paid to NTPC by State Government	-	-	(-) 360	(-) 360
8	Net working capital	67.41	93.55	471.46	632.42
8	Rate of Interest	14.75%	14.75%	14.75%	14.75%
9	Interest on Working Capital	9.94	13.81	69.53	93.28

Therefore, the Commission considers Rs.93.28 crore as revised interest on working capital for FY 2012-13 (RE), which is subject to truing up as and when Audited Annual Accounts of the Companies will be submitted by the Petitioner for FY 2012-13.

5.13 Return on Equity

Petitioner's submission:

It is submitted by BSPHCL that as per Transfer Scheme 2012, BSEB has been unbundled into five Companies and an amount of Rs.1458 crore has been invested as equity capital for the successor entities. The equity capital invested in each of the Companies is as below:

Generation - Rs. 344 crore
Transmission - Rs. 235 crore
Distribution - Rs. 879 crore

Commission's analysis:

The Petitioner has claimed Return on Equity at 14% for full year. Since the unbundling has become effective from 1.11.2012 the return on equity is considered for 5 months by the Commission as detailed below:

Table 5.28: Return on equity considered by the Commission for FY 2012-13 (RE)

(Rs. crore)

Sl. No.	*Particulars*	Generation	Transmission	Distribution	Total
1	Equity capital	344	235	879	1458
2	Part of RoE	14%	14%	14%	
3	Return on equity	48.16	32.90	123.06	204.12
4	RoE for 5 months (November to March, 2013)	20.07	13.17	51.28	85.05

The Commission, therefore, approves Return on Equity at Rs. 85.05 crore for FY 2012-13 (RE) as given in the Table above.

5.14 Non Tariff Income

Petitioner's submission:

The BSPHCL has projected non-tariff income at Rs.107.14 crore for the year 2012-13. The Commission in its Tariff order dated 30.3.2012 has approved Rs. 127.16 crore for the year 2012-13.

The detailed breakup of non-tariff income as projected by BSPHCL for FY 2012-13 (RE) is given in Table below:

Table 5.29: Non Tariff Income estimated by BSPHCL for FY 2012-13

(Rs. crore)

Sl. No.	*Station*	Generation	Transmission	Distribution	Total
1	Interest on staff loans			0.01	**0.01**
2	Income from Investment				
3	Interest on Advance estimation	0.11	0.11	0.11	**0.33**
4	DPS from			41.96	**41.96**
5	Interest from Bank	0.31	0.31	0.31	**0.93**
6	Income from Trading			2.21	**2.21**
7	Mine Receipt			20.05	**20.05**
8	Meter rent			29.61	**29.61**
9	Incentive for Terminal payment			12.04	**12.04**
10	**Total**	**0.42**	**0.42**	**106.30**	**107.14**

Commission's analysis:

The Commission agrees with the methodology adopted by BSEB to compute non-tariff income. At the same time, the Commission feels that it is necessary to adjust some components of non-tariff income based on recent developments in the sector, which do appropriately reflect the past trend.

The Commission has approved the meter rent, Interest on Staff Loan and Advance, and Misc. charges from consumers for FY 2012-13.

The Commission has adopted the approach for DPS as a part of Non-tariff income in line with the recent judgment of Hon'ble Appellate Tribunal for Electricity (APTEL) dated 12th July, 2011 in Case No. 142 and 147 of 2009.

The relevant extracts of the Judgment are reproduced below:

> *"The normative working capital compensates the distribution company in delay for the 2 months credit period which is given to the consumers. The late payment surcharge is only if the delay is more than the normative credit period. For the period of delay beyond normative period, the distribution company has to be compensated with the cost of such additional financing. It is not the case of the Appellant that the late payment surcharge should not be treated as a non-tariff income. The Appellant is only praying that the financing cost is involved due to late payment and as such the Appellant is entitled to the compensation to incur such additional financing cost. Therefore, the financing cost of outstanding dues, i.e. the entire*

principal amount, should be allowed and it should not be limited to late payment surcharge amount alone. Further, the interest rate which is fixed as 9% is not the prevalent market Lending Rate due to increase in Prime Lending Rate since 2004-05. Therefore, the State Commission is directed to rectify its computation of the financing cost relating to the late payment surcharge for the FY 2007-08 at the prevalent market lending rate during that period keeping in view the prevailing Prime Lending Rate".

The Commission has considered DPS of Rs. 41.96 crore for FY 2012-13 as projected in the Petition. As the Petitioner charges DPS @ 18% per annum (1.5% per month), the principal amount on which DPS would be charged comes as Rs.233.11 crore.

As prevailing SBI PLR as on 1st April, 2012 was 14.75%, the Commission has allowed the financing cost for DPS @ 14.75%. The financing cost approved by the Commission is shown below:

Table 5.30: Non-tariff income considered by Commission for FY 2012-13

(Rs. crore)

Sl.No.	Particular	FY 2011-12
1	DPS as per projections (@ 1.5% per month) (A)	41.96
2	Principal amount on which DPS was charged (B = A / 18%)	233.11
3	Interest Rate for funding of Principal of DPS	14.75
4	Interest on funding of Principal amount of DPS	34.38

Accordingly, the Commission has computed the amount of non-tariff income as summarised below:

(Rs. crore)

The non-tariff income	107.14
Less: Financing cost of principle amount of DPS	34.38
Net non-tariff income	72.76

Therefore, the Commission considers Non-tariff income for FY 2012-13 at Rs.72.76 as against Petitioner's claim of Rs.107.14 crore. The revised estimated of non-tariff income considered is subject to truing up as and when Audited Accounts of the Companies will be submitted by the Petitioner for FY 2012-13.

5.15 Revenue from sale of power at existing tariff for FY 2012-13

Petitioner's submission:

BSPHCL has estimated revenue from existing tariff at Rs.3024 crore including energy sales to Nepal as detailed in Table below:

Table 5.31: Revenue from sale of Power at existing tariff estimated by the BSPHCL for FY 2012-13 (RE)

Sl. No.	*Category*	Sales (MU)	Amount (Rs.crore)	Average Revenue (Rs/Kwh)
I	**Domestic**	**2355**	**1593.89**	**2.53**
1	K.J	270	44.82	1.66
2	D.S I	553	153.08	2.77
3	DS II	1531	533.75	3.48
4	DS III	1	0.24	2.40
II	**Non Domestic Supply**	**641**	**394.1**	**6.15**
5	NDS I	15	4.91	3.27
6	NDS II	624	388.23	6.22
7	NDS III	2	0.96	4.60
III	**Street Light**	**21**	**16.42**	**7.82**
8	Street light I	4	2.55	6.37
9	Street light II	16	13.87	6.67
10	Street light III	1		
IV	**Irrigation & Agriculture**	**416**	**52.33**	**1.25**
11	IAS I	272	14.12	0.52
12	IAS II	144	38.21	1.26
V	**Public Water work**	**53**	**37.35**	**7.05**
VI	**LT Industries**	**246**	**137.53**	**5.56**
12	LTIS I	134	73.21	5.46
13	LTIS II	112	64.32	5.74
VII	**HT Industrial**	**1305**	**839.07**	**6.43**
14	HTS I	628	438.09	6.97
15	HTS II	149	113.4	7.61
16	HTS III	70	49.03	7.00
17	HTSS	458	238.55	5.20
VIII	**Railway Traction**	**501**	**306.27**	**6.11**
	Total sales within State	**6008**	**2592.63**	**43.24**
IX	**Sales to Nepal**	**1023**	**430.98**	**4.21**
	Total Sales	**7031**	**3024.00**	**4.30**

Commission analysis:

The Commission has sought details of energy sold and revenue billed, category-wise, during the first 6 months of FY 2012-13. BSPHCL submitted the details vide its e-mail dated 11th February, 2013, the energy sold revenue billed and average billed rate for kWh as given in the Table below.

Table 5.32: Sale of Energy and Revenue billed from April 2012 to October 2012

Sl. No	Particulars	Sales (MU)	Revenue (Rs. Lakhs)	Average Rate (Rs. / kwh)
1	KJ	346.10	5007	1.45
2	DS -I	321.17	9957	3.10
3	DS -II	907.90	35045	3.86
4	DS -III	0.43	19	4.42
5	NDS - I	8.51	317	3.73
6	NDS - II	422.82	27090	6.41
7	NDS - III	1.10	57	5.18
8	LTIS - I	83.55	4739	5.67
9	LTIS - II	56.47	3407	6.03
10	Public water works	31.55	2260	7.16
11	IAS - I	133.01	1292	0.97
12	IAS - II	81.37	3563	4.38

Sl. No	Particulars	Sales (MU)	Revenue (Rs. Lakhs)	Average Rate (Rs. / kwh)
13	STL - I	4.95	345	6.97
14	STL - II	24.90	1185	4.76
15	STL - III	0.12	3	2.50
16	HTS - I	214.50	17874	8.33
17	HTS - II	107.56	7138	6.64
18	HTS - III	94.31	5617	5.96
19	HTSS	256.68	16453	6.41
20	RTS - I	167.65	10582	6.31
21	RTS - II	120.04	8084	6.73
22	**Total**	**3384.69**	**160034**	**4.73**
23	**Nepal + UI**	**756.88**	**293.71**	**3.88**

The revenue from the energy sales considered by the Commission is worked out based on category-wise billed energy for 7 months (April to October, 2012) and average rate, this works out to Rs. 2930.08 crore for the year as detailed in Table below:

Table 5.33: Revenue from sale of Power at existing Tariff considered by the Commission for FY 2012-13 (RE)

Sl. No	Particulars	Sales (MU)	Avg. rate (Rs./kwh)	Revenue (Rs. crore)
1	**2**	**3**	**4**	**5**
1	KJ	341	1.45	49.33
2	DS-I	551	3.10	170.82
3	DS-II	1556	3.86	600.62
4	DS-III	1	4.40	0.44
5	**Sub Total**	**2108**		**771.88**
6	NDS-I	15	3.73	5.59
7	NDS-II	725	6.41	464.51
8	NDS-III	2	5.18	1.03
9	**Sub Total**	**742**		**471.13**
10	LTIS-I	143	5.67	81.11
11	LTIS-II	97	6.03	58.53
12	**Sub Total**	**240**		**139.64**
13	**LTIS-III (Public Water Works)**	**54**	**7.16**	**38.69**
14	IAS-I	272	0.97	26.42
15	IAS-II	144	4.38	63.06
16	**Sub Total**	**416**		**89.49**
17	STL-I	8	6.97	5.58
18	STL-II	43	4.76	20.47
19	STL-III	0	2.50	0.00
20	**Sub Total**	**51**		**26.05**
21	HTS-I	628	8.33	523.30
22	HTS-II	184	6.64	122.11
23	HTS-III	162	5.96	96.48
24	HTSS	440	6.41	282.03
25	**Sub Total**	**1414**		**1023.93**
26	RTS-I		6.31	-
27	RTS-II		6.73	-
28	**Sub Total**	**493**	**6.49**	**319.96**
29	**Total**	**5859**	**4.57**	**2930.08**

The Commission considers the revenue from sale of power at existing tariff for FY 2012-13 (RE) at Rs.2930.08 crore.

5.16 Revenue from Sale of power to Nepal & UI

Petitioner's submission:

BSPHCL has projected the sales to Nepal + UI at 1023 MU and revenue of Rs.430.98 crore with average rate @ Rs.4.21 / kWh.

Commission's analysis:

The Commission has considered sales to Nepal + UI as proposed by BSPHCL.

5.17 Disincentive for non-achievement of T&D loss reduction targets

The difference in the actual power purchase and the power purchase requirement approved by the Commission is disallowed at the average power purchase rate and is treated as 'Disincentive for non-achievement of T&D loss targets'.

As per the trajectory, the T&D loss reduction target for FY 2012-13 was set at 27.5%, which the Petitioner has not achieved as per the review petition of BSPHCL. Accordingly, the Commission has computed the disincentive for non-achievement of T&D loss reduction targets at Rs. 1005.33 crore for FY 2012-13, subject to true-up, as and when the audited accounts of the erstwhile BSEB will be submitted by the Petitioner for FY 2012-13.

Table 5.34 : Disincentive for non-achievement of T&D loss reduction target for FY 2012-13 (RE)

Sl.No.	Particular	Units	FY 2012-13
1	Net Power Purchase Dis-allowed	MUs	2957
2	Average Power purchase cost	Rs./kWh	3.45
3	Cost of power purchase disallowed	Rs. crore	1020.17

5.18 Resource gap funding received from State Government for FY 2012-13

The State Government in its letter No. 21/2010-285 dated 16th January, 2013 has informed the Commission that the resources gap funding support of Rs.2880.00 crore for FY 2012-13 to BSPHCL. The resource gap funding is adjusted in the review for FY 2012-13 as below:

Particulars	(Rs. crore)
Resource gap funding from State Government	2880.00

Less: Disallowed power purchase cost on account of high T&D loss with reference to BERC target.	1020.17
Resource gap funding available with BSPHCL	1859.83

5.19 Aggregate Revenue Requirement considered by the Commission for FY 2012-13 (RE)

The summary of the Aggregate Revenue Requirement (ARR) of Generation, Transmission and Distribution Companies for FY 2012-13 (RE) as analysed in the preceding paragraphs in the review is given in the Table below:

Table 5.35: ARR considered by the Commission for FY 2012-13 (RE)

(Rs. crore)

Sl. No.	Particulars	Approved in Tariff order FY 2012-13	Claimed by BSPHCL in FY 2012-13 (RE)	Now considered by Commission for FY 2012-13 in review
1	Power purchase cost	5181.71	4127.92	4347.07
2	Fuel	103.52	0.00	-
3	Employee cost	110.27	1160.72	470.05
4	R&M expenses	735.37		90.99
5	Administration & General expenses	74.78		49.40
6	Depreciation	159.77	121.62	83.04
7	Interest & Financial charges	191.18	163.60	144.50
8	Interest on working capital	147	163.82	93.28
9	Return on Equity	-	212.81	85.05
10	**Total Revenue Requirement (1 to 9)**	**6703.6**	**5950.50**	**5363.38**
11	Less: Non Tariff Income	127.16	107.15	72.76
12	Less: Disallowed Power Purchase Cost / Government support for power purchase cost	1006.52	811.78	1020.17
13	ADD Recovery/(surplus) of revenue gap of past filling	(822.69)	845.76	-
14	**Net revenue requirement (10-11-12+13)**	**4747.22**	**5877.32**	**4270.57**
15	Less: Revenue from existing tariff	3070.63	2592.63	2930.08
16	**Deficit /(surplus) (14-15)**	**1676.60**	**3284.69**	**1340.49**
17	Less: Revenue from sale of power to Nepal	258.63	430.98	430.98
18	Less: Revenue from sale of surplus power	107.76		
19	Less: Revenue from sale off additional power	120.99	-	-
20	**GAP / (Surplus) (16-17-18-19)**	**1189.22**	**2853.71**	**909.51**
21	Remaining additional Revenue Subsidy		*923.80	1859.83
22	Less: Subsidy support for Agricultural/Rural consumer		964.42	-
23	**Net Surplus (20-21-22)**	**1189.22**	**1889.29**	**950.32**

This amount is not considered in the ARR.

5.19.1 The Commission approves the net revenue surplus of Rs. 950.32 in revised estimate subject to final truing up as and when the Audited Accounts of the BSPHCL will be submitted by the Petitioner for FY 2012-13. From the above table it can be seen that a surplus of Rs. 950.32 crore is available over and above the State Government's support for financial loss on account of non achievement of T&D loss target as set by the Commission, the net revenue surplus approved by the Commission for FY 2012-13 is Rs. 950.32 crore against the regulatory asset created by the Commission in the Tariff Order for FY 2012-13.

The surplus estimated by the Commission is based on revised estimates submitted by BSPHCL as modified by the Commission.

Actuals for FY 2012-13 will be known only after the audited annual accounts for FY 2012-13 are made available to the Commission which may differ from the reviewed estimates approved by the Commission.

Therefore, the Commission does not consider this surplus to be carried forward in the ARR for FY 2013-14. However, considering the estimated surplus for FY 2012-13, the Commission also decides that the regulatory asset of Rs.157.26 crore approved in the tariff order for FY 2012-13 shall not be carried forward and adjusted in the ARR of FY 2013-14.

6. Determination of Aggregate Revenue Requirement (ARR) for the FY 2013-14 to FY 2015-16 and Generation Tariff for FY 2013-14 for Bihar State Power Generation Company Limited (BSPGCL)

6.1 Generating Stations

6.1.1 Power generation capacity in the State of Bihar is predominantly thermal and the contribution of hydropower is only 10%. Bihar has only 491.1 MW of installed capacity of which 440 MW is thermal and remaining 51.1 MW is hydel

Separation of Jharkhand from Bihar has left the erstwhile Board with only three Power Generation Plants, details of which are as follows.

(a) Barauni Thermal Power Station, Barauni (BTPS)
(b) Muzaffarpur Thermal Power Station (MTPS)
(c) Koshi Hydel Power Station (KHPS)

a) Barauni Thermal Power Station, Barauni (BTPS)

The BSPGCL owns and operates only one thermal generating plant (i.e) Barauni Thermal Power Station (BTPS) located at Barauni. The details and Status of all the units of BTPS as on 31.03.2012 are given in table 6.1 below:

Table 6.1: Present Status of units of BTPS (As on 30.03.2012)

Unit	Capacity / de-rated capacity	CoD	Present Status
1	15 MW	26.01.1966	Retired on 16/02/1983
2	15 MW	16.01.1963	Retired on 26/11/1985
3	15 MW	20.10.1963	Retired on 05/10/1985
4	50 MW	09.11.1969	Retired on12/03/2012
5	50 MW	01.12.1971	Retired on12/03/2012
6	110/105 MW	01.05.1983	Under R&M
7	110/105 MW	31.03.1985	Under R&M
Total	**220/210 MW**		

It is submitted by BSPHCL that presently, only unit 6 and 7 are available for operation but are currently under R&M, which is expected to be completed by FY 2013-14 and both the units will be put back in service in FY 2013-14 (December 2013 for unit No.6 and May 2013 for unit No.7)

b) Muzaffarpur Thermal Power Station, Muzaffarpur (Now called Kanti Bijlee Utpadan Nigam Ltd (KBUNL)

Kanti Bijlee Utpadan Nigam Ltd (KBUNL) was incorporated as a wholly owned subsidiary of NTPC Ltd. on 08.09.2006. The Company was initially incorporated to take over Muzaffarpur Thermal Power Station (2*110MW) by creating a subsidiary company named Vaishali Power Generating Company limited (VPGCL) with NTPC contributing 51% of equity and balance equity by erstwhile Bihar State Electricity Board (BSEB).

The Company was rechristened as 'Kanti Bijlee Utpadan Nigam limited' on 10th April 2008. Present equity holding is NTPC 64.57% and erstwhile BSEB 35.43% making it a subsidiary of NTPC Ltd. The entire power generated from the generating station, is proposed to be supplied to the two distribution companies of the state.

Currently, R&M work on both these units is being carried out by BHEL, after getting due approval from the Planning Commission, Government of India.

c) Koshi Hydel Power Station (KHPS)

Koshi Hydel Power Station (Kataiya), Birpur consisting of 4 units of 4.8MW each was commissioned during the year 1970-78. This project was handed over to Bihar State Hydel Power Corporation (BSHPC) on 16.11.2003 vide notification No.11, dated 26.06.2003 of Energy dept., GoB and erstwhile BSEB notification No. 46, dated 31.07.2003.

BTPS Units

AS BTPS is the only generating station under BSPGCL, the performance and cost parameters of this station are discussed in the following paragraphs.

Past Performance

The actuals of Thermal parameters for the last 6 years and the corresponding values approved by the Commission for Truing up are given in the table below.

Table 6.2: Actual Vs. Approved Operational Parameters in True up for BTPS

Year	Particulars	PLF (%)	Auxiliary Consumption (%)	Specific Oil Consumption (ml/Kwh)	Station Heat Rate (Kcal/Kwh)
FY 2006-07	Actual	4.05%	24.48%	12.62	3776
	BERC Approved in truing up	4.05%	24.48%	12.62	3776
FY 2007-08	Actual	14.43%	13.86%	32.86	4528
	BERC Approved in truing up	14.43%	13.86%	16.89	4106
FY 2008-09	Actual	11.0%	9.0%	18.45	4226
	BERC Approved in truing up	11.0%	9.0%	18.45	4226
FY 2009-10	Actual	28.78%	14.40%	21.62	4392
	BERC Approved in truing up	28.78%	14.40%	18.45	4226
FY 2010-11	Actual	11.98%	17.95%	22.94	4103
	BERC Approved in truing up	11.98%	17.95%	18.45	4103
FY 2011-12	Actual	9.08%	15.95%	27.87	3981
	BERC Approved in truing up	9.08	10.00%	10.00%	3981

Petitioner's submission

BSPHC has submitted the following reasons for non-achievement of revised performance parameters as set for the BTPS during the past years, which can be attributed to uncontrollable circumstances mentioned below:

- Out of the seven (7) Units of the Barauni Thermal Power Station (BTPS), Units 1,2 and 3 have been retired long back i.e. before 1985. Out of the remaining four (4) units - 4 and 5 are over 42 and 40 years old, respectively and have completed their economic life; these units too have been retired since March, 2012;
- The low PLF was also due to the forced outages of the units due to the problems related to boiler and turbine, primarily due to the ageing of the operational units.
- Lack of scheduled maintenance and annual overhauling of Units;
- Due to frequent breakdown/ trippings, oil support is frequently required for stability of the furnace and to save the Units from tripping, thereby increasing oil consumption;
- During outage/ partial load running of the Units, the various Auxiliaries of the Plant still keep running at full load, thereby, increasing the percentage Auxiliary Consumption for the plant;
- Station Heat Rate for generating stations varies from Unit to Unit depending upon their age, size, technology, no. of starts/stops, quality of coal etc. The older the Unit becomes, its efficiency goes down, and it becomes prone to run

at higher heat rate. This is one of the main reasons for deterioration of efficiency of BTPS;

At present Units 6 and 7 are undergoing Renovation and Modernization work for revival. After R&M, the operational parameters of these units are expected to improve.

Status of BTPS Units during Control Period

- Barauni Thermal Power Station is presently the only power station under State Sector.Older units of BTPS i.e Units # 1, 2 & 3 (3x15 MW) and units # 4 & 5 (2 x 50 MW) have been retired. Units # 6 & 7 (2x110 MW) are under R&M by BHEL under the supervision of M/s NTPC Limited.

- Further, in order to meet the continued power and energy demand in the state, erstwhile BSEB has proposed to augment the power generating capacity of the Barauni Thermal Power Station by installing 2 x 250 MW units (Units # 8 & 9) alongside the existing units.

6.3 Projection of the Technical Parameters of BTPS for the control period

The technical parameters projected by BSPHCL and the Commission's decisions are discussed in the following paragraphs:

6.3.1 Plant Availability of each unit of BTPS

Petitioner's submission

It is submitted by BSPHCL that the R&M of unit Nos. 6&7 is expected to be completed by December, 2013 and May, 2013 respectively. The expected date of Commissioning of unit-8 and unit-9 under BTPS extension are considered in September, 2015 and July, 2016, respectively.

Based on the proposed plan, the availability of each unit during the control period FY 2013-14 to FY 2015-16 is provided in the Table 6.3 below.

Table 6.3: Projected No. of Days of operation of BTPS Units from FY 2013-14 to FY 2015-16

Unit No	FY 2013-14	FY 2014-15	FY 2015-16
1 to 5	Retired	Retired	Retired
6	90 Days	365 Days	365 Days
7	304 Days	365 Days	365 Days
8	Under Construction	Under Construction	182 Days
9	Under Construction	Under Construction	Under Construction

BSPHCL projected the availability factor for the control period as given in the Table below.

Table 6.4: Proposed Plant Availability Factor during control period

Unit No	FY 2013-14 (P)	FY 2014-15 (P)	FY 2015-16 (P)
6	17.3%	70%	70%
7	58%	70%	70%
8	-	-	35%
9	-	-	-
Overall Plant Load Factor	**37.78%**	**70%**	**50.93%**

BSPHCL has submitted that the PAF for the control period for different units are projected based on the vintage of units, impact of the on-going R&M, performance achieved post R&M on the plants of similar vintage in other states such as Punjab and Haryana etc.

Commission's Analysis:

It is considered that the Unit-wise availability projection is reasonable for unit Nos. 6 & 7 for the year FY 2013-14, as the units will be Commissioned after R&M during FY 2013-14. For the years for FY 2014-15 and FY 2015-16, the Commission considers that the availability of 80% for units 6&7 is reasonable, as they will be stabilized after R&M during these years.

In the case of unit No.8 the Commission considers that based on present status it may not come into commercial operation, during the control period and hence the availability of this unit is not considered during the control period.

Based on the above the Plant Availability Factor (PAF) approved by the Commission for the MYT period is as given in the Table below.

Table 6.5: Approved Plant Availability Factor during control period

Unit No	FY 2013-14 (P)	FY 2014-15 (P)	FY 2015-16 (P)
6	17.3%	80%	80%
7	58%	80%	80%
8	-	-	-
9	-	-	-
Overall Plant Load Factor	**37.78%**	**80%**	**80%**

6.3.2 Plant Load Factor (PLF)

Petitioner's submission

The BSPHCL has submitted that the PLF for the control period for different units are projected based on the following.

- The vintage of the units.
- Further, the impact of the ongoing R&M activity has been accounted for, while projecting the PLF of each unit for respective years.
- The performance parameters in terms of Plant Load Factor achieved by the power plants such as Guru Nanak Dev Thermal Plant of PSPCL and Panipat Thermal Power Station of HPGCL even after R&M are around 70%. Accordingly, the PLF has been proposed for Units 6 and 7 of BTPS, Barauni during the ensuing control period.
- Considering the availability of each unit during the year, the projection of PLF of each unit during control period FY 2013-14 to FY 2015-16 have been provided in the table below:

Table 6.6: Proposed Plant Load Factor during control period

Unit No	FY 2013-14 (P)	FY 2014-15 (P)	FY 2015-16 (P)
6	17.3%	70%	70%
7	58%	70%	70%
8	-	-	35%
9	-	-	-
Overall Plant Load Factor	**37.78%**	**70%**	**50.93%**

Commission's Analysis

As mentioned earlier in para 6.3.1, the Commission considers that the Unit no -8 may not come into commercial operation during the control period. In the case of units 6& 7, the PLF Projected by BSPHCL is considered reasonable, as explained below:

Unit 6 is expected to be commissioned after R&M by December 2013. That means, it will be in operation during FY 2013-14, for only about 3 months. Generally, the PLF is reckoned taking into consideration the whole of the year. PLF Projected (17.3%) for Unit 6 is reasonable when it is reckoned for the entire year. If the PLF is considered strictly for 3 months period (i.e. December 2012 to March 2013), the PLF works out to about 70%, if the unit will be in operation for the entire year.

Unit No 7 is expected to be commissioned after R & M by May 2013. That means, it will be in operation during FY 2013-14 for about 10 months. The PLF Projected

(58%) for FY 2013-14, is reasonable, as it works out to 70%, if the Unit will be in operation for the entire year.

The Wt. Av PLF for both the units together, works out to 37.78% based on the above. This Wt. Av PLF (37.78%) is reasonable, as it accounts for 70% if both the units operate for the entire year.

The effective PLF of 70% for units 6 & 7 is considered reasonable for the MYT period taking into consideration the coal supply constraints, the performance of similar units in other states.

Based on the above, the PLF approved during the control period is as given in the Table below:

Table 6.7: Approved Plant Load Factor during control period

Unit No	FY 2013-14 (P)	FY 2014-15 (P)	FY 2015-16 (P)
6	17.3%	70%	70%
7	58%	70%	70%
8	-	-	-
9	-	-	-
Overall Plant Load Factor	**37.78%**	**70%**	**70%**

6.3.1 Auxiliary Consumption

Petitioner's submission

The BSPHCL has projected the Auxiliary consumption for the station, as given in the table below.

Table 6.8: Projected Auxiliary consumption during the control period

Particulars	FY 2013-14	FY 2014-15	FY 2015-16
Auxiliary Consumption (%)	18.00	12.00	12.00

BSPHCL justified the projected auxiliary consumption, as follows.

Both the existing operational units i.e. unit No. 6 and 7 are undergoing R&M and the ongoing R&M activity is expected to be completed during FY 2013-14. During FY 2012-13, there will be some auxiliary consumption as a result of trial runs of units to be commissioned in FY 2013-14. Thus, it is estimated that there will be 1.2 MU auxiliary consumption during FY 2012-13. For the control period, the impact of the ongoing R&M activity has been accounted for while projecting the auxiliary consumption of the unit for the respective year. The auxiliary consumption for all the units of BTPS have been considered at 18% for the FY 2013-14 and 12% for the control period from FY 2014-15 to FY 2015-16.

Commission's Analysis:

The Units 6 and 7 will be in operation after R&M during the control period.

During the earlier years, the Commission has been allowing higher Auxiliary Consumption for Truing up, as the units are very old and considering outages and partial running of the units.

After R&M, the outages and partial running will get reduced for the year 2013-14. Auxiliary Consumption of 12% is considered, as there will be some auxiliary consumption as a result of trial runs of units. For the remaining years of control period Auxiliary Consumption of 10% is considered reasonable.

Hence, Auxiliary Consumption is approved, for the control period, as given in the table below.

Table 6.9: Auxiliary consumption approved for the control period for FY 2013-14 to FY 2015-16

Particulars	FY 2013-14	FY 2014-15	FY 2015-16
Auxiliary Consumption (%)	12%	10%	10%

6.3.4 Gross and Net Generation of BTPS

Based on the aforesaid approvals, the unit wise Gross and Net Generation is summarized in the table below.

Table 6.10: Gross and Net Generation approved for the control period for BTPS Units

Particulars	Unit No	FY 2013-14		FY 2014-15		FY 2015-16	
		Projected	Approved	Projected	Approved	Projected	Approved
Gross Generation	6	136.38*	166.70	593.58*	674.52	593.58*	674.52
Gross Generation	7	460.67*	558.89	593.58*	674.52	593.58*	674.52
Gross Generation	8	-	-	-	-	672.70*	-
Gross Generation	9	-	-	-	-	-	-
Total Gross Generation	All Units	597.05	725.59	1187.16	1349.04	1859.86	1349.04
Auxiliary consumption	All units	131.06	87.01	161.88	134.90	253.61	134.90
Net generation	All Units	465.99	638.58	1025.28	1214.14	1606.25	1214.14

* BSPHCL has wrongly depicted the Gross generation figures of individual units.

6.3.5 Station Heat Rate (SHR)

Petitioner's submission

The BSHPCL projected the Station Heat Rate for the generating stations for the control period as given in the table below:

Table 6.11: Projected Station Heat Rate (SHR) for the control period

(Kcal/Kwh)

Particulars	FY 2013-14	FY 2014-15	FY 2015-16
Station Heat Rate (SHR)	3200	3200	3000

The BSPHCL has not furnished any justification for projecting the above values for SHR.

Commission's Analysis:

The unit no's 6 and 7 are expected back in service after R&M during the year FY 2013-14 of the control period. The Heat Rate approved for these units and also actual Heat Rate achieved has been 3981 to 4528 Kcal/Kwh, for the earlier years, as given in the table 6.2. The R&M, for units 6 and7 will be completed during FY 2013-14 and the units will come into operation from May and December 2013. After R&M, the performance of the units is bound to improve.

The BSPHCL has submitted vide its letter-dated 20.12.2012, in response to a query from the Commission, that the contract between BHEL and BSEB does not specify the guaranteed SHR after R&M.

There will be considerable improvement in SHR, after R&M. The SHR of 3200 Kcal/kwh, projected by BSPHCL is considered high.

Though, CERC (Terms & Conditions of Tariff) Regulations, 2009 do not specify any norms for 110/120 MW units, it specified a norm of 2825 Kcal / kwh for Tanda Thermal station of NTPC which has 4 units of 110 MW each, after their Renovation & Modernization.

In the case of Kothagudem – B and C stations (2X110 MW each) of Andhra Pradesh substantial improvement in performance norms was observed after R & M, as shown below:

Kothagudem – B station (2X110 MW)

Sl. No.	Parameters	Prior to R&M (1994-95 to 1999-2001)	After R&M works (2004-05)
1	Capacity (MW)	110	120
2	Auxiliary Consumption (%)	12.13	9.72
3	PLF (%)	36	86
4	Specific oil consumption (ml.kwh)	2.99	0.75
5	Heat rate (K.Cal / kwh)	3272	2504

Kothagudem – C station (2X110 MW)

Sl. No.	Parameters	Prior to R&M (1994-95 to 1999-2001)	After R&M works (2004-05)
1	Capacity (MW)	110	120
2	Auxiliary Consumption (%)	10.87	7.57
3	PLF (%)	65	91
4	Specific oil consumption (ml.kwh)	4.00	1.55
5	Heat rate (K.Cal / kwh)	3084	2422

As the SHR of BTPS units before R&M were substantially high (3981 to 4528 Kcal / kwh), the level of improvement in SHR achieved for Tanda and Kothagudem stations is substantial after R&M. The Commission considers, that SHR of 3000 Kcal/kwh is reasonable for the units 6 & 7 after R&M for the first year of MYT period and 2800 k.cal/kWh for the FY 2014-15 and FY 2015-16. As discussed in the earlier paragraphs, the Commission considers that the new Unit no 8 is not likely to come into commercial operation during the control period. Hence SHR is considered for Units No's 6 & 7 only for the control period and approved as given in the table below:

Table 6.12: Approved Station Heat Rate for BTPS for the Control Period

(Kcal/Kwh)

Particulars	FY 2013-14	FY 2014-15	FY 2015-16
Station Heat Rate	3000	2800	2800

The SHR norm approved above is subject to review by the Commission after a study of the performance of the Units 6 & 7 after R&M.

6.3.6 Specific Oil Consumption

Petitioner's submission

The BSPHCL projected the specific oil consumption at 5 ml/Kwh for all the years of the control period as given in the table below.

Table 6.13: Projected Specific Oil Consumption for the Control Period

(ml/Kwh)

Particulars	FY 2013-14	FY 2014-15	FY 2015-16
Specific Oil Consumption	5	5	5

Commission's Analysis:

During the earlier years, the specific oil consumption used to be abnormally high, as high as 16 to 22 ml/Kwh as mentioned in table 6.2.

With the improved performance after R&M, the oil consumption shall get reduced substantially. The CERC (Terms & Conditions of Tariff) Regulations, 2009 specify the secondary fuel oil consumption at 1.0 ml / kwh, for coal based generating stations other than a few stations of DVC as mentioned below:

Specific oil consumption for some DVC stations

Mejia TPS Unit I – IV	2.0 ml /kwh
Bokaro TPS	2.0 ml /kwh
Chandrapura TPS	3.0 ml /kwh
Durgapur TPS	2.4 ml /kwh

As the BTPS units are very old, the Commission considers it reasonable to approve the specific oil consumption at 3 ml / kwh for the year FY 2013-14, as the oil consumption may be more during the initial period of operation after R & M. For the years FY 2014-15 and FY 2015-16, however, specific oil consumption of 2.5 ml / kwh is considered reasonable.

Thus the Commission approves the specific oil consumption for BTPS for the control period, as given in the table below.

Table 6.14: approved Specific Oil Consumption for the Control Period

(ml/Kwh)

Particulars	FY 2013-14	FY 2014-15	FY 2015-16
Specific Oil Consumption	3.00	2.50	2.50

The specific oil consumption approved is subject to review by the commission after study of the performance of the units after R & M.

6.3.7 Transit Loss of Coal

The BSPHCL has projected the Transit loss of coal for the control period at 0.80%.

It is considered reasonable, as it is as per CERC Regulations and hence the Commission approves the same for the control period FY 2013-14 to FY 2015-16.

Cost Parameters

6.3.8 Gross Calorific Value (GCV) of Fuels

Petitioner's submission

The BSPHCL has projected the weighted average GCV and price of coal and oil for the control period as given in the table below.

Table 6.15: Projected Weighted Average GCV and Prices of Fuels for the Control period for BTPS

FY 2013-14				FY 2014-15				FY 2015-16			
Weighted Average GCV of Coal (Kcal/Kg)	Weighted Average GCV of Oil (Kcal/L)	Price of Coal (Rs./MT)	Price of Secondary Oil (Rs. / KL)	Weighted Average GCV of Coal (Kcal/Kg)	Weighted Average GCV of Oil (Kcal/L)	Price of Coal (Rs./MT)	Price of Secondary Oil (Rs. / KL)	Weighted Average GCV of Coal (Kcal/Kg)	Weighted Average GCV of Oil (Kcal/L)	Price of Coal (Rs./MT)	Price of Secondary Oil (Rs. / KL)
4000	10,000	3241	47167	4000	10,000	3403	49525	4000	10,000	3575	52001

It is submitted by BSPHCL that the price of fuel (Coal & Oil) is projected considering an escalation factor of 5%. But no basis is given for projecting the price of Coal and Oil at Rs.3241/MT and Rs. 47167/KL respectively for the 1st year of MYT; (i.e) FY 2013-14. Similarly, no basis is given for projecting the weighted average GCVs of coal and oil at the level proposed.

Commission's Analysis:

The Commission has considered it reasonable to approve the cost parameters as per the actuals for FY 2011-12, approved by the Commission, except for the secondary fuel oil as there is substantial increase in the oil price, for the control period FY 2013-14 to FY 2015-16.

The cost parameters thus approved are as given in the table below.

Table 6.16: Approved cost parameters for BTPS for the Control period FY 2013-14 to FY 2015-16

FY 2013-14				FY 2014-15				FY 2015-16			
Weighted Average GCV of Coal (Kcal/Kg)	Weighted Average GCV of Oil (Kcal/L)	Price of Coal (Rs./MT)	Price of Secondary Oil (Rs. / KL)	Weighted Average GCV of Coal (Kcal/Kg)	Weighted Average GCV of Oil (Kcal/L)	Price of Coal (Rs./MT)	Price of Secondary Oil (Rs. / KL)	Weighted Average GCV of Coal (Kcal/Kg)	Weighted Average GCV of Oil (Kcal/L)	Price of Coal (Rs./MT)	Price of Secondary Oil (Rs. / KL)
3714	10153	2939.3	49000	3714	10153	2939.3	49000	3714	10153	2939.3	49000

The Commission has considered the fuel cost for the control period based on the cost parameters approved above. Any variation in the fuel cost due to variation in the cost parameters approved is to be passed on to the consumers as per the approved FPPPA formula.

6.3.9 Approved Performance & Cost Parameters

Based on the discussions and decisions of the Commission, in the earlier paras, the performance and cost parameters are approved for arriving at the fuel cost for the control period for BTPS station.

Table 6.17: Approved Performance and Cost Parameters for the Control Period

FY 2013-14

PLF (%)	Auxiliary Consumption (%)	SHR (Kcal/Kwh)	Specific Oil Consumption (Ml/Kwh)	Transit Loss of Coal (%)	Wt. Av GCV of Coal (Kcal/ Kg)	Wt.Av GCV of Oil (Kcal/ L)	Price of Coal (Rs./MT)	Price of Oil (Rs./KL)
37.78	12	3000	3	0.8	3714	10153	2939.3	49000

FY 2014-15

PLF (%)	Auxiliary Consumption (%)	SHR (Kcal/Kwh)	Specific Oil Consumption (Ml/Kwh)	Transit Loss of Coal (%)	Wt. Av GCV of Coal (Kcal/ Kwh)	Wt.Av GCV of Oil (Kcal/ L)	Price of Coal (Rs./MT)	Price of Oil (Rs./KL)
70	10	2800	2.5	0.8	3714	10153	2939.3	49000

FY 2015-16

PLF (%)	Auxiliary Consumption (%)	SHR (Kcal/Kwh)	Specific Oil Consumption (Ml/Kwh)	Transit Loss of Coal (%)	Wt. Av GCV of Coal (Kcal/ Kwh)	Wt.Av GCV of Oil (Kcal/ L)	Price of Coal (Rs./MT)	Price of Oil (Rs./KL)
70.00	10	2800	2.5	0.8	3714	10153	2939.3	49000

6.4 Fuel Costs

Based on the parameters approved above, the Fuel costs arrived at for the Gross and Net Generation approved in Para 6.3.4 are given the table below.

Table 6.18: Approved Fuel Cost for the control period

Sl. No.	Item	Derivation	Unit	2013-14	2014-15	2015-16
1	Generation (Gross)	A	MU	725.59	1349.04	1349.04
2	Heat Rate	B	Kcal/kWh	3000	2800	2800
3	Specific Oil Consumption	C	mg/kWh	3	2.5	2.5
4	Calorific Value of Oil	D	KCal/L.	10153	10153	10153
5	Calorific Value of Coal	E	KCal/Kg.	3714	3714	3714
6	Overall Heat	F=(A * B)	G. Cal.	2176770	3777312	3777312
7	Heat from Oil	G=(A*C*D)/1000	G.Cal	22100.75	34242.01	34242.01
8	Heat from Coal	H=(F-G)	G.Cal	2154669.25	3743069.99	3743069.99
9	Actual Oil Consumption	I =A*C	KL	2176.77	3372.60	3372.6
10	Actual Coal Consumption	J=(H*1000/E)	MT	580147.89	1007827.14	1007827.138
11	Indigenous Coal including transit loss of 0.8%	J1=(J*1.00)/(1.00-0.008)	MT	584826.50	1015954.78	1015954.777
12	Cost of Oil per KL	K	Rs./KL	49000	49000	49000
13	Cost Of Coal Per MT	L	Rs./MT	2939.3	2939.30	2939.3
14	Cost of Oil	M=I*K/100000	Rs. Lakhs	1066.62	1652.57	1652.57
15	Cost of Coal	N=J 1* L / 100000	Rs. Lakhs	17189.81	29861.96	29861.96
16	**Total Fuel Cost**	**O = M + N**	**Rs. Lakhs**	**18256.42**	**31514.53**	**31514.53**
	Other Fuel related cost	P	Rs.Lakhs	0	0	0.00
	Total Fuel Cost	Q = O+P	Rs.Lakhs	18256.42	31514.53	31514.53
17	Fuel cost / Unit (Gross)	Q/(A*10)	Rs/KWh	2.52	2.34	2.34
18	Auxiliary consumption (percent)	R	%	12.00	10	10
19	Auxiliary consumption	S = (A*R) / 100	MU	87.07	134.90	134.90
20	Net Generation	T = A - S	MU	638.52	1214.14	1214.14
21	Fuel cost / Unit (Net)	Q/(T*10)	Rs / KWh	2.86	2.60	2.60

6.5 Capital Investment

Petitioner's submission:

The BSPHCL has projected the capital expenditure to the extent of Rs.2891.61 crore for the control period FY 2013-14 to FY 2015-16. The details pertaining to the planned capital expenditure and its phasing are provided in the table below:

Table 6.19: Proposed Planned Capital Expenditure for Generation Business for the control period FY 2013-14 to FY 2015-16

Sl. No.	Particulars	Total Project Cost	Fund released till FY 2011-12	Planned Capex during FY 2012-13 to FY 2015-16				Total Capex (From FY 2012 to FY 2016
				FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	
1.	R&M of BTPS (Unit # 6&7)	581.2	431.76	0.00	149.44	0.00	0.00	149.44
2.	Extension of BTPS (Unit #8&9)	3666.0	346.00	750.00	792.41	799.96	830.14	3172.51
3.	Strengthening of infrastructure at BTPS	253.69	-	0.00	87.87	55.36	57.45	200.68
4.	Ganga River Water scheme for BTPS	173.0	54.00	0.00	59.92	37.75	21.33	119.00
5.	Total investment	4673.9	831.76	750.0	1089.64	893.06	908.91	3641.62

The BSPHCL has submitted that 65% of the planned investment of the BTPS extension project has been linked to Unit-8 and the COD of the unit is expected by September, 2015. Thus, by that time, the rest of the plant equipment coal handling plant, ash handling plant, fuel oil handling, water treatment system, circulating water system etc., will also be installed.

The details pertaining to the planned capital expenditure and its phasing for BTPS extension project are provided below:

Table 6.20: Planned Capital Expenditure for BTPS Extension Project

(Rs. crore)

Sl. No.	Particulars	Expected COD	Total Project cost	Fund released till FY 2011-12	Planned Investment				
					FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17
1.	Unit # 8	Sept' 15	2287	224.90	487.50	515.07	519.97	539.59	-
2.	Unit # 9	July'16	1379	121.10	262.50	277.34	279.98	290.55	147.49
3.	Total investment		3666	346.00	750.00	792.41	799.96	830.14	147.49

6.5.1 Capitalisation Schedule

Petitioner's submission:

The BSPHCL has submitted that since R&M activity and other restoration activities of units 6 and 7 are expected to be completed in the same financial year, all capital expenditure with respect to these units have been assumed to be capitalised in the year of completion of works.

For BTPS extension unit 8 and 9 (2x250 MW), the capitalisation has been linked to the expected COD of each unit.

For other capital works capitalisation schedule is as indicated below considering the past experience in completion of various capital works.

Table 6.21: Capitalisation schedule

(Rs. crore)

Sl. No.	Particulars	Year 1	Year 2	Year 3	Year 4
1.	For Capex R&M of units 6&7	100%	0%	0%	0%
2.	For Opening CWIPof FY 2012-13	30%	30%	40%	0%
3.	For other Capex works	50%	50%	0%	0%
4.	For BTPS Extension project (2x250 MW)	Linked to expected date of commercial operation of units a) Unit # 8 – September 2015 b) Unit # 9 – July 2016			

The details of year-wise capital expenditure and amount capitalised are given in table below:

Table 6.22: Capital investment and capitalisation projected for FY 2012-13 and control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
1.	Total new investment	750.00	1089.64	893.06	908.91
2.	(a) Amount capitalised for R&M of units 6 and 7	-	149.44	-	-
	(b) Amount capitalised for unit # 8, BTPS	-	-	-	2287.03
	(c) Amount capitalised for unit # 9, BTPS	-	-	-	-
	(d) Amount capitlised for other investment	-	73.90	120.45	85.94
3.	Amount capitalised from new investment during the year (1=a+b+c+d)	-	223.33	120.45	2372.97
4.	Opening CWIP for FY 2012-13	757.30	-	-	-
5.	Opening CWIP capitalised during the year (2)	227.19	227.19	302.92	-
6.	Actual addition to GFA/capitalisation (=1+2)	227.19	450.52	423.37	2372.97

6.5.2 Funding of Capital Investment:

Petitioner's submission:

The BSPHCL has submitted that considering the past trends where erstwhile BSEB has obtained grant from the Government of Bihar or from Government of India under BRGF scheme, for meeting a portion of the capital expenditure, it has been considered that the funding requirement against the capital investment during the control period shall be met in a similar manner from the State or Central Governments. The balance amount has been considered to be funded through loans from the state / PFC or other financial institutions.

The details of funding of new capital investment plan is given below:

Table 6.23 : Proposed Funding of Capital investment during FY 2012-13 to FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	Total
a.	R&M of BTPS (Unit # 6 & 7)	0.00	149.44	0.00	0.00	149.44
b.	Strengthening of infrastructure at BTPS	0.00	87.87	55.36	57.45	200.68
1	Grant under RSVY/BRGF or State Plan (=a+b)	0.00	237.31	55.36	57.45	350.11
c.	Extension of BTPS (unit 8 and 9)	750.00	792.41	799.96	830.14	3172.51
d.	Ganga River water scheme for BTPS	0.00	59.92	37.75	21.33	119.00
2.	Loan from State Government /PFC or other financial institutions (=c+d)	750.00	852.33	837.71	851.47	3291.51
3.	Total planned investment (=1+2)	750.00	1089.64	893.06	908.91	3641.62

Commission's Analysis:

The Commission has examined the capital investment proposed for generation business, capitalization and funding of capital investment proposed by BSPHCL. The Capital investment covers i) R&M of units 6&7 of BTPS (ii) Extension of BTPS with units 8&9 of 250 MW each (new project) and (iii) other related works i.e strengthening of infrastructure of BTPS and Ganga River Water Scheme.

As per the practice followed by CERC, tariff for Thermal Power Plants of NTPC commissioned in different stages are determined stage-wise and not for the station as a whole. Here BSPHC Ltd. has submitted a combined proposal of ARR as well as tariff for stage-I (R&M 2 x 110 MW) and stage-II (addition of 2 x 250 MW plants). This is not a correct approach. Therefore, BSPHC Ltd. and Bihar State Power Generation Company Ltd. are directed to submit separate proposals for R&M of 2 x 110 MW plants and 2 x 250 MW extension plants. Further the costs of strengthening of infrastructure at BTPS and Ganga River Water Scheme for BTPS are to be apportioned as per use of these two projects in stage-I and stage-II. It appears that units 6 & 7 are scheduled to be commissioned by December, 2013 and May 2013 respectively. On the other hand the investments in strengthening of infrastructure and Ganga River Water Scheme are proposed to be completed in FY 2015-16 and beyond. It is not understandable how these investments will be used for stage-I project. Therefore capex, capitalisation, depreciation, and interest and finance charges for strengthening of infrastructure and Ganga River Water Schemes are not being considered in the ARR and tariff for stage-I R&M project.

BSPHC Ltd. and Bihar State Power Generation Co. Ltd. are directed to submit separate ARR for stage-I and stage-II indicating the apportionment of the costs of the projects of strengthening of infrastructure and Ganga River Water Scheme between two stages, at the time of filing the petition for review for FY 2013-14 and tariff proposal for FY 2014-15.

Capitalization:

BSPHCL has proposed capitalization of Rs. 149.44 crore for R&M of units 6&7 at BTPS during FY 2013-14 and capitalization of Rs. 2287.03 Cr for unit 8 of BTPS extension during FY 2015-16 as the unit is proposed to be Commissioned by September, 2015.

Based on the current status of works. Capitalization of Unit –8 at BTPS extension is not considered during FY 2015-16 as it is doubtful if it can achieve COD during FY 2015-16 and generation is also not considered from this unit during FY 2015-16. Hence capitalization of this unit is not considered during FY 2015-16. This will, however, be reviewed during FY 2014-15.

The Commission approves the capital investment, capitalisation and funding of the capital investment as detailed in the table below:

Table 6.24: Capital investment and capitalisation approved for stage-I (R&M of units 6&7) for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	**Total new investment**	**1089.64**	**893.06**	**908.91**
2	**(a) Amount capitalised for R&M of units 6 and 7**	**149.44**	**-**	**-**
	(b) Amount capitalised for unit # 8, BTPS	**-**	**-**	**-**
	(c) Amount capitalised for unit # 9, BTPS	**-**	**-**	**-**
	(d) Amount capitlised for other investment	**-**	**-**	**-**
3	Amount capitalised from new investment during the year (1=a+b+c+d)	149.44	-	-

6.5.3 Opening CWIP Capitalised

Petitioner's submission:

BSPHCL has provided the capitalisation of opening CWIP during the year. It is submitted that it has considered the funding of opening CWIP capitalised during the year in the ratio of amount barrowed towards capital assets and closing GFA for FY 2011-12. The details of funding of opening CWIP for FY 2012-13 as below:

Table 6.25: Funding of opening CWIP for FY 2012-13 and during control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
1	**Opening CWIP during FY 2012-13**	**757.30**	**-**	**-**	**-**
2	**(GFA – Grants) GFA during FY 2011-12**	**43.63%**	**-**	**-**	**-**
3	**Funding through loan**	**99.13**	**99.13**	**132.18**	**-**
4	**Funding through grants**	**128.06**	**128.06**	**170.74**	**-**
5	**Opening CWIP capitalised during the year**	**227.19**	**227.19**	**302.92**	**-**

Commission's Analysis:

Total project cost of R&M of BTPS units 6&7 is Rs.581.20 crore out of which Rs. 229 crore was capitalized during FY 2012-13 (RE). As the units are going to be commissioned during FY 2013-14 balance amount of Rs.149.44 crore is being capitalized out of new investment and Rs.202.76 crore is being captalised out of opening CWIP. As the project cost of R&M of units 6&7 is fully funded by grant, no loan is considered. The details are furnished in Table below:

Table 6.26: Funding of CWIP approved by the Commission for FY 2012-13 & during control period FY 2013-14 to FY 2015-16

Sl.No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	Opening Balance of CWIP as per 2012-13 (RE)	535	-	-
2	Capitalisation for R&M of Units 6 & 7.	202.76	-	-
3	Funding			
(a)	Through grants	202.76	-	-
(b)	Through Loans	-	-	-

6.5.4 Capital works in progress and loan disbursement

Petitioner's submission:

The BSPHCL has submitted that based on capital investment plan, capitalisation schedule, capital works in progress, loan disbursement against actual capitalisation during the year are determined.

The Petitioner has determined the funding of IDC and total asset capitalised due to new investment and CWIP after reducing corresponding grants. Accordingly, the loan capitalisation is computed as below:

Table 6.27: CWIP and loans disbursement for FY 2012-13 and during control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1.	Opening CWIP	1280.11	1919.23	2388.92
2.	Add: New investment	1089.64	893.06	908.91
	Total	**2369.75**	**2812.29**	**3297.83**
3.	Less: New investment capitalised	223.33	120.45	2372.97
4.	Less: Opening CWIP capitalised	227.19	302.92	-
5.	**Closing CWIP capitalisation**	**1919.23**	**2388.92**	**924.86**
	Funding of actual capitalisation			
6.	Total capitalisation	450.52	423.37	2372.97
7.	Less: Grants against actual capitalisation	223.33	120.45	85.94
8.	Total loan disbursed	227.19	302.92	2287.03

Commission's Analysis:

The Commission has examined CWIP and loan disbursement furnished by BSPHCL. The Commission has considered the CWIP as per Audited Accounts approved as against provisional accounts which BSPHCL has considered. As discussed earlier in para No. 6.5.2 capitalization of unit-8 strengthening of infrastructure and Ganga Water scheme are not considered, the capitalization is limited to R&M of unjits 6&7 of BTPS. BSPHCL is however directed to finalise a separate ARR for strengthening of infrastructure and Ganga Water Scheme apportioning the cost between R&M of units 6&7 and units 8&9 of BAPS extension. The CWIP and loan disbursement approved for the control period are given in the Table below.

Table 6.28: CWIP and new Investment capitalization and Loan disbursement for the control period FY 2013-14 to FY 2015-16

S.No.	Particulars	2013-14	2014-15	2015-16
1	Opening CWIP as per 2012-13 (RE)	1285.00	2022.44	2915.50
2	Add new investment	1089.64	893.06	908.91
3	**Total**	**2374.64**	**2915.50**	**3824.41**
4	Less: New investment capitalised	149.44	-	-
5	Less CWIP capitalised	202.76	-	
6	Closing CWIP	2022.44	2915.50	3824.41
7	Funding of actual capital			
8	**Total Capitalisation**	**352.20**	**-**	**-**
9	Less Grants	352.20	-	-
10	**Total Loan disbursement**	**-**	**-**	**-**

6.5.5 Gross Fixed Assets

Petitioner's submission

The BSPHCL has projected the gross fixed assets (GFA) for FY 2012-13 for the control period based on schedule of capitalisation towards new investment, CWIP and the IDC as given in the table below:

Table 6.29: Gross Fixed Assets projected for FY 2012-13 and during control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
1.	Opening GFA	334.28	567.92	1024.88	1456.85
2.	Add: Actual additions to GFA/ Capitalisation during the year	227.19	450.52	423.37	2372.97
3.	Add: IDC	6.44	6.44	8.59	526.12
4.	Closing GFA	567.92	1024.88	1456.85	4355.99

BSPHCL has also provided class-wise breakup of closing balance GFA for FY 2012-13 and the control period FY 2013-14 to FY 2015-16.

Commission's Analysis:

The opening GFA, capital addition during the year and closing GFA projected by BSPHCL are examined by the Commission with reference to Audited Accounts and review for FY 2012-13 (RE) and approved as given in the Table below.

Table 6.30: Gross fixed Assets approved for MYT period FY 2013-14 to FY 2015-16 by the Commission

S.No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	Opening GFA as per FY 2012-13 (RE)	563.47	915.67	915.67

2	Add Actual addition to GFA/capitalization during the year	352.20	-	-
3	**Closing GFA**	**915.67**	**915.67**	**915.67**

6.6 Desegregation of Fixed Costs

The BSPHCL has submitted that while submitting the separate Annual Requirement for Generation, Transmission and distribution functions of erstwhile BSEB, it has tried to identify the costs related to individual functions and has allocated these to respective functions accordingly.

The cost elements like employee cost, A&G expenses and R&M expenses have been directly allocated as per segregated information available in the erstwhile BSEB Annual Accounts. For parameters such as interest and finance charges, depreciation etc., it has used generally accepted principles. The methods used for segregation cost for each head are out lined below:

Table: 6.31: Assumption for functional desegregation of cost elements

Sl. No.	Cost Element	Principle following for sourcing / estimation of segment wise cost
1	Employee Cost	Function wise segregated cost is available in the annual account of the erstwhile BSEB
2	A&G cost	Function wise segregated cost is available in the annual account of the erstwhile BSEB
3	R&M Cost	Function wise segregated cost is available in the annual account of the erstwhile BSEB
4	Interest & Finance charges	Based on loan (actual and projected)availed / to be availed by each Companies (Generation, Transmission and Distribution)
5	Depreciation	based on projected fixed assets during the year
6	Provision of bad and doubtful debt	100% allocated to the Distribution function of erstwhile Board
7	Non-tariff income	Non-tariff income is disaggregated based on the nature of income that is attributable to each function

6.6.1 Depreciation

Petitioner's submission:

The BSPHCL has projected the depreciation at Rs.341.51 crore (Gross) Rs.169.55 crore (net) excluding depreciation on assets created through grants and consumer contribution as given in the table below:

Table: 6.32: Depreciation charges projected for the control period FY 2013-14 to FY 2015-16

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	Opening GFA	567.92	1024.88	1456.85
2	Addition to GFA during the year	450.97	431.96	2899.09
3	Closing GFA	1024.88	1456.85	4355.94

4	Weighted average rate of depreciation	4.99%	4.99%	4.99%
5	**Gross depreciation for the year**	51.19	72.76	217.56
6	Amount borrowed for assets addition /GFA(%)	20.70%	25.50%	64.50%
7	**Net depreciation for the year**	10.62	18.53	140.4

The BSPHCL has submitted that the depreciation during the year has been computed based on the closing GFA of the respective years. The depreciation for different asset class has been computed for the control period in accordance with CERC Regulations, 2009. The petitioner has computed depreciation annually based on straight-line method (SLM) by applying weighted average rate of depreciation on closing GFA. The weighted average rate of depreciation arrived is 4.99%. It is further submitted that the depreciation on the portion of assets created out of grants and consumer contribution is removed from gross depreciation to arrive at net depreciation. The computation of depreciation on the assets created out of grants is based on the actual ratio of grants to GFA.

Commission's Analysis:

Commission has examined the depreciation computed by the Petitioner for the control period adopting CERC rates for depreciation. The Commission has approved the capitalization, and gross fixed assets in paragraph 6.5.6 above. The Commission considered the average rate of depreciation of 4.99% as adopted by BSPHCL.

It is observed that the Petitioner has computed the depreciation on closing GFA, it should be on average GFA during the year. The Commission has computed the depreciation based on opening GFA and addition of assets approved in Table 6.28 above as detailed in the table below:

Table: 6.33: Approved Depreciation for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	**Opening GFA as per FY 2012-13 (RE)**	**563.47**	**915.67**	**915.67**
2	Additions during the year	352.20	-	-
3	Closing GFA (1+2)	915.67	**915.67**	**915.67**
4	Average GFA (1+3)/2	739.57	**915.67**	**915.67**
5	Weighted average rate of depreciation	4.99%	4.99%	4.99%
6	**Gross Depreciation (4*5)**	**36.90**	**45.69**	**45.69**
7	Opening Grants (As per FY 2012-13 (RE))	393.20	745.40	745.40
8	Grants during the year	352.20	-	-
9	**Total Grants**	745.40	745.40	745.40
10	Average Grants	569.30	745.40	745.40
11	Weighted average rate of depreciation	4.99%	4.99%	4.99%
12	**Depreciation for GFA on Grants**	**28.41**	**37.20**	**37.20**
13	**Depreciation for GFA on loans (6-12)**	**8.49**	**8.49**	**8.49**

The Commission approves the net depreciation to be charged to Generation Business at Rs.8.49 crore for FY 2013-14, Rs.8.49 crore for FY 2014-15 and Rs.8.49 crore for FY 2015-16.

6.6.2 Interest and Finance charges

Petitioner's submission:

The BSPHCL has projected the interest and finance charges at Rs.255.31 crore for the control period FY 2013-14 to FY 2015-16 as detailed in the table below:

Table: 6.34: Projected Interest and finance charges for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	*Particulars*	FY 2013-14	FY 2014-15	FY 2015-16
1	Gross Normative loan-Opening	134.98	212.61	371.08
2	Cumulative repayment of Normative loan up to previous year	10.88	21.26	37.11
3	Net Normative loan -Opening	124.1	191.35	333.97
4	Drawl during the year	99.13	198.26	2617.47
5	Repayments of Normative Loan during the year	10.62	18.53	140.40
6	**Net Normative loan -Closing**	212.61	371.08	2811.04
7	Average Normative Loan	168.35	281.21	1572.51
8	**Total Interest on Normative loan**	27.79	37.31	190.21
9	**Weighted average Rate of Interest on Loans** (%)	16.51	13.27	12.10

The BSPHCL has submitted that while calculating the interest charges on existing and new loans, the Petitioner has followed the approach as per the CERC (Terms and Conditions of Tariff) Regulations, 2009. Accordingly, the opening loan for the year has been reduced by net cumulative depreciation upto the previous year, limited to one tenth of the opening loan. The Petitioner has increased the loan by drawal during the year and reduced the same by repayment as net depreciation during the year to arrive at the closing loan.

It is further submitted by BSPHCL that as a result of unbundling of the erstwhile BSEB, all State Government loans and interest as on 31st March, 2011, have been waived off and Rs.1475 crore have been converted into equity out of which Rs.1458 crore have been distributed across generation, transmission and distribution.

Commission's Analysis:

The Commission has examined the computation of interest on long-term loans for the control period. BSPHCL has considered the loan additions based on capitalisation during the year.

The Commission has approved the capitalisation during each year of the control period, loan portion of capitalisation in para 6.5.2 and table 6.22 above.

The BSPHCL has adopted the weighted average rate of interest varying from 12.1% to 16.51%. The Commission has considered the interest rate of 13% for the control period. Considering the above, the Commission has computed the interest on loans for the control period as detailed in the table below:

Table: 6.35: Approved interest charges on long term loans for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl.No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	Normative opening loan as per FY 2012-13 (RE)	95.11	86.62	78.13
2	Additions during the year	-	-	-
3	Repayment during the year	8.49	8.49	8.49
4	**Closing loan (1+2-3)**	**86.62**	**78.13**	**69.14**
5	**Average loan (1+4)/2**	**90.87**	**82.38**	**73.89**
6	Rate of Interest	13%	13%	13%
7	**Interest (5*6)**	**11.81**	**10.71**	**9.60**

6.6.3 Interest on Working Capital

Petitioner's submission:

The BSPHCL has projected the interest on working capital at Rs.96.33 crore for the control period FY 2013-14 to FY 2015-16 as given in the table below:

Table: 6.36: Proposed Interest on working capital for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	2 months cost of coal	31.22	60.73	93.56
2	2 months cost of secondary fuel oil	2.86	5.57	9.16
3	Maintenance spares (at 1% of GFA escalated by 6% per annum	5.97	9.70	9.70
4	1 Month O&M expenses	7.09	8.28	9.83
5	Receivables(2 months of fixed and variable charges)	68.39	107.9	196.54
6	**Total WC Requirement**	121.56	199.77	331.73
7	Interest rate (SBI PLR)	14.75%	14.75%	14.75%
8	**Interest on WC**	17.93	29.47	48.93

The BSPHCL has submitted that the interest on working capital has been computed in accordance with the norms indicated in BERC (Terms and Conditions for Determination of Tariff) Regulations, 2007 as under:

(i) Cost of coal for two months.
(ii) Cost of secondary fuel for two months
(iii) O&M expenses for one month
(iv) Maintenance spares at 1% of the historical cost escalated at 6% per annum.
(v) Receivables for two months of fixed and variable costs on target availability.

The rate of interest adopted is 14.75% which is SBI PLR (as on 1st April, 2012)

The BSPHCL has claimed working capital and interest thereon as discussed above.

Commission's Analysis:

The Commission has examined the computation of working capital and interest on working capital submitted by BSPHCL. The Petitioner has computed the working capital as per norms specified in the regulation and the interest rate at 14.45% as per SBI PLR as on February, 2013. The Commission has adopted the interest rate as per PLR as on 04.02.2013.

The Commission has computed the working capital and interest on working capital as detailed in the table below:

Table: 6.37: Interest on working capital approved for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	**Particulars**	**FY 2013-14**	**FY 2014-15**	**FY 2015-16**
1.	Cost of coal for two months	30.43	52.53	52.53
2.	Cost of secondary fuel for two months			
3.	O&M cost – one month	6.98	8.09	9.54
4.	Maintenance spares 1% of historical costs	5.97	9.71	9.71
5.	Receivable for two months	58.16	83.53	86.34
6.	**Total working capital**	**101.54**	**153.86**	**158.12**
7.	Rate of interest (%)	14.45	14.45	14.45
8.	Interest on working capital	14.67	22.23	22.85

The Commission approves the interest on working capital for the control period as in the table above.

6.6.4 Operation and Maintenance expenses

The operation and maintenance expenses consist of employee expenses, repair and maintenance (R&M) expenses and administrative and general (A&G) expenses.

The expenses under each head are discussed below:

(a) Employee expenses

Petitioner's submission:

The BSPHCL has projected the employees expenses at Rs.251.62 crore for the control period FY 2013-14 to FY 2015-16 as given in the table below:

Table: 6.38: Employee expenses projected for the control period FY 2013-14 to FY 2015-16

Sl. No.	**Particulars**	**FY 2013-14**	**FY 2014-15**	**FY 2015-16**
1	Employee Expenses - Generation	122.07	133.37	145.7
2	Effect of New Employee	10	10	10
3	Less: Proposed Govt. support towards terminal benefit	62.88	60.91	55.73
4	Less : Capitalisation			
5	**Total Employee Cost**	**69.2**	**82.45**	**99.97**

The BSPHCL has submitted that the employee expenses comprise of salaries, dearness allowance, bonus, terminal benefits in the form of pension and gratuity, leave encashment and staff welfare expenses. It is submitted that BSPHCL has considered an increase in employee cost at 9.25% per annum during the control period based on consumer price index (CPI) of FY 2009-10 to FY 2011-12. It is further submitted that Rs.10 crore is provided towards new employee cost for each year during the control period.

The BSPHCL has submitted that after unbundling of erstwhile BSEB, the State Government is expected to fund the terminal benefits for GENCO employees during the control period.

Commission's Analysis:

The Commission has examined the submission of BSPHCL. The actual employee cost during FY 2011-12 was Rs.102.50 crore for generation function. The Commission has approved the employee cost at Rs.39.19 crore for FY 2012-13 in the Tariff Order for FY 2012-13. But BSPHCL has projected employee cost at Rs.111.74 in FY 2012-13 (RE). BSPHCL has not considered capitalisation of employee cost during the control period. Capitalisation of employee cost is also not considered by the Commission. The cost on account of new employees is however considered.

The Commission has considered the consumer price index (CPI) at 8.63% as on March, 2012 over actual cost of FY 2011-12 for determining the employee cost for the control period. The support of the State Government towards terminal benefits is deducted from the employee cost. The employee cost as approved by the Commission is given in the table below:

Table: 6.39: Employee cost approved for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1.	Employee cost for generation	121.00	131.39	142.73
2.	Effect of new employees	10.00	10.00	10.00
3.	Less: proposed Government support towards terminal benefits	62.88	60.91	55.73
4.	Capitalisation	-	-	-
5.	**Total employee cost**	**68.12**	**80.48**	**97.00**

The Commission approves the employee cost at Rs.68.12 crore for FY 2013-14, Rs.80.48 crore for FY 2014-15 and Rs.97.00 crore for FY 2015-19 respectively.

(b) Repair and Maintenance (R&M) expenses

Petitioner's submission:

The BSPHCL has projected the repair and maintenance expenses at Rs.29.42 crore for the control period FY 2013-14 to FY 2015-16 as given in the table below:

Table: 6.40: Proposed Repair and Maintenance expenses for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	R&M Expenses - Generation	5.34	5.83	6.37
2	Cost of Water	3.61	3.95	4.31
	Total R&M	**8.95**	**9.78**	**10.69**

The BSPHCL has submitted that the assets of Generating Company are old and require regular maintenance to ensure un-interrupted operations. It is stated that BSPHCL has included actual water and miscellaneous charges under this head as directed by the Board in the tariff order for FY 2008-09. The R&M expenses for FY 2011-12 were Rs.4.47 crore and the water charges of Rs.2.09 crore incurred are to be added to this.

It is submitted that the R&M costs have been indexed to WPI and three-year (FY 2009-10 to 2011-12) growth, which is 9.25% is used year to year increase in R&M cost during the control period.

Commission's Analysis:

The Commission has examined the R&M expenses claimed by BSPHCL. The actual R&M expenses for generation were Rs.4.47 crore during FY 2011-12 and the Commission approved Rs.11.07 crore towards R&M cost and Rs.6.18 towards water charges for FY 2012-13

It is observed that the increase in WPI as on March, 2012 is 7.69%. The Commission, has considered R&M expenses for the control period on the actual expenses of FY 2011-12 at increase of 7.69% and the water chargers as projected by BSPHCL. The R&M charges considered for approval are given in the table below:

Table: 6.41: Repair and Maintenance cost approved by the Commission for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1.	R&M expenses for generation	5.18	5.58	6.01
2	Water charges	3.61	3.95	4.31
	Total	**8.79**	**9.53**	**10.32**

The Commission approves the Repairs and Maintenance costs at Rs.8.79 crore for FY 2013-14, Rs.9.53 crore for FY 2014-15 and Rs.10.32 crore for FY 2015-16 respectively.

(c) Administration and General (A&G) Expenses

Petitioner's submission

The BSPHCL has claimed the Administrative and General Expenses at Rs.21.35 crore for the control period FY 2013-14 to FY 2015-16 as given in the table below:

Table: 6.42: Administrative and General expenses projected for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	A&G expenses – generation	1.93	2.11	2.31
2	Payment to CISF	5.00	500	5.00
3	Less: Capitalisation	-	-	-
4	**Total A&G cost**	**6.93**	**7.11**	**7.31**

The BSPHCL has submitted that the Administrative and General expenses mainly comprise of rents, telephone and other communication expenses, professional charges, conveyance and traveling allowance and other debits.

It is submitted that additional expenses of Rs.5.00 crore per year towards appointment of security CISF personnel for security of the stations may be considered. It is submitted that the A&G expenses have been indexed to WPI and three year (FY 2009-10 to FY 2011-12) growth which is 9.25% and the A&G expenses are increased at 9.25% per annum during the control period.

Commission's Analysis:

The Commission ha examined the A&G expenses projected by BSPHCL. The actual A&G expenses for FY 2011-12 were Rs.1.62 crore during FY 2011-12 as apportioned in the annual accounts.

The Commission approved Rs.1.42 crore for FY 2012-13 in the Tariff Order for FY 2012-13.

It is observed that the increase in WPI in March, 2012 over March, 2011 was 7.69% and the Commission has considered the increase in A&G expenses at 7.69% per annum during the control period over the actuals for FY 2011-12.

The Commission has also considered the proposal of BSPHCL for providing CISF security for the Generating Stations at a cost of Rs.5.00 crore per annum during the control period. The Commission has not considered the capitalisation of A&G

expenses. The A&G expenses considered for the control period are given in table below:

Table: 6.43: Administrative and General expenses approved for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1.	A&G expenses generation	1.88	2.02	2.18
2.	Security – CISF	5.00	5.00	5.00
3.	**Total A&G expenses**	**6.88**	**7.02**	**7.18**

The Commission approves the A&G expenses at Rs.6.88 crore for FY 2013-14, Rs.7.02 crore for FY 2014-15 and Rs.7.18 crore for FY 2015-16 respectively.

(d) Total operation and maintenance expenses for generation for the control period are given in the table below:

Table: 6.44: Total O&M expenses for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	Employee expenses	68.12	80.48	97.00
2	R&M costs	8.79	9.53	10.32
3	A&G expenses	6.88	7.02	7.18
	Total O&M expenses	**83.79**	**97.03**	**114.50**

The Commission approves the total Operation and Maintenance expenses for the control period as given in the table above.

6.6.5 Return on Equity

Petitioner's submission:

The BSPHCL has projected the return on equity at Rs.196.96 crore for control period FY 2013-14 to FY 2015-16 for the generation business as given in the table below:

Table: 6.45: Return on Equity projected for the control period FY 2013-14 to FY 2015-16

Sl. No.	Particulars	FY2013-14	FY2014-15	FY2015-16
1	Equity capital	344	344	344
2	Rate of RoE	15.50%	15.50%	15.50%
3	**RoE during the year**	**53.32**	**53.32**	**53.32**

The BSPHCL has submitted that as per Bihar State Electricity Reforms Transfer Scheme, 2012, the BSEB has been unbundled into five companies and an amount of Rs.344 crore has been vested in equity capital in generation business as on 1st April, 2011 as given in Scheme-B Part-II transfer scheme. The BSPHCL has proposed RoE at the rate of 15.5% as per CERC Tariff Regulations, 2009.

Commission's Analysis:

The Commission has computed the return on the equity as per opening balance sheet as on 1st April, 2011 and there is no equity addition during FY 2011-12 and FY 2012-13. The return on equity is computed on the equity capital as on 1st April, 2011 for each year of the control period as the additions to equity capital during the control period are not known.

The Return on equity for the control period is computed at RoE rate of 14% as given in table below:

Table: 6.46: Return on Equity approved for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	Equity capital	344	344	344
2	Rate of Return (%)	14	14	14
3	Return on equity	48.16	48.16	48.16

The Commission approves the return on equity for the control period as given in the above table.

6.6.6 Non-Tariff Income

Petitioner's submission:

The BSPHCL has projected the non-tariff income of Rs.1.85 crore for the control period as given in the table below:

Table: 6.47: Proposed non-tariff income for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	Interest on Staff Loan & Advance			
2	Income from investment (F.D)			
3	Interest on Loan & advance to license			
4	D.P.S from Consumer			
5	Interest on advance to Supplier/Contractor	0.13	0.16	0.19
6	Interest from bank (Other than F.D)	0.38	0.45	0.54
7	Income from Trading			
8	Income from Staff Welfare activities			
9	Miscellaneous Receipt			
10	Meter Rent			
	Total	**0.51**	**0.61**	**0.73**

The BSPHCL has submitted that the non-tariff income for generation business is under the following heads.

- Interest on advance to suppler / contractor.

- Interest from Bank (other than FD).
- Income from Staff Welfare activities.

The Petitioner has submitted that the income from the above heads is equally apportioned for generation, transmission and distribution functions are the remaining income is mainly to distribution function only.

It is further submitted that Petitioner has estimated non-tariff income based on arithmetic average non-tariff income values during the last five year.

Commission's Analysis:

The BSPHCL has submitted that it has taken the actual non-tariff income over the last five years and apportioned it to generation, transmission and distribution functions. The Commission has taken into consideration the non-tariff income projected by BSPHCL for the control period FY 2013-14 to FY 2015-16 as given in the table below:

Table: 6.48: Non-tariff income approved for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	Non-tariff income	0.51	0.61	0.73

The Commission approves the non-tariff income for the control period as given in the table above.

6.7 Aggregate Revenue Requirement for Generation

Petitioner's submission:

The BSPHCL has submitted that the ARR for generation consists of mainly two parts – variable expenses arising out of fuel expenses (primary and secondary) and fixed expenses consist of interest cost, depreciation, interest on working capital, O&M expenses and return on equity.

The costs projected BSPHCL are summarised below:

Table: 6.49: Summary of proposed generation ARR for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Particulars	FY 2013-14	FY 2014-15	FY 2015-16
a. Fuel Cost	216.11	410.02	629.14
Repair and Maintenance Expenses	8.95	9.78	10.69
Employee Expenses (2)	69.2	82.45	99.97
A & G Expenses (3)	6.93	7.11	7.31
b. O&M cost (=1+2+3)	85.08	99.35	117.97
c. Interest & Financing charges	27.79	37.31	190.21
d. Interest on working capital	17.93	29.47	48.93
e. Depreciation	10.62	18.53	140.4
f. ROE	53.32	53.32	53.32
g. Total Cost (=a to f)	**410.86**	**648**	**1179.97**
h. Less Non-tariff income	0.51	0.61	0.73
i. Net Revenue Recoverable - Generation (=g-h)	**410.35**	**647.39**	**1179.24**

Further the break up of fixed and variable cost are summarised below:

Table: 6.50: Breakup of Fixed and Variable costs projected for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl.No.	***Particulars***	FY 2013-14	FY 2014-15	FY 2015-16
1	Energy Charges (Rs Cr.)	216.11	410.02	629.14
2	Annual Fixed Charges (Rs Cr.)	194.24	237.37	550.09
3	Revenue Recoverable - Generation (Rs Cr.)	410.35	647.39	1179.24
4	Gross Energy charges (Rs/unit)	2.97	3.04	2.98
5	Gross Fixed charge(Rs/unit)	2.67	1.76	2.6
6	Gross Generation cost(Rs/unit)	5.64	4.8	5.58
7	Net Generation cost(Rs/unit)	6.87	5.45	6.34

6.8 Approved Aggregate Revenue Requirement (ARR)

Based on the detailed analysis, the fixed and energy charges approved by the Commission for the control period are summarised in the table below:

Table: 6.51: Approved ARR for Generation for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl.No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	Fuel cost	182.56	315.15	315.15
	O&M costs	83.79	97.03	114.5
	Employee cost	68.12	80.48	97
	R&M cost	8.79	9.53	10.32
2	A&G expenses	6.88	7.02	7.18
3	Interest and finance charges	11.81	10.71	9.60
4	Depreciation	8.49	8.49	8.49
5	Interest on Working Capital	14.67	22.23	22.85
6	Return on Equity	48.16	48.16	48.16
7	**Total cost**	**349.48**	**501.77**	**518.75**
8	Less: Non-tariff income	0.51	0.61	0.73
9	**Net Revenue Requirement – Generation**	**348.97**	**501.16**	**518.02**

Table: 6.52: Fixed and Energy charges approved by the Commission for the control period FY 2013-14 to FY 2015-16

Sl. No.	*Particulars*	FY 2013-14	FY 2014-15	FY 2015-16
1	Gross generation (MU)	726	1349	1349
2	Net Generation	639	1214	1214
3	Energy Charges (Rs Cr.)	182.56	315.15	315.15
4	Annual Fixed Charges (Rs Cr.)	166.41	186.01	202.87
5	Revenue Recoverable - Generation (Rs.Cr.)	348.97	501.16	518.02
6	Net Energy charges (Rs/unit)	2.86	2.60	2.60
7	Net Fixed charge(Rs/unit)	2.60	1.53	1.67
8	Net Generation Cost	5.46	4.13	4.27

7. Determination of Aggregate Revenue Requirement (ARR) for the FY 2013-14 to FY 2015-16 and Transmission charges for FY 2013-14 for Bihar State Power Transmission Company Limited (BSPTCL)

7.1 Introduction

The determination of Aggregate Revenue Requirement (ARR) for the control period FY 2013-14 to FY 2015-16 and the transmission charges for the FY 2013-14 for BSPTCL are discussed in this Chapter.

7.2 Existing Transmission System

BSPHCL owns and operates the transmission system above 33 KV i.e 132 KV, 220 KV and 400 KV system in the state. The existing transmission system is as given below.

Table 7.1: Existing transmission System

Sl.No.	Voltage	No.of substations	Line Length (Ckm)	Transmission (MVA)
1	400 KV	-	75	-
2	220 KV	9	1147	2450
3	132 KV	76	5178	4588
	Total	85	6400	-

7.3 Performance of the Transmission System

BSPHCL has projected the transmission loss of the transmission system for the control period as given below.

Table 7.2: Transmission Loss Projected

(%)

Sl. No.	Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
1	Transmission Loss	4.07	4.02	3.97	3.92

BSPHCL has also to provide the availability of transmission system.

7.4 Capital investment

BSPHCL has projected capital investment of Rs.3123 crore for expansion / augmentation of its transmission system for evacuation of power from upcoming intra-state and inter-state generating stations and augmentation of the existing grid sub-stations during the control period as given in the Table below.

Table 7.3: Capital Investment Planned for Transmission Function

(Rs. crore)

Sl. No.	Planned Scheme	Total Cost	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	Total MYT	Remaining (FY 2016-17)
1	12th Plan_18th EPS (BRGF)	6338	437	210	844	1960	3450	2888
2	Immediate removal of transmission constraints	310	201	109	-	-	310	-
3	ADB Funded Scheme	197	197	-	-	-	197	-
Grand Total		**6845**	**835**	**319**	**844**	**1960**	**3957**	**2888**

BSPHCL has proposed to add 2197 ckt. km. of network and 9 EHV substations to the transmission system during the control period FY 2013-14 to FY 2015-16 given in the Business Plan are detailed in the Tables below:

Table 7.4: Network additions during the control period FY 2013-14 to FY 2015-16

(ckt. km.)

Sl. No.	Voltage level	FY 2013-14	FY 2014-15	FY 2015-16	Total
5.	**400 kV**	**-**	**-**	**104**	**104**
6.	**220 kV**	**6**	**239**	**608**	**853**
7.	**132 kV**	**257**	**453**	**506**	**1216**
8.	**33 kV**	**16**	**8**	**-**	**24**
	Total	279	700	1218	2197

Table 7.5: Addition of sub-stations during the control period FY 2013-14 to FY 2015-16

(Nos.)

Sl. No.	Voltage level	FY 2013-14	FY 2014-15	FY 2015-16	Total
1.	**400 kV**	**-**	**-**	**1**	**1**
2.	**220 kV**	**-**	**2**	**4**	**6**
3.	**132 kV**	**1**	**1**	**-**	**2**
	Total	1	3	5	9

BSPHCL has proposed to phase the capital investment of Rs.3123 crore over the control period to create additional lines and sub-stations detailed in Tables 7.4 and 7.5 above, as given in Table below:

Table 7.6: Proposed capital investment plan during the control period

(Rs. crore)

Particulars	FY 2013-14	FY 2014-15	FY 2015-16	Total
New Projects				
400 KV Sub-stations			540	540
400 KV Lines			281	281
220 KV Sub-stations		384	401	785
220 KV Lines	-	243	571	814
132 KV Sub-stations				49
132 KV Lines	161	217	166	544
33 KV Lines				-
Total	**161**	**844**	**1959**	**2964**
R&M				
400 KV Sub-stations				
400 KV Lines				
220 KV Sub-stations	45			45
220 KV Lines	11			11
132 KV Sub-stations	74			74
132 KV Lines	28			28
33 KV Lines				
Total	**158**	**0**	**0**	**158**
Grand Total	**319**	**844**	**1959**	**3123**

Source: Business Plan

Petitioner's submission:

BSPHCL has submitted that, in order to meet the growing demand for power by the consumers, its diversity in terms of geography and evacuation of power expected to be available from upcoming intra/interstate generating stations, BSPHCL has been undertaking various transmission network capacity addition, augmentation and improvement projects for making reliable power available uniformly across the State.

BSPHCL has also highlighted specific transmission projects which include the transmission lines for transfer of power from the northern part of Bihar and the proposed transmission system for Patna city, including three 400 kV sub-stations.

It is further submitted that, apart from the transmission works, it has also planned for immediate removal of transmission constraints in the existing network.

BSPHCL has provided the detailed scheme-wise capital investment plan proposed during the control period FY 2013-14 to FY 2015-16.

Commission's Analysis:

BSPHCL has projected an ambitious plan for transmission development with an addition of about 2197 ckt. km. of transmission lines and 9 sub-stations of 132 kV, 220 kV and 400 kV capacities at a total investment of Rs.3123 crore during the control period FY 2013-14 to FY 2015-16. The transmission additions are for evacuation of power from the upcoming intra-state and inter-state generating stations coming up during the control period, downstream transmission of power to load centres and strengthening of the transmission system to transmit the additional power. The transmission plan also covers renovation and modernization of the transmission system and Patna city development plans. BSPHCL has projected the capital investment plan during each year of the control period, but it has not given the likely physical achievements of the transmission system during the corresponding years. The lines are mostly for evacuation of power from new generating stations, Darbanga and Motihari 400 kV sub-stations and strengthening of intra-state transmission system.

A number of generating stations are programmed to be commissioned under the State, Joint and Central sectors in which BSPHCL has allocations, which are programmed to be commissioned during the control period. In addition, BSPHCL has entered into contract to obtain power from Adani, Essar, GMR Power plants outside the state during this period. Availability of power from various stations is detailed in the Table below.

Table 7.7: Power Availability form various Sources

Particulars	FY 2012-13 (RE)		FY 2013-14 (P)		FY 2014-15 (P)		FY 2015-16 (P)	
			MYT Control period					
NTPC	**MW**	**MU**	**MW**	**MU**	**MW**	**MU**	**MW**	**MU**
a) Farakka 1,2 and 3	528	2834	528	2889	528	2889	528	2889
b) Talchar	528	2585	398	2449	398	2449	398	2449
c) Kahalgaon 1&2	528	2662	438	2670	438	2670	438	2670
Barth – Stg 2 #1			330	1638	330	2457	330	2457
Barth – Stg 2 #2					330	2048	330	2457
Bart Stg 1 Unit 1					175	977	175	1303
Bart Stg 1 Unit 2							175	1194
Bart Stg 1 Unit 3							175	109
NTPC Total	**1694**	**8081**	**1694**	**9646**	**2199**	**13490**	**2549**	**15528**
Railway & BSEB								
Nabinagar -I							25	186
Nabinagar –II							25	186
Nabinagar –III								
Nabinagar -IV								
Total Nabinagar							**50**	**372**
NHPC								
a) Rangit	21	136.88	21	789	21	78	21	78
b) Teesta	108	726.20	108	404	108	404	108	104
Total NHPC	**129**	**863.08**	**129**	**482**	**129**	**482**	**129**	**482**
PTC								
Chukka	80	850.03	80	298	80	298	80	298
Tala	260	1122	260	968	260	968	260	968
Total PTC	**340**	**1702**	**340**	**1266**	**340**	**1266**	**340**	**1266**
DVC								

Particulars	FY 2012-13 (RE)		FY 2013-14 (P)		FY 2014-15 (P)		FY 2015-16 (P)	
DVC			100	745	100	745	100	745
Total DVC			**100**	**745**	**100**	**745**	**100**	**745**
Others								
Adani	200	1254	200	1752	200	1752	200	1314
NEA+Short Term		1518		50	-	50	-	50
Essar					450	2957	450	3942
Essar 2					-	-	300	1314
GMR					-	-	260	949
Total Others	**200**	**2772**	**200**	**1802**	**650**	**4759**	**1283**	**7569**
State								
BTPS	105	(1.2)	110	136	110	594	110	594
BTPS	105		110	136	110	594	110	594
BTPS Stg 2							250	673
BSHPC		56.75	53	45	53	45	53	45
Sugar Mills		53.66	-	80	-	80	-	80
KBUNL#1(MTPS Stg 1)			110	573	110	607	110	607
KBUNL#2(MTPS Stg 1)			110	477	110	607	110	607
KBUNL#3(MTPS Stg 1)							132	363
UI Sales		(1069)						
Solar RPO				19		49		93
Total availability	**2573**	**12459**	**2916**	**15732**	**3921**	**23317**	**5243**	**29617**

The transmission system is therefore, required to be augmented / strengthened to draw the additional power. The transmission plan of BSPHCL for the control period FY 2013-14 to FY 2015-16 is, therefore, provisionally approved.

Meanwhile, BSPHCL is directed to submit cost–benefit analysis for each of the schemes or group of schemes, other than those required for evacuation of power from generating stations for approval of the Commission.

7.5 Capitalisation

BSPHCL has proposed the capitalisation schedule and scheme-wise capitalization plans during the control period, as given below:

Table 7.8: Proposed Capitalisation Schedule

Sl. No.	Particulars	Year-1	Year-2	Year-3
1	**For new schemes**	**40%**	**40%**	**20%**
2	**For R&M schemes**	**60%**	**40%**	**0%**
3	**For Opening CWIP FY 2012-13**	**30%**	**30%**	**40%**

Based on the above capitalisation schedule, the scheme-wise proposed capitalisation is given below:

Table 7.9: Proposed Capitalisation during FY 2012-13 and the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
1.	**12th plan, 18th EPS (BRGF)**	**175**	**269**	**460**	**1154**
2.	**Immediate removal of transmission constraints**	**121**	**146**	**44**	**-**
3.	**ADB funded schemes**	**79**	**79**	**39**	**-**
4.	**Opening CWIP capitalised**	**41**	**41**	**55**	**-**
	Total	416	535	628	1154

Commission's analysis:

As discussed in para 7.4 above, most of the transmission lines are intended for evacuation of power from the State and Central generating stations that are likely to be commissioned during the control period FY 2013-14 to FY 2015-16 and power from private sector – Adani, Essar and GMR - scheduled to be drawn during FY 2012-13 to 2015-16 and strengthening of the downstream network has to be completed during the control period. BSPHCL has proposed capitalization of the expenditure in two to three years as shown in Table 7.9 above. The Commission is of the view that based on the previous experience, the capitalization schedule proposed by BSPHCL may not be achieved. The Commission has revised the schedule and capitalization as given in the Tables below.

Table 7.10: Capitalization Schedule approved by the Commission

(Rs. crore)

Sl.No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1.	For New Scheme	30%	30%	40%
2.	For R&M Scheme	30%	30%	40%
3.	For Opening CWIP for FY 2013-14	30%	30%	40%

Table 7.11: Capitalization approved during FY 2012-13 and the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	Balance
1	Total investment	835	319	844	1960	
2	Capitalization CWIP Rs.139 crore	42	42	55	-	
3	New Investment				-	
	FY 2012-13 - Rs. 835 crore	250	250	335		
	FY 2013-14 - Rs. 319 crore	-	96	96	127	
	FY 2014-15 - Rs. 844 crore	-	-	253	253	338
	FY 2015-16 - Rs. 1960 crore	-	-	-	588	1372
4	**Total (2+3)**	**292**	**388**	**739**	**968**	**1710**

The Commission approves ton capital investments and capitalization as given in the Tables above.

7.6 Funding of capital investment and capitalisation:

Petitioner's submission:

BSPHCL has submitted that, based on the capital investment plan, it has been planned to fund the same along with capital works in progress (CWIP) at the beginning of FY 2012-13. The scheme-wise funding arrangement for Capex is given in the Table below:

Table 7.12: Proposed funding of capital investment during FY 2012-13 and the control period

(Rs. crore)

Sl. No.	Planned Scheme	Capital Expenditure	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
1	12th Plan - 18th EPS (BRGF)	3450	437	210	844	1960
	Grant	3450	437	210	844	1960
	Loan	-	-	-	-	-
2	Immediate removal of transmission constraints	310	201	109	-	-
	Grant	-	-	-	-	-
	Loan	310	201	109		
3	ADB Funded Scheme	197	197			
	Grant	-	-	-	-	-
	Loan	197	197			
4	Balance CWIP	138	41	41	55	
	Grants	56	17	17	22	
	Loans	82	25	25	33	
	Grand Total	**4095**	**877**	**361**	**899**	**1960**
	Grants	3506	454	227	866	1960
	Loans	589	423	134	33	

Loan Capitalisation:

It is submitted by BSPHCL that, based on the capital investment plan and capitalisation schedule, the CWIP and loan capitalisation during the years have been determined. For this purpose, investment net of capitalisation during the year has been added to the opening CWIP of the respective year.

It is submitted that the Petitioner has assumed that the drawal of new loans during the year may be treated as capitalisation of assets for the same year. The interest applicable to the loan would be treated as interest during construction (IDC) for the corresponding year. This IDC would form part of the gross block for determination of transmission tariff.

The Petitioner has determined funding of IDC and total assets capitalised due to new investment and CWIP, after reducing the corresponding grants. Accordingly, the projected loan capitalisation has been computed, as detailed below:

Table 7.13: Loan capitalisation projected for FY 2012-13 and for the control period

(Rs. crore)

Sl. No.	Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
1.	Opening CWIP	138	557	342	558
2.	Add new Investment	835	319	844	1960
3.	**Total (1+2)**	**973**	**876**	**1186**	**2518**
4.	Less: Investment Capitalised	374	493	572	1154
5.	Less: Opening CWIP Capitalised	41	41	55	
6.	Closing CWIP	558	342	559	1364
7.	Funding of Capex				
8.	**Total Capitalisation (4+5)**	**416**	**535**	**628**	**1154**
9.	Less: Grants (new investments)	175	269	490	1154
10.	Less: Grants (Opening CWIP)	17	17	22	
11.	**Loan Capitalised (8-9-10)**	**224**	**249**	**116**	
12.	Add: IDC	15	16	8	
13.	**Total Loan Capitalisation (11+12)**	**239**	**265**	**124**	

Commission's Analysis:

The details of opening CWIP, etc., have been verified with reference to the opening balance sheet, as on 1st April, 2011, issued along with the transfer scheme and actual expenditure during FY 2011-12. It is observed that the closing CWIP for FY 2011-12 is Rs.139.00 crore. Other investments proposed to be capitalised as per the capitalisation schedule are found to be correct.

The capital investment plan, funding of capital investment, the capitalisation of grants and loans as approved by the Commission are given in the Table below:

Table 7.14: CAPEX, Capitalisation and Funding for FY 2012-13 and the control period FY 2013-14 to FY 2015-16 approved by the Commission

(Rs. crore)

Sl.No.	Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
1	Opening Balance of CWIP	139	682	613	718
2	Add New investment	835	319	844	1960
3	**Total (1+2)**	**974**	**1001**	**1457**	**2678**
4	Less Capitalisation	292	388	739	968
(a)	CWIP	42	42	55	
(b)	New investment	250	346	684	968
5	**Closing CWIP (3-4)**	**682**	**613**	**718**	**1710**
6	Funding for capitalisation				
(a)	CWIP	42	42	55	
(I)	Grant	17	17	22	

Sl.No.	Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
(ii)	Loan	25	25	33	
(b)	New investment	250	346	684	
(I)	Grant	131	194	491	925
(ii)	Loan	119	152	193	43
7	**Total Grant**	**148**	**211**	**513**	**925**
8	**Total Loan**	**144**	**177**	**226**	**43**

7.7 Interest during construction (IDC)

Petitioner's submission:

The BSPHCL has submitted that the interest during construction is the amount charged on the actual loan drawal during the year. It is further submitted that for the purpose of IDC estimation, the petitioner has assumed the amount capitalised during the year due to new investments and CWIP as the loan drawal. The interest rate considered for IDC is the applicable weighted average interest rate for the proposed loans. The interest during construction is projected in Table below:

Table 7.15: Projected interest during construction for the control period

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1.	**Total capitalised loans**	**249**	**116**	**-**
2.	**Weighted average interest rate (%)**	**13**	**13**	**13**
3.	**Interest during construction**	**16**	**8**	**-**

Commission's Analysis:

The loan capitalised and the average interest rate has been verified and the interest is claimed on the average loan during the year. The capitalized loan is given in Table 7.14. This has been considered to arrive at the interest during construction, as given in the Table below:

Table 7.16: Approved interest during construction

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	**Loan drawn**	**177**	**226**	**43**
2	**Average Loan**	**88.5**	**113**	**21.5**
3	**Weighted Average Rate of Interest**	**13%**	**13%**	**13%**
4	**IDC**	**11.51**	**14.69**	**2.80**

The Commission, accordingly, approves the interest during the construction for the control period, as detailed in the Table above.

7.8 Gross Fixed Assets

Petitioner's submission:

The Petitioner has projected Gross Fixed Assets (GFA) for the control period based on the schedule of capitalisation towards new investments, CWIP and IDC, as given in the Table below:

Table 7.17: Gross Fixed Assets Projected for the control period

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	**Opening GFA**	**1682**	**2233**	**2868**
2	**Add: Capitalisation**	**535**	**628**	**1154**
3	**IDC**	**16**	**8**	**-**
	Closing	2233	2868	4021

Commission's Analysis:

The Commission has arrived at the opening and closing GFA, taking into consideration the capitalisation approved in the above paragraph and Table 7.14. The opening GFA for FY 2012-13 has been considered based on closing GFA of audited accounts of 2011-12. The opening and closing GFA for the control period is given, as detailed in the Table below:

Table 7.18: Gross fixed assets for FY 2013-14 to FY 2015-16

(Rs. crore)

SL.No.	**Particulars**	**FY 2013-14**	**FY2014-15**	**FY 2015-16**
1	Opening GFA	1547.13	1946.64	2700.33
2	Addition	388.00	739.00	968.00
3	IDC	11.51	14.69	2.80
4	**Closing GFA (1+2+3)**	**1946.64**	**2700.33**	**3671.13**

7.9 Depreciation

Petitioner's submission:

BSPHCL has projected the depreciation at Rs.467 crore for the control period FY 2013-14 to FY 2015-16, as detailed in the Table below:

Table 7.19: Depreciation projected for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	**Particulars**	**FY 2013-14**	**FY 2014-15**	**FY 2015-16**
1	Closing GFA	2233	2868	4021
2	Weighted average rate of Depreciation	5.12%	5.12%	5.12%
3	Gross Depreciation for the year	114	147	206
4	Ratio: (GFA- Grants) / GFA	64%	55%	40%
5	Net Depreciation on Capital Cost	73	82	82
6	Gross Cumulative Depreciation	702	849	1055
7	Net Cumulative Depreciation	448	471	417

BSPHCL has submitted that the depreciation has been computed during the year, based on the closing GFA of the respective year. The depreciation for different assets has been computed according to CERC Regulations, 2009.

BSPHCL has further submitted that depreciation has been computed annually based on the straight-line method - by applying weighted average rate of depreciation on the closing GFA. It is stated that the Petitioner has reduced the depreciation on assets created out of grants and consumer contributions from the gross depreciation to arrive at the net depreciation chargeable to transmission. The computation of depreciation on the assets created out of grants and consumer contribution and GFA are detailed in the Table above.

Commission's Analysis:

The Commission has noted that the Petitioner has computed the depreciation for the control period FY 2013-14 to FY 2015-16 by adopting depreciation rates as per CERC Regulations for the control period FY 2013-14 to FY 2015-16. The Commission has approved the capitalisation and gross fixed assets projected in Paras 7.5 and 7.8 above. The Commission has considered the average rate of depreciation of 5.12% arrived at by BSPHCL. It is observed that, the petitioner has computed the depreciation based on closing GFA, whereas it should be the average of opening and closing GFAs during the year. The Commission has computed the depreciation, based on the opening balance of GFA and additions during the year, as approved in Table 7.18 above and net depreciation, excluding depreciation on assets created through grants, etc., as detailed in the Table below:

Table 7.20: Approved Depreciation for the control period

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	Gross fixed assets of the			
	beginning of the year	1547.13	1946.64	2700.33
2	Additions during the year	388.00	739.00	968.00
3	IDC	11.51	14.69	2.80
4	**Closing GFA (1+2+3)**	**1946.64**	**2700.33**	**3671.13**
5	**Average GFA (1+4)/2**	**1746.89**	**2323.49**	**3185.73**
6	Weighted average rate of depreciation	5.12%	5.12%	5.12%
7	**Depreciation (5*6)**	**89.44**	**118.96**	**163.11**
8	Opening grants	679.31	890.31	1403.31
9	Grants during the year	211	513	925
10	**Total Grants (8+9)**	**890.31**	**1403.31**	**2328.31**
11	**Average Grants (10+8)/2**	**784.81**	**1146.81**	**1865.81**
12	Weighted average rate of depreciation	5.12%	5.12%	5.12%
13	**Depreciation for GFA on grant (11*12)**	**40.18**	**58.72**	**95.53**
14	**Net Depreciation for GFA in loan (7-13)**	**49.26**	**60.24**	**67.58**

The Commission, accordingly, approves the depreciation for the control period as detailed in the Table above.

7.10 Interest on loan

Petitioner's submission:

BSPHCL has projected the interest on long-term loans at Rs.218.65 crore on the existing loans and proposed new loans for the control period FY 2013-14 to FY 2015-16, as detailed in the Tables below:

Table 7.21: Calculation of Proposed Interest on Existing Loans

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	Gross loan Opening	96.64	96.64	96.64
2	Cumulative repayment till the previous year	9.66	9.66	9.66
3	Net loan - Opening	86.98	86.98	86.98
4	Drawal during the year			
5	Repayment(s) during the year	35.86	30.68	21.88
6	Net loan closing	51.11	56.3	65.10
7	Average Net Loan	69.04	71.64	76.04
8	weighted average Rate of Interest	13.33%	13.58%	13.85%
9	Interest on loan	9.20	9.73	10.51

Table 7.22: Calculation of Interest on Proposed New Loans

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	Gross loan Opening	238	503.93	627.32
2	Cumulative repayment till the previous year	17.83	34.79	43.36
3	Net loan - Opening	220.73	469.14	583.96
4	Drawal during the year	265.37	123.38	
5	Repayment(s) during the year	16.97	8.57	
6	Net loan closing	469.14	583.96	583.96
7	Average Net Loan	344.94	526.55	583.96
8	Weighted average Rate of Interest	13.00%	13.00%	13.00%
9	Interest on loan	44.84	68.45	75.91

Table 7.23: Proposed Interest & Finance Charges on total loans during MYT period

(Rs. crore)

Particulars	FY 2013-14	FY 2014-15	FY 2015-16
Interest and Finance Charges	54.04	78.18	86.43

The BSPHCL has submitted that, as a result of unbundling of the erstwhile BSEB, the State Government loans and interest, as on 31st March, 2011, have been waived off and Rs.1475 crore have been converted into equity, out of which Rs.1458 crore have been distributed across the GENCO, Transco and two DISCOMs.

BSPHCL has further submitted that it has separately determined the interest on existing loans and interest on new loans towards proposed asset capitalisation. The interest rate for each of the existing loans has been computed based on actual interest, including penal interest amount charges. For the asset capitalisation during the control period, the Petitioner has proposed new loans at 13% interest rate.

It is further submitted that the opening loan for the year has been reduced by the net cumulative depreciation up to the previous year, limited to one tenth of the opening loan.

Commission's Analysis:

The Commission has examined the computation of interest on long-term loans for the control period. BSPHCL has considered the loan additions, based on capitalisation.

The Commission has approved the capitalisation during each year of the control period, loan portion of capitalisation in Para 7.6 and Tables 7.14 above.

BSPHCL has adopted the rate of interest on the existing loans at 13.33%, 13.58% and 13.83% respectively for the control period and 13% for new loans. Since there is an element of penal interest in the case of existing loans, the interest rate of 13% has been considered on all existing and new loans.

Considering the above, the Commission has computed the interest charges for the control period. The interest charges are as given in Table below:

Table 7.24: Approved interest charges on long term loans for the control period

(Rs. crore)

Sl.No	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	Opening loan	190.23	317.97	483.73
2	Additions during the year	177.00	226.00	43.00
3	Repayment	49.26	60.24	67.78
4	**Closing Loan**	**317.97**	**483.73**	**458.95**
5	**Average loan**	**254.10**	**400.85**	**471.34**
6	Rate of interest	13%	13%	13%
7	**Interest charges**	**33.03**	**52.11**	**61.28**

The Commission approves the interest and long-term loans for the control period, as mentioned above.

7.11 Interest on working capital

Petitioner's submission:

BSPHCL has projected the interest on working capital at Rs.36.61 crore for the control period FY 2013-14 to FY 2015-16, as detailed in the Table below:

Table 7.25: Interest on working capital projected for the control period

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	O&M Expenses	7.58	9.15	11.2
2	Maintenance Spares	20.38	27.11	35.09
3	Receivables	37.95	46.96	52.83
4	Total Working Capital Requirements	65.91	83.22	99.12
5	Rate of Interest (SBI PLR)	14.75%	14.75%	14.75%
6	Interest on working Capital	9.72	12.27	14.62

BSPHCL has submitted that the interest on working capital has been proposed in accordance with the BERC (Terms and Conditions for determination of Tariff) Regulations, 2007 for the control period FY 2013-14 to FY 2015-16, as under:

(i)	Operation and maintenance expenses	One month
(ii)	Maintenance spares	1% of historical cost escalated at 6% per annum.
(iii)	Receivables	Two months of transmission charges
(iv)	Rate of interest on working capital	Short term prime lending rate of SBI on 1st April of the year.

The rate of interest applied on the proposed working capital is as per the PLR, as on 1st April, 2012, at 14.75%.

Commission's Analysis:

The Commission has examined the computation of interest on the working capital, as submitted by BSPHCL. The Petitioner has computed the working capital as per Regulations. The Commission has computed the working capital and interest on working capital as per expenses approved at an interest rate at 14.45% as on February, 2013, as detailed below:

Table 7.26: Interest on working capital approved for the control period

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	O&M Expenses one month	7.46	8.92	10.84
2	Maintenance Spares at 1% of GFA	16.40	20.63	28.62
3	Receivables for two months	35.65	43.98	50.65
4	**Total Working Capital**	**59.51**	**73.53**	**90.11**
5	Interest Rate (%)	14.45	14.45	14.45
6	Interest on working Capital	8.60	10.63	13.02

7.12 Operation and Maintenance expenses

The operation and maintenance expenses include employee expense, R&M costs, and administrative and general expenses. The expenses under each are discussed below:

a) Employee expenses

Petitioner's submission:

The BSPHCL has claimed Rs.286.78 crore towards employees expenses for the control period FY 2013-14 to FY 2015-16, as detailed in the Table below:

Table 7.27: Proposed Employee Expenses

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	Employee Cost	163.18	178.27	194.76
2	Less: Employee Cost Capitalised	2.88	3.15	3.44
3	Less: support by State Government against terminal liabilities	84.05	81.42	74.49
4	**Total Employee Cost**	**76.25**	**93.70**	**116.83**

The BSPHCL has submitted that the employee expenses comprise of salaries, dearness allowance, bonus, terminal benefits (in the form of pension and gratuity), leave encashment and staff welfare expenses.

It is submitted that, BSPHCL has considered an increase in employee cost at 9.25% per annum during the control period, based on the consumer price index (CPI) of FY 2009-10 to FY 2011-12. It has also submitted that the capitalisation of employee cost during FY 2011-12 was nil, but cost escalation was applied on capitalisation of employee cost for FY 2012-13 and the control period. It is further submitted that after unbundling of erstwhile BSEB the State Government is expected to fund terminal liabilities of the Transmission Company during the control period.

BSPHCL has requested that the employee cost be considered as uncontrollable due to:

- increase in salaries, including dearness allowance.
- Increase in salaries due to recruitment of new employees.
- Provision of retirement dues on the basis of actual values from the figures of the current financial year.

Commission's Analysis:

The Commission has examined the submission of BSPHCL. The actual employee cost during FY 2011-12 was Rs.102.51 crore and the Commission approved the employee cost for transmission business at Rs.87.47 crore in the Tariff Order for FY 2012-13, against which BSPHCL has claimed Rs.149.36 crore in the RE.

The BSPHCL has capitalised the employee cost during the control period, but has not indicated the rate of capitalization. However, the capitalisation amount indicates the rate of about 1.8%. Since gestation period for transmission works is more than one or two years, capitalisation has been considered at 1.8% of the cost.

The Commission considered the consumer price index (CPI) at 8.63% as on 31 March, 2012 for considering the increase in employee cost for the control period over the revised cost for FY 2012-13. The approved employee cost is given in the Table below:

Table 7.28: Approved Employee expenses for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	Employee Cost	162.25	176.25	191.46
2	Less: Employee Cost Capitalised @1.8%	2.93	3.17	3.44
3	Less: Support by State Government against terminal benefits	84.05	81.42	74.49
4	Total Employee Cost (1-2-3)	75.27	91.66	113.53

The Commission approves the employees cost, as detailed in the Table above.

b) Repairs and Maintenance (R&M) Cost

Petitioner's submission:

BSPHCL has projected the Repairs and Maintenance costs at Rs.31.50 crore for the control period FY 2013-14 to FY 2015-16, as given in the Table below:

Table 7.29: Projected Repairs and Maintenance cost for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	R&M costs	9.6	10.5	11.4

BSPHCL has submitted the Repairs and Maintenance costs include the cost towards regular upkeep of the system and network, as well as the office establishment, equipment, building and civil works, furniture and fixtures, etc. The R&M activities form part of the Petitioner's efforts to maintain reliable power supply and reduction of system losses.

It is further submitted that the BSEB network is old and requires regular maintenance to ensure uninterrupted operations of the system and, accordingly, it has been undertaking the expenditure on R&M works.

It is submitted that the R&M costs have been indexed to WPI and three-year (FY 2009-10 to FY 2011-12) growth, which is 9.25%, has been used for computing the year-to-year increase in R&M costs for the control period.

Commission's Analysis:

The Commission has examined the R&M expenses claimed by BSPHCL. The actual R&M expenses incurred during FY 2011-12 were Rs.8.03 crore for transmission function and the Commission approved the R&M expenses at Rs.14.05 crore for FY 2012-13.

It is observed that the increase in WPI, as on 31 March, 2012, is 7.69%. The Commission, accordantly, approves the R&M expenses for the control period at an increase of 7.69% per annum on the actual expenses for FY 2011-12, as given in the Table below:

Table 7.30: Approved R&M expenses for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	R&M Cost	9.31	10.03	10.80

The Commission approves the R&M costs, as detailed in the Table above, for the control period FY 2013-14 to FY 2015-16.

c) Administrative and General Expenses

Petitioner's submission:

BSPHCL has claimed the Administrative and General expenses at Rs.16.8 crore for the control period FY 2013-14 to FY 2015-16, as given in the Table below:

Table 7.31: Projected A&G expenses for the control period FY 2013-14 to FY 2015-16

(Rs.crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	A&G expenses	5.3	5.8	6.4
2	Less A&G expenses capitalised	0.21	0.23	0.25
3	Total A&G expenses	5.1	5.6	6.1

BSPHCL has submitted that the A&G expenses mainly comprise of rental charges, telephone and other communication expenses, professional charges, conveyance charges and traveling allowance and other debits.

It is submitted that while determining the A&G expenses, the Petitioner has reduced the same by the A&G cost capitalised. A&G costs capitalised during FY 2011-12 is nil, but A&G expenses capitalised during FY 2010-11 have been increased suitably to project the capitalisation of A&G cost for the control period.

The BSPHCL has further submitted that the A&G expenses are increased by 9.25% per annum for the control period inline with the WPI increase over the three year period FY 2009-10 to FY 2011-12.

Commission's Analysis:

The Commission has examined the A&G expenses projected by BSPHCL. The actual A&G expenses were Rs.4.47 crore during FY 2011-12, as apportioned for transmission functions in the Annual Accounts and the Commission approved Rs.5.06 crore for FY 2012-13. It is observed that the increase in WPI in March, 2012, over that of March, 2011 is 7.69% and the Commission has considered the increase in A&G expenses at 7.69% per annum during the control period over the actuals of

FY 2011-12, as given in the Table below, and capitalisation of A&G expenses has been considered at 4%, as projected by BSPHCL.

Table 7.32: Approved A&G expenses for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	A&G expenses	5.18	5.58	6.02
2	Less: A&G expenses capitalised	0.20	0.22	0.24
3	Total A&G expenses	4.98	5.36	5.78

Total Operational and Maintenance (O&M) Costs

The approved total O&M costs for the control period FY 2013-14 to FY 2015-16 are given in the Table below:

Table 7.33: Approved O&M Cost for the control period

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	Employee expenses	75.27	91.66	113.53
2	R&M cost	9.31	10.03	10.80
3	A&G expenses	4.98	5.36	5.78
4	Total O&M cost	89.56	107.05	130.11

The Commission approves the total O&M cost for the control period as in the table above.

7.13 Return on Equity

Petitioner's submission:

The BSPHCL has projected the return on equity at Rs.109.29 for the control period FY 2013-14 to FY 2015-16, as given in the Table below:

Table 7.34: Return on Equity projected for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	Equity capital	235	235	235
2	Rate of Return (%)	15.5	15.5	15.5
3	Return on equity	36.43	36.43	36.43

The BSPHCL has submitted that, in accordance with the Bihar State Electricity Transfer Scheme, 2012, the BSEB has been unbundled into five companies and an amount of Rs.235 crore has been vested in equity capital in the transmission company as given in Schedule-A, Part-III Transfer Scheme. BSPHCL has proposed the base rate of RoE 15.5%, as per CERC Tariff Regulations, 2009.

Commission's Analysis:

The Commission has computed the return on the equity, as per the opening balance sheet as on 1st April, 2011, and there has been no equity addition during FY 2011-12 and FY 2012-13. The return on equity has been considered at 14%, as per BERC Tariff Regulations. The return on equity is computed on the equity capital, as on 1st April, 2011, for each of the years of the control period, as given below, since the addition of equity capital during the control period is not known.

Table 7.35: Approved Return on Equity for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	Equity capital	235	235	235
2	Rate of Return (%)	14	14	14
3	Return on equity	32.90	32.90	32.90

The Commission approves the Return on Equity for the control period, as detailed in the above Table.

7.14 Non-Tariff Income

Petitioner's submission:

The BSPHCL has projected the non-tariff income at Rs.1.85 crore for the control period FY 2013-14 to FY 2015-16 as detailed in the Table below:

Table 7.36: Non-tariff income projected for Transmission function for the for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	Interest on staff loans advances	-	-	-
2	Income from investment (FD)	-	-	-
3	Interest on loans and advances to licensees	-	-	-
4	DPS from consumers	-	-	-
5	Interest on advance to supplier/contractor	0.13	0.16	0.19
6	Interest from Bank s(other than FD)	0.38	0.45	0.54
7	Income from trading	-	-	-
8	Income from staff welfare activities	-	-	-
9	Miscellaneous receipts	-	-	-
10	Meter rent	-	-	-
11	Miscellaneous charges from consumers	-	-	-
	Total	**0.51**	**0.61**	**0.73**

BSPHCL has submitted that the non-tariff income for the transmission function falls under the following heads:

- Interest on advances to suppliers / contractors.
- Interest on Bank (other than FD)
- Income from staff welfare activities.

The Petitioner has submitted that the income from the above heads is equally apportioned for generation, transmission and distribution functions and the remaining other income is mainly attributed to distribution function only.

It is further submitted that the Petitioner has estimated non-tariff income, based on arithmetic average of non-tariff income values during the last five years.

Commission's Analysis:

The BSPHCL has submitted that it has taken the actual non-tariff income over the last five-years and apportioned it to the generation, transmission and distribution functions. The Commission has taken into consideration the non-tariff income as projected by BSPHCL for the control period FY 2013-14 to FY 2015-16, as detailed in the Table below:

Table 7.37: Approved non-tariff Income for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	Non-tariff income	0.51	0.61	0.73

The Commission approves the non-tariff income for the control period, as detailed in the Table above.

7.15 Transmission charges

Petitioner's submission:

The annual fixed charges for transmission function / transmission company have been arrived at by aggregating all the expenses / fixed costs, viz., depreciation, interest on loan, interest as working capital, O&M expenses and RoE. The total expenses, less non-tariff income, are the net annual fixed charges or transmission charges.

The summary of annual fixed charges / ARR projected by BSPHCL are given in the Table below:

Table 7.38: Projected Aggregate Revenue Requirement for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1.	Depreciation	72.95	81.51	81.51
2.	Interest and finance charges	54.04	78.18	86.43
3.	Interest on working capital	9.72	12.27	14.62
4.	**O&M Cost**	**90.96**	**109.78**	**134.39**
5.	Employee cost	76.25	93.70	116.83
6.	R&M cost	9.58	10.47	11.44
7.	A&G cost	5.13	5.61	6.12
8.	Return on equity	36.43	36.43	36.43
9.	**Total**	**264.10**	**318.17**	**353.38**
10.	Less: Non-tariff income	0.51	0.61	0.73
11.	**Net: Aggregate Revenue Requirement**	**263.59**	**317.56**	**352.65**
12.	Energy available for transmission	15396.25	22862.22	29088.59
13.	Transmission losses assumed	4%	4%	4%
14.	Energy delivered to distribution	14780	21949	27925
15.	**Transmission tariff (Ps./unit)**	**17.83**	**14.47**	**12.63**

Commission's Analysis:

Based on the Commission's analysis, the Aggregate Revenue Requirement / annual fixed charges, as approved by the Commission, are given in the Table below:

Table 7.39: Approved Aggregate Revenue Requirement for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1.	Depreciation	49.26	60.24	67.58
2.	Interest and finance charges	33.03	52.11	61.28
3.	Interest on working capital	8.60	10.63	13.02
4.	**O&M Cost**	**89.56**	**107.05**	**130.11**
5.	Employee cost	75.27	91.66	113.53
6.	R&M cost	9.31	10.03	10.80
7.	A&G cost	4.98	5.36	5.78
8.	Return on equity	32.90	32.90	32.90
9.	**Total**	**213.35**	**262.93**	**304.89**
10.	Less: Non-tariff income	0.51	0.61	0.73
11.	**Net: Aggregate Revenue Requirement**	**212.84**	**262.32**	**304.16**

7.16 Approved Transmission charges for FY 2013-14 to FY 2015-16

The Transmission Company has to realize its full cost irrespective of quantum of power handled by the system. Total transmission costs shall be fully realized from the Distribution Companies on monthly basis in proportion of power delivered to the Distribution Companies. The transmission cost to be realized per month from Distribution Companies is given in the Table below:

Table 7.40: Transmission charges approved for the control period

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1.	Annual transmission cost (Rs. crore)	212.84	262.32	304.16
2.	Transmission cost to be realized per month from Distribution Companies (Rs. crore)	17.74	21.86	25.35

8. Aggregate Revenue Requirement (ARR) for the Control Period FY 2013-14 to FY 2015-16 and determination of Tariff for FY 2013-14 for North and South Power Distribution Companies

8.1 Background

This chapter covers Petitioner's submission and Commission's analysis of the ARR and tariff petition and approval of the ARR for the Control Period FY 2013-14 to FY 2015-16. BSPHCL has filed the ARR and Tariff Petition for North and South Power Distribution Companies together. Hence, the ARR is considered together for the two distribution companies.

8.2 Energy Sales

Proper estimation of category-wise energy sales for the control period is essential to arrive at the quantum of power to be purchased and the likely revenue by sale of energy.

This section examines in detail the consumer category-wise energy sales projected for the two distribution companies in the MYT Petition for the control period FY 2013-14 to FY 2015-16 for approval of ARR.

8.3 Consumer Category

The two distribution companies serve over 33 lakh consumers within their licensed areas and the consumers are broadly categorized as under:

LT Category:

- Domestic
- Non-Domestic
- Public Lighting
- Irrigation
- Public Water Works
- Industry

HT Category:

- Industry
- Railway Traction

The DISCOMs serve the consumers at different voltages at which the consumers avail supply.

The agricultural consumers and most of the domestic and non-domestic consumers in the rural areas are not metered. All the consumers are targeted to be metered by 31st March 2013. The consumption of the un-metered consumers is assessed based on the normative consumption levels approved by the Commission.

8.3.1 Overall Approach to Sales Projections

The BSPHCL has not projected the energy sales for the control period based on past trend which has proved to be a reasonably accurate and well accepted method for estimating the energy consumption, number of consumers and connected load. This conventional method is not followed due to the reason that past growth of energy sales is stunted growth due to severe power shortage in the State and a large number of villages and households are yet to be electrified.

In view of electrification of large number of villages, households and development of infrastructure in all the villages to make electricity available to all households, commercial activity, industry etc., under RGGVY and other programmes, BSPHCL has considered higher growth in energy consumption for domestic, commercial, industry and other categories of consumers. BSPHCL has projected the energy sales for the control period taking the revised sales for FY 2012-13 as its base.

The Commission has accepted in principle the overall approach adopted in projecting the consumption of various categories of consumers except in the case of Kutir Jyoti and agricultural pumpsets. The projection of category-wise energy consumption is discussed in subsequent paragraphs.

8.3.2 Category-wise Energy Sales for the Control Period FY 2013-14 to FY 2015-16

The BSPHCL has furnished the category-wise sales over the last 7 years (FY 2005-06 to FY 2011-12) based on assessed and the actuals and projected the sales for the control period and also underlying CAGR (1 year to 5 years) thereof. Category-wise sales and growth rates over the last seven years as furnished by BSPHCL are shown in the Tables 8.1 and 8.2 below:

Table 8.1: Historical data on category-wise Energy Sales

(MU)

Sl. No.	Consumer Category	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
1	Kutir Jyoti	1304	1450	1700	1769	1965	164	342
2	Domestic						1969	2026
3	Commercial	313	309	372	417	470	490	521
4	Public Lighting	20	25	24	23	27	33	23
5	Irrigation & Agriculture	887	709	659	777	794	389	363
6	Public Water Works	178	164	151	161	143	60	45
7	Industrial L.T	113	111	139	153	192	226	203
8	Industrial HT	674	762	964	1275	1475	1501	1470
9	Railway	359	384	385	400	445	458	537
10	Inter State	494	627	458	351	555	848	1164
	Total	**4342**	**4542**	**4852**	**5325**	**6067**	**6139**	**6695**

Tariff 8.2: Category-wise Growth Rates (CAGR) of Energy Sales

(Revised data given in letter dated 21.12.2012)

Sl. No.	Consumer Category	1 Year	2 Year	3 Year	4 Year	5 Year
1	Domestic	11.09%	9.8%	10.2%	8.6%	10.3%
2	Commercial	6.2%	5.2%	7.7%	8.8%	11.0%
3	Public Lighting	-30.7%	-7.7%	0.5%	-1.0%	-1.8%
4	Irrigation & Agriculture	-6.6%	-32.4%	-22.4%	-13.9%	-12.5%
5	Public Water Works	-25.6%	-44.0%	-34.6%	-26.1%	-22.8%
6	Industrial L.T.	-10.4%	2.7%	9.9%	9.9%	12.8%
7	Industrial H.T.	-2.0%	-0.2%	4.9%	11.1%	14.0%
8	Railway	17.3%	9.9%	10.4%	8.7%	7.0%
9	Inter State	37.3%	44.8%	49.2%	26.3%	13.2%
	Total	9.1%	5.0%	7.9%	8.4%	8.1%

8.3.3 Consumer Profile and Connected Load

8.3.3.1 The BSPHCL has also furnished the category-wise number of consumers for the past years as given in the Table below:

Table 8.3 Historical data on Category-wise Number of Consumers (Effective)

Category 2005-06 2006-07 2007-08 2008-09 2009-10 2010-11 2011-12

Sl. No.	Consumer Category	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
1	Kutir Jyoti	240,349	240,349	248,293	258,221	319,244	579,852	889,252
2	Domestic	1,038,658	1,386,639	1,513,675	1,671,636	1,797,404	1,938,023	2,107,229
3	Commercial	138,166	146,847	158,646	167,422	190,089	195,145	216,530
4	Public Lighting	342	379	341	359	379	306	355
5	Irrigation	57,581	57,581	55,762	51,442	59,121	54,709	57,615
6	Public Water Works	647	689	762	818	768	923	970
7	Industrial L.T.	10,718	11,647	12,933	13,821	18,917	17,144	16,181
8	Industrial H.T.	667	699	763	870	929	915	1,179
9	Railway	13	13	15	15	15	15	17
	Total	1,487,142	1,844,844	1,991,191	2,164,605	2,386,867	2,787,033	3,289,329

8.3.3.2 The category wise CAGR of number of consumers computed by the Commission is given in the Table below:

Table 8.4: Category-wise Growth Rates (CAGR) of Number of Consumers

(%)

Sl. No.	Consumer Category	CAGR 1 Year for 2010-11 to 2011-12	CAGR 2 Year for 2009-10 to 2011-12	CAGR 3 Year for 2008-09 to 2011-12	CAGR 4 Year for 2007-08 to 2011-12	CAGR 5 Year for 2006-07 to 2011-12
1	Domestic	53.4	66.9	51.0	37.6	29.9
2	Commercial	8.7	8.3	8.0	8.6	8.7
3	Public Lighting	11.0	6.7	9.0	8.1	8.1
4	Irrigation & Agriculture	16.0	-3.2	-0.4	1.0	-1.3
5	Public Water Works	5.3	-1.3	3.8	0.8	0.0
6	Industrial L.T.	5.1	12.4	5.8	6.2	7.1
7	Industrial H.T.	-5.6	-7.5	5.4	5.8	6.8
8	Railway	28.9	12.7	10.7	11.5	11.0
9	Inter State	13.3	6.5	4.3	3.2	5.5
	Total	18.0	17.4	15.0	13.4	12.3

8.3.3.3 The BSPHCL has furnished the category wise connected load for the past years as given in the Table below:

Table 8.5: Historical data on Category-wise (Registered) Connected Load

(KW)

Sl. No	Consumer Category	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
1	Domestic	1,679,134	1,804,466	1,794,312	2,113,086	2,384,686	3,060,488	3,535,753
2	Commercial	388,473	418,036	442,172	504,359	576,714	614,059	679,093
3	Public Lighting	13,531	15,435	12,478	9,241	9,625	11,411	6.260
4	Irrigation & Agriculture	582,107	576,357	630,750	612.119	618,974	417,191	423.965
5	Public Water Works	28,866	30,082	34,052	35.232	21,385	23,055	25,329
6	Industrial L.T.	535,049	553,023	601,898	700.880	728,365	455,276	480,421
7	Industrial H.T.	364,850	382,744	404,264	411.638	430,833	327,610	516.509
8	Railway	99,000	99,000	102,150	102,150	102,150	326,500	137.085
9	Inter State	-	-	-	-	-	-	-
	Total	**3,691,010**	**3,879,143**	**4,022,076**	**4,488,705**	**4,872,732**	**5,235,590**	**5,804,415**

8.3.3.4 The category wise CAGR of connected load computed by the Commission is as given in the Table below:

Table 8.6: Category-wise Growth Rates (CAGR) in Connected Load

(%)

Sl. No.	Consumer Category	CAGR 1 Year for 2010-11 to 2011-2	CAGR 2 Year for 2009-10 to 2011-2	CAGR 3 Year for 2008-09 to 2011-2	CAGR 4 Year for 2007-08 to 2011-2	CAGR 5 Year for 2006-07 to 2011-2
1	Domestic	15.5	21.8	18.7	18.5	14.4
2	Commercial	10.6	8.5	10.4	11.3	10.2
3	Public Lighting	-45.1	-19.4	-12.2	-15.8	-16.5
4	Irrigation & Agriculture	1.6	-17.2	-11.5	-9.5	-6.0
5	Public Water Works	9.9	8.8	-10.4	-7.1	-3.4
6	Industrial L.T.	5.6	-18.8	-11.8	-5.5	-2.8
7	Industrial H.T.	57.7	9.5	7.9	6.3	6.2
8	Railway	-58.0	15.8	10.3	7.6	6.7
9	Inter State					
	Total	10.9	9.1	8.9	9.6	8.4

8.3.4 Category-wise Projected Energy Sales

The BSPHCL has projected the category-wise energy sales for the control period FY 2013-14 to FY 2015-16 as given in Table below. It is stated that the sales are projected based on certain norms for the un-metered categories and estimated growth rates for other categories of consumers based on electrification programme of villages, households under RGGVY and other programmes and the rapid economic growth in the State. The projected energy sales are given in the Table below:

Table 8.7: Energy Sales Projected for the Control Period FY 2013-14 to FY 2015-16

(MU)

Consumer Category	2013-14	2014-15	2015-16
Domestic Service	3,438	4,297	5,372
Kutir Jyoti - BPL Consumer	833	1,041	1,301
Domestic - I	691	863	1,079
Domestic - II	1,913	2,392	2,990
Domestic-III	1	1	1
Non Domestic Service	803	1,003	1,254
Non-Domestic - I	19	24	30
Non-Domestic - II	781	976	1,220
Non-Domestic - III	3	4	5
Street Light Service	26	32	40
Street Light - I	5	6	8
Street Light - II	20	25	32
Irrigation & Agriculture Service	1,209	1,730	2,483
IAS - I	895	1,281	1,838
IAS - II	314	449	645
Public Water Works	50	52	55
LT Industrial Service	278	314	354
LTIS - I	151	171	193

LTIS - II	127	143	161
HT Industrial Service	1,550	1,842	2,189
HTS - I	746	886	1,053
HTS - II	177	211	251
HTS - III	83	98	117
HTSS	544	647	769
Railway Traction Service	551	606	667
Nepal	1,000	1,000	1,000
Grand Total Sales including UI and Nepal	**8,905**	**10,877**	**13,413**

8.3.5 Projection of Consumers and Connected Load

The BSPHCL has also projected the category-wise number of consumers and connected load for the control period as shown below:

Table 8.8: Projected consumers and connected load for FY 2013-14

Sl. No.	Consumer Category and sub-categories	Financial Year 2013-14	
		Effective Consumers (Nos.)	Connected Load (effective) (kW/kVA/HP)
1	Domestic	4772412	4683469
2	Kutir Jyoti - BPL Consumer	1875729	1352405
3	Domestic - I	1209225	1170426
4	Domestic - II	1687394	2159907
5	Domestic - III	65	731
6	Commercial	281017	643843
7	Non-Domestic - I	28163	29101
8	Non-Domestic - II	252629	612766
9	Non-Domestic - III	224	1975
10	Public Lighting	415	5758
11	Street Light - I	126	1448
12	Street Light - II	288	3870
13	Irrigation	57062	604733
14	IAS - I	53807	447656
15	IAS - II	3255	157078
16	Public Water Works	1150	19615
17	Industrial LT	16860	158795
18	LTIS - I	15603	108261
19	LTIS - II	1257	50534
20	Industrial HT	1637	619223
21	HTS - I	1543	313615
22	HTS - II	63	113494
23	HTS - III	3	45558
24	HTSS	28	146556
25	Railway	17	183968
26	Nepal	1	
27	UI		
	Total	**5,130,571**	**6,919,403**

Table 8.9: Projected consumers and connected load for FY 2014-15

Sl. No	Consumer Category and sub categories	Financial Year 2014-15	
		Effective Consumers (Nos.)	Connected Load (effective) (kW/kVA/HP)
1	Domestic	5965512	5702865
2	Kutir Jyoti - BPL Consumer	2344661	1646767
3	Domestic - I	1511531	1425178
4	Domestic - II	2109242	2630029
5	Domestic - III	78	890
6	Commercial	320139	716745
7	Non-Domestic - I	32084	32396
8	Non-Domestic - II	287800	682149
9	Non-Domestic - III	255	2199
10	Public Lighting	449	6333
11	Street Light - I	137	1592
12	Street Light - II	311	4257
13	Irrigation	56788	865107
14	IAS - I	53548	640398
15	IAS - II	3240	224709
16	Public Water Works	1252	21549
17	Industrial LT	17210	167565
18	LTIS - I	15927	114240
19	LTIS - II	1283	53325
20	Industrial HT	1783	678002
21	HTS - I	1680	343385
22	HTS - II	69	124267
23	HTS - III	3	49882
24	HTSS	31	160468
25	Railway	17	213117
26	Nepal	1	
27	UI		
	Total	**6,363,150**	**8,371,283**

Table 8.10: Projected Consumers and connected load for FY 2015-16

Sl. No.	Consumer Category and sub categories	Financial Year 2015-16	
		Effective Consumers (Nos.)	Connected Load (effective) (kW/kVA/HP)
1	Domestic	7456886	6944139
2	Kutir Jyoti - BPL Consumer	2930826	2005200
3	Domestic - I	1889414	1735380
4	Domestic - II	2636553	3202476
5	Domestic - III	93	1084
6	Commercial	364709	797901
7	Non-Domestic - I	36551	36064
8	Non-Domestic - II	327867	759388
9	Non-Domestic - III	291	2448
10	Public Lighting	486	6967
11	Street Light - I	148	1752
12	Street Light - II	337	4682
13	Irrigation	56515	1241517
14	IAS - I	53291	919037
15	IAS - II	3224	322480
16	Public Water Works	1363	23675

17	Industrial LT	17567	176820
18	LTIS - I	16257	120550
19	LTIS - II	1310	56270
20	Industrial HT	1941	742362
21	HTS - I	1828	375981
22	HTS - II	75	136063
23	HTS - III	4	54617
24	HTSS	33	175700
25	Railway	17	246884
26	Nepal	1	
27	UI		
	Total	**7,898,484**	**10,180,265**

8.4 Detailed Analysis of Energy Sales Projected

As mentioned earlier, BSPHCL has projected the energy sales for the control period based on certain assessed norms for un-metered categories and estimated growth rates for others based on electrification of villages, households and development of infrastructure in the villages under RGGVY and other programmes and expected high economic growth in the State as discussed below:

8.4.1 Kutir Jyoti:

Most of the consumers are un-metered. The sales to this category constitute about 10.5% of total energy sales of the two Distribution Companies in the State. BSPHCL has projected the energy sales to Kutir Jyoti category for the control period as given in the Table below:

Table 8.11: Energy Sales Projected to Kutir Jyoti Category during thecontrol period FY 2013-14 to FY 2015-16

Consumer category	2013-14	2014-15	2015-16
Kutir Jyoti Category (MU)	**833**	**1041**	**1301**

Petitioner's Submission:

It is submitted by BSPHCL that the growth of Kutir Jyoti connections in the State will continue to rise and in addition, due to increased availability of power, the supply hours in rural areas are expected to improve. It is also observed that actual connected load in the Kutir Jyoti connections is higher than specified. In the light of the above, it has been assumed that consumption would be 37 units /consumer/month using a connected load of 60/100 watts, as they would get 20 hours of supply in rural areas and 22 hours of supply in urban areas. BSPHCL has stated that for the sales projections, a composite specific consumption of the rural and urban Kutir Jyoti consumers is estimated to be 37 units per month. It is submitted that the growth rate of Kutir Jyoti consumers has been considered at 25% for the control period.

Commission's Analysis:

The BSPHCL has not furnished the number of rural and urban Kutir Jyoti consumers separately in the petition. They have only given the total number of Kutir Jyoti consumers in the State. The Commission sought from BSPHCL the details of actual sale of energy and revenue billed, category-wise, during the first six months of FY 2012-13. In reply, BSPHCL has furnished the category-wise number of consumers, energy sales and revenue billed for the period from April 2012 to October 2012 by e.mail dated 11-02-2013. It is observed that the number of Kutir Jyoti Consumers (Urban) are about 10% of the total Kutir Jyoti consumers during October, 2012. Accordingly, the Kutir Jyoti consumers for rural and urban areas are segregated.

The issue of consumption by Kutir Jyoti consumers is discussed in detail under paragraph 4.3 of Chapter-4 'Truing up for FY 2011-12'. In the absence of complete metering and billing on the basis of actual consumption and in the absence of any credible field study of the consumption and connected load of Kutir Jyoti consumers, there is no reason to change the consumption norm of 18 units per month for Kutir Jyoti (rural) and 30 units per month for Kutir Jyoti (urban) consumers. In the tariff schedule for Retail Tariff Rates and Terms and Condition for supply FY 2011-12 the Commission has defined Kutir Jyoti connection on the connected load, consumption norms for Kutir Jyoti and has also directed that in case it is detected that the norms prescribed for connected load and consumption are violated, rates applicable to DS-I and DS-II categories, as the case may be with appropriate charge shall apply in such cases.

The total number of Kutir Jyoti BPL- consumers for the Control Period are as given in the Table below:

Year	Total Consumers	Rural	Urban (Metered)
FY 2013-14	1875729	1688156	187573
FY 2014-15	2344661	2110195	234466
FY 2015-16	2930826	2637743	293083

The total consumption by Kutir Jyoti consumers at approved norm of 18 units / month for rural households and 30 units / month for urban households is as below:

Table 8.12: Kutir Jyoti Consumption computed for the Control Period FY 2013-14 to FY 2015-16

Particulars	FY 2013-14	FY 2014-15	FY 2015-16
Rural BPL consumers	1688156	2110195	2637743
Urban BPL consumers	187573	234466	293083
Consumption by rural households at 18 units / month (MU)	365	456	570
Consumption by Urban households at 30 units / month (MU)	67	84	105
Total Consumption (MU)	432	540	675

The Commission approves the energy sales for Kutir Joyti consumers during the control period FY 2013-14 to FY 2015-16 as shown below:

Table 8.13: Energy sales approved for Kutir Jyoti during the control period

Consumer category	FY 2013-14	FY 2014-15	FY 2015-16
Kutir Jyoti (MU)	**432**	**540**	**675**

8.4.2 Domestic-I (Rural):

The sales of this category constitute about 8.7% of the total energy sales by the two distribution companies in the State. BSPHCL has projected the energy sales to Domestic-I Category for the control period, as given in the Table below:

Table 8.14: Energy Sales projected for Domestic-I Category for the control period FY 2013-14 to FY 2015-16

Consumer Category	FY 2013-14	FY 2014-15	FY 2015-16
Domestic-I (MU)	**691**	**863**	**1079**

Petitioner's Submission:

BSPHCL has projected the sales for domestic category at an overall growth rate of 25%. It is submitted that domestic consumption will increase at the overall growth rate of 25% as there will be increased power supply and overall high economic growth in the State.

Commission's Analysis:

The growth of entire domestic consumption during the last 5 years was 10.3% and BSPHCL expects a growth rate of 25% during the control period 2013-16. The consumption estimated by BSPHCL for 2012-13 (RE) is 553 MU against approved consumption of 1047.74 MU. The Commission considered the revised sales for FY 2012-13 at 551 MU in the review.

A growth rate of 25% is considered possible during the control period as large number of villages are being electrified under RGGVY and other programmes and infrastructure is being extended to provide power supply to a number of households in the villages. In addition, the high economic growth will also stimulate electrification of large number of households and consumption of electricity in the State. It is understood that the agency executing RGGVY works is installing only one 25 KVA 11/400 V transformer in each village to cater BPL consumer only. BSPCL shall install additional transformer (s) to cater other consumers in the village to achieve 25% growth in energy sales in rural areas. Hence, the energy sales to domestic-I are approved as projected by BSPHCL.

The Commission approves the energy sales to Domestic-I Category during the control period FY 2013-14 to FY 2015-16 as shown below. This is however subject to review in the next Tariff Order.

Table 8.15: Energy Sales approved for Domestic-I Category during the control period

Consumer Category	FY 2013-14	FY 2014-15	FY 2015-16
Domestic-I (MU)	**689**	**861**	**1076**

8.4.3 Domestic-II (Urban - Metered):

The sales to this category constitute about 25% of the total energy sales of the two distribution companies in the State. BSPHCL has projected the energy sales to Domestic-II Category for the control period as given in the Table below:

Consumer Category	FY 2013-14	FY 2014-15	FY 2015-16
Domestic-II (MU)	1913	2392	2990

Petitioner's Submission:

The BSPHCL has projected the sales for domestic categories at an overall growth of 25%. It is submitted by BSPHCL that it has assumed that domestic consumption will increase at an overall growth rate of 25% as there will be increased power supply and overall high economic growth of the State.

Commission's Analysis:

The growth of entire domestic consumption during the last 5 years was 10.3%, and BSPHCL expects a growth of 25% during the control period as the availability of power supply will be high compared to earlier years and the overall economic growth will also be high. The urban areas have better and stable power supply compared to rural areas at present. Even with better power supply and economic growth it may be difficult to achieve a growth of 25% in urban areas where large number households are already electrified. It is reasonable to consider a growth rate of 20% for Domestic-II category against growth of 10.3% in the last 5 years instead of 25% projected by BSPHCL. The consumption is arrived at a growth rate of 20% on the basis of consumption of 1556 MU considered in FY 2012-13 (RE).

The Commission approves the energy sales to Domestic-II Category at growth of 20% during the control period FY 2013-14 to FY 2015-16 as shown below:

Table 8.16: Energy Sales approved for Domestic-II Category during the control period

Consumer Category	FY 2013-14	FY 2014-15	FY 2015-16
Domestic-II (MU)	1867	2241	2689

8.4.4 Domestic-III (Metered)

The BSPHCL has projected the energy sales to the Domestic-III category for the control period as given in the Table below:

Table 8.17: Energy Sales projected for Domestic-III Category during the control period

Consumer Category	FY 2013-14	FY 2014-15	FY 2015-16
Domestic-III (MU)	**1**	**1**	**1**

Petitioner's Submission:

The BSPHCL has projected the sales for domestic consumer category at an overall growth of 25%. As stated under Domestic-I and Domestic-II, BSPHCL has assumed that domestic consumption will increase at an overall growth rate of 25% as there will be improved power supply and increase in overall economic growth of the State.

Commission's Analysis:

It is observed that the annual consumption of this category is only 1 MU over the last three years and it is projected at the same level during the control period also. The CAGR of consumption of entire domestic category over the last 5 years was 10.3%. Though the number of consumers and connected load are growing over the last three years, the consumption of this category is constant as shown below:

Table 8.18: The Energy Sales projected for Domestic-III category

Year	Consumers	Connected Load (KW)	Consumption (MU)
FY 2010-11 (Actual)	39	286	1.0
FY 2011-12 (Actual)	45	505	1.0
FY 2012-13 (Estimated)	54	600	1.0
FY 2013-14 (Projected)	65	731	1.0
FY 2014-15 (Projected)	78	890	1.0
FY 2015-16 (Projected)	93	1084	1.0

The consumption appears to be rounded of to 1.0 MU.

The Commission, approves energy sales to Domestic-III category during the control period 2013-14 to FY 2012-16 as projected by BSPHCL as below:

Table 8.19: Energy Sales approved for Domestic-III Category during the control period

Consumer Category	FY 2013-14	FY 2014-15	FY 2015-16
Domestic-III (MU)	1	1	1

8.4.5 Non-Domestic-I (Rural)

The Non-domestic-I (Commercial) category is applicable to un-meted commercial consumers in the rural areas. The sales to this category constitute hardly 0.25% of total energy sales of the two distribution companies. BSPHCL has projected the energy sales to this category for the control period as given in the Table below:

Table 8.20: Energy Sales projected for Non-domestic-I Category during the control period

Consumer Category	FY 2013-14	FY 2014-15	FY 2015-16
Non-Domestic – I (MU)	**19**	**24**	**30**

Petitioner's Submission:

The BSPHCL has projected the energy sales for all Non-domestic (Commercial) categories at an overall growth of 25% CAGR for the control period. It is submitted by BSPHCL that improvement in economic activities in the State and also improved availability of power will result in increase in commercial consumption. Further energy consumption is expected to rise due to anticipated franchise operations in urban areas.

It is further submitted considering the future economic scenario, BSPHCL expects the commercial category consumption to increase by 25% CAGR.

Commissions Analysis:

The growth of entire commercial category during the last 5 years was 11% CAGR. The BSPHCL expects a growth of 25% during the control period due to improved availability of power and the improvement in economic activities in the State. In view of large number of villages being electrified and required infrastructure is being provided for connecting number of consumers and improved availability of the power in the villages, the commercial activity is likely to pickup in the villages and 25% growth in energy sales in non-domestic-I (commercial) category is possible. As mentioned in paragraph 8.4.2 Domestic-I (rural), BSPHCL has to install additional Transformer (s) to cater all the consumers in the village. The consumption is arrived at a growth rate of 25% as projected by BSPHCL on the consumption of 15 MU considered in FY 2012-13(RE)

Hence, the Commission approves the energy sales to Non-domestic-I category during the control period FY 2013-14 to FY 2015-16 as shown below:

Table 8.21: Energy Sales approved for Non-domestic-I Category during the Control period

Consumer Category	FY 2013-14	FY 2014-15	FY 2015-16
Non-Domestic - I (MU)	19	24	30

8.4.6 Non-Domestic-II Urban (Metered)

The sales to this category constitutes about 10% of total energy sales of the distribution companies within the State. BSPHCL has projected the energy sales to Non-domestic-II category for the control period as given in the Table below:

Table 8.22: Energy Sales Projected for Non-domestic-II Commercial Category during the Control Period

Consumer Category	FY 2013-14	FY 2014-15	FY 2015-16
Non-Domestic-II (MU)	**781**	**976**	**1220**

Petitioner's Submission:

The BSPHCL has projected the energy sales for Non-domestic-II (Commercial) category at an overall growth of 25% CAGR for the control period. It is submitted by BSPHCL that improvement of economic activities will result is increase in commercial consumption especially in urban areas. Further, due to anticipated franchise operations in urban areas, commercial energy sales are expected to rise. Considering the future economic scenario improved power supply and franchise operations, BSPHCL expects the sales to commercial category to increase at 25% CAGR.

Commission's Analysis:

The growth of consumption of the entire commercial category during the last 5 years was 11.0% CAGR. BSPHCL expects a growth of 25% CAGR due to improvement in power supply situation and economic activities in the State and also franchise operations in urban areas. The power supply in Patna and other urban areas is far better compared to rural areas. It is true the power supply position will considerably improve during the control period and the economic activity will also pickup in the State, economic growth is one of the highest in the country and franchise operations will also improve commercial consumption. But it is difficult to expect a growth of 25% in urban areas during the control period as in the rural areas with Non-domestic-I category where large number of villages are being electrified and power supply would be available for more number of hours.

It is considered reasonable to consider a growth of 20% considering improved availability of power and economic activity. Further the anticipated franchise operations in urban areas would also improve the commercial energy sales. The consumption is arrived at a growth rate of 20% on the consumption of 725 MU considered in FY 2012.13 (RE).

The Commission, therefore, approves the energy sales to Non-domestic (Commercial)-II category during the control period FY 2013-14 to FY 2015-16 as given in Table below:

Table 8.23: Energy Sales approved for Non-domestic (Commercial) II Category during the control period

Consumer Category	FY 2013-14	FY 2014-15	FY 2015-16
Non-Domestic-II (Commercial) (MU)	870	1044	1253

8.4.7 Non-Domestic-III (Religious Places)

The sales to this category is hardly about 2 MU of the total sales of the two distribution companies in the State. BSPHCL has projected the energy sales to Non-domestic (Commercial)-III category for the control period as given in the Table below:

Table 8.24: Energy Sales projected for Non-domestic (Commercial) III Category during the control period

Consumer Category	FY 2013-14	FY 2014-15	FY 2015-16
Non-Domestic-III (Commercial) (MU)	3	4	5

Petitioner's Submission:

The BSPHCL has projected the sales for Non-domestic (Commercial) Categories (Non-domestic-I, II and III) at an overall growth of 25% stating the increase in economic activities in the State and improvement in availability of power will result in increase in commercial consumption, particularly, in urban areas.

Commission's Analysis:

The growth of consumption of all Non-domestic (Commercial) category during the last 5 years was at 11% CAGR. This category being supply to religious places, the increase in economic activities etc., in the State may not have much of an impact in the consumption of this category but the improved power supply position will have some impact.

However, the consumption of this category being hardly 3 to 5 MU during the control period, the consumption as projected by BSPHCL is retained.

The Commission approves the energy sales to Non-domestic (Commercial)-III category during the control period FY 2013-14 to FY 2015-16 as given in the Table below:

Table 8.25: Energy Sales approved for Non-domestic-III Category during the control period

Consumer Category	FY 2013-14	FY 2014-15	FY 2015-16
Non-Domestic-III (Commercial) (MU)	3	4	5

8.4.8 Industrial (LTIS - I&II)

The sales to this category account to about 3.5% of total energy sales of the two distribution companies in the State. BSPHCL has projected the energy sales to industrial (LT) category for the control period as given in the Table below:

Table 8.26: Energy Sales projected for Industrial (LT) Category during the Control Period

Consumer Category	FY 2013-14	FY 2014-15	FY 2015-16
LT Industry **(MU)**			
LTS–I	**151**	**171**	**193**
LTS–II	**127**	**143**	**161**
Total	278	314	354

Petitioner's Submission:

It is submitted by BSPHCL that the sales to Industrial (LTIS-I&II) are projected at 12.8% (Highest CAGR of five years).

Commission's Analysis:

The growth of energy sales to LT industry (LTIS-I&II) during the last 5 years was 12.8% which is the highest CAGR. The BSPHCL has considered the same level of growth of 12.8% during the control period FY 2013-14 to FY 2015-16 also. In the case of domestic and non-domestic categories, BSPHCL had considered a growth of 25% taking in to consideration the improved availability of power and higher economic growth in the State. This is not considered by BSPHCL while projecting the growth in energy sales to industries (LT).

The improved availability of supply and the growth in economic activities in the State will have an impact on the industrial growth also, hence a growth of 20% is considered reasonable during the control period as there is considerable potential for growth of small industry in the State. The consumption is arrived at a growth rate of 20% on the base consumption of 143 MU for LTIS-I and 97 MU for LTIS-II considered in FY 2012-13(RE)

The Commission approves the energy sales to the industrial (LT) category during the control period FY 2013-14 to FY 2015-16 as given in the Table below:

Table 8.27: Energy sales approved for Industrial (LT) category for the control period FY 2013-14 to FY 2015-16

Consumer Category	**FY 2013-14**	**FY 2014-15**	**FY 2015-16**
LT Industry **(MU)**			
LTS – I	172	206	247
LTS – II	116	140	168
Total	288	346	415

8.4.9 Street Lighting (Public Lighting) ST-I, ST- II

The consumption by street lighting accounts to about 0.3% of total energy sales by the two distribution companies in the State. BSPHCL has projected the energy sales to this category for the control period as given Table below:

Table 8.28: Projected Energy Sales projected for Street Lights during the control period

Consumer Category	FY 2013-14	FY 2014-15	FY 2015-16
Street Lighting (MU)			
ST – I	5	6	8
ST – II	20	25	32
Total	25	31	40

Petitioner's Submission:

It is submitted by BSPHCL that the consumption of public lighting during the last 5 years has shown a negative growth of (-)1.8% CAGR. It expects a growth of 5% during the control period FY 2013-14 to FY 2015-16

Commission's Analysis:

The 5 year and 3 year growth rates of energy sales were (-)1.8% and 0.5%, respectively. BSPHCL has projected a growth rate of 5.0% during the control period. The ST-I is said to be metered and ST-II unmetered. It is not explained how ST-II consumption is arrived at. Though in the write-up, the growth is stated as 5%, the sales figures given in Table 95 of the Petition show an assumed growth of about 25%. It is observed that there were year-to-year variations in number of consumers and also connected load and it is not clear how the growth in energy consumption could be negative for street lighting. BSPHCL is directed to look in to this and properly account for the number of consumers, connected load and energy sales. A directive is issued separately.

Since all the street light services are now being metered, the energy consumed shall be properly accounted. In view of large number of villages being electrified and with the improved availability of power, the growth rate of 5% as projected by BSPHCL is considered on the base consumption for 8 MU for STL-I and 43 MU for STL-II considered in FY 2012-13 (RE).

The Commission approves the sales to streetlights for the control period FY 2013-14 to FY 2015-16 as given in the Table below:

Table 8.29: Energy Sales approved for Streetlights during control period

Consumer Category	FY 2013-14	FY 2014-15	FY 2015-16
Street lighting (MU)			
ST-I	**8**	**9**	**9**
ST-II	**45**	**47**	**50**
Total	53	56	59

8.4.10 Public Water Works

The sales to this category accounts for about 0.63% of total energy sales of the two distribution companies within the State. BSPHCL has projected the sales of the category during the control period as given in the Table below:

Table 8.30: Energy Sales projected for Public Water Works

Consumer Category	FY 2013-14	FY 2014-15	FY 2015-16
Public Water Works (MU)	50	52	55

Petitioner's Submission:

The consumption of public water works during the last 5 years has shown as negative growth (-)22.8% CAGR. BSPHCL expects a growth of 5% during the control period FY 2013-14 to FY 2015-16.

Commission's Analysis:

The 3 year, 4 year and 5 year growth rates (CAGR) for energy sales were (-) 34.6%, (-) 26.1%, (-)22.8% respectively. BSPHCL has projected a growth rate of 5% during the control period. It is observed that the negative growth is due to erratic consumption levels as given in the Table below:

Year	Energy Consumption (MU)
FY 2007-08	151
FY 2008-09	161
FY 2009-10	143
FY 2010-11	60
FY 2011-12	45
FY 2012-13	53 (estimated)

The Commission had approved energy sales at 160.3 MU for FY 2012-13 against which estimated sales for FY 2012-13 (RE) are given as 53 MU. The drop in consumption during FY 2010-11 is not explained. There is also drop in the connected load during 2009-10. BSPHCL is directed to explain the variation and account the energy sales correctly. However the growth of 5% on the sale of 54 MU approved for FY 2012-13 (RE) is considered for the control period.

The Commission approves the sales to public water works with 5% growth for the control period as given in the Table below:

Table 8.31: Energy Sales approved for Public Water Works

Consumer Category	FY 2013-14	FY 2014-15	FY 2015-16
Public Water Works (MU)	57	60	63

8.4.11 Irrigation and Agricultural Services (IAs)

The consumption by Irrigation and Agricultural Services (Irrigation Pumpsets) accounts for about 7.0% of total energy sales of the two distribution companies in the State. The consumption by Irrigation Pumpsets under IAS-I is not metered. BSPHCL has projected the energy sales to this category during the control period as given in Table below:

Table 8.32: Energy Sales projected for Agriculture & Irrigation Services for the Control Period FY 2013-14 to FY 2015-16

(**MU)**

Consumer Category	FY 2013-14	FY 2014-15	FY 2015-16
IAS-I	**895**	**1281**	**1838**
IAS-II	**314**	**449**	**645**
Total	1209	1730	2483

Petitioner's Submission:

The BSPHCL has submitted that the specific consumption norm approved by the Commission is 1485 units / kW/annum for IAS-I category, which covers private tubewells. However, due to increased availability of power and implementation of "Krishi Road Map" during MYT control period, the supply hours in rural feeders especially to Irrigation Agriculture Service consumers will improve resulting in more usage of pump sets based on electric power. In view of this BSPHCL has requested to increase the specific consumption of un-metered Irrigation pump sets from 1485 units / KW / annum to 2000 units / KW / annum. It is further submitted that BSPHCL has considered the specific consumption of 2000 units / KW / annum for irrigation pump sets is based on projection of 3 months data of FY 2012-13 and during FY 2012-13 the connected load of agricultural pumpsets is expected to be 214,134 KW.

The BSPHCL has furnished the following information for the year 2010-11 to FY 2015-16 in regard to irrigation and agricultural services.

Table 8.33: Number of Consumers, Connected Load (effective) Consumption of Pumpsets from FY 2010-11 to FY 2015-16

Year / IA Services	Consumers	Connected Load (KW)	Consumption (MU)
FY 2010-11	54709	177437	389
FY 2011-12	57615	180830	363
FY 2012-13	57338	185212	416
FY 2013-14	57062	604733	1209
FY 2014-15	56788	865107	1730
FY 2015-16	56515	1241517	2483

During the preliminary analysis of the Petition, it is observed that there is a quantum jump in the connected load of the pumpsets during FY 2013-14 with the number of consumers / pumpsets being almost constant. The quantum jump in connected load has resulted in increased energy consumption.

The Commission vide letter No.BERC:18/12-1159, dated 27-11-2012 has sought clarification from BSPHCL on abnormal increase in connected load of pumpsets, while there is no similar increase in the consumers. BSPHCL was directed to examine in detail and furnish achievable number of consumers, connected load and energy consumption.

In response, BSPHCL has submitted vide letter No: Cum/Tariff Petition – 160/12012 (Part-I)-3123, dated 20-12-2012 that the abnormal rise in connected load is due to implementation of "Krishi Road Map". It is further submitted by BSPHCL that Irrigation and Agriculture Service sales has been projected on the basis of projected connected load and requested to approve the sales as projected in the Petition.

Commission's Analysis:

The growth in energy consumption of this category over the last 5 years was(-)12.5% (CAGR). The projected connected load and the consumption based on projected load is very high and un-realistic. Further the consumption norm of 2000 units / KW/annum is considered by BSPHCL against 1485 units / KW / annum approved by the Commission.

The issues involved in projection of high energy sales are (i) the abnormal increase in connected load of pumpsets without corresponding increase in number of consumers and (ii) adopting a consumption a norm of 2000 units / kW / annum on the connected load.

The number of consumers, connected load and the average connected load of each pump set for the years 2010-11 to 2012-13 and projection for FY 2013-14 to FY 2015-16 as furnished by BSPHCL are given in the Table below:

Table 8.34: Consumers, Connected load and Connected load of each pumpsets

Year	IAS Category	No. of Consumers	Connected Load (kW)	Connected load of Pumpsets (kW)
FY 2010-11	IAS – I	51663	133057	2.58
	IAS – II	3046	44379	14.57
FY 2011-12	IAS – I	54253	134986	2.49
	IAS – II	3362	45844	13.64
FY 2012-13	IAS – I	53914	137104	2.54
	IAS – II	3424	48108	14.05
FY 2013-14	IAS – I	53807	447656	8.32
	IAS – II	3255	157078	48.25
FY 2014-15	IAS – I	53548	640398	11.96
	IAS – II	3240	224709	69.35
FY 2015-16	IAS – I	53291	919037	17.24
	IAS – II	3224	322480	100.02

It could be seen from the above Table that the average capacity per IAS-I pump set which was 2.54 kW during 2012-13 has gone-up to 8.32 kW during 2013-14, 11.96 kW during 2014-15 and 17.74 kW during FY 2015-16. Similarly, for IAS-II the connected load which was 14.05 kW during FY 2012-13, is projected at 48.25 kW during 2013-14, 69.35 kW during 2014-15 and 100.02 kW during FY 2015-16 and no justification is provided for the increase in connected load of each pumpset.

As seen from the above Table the average capacity of IAS-I pump sets was about 3.73 kW and 14.57 kW for IAS-II pumpsets upto the year 2012-13. In view of implementation of 'Krishi Rural Map' and stress for rapid growth of agricultural sector, the average capacity of each pumpset is considered at 4.0 kW under IAS-I category and the growth of number of number of pumpsets would increase at 5% per annum over the number in FY 2012-13. The total connected load for FY 2013-14, FY 2014-15 & FY 2015-16 is computed by the Commission based on the number of consumers considered for the three years with the capacity of each pump set at 4.00 kW for IAS-I and 15 KW for IAS-II. The number of consumers and connected load so computed by the Commission for the control period are given in the Table below:

Table 8.35: Consumers and Connected Load Approved by the Commission for the Control Period

Year	IAS Category	No. of Consumers	Capacity (kW)	Connected load of Pumpsets (kW)
FY 2013-14	IAS – I	56610	4.0	226440
	IAS – II	3595	15.0	53925
FY 2014-15	IAS – I	59440	4.0	237760
	IAS – II	3775	15.0	56625
FY 2015-16	IAS – I	62412	4.0	249648
	IAS – II	3964	15.0	59460

The Commission approves the connected load as given in the Table above.

The other issue is consumption norm. BSPHCL has considered consumption norm of 2000 units / kW / annum.

Even, if the power supply improves, the power supply to pumpsets will be restricted to certain hours of the day as is the practice in all most all the States. BSPHCL has stated under compliance to the directive that continuous power supply is being made available to pumpsets for 6 hours a day for IAS-I. At 6 hours of power supply per day the pumpsets have to work about 330 days in a year. Pumpsets do not work 330 days in a year to consume 2000 units/kW/annum. Normally to arrive at a norm for working of pumpsets working for about 180 days in a year is considered. Even working 8 hours a day for 180 days the norm of 1485 units approved by the Commission earlier is considered reasonable. The Commission, therefore, retains the norm of 1485 units/kW/annum for IAS-I and 225 units / HP per month for IAS-II as approved by the Commission in the tariff orders for FY 2011-12 and FY 2012-13. Even the consultant appointed by the Commission to assess the consumption of BPL households and agricultural pumpsets has recommended 1485 units/kW/annum after due verification at field level.

Based on the number of pumpsets, connected load per pumpset and total connected load as given in Table 8.35 above, above the energy consumption for Agriculture Services IAS-I and IAS-II is computed for the control period as shown in the Table below:

Table 8.36: Approved Consumption by Agriculture Consumers during the Control Period FY 2013-14 to FY 2015-16

Year	No. of Consumers	Capacity of Pump set (kW)	Connected Load of pumpsets (kW)	Consumption norm - Units / kW / annum	Total Consumption (MU)
IAS – I					
FY 2013-14	56610	4	226440	1485	336
FY 2014-15	59440	4	237760	1485	353
FY 2015-16	62412	4	249648	1485	371
IAS – II					
FY 2013-14	3595	15	53925	3620*	195
FY 2014-15	3775	15	56625	3620	205
FY 2015-16	3964	15	59460	3620	215

* The consumption norm of 225 units / HP / month is converted to units / kW/annum.

The Commission approves the energy sales for the Agricultural Services for the control period FY 2013-14 to FY 2015-16 as given in the Table below:

Table 8.37: Approved Consumption by Agricultural Consumers

Consumer Category	FY 2013-14	FY 2014-15	FY 2015-16
Agricultural Services (MU)			
IAS – I	**336**	**353**	**371**
IAS – II	**195**	**205**	**215**
Total	531	558	586

8.4.12 HT Industry (HT-I, HT-II, HT-III and HTSS)

The energy sales to the HT industry accounts for about 19.6% of the total energy sales of the two distribution companies within the State. BSPHCL projected the sales to the HT industry during the control period as below:

Table 8.38: Projected Energy Sales for HT Industries

Consumer Category	**FY 2013-14**	**FY 2014-15**	**FY 2015-16**
HT Industry Sales (MU)			
HT – I	746	886	1053
HT – II	177	211	251
HT – III	83	98	117
Sub Total (I + II + III)	1006	1195	1421
HTSS	544	647	769
Total HT Industry	**1550**	**1842**	**2190**

Petitioner's submission:

The BSPHCL has submitted that the sales to industrial HT consumption is expected to rise at the rate of 18.83%. It is stated that this has been proposed based on the increased industrialization in Bihar. BSPHCL expects that due to improved availability of power, the sales to HT industrial consumers will increase by at least the overall growth of 18.83% in sales.

Commission's Analysis:

The CAGR of the sales to the HT industry was 14.0% over a 5 year period FY 2007-08 to FY 2011-12 and was 11.1% over 4 year period FY 2007-08 to FY 2011-12 and 4.9% over a 3 year period FY 2007-08 to FY 2011-12. The 5-year CAGR is the highest. BSPHCL has projected 18.83% to 19.00% growth for HT-I, HT-II & HT-III and HTSS based on improved availability of power and expected growth in industry. The Commission considers 19% growth for HT-I, HT – II, HT-III & HTSS during the control period FY 2013-14 to FY 2015-16 on the base consumption considered for FY 2012-13 (RE).

The Commission approves the energy sales to HT industry during the control period FY 2013-14 to FY 2015-16 as given in the Table below:

Table 8.39: Approved Energy Sales for HT Industry

Particulars	FY 2013-14	FY 2014-15	FY 2015-16
HT Industry Sales (MU)			
HT – I	747	889	1058
HT – II	219	261	310
HT – III	193	230	273
HTSS	523	622	741
Total	**1682**	**2002**	**2382**

8.4.13 Railway Traction

The energy sales to Railway traction accounts to about 7.01% of the total energy sales of the two distribution companies in the State. BSPHCL has projected the energy sales of the category for the control period as given in Table below:

Table 8.40: Energy Sales Projected for Railway Traction

Consumer Category	FY 2013-14	FY 2014-15	FY 2015-16
Railway Traction (MU)	551	606	667

Petitioner's submission:

The BSPHCL has projected the sales for railway traction at 10% CAGR for the control period. The points of supply to railway traction were 17 in FY 2011-12 and there is no increase in the connections that indicates that there is no extension of electrification of track.

Commission's Analysis:

The growth rate in consumption of the category over the last 5 year was 7%. The growth rate had been 7% to 10% over the last 4 years. The growth of 10%, without any extension of track electrification is considered reasonable and approved as projected by BSPHCL.

The Commission approves the energy sales to Railway traction load during the control period FY 2013-14 to FY 2015-16 as given in the Table below:

Table 8.41: Energy Sales Approved for Railway Traction During the Control Period

Consumer Category	FY 2013-14	FY 2014-15	FY 2015-16
Railway Traction (MU)	**551**	**606**	**667**

8.4.14 Energy Sales to Nepal (NEA)

The BSPHCL has projected the energy sales to Nepal at 1000 MU for each year of the control period as given in the Table below:

Table 8.42: Energy sales projected for Nepal for the control period

Particulars	FY 2013-14	FY 2014-15	FY 2015-16
Energy sales to Nepal (MU)	**1000**	**1000**	**1000**

Petitioner's submission:

The BSPHCL has not submitted the justification for the increase in sales against actual sales of 500.27 MU during FY 2011-12. The sales projected to Nepal appears to be including UI sales as mentioned in Table-98 under Energy balance.

Commission's Analysis:

The actual sales to Nepal as per Audited Accounts for FY 2011-12 are 500.27 MU. The Commission approved the sales to Nepal at 555 MU for FY 2012-13 in the Tariff Order for FY 2012-13. BSPHCL has revised the sales for FY 2012-13 to 1023 MU in the present Petition without furnishing any justification for the increase in sales quoting any revised agreement. In view of this, the Commission considers the sales to Nepal at 550 MU during the control period. The Commission does not consider any purchase under UI.

The Commission approves the energy sales for Nepal for the control period as given below in the Table below:

Table 8.43: Approved energy sales to Nepal for the control period

Particulars	FY 2013-14	FY 2014-15	FY 2015-16
Energy sales to Nepal (MU)	**550**	**550**	**550**

8.4.15 Total Energy Sales

Total energy sales as projected by BSPHCL and approved by the Commission for the control period are given in the Tables below:

Table 8.44: Energy sales projected by BSPHCL for the control period FY 2013-14 to FY 2015-16

(MU)

Consumer Category	2013-14	2014-15	2015-16
Domestic Service	**3,438**	**4,297**	**5,372**
Kutir Jyoti - BPL Consumer	833	1,041	1,301
Domestic - I	691	863	1,079
Domestic - II	1,913	2,392	2,990
Domestic-III	1	1	1
Non Domestic Service	**803**	**1,003**	**1,254**
Non-Domestic - I	19	24	30
Non-Domestic - II	781	976	1,220

Consumer Category	2013-14	2014-15	2015-16
Non-Domestic - III	3	4	5
Street Light Service	**26**	**32**	**40**
Street Light - I	5	6	8
Street Light - II	20	25	32
Irrigation & Agriculture Service	**1,209**	**1,730**	**2,483**
IAS - I	895	1,281	1,838
IAS - II	314	449	645
Public Water Works	**50**	**52**	**55**
LT Industrial Service	**278**	**314**	**354**
LTIS - I	151	171	193
LTIS - II	127	143	161
HT Industrial Service	**1,550**	**1,842**	**2,189**
HTS - I	746	886	1,053
HTS - II	177	211	251
HTS - III	83	98	117
HTSS	544	647	769
Railway Traction Service	**551**	**606**	**667**
Nepal	**1,000**	**1,000**	**1,000**
Grand Total Sales including UI and Nepal	**8,905**	**10,877**	**13,413**

Table 8.45: Energy sales approved by the Commission for the control period FY 2013-14 to FY 2015-16

(MU)

Consumer Category	2013-14	2014-15	2015-16
LT Consumers			
Domestic Service			
Kutir Jyoti			
- Rural	365	456	570
- Urban	67	84	105
Sub-Total	**432**	**540**	**675**
Domestic Service			
Domestic - I	689	861	1,076
Domestic - II	1867	2241	2689
Domestic-III	1	1	1
Sub-Total	**2557**	**3103**	**3766**
Non Domestic Service			
Non-Domestic - I	19	24	30
Non-Domestic - II	870	1044	1253
Non-Domestic - III	3	4	5
Sub-Total	**892**	**1072**	**1288**
Industrial (LT) Services			
LTIS-I	172	206	247
LTIS-II	116	140	168
Sub-Total	**288**	**346**	**415**
Street Light (Public lighting)			
Streetlight -I	8	9	9

Consumer Category	2013-14	2014-15	2015-16
Streetlight -II	45	47	50
Sub-Total	**53**	**56**	**59**
Public Water Works	**57**	**60**	**63**
Irrigation & Agriculture Service			
IAS – I	336	353	371
IAS - II	195	205	215
Sub-Total	**531**	**558**	**586**
LT Total	**4810**	**5735**	**6852**
HT Consumers			
HT Industrial Service			
HTS - I	747	889	1058
HTS - II	219	261	310
HTS - III	193	230	273
HTSS	523	622	741
Sub-Total	**1682**	**2002**	**2382**
Railway Traction	551	606	667
Total HT Services	**2233**	**2608**	**3049**
Nepal	550	550	550
Grand Total Sales including Nepal	**7593**	**8893**	**10451**

8.5 Transmission and Distribution (T&D) Losses

The BSPHCL has not projected the T&D loses for the control period under separate head in the Petition. It has mentioned the T&D losses in Table-98 for the control period under proposed energy balance as below:

Table 8.46: Projected Transmission and Distribution Losses for the control period

Year	T&D loss Projected (%)
FY 2012-13	42
FY 2013-14	38
FY 2014-15	34
FY 2015-16	28.5

Commission's Analysis:

The T&D losses were discussed in detail and the loss trajectory was fixed by the Commission in the earlier Tariff Orders from FY 2006-07 to FY 2013-14 and the Commission recorded in the Tariff Order of FY 2012-13 as below:

"Therefore, the Commission considers and approves T&D losses at 27.5% for FY 2012-13 and sets T&D loss trajectory of 26.0% for FY 2013-14 and 24.5% for FY 2014-15. The Commission also approves the consumption norms of 18 units per month for Kutir Jyoti (Rural unmetered) and 1485 units /kW/annum for IAS-I consumers".

The Commission, accordingly, regulated the quantum of power purchase considering T&D losses at 27.5% for FY 2012-13. The Commission approves the T&D loss for the control period as below:

Year	Distribution approved (%)
FY 2013-14	26.0
FY 2014-15	24.5
FY 2015-16	23.0

Since the Board is now unbundled and a separate Transmission Company is formed from November, 2012, the distribution companies have no control over the transmission loss. Hence, the transmission and distribution losses are to be accounted separately. In the MYT Petition the Transmission Company has assumed the transmission loss at 4%. In the Energy Audit Report submitted by BSPHCL on 1st March, 2013 for the FY 2012-13 (April to October, 2012), the transmission loss level is given as 3.99%.

The transmission loss at 4% is considered by the Commission for segregation of transmission and distribution losses. TRANSCO has to conduct further energy audit and arrive at actual transmission loss while filing the Petition for FY 2014-15. Meanwhile the transmission and distribution losses are approved for the control period as below:

Table 8.47: Transmission and Distribution Losses approved for the control period

Year	T&D Losses (%)	Transmission Losses(%) *	Distribution Losses (%)
FY 2013-14	**26**	**4**	**23.0**
FY 2014-15	**24.5**	**4**	**21.4**
FY 2015-16	**23.0**	**4**	**20.0**

* subject to actuals based on energy audit.

The distribution losses are regulated as above from FY 2013-14 to FY 2015-16 by the Commission. The distribution companies shall conduct energy audit based on metered consumption of all consumers and meters provided on 33 kV, 11 kV lines and distribution transformers.

8.6 Energy Requirement at Distribution Periphery

The total energy requirement of a distribution company to meet the total demand of its consumers would be the sum of estimated energy sales and the system losses (transmission and distribution) as approved by the Commission. The estimated energy sales, the transmission and distribution losses and the estimated energy requirement for the control period FY 2013-14 to FY 2015-16 as projected by BSPHCL are given in the Table below:

Table 8.48: Total projected energy available and requirement during the control period

Sl. No.	Particulars	2013-14	2014-15	2015-16
1	Energy Availability (MU) (After ER Transmission Loss of 3.09%)	15396	22862	29089
2	Retail Energy Sales (MU)	7905	9877	12413
3	UI Sales+ Nepal (MU)	1000	1000	1000
4	T&D Loss	38.0%	34.0%	28.5%
5	Energy required for Retail Sales (MU)	14363	16480	18760
6	Surplus/(Shortage) Energy (MU)	1034	6382	10329

Commission's Analysis:

BSPHCL has projected the energy requirement considering the energy sales and transmission and distribution losses projected by it. The Commission has considered the energy sales and distribution losses approved by the Commission in paragraph 8.4 and Tables 8.45 and 8.47 above to arrive at the energy requirement at the distribution periphery as given in Table below:

Table 8.49: Total approved energy requirement during the control period

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	Estimated energy sales including sales to Nepal (MU)	7593	8893	10451
2	Distribution losses (MU)	2268	2421	2613
	(%)	23.0	21.4	20.0
3	Energy input requirement at distribution periphery (MU)	9861	11314	13064

8.7 Total Energy Requirement into Transmission System

Petitioner's submission:

The summary of energy balance projected by BSPHCL is given in Table 8.48 above. BSPHCL has arrived at the total energy requirement considering transmission and distribution losses at 38.0%, 34.0% and 28.5% for the years 2013-14, 2014-15 and 2015-16 respectively and PGCIL pool loss of Eastern Region at 3.09%.

Commission's Analysis:

The Commission has considered the approved distribution losses at 23.0%, 21.4% and 20% for the years FY 2013-14, 2014-15 and 2015-16 respectively and the transmission loss at 4%. The PGCIL pool loss of Eastern Region is considered at 2.73% for the control period as per the information obtained from ERLDC for FY 2012-13

Based on the approved energy sales, distribution losses and transmission losses the total energy requirement into transmission system is given in the Table below:

Table 8.50: Total energy requirement approved for the control period

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	Energy sales including sales to Nepal (MU)	7593	8893	10451
2	Distribution losses (MU)	2268	2421	2613
	(%)	23	21.4	20.0
3	Energy input required at distribution periphery (MU)	9861	11314	13064
4	Transmission losses (MU)	411	471	544
	(%)	4	4	4
5	Total energy input required into transmission system (MU)	10272	11785	13608

8.8 Power Purchase

Petitioner's submission:

BSPHCL has submitted that the Distribution Companies have firm allocation of power from thermal power plants of NTPC, Hydel power plants of NHPC, Hydel plants of Chukka and Tala through PTC, hydel power plants of BSHPC and thermal power plants of BSGCL and Kanti BUNL. In addition BSPHCL/distribution companies are procuring power from DVC and private sector power plants of Adani, Essar and GMR, power from non-conventional energy sources under RPO and other sources within Bihar.

The power purchase projections of the NTPC stations – Farakka-I, II and III, Talchar and Kahalgaon I&II are projected at the approved power purchase quantum in MU by the Commission for FY 2012-13.

The energy available from State allocations in the upcoming thermal plants in Nabinnagar, Barh and DVC have been calculated at 85% overall availability. The energy available from the private generating stations of Adani, GMR, ESSAR and Tilaya (UMPP) have been calculated at full contracted capacity. The power purchase from Hydro stations has been projected assuming operational period of 6 months of these plants and 85% of availability to Bihar.

It is also submitted that the energy balance for the MYT period is estimated by considering the energy available from the current allocations and adjusting Eastern region losses at 3.09% for power drawn from central sector power plants except Kahalgaon units of NTPC.

Power purchase under Solar RPO is considered as per RPO Regulations. The total solar RPO is 0.25% of energy sales for FY 2013-14, 0.5% of energy sales in FY 2014-15 and 0.75% in FY 2015-16.

It is further submitted that with the growth of installed capacity combined with rapid T&D loss reduction, the state is likely to have surplus energy for sale. BSPHCL proposes to sell the surplus power at a price equal to the overall power purchase cost of the year, so that there is neutral impact of the surplus power on the overall power purchase cost.

8.8.1 Power Purchase Sources

Petitioner's Submission:

The various sources of power purchase by BSPHCL consist of State operating plants of BSPGCL, joint sector project – KUBNL, hydro plants of BSHPC, central sector stations – (NTPC, NHPC, PTC and DVC), IPPs, renewable sources of energy, other sources, etc. The power purchase sources include the existing and additional capacity envisaged during the control period.

The proposed source-wise allocation (in MW), energy (in MU) as per capacity allocated / contracted for the control period FY 2013-14 to FY 2015-16 by BSPHCL are given station-wise as below:

Table 8.51: Proposed source-wise capacity allocation (in MW) and power purchase (in MU) for the control period FY 2013-14 to FY 2015-16

Stations	**2013-14**		**2014-15**		**2015-16**	
NTPC	MW	MU	MW	MU	MW	MU
a) Farakka 1,2 and 3	528	2889	528	2889	528	2889
b) Talchar	398	2449	398	2449	398	2449
c) Kahalgaon 1 and 2	438	2670	438	2670	438	2670
Barh - Stg 2 #1	330	1638	330	2457	330	2457
Barh - Stg 2 #2			330	2048	330	2457
Barh - Stg 1 Unit 1			175	977	175	1303
Barh - Stg 1 Unit 2					175	1194
Barh - Stg 1 Unit 3					175	109
NTPC Total	1694	9646	2199	13490	2549	15528
Railway & NTPC						
Nabinagar - I					25	186
Nabinagar - II					25	186
Nabinagar - III						
Nabinagar - IV						
Total Nabinagar					50	372

Stations	2013-14		2014-15		2015-16	
NTPC	MW	MU	MW	MU	MW	MU
NHPC						
a) Rangit	21	78	21	78	21	78
b) Teesta	108	404	108	404	108	404
Total NHPC	129	482	129	482	129	482
PTC						
Chukka	80	298	80	298	80	298
Tala	260	968	260	968	260	968
Total PTC	340	1266	340	1266	340	1266
DVC						
DVC	100	745	100	745	100	745
Total DVC	100	745	100	745	100	745
Others						
Adani	200	1752	200	1752	200	1314
NEA + Short Term		50	-	50	-	50
Essar			450	2957	450	3942
Essar 2			-	-	300	1314
GMR			-	-	260	949
Total Others	200	1802	650	4759	1210	7569
State						
BSHPC	53	45	53	45	53	45
Sugar Mills		80		80		80
KBUNL # 1 (MTPS Stg 1)	110	573	110	607	110	607
KBUNL # 2 (MTPS Stg 1)	110	477	110	607	110	607
KBUNL # 3 (MTPS Stg 2)					132	363
UI Sales						
Solar RPO		19		49		93
Total of Outside Sources*	2736	15135	3691	22130	4783	27757

* Totals are corrected.

Commission's Analysis:

The BSPHCL proposes to purchase power from BTPS of BSPGCL, Central generating stations of NTPC and NHPC, DVC, PTC-Chukka and Tala, KUBNL and IPPs from outside the State and others to meet the demand of the two distribution companies. The proposed source-wise purchases are given in Table 8.51 above.

BSPHCL, the successor of BSEB and a holding company which is also entrusted with purchase and sale (trading) function of electricity, has firm allocation from central generating stations–NTPC and NHPC, PTC-Chukka and Tala and has also contracts for long time purchase of power with these companies. BSPHCL has also entered contract with IPPs – Adani, Essar and GMR and joint venture KUBNL and others. As mentioned earlier in para 8.8, BSPHCL projected the energy available from central stations for the control period as approved by the Commission in the Tariff Order FY

2012-13 the energy as projected from these stations is about 70% PLF which is far less than the PLF of NTPC stations which is normally 80-95%. The reduced availability might be due to non availability of adequate quantum of coal. Hence the availability of energy from NTPC stations is kept at FY 2012-13 level. The energy available from other existing stations and upcoming stations is considered as projected by BSPHCL. The Commission considers the purchase of power from the above sources as given in Table below:

Table 8.52: Power purchase projected by BSPHCL and approved by the Commission for the control period FY 2013-14 to FY 2015-16

(MU)

Power Stations	FY 2013-14		FY 2014-15		FY 2015-16	
	Projected by BSPHCL	Approved by the Commission	Projected by BSPHCL	Approved by the Commission	Projected by BSPHCL	Approved by the Commission
1. NTPC						
a) Farakka 1,2 and 3	2889	2889	2889	2889	2889	2889
b) Talchar	2449	2449	2449	2449	2449	2449
c) Kahalgaon 1 and 2	2670	2670	2670	2670	2670	2670
d) Barh - Stag 2						
Unit-1	1638	1638	2457	2457	2457	2457
Unit-2	-	-	2048	2048	2457	2457
Barh – Stag-1						
Unit 1	-	-	977	977	1303	1303
Unit 2	-	-	-	-	1194	1194
Unit 3	-	-	-	-	109	109
NTPC Total	**9646**	**9646**	**13490**	**13490**	**15528**	**15528**
2. NTPC/Railway						
Nabinagar - I	-	-	-	-	186	186
Nabinagar - II	-	-	-	-	186	186
Nabinagar - III	-	-	-	-	-	-
Nabinagar - IV	-	-	-	-	-	-
NTPC & Railways					**372**	**372**
3. NHPC						
a) Rangit	78	78	78	78	78	78
b) Teesta	404	404	404	404	404	404
Total NHPC	**482**	**482**	**482**	**482**	**482**	**482**
4. PTC						
Chukka	298	298	298	298	298	298
Tala	968	968	968	968	968	968
Total PTC	**1266**	**1266**	**1266**	**1266**	**1266**	**1266**
5. DVC						
DVC	745	745	745	745	745	745
6. Others						
Adani	1752	1752	1752	1752	1314	1314

Power Stations	FY 2013-14		FY 2014-15		FY 2015-16	
	Projected by BSPHCL	Approved by the Commission	Projected by BSPHCL	Approved by the Commission	Projected by BSPHCL	Approved by the Commission
Essar-1	-	-	2957	2957	3942	3942
Essar 2	-	-	-	-	1314	1314
GMR	-	-	-	-	949	949
NEA	50	50	50	50	50	50
Total Others	**1802**	**1802**	**4759**	**4759**	**7569**	**7569**
7. BSHPC	45	45	45	45	45	45
8. KBUNL (MTPS)						
Unit-1	573	573	607	607	607	607
Unit-2	477	477	607	607	607	607
Unit-3	-	-	-	-	363	363
KBUNL (MTPS) total	**1050**	**1050**	**1214**	**1214**	**1577**	**1577**
9. Sugar Mills	**80**	**80**	**80**	**80**	**80**	**80**
10.Solar RPO	**19**	**19**	**49**	**49**	**93**	**93**
Total out side source	**15135**	**15135**	**22130**	**22130**	**27757**	**27757**

Since BSPHCL has contracts for purchase of power from all the above stations / sources, it is obligatory for BSPHCL to purchase power from the above sources.

In addition BSPHCL has to purchase power from BTPS of BSPGCL. The quantum of power and the cost of power purchase from BTPS are considered as per analysis of ARR of BSPGCL for the control period as discussed in Chapter-6.

Summing up the quantum of power purchase approved from various sources is given in the Table below:

Table 8.53: Power purchase approved by the Commission for the control period FY 2013-14 to FY 2015-16

(MU)

Sl. No.	Generating Company / Station	FY 2013-14	FY 2014-15	FY 2015-16
1.	NTPC	9646	13490	15528
2.	NTPC/Railways	-	-	372
3.	NHPC	482	482	482
4.	PTC	1266	1266	1266
5.	DVC	745	745	745
6.	IPPs (Adani, Essar & GMR)	1752	4709	7569
7.	BSHPC	45	45	45
8.	NEA	50	50	50
9.	KBUNL	1050	1214	1577
10.	BTPS	639	1214	1214
11.	Sugar Mills	80	80	80
12.	Solar RPO	19	49	93
13.	Total	15774	23344	28971

Commission approves purchase of power at 15774 MU for 2013-14, 23344 MU for 2014-15 and 28971 MU for FY 2015-16.

8.9 Energy Balance

Petitioner's Submission:

BSPHCL has drawn the energy balance for the control period based on projected energy sales, T&D losses and availability of power from various sources.

Energy balance projected by BSPHCL for the control period is given in Table below:

Table 8.54: Projected Energy Balance for the control period for FY 2013-14 to FY 2015-16

(MU)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1.	Energy Sales within State	7905	9877	12413
2.	Sales from additional power availability	-	-	-
3.	Energy outside State (Nepal)	1000	1000	1000
	Sale in bilateral trade/UI			
4.	Total sales	8905	10877	13413
5.	T&D losses	38%	34%	28.50%
6.	T&D losses	5458	5603	5347
7.	Energy requirement (4+6)	14363	16480	18760
8.	Energy availability	15733	23317	29618
9.	Transmission loss in regional network (%)	3.09%	3.09%	3.09%
10.	Transmission loss in regional network	336	455	529
11.	Net power availability (8-10)	15397	22862	29089
12.	Surplus/(deficit) (11-7)	1034	6382	10329

Commission's Analysis:

The Commission has drawn the energy balance based on the energy sales, T&D losses and energy available approved by the Commission.

The Commission has considered the pool losses for the Eastern Region (PGCIL network) at 2.73% as obtained from ERLDC.

The energy balance approved by the Commission is given in Table below:

Table 8.55: Approved Energy Balance for the control period FY 2013-14 to FY 2015-16

(MU)

Sl. No.	Particulars	Units	FY 2013-14	FY 2014-15	FY 2015-16
1.	Energy Sales within State including sales to Nepal	MU	7593	8893	10451
2.	Distribution losses	MU	2268	2421	2613
		%	23.00	21.40	20.00
3.	Energy input required at the distribution periphery	MU	9861	11314	13064
4.	Transmission losses	%	4	4	4
5.	Total energy to be input to transmission system	MU	10272	11785	13608
6.	Total power from central generating stations and other outside sources	MU	15774	23344	28971
7.	Transmission loss in regional system at 2.73% of power from	MU	331	436	492

	central stations.				
8.	Total power available for BSPHCL (6-7)	MU	15443	22908	28479
9.	Surplus available (8-5)	MU	5171	11123	14871

The energy requirement at T&D losses projected by BSPHCL and at the Distribution losses approved by the Commission for the energy sales approved by the Commission for FY 2013-14 to FY 2015-16 are as given in the Table below:

Table: 8.56: Surplus power available and additional power disallowed due to excess distribution Loss

Sl.No	Particulars	Unit	FY 2013-14		FY 2014-15		FY 2015-16	
			As per BERC approved losses Trajectory	As per BSPHCL loss Trajectory Proposed	As per BERC approved loss Trajectory	As per BSPHCL loss Trajectory Proposed	As per BERC approved loss Trajectory	As per BSPHCL loss Trajectory Proposed
	Energy Requirement							
1	Energy sales within state including Nepal	MU	7593	8905	8893	10877	10451	13413
2	Distribution Losses	%	23	38	21.4	34	20	28.5
3		MU	2268	5458	2421	5603	2613	5347
4	Energy Input for distribution network	MU	9861	14363	11314	16480	13064	18760
5	Transmission Losses	%	4	*	4	*	4	*
6	Total Energy requirement in to transmission system	MU	10272	14363	11785	16480	13608	18760
7	Total power purchase	MU	10492	15774	12009	23344	13843	28971
8	Losses in Regional transmission system	%	2.1%	2.1%	1.87%	1.87%	1.70%	1.70%
9	Regional losses	MU	220	331	224	436	235	492
10	Net power availability	MU	10272	15443	11785	22908	13608	28479
11	Surplus power	MU	5295		11335		15128	
12	Additional power at State Transmission periphery due to excess distribution loss	MU	4091		4695		5152	
13	Additional power purchase due to excess distribution loss disallowed	MU	4179		4784		5241	

*Transmission losses are not considered separately, as it included in Distribution losses.

The total purchases from long term sources has been worked out considering the impact of average regional transmission losses applicable in the total actual power purchases by BSEPHCL.

Average regional transmission losses during the control period are as given below:

FY 2013-14	FY 2014-15	FY 2015-16
331x100/15774 = 2.1%	436x100/23347 1.87%	492x100/28971 1.70%

The reason for applying the average regional transmission losses is that the power purchase quantum by BSPHCL also includes sources of power on which regional transmission losses are not applicable eg. UI power, Nepal (NEA), BSHPC etc.

Accordantly, the gross power purchase required to be done during the control period is as given below:

FY 2013-14	FY 2014-15	FY 2015-16
10272/1-2.1÷100 = 10492 MU	11785/1-1.87÷100 = 12009 MU	13608/1-1.70÷100 = 13843 MU

Accordingly, the Commission has disallowed power purchase quantum equivalent to 4179 MU, 4784 MU and 5241 MU for FY 2013-14, FY 2014-15 and FY 2015-16 respectively based on principle that excess power purchase on account of higher T&D losses i.e. over and above approved losses shall not be permitted.

The net surplus power available for sale outside the State during the control period is as given below:

(MU)

Year	Surplus power available (as in Table 8.55)	Power purchase disallowed (as per Table 8.56)	Net surplus power available for sale (2-3)
1	2	3	5
FY 2013-14	5295	4179	1116
FY 2014-15	11335	4784	6551
FY 2015-16	15128	5241	9887

8.10 Revenue Requirement for the control period FY 2013-14 to FY 2015-16

The components for calculation of revenue requirement (total expenses) for the control period FY 2013-14 to FY 2015-16 are as follows:

- Power purchase cost
- Operation and maintenance expenses
- Depreciation
- Interest on loans and finance charges

- Interest on working capital
- Provision for bad debts
- Return on equity
- Provision for tax

8.11 Projected expenses by BSPHCL and decisions of the Commission

The projected expenses by BSPHCL under each head and the analysis and decisions of the Commission are discussed below:

8.11.1 Power purchase cost

Petitioner's submission:

BSPHCL has submitted that for the projection of power purchase cost, it has considered the plant wise actual cost incurred for power purchase from April, 2012 to September, 2012 for NTPC, NHPC, PTC and other plants. But BSPHCL has arrived at the power purchase cost based on the trends of actual per unit power purchase cost from FY 2008-09 to FY 2011-12 and FY 2012-13 (on the basis of data available from April, 2012 to September, 2012) and the power purchase costs have been projected for the MYT period (FY 2013-14 to FY 2015-16) by escalating the per unit actual cost of FY 2012-13 at CAGR of 5 years. The per unit rate of new plants is escalated at 5%.

The actual power purchase cost as claimed by various generating companies for the period April,2012 to September, 2012, the CAGR of 5 years as calculated by BSPHCL based on the trend of the actual unit cost during the years 2008-09 to 2012-13 (six months) are given in the Tables below:

Table 8.57: Actual Power purchase details (April 2012 to September, 2012)

Sl. No.	Source	MUs Purchased	Cost (in Rs. crore)	Per Unit
1.	Adani Medium Term	627.0	271.0	4.32
2.	Bharat Sugar	13.9	5.9	4.23
3.	BHPC	28.4	7.3	2.57
4.	Chukha (PTC)	290.0	57.7	1.99
5.	Farakka I and II	1259.6	487.7	3.87
6.	Farakka III	157.3	75.5	4.80
7.	Harinagar Sugar M	11.6	5.3	4.57
8.	HPC/Biofuels/Luriya	(0.4)	(0.2)	4.53
9.	HPC/Biofuels/Sugauli	(0.1)	(0.0)	4.53
10.	Kahalgaon -I	1046.0	337.0	3.22
11.	Kahalgaon -II	285.2	97.4	3.42
12.	Kanti (KBUNL)	-	-	-
13.	NEA Purchase	0.7	0.3	4.90
14.	NEA Sale	(236.1)	(88.9)	3.77
15.	NHPC (Ranggit)	68.4	25.3	3.69
16.	NHPC (Teesta)	363.1	73.0	2.01
17.	NS Sugar Mill	1.3	0.5	4.16
18.	NVVNL Short Term	758.2	324.9	4.28
19.	Tala (PTC	561.2	131.5	2.34
20.	Talcher	1292.6	318.9	2.47
21.	Transmission Charges	-	90.4	-
22.	UI Purchase	16.9	0.6	0.33
23.	UI Sale	(451.3)	(155.7)	3.45
24.	Grand Total	6093.5	2065.3	3.39

Table 8.58: Trends of per unit power purchase cost from FY 2008-09 to FY 2012-13

(Paise/unit)

Source	FY 2008-09	FY 2009-10	FY 2010-1	FY 2011-12	FY 2012-13 (P)	CAGR (%)
NTPC	220.11	263.33	316.37	265.2	342.80	11.7%
NHPC	190.13	192.50	194.48	224.67	244.70	6.5%
PTC	194.07	193.16	193.00	179.29	239.24	5.4%
Others	218.23	254.44	296.21	358.42	481.63	21.9%

Based on the methodology of escalating the unit cost of power purchase at CAGR of 5 year as per Table 8.58 above, BSPHCL has worked out the source-wise power purchase cost for the control period as given in the Table below:

Table 8.59: Projected source-wise power purchase cost for the control period FY 2013-14 to FY 2015-16

Sl. No.	Source/ Power Plant	FY 2013-14			FY 2014-15			FY 2015-16		
		Energy purchased (MU)	Average unit (Rs/unit)	Total Power Purchased cost	Energy purchased (MU)	Average Unit (Rs/Unit)	Total Power purchased cost	Energy purchased (MU)	Average Unit (Rs/Unit)	Total Power purchased cost
1	2	3	4	5	6	7	8	9	10	11
1	**NTPC**									
	a) Farakka 1,2 and 3	2889	3.83	1106	2889	4.28	1236	2889	4.78	1381
	b) Talchar	2449		938	2449		1048	2449		1171
	c) Kahalgaon 1 and 2	2670		1023	2670		1143	2670		1276
	Barh - Stg 2 #1	1638		627	2457		1052	2457		1174
	Barh - Stg 2 #2				2048		876	2457		1174
	Barh - Stg 1 Unit 1				977		418	1303		623
	Barh - Stg 1 Unit 2							1194		571
	Barh - Stg 1 Unit 3							109		52
	NTPC Total	**9646**		**3694**	**13490**		**5771**	**15528**		**7422**
2	**Railway & BSEB**									
	Nabinagar - I							186	4.78	89
	Nabinagar - II							186		89
	Nabinagar - III		3.83			4.28				
	Nabinagar - IV									
	Total Nabinagar							**372**		**178**
3	**NHPC**									
	a) Rangit	78	2.29	18	78	2.44	19	78	2.59	20
	b) Teesta	404		92	404		98	404		105
	Total NHPC	**482**		**110**	**482**		**117**	**482**		**125**
4	**PTC**									
	Chukka	298	2.88	114	298	3.04	127	298	3.20	142
	Tala	968		370	968		414	968		463
	Total PTC	**1266**		**484**	**1266**		**542**	**1266**		**605**
5	**DVC**									
	DVC	745	3.83	285	745	4.28	319	745	4.78	356
	Total DVC	**745**		**285**	**745**		**319**	**745**		**356**
6	**Others**									
	Adani	1752	4.17	731	1752	4.38	767	1314	4.60	604
	NEA + UI	50	-	19	50	-		50	-	23
	Essar		4.00		2957	4.20	1242	3942	4.41	1812
	Essar 2		4.00			4.20		1314	4.41	604
	GMR		4.00			4.20		949	4.41	430
	Tilalya UMPP		3.00			3.15			3.31	
	Total Others	**1802**		**750**	**4759**		**2009**	**7569**		**3480**
7	**State**									
	BTPS	136	6.87	94	594	5.45	324	594	6.34	377
	BTPS	461	6.87	317	594	5.45	324	594	6.34	377

Sl. No.	Source/ Power Plant	FY 2013-14			FY 2014-15			FY 2015-16		
		Energy purchased (MU)	Average unit (Rs/unit)	Total Power Purchased cost	Energy purchased (MU)	Average Unit (Rs/Unit)	Total Power purchased cost	Energy purchased (MU)	Average Unit (Rs/Unit)	Total Power purchased cost
1	2	3	4	5	6	7	8	9	10	11
	BTPS Stg 2		6.87			5.45		673	6.34	427
	BSHPC	45	2.10	9	45	2.21	10	45	2.32	10
	Sugar Mills	80	4.17	33	80	4.38	35	80	4.60	37
	KBUNL # 1 (MTPS Stg 1)	573	4.00	229	607	4.20	255	607	4.41	268
	KBUNL # 2 (MTPS Stg 1)	477	4.00	191	607	4.20	255	607	4.41	268
	KBUNL # 3 (MTPS Stg 2)		4.00			4.20		364	4.41	161
	Solar RPO	**20**	**11.00**	**22**	**49**	**11.33**	**56**	**93**	**11.67**	**109**
	STU Charge			289			343			379
	Total State	**1792**		**1183**	**2576**		**1602**	**3657**		**2413**
8	**Total**	**15733**		**6508**	**23318**		**10359**	**29619**		**14574**
			Avg. PP Cost FY 2013-14			Avg. PP Cost FY 2014-15			Avg. PP Cost FY 2-15-16	
9	**Central sector transmission loss 3.09 %**	**486**	**4.23**		**721**	**4.53**		**915**	**5.01**	

Commission's Analysis:

As discussed in the preceding paragraphs, BSPHCL has considered the power purchase cost for the control period FY 2013-14 to FY 2015-16 by applying CAGR of 5 years on the trends of unit power purchase cost from FY 2008-09 to FY 2012-13 on the actual rates paid for power from various generating companies during April 2012 to September, 2012.

The Commission does not approve the methodology considered by BSPHCL in arriving at the power purchase cost for the control period. The Commission has however, considered the power purchase cost of BSPHCL station (BTPS) as approved in chapter 6. For NTPC stations, the Commission has considered 5% increase per annum over the actual rates of April to September 2012, to cover likely increase in the cost of coal and transportation charges. NHPC has revised power purchase price of Rangit HPS, and it has built in bills claimed from April to September 2012. The Commission has also considered 5% increase in power purchase from Tala and Chukka projects in Bhutan. For the power purchased from Adani and other IPPs, the cost as provided in the PPA are considered and for power from other sources (now and existing) the cost as claimed by BSPHCL is approved.

The Commission has approved the quantum of power purchase from all the central generating stations and others as proposed by BSPHCL as they have long / medium term contracts and it is obligatory to purchase power offered by these sources. The Commission would however, limit the power purchase to the energy requirement approved in paragraph 8.8.1 and Tables 8.50 and 8.55. The surplus power after meeting the demand of the consumers fully without any restrictions on power supply shall be sold outside at the average purchase cost to neutralize the impact of purchase of additional power.

The source-wise power purchase cost for the control period as approved by the Commission is given in Table below:

Table 8.60: Power purchase cost approved for the control period FY 2013-14 to FY 2015-16

Sl. No.	Source/ Power Plant	FY 2013-14			FY 2014-15			FY 2015-16		
		Energy available (MU)	Purchase cost (Rs/Unit)	Total Power purchase cost (Rs. crore)	Energy available (MU)	Purchase cost (Rs / Unit)	Total Power purchase cost (Rs. crore)	Energy available (MU)	Purchase cost (Rs/Unit)	Total Power purchase cost (Rs. crore)
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
1	**NTPC**									
	a) Farakka 1,2 and 3	2889	4.17	1205	2889	4.38	1265	2889	4.60	1329
	b) Talchar	2449	2.59	634	2449	2.72	666	2449	2.86	700
	c) Kahalgaon 1 and 2	2670	3.42	913	2670	3.59	959	2670	3.77	1007
	Barh - Stg 2 #1	1638	4.00	655	2457	4.00	983	2457	4.00	983
	Barh - Stg 2 #2				2048	4.00	819	2457	4.00	983
	Barh - Stg 1 Unit 1				977	4.00	391	1303	4.00	521
	Barh - Stg 1 Unit 2							1194	4.00	478
	Barh - Stg 1 Unit 3							109	4.00	44
	NTPC Total	**9646**		**3407**	**13490**		**5083**	**15528**		**6045**
2	**Railway & BSEB**									
	Nabinagar - I							186	4.00	74
	Nabinagar - II							186	4.00	74
	Nabinagar - III									
	Nabinagar - IV									
	Total Nabinagar							**372**		**148**
3	**NHPC**									
	a) Rangit	78	3.69	29	78	3.69	29	78	3.69	29
	b) Teesta	404	2.01	81	404	2.01	81	404	2.01	81
	Total NHPC	**482**		**110**	**482**		**110**	**482**		**110**

Sl. No.	Source/ Power Plant	FY 2013-14			FY 2014-15			FY 2015-16		
		Energy available (MU)	Purchase cost (Rs/Unit)	Total Power purchase cost (Rs. crore)	Energy available (MU)	Purchase cost (Rs / Unit)	Total Power purchase cost (Rs. crore)	Energy available (MU)	Purchase cost (Rs/Unit)	Total Power purchase cost (Rs. crore)
1	2	3	4	5	6	7	8	9	10	11
4	**PTC**									
	Chukka	298	2.88	86	298	3.04	91	298	3.20	95
	Tala	968	2.88	279	968	3.04	294	968	3.20	310
	Total PTC	**1266**		**365**	**1266**		**385**	**1266**		**405**
5	**DVC**									
	DVC	745	3.83	285	745	4.28	319	745	4.78	356
	Total DVC	**745**		**285**	**745**		**319**	**745**		**356**
6	**Others**									
	Adani	1752	4.43	776	1752	4.54	795	1314	4.65	611
	NEA + UI	50	4.90	25	50	4.90	25	50	4.90	25
	Essar		-		2957	3.09	914	3942	3.00	1183
	Essar 2		-			-	0	1314	4.00	526
	GMR		-			-	0	949	4.00	380
	Tilalya UMPP		-			-	0		-	0
	Total Others	**1772**		**801**	**4759**		**1734**	**7569**		**2723**
7	**State**									
	BTPS	639	5.46	349	1214	4.13	501	1214	4.27	518
	BTPS Stg 2*	-	-	-	-	-	-	-	-	-
	BSHPC	45	2.57	12	45	2.57	12	45	2.57	12
	Sugar Mills	80	4.36	35	80	4.36	35	80	4.36	35
	KBUNL # 1 (MTPS Stg 1)	573	4.00	229	607	4.00	243	607	4.00	243
	KBUNL # 2 (MTPS Stg 1)	477	4.00	191	607	4.00	243	607	4.00	243
	KBUNL # 3 (MTPS Stg 2)		-			-		364	4.00	146
	Solar RPO	**20**	**11.00**	**22**	**49**	**11.00**	**54**	**93**	**11.00**	**102**
	Non-Solar RPO									
	Total State	**1834**		**833**	**2602**		**1088**	**3010**		**1299**
8	**PGCIL charges**			190			190			190
9	**Total**	**15774**	**3.80**	**5996**	**23344**	**3.82**	**8909**	**28971**	**3.89**	**11275**

*** Generation for BTPS stage-2 scheduled in FY 2015-16 is not considered.**

8.11.2 Transmission Charges

The transmission costs include the cost to be paid to PGCIL for the regional transmission and cost of BSPTCL for intra-state transmission.

The transmission charges of PGCIL are approved by CERC and are to be paid by BSPHCL /BSPTCL on the basis of calculation of Regional Energy Account of Eastern Region by ERLDC. Hence, the Commission accepts the projection of BSPHCL/ BSPTCL for PGCIL charges. The transmission charges of BSPTCL are approved by the Commission in the MYT order of BSPTCL (chapter-7). The transmission chargers payable to PGCIL and BSPTCL are given in the Table below:

8.11.3 Total power purchase cost

The total power purchase cost including the transmission charges to be paid by BSPHCL for the control period are given in the Table below:

Table 8.61: Total power purchase cost approved for the control period FY 2013-14 to FY 2015-16

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	Total energy purchased (MU)	15774	23344	28971
2	Power purchase cost including PGCIL charges (Rs. crore)	5996	8909	11275
3	Transmission charges (Rs. crore)*	213	262	304
4	Total power purchase cost (Rs. crore)	6209	9171	11579
5	Average power purchase cost excluding transmission charges (Rs. /unit) (2/1)	3.80	3.82	3.89

*** Transmission charges are as approved in Chapter-7.**

8.11.4 Net power purchase cost

The surplus power purchased by BSPHCL, after deducting the disallowed power due to BSPHCL not maintaining the distribution loss level approved by the Commission, has to be sold outside at a rate not less than the average purchase cost as approved in paragraph 8.11 and Table 8.60 above. The Commission will not allow selling of surplus power outside the State at lower rate by purchasing the same at higher rate. The SLDC and distribution licensees shall take adequate care while scheduling the daily power purchase requirement. The net power purchase cost is arrived as below:

Table 8.62: Net power purchase cost approved for the control period FY 2013-14 to FY 2015-16

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	Total power purchase cost (Rs. crore)	6209	9171	11579
2	Surplus energy to be sold outside (MU)	1116	6551	9887
3	Average cost (Rs./kWh)	3.80	3.82	3.89
4	Cost of surplus power (2x3) (Rs. crore)	424.08	2502.48	3846.04
5	Net power purchase cost (1-4)	5784.92	6668.52	7732.96

8.11.4(a) Distribution fixed costs

Key assumptions for functional desegregation of cost elements.

It is submitted by BSPHCL that while submitting the separate Annual Revenue Requirement for Generation, Transmission and Distribution Companies it has tried to identify the costs related to individual functions and has allocated them to the respective function directly.

The cost elements like employee cost, administration and general expenses etc., which are not easily identifiable have been allocated to the individual functions on the basis of certain assumptions, which are outlined below:

Table 8.63: Assumptions for functional desegregation of cost elements

Sl.No.	Cost Element	Assumptions
1	Employee Cost	Function wise segregated cost is available in the annual accounts of the erstwhile BSEB
2	A&G Cost	Function wise segregated cost is available in the annual accounts of the erstwhile BSEB
3	R&M Cost	Function wise segregated cost is available in the annual accounts of the erstwhile BSEB
4	Interest & Finance Charges	Based on loan (actual and projected) availed / to be availed by the each Company (Generation, Transmission and two Distribution)
5	Depreciation	Based on projected fixed assets during the year
6	Provision of bad and doubtful debt	100% allocated to the Distribution companies
7	Non-tariff income	Non-tariff income is disaggregated based on the nature of income that is attributable to each function.

8.11.5 Capital Expenditure

Petitioner's submission:

The BSPHCL has projected the capital expenditure at Rs.18430 crore for the control period FY 2013-14 to FY 2015-16 as given in the Table below:

Table 8.64: Capital expenditure planned for the distribution for FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No	Particulars	2012-13	2013-14	2014-15	2015-16	Total from FY 2013 to FY 2016
1	BRGF	88	1075	1100	1100	3363
	Grant	88	1075	1100	1100	3363
	Loan					
2	Implementation of IT / R&M of network under Non - RAPDRP		300	300	400	1000
	Grant					
	Loan		300	300	400	1000
3	RAPDRP	421	435	435		
	Grant	136				136
	Loan	285	435	435		1155
4	RE	700	3000	4862	2720	11282

Sl. No	Particulars	2012-13	2013-14	2014-15	2015-16	Total from FY 2013 to FY 2016
	Grant	600	2300	3931	2000	8831
	Loan	100	700	931	720	2451
5	State Plan	329	600	750	977	2656
	Grant					
	Loan	329	600	750	977	2656
6	ADB Cell	60	175	150	50	435
	Grant					
	Loan	60	175	150	50	435
7	**Total**	**1598**	**5585**	**7597**	**5248**	**20028**
	Grant	824	3375	5031	3100	12330
	Loan	774	2210	2566	2147	7698

The BSPHCL has submitted in the ‘Business Plan’ that the DISCOMs are implementing the capital works to improve the efficiency of the distribution network and the activities are funded by centrally sponsored schemes as well as State Government funds as detailed below:

1. **The Backward Regions Grant Fund (BRGF**): The works under the scheme include:
   - Segregation of rural loads by providing dedicated agriculture feeders for improving load management and ensuring reliable supply to irrigation purposes.
   - R&M of old power substations.
   - Implementing IT applications and strengthening / R&M of distribution network of 49 small towns (not covered under R-APDRP)

2. **R-APDRP**

   The works under this programme cover the following:
   - Strengthening and upgradation of sub-transmission and distribution network and adoption of information technology during XI plan. 71 towns have been selected under part – A of R-APDRP with an objective of establishment of base line data and fixation of accountability.

     Part-A: Part –A of the programme envisages installation of SCADA/DMS projects in the towns.
     Total cost involved is Rs.253.68 crore out of which Rs.194.58 crore as loan by Government of India convertible as grant subject to completion of projects in 3 years from sanctioned date 9/12/2009 and balance fund of Rs.59.10 crore by Government of Bihar.

     Part-B: Part-B of the programme covers renovation, modernization and strengthening of 11 kV level substations, transformers / transformer centers, reconductring of lines at 11 kV level and below, load bifurcation, feeder segregation, load balancing, Aerial bunched conductors in thickly populated areas, installation of capacitor banks and mobile service centers etc, in 64 selected towns in Bihar. The total cost of Rs.1155.21 crore (Patna- Rs.506) funding by Government of India is approved for Part-B. The total approved cost of Rs.1151.21 crore to be arranged as loan, upto 50% of which will be converted into grant after reduction of loss to 15% on a sustained basis for a period of 5 years.

3. **ADB Funded Schemes**

The ADB funded works have 4 packages dedicated for Distribution work. The following works are planned in the scheme in selected towns – Bihar Sharitt, Motihari and Battaial, Samasthipur and Begugaral, Ara and Buxar towns.

- Augmentation of substation capacity
- LT and HT lines reconductoring
- Consumer metering

4. Rajiv Gandhi Grameen Vidyutikaran Yojna (RGGVY)

The RGGVY aims at:

- Electrification of all villages and habitations as per new definition.
- Providing access to electricity to all rural households.
- Providing electricity connections to below poverty line (BPL) families free of cost.

It is submitted by BSPHCL that the State has 21282 villages remaining electrification including 9268 de-electrified villages and the RGGVY programme is underway in 38 districts of the State with sanctioned cost of Rs.2896 crore, 90% of which as grant provided by Government of India and 10% of loan by REC to State Government.

Commission's Analysis:

The Commission has examined the capital expenditure plan projected by BSPHCL for the control period. BSPHCL has envisaged huge capital expenditure under BRGF, R-APDRP, Rural Electrification under RGGVY and State Plan, and ADB assistance for R&M of network, augmentation of sub-stations, customer metering etc. The proposed capital expenditure for each year of the control period is about Rs.6140 crore on an average. While capital investment is required to be made by Distribution companies for various purposes such as creation of new infrastructure to meet the load growth, strengthening the existing system to improve quality of supply and increase its operational efficiency, replace old and obsolete assets, segregation of rural loads, consumer metering etc., any such capital investment increases the fixed asset base, resulting in higher debt servicing, higher return on equity and higher depreciation which ultimately affects the tariffs to consumer. The Commission finds it necessary to ensure that the proposed capital investment schemes do not impose avoidable burden on the consumers by way of increase in tariff and the CAPEX should be utilized at optimum level. However, the Commission would not like to prune down the proposed capital expenditure investment at this stage. Over 60% of the capital investment comes from grants under various schemes and balance as loan. BSPHCL is directed separately to give cost-benefit analysis for each of the schemes related to reduction of distribution losses, strengthening of the system etc., to improve quality of supply etc.

The Commission approves, in principle, the capital investment proposed by BSPHCL for the control period as given in Table below:

Table 8.65: Capital Investment approved for the control period

(Rs. crore)

Year	Capital investment
FY 2013-14	5585
FY 2014-15	7597
FY 2015-16	5248
Total	18430

Capitalisation and funding of CAPEX

Petitioner's submission:

BSPHCL has submitted that since most of the distribution projects take 18-24 months to complete, 2 years is assumed as a horizon for completion of the projects. It is assumed that 50% of the works will be capitalised in the first year of execution and remaining in the second year of execution. The opening CWIP for FY 2012-13 is scheduled to be capitalised in 3 years. The capitalisation schedule proposed for the control period is given in the Table below:

Table 8.66: Capitalisation schedule of distribution work proposed for FY 2012-13 to FY 2015-16

Schedule of Capitalization	Year 1	Year 2	Year 3	Year 4
For all new Capex Works	50%	50%	0%	0%
For Opening CWIP of FY 2012-13	30%	30%	40%	0%

Based on the capitalisation schedule, the capitalisation and addition to GFA for distribution function are shown in the Table below:

Table 8.67: Capital Investment and capitalisation (Distribution) proposed during FY 2012-13 and for control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
1	Total New Investment	1598	5585	7597	5248
2	Amount Capitalized from new investment during the year (1)	799	3592	6591	6422
3	Opening CWIP for FY 2012-13	697			

4	Opening CWIP capitalized during the year (2)	209	209	279	-
5	Actual addition to GFA / Capitalisation (=1+2)	1008	3801	6870	6422

Funding of Capital Investment

Petitioner's submission:

BSPHCL has submitted that considering the past trend where erstwhile BSEB has undertaken grant from Government of Bihar or Government of India under BRGF scheme, for meeting the capital expenditure, it has been considered that the funding requirement against the Capital investment plan during the control period shall be met in the similar manner from the State or central Governments.

The details of the funding of new capital investment plan is summarized in the Table below:

Table 8.68: Funding of new capital investment proposed during FY 2012-13 and for control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	Total
1	Grant under BRGF / RAPDRP etc., from State Government or State plan.	824	3375	5031	3100	12330
2	Loan from State Government / PFC or other Financial Institutions	774	2210	2566	2147	7698
	Total	1598	5585	7597	5248	20028

Commission's Analysis:

BSPHCL has proposed capitalisation of the expenditure in one to two years. The Commission is of the view that based on previous experience, the capitalization schedule proposed by BSPHCL for new capital works may not be achieved. Hence the Commission has revised the schedule as given in the table below:

Table8.69: Capitalization schedule approved for the control period FY 2013-14 to FY 2015-16

Sl. No.	Particulars	Year 1	Year 2	Year 3
1	For all new CAPEX works	30%	30%	40%
2	For opening CWIP	30%	30%	40%

The funding mostly comes through grants under BRGF, RAPDRP, State and Central Governments and balance through loans raised by BSPHCL from State Government, PFC and other Financial Institutions. The details of opening CWIP etc., have been verified with reference to opening balance sheet as on 1.4.2011 issued along with transfer scheme and actual expenditure during FY 2011-12 and found that the opening CWIP is based on un-audited Annual Accounts. But as per Audited Accounts the opening CWIP of erstwhile BSEB is Rs.2962.27 crore for distribution. This increase in CWIP is due to consideration of advance paid by REC to PGCIL and NTPC for execution of RGGVY works.

The CAPEX, capitalisation and funding approved by the Commission are given in the Table below:

Table 8.70: CWIP and Investment Capitalisation and Funding for Control Period 2013-14 to FY 2015-16 approved by the Commission

(Rs. crore)

S.No	Particulars	2012-13 (RE)	2013-14	2014-15	2015-16
1	Opening CWIP	2962	3192	5733	7551
2	New Investment	1598	5585	7597	5248
3	Less Capitalization	1368	3044	5779	6086
(a)	CWIP	889	889	1184	-
(b)	New Investment	479	2155	4595	6086
4	Closing CWIP (1+2-3)	3192	5733	7551	6713
5	Funding				
(a)	CWIP Capitalization	889	889	1184	-
(i)	Grant	699	699	931	-
(ii)	Loan	190	190	253	-
(b)	New Investment Capitalization	479	2155	4595	6086
(i)	Grant	247	1260	2852	3788
(ii)	Loan	232	895	1743	2298
6	Total capitalisation	1368	3044	5779	6086
(i)	Total Grant	946	1959	3783	3788
(ii)	Total Loan	422	1085	1996	2298

BSPHCL shall furnish the details of works targeted to be achieved against capitalisation each year. A directive is issued separately.

Gross Fixed Assets

The Commission has arrived at the opening and closing GFA taking into consideration the GFA in the opening balance sheet as on 1st April, 2011, capitalisation during FY 2011-12 and 2012-13 and capitalisation approved for the respective years as given in the above Table as detailed in the Table below:

Table 8.71: Gross fixed assets approved for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	Opening GFA	4827.36	7941.89	13850.63
2	Additions to GFA/capitalisation during the year	3044.00	5779.00	6086.00
3	IDC	70.53	129.74	149.37
4	Closing GFA	7941.89	13850.63	20086.00

8.11.6 Operation and Maintenance (O&M) Expenses

The O&M expenses include employee expenses, R&M costs and Administration and General expenses.

The expenses under each head are discussed below:

a) Employee Expenses

Petitioner's submission:

The BSPHCL has claimed Rs.1506 crore towards employees expenses for the control period FY 2013-14 to FY 2015-16 as given in the Table below:

Table: 8.72: Employee expenses of Distribution projected for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	Employee expenses - Distribution	812.99	888.19	970.35
2	Effect of New Employees	10.00	10.00	10.00
3	Less: Capitalization			
4	Less: Government Support towards terminal benefits	418.75	405.66	371.15
5	Total Employee Expenses	404.24	492.53	609.2

The BSPHCL has submitted that employee expenses comprise of salaries, dearness allowance, bonus, terminal benefits in the form of pension and gratuity, leave encashment and staff welfare expenses.

It is submitted that BSPHCL has considered the Consumer Price Index (CPI) of 9.25% based on FY 2009-10 to FY 2011-12 increases and estimated the employee expenses at an increase of 9.25% during the control period. It is stated that the employee expenses capitalisation for FY 2011-12 was nil and the same trend is expected for the FY 2012-13 and MYT period FY 2013-14 to FY 2015-16.

The BSPHCL has also submitted that the effect of new employee addition is expected to be Rs.10 crore for each year during the control period. It is further submitted that as per the transfer scheme, Government support is expected towards payment of terminal benefits of the employees during the control period. Considering this, the expected support is reduced from employee costs projected for the control period.

The BSPHCL has requested the Commission to consider the increase in salaries/employee cost as uncontrollable factor and approve the employee expenses as projected.

Commission's Analysis:

The Commission has examined the submission of BSPHCL. The actual employee cost during FY 2011-12 was Rs.863.61 crore and the Commission approved employee cost at Rs. 608.71 crore for distribution business in the Tariff Order for FY 2012-13 as below:

(Rs. crore)

Employee cost	600.17
Effect of new employees	27.00
Less: Capitalisation	18.46
Net employee cost	608.71

The Commission considers the Consumer Price Index (CPI) at 8.63% per annum as on March, 2012 for determining the employee cost for the control period. The Commission has considered Rs.10.00 crore towards new employee cost during the control period and has taken into consideration the State Government support towards terminal benefits.

The Commission approves the employee cost for the control period as given in the Table below:

Table 8.73: Approved employee expenses for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	Employee expenses	394.24	428.26	465.22
2	Effect of new employee expenses	10.00	10.00	10.00
	Total	404.24	438.26	475.22

The Commission approves the employee cost at Rs.404.24 crore for FY 2013-14, Rs.438.26 crore for FY 2014-15 and Rs.475.22 crore for FY 2015-16 respectively as detailed in the above Table.

b) Repair and Maintenance (R&M) Costs

Petitioner's submission:

The BSPHCL has claimed the R&M costs at Rs.270.11 crore for the control period FY 2013-14 to FY 2015-16 as given in the Table below:

Table 8.74: Proposed R&M Cost for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Particulars	FY 2013-14	FY 2014-15	FY 2015-16
R&M costs	**82.20**	**89.80**	**98.11**

The BSPHCL has submitted that R&M costs have been indexed to the WPI and three year (FY 2009-10 to FY 2011-12) growth is used to project the R&M costs at 9.25% and it is considered that the R&M expenses will increase at by 9.25% in FY 2012-13 and during the control period.

The R&M expenses go towards day-to-day upkeep of the network of the DISCOMs form an integral part of the company's efforts towards reliable and quality power supply and also in the reduction of losses in the system.

It is further submitted that the R&M expenses depend on various factors. The assets are old and require regular maintenance to ensure uninterrupted operations. The companies have been trying their best to ensure uninterrupted operation of the system by undertaking necessary expenditure for R&M activity.

The BSPHCL has requested the Commission to approve the costs as proposed without any disallowance.

Commission's Analysis:

The Commission has examined the R&M expenses claimed by BSPHCL. The actual R&M expenses incurred during FY 2011-12 were Rs.68.87 crore and the Commission approved the R&M expenses at Rs.78.96 crore for FY 2012-13. The BSPHCL has claimed Rs.75.24 crore under RE for 2012-13. it is observed that the increase in WPI as on March, 2012 is 7.69%. The Commission, accordingly, approves the R&M expenses for the control period at an increase of 7.69% per annum for the control period on the actual expenses for FY 2011-12 as given in the Table below:

Table 8.75: Approved R&M expenses for the control period FY 2013-14 to FY 2015-16

(Rs.crore)

Particulars	FY 2013-14	FY 2014-15	FY 2015-16
R&M expenses	79.87	86.01	92.63

The Commission approves the Repair and Maintenance (R&M) expenses as detailed in the Table above for the control period FY 2013-14 to FY 2015-16.

c) Administration and General (A&G) Expenses

Petitioner's submission:

The BSPHCL has claimed Rs.153.46 crore towards A&G expenses for the control period FY 2013-14 to FY 2015-16 as given in Table below:

Table 8.76: Projected A&G expenses proposed for the control period FY 2013-14 to FY 2015-16

(Rs.crore)

Particulars	FY 2013-14	FY 2014-15	FY 2015-16
A&G expenses	**46.70**	**51.02**	**55.74**

The BSPHCL has submitted that A&G expenses mainly comprise of rents, telephone and other communication expenses, professional charges, contingence and traveling allowances and other debits.

It is submitted that the A&G expenses are linked with the increase in Wholesale Price Index (WPI). It is further submitted that it has considered the increase in A&G expenses during the control period at 9.25%, the increase of WPI from FY 2009-10 to FY 2011-12.

Commission's Analysis:

The Commission has examined the projected A&G expenses by BSPHCL. The actual A&G expenses were Rs.39.12 crore during FY 2011-12 and the Commission approved the A&G expenses at Rs.68.36 crore for FY 2012-13 against which the BSPHCL has projected at Rs.42.75 crore in FY 2012-13 (RE). It is observed that the increase WPI in March 2012 over March 2011 was 7.69%. The Commission has considered the increase in A&G at an increase of 7.69% over the 2012-13 (RE) as given in the Table below:

Table 8.77: Approved A&G expenses for the control period FY 2013-14 to FY 2015-16

(Rs.crore)

Particulars	FY 2013-14	FY 2014-15	FY 2015-16
A&G expenses	46.04	49.58	53.39

The Commission, accordingly, approves the A&G expenses as detailed in the Table above for the control period FY 2013-14 to FY 2015-16.

d) Total Operation and Maintenance (O&M) Costs

The total O&M costs approved for the control period FY 2013-14 to FY 2015-16 are given in Table below:

Table 8.78: Approved O&M cost for the control period for FY 2013-14 to FY 2015-16

(Rs.crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1.	Employee expenses	404.24	438.26	475.22
2.	R&M expenses	79.87	86.01	92.63
3.	A&G expenses	46.04	49.58	53.39
	Total	530.15	573.85	621.24

8.11.7 Depreciation

Petitioner's submission:

The BSPHCL has projected the depreciation at Rs.713 crore for the control period FY 2013-14 to FY 2015-16 as given in the Table below:

Table 8.79: Depreciation projected for the control period

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1.	Gross fixed assets	8442	15471	22047
2.	Depreciation for the year	440.12	807	1149
3.	Average rate of depreciation	5.21%	5.21%	5.21%
4.	Amount barrowed for assets addition/GFA	30%	30%	30%
5.	Net depreciation excluding assets created out of grants and consumer contribution (2x4)	133	245	335

The BSPHCL has submitted that the depreciation during the year has been computed based on closing GFA of the respective year. While determining the depreciation, the petitioner has considered the actual values available as per accounts of FY 2010-11 (audited) and FY 2011-12 (unaudited). The Petitioner has submitted that the depreciation for different assets class has been computed during the control period according CERC to CERC (Tariff) Regulations, 2009.

The BSPHCL has also submitted that depreciation has been computed annually based on straight line method and applying weighted average rate of depreciation as the closing GFA. It is further submitted that the depreciation is arrived at by removing the depreciation on assets created out of grants and consumer contribution from the gross depreciation to arrive at net depreciation. The computation of depreciation on the assets created out of grants and consumer contribution is based on the actual ratio of grants and consumer contribution and GFA. Similarly net cumulative depreciation is considered the rates of interest amount to GFA.

Commission's Analysis:

The Commission has noted that the Petitioner has computed the depreciation for the control period FY 2013-14 to FY 2015-16 adopting CERC rates of depreciation. The Commission has approved the capitalisation and gross fixed assets in paragraph 8.11.5 and Table 8.71 above. The Commission has considered the average rate of depreciation of 5.21% as adopted by BSPHCL based on asset class-wise depreciation. It is observed, the Petitioner has computed the depreciation based on closing GFA, it should be an average GFA during the year. The Commission has computed the depreciation based on the opening balance of GFA and addition of assets approved in Table 8.71 above. The depreciation is arrived at based on actual rate of grant and consumer contribution and GFA.

Table 8.80: Depreciation approved for Control Period FY 2013-14 to FY 2015-16

Sl. No	Particulars	2013-14	2014-15	2015-16
1	Gross fixed assets of the beginning of the year	4827.36	7941.89	13850.63
2	Additions during the year	3044.00	5779.00	6086.00
3	IDC	70.53	129.74	149.37
4	Closing GFA	7941.89	13850.63	20086.00
5	Average GFA	6384.63	10896.26	16968.32
6	Weighted Average Rate of Depreciation	5.22%	5.22%	5.22%
7	Gross Depreciation	333.28	568.78	885.75
8	Opening grants	3918.50	5877.50	9660.50
9	Grants during the year	1959.00	3783.00	3788.00
10	Total Grants	5877.50	9660.50	13448.50
11	Average Grants	4898.00	7769.00	11554.50
12	Weighted Average rate of Depreciation	5.22%	5.22%	5.22%
13	Depreciation for GFA on Grants	255.68	405.54	603.15
14	Net Depreciation of GFA on loans (7-13)	77.60	163.24	282.60

The Commission, accordingly, approves the depreciation for the control period as detailed in the Table above.

8.11.8 Interest during Construction (IDC)

Interest during construction is calculated on the loan portion of CWIP and new investment for FY 2013-14 to FY 2015-16. The interest rate for IDC funding is assumed at 13% and is worked out on average loan during the year. The Table below gives the IDC during the control period.

Table 8.81: Interest during Construction

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	Loan drawal	1085	1996	2298
2	Average loan	542.50	998	1149
3	IDC (on average loan)	70.53	129.74	149.37

8.11.9 Interest on Finance Charges

Petitioner's submission:

The BSPHCL has projected the interest and finance charges at Rs.1398 crore for the control period FY 2013-14 to FY 2015-16 as detailed in the Table below:

Table 8.82: Interest and Finance Charges projected for the control period

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	Gross Normative Loan - Opening	1130	2554	4702
2	Cumulative repayment of Normative Loan upto previous year	80	213	458
3	Net Normative Loan - Opening	1050	2341	4241
4	Increase / Decrease due to ACE during the year	1637	2607	2516
5	Repayments of Normative Loan during the year	133	245	335
6	Net Normative Loan - Closing	2554	4702	6425
7	Average Normative Loan	1802	3521	5335
8	Interest on Normative Loan	237	462	699
9	Weighted Average Rate of Interest of actual Loans	13.20%	43.1%	13.1%

The BSPHCL has submitted that as a result of unbundling of the erstwhile Board, all State Government loans and interest as on 31st March, 2011, have been waived off and Rs.1475 crore have been converted into equity out of which Rs.1458 crore have been distributed across the GENCO, Transco and tow DISCOMs. The opening balance sheet of the DISCOMs as per transfer scheme shows loan amount of Rs.515 crore for the two distribution companies as per schedule-C part-II of Transfer Scheme, 2012) as on 1st April, 2011. The loan amount for FY 2011-12 has been added to the opening amount to arrive at the interest cost of FY 2012-13 and MYT control period.

The BSPHCL has also submitted that it has separately determined the interest on existing loans and interest on new loans towards proposed asset capitalisation.

The interest rate for each of the existing loans is computed based on the actual interest including penal interest amount charges. for asset capitalisation during the MyT control period, the Petitioner has proposed new loans at 13% interest rate. The determination of weighted average interest rate of existing loans and the proposed new loans are detailed separately in the formats.

Commission's Analysis:

The opening balance of loan for FY 2011-12 is the loan indicated in the opening balance sheet as on 1st April, 2011 for the two distribution companies. BSPHCL has considered the loan addition based on the capitalisation as per capitalisation schedule during the year as approved by the Commission in paragraph 8.11.5 and Table 8.70. The BSPHCL has adopted weighted average rate of interest at 13.2% for FY 2012-13 and FY 2013-14 and 13.1% for fY 2014-15 and FY 2015-16.

Considering the above norms, the Commission has computed the interest and finance charges for the control period. The Commission has considered interest rate of 13%. The interest and finance charges computed are given in the Table below:

Table 8.83: Interest and Finance charges approved for control period FY 2013-14 to FY 2015-16

Sl.No.	Particulars	2013-14	2014-15	2015-16
1	Opening Loan	1121.73	2129.13	3961.89
2	Additions	1085.00	1996.00	2298.00
3	Repayment	77.60	163.24	282.60
4	Closing Loan	2129.13	3961.89	5977.29
5	Average Loan	1625.25	3045.51	4969.59
6	Rating Interest	13.00%	13.00%	13.00%
7	Interest and Finance charges	211.28	395.92	646.05

The Commission, accordingly, approves the interest and finance charges as detailed in the above Table for the control period FY 2013-14 to FY 2015-16.

8.11.10 Interest on Working Capital

Petitioner's submission:

The BSPHCL has projected the interest on working capital at Rs.752.72 crore for the control period FY 2013-14 to FY 2015-16 as detailed in the Table below:

Table 8.84: Interest and Finance Charges projected for the control period

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	1 month O&M	44.43	52.78	63.59
2	Maintenance Spares	55.14	96.84	229.9
3	Receivables	1175.31	1487.9	1897.23
4	Working Capital	1274.88	1637.51	2190.75
5	Interest on Working Capital	188.05	241.53	323.14

The BSPHCL has submitted that the interest on working capital is proposed in accordance with the BERC (Terms and Conditions for determination of Tariff) Regulations, 2007 for FY 2012-13 and for the control period FY 2013-14 to FY 2015-16. The norm followed is as under:

i) O&M expenses for one month

ii) Maintenance spares @1% of the historical cost estimated at 6% per annum from the date of commercial operation.

iii) Receivable for two months charges for sale of energy

The interest rate has been assumed at 14.75% which is SBI PLR for calculating interest on working capital for the control period.

Commission's Analysis:

The Commission has examined the computation of interest on working capital submitted by BSPHCL. The Petitioner has focused the norm for working capital as per Regulation 85 (ii) (8), BERC Tariff Regulations of 2007. The Commission has computed the working capital and interest on working capital as per expenses approved as detailed in the Table below:

Table 8.85: Interest on working capital approved for the control period

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1.	**O&M expenses for one month**	**44.18**	**47.82**	**51,77**
2.	**Maintenance spares at 1% of GFA escalated at 6% per annum**	**51.17**	**84.18**	**146.82**
3.	**Receivables equivalent to 2 months sales**	**1116.98**	**1322.08**	**1575.71**
4.	Total working capital	1212.33	1454.08	1774.30
5.	**Less: Govt. assistance for power purchase**	**360.00**	**360.00**	**360.00**
6.	**Net working capital**	**852.33**	**1094.08**	**1414.30**
7.	**Interest rate (SBI PLR as on February 2013) (%)**	**14.45%**	**14.45%**	**14.45%**
8.	**Interest on working capital**	**123.16**	**158.09**	**204.37**

The Commission, accordingly, approves the interest on working capital as detailed in the above Table for the control period FY 2013-14 to FY 2015-16.

8.11.11 Return on Equity

Petitioner's submission:

The BSPHCL has projected the return on equity at Rs.369.30 crore for the control period FY 2013-14 to FY 2015-16 as given in the Table below:

Table 8.86: Return on equity projected for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1.	Equity capital	879	879	879
2.	Rate of return on equity	14%	14%	14%
3.	Return on equity	123.1	123.1	123.1

The BSPHCL has submitted that as per Bihar State Electricity Transfer Scheme, 2012, the BSEB has been unbundled into five companies and an amount of Rs.879 crore has been invested as Equity Capital in the two distribution companies. The Petitioner has proposed the RoE at the rate of 14% on the amount invested in the two distribution companies.

Commission's Analysis:

The Commission has computed the return on the equity as per opening balance sheet as on 1st April, 2011 and there is no equity addition during FY 2011-12 and FY 2012-13. Since likely equity additions during the control period are not known, the return on equity is computed on the equity capital as on 1st April, 2011 for each year of the control period as in the Table below:

Table 8.87: Approved Return on equity for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1.	Equity capital	879	879	879
2.	Rate of return on equity	14%	14%	14%
3.	Return on equity	123.1	123.1	123.1

The Commission approves the return on equity as detailed in the above Table for the control period FY 2013-14 to FY 2015-16.

8.11.12 Non-Tariff Income

Petitioner's submission:

The BSPHCL has projected the non-tariff income at Rs.369.13 crore for the control period FY 2013-14 to FY 2015-16 as detailed in the Table below:

Table 8.88: Projected Non- Tariff Income of Distribution for FY 2012-13 and MYT Period

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	Interest of Staff Loan & Advance	0.01	0.01	0.01
2	Income from Investment (F.D)			
3	Interest on Loan & Advance to licenses			
4	D.P.S from Consumer	46.95	51.12	55.78
5	Interest on advance to Supplier /Contractor	0.13	0.16	0.19
6	Interest from Bank (Other than F.D)	0.38	0.45	0.54
7	Income from Trading	2.42	2.64	3.05
8	Income from Staff Welfare activities			
9	miscellaneous Receipt	20.58	21.36	22.22
10	Meter Rent	34.41	40	46.5
11	Incentives for Timely payments	5.79	6.71	7.71
	Total	**110.68**	**122.45**	**136.00**

The BSPHCL has submitted that the income under non-tariff income comprise of interest on loans and advances to employees / suppliers / contractors, income from investment (FD), income from Banks other than FD, meter rent, income from trading, DPS from consumers, miscellaneous receipts etc.

It is submitted that the income from the following heads has been equally divided among generation, transmission and distribution and the remaining heads of non-tariff income have been taken under distribution function only.

- Interest on advances to supplier / contractors
- Interest from Banks (other than FD)
- Income from Staff welfare functions

It is further submitted that non-tariff income is projected based on the average of last 5 years.

Commission's Analysis:

The Commission has examined the non-tariff income projected by the Petitioner. The Commission approved non-tariff income at Rs.122.28 crore under RE for FY 2011-12 and Rs.127.16 crore in FY 2012-13 as per Tariff Order for FY 2012-13.

It is noted from the Annual Accounts for FY 2011-12 the other income was Rs.152.28 crore and adding Rs.25.47 crore from meter rent and Rs.15.29 crore from miscellaneous charges from consumers, total non-tariff income would be Rs.193.04 crore. Considering an increase of about 8% per annum, the non-tariff income is estimated to be Rs.225 crore for FY 2013-14.

The Commission has adopted the approach for DPS as a part of non-tariff income in line with the judgment of Honourable Appellate Tribunal for Electricity (APTEL) dated 12th July, 2011 in Case No. 142 and 147 of 2009). The relevant extract of the judgment are reproduced below:

> *" The normative working capital compensates the distribution company in delay for the 2 months credit period which is given to the consumers. The late payment surcharge is only if the delay is more than the normative credit period. For the period of delay beyond normative period, the distribution company has to be compensated with the cost of such additional financing. It is not the case of the Appellant that the late payment surcharge should not be treated as a non-tariff income. The Appellant is only praying that the financing cost is involved due to late payment and as such the Appellant is entitled to the compensation to incur such additional financing cost. Therefore, the financing cost of outstanding dues, i.e the entire principal amount, should be allowed and it should not be limited to late payment surcharge amount alone. Further, the interest rate which is fixed as 9% is not the prevalent market Lending Rate due to increase in Prime Lending Rate since 2004-05. Therefore, the State commission is directed to rectify its computation of the financing cost relating to the late payment surcharge for the FY 2007-08 at the prevalent market lending rate during that period keeping in view the prevailing Prime Lending Rate*"

The Commission has considered DPS of Rs. 46.95 Cr, Rs. 51.12 Cr, Rs. 55.78 Cr for FY 2013-14, FY 2014-15 and FY 2015-16 respectively as projected in the Petition. As the Petitioner charges DPS @ 18% per annum (1.5% per month), the principle amount on which DPS would be charged comes as Rs.261 Cr, Rs. 284 Cr and Rs. 310 Cr for FY 2013-14, FY 2014-15 and FY 2015-16 respectively.

The prevailing SBI PLR on April, 2012 was 14.75%, the Commission has allowed the financing cost for DPS at 14.75%. The financing cost approved by the Commission for the control period is shown below.

Table 8.89: Non-Tariff Income approved in the Commission for the control period

(Rs. crore)

Sl. No	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	DPS as per projection @ 1.5% per month (A)	46.95	51.12	55.78
2	Principal amount on which DPS was charged (B=A/18%)	261	284	310
3	Interest Rate at for funding of principal of DPS	14.75%	14.75%	14.75%
4	Interest on funding of principal amount	38.50	41.89	45.73

Accordingly, the Commission has computed the amount of Non-Tariff Income as summarized below:

Sl. No	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	Non-Tariff Income considered	225.00	225.00	225.00
2	Less: Financing cost of principal amount of DPS	38.50	41.89	45.73
3	Net Non- Tariff Income	186.50	183.11	179.27

Therefore, the Commission approves the No-Tariff Income at Rs. 186.50 crore, Rs. 183.11 crore, and Rs. 179.27 crore for the year FY 2013-14, FY 2014-15 and FY 2015-16 respectively against claim Rs. 110.68 crore to Rs. 136.00 crore

8.13 Revenue from sale of Power at existing tariff for FY 2013-14 to FY 2015-16

Petitioner's Submission

The BSPHCL has projected the category-wise revenue based on the existing tariff including sales to Nepal for FY 2013-14 to FY 2015-16 as detailed in the Table below:

Table 8.90: Proposed Revenue from sale of power at current tariff during control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Category	FY 2013-14	FY 2014-15	FY 2015-16
1	**KJ Total**	**140.18**	**175.22**	**219.03**
2	D.S - I	132.30	165.39	206.73
3	D.S - II	709.02	884.47	1103.41
4	D.S - III	0.30	0.37	0.46
5	**Domestic - Total**	**841.62**	**1050.23**	**1310.60**
6	N.D.S - I	4.25	5.31	6.63
7	N.D.S - II	481.76	585.42	713.09
8	N.D.S - III	1.19	1.46	1.79
9	**NDS - Total**	**487.19**	**592.18**	**721.51**
10	**IAS - I Total**	**48.09**	**68.79**	**98.73**
11	**IAS - II Total**	**126.55**	**181.04**	**259.82**
12	**IAS - Total**	**174.64**	**249.84**	**358.54**
13	LT Industrial L.T.I.S - I	84.80	95.03	103.70
14	LT Industrial L.T.I.S - II	75.06	84.29	90.58
15	**Industrial LT - Total**	**159.86**	**179.32**	**194.28**
16	Public Water Work (PWW)	36.98	39.43	41.61
17	Street Light - I (Metered)	3.22	4.02	5.03
18	Street Light - II (Unmetered)	15.95	17.55	20.79
18	**Street Light Service Total**	**18.65**	**20.99**	**23.70**
20	H.T.S - I	522.90	594.19	696.91
21	H.T.S - II	134.07	148.84	173.63
22	H.T.S - III	57.00	62.25	72.85
23	H.T.S.S	275.55	291.06	335.22
24	**HT - Total**	**989.52**	**1096.35**	**1278.61**
25	R.T.S - 25 KV/132 KV	339.57	376.62	408.14
26	**Total Revenue**	**3188.20**	**3780.18**	**4556.02**
27	Revenue from Nepal	444.50	468.94	494.74
	Grand Total	**3632.70**	**4249.12**	**5050.76**

Commission's Analysis

The Commission has obtained the category – wise energy sales, revenue billed from April 2012 to October 2012 and computed the average billed rate per kwh as given in the Table below:

Table 8.91: Sale and Revenue for the period from April 2012 to October 2012

Sl.No	Category	Sales (MU)	Revenue (Rs. Lakhs)	Avg Rate (Rs. / kwh)
1	Kutir Jyoti	346.10	5007	1.58
2	Domestic - I	321.17	9957	3.10
3	Domestic - II	907.9	35045	3.86
4	Domestic – III	0.43	19	4.39
5	Non-Domestic - I	8.51	317	3.72
6	Non-Domestic - II	422.82	27090	6.41
7	Non-Domestic - III	1.1	57	5.17
8	LTIS - I	83.55	4739	5.67
9	LTIS - II	56.47	3407	6.03
10	Public Water Service	31.55	2260	7.16
11	IAS -I	133.01	1292	0.97
12	IAS -II	81.37	3563	4.38
13	Street Light - I	4.95	345	6.98
14	Street Light - II	24.9	1185	4.76
15	Street Light - III	0.12	3	2.55
16	HTIS - I	214.5	17874	8.33
17	HTIS - II	107.56	7138	6.64
18	HTIS - III	94.31	5617	5.96
19	HTSS	256.68	16453	6.41
20	RTS -I	167.65	10582	6.31
21	RTS -I	120.04	8084	6.73
22	**Total**	**3354.69**	**160034**	4.77
23	**Nepal + UI**	756.88	2931	3.88

The Commission has assessed the revenue from energy sales for FY 2013-14 to FY 2015-16 based on the average billed rate shown in the above Table. The revenue worked out for FY 2013-14 to FY 2015-16 is as given in the Table below:

Table 8.92: Revenue from sale of power assessed by the Commission for FY 2013-14 to FY 2015-16

Sl. No	Category	Avg Rate (Rs / kwh)	FY 2013-14		FY 2014-15		FY 2015-16	
			Sales (MU)	Revenue (Rs. crore)	Sales (MU)	Revenue (Rs. crore)	Sales (MU)	Revenue (Rs. crore)
1	Kutir Jyoti	1.45	432	62.64	540	78.30	675	97.88
2	Domestic - I	3.10	689	213.59	861	266.91	1076	333.56
3	Domestic - II	3.86	1867	720.66	2241	865.03	2689	1037.95
4	Domestic - III	4.39	1	0.44	1	0.44	1	0.44
5	Non-Domestic - I	3.72	19	7.07	24	8.93	30	11.16
6	Non-Domestic - II	6.41	870	557.67	1044	669.20	1253	803.17
7	Non-Domestic - III	5.17	3	1.55	4	2.07	5	2.59
8	LTIS - I	5.67	172	97.52	206	116.80	247	140.05
9	LTIS - II	6.03	116	69.95	140	84.42	168	101.30
10	Public Water Service	7.16	57	40.81	60	42.96	63	45.11
11	IAS –I	0.97	336	32.59	353	34.24	371	35.99
12	IAS -II	4.38	195	85.41	205	89.79	215	94.17
13	Street Light - I	6.98	8	5.58	9	6.28	9	6.28
14	Street Light - II	4.76	45	21.42	47	22.37	50	23.80
15	Street Light - III	2.55	0	0.00	0	0.00	0	0.00
16	HTIS - I	8.33	747	622.25	889	740.54	1058	881.31
17	HTIS - II	6.64	219	145.42	261	173.30	310	205.84
18	HTIS - III	5.96	193	115.03	230	137.08	273	162.71
19	HTSS	6.41	523	335.24	622	398.70	741	474.98
20	RTS -I	6.31	551	347.68	606	382.39	667	420.88
21	RTS -II	6.73	0	0.00	0	0.00	0	0.00
	Sub-total		**7043**	**3482.52**	**8343**	**4119.75**	**9901**	**4879.15**
22	Nepal	4.64	550	255.20	550	255.20	550	255.20
23	**Total**		**7593**	**3737.72**	**8893**	**4374.95**	**10451**	**5134.35**

The Commission approves the revenue from sale of power with current tariff at Rs. 3737.72 crore for FY 2013-14, Rs. 4374.95 crore for FY 2014-15 and Rs. 5134.35 crore for FY 2015-16 as detailed in the Table above.

8.14 Revenue from energy sale to Nepal

Petitioner's Submission

The BSPHCL has projected revenue from energy sale to Nepal in each year during FY 2013-14 to FY 2015-16 at Rs. 444.50 crore for FY 2013-14, Rs. 468.94 crore for FY 2014-15 and Rs. 494.74 crore for FY 2015-16

Commission's Analysis

The Commission has approved energy sales to Nepal at 550 MU as discussed in paragraph 8.4.14.

The Commission considered the average rate per unit for sale of energy to Nepal at Rs. 4.21 as per audited annual accounts for FY 2011-12 and escalated at 5% per annum which works out to Rs.4.64 per unit.

Accordingly, the Commission approves at Rs. 255.20 crore for each year during the control period FY 2013-14 to FY 2015-16.

8.15 Resource gap funding for meeting cost of additional power purchase

Petitioner's Submission

BSPHCL has submitted that as per the letter from State Government dated 19th September, 2011, the treatment of support from State Government is considered to compensate in full for the financial losses caused through erstwhile BSEB (Now DISCOMS) on account of additional power purchase due to difference in actual T&D Losses and the T&D Losses as determined / approved by the Commission and the remaining subsidy out of Rs. 1080 crore shall be available to subsidize agriculture and rural consumers.

BSPHCL has considered the subsidy at Rs. 1080 crore for each year of the control period and projected the power purchase cost disallowed for FY 2013-14 to FY 2015-16 as shown in the table below:

Table 8.93: Proposed revenue Subsidy at existing Tariff during the Control Period

(Rs. crore)

Sl. No.	Category	FY 2013-14 (RE)	FY 2014-15 (RE)	FY 2015-16 (RE)
1	Proposed Subsidy from State Government	1080.00	1080.00	1080.00
2	Disallowed PP cost (Funded as State Govt. grant)	984.48	939.61	671.37
3	Available revenue Subsidy for LT consumers	95.52	140.39	408.63
4	Subsidy Computed (Annexure(X)	165.32	2266.01	3115.58
5	Expected subsidy to be received against sale to rural and Agriculture consumers (Minimum of 3 and 4)	95.52	140.39	408.63
6	Remaining additional Revenue subsidy to Discoms	-	-	-

Commission's Analysis

As per letter dated 4.3.2013 from Bihar State Government BSPHCL will be receiving resource gap assistance of Rs. 2160 crore during FY 2013-14 from the State Government.

Based on the letter from State Government on utilization of resource gap grant, the Commission has adjusted the cost of additional power purchase requirement on account of difference in actual T&D loss of the Discoms and T&D loss approved by the Commission from resource gap funding by the State Government. The approach has reduced the net power purchase cost of the Discoms.

The Commission has computed the cost of additional power purchase (as approved in energy balance) at the average purchase rate of power purchase as given in the Table below:

Table 8.94: Cost of additional power disallowed

Sl. No.	Category	UNIT	FY 2013-14 (RE)	FY 2014-15 (RE)	FY 2015-16 (RE)
1	Additional power purchase by Discoms due to excess distribution losses (Table 8.56)*	MU	4179	4784	5241
2	Average power purchase rate (Table 8.61)	Rs / Unit	3.80	3.82	3.89
3	Cost of additional power disallowed (1x2)	Rs. crore	1588.02	1827.49	2038.75

8.16 Past Recoveries

Petitioner's submission

The BSPHCL has projected gap of previous years without subsidy at Rs. 2853.71 crore for considering in FY 2013-14, as given in Table below:

Table 8.95: Past period Revenue Gap

(Rs. crore)

Sl. No.	Particulars	Amount
1	Revenue Gap for FY 2011-12	737.04
2	Carrying cost for FY 2012-13 (SBI rate @ 14.75%)	108.71
3	Total gap with carrying cost	845.76
4	Revenue gap for FY 2012-13	2007.95
5	Total gap	2853.71

Commission's analysis

The Commission has conducted detailed analysis and truing-up for FY 2011-12 based on the audited annual account and review for FY 2012-13. The summary of the revenue gap / surplus approved by the Commission is given in the Table below:

Table 8.96: Approved Revenue Gap / Surplus for FY 2011-12 to FY 2012-13

(Rs. crore)

Sl. No.	Particulars	Amount
1	Revenue gap / (Surplus) for FY 2011-12	(170.33)
2	Revenue gap / (Surplus) for FY 2012-13 (as per review of FY 2012-13)	-
3	Cumulative revenue Gap / (surplus)	(170.33)

The aggregate revenue gap along with carrying cost for FY 2011-12 to FY 2012-13 approved by the Commission resulting in a cumulative revenue surplus of Rs. 170.33 crore. The Commission shall consider this surplus in the ARR for FY 2013-14.

8.17 Annual Revenue Requirement (ARR) and Revenue Gap at existing tariff projected for the Distribution companies for the control period FY 2013-14 to FY 2015-16

Petitioner's Submission

ARR as projected by BSPHCL for the two distribution companies for the control period FY 2013-14 to FY 2015-16 is given in the Table below:

Table 8.97: Projected Annual Revenue Requirement for the two distribution companies for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1	Net power purchase cost	6070.96	7467.45	9399.14
2	Interest cost	237.27	762.34	699.29
3	Depreciation	133.13	245.15	334.97
4	O&M cost	533.14	633.36	763.05
5	Interest cost on working capital	188.05	241.53	323.14
6	Return on equity	123.06	123.06	123.06
7	**Total ARR**	**7285.61**	**9172.89**	**11642.64**
8	Less: Non-tariff income	110.68	122.45	136.00
9	**Net ARR**	**7174.93**	**9050.44**	**11506.64**

Commission's Analysis

Based on the analysis of ARR submitted by BSPHCL, the ARR as approved by the Commission for the two distribution companies for the control period FY 2013-14 to FY 2015-16 is given in the Table below:

Table 8.98: Approved Annual Revenue Requirement for the two distribution companies for the control period FY 2013-14 to FY 2015-16

(Rs. crore)

Sl.No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1.	Net power purchase cost	5784.92	6668.52	7732.96
2.	O&M Expenses	530.15	573.85	621.24
	Employee Cost	404.24	438.26	475.22
	R&M expenses	79.87	86.01	92.63
	A&G expenses	46.04	49.58	53.39
3.	Depreciation	77.6	163.24	282.6
4.	Interest and Finance expenses	211.28	395.92	646.05
5.	Interest on working capital	123.16	158.09	204.37
6.	Return on equity	123.10	123.10	123.10
7.	**Total Revenue Requirement**	**6850.21**	**8082.72**	**9610.32**
8.	Less: Non-tariff income	186.5	183.11	179.27
9.	**Net Revenue Requirement**	**6663.71**	**7899.61**	**9431.05**

8.18 Projected Revenue gap at existing tariff for control period FY 2013-14 to FY 2015-16

Petitioner's submission:

Based on the projection of Revenue Requirement during the control period and revenue from various sources, BSPHCL projected the revenue gap at existing Tariff is show in Table below:

Table 8.99: Proposed Revenue gap for control period FY 2013-14 to FY 2015-16

(As submitted in letter No. Com/Tariff Petiton-160/2012 (part-I)/3123 dated 20.12.2012)

(Rs. crore)

Sl. No.	Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1.	Net ARR for the DISCOMs (A)	7174.93	9050.44	11506.64
2.	Revenue from sale of power at existing tariff (B)	3632.70	4249.12	5050.76
3.	Gap at existing tariff (C=A-B)	3542.23	4801.32	6455.88
4.	Gap of previous year with grant and subsidy (D)	2853.71	6395.94	11197.26
5.	Net gap without subsidy (E=C+D)	6395.94	11197.26	17653.14
6.	Expected grant and subsidy during the year (F)	1080.00	1080.00	1080.00
7.	Cumulative subsidy since FY 2012-13	3780.00	4860.00	5940.00
8.	Net gap with subsidy (G=E-F)	3427.72	7149.04	12524.92

8.19 Approved Revenue Gap with existing tariff for FY 2013-14

Based on the Annual Revenue Requirement approved for FY 2013-14 and estimated revenue from sale of power with existing tariff the revenue gap for FY 2013-14 is given in the Table below.

Table 8.100: Approved Revenue gap for FY 2013-14

(Rs. crore)

Sl. No.	Particulars	Amount
1	Net ARR	6663.71
2	Add: Recovery of revenue gap / (Surplus) of past period (True up of FY 2011-12)	-170.33
3	Net Revenue requirement (1-2)	6493.38
4	Less: Power purchase cost disallowed	1588.02
5	Less: Revenue from existing tariff	3482.52
6	Less: Revenue from sales to Nepal	255.20
7	Gap (3-4-5)	1167.64
8	Total grant from State Government	2160.00
9	Grant used for compensating BSPHCL disallowed power.	1588.02
10	Balance Resource assistance from State Government (8-9)	571.98
11	Net Gap/(Surplus) at existing Tariff (7-10)	595.66

From the above Table it can be seen that after considering the State Government support for cost of additional power purchase requirement on account of difference in actual distribution loss of Discoms and loss approved by the Commission, the revenue gap approved by the commission for FY 2013-14 is Rs.595.66 crore.

The revenue surplus worked out in the review for FY 2012-13 is not considered in the ARR for FY 2013-14 as it was only indicative and worked out on the revised estimates projected by BSPHCL and not based on any approved annual accounts. Further, it was noted that the revenue surplus of Rs.674.63 crore approved in the review for FY 2011-12 in the Tariff Order for FY 2012-13 dated 30.03.2012 at came down to Rs.170.33 crore while truing up of FY 2011-12 based on audited annual accounts.

However, the surplus/gap of FY 2012-13 will be considered in the ARR of FY 2013-14 after truing up of FY 2012-13 when the audited accounts will be made available by BSPHCL.

8.20 Revenue at Approved Tariff

The Commission has revised the existing retail tariff and approved retail tariff for FY 2013-14 in the chapter-10 “Tariff principles, design and tariff schedule”. The Commission expects an additional revenue of Rs. 241.18 crore on account of tariff revision which indicates a tariff rise of 6.9%%.

Table 8.101: Revenue from sale of energy at Approved Tariff for FY 2013-14

Particular	Energy Sale (MU)	Revenue (Rs. crore)	Average realization (Rs. per unit)
Kutir Jyoti (Rural)	365	117.98	3.23
Kutir Jyoti (Urban)	67	13.07	1.95
DS - I (Rural)	689	230.00	3.34
DS- II			
Single Phase	895	451.43	5.04
Three Phase	972	488.86	5.02
DS- III	1	0.47	4.7
NDS-I (Rural)	19	8.45	4.45
NDS-II (Urban)			
Single Phase	783	538.70	6.88
Three Phase	87	60.11	6.91
NDS-III	3	1.20	4.23
LTIS-I	172	103.06	5.99

LTIS-II	116	72.79	6.28
Public Water Works	57	44.73	7.85
IAS-I (Private)	336	38.64	1.15
IAS-II (Government)	195	102.16	5.24
SS-I (Metered)	8	5.73	7.16
SS-II (Unmetered)	45	27.86	6.19
HTS-I	747	512.13	6.86
HTS-II	219	151.71	6.93
HTS-III	193	116.81	6.05
HTSS	523	287.00	5.49
RTS-I	551	350.81	6.37
Total	**7043**	**3723.70**	5.29

8.21 Revenue Gap at Approved Tariff

The expected revenue gap at approved tariffs for the FY 2013-14 is Rs. 354.48 crore as given in table below:

Table 8.102: Revenue Gap at Approved Tariff for FY 2013-14

(Rs. crore)

Sl. No.	Particulars	Amount
1	Revenue requirement (Table 8.98)	6663.71
2	Less: Recovery of revenue gap / (Surplus) of past period (True up of FY 2011-12)	-170.33
3	Revenue requirement (1-2)	6493.38
4	Less: Power purchase cost disallowed (Table 8.94)	1588.02
5	Net revenue requirement for FY 2013-14 (3-4)	4905.36
6	Less: Expected revenue at approved tariff	3723.70
7	Less: Revenue from sales to Nepal	255.20
8	Gap (5-6-7)	926.46
9	Total grant from State Government	2160.00
10	Grant used for compensating BSPHCL disallowed power.	1588.02
11	Balance Resource assistance from State Government (8-9)	571.98
12	Net Gap at approved tariff (8-11)	354.48

As per the letter from State Government dated 4th March 2013, the treatment of support from State Government is considered to compensate in full for the financial losses caused to the two Power distribution companies on account of additional power purchase due to difference in the actual T&D loss and the T&D loss as determined/ approved by the Commission and the remain grant of Rs. 571.98 crore is considered as subsidy to agriculture and rural consumers.

In view of the above, the Commission approves an average tariff hike of 6.9 % for FY 2013-14. This hike has been approved to minimize combined revenue gap of the two distribution companies. It is felt that any sharp increase in tariff would have caused undue hardship to the consumers and the tariffs need to be gradually made to reflect the actual cost of supply. It may be noted that the approved value of regulatory asset in this Tariff Order being carried forward to subsequent years is justifiable on the following grounds:

The Commission has approved substantial tariff increase consecutively in FY 2011-12 and FY 2012-13, therefore it was felt that any substantial increase in tariff would be an additional burden to the consumer.

Moreover, there has been a sudden change in the policy of the State Government in which it has been allowing for adjustment of grant/ subsidies to the BSPHCL. A Bulk of the subsidy support which was earlier being used to reduce the overall ARR is now being used to compensate the BSPHCL for the disallowed power purchase cost on account of higher than approved T&D losses.

Therefore, the Commission has decided to retain net revenue gap of Rs. 354.48 crore for FY 2013-14 to avoid sudden tariff shock. This unrecovered gap is considered as Regulatory Asset to be amortized in subsequent three years. BSPHCL may have to mobilize financial resources to maintain its cash flow and the Commission will allow carrying cost of the same.

8.22 Average Tariff as percentage of Average Cost in Tariff Order for FY 2012-13 and FY 2013-14

The Commission has approved tariff for various consumer categories considering gradual reduction in cross-subsidy in line with the requirement of Tariff Policy. As seen from the table below, tariff as a percentage of average cost is moving towards the band of ± 20% of average cost of supply as suggested in Tariff Policy. The average Tariff as a percentage of average cost of supply approved in Tariff Order for FY 2012-13 and that approved in the Tariff Order for FY 2013-14 is as shown in the table below.

Table 8.103: Cross-Subsidy in FY 2012-13 & FY 2013-14

Sl.	Particular	FY 2012-13 (Approved in TO FY 2012-13)			FY 2013-14 (Approved by Commission)		
		Average Realization	Cost of Service	% of average cost	Average Realization	Cost of Service	% of average cost
1	Kutir Jyoti	1.59	5.5	29%	3.03	6.46	47%
2	DS-I	1.88	5.5	34%	3.34	6.46	52%
3	DS- II	3.59	5.5	65%	5.06	6.46	78%
4	DS-III				4.70	6.46	73%
5	NDS - I	2.32	5.5	42%	4.45	6.46	69%
6	NDS-II	7.24	5.5	132%	6.88	6.46	107%
7	NDS - III	3.44	5.5	62%	4.23	6.46	65%
8	Irrigation IAS – I	1.15	5.5	21%	1.15	6.46	18%
9	Irrigation IAS – II	5.63	5.5	102%	5.24	6.46	81%
10	L.T.I.S.-I	5.94	5.5	108%	5.99	6.46	93%
11	L.T.I.S.-II	6.69	5.5	122%	6.28	6.46	97%
12	Public Water work	7.14	5.5	130%	7.85	6.46	122%
13	Street light-I (Metered)	6.63	5.5	120%	6.44	6.46	100%
14	Street light-II (Unmetered)	5.79	5.5	105%	7.21	6.46	112%
15	H.T.S.-I	6.54	5.5	119%	6.86	6.46	106%
16	H.T.S.-II	6.12	5.5	111%	6.93	6.46	107%
17	H.T.S.-III	5.78	5.5	105%	6.05	6.46	94%
18	H.T.S.S.	3.81	5.5	69%	5.49	6.46	85%
19	R.T.S.	5.91	5.5	107%	6.37	6.46	99%

8.23 Average Tariff as percentage of voltage-wise cost

The Commission has made an attempt to determine the voltage-wise cost based on the limited data / information made available as detailed in Chapter-9. The average tariff as a percentage of cost of supply approved in Tariff Order for FY 2012-13 and the average tariff as a percentage of voltage-wise cost determined in chapter-9 for FY 2013-14 is as shown in table below:

Table 8.104: Computation of Cross-Subsidy with average cost of service for FY 2012-13 & FY 2013-14

Sl.	Particular	FY 2012-13 (Approved in TO FY 2013-14)			FY 2013-14 (Approved by Commission)		
		Average Realization	Cost of Service	% of average cost	Average Realization	Cost of Service	% of average cost
1	Kutir Jyoti	1.59	5.5	29%	3.03	6.46	47%
2	DS-I	1.88	5.5	34%	3.34	6.46	52%
3	DS-II	3.59	5.5	65%	5.06	7.15	71%
4	DS-III				4.70	6.46	73%
5	NDS - I	2.32	5.5	42%	4.45	7.15	62%
6	NDS-II	7.24	5.5	132%	6.88	7.15	96%
7	NDS - III	3.44	5.5	62%	4.23	7.15	59%
8	Irrigation IAS – I	1.15	5.5	21%	1.15	6.46	18%
9	Irrigation IAS – II	5.63	5.5	102%	5.24	7.15	73%
10	L.T.I.S.-I	5.94	5.5	108%	5.99	7.15	84%
11	L.T.I.S.-II	6.69	5.5	122%	6.28	7.15	88%
12	Public Water work	7.14	5.5	130%	7.85	7.15	110%
13	Street light-I (Metered)	6.63	5.5	120%	6.44	7.15	90%
14	Street light-II (Unmetered)	5.79	5.5	105%	7.21	7.15	101%
15	H.T.S.-I	6.54	5.5	119%	6.86	6.77	101%
16	H.T.S.-II	6.12	5.5	111%	6.93	6.46	107%
17	H.T.S.-III	5.78	5.5	105%	6.05	6.22	97%
18	H.T.S.S.	3.81	5.5	69%	5.49	6.46	85%
19	R.T.S.	5.91	5.5	107%	6.37	6.22	102%

9. Voltage-wise Cost of Supply

9.0 The Appellate Tribunal for Electricity (APTEL) in its order dated 10th May, 2012 on the Appeal No.14 of 2011 of Bihar Industries Association and Appeal No.27 of 2011 Kalyanpur Cements Limited has issued the following orders on the alignment of tariff to Cost of Supply. While dealing the appeals, the APTEL has referred to its judgment reported in ELR (APTEL) 1022 between Tata Steel Limited Vs. Orissa Electricity Regulatory Commission in which it has extensively quoted its judgment under Appeal No. 931 of 2007 - SIEL Limited Vs. PSERC and others.

The Tribunal has first dealt whether the tariff is to be aligned with average cost of supply as was done by PSERC and other Commissions or cost of supply as per the Act and has held that it should be "Cost of Supply" to different categories of consumers as per Section 61 (g) of the Act, 2003 (para 18.9 of APTEL Order). Having settled this issue the Tribunal has extensively dealt on the issue of determination of "Cost of Supply" to different categories of consumers In para 18.9 of the order it has dealt on providing of meters to all consumers under section 55 of the Act and conducting system studies for arriving at the "technical losses" in the distribution system. The Tribunal has extensively dealt with determination of cost of supply and arriving at cross subsidy surcharge (para 18.9 of APTEL Order). The methodology indicated by Tribunal for determination of "Cost of Supply" in the order is reproduced below:

> *"31. We appreciate that the determination of cost of supply to different categories of consumers is a difficult exercise in view of non-availability of metering data and segregation of network costs. However, it will not be prudent to wait indefinitely for availability of the entire data and it would be advisable to initiate a simple formulation which could take into account the major cost element to a great extent reflect the cost of supply. There is no need to make distinction between the distribution charges of identical consumers connected at different nodes in the distribution network. It would be adequate to determine the voltage-wise cost of supply taking into account the major cost element which would be applicable to all the categories of consumers connected to the same voltage level at different*

locations in the distribution system. Since the State Commission has expressed difficulties in determining voltage wise cost of supply, we would like to give necessary directions in this regard.

32. Ideally, the network cost can be split into the partial costs of the different voltage level and the cost of supply at a particular voltage level is the cost at that voltage level and upstream network. However, in the absence of segregated network costs, it would be prudent to work out the voltage-wise cost of supply taking into account the distribution losses at different voltage levels as a first major step in the right direction. As power purchase cost is a major component of the tariff, apportioning the power purchase cost at different voltage levels taking into account the distribution losses at the relevant voltage level and the upstream system will facilitate determination of voltage wise cost of supply, though not very accurate, but a simple and practical method to reflect the actual cost of supply.

33. The technical distribution system losses in the distribution network can be assessed by carrying out system studies based on the available load data. Some difficulty might be faced in reflecting the entire distribution system 11 kV and 0.4 kV due to vastness of data. This could be simplified by carrying out field studies with representative feeders of the various consumer mix prevailing in the distribution system. However, the actual distribution losses allowed in the ARR which include the commercial losses will be more than the technical losses determined by the system studies. Therefore, the difference between the losses allowed in the ARR and that determined by the system studies may have to be apportioned to different voltage levels in proportion to the annual gross energy consumption at the respective voltage level. The annual gross energy consumption at a voltage level will be the sum of energy consumption of all consumer categories connected at that voltage plus the technical, distribution losses corresponding to that voltage level as worked out by system studies. In this manner, the total losses allowed in the ARR can be apportioned to different voltage levels including the EHT consumers directly connected to the transmission system of GRIDCO. The cost of supply of the appellant's category who are connected to the 220/132 kV voltage may have zero technical losses but will have a component of apportioned distribution losses due to difference between the loss level allowed in ARR (which *includes commercial losses) and the technical losses determined by the system studies, which they have to bear as consumers of the distribution licensee.*

34. Thus power purchase cost which is the major component of tariff can be segregated for different voltage levels taking into account the transmission and distribution losses, both commercial and technical, for the relevant voltage level and upstream system. As segregated network costs are not available, all the other costs such as return on equity, interest on loan, depreciation, interest on working capital and O&M costs can be pooled and apportioned equitably, on pro-rata basis, to all the voltage levels including the appellant's category to determine the cost of supply. Segregating power purchase cost taking into account voltage-wise transmission and distribution losses will be a major step in the right direction for determining the actual cost of supply to various consumer categories. All consumer categories connected to the same voltage will have the same cost of supply. Further, refinements in formulation for cost of supply can be done gradually when more data is available.

36. The learned counsel for the Appellants has argued that it would not be difficult to determine cost of supply for them as they draw electricity directly from the transmission system of the State Transmission Licensee. We feel that even if it is not difficult for the State Commission to determine the cost of supply for the appellants, unless the cost of supply is determined for all the consumer categories connected to different voltage levels, it will not serve any purpose. We also do not accept the argument of the learned counsel for the appellant that the distribution losses and network costs in respect of the appellant consumer categories will be nil. As stated above, the commercial losses of the distribution system have to be borne by all the consumers of the distribution licensee. However, as the distribution losses reduce gradually, the cost of supply for the appellants' category will also reduce. We also can not grant any relief to the appellants on account of fixed charges for the distribution system assets and O&M expenses, etc., due to complexities involved in determining the segregated cost of service and in light of amendment of 2007 of the Act removing the provision of elimination of subsidies.

37. We, however, direct the State Commission to determine the cross subsidy for each consumer category after working out the voltage-wise cost of supply based on the directions given in the preceding paragraphs. The cross subsidy will be calculated as the difference between the average tariff realization for that category as per the Annual Revenue Requirement and the cost of supply for the consumer category based on voltage-based cost of supply".

9.1 It could be seen from the above judgment that assessment of the technical distribution losses in the distribution system network by carrying out system studies based on the available load data for 33 kV and above and field studies for representative feeders for 11 kV and 0.4 kV of the various consumer mix prevailing in the distribution system is a prerequisite for arriving at the voltage-wise cost of supply as per methodology ordered by the APTEL.

9.2 The methodology given by the APTEL for determination of voltage-wise "Cost of Supply" and the inputs required are briefly given below:

(i) The technical distribution system losses in the distribution network are to be assessed by carrying out system studies based on available load data for 33 kV and above voltages and in the case of 11 kV and 0.40 kV (LT), due to vastness of data, field studies to be carried out with representative feeders for the various consumer mix prevailing in the distribution system.

(ii) The total losses in the system, which include commercial or non-technical losses, will be more than the technical losses determined based on the system studies. Therefore, the difference between the total losses in the system and the technical losses determined by the studies may have to be apportioned to different voltage levels in proportion to annual gross energy consumption at the respective voltage level.

The annual gross energy consumption of all consumers at a voltage level will be the sum of energy consumption of all consumer categories connected at that voltage plus the technical losses corresponding to that voltage level as worked out by the system studies.

(iii) The power purchase cost which is the major component of tariff is to be segregated for different voltage levels taking into account the transmission and distribution losses, both technical and non-technical commercial for the relevant voltage level and upstream system.

(iv) The network costs such as O&M costs, interest on loans, depreciation, interest on working capital and return on equity are to be pooled and apportioned equitably on pro-rata basis to all voltage levels to determine the cost of supply.

9.3 The Commission conducted suo-moto proceedings to discuss the directive issued by APTEL to work out the cost of supply as per methodology suggested by APTEL in its order dated 10.03.2012. BSPHCL had given a presentation on the subject during the hearing on the suo-motu proceedings. M/s Bihar Industries Association and M/s Kalyanpur Cements Limited had also made their submissions on the subject. BSPHCL in their presentation had indicated the following voltage level technical losses:

220/132 kV - 3.1%
33 kV - 5.0%
11 kV - 7.4%
LT - 13.7%

As per the study the total technical losses account to 14.71% of total losses of 44.05% for FY 2011-12 and balance is commercial losses. The technical losses indicated are based on limited field study and are not based on system studies. The commercial losses are derived by deducting the technical losses from the total losses.

Subsequently in its tariff petition for FY 2013-14, BSPHCL has given the following technical loss levels for FY 2013-14.

Voltage level	Technical losses (%)
220/132 kV	3.04
33 kV	4.90
11 kV	7.20
LT	13.00

M/s Bihar Industries Association and M/s Kalyanpur Cements Limited also adopted almost same level of loss levels as considered by BSPHCL in their submission.

In the total losses of 38”% submitted by them for FY 2013-14, 17.52% account for technical loss and the balance 20.48% commercial losses. Based on some limited study BSPHCL has computed the technical losses at 17.52% and accounted balance losses to commercial by deducting technical losses computed from the total estimated losses. Reduction of commercial losses could be achieved without much capital investment at a speedier pace by improving governance and administrative strengthening, whereas reduction of technical losses needs more capital investment and time. With the capital investment projected by the petitioner for the period FY 2012-13 to FY 2013-14, there is lot of scope for reduction of technical losses in subsequent year, particularly at 11 kV and LT levels.

9.4 The Commission has fixed the total T&D losses at 26% for FY 2013-14. Due to lack of data for segregation of technical and commercial losses, the Commission could not fix the technical and commercial loss levels within total loss of 26% for FY 2013-14. In view of high loss level of 38% projected by BSPHCL, it is considered appropriate to assume technical and commercial loss levels for realistic assessment of cost of supply within overall 26% losses allowed by the Commission. The petitioner is assessing the transmission system losses and reporting to the Commission every month which indicate that the average transmission losses estimated for the period April 2012 to October 2012 is 3.99%. Hence, keeping the transmission losses at 4%, the remaining is adjusted, among other voltage levels.

The Commission has considered the following voltage-wise technical loss level for FY 2013-14 within overall loss level of 26%.

Voltage	**Losses (%)**
220/132 KV	4.00
33 KV	5.00
11 KV	6.00
LT	7.00
Technical Losses of the system (A)	14.58
Loss approved by the Commission in the Tariff Order for FY 2013-14 (B)	26.00
Commercial and non-technical losses in the system (B-A)	11.42

Based on the above assumptions the Commission has computed the voltage-wise cost of supply for as below:

9.5 Energy Sales:

Approved voltage-wise energy sales for FY 2013-14.

Sl.No.	Voltage and Category	Sales approved (MU)
A	220/132 KV	
	HT Industry (HTS-III)	193
	Railway Traction	551
	Sub - Total	**744**
B	33 KV	
	HTS-II	219
	HTSS	523
	Nepal	550
	Sub - Total	**1292**
C	11 KV	
	HTS-I	747
D	LT	
	Domestic, Non-Domestic, Agriculture and Others	4810
	Total (A+B+C+D)	7593

9.6 Voltage –wise Technical and Commercial Losses:

As stated in para 33 of APTEL order dated 10.05.2012 in Appeal No.14 of 2011, the voltage-wise commercial losses are to be arrived at by segregating the total commercial losses in proportion to grossed up sales (Actual consumption + technical loss) voltage-wise.

In para 34 of APTEL order it is reiterated that the power purchase cost is to be segregated for different voltage levels taking into account the transmission and distribution losses, both commercial and technical, for relevant voltage level and upstream system. Thus the losses (technical) at 33 KV shall be the losses at that voltage and also at upstream 132 KV voltages.

9.7 The technical and commercial losses are arrived at based on the above method as below.

The technical losses are computed as given in the table below:

Voltage Level	Sales (MU)	Volt. Wise Tech. Loss (%)	Energy Input (MU)	Tech. Losses (MU)
1	2	**3**	4	5
132/220 kV	A	**w**	=A/(1-w%)	=(4)-(2)
33kV	B	**x**	=B/(1-x%)(1-w%)	=(4)-(2)
11kV	C	**y**	=C/(1-y%)(1-x%)(1-w%)	=(4)-(2)
LT	D	**z**	=D/(1-z%)/(1-y%)(1-x%)(1-w%)	=(4)-(2)
Total	A+B+C+D)			

Technical Losses:

Sl. No.	Voltage Level (KV)	Voltage-wise Technical Losses (%)	Cumulative Loss (%)	Energy input (MU)	Energy Sold (MU)	Technical Loss (MU)
1	2	3	4	5	6	7(5-6)
1	220/132	4.00	4.00	775	744	31
2	33	5.00	8.80	1417	1292	125
3	11	6.00	14.27	872	747	125
4	0.4	7.00	20.30	6035	4810	1225
Total				**9098**	**7593**	**1505**

.

Commercial Losses:

Sl. No.	Voltage Level (KV)	Energy Sale (MU)	Technical Losses (MU)	Sales + Technical Loss (MU)	Commercial Loss (MU)	Total Sales + Technical + Commercial Loss as per Tariff order MU)
1	2	3	4	5 (3+4)	6	7 (5+6)
1	220/132 KV	744	31	775	100	875
2	33	1292	125	1417	183	1599
3	11	747	125	872	112	984
4	LT	4810	1225	6035	779	6814
	Total	**7593**	1505	**9098**	**1174**	10272

9.8 Apportionment of Losses

The above technical and commercial losses are apportioned at different voltage levels as below:

Voltage Level (KV)	Energy Sale (MU)	Voltage-wise Technical losses(%)	Cumulative Loss (%)	Technical Losses (MU)	Sales+ Tech. losses (MU)	Commercial Loss (MU)	Total Loss (MU)	Energy Input (MU)
1	2	3	4	5	6 (2+5)	7	8 (5+7)	9
220/132	744	4.00	4.00	31	775	100	131	875
33	1292	5.00	8.80	125	1417	183	307	1599
11	747	6.00	14.27	125	872	112	237	984
LT	4810	7.00	20.30	1225	6035	779	2004	6814
Total	**7593**			1505	9098	1174	2679	**10272**

9.9 Allocation of Power Purchase Cost for FY 2013-14

The power purchase cost has been allocated for different voltage levels taking into account the T&D losses, both commercial and technical, for the relevant voltage level and upstream as per methodology indicated by APTEL.

Average unit cost of purchase approved by the Commission is Rs.3.80/unit (as per Table 6.22). After deducting the regional transmission losses of 331 MU from the total power purchase of 15774 MU, the average power purchase cost per unit works out to Rs.3.86 [(5966÷(15774-331)*10].

Allocation of power purchase cost

Sl. No.	Voltage Level (KV)	Energy Sale (MU)	Sales + Technical loss + Comml. losses (MU)	Unit cost of purchase approved by the Commission (Rs./unit)	Total Power Purchase Cost (Rs.crore)	Cost of Power per unit sale (Rs./unit)
1	2	**3**	**4**	5	6 (4*5)	**7(6÷3)**
1	220/132 KV	744	875	3.86	338	4.54
2	33	1292	1599	3.86	617	4.78
3	11	747	984	3.86	380	5.09
4	LT	4810	6814	3.86	2630	5.47
	Total	7593	10272		3965	5.22

9.10 Network Cost

APTEL in its order has indicted the method for allocation of network costs at different voltage levels as under:

> " ……….. all other cost such as Return on Equity , interest on loan , interest on working capital and O&M costs can be pooled and apportioned equitably, on pro-rata basis to all the voltage level to determine the cost of supply".

The network costs have to be calculated on pro-rata basis and its appointment shall be fare and just.

The network cost approved by the Commission for FY 2013-14 are:

Sl.No.	Particulars	Amount (Rs. Cr)
1	Employee Cost	404.24
2	R&M costs	79.87
3	A&G expenses	46.04
4	Depreciation	77.60
5	Interest & Finance Charges	211.28
6	Interest on Working Capital	123.50

Sl.No.	Particulars	Amount (Rs. Cr)
7	Return on Equity	123.10
8	Total (1 to 7)	1065.63
9	Transmission cost	213.00
10	Total cost	1278.63
11	Energy input at transmission (MU)	7593
12	Network cost (Distribution + Transmission)/unit (Rs./unit)	1.68

Allocation of network costs at different voltages

Sl.No.	Particulars	132 KV	33 KV	11 KV	LT
1	Network cost (Rs./unit)	1.68	1.68	1.68	1.68
2	Energy sales (MU)	744	1292	747	4810
3	Total network cost at the voltage level (1X2) (Rs. Cr)	124.99	217.06	125.50	808.08

9.11 Cost of supply at different voltage levels

Based on the power purchase cost and network cost as above, the cost of supply at different voltage levels is arrived at as below:

Sl. No.	Supply voltage	Cost of power purchase cost (Rs. /unit)	Network cost (Ps. / unit)	Cost of supply (Ps. /unit)
1	220/132 KV	4.54	1.68	6.22
2	33	4.78	1.68	6.46
3	11	5.09	1.68	6.77
4	LT	5.47	1.68	7.15

10. Tariff Principles, Design and Tariff Schedule

10.1 Background

The Commission in determining the Aggregate Revenue Requirement (ARR) for MYT control period FY 2013-14 to FY 2015-16 and the retail tariff for FY 2013-14 for the two distribution licensees has been guided by the provisions of the Electricity Act, 2003, the National Electricity Policy 2005 (NEP), the Tariff Policy 2006 (TP), Regulations on Terms and Conditions for Determination of Tariff issued by the Central Electricity Regulatory Commission (CERC) and BERC (Terms and Conditions for Determination of Tariff) Regulations, 2007. Section 61 of the Act lays down the broad principles, which shall guide determination of retail tariff. As per these principles the tariff should progressively reflect cost of supply and also reduce cross subsidies within the period to be specified by the Commission. The Act also lays special emphasis on safeguarding consumer interests and also requires that the costs should be recovered in a reasonable manner. The Act mandates that tariff determination should be guided by the factors, which encourage competition, efficiency, economical use of resources, good performance and optimum investment.

The National Electricity Policy (NEP) aims at increased access to electricity, supply of reliable and quality power at reasonable rates, minimum life line consumption, financial turnaround and commercial viability of electricity sector and protection of consumer's interest. The Commission has considered factors as far as possible which aim at achieving the objectives of NEP while determining the revenue requirement of the two distribution companies and designing the retail tariff for consumers.

The Tariff Policy (TP) notified by Government of India in January 2006 provides comprehensive guidelines for determination of tariff and revenue requirement of power utilities. The Commission has endeavoured to follow these guidelines as far as possible.

The Electricity Act, 2003 requires consideration of Multi Year Tariff (MYT) principles and Tariff Policy also mandates that the MYT framework be adopted for determination of tariff from 1st April 2006. The BERC (Terms and Conditions for determination of tariff) Regulations, 2007 provide the MYT framework to be made applicable to licensees from the date to be notified by the Commission. However, the Commission did not introduce MYT regime in the State immediately but decided to defer its applicability till FY2013-14 because of lack of requisite and reliable operational and financial data.

The Tariff Policy mandates that tariff should be within ±20% of the average cost of supply by FY2010-11 and requires Commissions to lay down a road map for reduction of cross subsidy. However, the Commission while designing the retail tariffs for FY2013-14 has taken into consideration the existing level of cross subsidies, the need to reduce cross subsidies as required under the Tariff Policy and the feasible pace at which it can be done without giving a tariff shock to subsidized consumers. The Commission has accordingly modified tariffs for consumer categories whose existing tariffs are lower/higher than the average cost of supply so that the retail tariffs of all such consumer categories move closer to the band of ± 20% of the average cost of supply. The Commission for this purpose has computed the average cost of supply on the basis of the revenue requirement allowed and the sale approved by the Commission for FY2013-14.

The Commission has also determined the voltage-wise cost of supply as per the direction and guidelines provided by APTEL, for the first time and determined the revised tariff rates such that they are within ± 20% of the voltage-wise cost of supply as for as possible except for Kutir Jyoti, rural and agricultural consumers for whom State Government tariff subsidy will be available.

10.2 Revenue gap for FY 2013-14

The petitioner in its tariff petition for MYT period from FY 2013-14 to FY 2015-16 has proposed revision of retail tariffs of various consumer categories to earn additional revenue of Rs.2730.47 crore leaving a gap of Rs. 494.60 crore to be recovered as regulatory assets in subsequent years.

However, on detailed scrutiny and application of prudency check on the aggregate revenue requirement filed by BSPHCL, the Commission has arrived at a more realistic aggregate revenue requirement of Rs.6663.71 crore for FY 2013-14. The net revenue gap arrived at existing tariff for FY 2013-14, is Rs.595.66 crore. Tariff rates are increased by about 6.9% on overall to obtain additional revenue of Rs.241.18 crore still having an unmet revenue gap of Rs.354.48 crore. This revenue gap of

Rs.354.48 crore in the combined ARR of South Bihar Power Distribution Company Limited and North Bihar Power Distribution Company Limited, which is not covered by the approved increase in tariff for FY 2013-14, is approved as Regulatory Asset which will be amortised along with admissible carrying cost in the next three years. However, the review of ARR and the revenue for FY 2012-13 indicates a surplus of Rs.975.32 crore. Therefore, the Regulatory Asset of Rs.157.26 crore approved in the tariff order for FY 2012-13 is not being carried forward along with carrying cost to the ARR for FY 2013-14 and final decision on this will be taken at the time of true up for FY 2012-13. Considering surplus of Rs.975.32 crore in the review for FY 2012-13, it is expected that the Regulatory Asset approved for the year 2013-14 may also be wiped out by the likely surplus at the time of true up for FY 2012-13.

10.3 Changes in Tariff proposed by BSPHCL

(a) Monthly minimum charges for HTS-1, HTS-II, HTS-III, HTSS and RTS.

BSPHCL proposed in its petition for reintroduction of monthly minimum charges for HTS-I, HTS-II, HTS-III, HTSS and RTS categories. This issue was considered by the Commission in the tariff order for FY 2012-13 and these charges were abolished for HT category of consumers. The Commission has decided not to approve this proposal.

(b) Levying of monthly fixed charges for Kutir Jyoti (Rural) metered, Kutir Jyoti (Urban), DS-I metered and NDS-I metered categories.

BSPHCL has proposed in its petition for levying of Rs.10/- per month per connection for Kutir Jyoti (Rural) metered, Kutir Jyoti (urban), Rs.20/- per connection per month for DS-I, metered and NDS-I metered categories. As discussed earlier in the tariff order for FY 2012-13, the Commission intends to gradually phase out the MMC for all consumer categories. Therefore, this proposal of BSPHCL is not accepted.

10.4 The approved Tariff Schedule which shall be effective from 1st Aril 2013 is given in Appendix-1.

Part-A - Tariff Schedule for Low Tension Supply.

Part-B - Tariff Schedule for High Tension Supply.

Part-C - Miscellaneous and General charges.

Appendix- 1

TARIFF SCHEDULE FOR RETAIL TARIFF RATES AND TERMS AND CONDITIONS OF SUPPLY FOR FY 2013-14

(Effective from 1st April, 2013)

PART - A: LOW TENSION SUPPLY

System of supply: Low Tension – Alternating Current, 50 cycles
Single Phase supply at 230 Volts

Three Phase supply at 400 Volts

The tariffs are applicable for supply of electricity to L.T consumers with a connected load upto 70 kW for domestic and non-domestic category, upto 99 HP for industrial (LTIS) and for public water works (PWW) category and upto 100 HP for irrigation category.

- Single Phase supply upto 7.0 kW
- Three Phase supply 5.0 kW and above

Category of Service AND TARIFF RATES

1.0 DOMESTIC SERVICE

Applicability

This tariff is applicable for supply of electricity to domestic purposes such as lights, fans, radios, televisions, heaters, air-conditioners, washing machines, air-coolers, geysers, refrigerators, ovens, mixers and other domestic appliances including motor pumps for lifting water for domestic purposes. This is also applicable to the common facilities in the multistoried, purely residential apartments, buildings.

1.1 Kutir Jyoti Connection (KJ) – Rural / Urban

This will be applicable to (i) all huts (Kutir) and dwelling houses of rural and urban families below the poverty line (BPL) (ii) houses built under schemes like Indira Awas Yojana and similar such schemes for BPL families.

i. Hut (Kutir) means a living place with mud wall and thatched roof or house built under Indira Awas Yojana and other similar schemes for BPL families which shall not exceed 200 Sq ft area.

ii. The total connected load of Kutir Jyoti connection in a rural area should not exceed 60 watts and for an urban connection it should not exceed 100 watts and maximum consumption 30 units per month shall be allowed.

iii. Use of CFL both in rural areas and urban areas should be encouraged.

iv. In case it is detected that the norms prescribed in para (i) and (ii) above are violated, the Kutir Jyoti Tariff shall immediately become inoperative and rates applicable to DS – I and DS- II category as the case may be, with appropriate charge shall apply in such cases.

1.2 Domestic Service – I (DS – I)

This is applicable to domestic premises in rural areas for a load upto 2 kW not covered by areas indicated under DS-II and not being fed from urban / town feeders.

1.3 Domestic Service – II (DS – II)

This is applicable for domestic premises in urban areas covered by Notified area committee / Municipality / Municipal Corporation / Development Authority / All District and Sub divisional towns / Block Head Quarters / Industrial areas /Contiguous Sub urban areas and also areas getting power from Urban / Town feeders for single phase supply for load upto 7 kW and three phase supply for load of 5 kW and above. Rural consumers having sanctioned load above 2 kW will also come under this category. Consumer has the option to take single -phase or three-phase supply connection for a load between 5 kW and 7 kW.

1.4 Domestic Service – III (DS – III)

This is applicable for registered societies, for their residential colonies, having not less than 15 houses / flats in the colony. Residential colonies / multistoried residential complexes taking load in bulk at a single point with a minimum load of 2 kW per flat / house and maximum total load upto 70 kW.

TARIFF RATES

1.0 Domestic Service

Sl.	Category of consumer	Fixed charge (Rs.)	Energy charge (Paisa/ Unit.)
1.1	**Kutir Jyoti - BPL Consumers**		
(i)	K.J. (Rural) - (Consumption upto 30 units per month)		
	Unmetered	Rs.55 / connection / per month	X
	Metered	X	**160 Ps/ unit** Subject to Monthly Minimum Charge of Rs.40 per month per connection.
(ii)	K.J. (Urban) (consumption upto 30 units per month)		
	Metered only	X	**195 Ps/ unit** Subject to Monthly Minimum Charge of Rs.50 per connection per month.

Fuel and Power Purchase cost Adjustment (FPPCA) charges as applicable will be charged extra however the same shall be provided by the State Government support to consumers and will not be recovered from consumer.

Sl.	Category of consumer	Fixed Charge (Rs.)	Energy Charges	
			Consumption in a month (Units)	**Rate P/unit**
1.2	**DS – I :** Connected load: Upto 2 kW only			
	Unmetered	Rs.160/connection / per month	X	X
	Metered	X	First 50 units	200
			51-100 units	230
			Above 100 units	270
		X	Subject to Monthly Minimum Charge (MMC) of 1^{st} kW – 40 units per month 2^{nd} kW – 20 units per month	

Fuel and Power Purchase cost Adjustment (FPPCA) charges as applicable will be charged extra.

Sl.	Category of consumer	Fixed charge (Rs.)	Energy charges	
			Consumption in a month (Units)	Rate Ps/unit
1.3	**DS – II (Metered)**			
	Single phase **Up to 7 kW**	First kw-Rs.55/ month/connection Addl. kW-Rs.15 per kW or part thereof per month.	1-100 units 101-200 units 201-300 units Above 300 units	285 350 420 530
	Three Phase **5 kW and above**	5 kW-Rs.250/ month/connection Addl. kW-Rs.15 per kW or part thereof per month		
			Subject to monthly minimum charge for 1st kW - 40 units per month Additional kW or part thereof - 20 units per month	

Fuel and Power Purchase Cost Adjustment (FPPCA) charges as applicable will be charged extra.

Premium tariff will be charged as applicable in notified area.

OPTIONAL

Domestic - DS-II (D) – Demand Based

All consumers under DS-II category with 3 phase meter connection with contract demand between 5 kW and 70 kW opting for demand based tariff shall be required to pay at the rates indicated below:

Sl.	Category of consumer	Demand charge (Rs./kW/month)	Energy charges	
			Consumption in a month (Units)	Rate Ps/unit
1.3.1	**DS-II (D)-(OPTIONAL) Demand Based Tariff**			
	Contract demand of 5 kW to 70 kW	Rs. 60/kW per month or part thereof on recorded demand or contract demand whichever is higher.	1-100 units 101-200 units 201-300 units Above 300 units	285 350 420 530

Sl.	Category of consumer	Demand charge (Rs./kW/month)	Energy charges	
			Consumption in a month (Units)	Rate Ps/unit
Subject to (i) Monthly minimum charge of 50 units per month/kW on recorded demand or contract demand, whichever is higher. (ii) If in any month the recorded maximum demand exceeds 110% of the contract demand, that portion of the demand in excess of the contract demand will be billed at twice the normal rate.				

Fuel and Power Purchase Cost Adjustment (FPPCA) charges as applicable will be charged extra.

Premium tariff will be charged as applicable in notified area.

Sl.	Category of consumer	Fixed charge (Rs.)	Energy charges	
			Consumption in a month (Units)	Rate (Ps/unit)
1.4	**DS – III (Metered)**			
		Rs. 55/- kW/ month	All units	420
			Subject to monthly minimum charge For 1st kW – 40 units / flat per month Additional kW or part there of– 20 units/flat per month	

FPPCA as applicable will be charged extra.

Premium tariff will be charged as applicable in notified area.

2.0 NON-DOMESTIC SERVICE (NDS)

Applicability

This is applicable for supply of electrical energy for non-domestic consumers having sanctioned load upto 70 kW, using electrical energy for light, fan and power loads for non – domestic purposes like shops, hospitals, nursing homes, clinics, dispensaries, restaurants, hotels, clubs, guest houses, marriage houses, public halls, show rooms, centrally air-conditioning units, offices, commercial establishments, cinemas, X-ray plants, non – government schools, colleges, libraries and research institutes, boarding / lodging houses, libraries, railway stations, fuel/oil stations, service stations, All India Radio / T.V. installations, printing presses, commercial trusts, societies, banks, theatres, circus, coaching institutes, common facilities in multistoried commercial office / buildings Government and semi–government offices, public museums and other installations not covered under any other tariff schedule. Government educational institutions, their hostels and libraries, Government hospitals and government research institutions and non – profitable government aided educational institutions their hostels and libraries., non-profitable recognized charitable cum public institutions, places of worship like temples, mosques, gurudwaras, churches etc. and burial / crematorium grounds.

2.1 Non – Domestic Service (NDS-I)

Applicable to loads upto 2 kW in rural areas not covered by areas indicated under NDS – II and not being fed from urban / town feeders.

TARIFF RATES – NDS - I

		Fixed charge (Rs.)	Energy charges	
			Consumption in a month (Units)	**Rate ps/unit**
2.1	**NDS- I**			
	Unmetered	Rs.220/connection/ per month	x	X
	Metered	x	1-100 units	230
		x	101-200 units	270
		x	Above 200 units	310
		x	Subject to monthly minimum charge of 50 units per kW	

FPPCA charges as applicable will be charged extra.

Premium tariff will be charged as applicable in notified area. .

2.2 Non – Domestic Service – NDS – II (Metered)

Applicable to loads upto 70 kW in urban areas covered by Notified Area Committees / Municipalities / Municipal Corporations / Regional Development Authorities / District and Sub – divisional towns / Block headquarters / Industrial areas / contiguous sub urban areas getting power from urban / town feeders, except those covered under NDS-III.

Rural consumers having sanctioned load above 2 kW will also come under this category.

TARIFF RATES – NDS - II

Sl.	Fixed charge (Rs.) Per month	Energy charges	
		Consumption in a month (Units)	Rate ps/unit
2.2	NDS - II		
	Single phase Rs.180 /kW or part thereof upto 7 Kw	1-100 units	500
		101-200 units	530
		Above 200 units	570
	Three Phase Rs.200/kW or part thereof for loads of 5 kW and above		
		Subject to a monthly minimum charge of 50 units/kW or part thereof	

FPPCA charges as applicable will be charged extra.

Premium tariff will be charged as applicable in notified area.

OPTIONAL

2.2.1 Non-Domestic Service - NDS – II (D) – Demand Based

All those consumers under NDS-II with 3 phase supply and contract demand between 5 kW and 70 kW opting for demand based tariff shall be required to pay at the rates indicated below:

Sl.	Category of consumer	Demand charge (Rs./kW/month)	Energy charges	
			Consumption in a month (Units)	Rate ps/unit
2.2.1	**NDS-II (D) – (OPTIONAL) Demand Based Tariff**			
	Contract demand of 5 kW to 70 kW	Rs. 250/kW per month or part thereof on recorded demand or contract demand whichever is higher.	1-100 units 101-200 units Above 200 units	500 530 570
Subject to (i) Monthly minimum charge of 70 units per month/kW on recorded demand or contract demand, whichever is higher. (ii) If in any month the recorded maximum demand exceeds 110% of contract demand, that portion of the demand in excess of the contract demand will be billed at twice the normal rate.				

Fuel and Power Purchase Cost Adjustment (FPPCA) charges as applicable will be charged extra.

Premium tariff will be charged as applicable in notified area.

2.3 Non-Domestic Service - NDS – III (Metered)

This is applicable for places of worship like temples, mosques, gurudwaras, churches etc. and burial / crematorium grounds. If any portion of the premises is used for commercial purposes, a separate connection shall be taken for that portion and NDS-II tariff schedule shall be applicable for that service.

TARIFF RATES – NDS - III

Sl.	Fixed charge (Rs.)	Energy charges	
		Consumption in a month (Units)	Rate ps/unit
2.3	**NDS - III**		
	Rs.80 /kW with minimum of Rs.165 per connection / month For load upto 30 KW.	1-100 units	300
		101-200 units	380
		Above 200 units	470
		Subject to monthly minimum charge of 50 units/kW or part thereof.	

FPFCA charges as applicable will be charged extra.

Premium tariff will be charged as applicable in notified area.

OPTIONAL

2.3.1 Non-Domestic Service - NDS – III (D) – Demand Based

All those consumers under NDS-III category with 3 phase supply and with contract demand between 5 kW and 30 kW opting for demand based tariff shall be required to pay at the rates indicated below:

Sl.	Category of consumer	Demand charge (Rs./kW)	Energy charges	
			Consumption in a month (Units)	Rate Ps/unit
2.3.1	**NDS-III (D) – (OPTIONAL) Demand Based Tariff**			
	Contract demand of 5 kW to 30 kW	Rs. 80/kW per month or part thereof on recorded demand or contract demand whichever is higher.	1-100 units 101-200 units Above 200 units	300 380 470
Subject to (i) Monthly minimum charge of 70 units per month/kW on recorded demand or contract demand, whichever is higher. **(ii)** If in any month the recorded maximum demand exceeds 110% of contract demand, that portion of the demand in excess of the contract demand will be billed at twice the normal rate.				

Fuel and Power Purchase Cost Adjustment (FPPCA) charges as applicable will be charged extra.

Premium tariff will be charged as applicable in notified area.

3.0 IRRIGATION and AGRICULTURE SERVICE (IAS)

Applicability

This is applicable for supply of electrical energy for bonafide use for agricultural purposes including processing of Agricultural Produce, confined to chaff - cutter, thrasher, cane crusher and rice Huller when operated by the agriculturist in the field or farm and does not include rice mills, flour mills, oil mills, dal mills or expellers. This is also applicable to hatcheries, poultries (with more than 1000 birds) and fisheries (fish ponds).

3.1 IAS - I

This is applicable for all purposes indicated above including private tube wells.

Tariff Rates

Unmetered Supply

Rural feeder - Rs.120 / HP per month

Urban feeder - Rs.160 /HP per month

Note: Hatcheries, poultries and fisheries are not covered under unmetered supply they have to be metered only.

Metered supply

Rural feeder

Energy Charges– 110 Ps/unit

Urban feeder

Energy Charges– 170 Ps/unit

Subject to monthly minimum energy charges of

Rural feeder - Rs. 85/HP per month

Urban feeder - Rs.130/HP per month

Fuel and Power Purchase cost Adjustment (FPPCA) charges as applicable will be charged extra however the same shall be provided by the State Government support to consumers and will not be recovered from consumer.

3.2 IAS – II

This is applicable to state tube wells / state lift irrigation pumps / state irrigation pumps upto 100 HP.

Unmetered Supply

Rural feeders - Rs.900 /HP per month

Urban feeders - Rs.1000/HP per month

Metered supply

Rural feeder

Energy Charges– 600 Ps/unit

Urban feeder

Energy Charges– 700 Ps/unit

Subject to a monthly minimum energy charge of 225 units /HP per month.

FPPCA charges as applicable will be charged extra.

4.0 LOW TENSION INDUSTRIAL SERVICE (LTIS)

Applicability

This is applicable for supply of electricity to low tension industrial consumers with a connected load upto 99 HP and below including incidental lighting for industrial processing or agro – industries purposes, arc welding sets, flour mills, oil mills, rice mills, dal mills, atta chakki, Huller, expellers etc.

4.1 LTIS-I (Connected load upto 25 HP)

TARIFF RATES for LTIS - I

	Fixed charge (Rs.)	Energy charges	
		Consumption in a month (Units)	**Rate (ps/unit)**
4.1	**LTIS-I (Connected load upto 25 HP)**		
	Rs.85/HP or part thereof / per month	All units	535
		Subject to monthly minimum charge of 70 units/HP or part thereof.	

FPPCA charges as applicable will be charged extra.

Premium tariff will be charged as applicable in notified area.

OPTIONAL

4.1.1 LTIS-I (D) Contracted demand 5 kW to 15 kW - Demand Based Tariff

All those consumers under LTIS-I category with 3 phase supply and with contract demand 5 kW to 15 kW opting for demand based tariff shall be required to pay at the rates indicated below:

Sl.	Category of consumer	Demand charge (Rs./kW)	Energy charges	
			Consumption in a month (Units)	Rate Ps/unit
4.1.1	**LTIS-I (D) (Demand Based Tariff) (OPTIONAL)**			
	Contract demand 5 kW to 15 kW	Rs. 170/kW per month or part thereof on recorded demand or contract demand whichever is higher.	All units	535
Subject to (i) Monthly minimum charge of 125 units per month/kW on recorded demand or contract demand, whichever is higher. (ii) If in any month the recorded maximum demand exceeds 110% of contract demand, that portion of the demand in excess of the contract demand will be billed at twice the normal rate.				

Fuel and Power Purchase Cost Adjustment (FPPCA) charges as applicable will be charged extra.

Premium tariff will be charged as applicable in notified area.

4.2 LTIS-II (Connected load above 25 HP and upto 99 HP)

Sl.	Fixed charge (Rs.)	Energy charges	
		Consumption in a month (Units)	Rate (Ps/unit)
4.2	**LTIS-II (Connected load above 25 HP and upto 99 HP)**		
	Rs.110/HP or part thereof per month	All units	570
		Subject to monthly minimum charge of 100 units/HP or part thereof.	

FPPCA charges as applicable will be charged extra.

Premium tariff will be charged as applicable in notified area.

Consumers with a connected load above 79 HP and upto 99 HP have option to avail power under LTIS / HTS category.

OPTIONAL

4.2.1 LTIS-II (D) (Contract demand above 15 kW and upto 70 kW – Demand Based Tariff)

All those consumers under LTS-II category with 3 phase supply and with contract demand above 15 kW and upto 70 kW opting for demand based tariff shall be required to pay at the rates indicated below:

	Category of consumer	Demand charge (Rs./kW)	Energy charges	
			Consumption in a month (Units)	Rate Ps/unit
4.2.1	**LTIS-II (D) (Demand Based Tariff) (OPTIONAL)**			
	Contract demand above 15 kW and upto 70 kW	Rs. 195/kW per month or part thereof on recorded demand or contract demand whichever is higher.	All units	570
Subject to (i) Monthly minimum charge of 180 units per month/kW on recorded demand or contract demand, whichever is higher. (ii) If in any month the recorded maximum demand exceeds 110% of contract demand, that portion of the demand in excess of the contract demand will be billed at twice the normal rate.				

Fuel and Power Purchase Cost Adjustment (FPPCA) charges as applicable will be charged extra.

Premium tariff will be charged as applicable in notified area.

5.0 PUBLIC WATERWORKS (PWW) (Connected load upto 99 HP)

Applicability

This is applicable to public water works, sewerage treatment plant and sewerage pumping stations functioning under state government and state government under takings and local bodies.

Sl.	Fixed charge (Rs.)	Energy charges	
		Consumption in a month (Units)	Rate (Ps/unit)
5.0	**PUBLIC WATERWORKS (PWW)** (Connected load upto 99 HP)		
	Rs. 205/HP or part thereof per month	All units	700
		Subject to monthly minimum charge of 165 units / HP or part thereof.	

FPPCA charges as applicable will be charged extra.

Premium tariff will be charged as applicable in notified area.

Consumers with a connected load above 79 HP and upto 99 HP have the option to avail power under PWW / HTS category.

6.0 STREET LIGHT SERVICES (SS)

Applicability

This is applicable for supply of electricity for street light system including signal system in corporation, municipality, notified area, committees, panchayats etc. and also in areas not covered by municipality and notified area committee provided the number of lamps from a point of supply is not less than five. Also applicable for Traffic Lights, Mast lights / Blinkers etc.

Tariff Rates

6.1 SS-I Metered Supply

All units – 700 Ps. /unit

Subject to monthly minimum charge of:-

i) Gram Panchayats – 160 units / kW or part thereof

ii) For Nagar Palika / NAC / Municipality – 220 units / kW or part thereof

iii) For Municipal Corporations – 250 units / kW or part thereof

FPPCA charges as applicable will be charged extra.

Premium tariff will be charged as applicable in notified area.

6.2 SS-II Unmetered Supply

Fixed Charges

i) Gram Panchayats – Rs. 270 per 100 W/month or part thereof

ii) For Nagar Palika / NAC / Municipality – Rs. 360 per 100 W/month or part thereof

iii) For Municipal Corporations – Rs. 440 per100 W/month or part thereof

FPPCA charges as applicable will be charged extra.

Premium tariff will be charged as applicable in notified area.

TERMS AND CONDITIONS OF LOW TENSION TARIFF

The foregoing tariffs are subject to the following conditions:

1. Rebate for prompt payment

The due date for making payment of energy bills or other charges shall be 15 days from the date of issue of the bill. Rebate will be allowed for making payment of energy bills on or before due date specified in the bill as given below:

i.	Kutir Jyoti (Unmetered)	Rs.2/- per connection per month.
ii.	DS-I and NDS-I (Unmetered)	Rs.3/- per connection per month.
iii.	Agricultural and Irrigation pumpsets (Unmetered)	Rs.5/- per HP/month
iv.	Street Lights (Unmetered)	Rs.3/- per connection/month
v.	All metered categories	10 paise per unit, on units billed

In case a consumer makes full payment after due date but within 10 days after the due date, no DPS shall be leviable for this period but rebate for prompt payment will not be admissible.

2. Accounting of Partial payment

All payment made by consumers in full or part shall be adjusted in the following order of priority:

Statutory taxes and duties on current consumption

Arrear of Statutory taxes and duties

Delayed payment surcharge

Balance of arrears

Balance of current bill

3. Delayed Payment Surcharge (DPS)

In case a consumer does not pay energy bills in full within 10 days grace period after due date specified in the bill, a delayed payment surcharge of one and half (1.5) percent per month or part thereof on the outstanding principal amount of bill will be levied from the due date for payment until the payment is made in full without prejudice to right of the licensee to disconnect the supply in accordance with Section 56 of the Electricity Act, 2003. The licensee shall clearly indicate in the bill itself the total amount, including DPS, payable for different dates after the due date after allowing for the grace period of 10 days. No DPS shall be charged on DPS arrear. The bill shall indicate the energy charges for the month, arrears of energy charges and DPS separately.

4. Duties and Taxes

Other statutory levies like electricity duty or any other taxes, duties etc., imposed by the State Government / Central Government or any other competent authority, shall be extra and shall not be part of the tariff as determined under this order.

5. Defective / Damaged / Burnt meters supply

In case of meter being defective / damaged / burnt the licensee or the consumer as the case may be, shall replace it within the specified period prescribed in “Standards of Performance for Distribution Licensee”, Regulations issued by the Commission.

Till defective / damaged / burnt meter is replaced, the consumption will be assessed and billed on an average consumption of last 12 months from the date of meter being out of order. Such consumption shall be treated as actual consumption for all practical purposes including calculation of electricity duty until the meter is replaced/ rectified.

In cases of newly installed meter of a consumer becoming defective/ damaged/ burnt after installation of the meter prior to completion of 12 months since its installation, the billing for the period for such defective/ damaged/ burnt meter, till it is not replaced, shall be done on the basis of average monthly consumption of the consumer or the MMC whichever is higher.

6. Shunt Capacitor Installation

(a) Every LT consumer including irrigation pump set consumers whose connected load includes induction motor (s) of capacity 3 HP and above and other low power factor consuming appliances shall arrange to install low tension shunt capacitors of appropriate capacity at his cost across terminals of his motor (s). The consumer shall ensure that the capacitors installed by him are properly matched with the actual rating of the motor so as to ensure power factor of 90%.

(b) All LT consumers having welding transformers will be required to install suitable shunt capacitor (s) of adequate capacity so as to ensure power factor of not less than 90%.

(c) The capacitors shall be of standard manufacture and meet the Bureau of Indian Standards specification.

(d) Consumers not complying to above shall be liable to pay a surcharge of 5% (five percent) of the billed amount excluding DPS till the capacitors are installed.

(e) Any LT consumer in whose case, the meter installed has power factor recording feature and who fails to maintain power factor of 90% in any month shall pay a surcharge of 5% (five percent) of the billed amount excluding DPS till the defective capacitors are replaced and power factor of 90% is maintained.

(f) No new supply to LT installations having low power factor consuming equipment such as induction motor of 3 HP and above or welding transformers etc., will be released unless shunt capacitors are installed to the satisfaction of the licensee.

(g) The ratings of shunt capacitor to be installed on the motors of different ratings are provided in the "Electric Supply Code" notified by the Commission.

6. Premium on Consumers in notified areas

All LT consumers except Kutir Jyoti and Agricultural consumers in the notified areas where concerned distribution company intends to supply electricity close to 24 hours shall pay 10% premium on demand/fixed and energy charge and in MMC.

It may be ensured that transmission and distribution network including other infrastructure required to ensure close to 24 hours supply to the notified areas are strengthened. Strengthening of infrastructure may include *inter alia* strengthening / replacement of weak conductors, transformers and other electrical equipments installed for supplying electricity to the notified areas, provision of appliances and spares and keeping technical teams ready round the clock for rectifying defects leading to disruption of supply in these areas. A few telephones should be kept operational for each notified area which should be manned round the clock for receiving and responding to the complaints. These telephone numbers should be widely publicised in the newspapers for the information of general public. Licensee must ensure these steps for ensuring close to 24 hours supply of electricity to the notified areas.

Such areas where licensee intends to strengthen the infrastructure and provide facilities as mentioned above and to supply electricity close to 24 (twenty four) hours shall be notified by licensee and premium shall be levied after notification of such area by the concerned distribution company. The continuous supply shall mean the normal supply for nearly 24 hours excluding the grid failure, any force majeure condition, scheduled shut down and emergent breakdown beyond the control of licensee.

7. Charges to Tatkal Connections (Optional)

If the any consumer (other than High Tension and Railway) opts for availing connection under tatkal scheme, the licensee shall release the tatkal connection to such consumer with the following conditions:

- The Tatkal connections shall be released by licensee in half the time limit prescribed in the Supply code for that consumer category.
- Two (2) times of the following charges approved under head miscellaneous and general charges will be taken from the consumers willing to avail tatkal connection:
- Application fees for new connection, and;
- Supervision, labour and establishment charge for service connection
- In case licensee fails to release connection within this time limit, licensee will refund the additional amount claimed to the consumer in the first energy bill.

PART - B: HIGH TENSION SUPPLY

7.1 HTS – I (11 kV/6.6 kV)

Applicable for supply of electricity for use in installations with a minimum contract demand of 75 kVA and maximum contract demand of 1500 kVA.
Character of service: AC, 50 cycles, 3 phase at 11 kV or 6.6 kV.

TARIFF RATES

Demand charge Rs./ kVA / Month of billing demand	Energy charges Paise / kWh
270	All units – 570

The billing demand shall be the maximum demand recorded during the month or 85% of the contract demand whichever is higher.
Surcharge of 7.5% will be levied on the demand and energy charges for supply at 6.6 kV.
If in any month the recorded maximum demand exceeds 110% of contract demand, that portion of the demand in excess of the contract demand will be billed at twice the normal charges.

Premium on HTS-I consumers in notified areas

All HTS-I consumers in the notified areas where the concerned distribution company intends to supply close to 24 hours shall pay 10% premium on demand/fixed and energy charge.

It may be ensured that transmission and distribution network including other infrastructure required to ensure close to 24 hours supply to the notified areas are strengthened. Strengthening of infrastructure may include interalia strengthening / replacement of weak conductors, transformers and other electrical equipments installed for supplying electricity to the notified areas, provision of appliances and spares and keeping technical teams ready round the clock for rectifying defects leading to disruption of supply in these areas. A few telephones should be kept operational for each notified area which should be manned round the clock for receiving and responding to the complaints. These telephone numbers should be widely publicised in the newspapers for the information of general public. Licensee must ensure these steps for ensuring close to 24 hours supply of electricity to the notified areas.

Such areas where the concerned distribution company intends to strengthen the infrastructure and provide facilities as mentioned above and to supply electricity close to 24 (twenty four) hours shall be notified by the concerned distribution company and premium shall be levied after notification of such area by the concerned distribution company. The continuous supply shall mean the normal supply for nearly 24 hours excluding the grid failure, any force majeure condition, scheduled shut down and emergent breakdown beyond the control of licensee.

FPPCA charges as applicable shall be charged extra.

7.2 HTS – II (33 kV)

This is applicable for use in installations with a minimum contract demand of 1000 kVA and maximum contract demand of 15,000 kVA.

Character of service: AC, 50 cycles, 3 phase at 33 kV.

TARIFF RATES

Demand charge Rs. / kVA / Month of billing demand	Energy charges (Paise / unit)
270	All units - 550

The billing demand shall be the maximum demand recorded during the month or 85% of the contract demand whichever is higher.

If in any month the recorded maximum demand exceeds 110% of contract demand, that portion of the demand in excess of the contract demand will be billed at twice the normal charges.

FPPCA charges as applicable shall be charged extra.

7.3 HTS – III (132 kV)

This is applicable for installations with a minimum contract demand of 7.5MVA.

Character of service: AC, 50 cycles, 3 phase at 132 kV

TARIFF RATES

Demand charge Rs. / kVA / Month of billing demand	Energy charges (Paise / unit)
270	All units – 540

The billing demand shall be the maximum demand recorded during the month or 85% of the contract demand whichever is higher.
If in any month the recorded maximum demand of the consumer exceeds 110% of the contract demand, that portion of the demand in excess of the contract demand will be billed at twice the normal charges.

FPPCA charges as applicable shall be charged extra.

7.4 HTSS (33 kV/11 kV)

This is applicable for supply of electricity to all consumers who have contract demand of 300 kVA and more for induction furnace including Ferro Alloy loads. This tariff will not apply to casting units having induction furnace of melting capacity of 500 Kg and below.

The capacity of induction furnace shall be 600 kVA per metric tonne as existing for determining the contract demand of induction furnace in the existing HTSS service connections. However, for new connection and if the furnace is replaced with a new one for the existing connections, the contract demand shall be based on total capacity of the furnace and equipment as per manufacturer technical specifications, and in case of difference of opinion, the provisions of clause Nos. 6.39 and 6.40 of the Bihar Electricity Supply Code shall apply.

Those consumers who are having rolling/re-rolling mill in the same premises will take additional contract demand for the rolling/re-rolling mill over and above the contract demand required for induction furnace. The consumer will have the option to segregate the rolling/re-rolling mill and take separate new connection following all prescribed formalities with a separate transformer. This new connection, if taken by the consumer will be allowed to be billed in appropriate tariff schedule. Such rolling/re-rolling mill will be allowed to avail power at 33 kV.

Character of service: **AC, 50 cycles, 3 phase at 33 kV or 11kV.**

TARIFF RATES

Demand charge Rs. / kVA / Month of billing demand	Energy charges (Paise / unit)
700	All units 310

The billing demand shall be the maximum demand recorded during the month or the contract demand whichever is higher.

If in any month the recorded maximum demand of the consumer exceeds 110% of contract demand that portion of the demand in excess of the contract demand will be charged at twice the normal charges.

If the power is availed at 11 kV a surcharge of five (5) % will be charged extra on demand and energy charges.

FPPCA charges as applicable shall be charged extra.

8.0 Railway Traction Service (RTS)

Applicable to Railway Traction loads only.

Tariff rates at 132 kV

Demand charge Rs. / kVA / Month of billing demand	Energy charges (Paise / unit)
240	All units 555

i. 15 Ps/unit of rebate will be provided for availing supply at voltages higher than 132 kV

ii. 15 Ps/unit of surcharge will be billed for availing supply at lower voltages than 132 kV.

iii. The billing demand shall be the maximum demand recorded during the month or 85% of the contract demand whichever is higher.

FPPCA charges as applicable shall be charged extra.

Time of Day tariff (ToD)

All HT consumers other than Railway traction have the option to take TOD tariff instead of the normal tariff given in the schedule.

Under the Time of Day (ToD) Tariff, electricity consumption and maximum demand in respect of HT consumers for different periods of the day, i.e. normal period, peak load period and off-peak load period, shall be recorded by installing a ToD meter. The maximum demand and consumption recorded in different periods shall be billed at the following rates on the tariff applicable to the consumer.

Time of use	Demand Charges	Energy Charges
(i) Normal period (5:00 a.m. to 5:00 p.m)	Normal Rate	Normal rate of energy charges
(ii) Evening peak load period (5:00 p.m to 11.00 p.m)	Normal Rate	120% of normal rate of energy charges
(iii) Off-peak load period (11:00 p.m to 5:00 a.m)	Normal Rate	85% of normal rate of energy charges

Applicability and Terms and Conditions of TOD tariff:

i. TOD tariff will be optional for all HT consumers having contract demand below 200 kVA. TOD tariff will be mandatory for all HT consumers having contracted demand of 200 kVA and above.

ii. The facility of aforesaid TOD tariff shall not be available to HT consumers having captive power plants and/or availing supply from other sources through wheeling of power.

iii. The HT industrial consumers who have installed standby generating plants shall also be eligible for the aforesaid TOD tariff.

iv. After electing TOD tariff, if any industrial HT consumer on account of some reasons wants to go back to the earlier tariff according to the agreement, this facility shall be available to him only once in two years.

v. If the actual monthly consumption of such HT consumer, whose monthly minimum charges are based on units, is less than minimum consumption, then the difference (deficit) of units between the minimum consumption and actual consumption shall be billed at normal rate of energy charge prescribed for “Normal Period”.

vi. In the event of applicability of TOD tariff to a consumer, the terms and conditions of the applicable tariff (such as monthly tariff minimum charge, etc.) shall continue to apply.

vii. In case, the consumer exceeds 110% of the contract demand, the demand in excess of contract demand shall be billed at twice the normal tariff applicable for the day time i.e. 5:00 a.m. to 5.00 p.m. irrespective of the time of use.

TERMS AND CONDITIONS OF HT TARIFF

The foregoing tariffs are subject to the following conditions:

1. Rebate for Prompt Payment

The due date for making payment of energy bills or other charges shall be 15 days from the date of issue of the bill.

The tariff rates are subject to prompt payment rebate of 1 (one) paise per unit on units billed provided the bill is paid by due date specified therein. If the consumer makes full payment after due date but within 10 days after due date, no DPS shall be leviable for this period but rebate for prompt payment will not be admissible.

2. Delayed Payment Surcharge (DPS)

In case of consumer does not pay energy bills in full within 10 days grace period after due date specified in the bill, a delayed payment surcharge of one and half (1.5) % per month or part thereof on the outstanding principal amount of bill will be levied form the original due date for payment until the payment is made in full without prejudice to right of the licensee to disconnect the supply in accordance with Section 56 of the Electricity Act, 2003. The licensee shall clearly indicate in the bill itself the total amount, including DPS, payable for different dates after the due date after allowing for the grace period of 10 days. No DPS shall be charged on DPS arrear.

3. Duties and Taxes

Other statutory levies like electricity duty or any other taxes, duties etc., imposed by the State Government / Central Government or any other competitive authority, shall be extra and shall not form part of the tariff as determined under this order.

4. Power Factor Surcharge

The average power factor (monthly) of the supply shall be maintained by the consumer not less than 0.90.

If the monthly average power factor falls below 90% (0.9) he shall pay a surcharge in addition to his normal tariff at the following rates:

(i) For each fall of 0.01 in power factor upto 0.80	One percent on demand and energy charge
(ii) For each fall of 0.01 in power factor below 0.80	1.5 (one and half) percent on demand and energy charge (Actual Recorded)

If the average power factor falls below 0.70 consecutively for 3 months, the Licensee reserves the right to disconnect the consumer's service connection without prejudice for the levy of the surcharge.

5. Power Factor Rebate

In case the average power factor (monthly) of the consumer is more than 90% (0.90) a power factor rebate at the following rates shall be allowed.

For each increase of 0.01 in power factor above 0.90 upto 0.95	0.5 (half) percent on demand and energy charge (Actual Recorded)
For each increase of 0.01 in power factor above 0.95	1.0 (one) percent on demand and energy charges. (Actual Recorded)

6. Accounting of Partial payment

All payment made by consumers in full or part shall be adjusted in the following order of priority:

a) Statutory taxes and duties on current consumption
b) Arrear of Statutory taxes and duties
c) Delayed payment surcharge
d) Balance of arrears
e) Balance of current bill

7 Transformer Capacity

The transformer capacity of HT consumer shall not be more than 150% of the contract demand, consumer found to be utilizing transformer of higher capacity than admissible for his contracted load, will fall under malpractice.

If standard capacity is not available for exact requirement then relaxation in transformer capacity upto 10% extra can be allowed in individual cases on request.

All HT/EHT consumers having contract demand of 200 kVA and above may be allowed to have a stand by transformer, whose capacity shall not be more than the main transformer. The technical/physical arrangement shall be approved by the Licensee's officer before it is installed. If any consumer violates the condition, then line will be disconnected and standby facility shall be withdrawn.

Considering the special need of the Railway, the RTS consumer may be allowed to have 100% extra i.e. 200% of the contract demand. Stand by transformer may also be allowed, which should not be more than the capacity of the main transformer.

8 Defective / Damaged / Burnt meter replacement

In case of meter being defective / damaged / burnt the Licensee or the consumer as the case may be shall replace the same within the period specified in “Standards of Performance for Distribution Licensee” Regulations issued by the Commission. Till defective meter is replaced the consumption will be assessed and billed on an average consumption of last 12 months from the date of meter being out of order. Such consumption shall be treated as actual consumption for all practical purposes including calculation of electricity duty until the meter is replaced/ rectified.

In cases of newly installed meter of a consumer becoming defective/ damaged/ burnt after installation of the meter prior to completion of 12 months since its installation, the billing for the period for such defective/ damaged/ burnt meter, till it is not replaced, shall be done on the basis of average monthly consumption of the consumer or the MMC whichever is higher..

9. If the actual recorded demand of a consumer exceeds 110% consecutively for three months Licensee may issue a notice and inform the consumer to get additional contract demand sanctioned or to limit their drawal as per their contract. Otherwise Licensee will take action as per provisions of the Act/Rules/Regulations.

10. The prevailing practice will continue for determining the contract demand of induction furnaces in the existing services connections. However, for new connections and where the furnaces are replaced in existing connections, contract demand shall be based on the total capacity of the furnace and equipment as per manufacturer technical specifications and in case of difference of opinion, the provisions of clause No.6.39 and 6.40 of Bihar Electricity Supply Code shall apply.

9.0 Temporary Supply (LT and HT)

9.1 Applicability

This tariff is for connection of temporary in nature for period of less than one year. The applicability shall be as given in the respective category tariff rate schedule.

Temporary supply cannot be claimed by a prospective consumer as a matter of right but will normally be arranged by the Licensee when a requisition is made giving due notice subject to technical feasibility and in accordance with electricity supply code issued by the Commission.

9.2 Tariff

Fixed charge and energy charge shall be chargeable at one and half times the normal tariff as applicable to the corresponding appropriate tariff category.

9.3 Terms of Supply

a) Temporary supply under any category of service may be given for a period not exceeding 30 days in the first instance, the duration of which, however may be extended on month-to-month basis subject to maximum of one year.

b) In addition to the charges mentioned above, the consumer shall have to deposit the following charges before commencement of the temporary supply:

   i. Estimated cost of erection of temporary service line and dismantling.
   ii. Cost of irretrievable materials which cannot be taken back to service.
   iii. Meter rent for the full period of temporary connection as per appropriate Tariff Schedule and miscellaneous charges.
   iv. Rental on the cost of materials as per estimate framed but not payable by the consumer shall be payable at the rate of Rs. 15/- per month on every Rs. 100/- or part thereof.
   v. Ten per cent on the total cost of the estimate for the temporary service connection to cover as security for loss of materials and contingencies. In case such loss is not noticed, the amount will be refunded.

(c) The applicants for temporary supply shall be required to make a deposit in advance of the cost as detailed above including the energy consumption charges estimated for full period on the basis of connected load. This will however, be adjusted against the final bill that will be rendered on disconnection of supply month to month basis.

(d) If the consumer intends to extend the temporary supply beyond the period originally applied for, he will have to deposit in advance all charges as detailed above including the estimated electricity consumption charges, for the period to be extended and final bill for the previous period, as well.

(e) The temporary supply shall continue as such and be governed by the terms and conditions specified above until the supply is terminated or converted into permanent supply at the written request of the consumer. The supply will be governed by the terms and conditions of permanent supply only after the consumer has duly completed all the formalities like execution of agreement, deposit of security money, cost of service connection and full settlement of the account in respect of the temporary supply etc.

10.0 Seasonal Supply (LT and HT)

(1) Seasonal supply shall be given to any consumer on written request to the Licensee subject to the following conditions.

	Period of Supply	**Tariff Rate**
	Upto 3 consecutive months in a year	Appropriate tariff plus 30 percent
	More than 3 consecutive months and upto 6 consecutive months in a year	Appropriate tariff plus 20 percent
	More than 6 consecutive months and upto 9 consecutive months in a year	Appropriate tariff plus 15 percent
	More than 9 consecutive months but less than one year	Appropriate tariff plus 5 percent.

(2) The meter rent and other charges as provided in the appropriate tariff are applicable to seasonal loads and would be charged extra for the entire period of supply.

(3) The supply would be disconnected after the end of the period unless the consumer wants the supply to be continued.

Any reconnection charges have to be borne by the consumer.

(4) Consumer proposing to avail seasonal supply shall sign an agreement with the Licensee to avail power supply for a minimum period of 3 years in the case of HT, and 2 years in the case of LT category of supply.

(5) The consumers must avail supply in terms of whole calendar month continuously.

(6) The consumer is required to apply for seasonal supply and pay initial cost and security deposit as an applicant for normal electricity supply.

(7) The consumer shall ensure payment of monthly energy bills within 7 days of its receipt. The supply will be disconnected if payment is not made on due date.

PART - C: MISCELLANEOUS AND GENERAL CHARGES

11.0 The Miscellaneous and General charges approved by the Commission are as below:

11.1 Meter Rent

Particulars	Applicable Charges
Kutir Jyoti	Rs.10/month
a) Single Phase LT except Kutir Jyoti	Rs. 20/month
b) Three Phase LT Upto 100 Amps	 Rs. 50/month
c) LT meter with CT	Rs. 500 / month
d) 6.6 kV and 11 kV HTS-I (i) Metering at low voltage (ii) Metering at 6.6/11 kV	 Rs. 500 / month Rs. 700 / month
e) 33 kV HT metering equipment for HTS-II and HTSS	Rs. 3000 / month
f) 132 kV EHT metering equipment for HTS-III	Rs. 15000 / month
g) 25 kV RTS	Rs.3000/month
h) 132 kV RTS	Rs.15000/month

11.2 Application fee for new connection / reduction of load / enhancement of load / request for permanent disconnection/ request for tatkal connection:

No.	Category / class	Rate
(i)	Kutir Jyoti	Rs.20.00
(ii)	LT Single phase except Kutir Jyoti	Rs. 75.00
(iii)	LT Three phase	Rs. 200.00
(iv)	LT Industrial	Rs. 300.00
(v)	HT Connection	Rs. 750.00
(vi)	For tatkal connection	Two (2) times the normal rate

11.3 Testing / Inspection of consumer's installation:

No.	Category / class	Rate
(i)	Initial Test / Inspection	Free of cost
(ii)	Subsequent test and inspection necessitated by fault in installation or by not complying with terms and conditions of	Rs. 100.00 for single phase connection Rs. 200.00 for three phase LT connection

No.	Category / class	Rate
	supply	Rs.800 for HT connection.

11.4 Meter Testing Fee:

No.	Category / class	Rate
(i)	Single Phase meter (L.T.)	Rs. 100.00
(ii)	Three Phase meter (L.T.)	Rs. 200.00
(iii)	Three Phase meter with CT	Rs. 300.00
(iv)	Trivector and special type meter	Rs. 1800.00
(v)	33 kV or 11 kV metering equipment	Rs. 5000.00
(vi)	132 kV/220 kV metering equipment	Rs. 8000.00

If the meter is tested at third party testing laboratory at the request of the consumer then the fees charged by the testing laboratory will be payable by the consumer.

11.5 Removing / Re-fixing / Changing of Meter / Meter Licensee at consumer's request:

<table>
<tr><th>No.</th><th>Category / class</th><th>Rate</th><td rowspan="6">Cost of material, as required, will be borne by the consumer</td></tr>
<tr><td>(i)</td><td>Single Phase meter</td><td>Rs. 200.00</td></tr>
<tr><td>(ii)</td><td>Three Phase meter</td><td>Rs. 400.00</td></tr>
<tr><td>(iii)</td><td>Three Phase meter with CT</td><td>Rs. 500.00</td></tr>
<tr><td>(iv)</td><td>Trivector and special type meter</td><td>Rs. 600.00</td></tr>
<tr><td>(v)</td><td>High tension metering equipment</td><td>Rs. 1200.00</td></tr>
</table>

11.6. Reconnection charge:

Sl.No .	Category/class	Rate
(i)	Single Phase supply, LT	Rs. 100.00
(ii)	Three Phase supply other than LT industrial	Rs. 200.00
(iii)	Three Phase LT industrial supply	Rs. 900.00
(iv)	HT supply	Rs. 3000.00

11.7 Supervision, Labour and Establishment charge for service connection:

Sl.No.	Category/class	Rate
(i)	Single Phase LT	Rs. 400.00
(ii)	Three Phase LT other than industrial	Rs. 900.00
(iii)	Three Phase industrial	Rs. 1500.00
(iv)	HT	As per approved estimate
(v)	For tatkal connection	Two (2) times the normal rate

11.8 Security Deposit:

(a) The consumer (except Kutir Jyoti rural and Kutir Jyoti urban) shall pay initial security deposit equivalent to the estimated energy charges including fixed / demand charges for a period of two months or as per the provisions of Bihar Electricity Supply Code notified by the Commission.

(b) All Central Government and State Government departments are exempted from payment of security deposit. However all public sector undertakings and local bodies shall pay security deposit, as applicable.

(c) The amount of security deposit obtained from the consumer is liable to be enhanced every year, in April-May of next year on the basis of consumption during previous years or as specified in clause 7.15 of Bihiar Electricity Supply Code. In default of payment of additional security deposit, wherever payable after review, the service line may be disconnected on serving thirty days notice and connection thereafter can be restored only if the deposit is made in full along with the prescribed reconnection charges and surcharge @1.5% per month or part thereof on the amount of outstanding.

11.9 Interest on Security Deposit

Security deposit made by a consumer shall bear interest as specified in Bihar Electricity Supply Code, payable at Bank rate notified by RBI from time to time. The interest will be calculated for full calendar months only and fraction of a month in which the deposit is received or refunded, shall be ignored. The interest for the period ending 31st March shall be adjusted and allowed to the consumer in the energy bill for May issued in June and in subsequent month (s), if not adjusted completely against the bill for the month of May.

12.0 The other terms and conditions of supply of electricity not specially provided in this tariff order will continue to be regulated by the provisions specified in the Bihar Electricity Supply Code notified by the Commission.

11. Directives to North Bihar Power Distribution Co. Ltd., and South Bihar Power Distribution Co. Ltd. [Bihar State Power (Holding) Co. Ltd.]

11.1 Background

The Sub-clause (c) of Section 61 of the Electricity Act, 2003 stipulates that the appropriate commission shall be guided by the factors which would encourage competition, efficiency, economical use of the resources, good performance and optimum investments. Further, as per provision of the Section 57 of the Act, the State Electricity Regulatory Commission (SERC) has to specify the standards of performance of a licensee or a class of licensees. In view of the above legal provisions, the Bihar Electricity Regulatory Commission (BERC) issued a number of directives in its tariff orders for determination of ARR and Tariff for retail sale of electricity by erstwhile Bihar State Electricity Board (BSEB or Board) and deemed licensee for FYs 2006-07, 2008-09, 2010-11, 2011-12 and 2012-13 to the erstwhile BSEB for improvement in its operational and financial performance, reducing T&D losses, improvement in quality of supply and services to the consumers and increasing efficiency. The Commission monitors the compliance of its directives given from to time and has been directing the erstwhile BSEB for complying with the directives. This is the sixth tariff order of the Commission and to include the status of compliance of each directive starting from the tariff order for FY 2006-07 onwards has become a voluminous exercise. Some of the directives have also been fully complied by the erstwhile BSEB and some of them have been repeated in different Tariff Orders. Therefore, the Commission now decides to consolidate all the previous directives which have not been complied and issue consolidated directives in this tariff order taking into consideration, the status of compliance of the directives issued in previous tariff orders to the erstwhile BSEB. The directives issued in previous tariff orders of the Commission which have been complied by the erstwhile BSEB and dropped by the Commission is listed below:

Directives issued in Tariff Order for FY 2006-07 which have been dropped

Sl. No.	Directive No.	Contents	Observation of the Commission
1.	Directive -6	Replacement of old Electromagnetic Meters with Static Meters	The erstwhile BSEB has installed electronic meters in the premises of most of the consumers and remaining old ones are also being replaced in a phased manner and, so it is dropped
2.	Directive-15	Annual Accounts of the BSEB	Erstwhile BSEB has updated its annual accounts and upto FY 2011-12 and has got it audited, Therefore, this directive is dropped.
3.	Directive-22	Adjustment of Payment of Current Bills against Delayed Payment Surcharge (DPS)	Procedure has been defined in the tariff order of the Commission for FY 2012-13 which is being followed by the erstwhile BSEB and now by the reorganised utilities.
4.	Directive -24	Performance of BSEB's own generation stations and these parameters	MTPS has been handed over to KBUNL and unit no. 6 & 7 of BTPS is under R&M and so its performance can be reviewed only after they come in operation and as such this directive is not pursued at this stage.
5.	Directive-25	New Generation Projects	The development of new generation projects is being monitored by the State Co-ordination Forum. So it is being dropped.
6.	Directive-26	Employee Cost	Restructuring of erstwhile BSEB has been effected from 01.11.2012 and the placement of employees will be done afresh. Therefore, it is dropped.
7.	Directive-28	Investment Programme	The BSPHC ltd. has submitted business plan as per direction. Therefore, this directive has been complied.
8.	Directive-29	APDRP Scheme	APDRP scheme has been closed and RAPDRP is being monitored by Co-ordination Forum. So this directive is not continued.
9.	Directive-30	Registered and Effective Consumers	The erstwhile BSEB has submitted data of registered and effective consumers and there is no need of review of registered consumers. Only effective consumers are required as process of tariff determination. Therefore, this directive is dropped.

Directive issued in Tariff Order for FY 2010-11which is dropped			
10.	Directive-2	Star Rating Distribution Transformers	Erstwhile BSEB and now BSPHC Ltd. is following the directive and now procuring only Star Rated transformers. Therefore, this directive is dropped.
Directives issued in Tariff Order for FY 2011-12 which is dropped			
11.	Directive-1	Timely submission of Tariff Petition	BSEB and BSPHC Ltd. has submitted the tariff petition for FY 2012-13 and MYT petition for control period FY 2013-14 to FY 2015-16 by 15th November, as required under Tariff Regulation 2007. So it is not being further continued for monitoring.
12.	Directive-4	MYT compliance	The BSPHC Ltd. has filed MYT petition on behalf of reorganised Generation, Transmission and two distribution companies. Therefore, this directive is dropped.
Directives issued in Tariff Order for FY 2012-13 which is dropped			
13.	Directive-5	Business Plan and Investment Programme	As the BSPHC Ltd. has submitted Business Plan and investment programme for each function. Therefore, it is dropped.
14.	Directive-6	MYT filling for each function	The BSPHC Ltd. has filed MYT petition separately for generation, transmission and two distribution companies. Therefore, this directive is dropped.

The Commission after taking into consideration the compliance of directives issued in its earlier tariff orders to the erstwhile BSEB now BSHPC Ltd. and consolidating them, issue fresh directives incorporating those directives which have not been fully complied and the Commission shall monitor the compliance of the directives as listed below

11.2 Fresh Directives for FY 2013-14

Directives to North Bihar Power Distribution Company Ltd. and South Bihar Power Distribution Company Ltd.

Directive 1- Cent Percent Metering:

Section 55 of the Electricity Act, 2003 provides that the licensee has to supply electricity through installation of a correct meter in accordance with the regulation made in this behalf by the Central Electricity Authority. The Central Electricity

Authority have already notified the regulation on installation and operation of meter on 17th March, 2006.

The erstwhile BSEB (now BSPHCL) has been directed in earlier tariff order for FY 2006-07 (Directive 1,2&3), to provide energy meters to all of its consumers and also to replace the defective/burnt/damaged meters of the consumers on priority basis within the time limit specified in the BERC (Standards of Performance of Distribution Licensee) Regulations, 2007.

The Commission has monitored the installation of meters in the consumers premises from time to time. The BSPHC ltd. has submitted the status of compliance of directive as indicated below**:**

No. of consumers	3366730
Running meters upto 30 September, 2012	2310099
Meter installed in October, 2012	53606
Total running meters upto 31st October, 2012	2363705
Defective meters upto October, 2012	46682
Unmetered upto October, 2012	956364
Total defective/unmetered upto October, 2012	1003025
Percentage unmetered	29.79%

Further, the BSPHC Ltd. has submitted that they would be able to achieve 100 % metering of consumers by 31st March, 2013.

Therefore, the Commission directs the two State power distribution companies to ensure provision of electronic static meters to all unmetered consumers and replace all the defective/damaged/burnt meters of the consumers by 31st March, 2013 with static electronic meters and submit compliance report to the Commission **by 30th June, 2013** with details of total number of categorywise/sub-categorywise consumers and status of functioning of the meters.

Directive 2- Efficient Meter Reading, Billing and Collection:

The Commission in its first tariff order for FY 2006-07 for improvement in the cash flow of the erstwhile BSEB (now BSPHCL) has directed for timely meter reading, billing and collection for energy consumed by the consumers (Directive 4,16,17,20 & 21). The Commission had also directed for collection of arrears. In compliance BSPHC Ltd. has stated that they have outsourced the meter reading, computerised billing and distribution of bills all over Bihar State.

However, during public hearings on the tariff petition of BSPHC ltd. for FY 2013-14, the consumers have brought to the notice of the Commission that the meter readings are not being taken regularly and they are not receiving the electricity bills in time. For obtaining bills they have to make their self efforts and have to cover a distance of 10-15 K.M. for obtaining the bills and making bill payment in the rural areas. It has further been stated that the details of Fuel and Power Purchase Cost Adjustment (FPPCA) charges are not properly furnished in the energy bills served to the consumers. The compliance submitted by the erstwhile BSEB (now BSPHCL) in respect of meter reading and billing does not show that the 100% meter reading and billing are monitored by the distribution licensee and also the collection efficiency and facility is not adequate. The Commission vide directive no. 5 in the tariff order for FY 2008-09 has directed to collect 100% of the monthly bills and another minimum 10% of the arrears outstanding, every month. The amount of arrears is also increasing year to year.

Therefore the Commission directs that-

(a) The full details of FPPCA charges or any other charges must appear in the energy bill served to the consumer.

(b) In urban areas hundred percent (100%) meter reading, issue of bills in each month shall be ensured and monitored.

(c) In rural areas hundred percent (100%) meter reading, issue of bills to all consumers be ensured and monitored atleast bimonthly.

(d) Each Discom shall at least collect ninety percent (90%) of current bill amount and a minimum of ten percent (10%) of arrear amount in each month.

Compliance report shall be submitted to the Commission by BSPHC Ltd. / two State Power distribution companies by **30th June 2013.**

Directive 3- Timely Delivery of Bill and Revenue Collection Counter

The Commission in its tariff order for FY 2006-07 (Directive 4) has directed the erstwhile BSEB (now BSPHCL) for timely meter reading, billing and delivery of bills to consumers. Further the Commission (from time to time) is asking the distribution licensee for timely delivery of monthly energy bills as per the time schedule specified in the Bihar Electricity supply Code-2007. But during the public hearings it has been pointed out by the various consumers and stakeholders that the electricity bills are not being delivered well within the time limit specified by the Commission. Sometime every bills are either not delivered at all or delivered after lapse of due date and delayed payment surcharge is charged from the consumers for no fault of theirs. In rural areas bill collection centres are located 10-15 KMs. away from the village.

It has also been brought to the notice of the Commission that the collection counters at the field offices for the collection of bills are not adequate and is limited to such number that a depositor has to wait in a long que for payment of their energy bills. Besides no facility has been provided for collection centres such as chairs, shade, drinking water, toilet etc.. The office going persons also have difficulty in payment as the collection counters open after 10 A.M and are closed at 2.30 P.M.

Considering the difficulties of the consumers and also the need to increase the cashflow of the Discoms the Commission gives following directions to BSPHCL and to the two distribution companies that-

(a) In city areas at least one collection counter at division level should remain open since 8 A.M. in the morning. So that the office goers may deposit their energy bills.

(b) Adequate number of collection centres/ counters considering the number of consumers shall be established to facilitate depositors and to ensure that consumers do not have to travel long distances to pay energy bills and they also do not have to wait in long ques.

(c) Minimum facilities of shade, drinking water and toilets should be provided at the bill centres. Special facilities should be provided for the comfort of ladies and senior citizens.

(d) Number of collection counters operating in each Electricity Supply Division, indicating the timing, facility provided to the consumers shall be submitted by BSPHC Ltd. by **30th September, 2013.**

(e) Facility for online payment of bills, using bank account/ credit card/ debit card may also be introduced.

(f) The delivery of energy bills to consumers be ensured as per clause 9.20 of the Bihar Electricity Supply Code-2007 viz. 14 days before the due date and in case of delay in delivery of bills atleast 14 days time from the date of delivery of the bill should be provided for making payment.

Directive 4- Regulation of Power Supply to Rural Areas

The Commission vide directive nos. 12 & 13 in Tariff order for FY 2006-07 directed erstwhile BSEB to draw scheme to regulate power supply to rural areas and to provide power supply to all consumers at reasonable voltage and with minimum interruptions and also to strengthen the distribution system wherever required.

The compliance submitted in the tariff petition for FY 2013-14 shows that the BSPHC Ltd. has not taken concrete steps to monitor or regulate the supply to rural areas and equitable distribution of available power in the State.

The Commission also issued directive to erstwhile BSEB in its tariff order for FY 2008-09 for strengthening/ maintenance of distribution network (Directive 7 & 8). The BSPHC Ltd. has not submitted the status of compliance in this regard.

During the public hearings for 2013-14 a number of consumers and consumer organizations expressed their deep concern over extremely poor quality and hours of supply in the small towns and in the rural areas. It has been pointed out that in small towns and in the rural areas the hours of supply is too much erratic. The domestic and non-domestic (Commercial) consumers do not get power supply during the evening period (6.00 P.M to 10.00 P.M) when it is needed for reading of students and other domestic and non-domestic house hold works, are required, to be performed whereas they have to pay the fixed charges or monthly minimum consumption (MMC) charges, without actual consumption of electricity.

Considering the status of compliance submitted by BSPHC Ltd. and the issue raised by the consumers, the Commission directs BSPHC Ltd. and the two State Power distribution companies to chalk out a plan so that the small towns and rural areas of the State also gets atleast one to three hours supply between 6 P.M. to 9 P.M. and submit the progress of work done during FY 2012-13 for strengthening/maintenance of distribution network by **30th June, 2013**.

Directive 5- Prompt Release of Supply to New Consumers

Section 43 of the Electricity Act, 2003 provides for release of service connection to new consumers in the area of supply within thirty days where extension of distribution mains is not required. In this context the Commission had also issued directives in its tariff order for FY 2008-09 under directive no. 4 and in various other orders for prompt release of supply to new consumers. BERC (Standards of Performance of Distribution Licensee) Regulations, 2007 also specify similar provision.

BSPHC Ltd. in its compliance, submitted with tariff petition for FY 2013-14, has stated that field officers have been directed to release new connections within stipulated time as indicated in SoP Regulation and in case of default on the part of officers a stringent/ deterrent action is taken by the erstwhile Board against the officers. It has been further stated that there is no shortage of meters for release of new consumer's connection.

However, during public hearings on the tariff petition of BSPHC Ltd. for FY 2013-14, the general public raised their voice that the applications for new electric connection are not accepted and the connections are not being released within thirty days of the deposit of the requisite amount. In many cases demand for deposit of requisite amount for new connection is also not given to the applicant for long.

The Commission, therefore, directs the two distribution companies to directs their field officers to provide new connections within 30 days of application. The two State Power distribution companies shall monitor the progress of disposal of application for release of new connections by getting the application registers inspected by their Electrical Superintending Engineer of Supply Circles. They should also hold camps for disposing of the application.

The BSPHC Ltd. and the two Discoms shall submit quarterly report in this regard. First such report for quarter ending **30th June** shall be submitted to the Commission by **15th July, 2013.**

Directive 6- Strengthening the Consumer Complaint Redressal Mechanism

The Commission in its tariff order for FY 2012-13 has directed the erstwhile BSEB to instruct the concerned filed officers to be available in their offices on the specified days so that the consumers may contact the concerned officers for settlement of their grievances related to meter reading, billing, new connection, faulty meters and faulty transformers etc. In compliance of the directive, the BSPHC ltd. has stated that Janta Darbar is being organised every month by right from Chairman to Junior Engineer level for redressal of complaints/grievances of the consumers. It has further been stated that a help line cell is functioning in the office of Member Finance and Revenue.

However, during the public hearings on the tariff petition of BSPHC Ltd. for FY 2013-14, the consumers and consumer organizations complained that erroneous bills are being served and their grievances are not redressed. There was also no awareness about the specific dates on which their field officers of different levels remain present in their offices for redressal of grievances relating to meter reading and billing etc. There was also no awareness about the Janta Darbars.

Therefore the Commission once again reiterates the directive and directs the BSPHC Ltd. and two Power distribution companies to specify at least one or two days in a week for officers to remain available in the office for redressal of grievances of the consumers, particularly the grievance about delay in releasing new connection and correction of different bills and submit monthly list of grievances received and redressed, to the concerned Electrical Superintending Engineer of the supply circle.

The progress of compliance may be submitted quarterly to the Commission.

Directive 7- Interest on Security Deposit

Section 47 of the Electricity Acts provides that a distribution licensee may require any person, who requires a supply of electricity in pursuance of section 43 of the Electricity Act, 2003 to give him a reasonable security as may be determined by regulation. The section 47 of the Act further provides that the distribution licensee shall pay interest equivalent to the bank rate or more as may be specified by the concerned State Commission.

BERC has specified the security to be deposited by a new consumer and the existing consumer and also the interest to be paid by the distribution licensee to the consumers in Bihar Electricity Supply Code-2007. However during public hearing on tariff petition of BSPHC Ltd. for FY 2013-14, it has been brought to the notice by the consumers that the interest on security deposit is not being allowed and adjusted in the energy bills of the consumers as required under the provision of Bihar Electricity Supply Code-2007.

In view of the above, the Commission directs BSPHC Ltd. and the two distribution companies -

(i) To indicate the amount of security money deposited by the consumers on their monthly energy bills.

(ii) Indicate the amount of interest on security deposit and adjust in energy bill as specified in Bihar Electricity Supply Code-2007.

The compliance of the directives alongwith the specimen copy of energy bill for the month in which the security has been adjusted shall be submitted by **15th July, 2013.**

Directive 8-Voltagewise Cost of Supply and Cross Subsidy

The Commission in its first tariff order for FY 2006-07 in directive no. 31 has directed the erstwhile BSEB to carry out a study to ascertain voltage-wise and consumer category-wise cost of supply to find out the nature and extent of cross subsidy. The Commission further in its tariff order for FY 2012-13 issued on 30.03.2012 under directive no. 4 directed erstwhile BSEB to carry out appropriate studies backed by energy accounting and audit to determine category-wise and voltage-wise T&D losses and cost of supply. The Hon'ble APTEL, New Delhi has also passed order on 10.05.2012 in appeal no. 26/2011 for working out the voltage-wise cost of supply and cross subsidy.

The BSPHC Ltd. has carried out study of limited number of representative feeders at different voltage levels for assessing the voltage-wise T&D loss and cost of supply without having hundred percent feeder metering. However it should be worked out on the basis of actual meter reading of the meters installed in the feeder and power sub-stations.

Therefore, the Commission directs BSPHC Ltd. and its two subsidiary distribution companies to continue their study and study more sample feeders and work out the T&D losses at different voltage levels and submit quarterly compliance of action taken in this regard.

First such compliance report be submitted to the Commission by **15th July, 2013.**

Directive 9- Reduction of Transmission and Distribution Losses

The Commission in its tariff order for FY 2006-07 under directive no. 7 has directed erstwhile BSEB to chalkout a long term action plan for reduction of T&D losses for both technical and non-technical losses. The Commission has also set trajectory of T&D losses in its tariff order for FY 2006-07, which the erstwhile BSEB could not achieve. Therefore, the Commission again relaxed the target for reduction of T&D losses and set the year-wise target of T&D losses in its tariff order for FY 2008-09 which is stated below:

Year	T&D losses	Year	T&D losses
2008-09	38%	2010-11	32%
2009-10	35%	2011-12	29%

The Commission again directed the erstwhile BSEB to reduce the losses and also to segregate the technical and commercial losses under directive no. 5 in the tariff order for FY 2008-09.

The Commission in its tariff order for FY 2012-13 directed erstwhile BSEB to determine circle-wise loss reduction on the basis of energy accounting and audit and fix circle-wise reduction target.

However the erstwhile BSEB, instead of reducing T&D losses have been projecting higher T&D losses, inspite of the direction to reduce the loss level as per target fixed by the Commission.

Therefore, the Commission again directs BSPHC Ltd. and its two subsidiary distribution companies to chalk out an action plan for reduction of T&D losses and fix circle-wise T&D losses reduction target to the level of target fixed by the Commission and submit the action plan and circle-wise loss reduction achieved to the Commission by **30th June, 2013**.

Directive 10- Energy Accounting/ Audit

Energy accounting and audit is important and essential tool to identify the transmission and distribution losses at different voltage levels and also the Aggregate Technical and Commercial (AT&C) losses in the system. For carrying out energy accounting and audit of the transmission & distribution system of the erstwhile BSEB (now BSPHCL) the Commission has issued directives in its tariff order for FY 2006-07 under directive no. 8 and suggested to install energy meters in all feeders including distribution transformer (DT). The erstwhile BSEB was also directed under directive no. 23 of the tariff order to organize circle as cost centre. Further the Commission in its tariff order for FY 2010-11, vide directive no. 3 directed erstwhile BSEB to undertake energy accounting in the areas where meters have already been provided at the distribution transformers and to submit periodic reports to the Commission.

The Commission issued further directive (no. 2) in its Tariff Order for FY 2012-13 in this regard. However, so far erstwhile BSEB (now BSPHCL) has not been able to comply with the directive.

Energy available for sale, and energy actually sold or billed has to be ascertained for determining the losses in the system. For carrying out the energy accounting/ audit, meters are required to be provided in all feeders from 220 KV to 11 KV levels and also on Distribution Transformer (DT) at low tension side. In its compliance BSPHCL in their petition for FY 2013-14 has indicated that 132 no. of 33 KV feeders and 188 no. of 11 KV feeders are still unmetered. The status of DT metering shows that 42 percent of DTs are metered. But the BSPHC Ltd. has not reported compliance of directive for energy accounting of those DTs on which meter has been installed.

Therefore, the Commission directs BSPHCL and its two subsidiary distribution companies -

(a) To provide meters at all feeders and report compliance by **30th September, 2013**.
(b) To carry out energy accounting/ audit in each month on the basis of meter reading of the meters installed in the feeders and in case the meter is not installed or is defective in a particular feeder, the energy consumption should be assessed on the basis of hours of supply and the average load in that feeder.
(c) To carry out the energy accounting of DTs on quarterly basis in which meter has been provided.
(d) To operationalize circles as cost centres.

The circle-wise energy accounting/ audit for FY 2012-13 alongwith energy accounting of these DTs in which meter is installed shall be submitted to the Commission by **30th September 2013**.

Directive 11- Energy Conservation & Demand Side Management

For conservation of energy and Demand Side Management (DSM) the Commission has issued directives to the erstwhile BSEB under directive nos. 8, 19 and 32 in the tariff order of the Commission for FY 2006-07. Further the Commission in its tariff order for FY 2010-11 vide directive nos. 4 and 6 for implementation of demand side management including for use of CFLs under Kutir Jyoti Programme issued directive. The Commission in its tariff order for FY 2010-11 also made ToD tariff mandatory for 200 KVA and above loads with a view to implement the Demand Side Management (DSM).

The Compliance submitted by the BSPHC Ltd. on the above issues has been reviewed by the Commission and the Commission feels that no tangible steps have been taken by the BSPHC Ltd. except making ToD tariff mandatory for 200 KVA and above loads.

In view of the above, consolidating the above directives, the Commission issue fresh directives for energy conservation and demand side management and directs BSPHC Ltd. and its two subsidiary distribution companies-

(i) To enforce use of CFLs under Kutir Jyoti/RGGVY.
(ii) To create awareness cell at Hqrs. level for energy conservation and DSM and arrange programmes in each supply circle periodically.

The compliance and action taken report shall be submitted by the BSPHC Ltd./ two State Power distribution companies on quarterly basis to the Commission, by 15th of the next month of the quarter. The first such report for quarter ending 30th June,2013 shall be submitted by **15th July,2013**.

(iii) To ensure ToD tariff application for 200 KVA and above contract demand and submit a plan for introducing ToD tariff for HT and high value LT consumers.

Directive 12- Asset Register

The Commission in its first tariff order for 2006-07 directed erstwhile BSEB to maintain separate Asset Registers of Generation, Transmission and Distribution functions of the erstwhile BSEB. Further the Commission in its tariff order for FY 2012-13 directed erstwhile BSEB for capitalisation of assets by completing the projects under RAPDRP as per schedule so that the central fund received under the scheme as loan is converted into grant as stipulated in the scheme. The compliance of directives submitted by the BSPHC Ltd. shows that erstwhile BSEB has not prepared and maintained the Asset Register as yet. Now the erstwhile BSEB Ltd. has been restructured into five companies.

Therefore, the Commission directs BSPHC Ltd. and its four subsidiary companies to prepare Asset Registers for each company and report by **30th September, 2013** the action taken in this regard.

Directive 13- Installation of pre-paid Meters

The Commission in its tariff order for FY 2010-11 vide directive no. 1 has directed erstwhile BSEB to provide prepaid meters to some domestic consumers as a pilot study to encourage and make aware the consumers to observe the advantage of having prepaid meter facility.

BSPHC Ltd. has reported that the Central Electricity Authority (CEA) is in process of formulation of specification for prepaid meters. Due to high cost of prepaid meters, licensees are yet to launch the scheme of prepaid meters. The demonstration given by various agencies have not been able to address the query of the erstwhile BSEB regarding necessary software change be made for implanting FPPCA charges on monthly to monthly basis.

In view of the above the Commission directs BSPHC Ltd. and its two subsidiary distribution companies to obtain a copy of the specification approved by CEA for prepaid meters where it is finalised and to start with implement prepaid meters on a pilot basis in Patna town. Installation of prepaid meters for consumers in the Government may also be discussed with the State Government officials and implemented for some Government officials.

Directive 14- Issue related to HT & High Value LT Consumers

The Commission in its first tariff order for FY 2006-07 under directive no. 5 and in the tariff order for FY 2008-09 vide directive nos. 1,2 and 3 has directed the erstwhile BSEB for correct meter reading, monitoring of meter reading, percentage check of meter reading by high officials and for redressal of grievances relating to High tension and high value LT consumers.

The Commission in its tariff orders for FY 2006-07 under directive no. 3 has observed that the calibration of meters is not done at specified regular intervals and has directed erstwhile BSEB to put in place an accredited independent third party meter testing arrangement in all districts.

Considering the compliance submitted by the BSPHC Ltd., the Commission considers that the erstwhile BSEB now BSPHC Ltd. has complied with the directive to some extent but compliance is still far from satisfactory and a lot is required to be done. The counter checking of monthly meter reading of the HT and high value consumers is required to be done by the Electrical Superintending Engineer and Chief Engineer on surprise basis and that has to be compared with the monthly meter reading taken by the meter reader/meter reading team. Their grievances require speedy disposal at Headquarter level as the revenue involved in such consumers is high.

In view of the above, the Commission directs BSPHC Ltd. and its two subsidiary distribution companies to–

(i) Ensure that all the HT and high value LT consumers have correct meters and in case of a meter becoming defective/damaged/burnt, it should be replaced within the time limit specified in the BERC (Standards of Performance of Distribution Licensee) Regulations, 2007.

(ii) Ensure the correct meter reading, billing and delivery of bill to all HT and high value LT consumers every month within the time specified in Supply Code, 2007.

(iii) Monitor the redressal of grievances related to quality of power supply and billing at Hqrs. level.

(iv) Arrange periodical test of energy meters of the feeders, and consumers and to put in place third party accredited laboratory for meter testing at least at commissionaire levels in the State.

(v) Ensure periodical test of the meters of the HT & high value LT consumers in their premises without removing the meters from the premises by installing a standard/sub standard comparison/check meters to ascertain the accuracy of the meter installed in the consumer premises.

The action taken report may be submitted to the Commission on quarterly basis.

Directive 15- Renewable Energy Purchase

The Commission in its first tariff order for FY 2010-11 under directive no. 5 directed the erstwhile BSEB to ensure supervision of the construction of the transmission lines when approached by the RE project developer and facilitate to connect the line to the erstwhile Board's network and to report the status of such transmission lines for evacuating energy from RE projects to the Commission.

In compliance, BSPHC Ltd. has stated that the following transmission lines are operational for evacuating power generated from RE sources-

(i) GSS Ramnagar to Lauria Sugar Mills

(ii) GSS Motihari to Sugauli Sugar Mills

(iii) GSS Ramnagar to Harinagar Sugar Mills

The Commission noted the compliance reported by BSPHC Ltd. and directs BSPHC Ltd. to submit the details of the lines which are now proposed for evacuation of power from RE projects which are being constructed and supervised by the BSPHC Ltd. in line with the "Bihar Policy for promotion of New and Renewable Energy Sources 2011" of the Govt. of Bihar on quarterly basis and first such report for quarter ending 30th June,2013 may be submitted by 15th July, 2013.

The Commission also directs BSPHC Ltd. to submit the compliance in respect of Renewable Purchase Obligation (RPO) as provided in BERC (REC Framework Implementation) Regulations, 2010 to the BREDA with a copy to the Commission.

Directive 16- Data Base and Management Information System (MIS)

The Commission in its first tariff order for FY 2006-07 vide directive no. 14 directed erstwhile BSEB now BSPHC Ltd. to take urgent steps to build credible and accurate data base and management information system for its three businesses namely-generation, transmission and distribution. The Commission in its tariff order for FY 2006-07 has observed that for effective working of distribution system, installation of "Supervisory Control and Data Acquisition (SCADA)" system and data management is essential. The Commission also under directive no. 6 issued in tariff order for FY 2008-09 observed that BSEB is not able to furnish the necessary information and data whenever required. The information or data furnished was inadequate or contradictory.

The compliance submitted by BSPHC Ltd. and the present level of information/data submission reveals that still credible and accurate data base/ and management information system (MIS) is not in place and requires special attention.

Therefore, the Commission directs BSPHC Ltd. to arrange data base management information system (MIS) for each companies and submit the status of compliance of MIS system and implementation of SCADA system with full detail by 30th September, 2013.

Directive 17- Energy Consumption of Kutir Jyoti and Agriculture Consumer

The Commission in its first tariff order for FY 2006-07 (Directive 10 and 11) has directed erstwhile BSEB for enumeration of Agriculture pumpsets and assessment of Agriculture consumption. The Commission further, in its tariff order for FY 2011-12 gave directive to undertake studies for estimation of energy consumption levels of Kutir Jyoti consumers and Agriculture consumer.

In compliance, BSPHC Ltd. has submitted that the respective field officers have been directed to conduct pilot study to assess the average energy consumption of Kutir Jyoti and IAS-I consumers. This shows that the erstwhile BSEB now BSPHCL ltd. has not completed the study as directed by the Commission. The growth of agriculture consumers is inadequate in view of the emphasis given to agriculture by both the Central and State Governments. The number of Kutir Jyoti connections both metered and unmetered are required to be scrutinized and the number of Kutir Jyoti connections shown in the petition is low compared to the reported number of connections. This shows that a large number of Kutir Jyoti connection are not billed.
Therefore the BSPHC Ltd. and its two subsidiary distribution companies are directed to –

(i) Conduct extensive survey for ascertaining the total number of Agriculture consumers (private/state tube), and Kutir Jyoti consumers and the number of consumers being billed in the respective category.
(ii) Find out the number of Kutir Jyoti consumers who is violating the load/ consumption limit for such consumers and to bill such consumers under DSI category.
(iii) Ensure hundred percent metering of Kutir Jyoti and Agriculture consumers by **31st March, 2013** as assured by erstwhile BSEB and now by BSPHCL.

Circelwise quarterly compliance report should be submitted by **15th July, 2013**.

Directive 18- Pilferage of Electricity

The Commission in its tariff order for FY 2006-07 stressed the need for prevention of pilferage/theft of electricity and directed the erstwhile BSEB to constitute task force in different zones to carry out raids to arrest the pilferage.

The compliance submitted by the BSPHC ltd. shows that the Special Task Force has been constituted and raids are being conducted. However the present level of losses above forty percent (40%) gives an impression that effective steps are not taken to curb the theft of electricity.

The Commission in its tariff order for FY 2012-13 has also directed to submit report on the status of details of offences, specific number of cases filed and the amount assessed and recovered circle-wise for each financial year but such detail report has not been submitted as yet.

Therefore the Commission reiterates its directive any direct BSPHC Ltd. to submit circlewise details of raids conducted FIR lodged, amount assessed amount realize for FY 2011-12, and 2012-13 by 30th June, 2013 and thereafter to submit quarterly compliance report.

The Commission shall monitor the compliance of the above directives on quarterly basis.

12. Fuel and Power Purchase Cost Adjustment

12.0 Background

12.1 Section 62 sub-section 4 of the Electricity Act, 2003 provides that no tariff or part of any tariff may ordinarily be amended, more frequently than once in every financial year, except in respect of any changes expressly permitted under the terms of any fuel surcharge formula as may be specified. This provision of the Act requires the Commission to specify the formula for fuel surcharge.

12.2 Accordingly, the Commission has been specifying the formula for working out the Fuel and Power Purchase Cost Adjustment (FPPCA) charges and other terms and conditions of FPPCA in each of its tariff orders starting from FY 2006-07 to FY 2012-13. Accordingly, the Commission had allowed erstwhile BSEB/distribution licensees to recover the FPPCA charges from the consumers in terms of the formula specified in the respective tariff orders of the Commission from time to time.

12.3 Now, the Commission has issued the BERC (Terms and Conditions for determination of Tariff) (First Amendment) Regulations, 2012 dated 31.08.2012.

As per these Regulations, the amount of Fuel and Power Purchase Cost Adjustment (FPPCA) charges shall be computed as under:

$$\text{FPPCA (Paise / kWh)} = \frac{Qc(Rc_2 - Rc_1) + Qo(Ro_2 - Ro_1) + Qpp(Rpp_2 - Rpp_1) + Vz + A}{(Qpg_1 + Qpp_1 + Qpp_2) \times \left(I - \frac{L}{100} \right)} \times 100$$

Where,

Qc	=	Quantity of coal consumed during the adjustment period in Metric Tons (MT)
	=	(SHR x QPg) (1+TSL)x1000 / GCV, or actual whichever is less
Rc_1	=	Weighted average base rate of coal supplied ex-power station coal yard as approved by the Commission for the adjustment period in Rs. / MT
Rc_2	=	Weighted average actual rate of the coal supplied ex-power station

coal yard for the adjustment period in Rs. / MT

Qo	=	Actual Quantity of oil (in KL) consumed during the adjustment period or normative oil consumption as per Tariff order whichever is less.
Ro_1	=	Weighted average base rate of oil ex-power station (Rs./KL) approved by the Commission for the adjustment period.
Ro_2	=	Weighted average actual rate of oil ex-power station supplied (Rs. / KL) during the adjustment period.
Qpp	=	Total power purchased from different sources (kWh) = Qpp_2+Qpp_3
Qpp_1	=	$Qpp_3\left(I - \frac{TL}{100}\right)$ in kWh
TL	=	Transmission loss (CTU) (in percentage terms).
Qpp_2	=	Power purchase from sources with delivery point within the state transmission or distribution system (in kWh)
Qpp_3	=	Power purchase from sources on which CTU transmission loss is applicable (in kWh)
Rpp_1	=	Average rate of power purchase as approved by the Commission (Rs. / kWh)
Rpp_2	=	Average rate of power purchased during the adjustment period (Rs. / kWh)
Qpg	=	Own power generation (kWh)
Qpg_1	=	Own power generation (kWh) at generator terminal – approved auxiliary consumption
L	=	Percentage T&D loss as approved by the Commission or actual, whichever is lower.
SHR	=	Station Heat Rate as approved by the Commission (Kcal / kWh)
TSL	=	Percentage Transit and Stacking Loss as approved by the Commission.
GCV	=	Weighted average gross calorific value of coal as fired basis during the adjustment period (Kcal / Kg).
VZ	=	Amount of variable charges on account of change of cost of unknown factors like water charges, taxes or any other unpredictable and unknown factors not envisaged at the time of tariff fixation subject to prior approval of the Commission (Rs.)
A	=	Adjustment, if any, to be made in the current period to account for any excess / shortfall in recovery of fuel or power purchase cost in the past adjustment period, subject to the approval of the Commission (Rs.)

If there are more than one power stations owned by the Licensee Qc, Rc_1, Rc_2, Qo, Ro_1, Ro_2, Qpg and Qpg_1 will be computed separately for each power station and sum of the increase/decrease of cost of all power stations shall be taken into consideration.

12.4. In case of the two distribution companies, there is no generation of their own. Therefore, Qc, Qo and Qpg_1 will be zero in this case.

Accordingly, the the two distribution licensees namely, North Bihar Power Distribution Company and South Bihar Power Distribution Company and the Generating Company can levy FPPCA charges with the prior approval of the Commission. Levy of FPPCA charges shall be subject to the following terms and conditions specified in the BERC (Terms and Conditions for determination of Tariff) (First Amendment) Regulations, 2012 dated 31.08.2012.

Terms and conditions for application of the FPPCA formula

1) The basic nature of FPPCA is 'adjustment' i.e. passing on the increase or decrease in the fuel costs and power purchase cost, as the case may be, compared to the approved fuel costs and power purchase costs in this Tariff Order.
2) The operational parameters / norms fixed by the Commission in the Tariff Regulations / Tariff Order shall be the basis of calculating FPPCA charges.
3) The FPPCA will be recovered every month in the form of an incremental energy charge (Rs/kwh) in proportion to the energy consumption and shall not exceed 10% of the approved avg. cost of supply in the Tariff order and balance amount, if any, in the FPPCA over and above this ceiling shall be carried forward to be billed in subsequent month.
4) Incremental cost of power purchase due to deviation in respect of generation mix or power purchase at higher rate shall be allowed only if it is justified to the satisfaction of the Commission.
5) Any cost increase by the licensee by way of penalty, interest due to delayed payments, etc. and due to operational inefficiencies shall not be allowed.
6) FPPCA charges shall be levied on all categories of consumers.
7) Distribution licensee shall file detailed computation of actual fuel cost in Rs./kWh for each month for each of power stations of the state generators as well as cost of power purchase (Fixed and Variable) from each source/station and a separate set of calculations with reference to

permitted level of these costs.

8) The data in support of the FPPCA claims shall be duly authenticated by an officer of the licensee, not below the rank of Chief Engineer on an affidavit supported with the certified copy of energy bills of power purchase, transmission and RLDC charges, bill for coal purchase and its transportation cost, oil purchase bill and the quantity of coal and oil consumed during the month.

9) Levy of FPPCA charge will be allowed only when it is ten (10) paise or more per unit. If it is less than 10 (ten) paise/unit, the same may be carried forward for adjustment in the next month.

10) The incremental cost per kWh due to this FPPCA arrived for a month shall be recovered in the energy bill of the month subsequent to the order of the Commission approving FPPCA with full details of rate and unit(s) on which FPPCA charges have been billed. The Generating Company and the Distribution Companies shall provide along with the proposal of FPPCA (as applicable to them) for a month, a compliance report of the previous order of the commission in respect of FPPCA.

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13. Generation, Transmission, Wheeling Charges and Open Access Charges

13.1 Generation Tariff

The generation tariff is computed based on the generation ARR and the net generation approved in para 6.7 of the chapter 6 of this tariff order. The approved generation tariff is given in the table below:

Table 13.1: Generation Tariff and Net generation

Net Generation (MU)	Fuel (variable) Costs (Rs. Crores)	Fixed costs (Rs. Crores)	Variable cost (Rs./ kWh)	Fixed cost / kWh (Rs./kWh)	Total cost / KWh (Rs./kWh)
639	180.56	166.41	2.86	2.60	5.46

Accordingly, the Commission approves generation tariff of Rs.5.46 / kWh for the FY 2013-14.

13.2 Transmission Tariff

The transmission ARR, as approved in para 7.16 of chapter 7 is Rs 212.84 crore. The approved transmission tariff is given in the table below:

Table 13.2: Transmission Tariff (in Paise/kWh)

Sl.	Partic	Unit	Transmission Tariff
1.	Total costs of transmission	Rs. crore	212.84
2.	Energy available for transmission	M	14363
3.	Transmission losses	%	4%
		MU	575
4.	Energy delivered to distribution	M	13788
5.	**Transmission tariff (1÷4)**	**Ps./kWh**	**15.44**

The Commission approves transmission tariff of 15 paise/ kWh for the FY 2013-14.

13.3 Wheeling Charges

The net distribution ARR as approved in chapter 8, Table 8.98 is Rs. 6663.71 crore. The distribution ARR approved is segregated into wires business and retail supply business in the percentages given below:

Table 13.3: Allocation matrix for segregation of expenses between Distribution Wire Business and Retail Supply Business

Sl. No.	Particulars	Wire Business (%)	Retail Supply Business (%)
1	Power purchase expenses	0%	100%
2	Standby charges	0%	100%
3	Employee expenses	60%	40%
4	Administration and General expenses	50%	50%
5	Repair and Maintenance expenses	90%	10%
6	Depreciation	90%	10%
7	Interest on long-term loan capital	90%	10%
8	Interest on working capital and consumer security deposits	10%	90%
9	Bad debts written off	0%	100%
10	Income tax	90%	10%
11	Transmission charges intra-state	0%	100%
12	Contribution to contingency reserves, if any	100%	0%
13	Return on equity	90%	10%
14	Non-tariff income	10%	90%

The total fixed costs (not ARR excluding power purchase cost is segregated into wire business and retail supply business as per the above matrix.

(Rs. crore)

Table 13.4: Segregation of Wires and Retail supply costs

(Rs. crore)

Sl.No.	Particulars	Total Fixed Cost	Wire Cost	Retail Supply
1	Employee cost	404.24	242.54	161.70
2	R&M Cost	79.87	71.88	7.99
3	A&G expenses	46.04	23.02	23.02
4	Depreciation	77.60	69.84	7.76
5	Interest and finance charges	211.28	190.15	21.13
6	Interest on working capital	123.16	12.32	110.84
7	Return on equity	123.10	110.79	12.31
8	Less: Non-tariff income	(-) 186.50	(-) 18.65	(-) 167.88
9	Total	878.9	701.89	176.90

The wheeling charges have been computed on the basis of approved costs of the Discoms for its distribution wire business and the total energy expected to be wheeled through their distribution networks. In the absence of segregated data on costs of operation of 33 kV and 11 kV networks, it has been assumed that the two costs are equal. The Commission would revisit this assumption when reliable and concrete data on operating costs (voltage wise) becomes available to it during review/true up.

The wheeling charges worked out for 33 kV voltage level are given in the table below:

Table 13.5: Wheeling charges at 33 kV Voltage Level

Sl.	Details	Units	Approved wheeling Charges
1	Energy input into 33 kV system	MU	9861
2	Total distribution cost	Rs. Cr.	701.89
3	Distribution cost for 33 kV voltage levels (assuming 50% of item 2)	Rs. Cr.	350.95
4	**Wheeling charges for 33 kV voltage level (item 3÷1)**	**Ps./kWh**	**35.59**

The wheeling charges determined for 11 kV voltage level are as given in table below:

Table 13.3: Wheeling charges for 11 kV Voltage Level

Sl. No.	Details	Units	Approved wheeling Charges
1.	Energy input into 33 KV system	MU	9861
2.	Losses in 33 KV	%	5%
3.	Energy sales in 33 kV system as approved by the Commission	MU	1292
4.	Energy input into 11 kV system [1-(2+3)]	MU	8569
5.	Total distribution cost	Rs. Cr.	701.89
6.	Distribution cost for 11 kV voltage levels (assuming 50% of item 5)	Rs. Cr.	350.95
7.	**Wheeling charges for 11 kV voltage level (item 6÷4)**	**Ps./kWh**	**40.96**

To encourage open access and to make the cost of delivered power under open access comparable with the retail tariff, the Commission approves wheeling charges at 18 paise/kWh for 33 kV voltage level and at 20 paise/kWh for 11 kV voltage level for the FY 2013-14.

13.4 Open Access Charges

The Commission feels that the HT consumers should be provided a facilitative open access framework for procurement of power from sources other than BSPHCL. For Open access to become a feasible option for HT consumers open access charges should be rational so that the cost of delivered power (from sources other than BSPHCL) is comparable to retail tariff.

Pursuant to Section 39, 40 and 42 and all other enabling provisions of the Electricity Act, 2003, the Commission notified the “Terms and Conditions for open access” Regulations on 20th May 2006. The Commission through these regulations has introduced open access in phases in Bihar as given below, having regard to operational constraints, and other relevant factors.

Table 13.6 : Phase Category of Consumers Open Access to be allowed from

Sl.	Phase	Category of Consumers	Open Access to be allowed from
1.	Phase-I	Consumers with demand of 15 MW and above	1-Jun-06
2.	Phase-II	Consumers with demand of 10 MW and above	1-Dec-06
3.	Phase-III	Consumers with demand of 5 MW and above	1-Dec-07
4.	Phase-IV	Consumers with demand of 1 MW and above	1-Dec-08

The consumer who seeks open access in accordance with these regulations will have to pay transmission charges, wheeling charges, cross subsidy surcharge, additional surcharge and charges to SLDC. The applicability of these charges to any open access consumer shall be as provided in the regulations for open access. In the following section all the charges to be paid by consumer seeking open access are being determined.

13.5 Transmission Charge

The Commission has computed the transmission tariff as provided in clause 75 of the BERC (Terms and conditions for determination of Tariff) Regulations, 2007 in chapter 7. The sum of allocated capacity to all long term transmission customers of the state transmission system has been taken into consideration. Based on the transmission cost worked out earlier the approved transmission charge for open access consumers for the FY 2012-13 is as given in table below:

Table 13.6: Transmission Charge

Particulars	
Transmission ARR	212.84 (Rs. Crores)
Average transmission capacity (MW) - Allocated capacity to all long term Open Access Customers of the State	2736 MW
Transmission charges for long term open access customers (Rs. /MW/Month)	Transmission ARR ÷ (Average transmission capacity X 12) = Rs. 64,827
Transmission charges for short term open access customers (Rs./MW/Day)	Transmission ARR x 0.25) ÷ (Average transmission capacity X 365) = Rs.533

The Commission decides that the transmission charges in cash will be Rs. 64827/ MW/ month or part thereof for long term open access consumers and Rs. 533/ MW/ day or part thereof for short term consumers. In addition transmission losses of 4% will be reduced in kind from the energy input (i.e. energy injected at the point of injection) at the point of delivery.

13.6 Wheeling Charges

For the energy input at 33 kV the wheeling charge shall be at 18 paise/kWh. In addition 5% of energy in kind will be deducted from the energy input, towards assumed losses in 33 kV network.

For energy input at 11 kV the wheeling charges shall be 20 paise /kWh. In addition, 6% of energy in kind will be deducted from the energy input towards assumed losses in 11 kV network.

13.7 Open Access Charges

The Open access charges shall be paid as per the table given below if the injection and drawl points of the open access customer are at different voltage levels.

Table 13.6: Open Access Charges

Injection \ Drawl	Transmission	33 KV	11 KV
Transmission	Transmission Charges plus transmission losses	Transmission charges plus wheeling charges of 33 kV. Losses of both transmission and 33 kV network shall be payable	Transmission Charges plus wheeling charges of 33 and 11 kV network shall be payable. The losses of transmission, 33 and 11 kV network shall be payable
33 KV	Transmission Charges plus transmission losses	Wheeling charges of 33 kV plus losses of 33 kV network	Wheeling Charges of 33 and 11 kV network. Losses for 33 and 11 kV shall also be payable
11 KV	Transmission Charges plus transmission losses	Transmission charges and Wheeling Charges of 33 kV. The losses of transmission and 33 kV network will have to be borne	Wheeling Charges of 11 kV plus losses of 11 kV network

13.8 SLDC Charges

Open access consumer shall pay all charges payable to the State Load Dispatch Centre (SLDC), as determined by the Commission under section 32 of the Act and as per the Regulation 19 (1) of “Terms and Conditions for Open Access” Regulations, 2006 of BERC.

The Annual SLDC and Operating charges for the present have not been determined separately as till date SLDC is not an independent entity but continues to be a part of Transmission Company with no separate accounts. The Commission believes that expenses incurred by the SLDC are a part of the transmission expenses of Transmission Company. The Commission has determined the revenue requirement for transmission function of company and consequently the revenue requirement of SLDC are a part of the revenue requirement of the transmission function. Charges payable to SLDC are a part of the transmission charges determined by the Commission. Till the time separate accounts are established by Transmission Company for SLDC these charges shall continue to be determined as a part of the Transmission Charges of Transmission Company.

13.9 Cross Subsidy Surcharge

The open access consumers are liable to pay cross subsidy surcharge to compensate the distribution utility for any loss of revenue due to shifting of its consumer to the open access system. The cross subsidy surcharge for open access consumers for the year 2012-13 is calculated as per the following recommended formula in the Tariff Policy.

S = T – [C (1+L/100) +D]

Where,

S = Surcharge

T = Tariff payable by the relevant category of consumers

C = Weighted average cost of power purchase of top 5% at the margin excluding liquid fuel based generation and renewable power.

D = Wheeling charges (Transmission and Distribution)

L = System losses for the applicable voltage level, expressed as a percentage.

The cross subsidy surcharge determined as per the above formula is worked out as follows:

1. Total power purchase = 15774 MU
2. 5% of power purchase = 789 MU
3. Weighted average cost of power purchase of top 5% at the margin excluding renewable power (C)

Source	MU	Rate (Rs./kWh)	Cost (Rs. Crore)
BTPS	639	5.46	348.89
Adani	150	4.43	66.45
Total	789	5.26	415.34

4. Calculation of cross subsidy surcharge

   S = T–[C(1+L/100)+D]

5. (a) for 132 kV consumers = 6.05–[(5.26 x 1.04) + 0.15] = 43 Ps/kWh
   (b) for 33kV consumers = 6.93 –[(5.26 x 1.05) + 0.35] = 106 Ps/kWh
   (c) for 11kV consumers = 6.86 –[(5.26 x 1.06) + 0.41]= 88 Ps/kWh
   (d) for HTSS consumers = 5.49 –[(5.26 x 1.05) + 0.35]= (–)38 Ps/kWh, hence 0

As indicated earlier the Commission in view of the prevailing power shortages in the state would like HT consumers to seek power purchase options from sources outside the state. The Commission in order to make the cost of delivered power comparable with the retail tariff approves the following cross subsidy surcharge for FY 2013-14.

For 132 kV consumers	= 22 Ps./kWh.
For 33 kV consumers (other than HTSS)	= 53 Ps./kWh.
For 11 kV consumers (other than HTSS)	= 44 Ps./kWh
For HTSS consumers (33 kV& 11 kV)	= 0 Ps./kWh

13.10 Additional Surcharge

The Commission is not in favour of levy of any additional surcharge, in the absence of the necessary data. The same shall be leviable only if it is conclusively demonstrated by BSPHCL that open access will lead to stranding of its fixed cost. BSPHCL should indicate the quantum of such stranded cost and the period over which it would be stranded for determination of additional surcharge.

13.11 Reactive Energy charges

The open access consumers should pay a reactive energy charge to Transmission and Distribution companies as the case may be for drawal / injection of reactive energy. The Commission in its last tariff order had directed erstwhile BSEB to conduct a study to determine the reactive energy charge and submit a proposal in the next tariff application. However BSPHCL has not submitted any such proposal and till the time BSPHCL submits a proposal in this regard, the reactive drawal shall continue to be charged at 04 paise/kVAR as determined by the Commission in its tariff order for FY2012-13.

13.12 Information to be put on the web site

The Commission directs BSPHCL to put all information related to open access facilities/charges on its web site. The information should include open access regulations, procedure for obtaining open access and details of all charges payable by an open access consumer.

14. Renewable Purchase Obligation

14.1 Background

Renewable energy is most important solution to reduce power shortage especially in Bihar where fossil fuel is not available. Developing renewable energy will increase power availability in the State and help balanced regional development. Besides, it will reduce adverse impacts on the local environment and carbon density. Bihar is primarily an agriculture based State and majority of the people live in the rural areas. Better power availability in rural areas will not only boost agriculture production, but standard of living of vast majority in rural areas will improve. There is potential of 2000 MW based on Agro-residues such as rice husk, paddy straw, maize cob, bagasse etc. There is also good potential of solar power which may even touch 8500 MW. Solar off grid too has potential of over 7000 MW which may ensure at least four hours of power supply in the evening in rural areas, where power is rarely available in the evening.

14.2 Renewable Purchase Obligation (RPO)

Provision of Renewable Purchase Obligations (RPOs) has been made to ensure that the obligated entities procure a certain minimum percentage of their total power requirement from renewable energy sources at preferential tariff. Some of the relevant provisions related to RPO in the Electricity Act, National Electricity Policy and Tariff Policy are as follows :-

14.2.1 The Electricity Act, 2003

Section 86 (1) (e) The State Commission shall discharge the following functions, namely : "Promote co-generation and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person and also specify, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licensee".

Section 61 "The Appropriate Commission shall subject to the provisions of this Act specify terms and conditions for the determination of tariff and in doing so shall be guided by the following, namely : 61 (h) the promotion of cogeneration and generation of electricity from renewable sources of energy"

14.2.2 National Electricity Policy

In pursuance of section 3 of the Act, Government of India has notified the National Electricity Policy on 12th February, 2005, which too reasserts the Government's intent to promote renewable energy. Relevant select extracts are reproduced hereunder:

5.2.20 "Feasible potential of non-conventional energy resources, mainly small hydro, wind and biomass would also need to be exploited fully to create additional power generation capacity. With a view to increase the overall share of non-conventional energy sources in the electricity mix, efforts will be made to encourage private sector participation through suitable promotional measures".

5.12.1 "Non-conventional sources of energy being the most environment friendly there is an urgent need to promote generation of electricity based on such sources of energy. For this purpose, efforts need to be made to reduce the capital cost of projects based on non-conventional and renewable sources of energy. Cost of energy can also be reduced by promoting competition within such projects. At the same time, adequate promotional measures would also have to be taken for development of technologies and a sustained growth of these sources"

5.12.2 "The Electricity Act 2003 provides that co-generation and generation of electricity from non-conventional sources would be promoted by the SERCs by proving suitable measures for connectivity with grid and sale of electricity to any person and also by specifying, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licensee. Such percentage for purchase of power from non-conventional sources should be made applicable for the tariffs to be determined by the SERCs at the earliest. Progressively the share of electricity from non-conventional sources would need to be increased as prescribed by State Electricity Regulatory Commissions. Such purchase by distribution companies shall be through competitive bidding process. Considering the fact that it will take some time before non-conventional technologies compete, in terms of cost, with conventional sources, the

Commission may determine an appropriate differential in prices to promote these technologies".

14.2.3 Tariff Policy

In pursuance of section 3 of the Act, Government of India also notified the tariff policy on 6th January, 2006 which also reiterates the importance of the renewable energy generation and its subsequent benefits for the country. Relevant extracts are reproduced hereunder :-

6.4 (1) "Pursuant to provisions of section 86 (1) (e) of the Act, the Appropriate Commission shall fix a minimum percentage for purchase of energy from such sources taking into account availability of such resources in the region and its impact on retail tariffs. Such percentage for purchase of energy should be made applicable for the tariffs to be determined by the SERCs latest by April, 1, 2006".

The title of para 6.4 and contents of above para 6.4 (1) was amended by Govt. of India and notified on 20th January, 2011. The amended provisions are as hereunder-

"6.4. Non-conventional and renewable sources of energy generation including cogeneration :

(1) Pursuant to provisions of section 86 (1) (e) of the Act, the Appropriate Commission shall fix minimum percentage of the total consumption of electricity in the area of a distribution licensee for purchase of energy from such sources, taking into account availability of such resources in the region and its impact on retail tariff. Such percentage for purchase of energy should be made applicable for the tariffs to be determined by the SERCs latest by April, 2006.

(i) Within the percentage made applicable to start with, the SERCs shall also reserve a minimum percentage for purchase of solar energy from the date of notification in the official Gazette which will go up to 0.25% by the end of 2012-13 and further upto 3% by 2022.

(ii) It is desirable that purchase of energy from non-conventional sources of energy takes place more or less in the same proportion in different states. To achieve this objective in the current scenario of large availability of such resources only in certain parts of the country, an appropriate mechanism such as Renewable Energy Certificates (REC) would need to be evolved. Through such a mechanism, the renewable energy based generation companies can sell the electricity to local distribution licensee at the rates for conventional power and can recover the balance cost by selling RECs to other distribution companies and obligated entities enabling the latter to meet their renewable power purchase obligations. In view of the comparatively higher cost of electricity from solar energy currently, the REC mechanism should also have a solar specific REC.

(iii) It will take some time before non-conventional technologies can compete with conventional sources in terms of cost of electricity. Therefore procurement by distribution companies shall be done at preferential tariffs determined by the Appropriate Commission".

14.2.4 National Action Plan on Climate Change (NAPCC)

The National Action Plan on Climate Change (NAPCC) fixed Renewable Purchase Obligation target of 5% at national level for 2010 with annual increase in trajectory over long term so as to reach around 15% RPO target by 2020. It has recommended to increase the share of renewable energy to 10% by 2015 and thereafter to 20% by 2020.

14.3 Renewable energy Policy

The Government of Bihar (GoB) had issued policy guidelines for increasing private sector participation for developing Non-conventional energy sources in 2003 which was applicable for five years. Keeping in the view that the potential for the renewables is yet to be harnessed, the Govt. of Bihar has issued revised policy for the promotion of power generation from renewable energy sources in June 2011 vide Letter No-Pra 02/Breda Apra Niti-11/08/2845 dated 24/6/2011.

The revised policy is applicable for the development of all forms of renewable energy resources. The responsibility for the development of biomass/biogas based projects, cogeneration projects, wind power projects, municipal solid waste based projects lies with the Bihar Renewable Energy Development Agency (BREDA), the state nodal agency for the renewable energy generation programmes. For the development of micro/mini/small hydel plants (up to 25 MW), the responsibility lies with the Bihar State Hydroelectric Power Corporation.

The revised policy 2011 has issued guidelines on the key issues stated as follows:

a) Project Approval process & role of institutional authorities
b) Regarding the sale of power to the BSEB, wheeling of power for third party sale or captive use;
c) Project monitoring and activity milestones;

d) Incentives /applicability e.g. applicability of policies notified by the state and Central Government from time to time, incentives under prevalent industrial incentive policy of the GoB and also such similar applicable policies, exemption from electricity duty and entry tax;
e) Special concession for the sustainability of the biomass based projects that no two biomass based projects are taken up in an area of radial distance of 25 km to ensure the availability of biomass;
f) Regarding the Renewable Energy Purchase Obligation, the policy has emphasized that the BSEB or the distribution licensee should purchase more power from renewable resources than the minimum prescribed by the BERC with the approval from the Government at tariff approved by the BERC.

14.4 BERC (Renewable Purchase Obligation, its Compliance and REC Framework Implementation) Regulations, 2010

The Commission has notified BERC (Renewable Purchase Obligation, its Compliance and REC Framework Implementation) Regulations, 2010 on 16th November, 2010. Clause 4(1) of the regulation states,

> *"Every obligated entity shall purchase not less than 1.5%, 2.5%, 4%, 4.5% and 5% of its total energy consumption (total energy input minus T&D losses) during 2010-11, 2011-12, 2012-13, 2013-14 and 2014-15 respectively from renewable energy sources under the Renewable Purchase Obligation or until reviewed by the Commission. Provided that 0.25% out of the renewable purchase obligation so specified in the year 2010-11 shall be procured from generation based on solar as renewable energy source and shall be increased at a rate of 0.25% every year thereafter till 2014-15 or until reviewed by the Commission."*

To promote solar energy projects for generation and sale of electricity from solar projects to distribution licensees within the State of Bihar, the Commission has notified BERC (Terms and Conditions for tariff determination from Solar Energy Sources) Regulations, 2010 on 2nd August 2010.

In view of non-availability of solar power in the state and amended Tariff Policy notified by the Govt. of India under section 3 of the Electricity Act, 2003 vide Ministry of Power Resolution dated 20th January, 2011, the Commission in its order dated 29.11.2012 revised the solar power obligation in the following manner: "0.25% of the consumption in the year 2012-13 shall be procured from generation based on solar source and shall be increased at a rate of 0.25% every year thereafter till 2019-20 and at a rate of 0.5% in 2020-21 as well as in 2021-22. It was also ordered that SPO determined by the Commission for FY 2010-11 and FY 2011-12 and not met by the distribution licensee shall be carried forward and shall be achieved during current year and subsequent years. Accordingly Bihar Electricity Regulatory Commission (Renewable Purchase Obligation, its Compliance and REC Framework Implementation) (1st Amendment) Regulations, 2012 and Bihar Electricity Regulatory Commission (Terms and Conditions for Tariff Determination from Solar Energy Sources) (1st Amendment) Regulations, 2012 were issued on 10th September, 2012.

The distribution licensee shall generally source the mandatory percentage purchase from renewable sources within the State, but they shall have option of purchase of shortfall from outside the State if they are not able to meet the purchase obligation from such sources located in the State. The energy generated from renewable sources in the State which is used by generator itself or sold to third party under open access, the same will be considered under the mandatory minimum percentage of power purchase. Purchase of Renewable Energy Certificate is also valid instruments for the discharge of the mandatory renewable energy purchase obligation.

Based on the above mentioned regulations it was made obligatory for erstwhile BSEB and now BSPHCL to purchase certain percentage of energy of their total energy consumption from Renewable Energy sources, as stated below:

Table 14.1: Percentage of Renewable Purchase Obligation (RPO)

From Renewable Sources	**FY 2010-11**	**FY 2011-12**	**FY 2012-13**	**FY 2013-14**	**FY 2014-15**	**FY 2015-16**
Renewable Purchase Obligation (RPO)	1.5%	2.5%	4%	4.5%	5.0%	5.0%
% share of solar power in RPO	0.25%	0.5%	0.25%	0.50%	.75%	1.0%
% share of non-solar power RPO	1.25%	2.0%	3.75%	4.0%	4.25%	4.0%

14.4.1 Effect of Default

The Commission can give consent to carry forward renewable purchase obligation in case of genuine difficulty in complying with the renewable purchase obligation because of non-availability of power in the State.

If an obligated entity does not fulfill the renewable purchase obligation and also does not purchase the certificates, the Commission may direct it to deposit into a separate fund, to be created and maintained by such obligated entity, such amount as the

Commission may determine on the basis of the shortfall in units of RPO and forbearance price decided by the Central Commission. The fund so created shall be utilized as may be directed by the Commission, for purchase of the RE certificates and partly for development of transmission / sub-transmission infrastructure for evacuation of power from generating stations based on renewable energy sources. Where any obligated entities fails to comply with the obligation to purchase the required percentage of power from renewable energy sources or the renewable energy certificates, it shall also be liable for penalty as may be decided by the Commission under section 142 of the Act.

14.5 Bihar Renewable Energy Development Agency (BREDA)

Relevant select extracts related to State Agency of BERC (Renewable Purchase Obligation, its compliance and REC Framework Implementation) Regulations, 2012 are reproduced as hereunder:

"6.1 The Commission shall designate an agency as the State Agency for accreditation and recommending the renewable energy projects for registration and to undertake functions under these regulations.

6.2 The State Agency shall function in accordance with the directions issued by the Commission and shall act in consistent with the procedures/rules laid by Central Agency for discharge of its functions under the Central Electricity Regulatory Commission (Terms and Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010.

6.3 The State Agency shall submit quarterly status to the Commission in respect of compliance of renewable purchase obligation by the obligated entities in the format as stipulated by the Commission and may suggest appropriate action to the Commission if required for compliance of the renewable purchase obligation."

Bihar Renewable Energy Development Agency (BREDA) has been established to promote development of schemes of non- conventional energy sources. BREDA has been implementing programme of non-conventional energy sources for schemes such as bio-gas development, SPV systems of Lanterns/Home lighting systems/street lighting systems, and wind mills. Under the Border Area Development Programme, BREDA has implemented a scheme of solar street lighting system in 40 villages along the International Border in Bihar.

In pursuance of the Regulation 6 of BERC (Renewable Purchase Obligation, its Compliance and REC Framework Implementation) Regulations, 2010 the Bihar Electricity Regulatory Commission has designated Bihar Renewable Energy Development Agency (BREDA) as "State Agency" for accreditation and recommending the renewably energy projects for registration and to undertake functions as specified in the Regulation.

14.6 Co-generation and Biomass Based Plants

1.6.1 Bihar does not have any specific policy for Co-generation at present.

However, BERC issued order for determination of tariff for purchase of electricity by the BSEB from biomass based power plant and bagasse based cogeneration plant in the State of Bihar in suo motu proceeding No. 2008 vide order dated 21st May 2009. The Commission vide order dated 30.11.2012 in suo-motu proceedings no. 31/2012 determined tariff for Biomass based plants and bagasse based cogeneration plants to be commissioned on or after 30.11.12 in FY 2012-13. Some bagasse based cogeneration plants are generating power in the State. Biomass based power plants have not come up in the State. Details of running bagasse based cogeneration plants with whom erstwhile BSEB now BSPHCL has signed PPAs are as follows :

Table 14.2: Co-generation Plants in Bihar

Sl. No.	Name of the Sugar mill (Co-generation plants)	Agreement of Power Supply (in MW)	
		Season	Off season
1.	New Swadeshi Sugar Mill	5	8
2.	Bharat Sugar Mill	10	13
3.	JHV Distilleries & Sugar Mills	14.54	18.05
4.	Hashan Sugar Mills	5	8

BSPHCL expects 3 MW from new cogeneration plant and 7 MW from biomass based plants in 2014-15. Additional 25 MW from cogeneration and 12 MW from biomass is expected in 2015-16.

14.7 Small Hydro Power

Total installed capacity of small hydro projects is 55 MW. Bihar State Hydroelectric Power Corporation has indentified 40 projects of 275 MW aggregate capacity. Their pre-feasibility report and DPRs are under preparation.

1.8 Solar Power

There is no solar power plant in the State. BSPHCL has signed PPA with Glat Solutions Ltd. for supply of 3 MW (4.94 MU) from proposed solar PV project at

Nawada. Revaluation of 25 proposals of project developers for solar power supply of 50 MW under phase I is under process. The project developers scoring higher marks in decreasing order will be invited for signing PPA with BSPHCL for cumulative achievement of 50 MW power. These solar plants are expected in 2014-15. BSPHC also expects 250 MW solar power in 2014-15 through competitive bidding.

14.9 Rural Electrification through Non-Conventional Energy Sources

One scheme has been sanctioned for electrification of 48 remote villages in Gopalganj and Kaimur districts through non-conventional energy sources under Rajiv Gandhi Gramin Vidyutikaran Yojna. It is being implemented.

14.10 Power purchase by BSEB under Renewable Purchase Obligations (RPO)

Purchase of power from BSHPC and Co-generation plants by the BSPHCL have been considered towards the fulfilment of RE purchase obligations and accordingly RE purchase from other sources have been considered.

The total power purchase quantum from renewable energy source approved by the Commission for FY 2010-11 to FY 2011-12 and FY 2012-13 and FY 2013-14 to FY 2015-16 is given in the table below:

(MU)

Sl. No.	From Renewable Sources	FY 2010-11	FY 2011-12	FY 2012-13 (projected)	FY 2013-14 (projected)	FY 2014-15 (projected)	FY 2015-16 (projected)
1	RE Purchase Solar	0	0	0	19	49	93
2	Co-generation	28.35	77.68	52.77	80	80	80
3	Small Hydro (BSHPC)	27.37	35.68	56.75	45	45	45
4	Total Power purchase from Renewable Sources (non solar)	55.72	113.36	109.52	125	125	125
5	Total = Solar + non-solar)	55.72	113.36	109.52	144	174	218
6	Total Energy Input	8890.09	8947.49	9315	10272	11785	13608
7	T&D Losses	2750.95	2402	2433	2679	2892	3157
8	Energy Consumption (Energy input- T&D losses)	6139.14	6535.32	6882	7593	8893	10451
9	Power Supply to Nepal + UI	848	1164	1023	550	550	550
10	Energy input – T&D losses-sales outside state	5291	5381	5859	7043	8343	9901
11	RPO: Solar	13	27	15	35	63	99
12	RPO: Non-Solar	66	108	220	282	355	396
13	Shortfall in Solar RPO	13	27	15	16	14	6
14	Shortfall in Non-Solar RPO	10	(5)	110	157	230	271

The above table indicates that the erstwhile BSEB had not met the Solar R. P. obligations during FY 2010-11 and 2011-12. The Commission in its order dated 29.05.2012 in petition no. 12/2012 allowed the BSEB to carry forward Solar RPO not met in FY 2010-11 and 2011-12 for its achievement in FY 2012-13 and subsequent years. The Commission in its order dated 28.09.2012 in case no. 19/2012 directed to fulfill shortfall in Solar RPO in 2010-11 and 2011-12 in five equal installments starting from 2013-14. As such the BSPHCL is to meet Solar RPO in FY 2013-14 alongwith the first installment of the shortfall in solar RPO for FY 2010-11 and 2011-12. The last installment will be in FY 2017-18. As per the projections for FY 2012-13, BSPHCL is not likely to fulfill the Solar RP obligation in FY 2012-13. As such it will have to deposit into a separate fund as per Regulation 9.1 of the Bihar Electricity Regulatory Commission (Renewable Purchase Obligations, its Compliance and REC Framework) Regulations for shortfall in Solar RPO for FY 2012-13, if Solar REC also is not purchased. It appears from the projection for FY 2013-14 to FY 2015-16 that BSPHC does not expect 50 MW solar power under phase I even by mid 2014-15. BSPHCL is directed to expedite signing of PPA with project developers for supply of 50 MW solar power under phase I. Action may also be taken for solar power purchases through competitive bidding once the competitive bidding guidelines for purchase of power from renewable sources are issued by the Ministry of Power so as to ensure that yearly Solar RPO alongwith installment of shortfall in solar RPO for FY 2010-11 and 2011-12 is met failing which BSPHCL will have to deposit into a separate fund as per Regulation 9.1.

There is no shortfall in non-solar RPO in 2011-12. The shortfall may be nil in 2010-, when energy generated and used by Sugar Mills is taken into account. Shortfall in non-solar RPO is likely in FY 2012-13 even after energy generated and used by Sugar Mills is taken into account. The State Agency BREDA will examine this matter and submit report to the Commission from projections for FY 2013-14 to 2015-16 it can be inferred that BSPHCL is not in a position to fulfil non-solar RPO. The BSPHCL shall endevour to procure and supply the power from New and Renewable Energy Sources, more than the minimum percentage prescribed under the RPO obligations by the Commission. It will have to deposit into a separate fund as per Regulation 9.1 of the Bihar Electricity Regulatory Commission (Renewable Purchase Obligations, it compliance and REC Framework) Regulations, 2010, if non-solar RPO is not met in FY 2012-13 and thereafter and REC also is not purchased.

Annexure-I

Bihar Electricity Regulatory Commission (BERC)
Vidyut Bhawan-II, Bailey Road, Patna

Minutes of the meeting of the State Advisory Committee (SAC) constituted under section 87 of the Electricity Act 2003 held on 14.12.2012 in the Conference Room of the Commission.

1. The meeting of the State Advisory Committee (SAC) was held on 14.12.2012 under the chairmanship of Sri U. N. Panjiar, IAS (Retd.), Chairman, BERC and SAC.
   The list of participants present in the meeting is annexed at the end of minutes.
2. Welcoming the members, the Chairman explained that the erstwhile Bihar State Electricity Board (BSEB) has been restructured into five companies Bihar State Power (Holding) Company (BSPHC) Limited has filed the petition on behalf of Bihar State Power Generation Company Ltd, Bihar State Power Transmission Company Ltd., North Bihar Power Distribution Company Ltd. and South Bihar Power Distribution Company Ltd. for provisional true up of Aggregate Revenue Requirement (ARR) for FY 2011-12, Review of ARR for FY 2012-13 and approval of Multi Year ARR and determination of Tariff for retail sale of electricity for the control period FY 2013-14 to FY 2015-16.

   The Chairman also explained that for the generation and transmission companies, the BSPHC Ltd. has filed separate ARR for the control period but a combined ARR has been filed for both the Distribution Companies since the segregated data for each of the distribution companies is not available as yet.

3. The Chairman BERC & SAC stated that today's meeting is to discuss the ARR and tariff petition filed by the BSPHC Ltd. as stated above.
   The Chairman briefed the SAC on the proposal of ARR and Revenue gap for the financial years 2011-12 and 2012-13 and Multi Year ARR for the control period from FY 2013-14 to 2015-16. He also mentioned that enhancement in the tariff for the FY 2013-14 has been proposed for almost all categories of consumers.
4. BSPHC Ltd. was requested to give presentation on the petition filed including the methodology considered to compute "cost of supply at different voltage levels" in compliance with the judgement of Hon'ble APTEL passed on 10.05.2012.
5. Presentation on ARR and methodology for working out the voltagewise cost of supply was given by the BSPHC Ltd. A copy of the presentation made by BSPHC Ltd. is enclosed.

6. After the presentation, the committee discussed the issues related to the determination of Multi Year ARR and Tariff as detailed below :

(i) Voltagewise cost of supply :-

Bihar State Power (Holding) Company (BSPHC) Ltd. gave presentation on voltagewise cost of supply. The representatives of Bihar Industries Association and Bihar Chamber of Commerce stated that the methodology as directed by the Hon'ble APTEL should be adopted. It was explained by the consultant of the Bihar Electricity Regulatory Commission that the methodology adopted by the BSPHC Ltd. is not fully in line with the direction given in the judgement passed by the Hon'ble APTEL.

The Chairman BERC and SAC stated that the Commission will consider the methodologies worked out by BSPHCL, and suggested by BIA, BCC and KCL Ltd. and work out the voltagewise cost of supply in line with the judgement passed by Hon'ble APTEL on 10.05.2012 in appeal no. 26/2011, and requested the representatives of the BSPHC Ltd., BIA and BCC to give their views on the methodology suggested by the consultant of the Commission.

(ii) Treatment of Resource Gap grant received from the State Government:-

The Chairman stated that Addl. Secretary, Energy Department, Govt. of Bihar in the last meeting held on 12.06.2012 had assured that the Government would settle the matter and will specify the extent to which the agriculture and rural consumers will be subsidized. The Addl. Secretary, Energy Department, Govt. of Bihar was requested to apprise the Committee on the upto-date status in this regard.

The Addl. Secretary, Energy Department, Shri Shambhu Nath Mishra stated that the Government is yet to take decision in this regard. As the restructuring of the BSEB has been done recently, the Govt. has to take decision considering the restructured status of the erstwhile BSEB.

The Chairman mentioned that since Govt. owned the two Discoms, first issue is how to treat the Government grant, second issue is the extent to which the Discoms should be compensated for the financial loss incurred due to higher T&D loss and the third issue is the extent of subsidy to Agriculture and rural consumers, and therefore the decision of the State govt. is required on the re-issues before finalizing the Tariff Order. It was also clarified by the Chairman that BSPCH Ltd. has considered Rs. 2700 crores as State Govt. grants to be provided by the State Govt. during FY 2012-13 but for the year 2013-14 onwards it has been proposed at Rs. 1080 crores only for which no basis has been provided. In this context the factual status is necessary to process the tariff petition and as such he requested the Addl. Secretary, Energy Department, Govt. of Bihar to apprise the Commission latest by 15th January, 2013 so that the Commission may take further steps accordingly.

The Addl. Secretary, Energy Department, said that both the issues have been placed before the Government for consideration and the same will be communicated by 15th January, 2013.

The representative of Bihar Chamber of Commerce Shri Sanjiv Kumar Choudhary stated that the Commission should consider the State Govt. grant not only for agriculture and rural consumers but for all categories of consumers as this grant is mainly given for purchase of power. He also pointed out that entire amount provided by the State Govt. as grant should be used to reduce the ARR.

[Action: Energy Department]

(iii) <u>Transmission & Distribution Losses</u> :

Shri Sanjiv Kumar Choudhary, BCC stated that the Transmission and Distribution losses (T&D losses) proposed by the BSPHC Ltd. is too high and this would ultimately increase the tariff of the consumers. It was also stated by him that the T&D losses is estimated and after providing 100 % meters to all feeders and consumers is completed, the T&D losses can be correctly assessed.

Dr. Rana Awdhesh, Managing Director, South Bihar Power Distribution Company Limited replied that procurement of meters is done and so far 70% of the work of installation of meters have been completed. It was pointed out by the Chairman that the erstwhile BSEB had assured that hundred percent metering would be completed by 31st March, 2013 so now the BSPHC Ltd. should complete the work of hundred percent metering by 31st March, 2013.

[Action: MD/SBPDCL & MD/NBPDCL]

(iv) <u>High Quantity and Price of Power Purchase :</u>

Shri S. K. Patwari, Member, Bihar Industries Association and Sri Sanjiv Chaudhary (BCC) stated that power purchase quantity and cost is increasing year on year in the tariff petition, but the revenue projected is not commensurate with the increase in power purchase quantity and cost. It was further stated by them that power purchase cost is projected on CAGR of earlier five years for future projections, it also there may not be much increase in power purchase cost as imported and indigenous coal is available at lower cost now. Mr. Sanjeev Chaudhary (BCC) also stated that the quantity of power purchase has been increased but commensurate higher sale of power has not been projected. The Chairman directed the BSPHC Ltd. to file their response on the issue raised by the representative of the BIA and BCC.

[Action: MD/SBPDCL & MD/NBPDCL]

(v) Projection of Higher Sales for Agriculture Category :-

Shri U. K. Poddar, (Member, Power Committee) and Shri S. K. Patwari, (Chairman, Power Sub-Committee) Bihar Industries Association and Sri Sanjeev Chaudhary (BCC) stated that the projected agriculture consumption is very high.

The Chairman BERC intervened and stated that even in the State like Gujarat, only 8 hours per day supply is given to agricultural consumers and suggested the Discoms that they should not consider a projection of 20 hours supply to agricultural consumers and project the agricultural sales on realistic the basis. Moreover, if sale to agriculture consumers is increased, amount of Government subsidy should also be increased proportionately.

[Action: MD/SBPDCL & MD/NBPDCL]

(vi) High cost of generation of Generating Company :-

Shri Sanjiv Kumar Choudhary, Member, BCC stated that the generation cost projected at Rs. 6.87 per unit from Bihar generating company's own generation is very high and purchasing power at this higher cost by the distribution companies will increase tariff of all categories of consumers.

Dr. Rana Awadhesh, MD, SBPDCL stated that after R&M works are completed the generation cost will reduce.

The Chairman SAC also stated that the cost is high and the Bihar State Power Generating Company should take up the task to reduce the cost of generation.

At the end of meeting Chairman BERC and SAC thanked all the participants once again requested the Addl. Secretary, Energy Department, Govt. of Bihar to send the clarification regarding quantum of the State Govt. grants for FY 2011-12, FY 2012-13 and FY 2013-14 onwards and the priority of the use the grants as stated above by 15th January, 2013. BSPHC Ltd. was also requested to submit their response on the issues raised by BCC and BIA and other members.

[Action: MD/BSPGCL]

(vii) Fuel & Power Purchase Cost Adjustment (FPPCA) Charges :-

The representatives of BIA and BCC stated that the average rate of power purchase cost of BSPHC Ltd. has decreased compared to the approved average rate of power purchase cost in the tariff order for FY 2012-13.

The Chairman BERC stated that the Commission will take up this aspect in Annual Performance Review (APR) of FY 2012-13.

(viii) **<u>Railways Tariff</u> :-**

Sri H. C. Meena, Chief Engineer E.C. Railway, Hajipur stated that the tariff rate proposed by the BSPHC Ltd. is too high.

The Chairman BERC stated that the Commission will reasonably fix the tariff for Railways. However he advised Sri Meena to submit on behalf of railways, detailed objections/suggestions on the tariff petition.

(ix) **<u>Employee Cost</u> :-**

The representative of Bihar Chamber of Commerce (BCC) Sri Sanjiv Kumar Choudhary stated that the increase in the employee cost projected by BSPHC Ltd. for control period FY 2013-14 to FY 2015-16 is abnormally high and it requires revisit. The Chairman BERC stated that the Commission would do prudence check while determining employee cost and also advised all stakeholders for submitting details comments/suggestions on the petition of the BSPHC Ltd. on or before the date of hearing on the tariff petition.

Bihar Electricity Regulatory Commission (BERC)
Vidyut Bhawan-II, Bailey Road, Patna

Meeting of State Advisory Committee

Time : 11:00 A.M Dated: 14th Dec., 2012

List of participants

Sr. No.	Name	Organization	Designation
1.	Sri Umesh Narayan Panjiar	BERC, Patna	Chairman
2.	Sri S. C. Jha	BERC, Patna	Member
3	Sri Rana Awadhesh	SBPDCL, Patna	Managing Director
4	Sri Shambhu Nath Mishra	Energy Deptt.,	Addl. Secretary
5	Sanjiv Kumar Choudhary	Bihar Chamber of Commerce, Patna	Member
6	Sri S. K. Patwari	Bihar Industries Association	Member
7	Shri U. K. Poddar	Bihar Industries Association	Member
8	Shri H. C. Meena	CEDE, E.C. Railway	Chief Engineer
9.	Shri A. K. Pandey	BSHPC	Managing Director

Annenxure - II

Public Hearing at Darbhanga on 20.12.2012

LIST OF THE PARTICIPANTS AS UNDER **:**

Appearance on behalf of BSPHC Ltd.		
1.	Shri Ram Chandra Singh	EEE (Com.), BSPHCLtd. Patna
2.	Shri Ram Niranjan Singh	EEE, D&GR
3.	Shri Kripa Naran Singh	G.M.-cum-Chief Engineer, Darbhanga Electricity Supply Area
4.	Shri Satyendra Kumar Singh	Asst. Ele. Eng., Electric Supply Sub-division, Laheriasarai, Darbhanga
5.	Shri Vinod Pd.	Senior Manager, Personne, Darbhanga Electric Supply Area
6.	Shri Sanjay Kumar Singh	EEE. Darbhanga(U),
Appearance on behalf of Stakeholder and Public		
1.	Shri Prakash Poddar, Chairman	Electric sub-committee, Divisional Chamber of Commerce & Industries, Darbhanga
2.	Shri Sushil Kumar Jain	General Secretary, Divisional Chamber of Commerce & Industries, Darbhanga
3.	Shri Vijay Kumar Bairolia	Vice-President, Divisional Chamber of Commerce & Industries, Darbhanga
4.	Shri Man Mohan Krishna Saravogi	Secretary, Divisional Chamber of Commerce & Industries, Darbhanga
5.	Shri Pawan Kumar Sureka	Chairman, Divisional Chamber of Commerce & Industries, Darbhanga
6.	Shri Gyaneshwer Prasad	General Secretary, Mithilanchal Industrial Chamber of Commerce, Darbhanga
7.	Shri Ashok Kumar Singh	Executive Member, Mithilanchal Industrial Chamber of Commerce.
8.	Shri Prabodh	Vice President, Mithilanchal Industrial Chamber of Commerce, Darbhanga
9.	Shri Shivesh Jha	Consumer,

Public Hearing at Muzaffarpur on 21.12.2012

LIST OF THE PARTICIPANTS AS UNDER **:**

Appearance on behalf of BSPHCL

1.	Shri Ramchandra Singh	E. S. Eng. (Com), BSPHCL, Patna
2.	Shri Jayant Bora	Consultant, BSPHCL
Appearance on behalf of stakeholder/Public		
1.	Shri Ashok Kr. Desh Bhakta	Vice-chairman, Akhil Bhartiya Desh Bhakta Morcha, Muzaffarpur
2.	Shri Dinesh Kumar Sinha	Medical Officer, Zila Parishad, Muzaffarpur
3.	Shri Dhurva Shankar Pd. Choudhary	Koshadhayaksha, Viyahut Seva Trust, Muzaffarpur
4.	Shri Arun Kumar Dhanuka	Member, North Bihar Chamber of Commerce & Industries.
5.	Shri Bharat Bhusan	Organization incharge, Laghu Udyog Bharti, Muzaffarpur
6.	Shri Bijendra Kumar Nirala	Sr. Manager Finance & Accts, NBPD Company Ltd., Muzaffarpur
7.	Shri Satrugn Pd. Kunwar	Propriter, Sangam Engineering Works, Industrial State Bela
8.	Shri Bharat Agrawal	Activity President, North Bihar Chamber of Commerce & Industries, Muzaffarpur
9.	Shri S. N. Jha	President, Petrolieum Dealers Association, Muzaffarpur
10.	Shri Abhaya Priya	City Manager, Nagar Parishad, Motihari
11.	Shri Sudhir Kumar Sureka	S.M.S.C. Kanti, Muzaffarpur
12.	Shri Chitranjan Prasad	Uttar Bihar Udyammi Sangh, Bela Muzaffarpur
13.	Shri Vishnu Kant Jha	Viyahut Seva Trust and Consumer Services, Muzaffarpur
14.	Shri Nitin Bansal	Charted Accountant, Laghu Udyog Bharti
15.	Shri Vinit Agrawal	Ashoka Polymers Pvt. Ltd. Muzaffarpur
16.	Shri Rajesh Kumar	Commercial consumer
17.	Shri Munna Prasad	Commercial consumer
18.	Smt. Sona Devi	Commercial consumer
19.	Shri Sanjay Kumar	Sr. Executive (Operation) M/s Unique Foods, Patahi, Muzaffarpur
20.	Shri Santosh Kumar	consumer
21.	Smt. Anita Devi	consumer
22.	Shri Sudhesh Nandan Singh	General Secretary, Uttar Bihar Udyami Sangh, Muzaffarpur
23.	Shri Nand Kumar Choudhary	Domestic consumer
24.	Shri Badri Narayan Choudhary	Domestic consumer
25.	Shri Balkrishna Pandey	Member, Uttar Bihar Udyog Sangh, Bela
26.	Shri Ratnesh Kumar Sinha	Domestic consumer
27.	Shri Gomesh Pd. Singh	President, Uttar Bihar Udyog Sangh, Bela, Muzaffarpur
28.	Shri Sujeet Kumar	Commercial consumer

29.	Shri Motilal Chhaparia	President, North Bihar Chamber of Commerce & Industries
30.	Shri Bhawani Dutta	Advocate

Public Hearing at Munger on 04.01.2013

LIST OF THE PARTICIPANTS AS UNDER **:**

Appearance on behalf of BSPHCL

1.	Shri Ramchandra Singh	E. S. Eng. (Com), BSPHCL, Patna
2.	Shri Jayant Bora	Consultant, BSPHCL
3.	Shri Sanjiv Kumar	AEE, Jamalpur
4.	Shri Pratik Adarsh	AEE/S/Munger
5.	Shri Mithilesh Kumar Ojha	ESE/Munger
6.	Shri Mahesh Kewat	JEE/S/Tarapur
7.	Shri Chandan Kumar	JEE/S/Kharagpur
8.	Shri Rajesh Kumar	AEE/S/Tarapur
9.	Shri Anant Kumar	AEE/Khalgaon
10.	Shri Ram Naresh Prasad	EEE, Electric Supply Div., Munger
Appearance on behalf of stakeholder/Public		
1.	Shri Indradeo Pd. Verma	Retd. SBO, Munger
2.	Shri Ashok Sitaria	President, Munger Chamber of Commerce.
3.	Shri Santosh Agrawal	Secretary, Munger Chamber of Commerce.
4.	Shri Gopesh Kumar Singh	Consumer, Loshghani, Lakhisarai
5.	Shri Shankar Anand	Consumer, Loshghani, Lakhisarai
6.	Shri N. K. Jalan	Spokesman, Munger

Public Hearing at Bhagalpur on 05.01.2013

LIST OF THE PARTICIPANTS AS UNDER **:**

Appearance on behalf of BSPHCL

1.	Shri Ramchandra Singh	E. S. Eng. (Com), BSPHCL, Patna
2.	Shri Jayant Bora	Consultant, BSPHCL
3.	Shri Ram Kishore Sharma	ESE/Bhagalpur, Electric Supply Div. Bhagalpur
4.	Shri Sadan Prasad	EEE/S/Rural, Bhagalpur
5.	Shri Sanjiv Kumar	AEE/S/TM
6.	Shri Shivkant Kumar	JEE/S/Maheshnagar
7.	Shri Pawan Kumar	AEE/Electric Supply Div. Naugachiya, Bhagalpur
8.	Shri Gopal Kumar	APO/ Electric Supply Div., Bhagalpur
9.	Shri D. K. Sharma	Accounts Officer, El. S. Circle, Bhagalpur
Appearance on behalf of stakeholder/Public		
1.	Shri Shambhu Kumar Lal	Junior Engineer (E) Bihar Agriculture University Sabour Bhagalpur
2.	Shri Umashankar Sharma	Sr. Auditor, BAU Sabour, Bhagalpur
3.	Dr. Mukteshwar Kumar	Assoc-Dean-cum Principal, BAU Sabour, Bhagalpur
4.	Shri Mukutdhari Agrawal	President, Eastern Bihar Industries Asso. Bhagalpur
5.	Shri Ashok Jiwrajka	Vidyut Upbhokta Samitee, Bhagalpur
6.	Shri Ashok Kumar	Bunkar Sangharsh Samiti, Nathnagar Bhagalpur
7.	Shri Santosh Kumar	Chairman, Sarvoday Samajik Sanstha, Bhagalpur
8.	Shri Gautam Suman	Central Chairman, Angya Uthanandolan Samiti, Bihar Jharkhand, Bhagalpur
9.	Shri Anjani Kumar Sharma	Manager, Aam Aadmi Party, Bhagalpur
10.	Shri Abhimanue Kumar	Secretary, Jharkhand Swabhiman Samiti, Bhagalpur
11.	Shri Pritam Singh	Secretary, Naya Vihan, Bhagalpur
12.	Shri Prakash Chand gupta	Convenor, Bijli Upbhokta Sangharsh Samiti, Bhagalpur
13.	Shri Lalu Sharma	Secretary, BJP Byabshayik Sangh
14.	Shri Sanjay Sah	Worker, JD(U), Bhagalpur
15.	Shri Satish Ch. Sinha	Dist. Convenor, Aam Aadmi Party, Bhagalpur
16.	Shri Shanti Raman	Secretary, Global Ideal Misnary Society, Bhagalpur
17.	Shri Lakhan Lal Prasad	Consumer, Bhagalpur
18.	Md. Enayat Hussein	Member, Bunkar Sangharsh Samiti, Nathnagar, Bhagalpur
19.	Mr. Nejahat Ansari	President, Bunkar Sangharsh Samiti, Champanagar Nathnagar, Bhagalpur
20.	Shri Debashish Banerji	Prabakta, Bunkar Sangharsh Samiti, Nathnagar, Bhagalpur
21.	Mr. Ilyas Ansari	Bunkar Sangharsh Samiti, Champapur, Nathnagar, Bhagalpur
22.	Mr. Ashfaqlle Ansari	Secretary, Bunkar Sangharsh Samiti, Nathnagar, Bhagalpur
23.	Mr. Raja Hasan alias Jumman Ansari	Bunkar, Bunkar Sangharsh Samiti, Nathnagar, Bhagalpur

24.	Md. Rizwan Ansari	Weavers, Member Bunkar Sangharsh Samiti, Nathnagar, Bhagalpur
25.	Mr. Kalina	Member, Bunkar Sangharsh Samiti, Nathnagar, Bhagalpur
26.	Md. Ayaz Ali	Member, Bunkar Sangharsh Samiti, Nathnagar, Bhagalpur
27.	Shri Sajjan Kumar Sha	Member, Bunkar Sangharsh Samiti, Nathnagar, Bhagalpur
28.	Shri Ram Badan Singh	Consumer, Naugaichiya, Bhagalpur
29.	Shri Santosh Kumar	Advocate, Bhagalpur
30.	Shri Sandeep Jha	Advocate, Bhagalpur
31.	Shri Shyamal Kishore Mishra	Social worker, Bhagalpur
32.	Shri Ram Gopal Poddar	President, Eastern Bihar Chamber of Commerce, Sujaganj, Bhagalpur

Public Hearing at Saharsa on 19.01.2013

LIST OF THE PARTICIPANTS AS UNDER **:**

Appearance on behalf of BSPHCL

1.	Shri Ramchandra Singh	E. S. Eng. (Com), BSPHCL, Patna
2.	Shri Jayant Bora	Consultant, BSPHCL
3.	Shri Baliram Singh	ESE/Saharsa
4.	Shri Ram Kant Pd. Choudhary	EEE/S/Madhepura
Appearance on behalf of stakeholder/Public		
1.	Shri Mayank Tekriwal	Partner, Bilas Food Products, Saharsa
2.	Shri Anish Kumar	Prop., Shree Dinesh Ice Factory, Khagariya
3.	Shri Kumar Hira Prabhakar	Chairman, District Electric Consumer Form, Saharsa
4.	Shri Bijay Tulsyan	Secretary, Vyapar Sangh Kaprapatti, Saharsa
5.	Shri Bhola Pd. Gupta	Secretary, Zila Bidyut Upbhogta Sangh, Saharsa
6.	Dr. Arun Kr. Sharma	Navodya Vidyalya, Bariyahi, Saharsa
7.	Shri Pravin Anand	Member of Dist. Board, Satter, Zila Parishad Saharsa Saharsha
8.	Shri Narmedheswar Singh	Accountant, Lord Buddha Shiksha Pratishthan, Saharsa
9.	Shri Raghunath Pd. Yadav	Social Worker, Ward No. 13, Saharsa
10.	Shri M. Madhav	Manager, D. B. Road, Saharsa
11.	Shri Onkar Nath Singh	Sr. Section Engineer (E) Railway colony, Saharsa
12.	Shri Balram Dev	Bihra, Saharsa
13.	Shri Sayruy Kr. Rajjak	GP/DS 8142, Saharsa
14.	Shri Raghunath Sah	LTIS/2460, Gandhi Path, Saharsa
15.	Shri Shambhu Nath Ojha	Ex. Pramukh, Sahar Prakhand, Saharsa
16.	Shri Prashant Kumar Singh	Student, Nariyar Road, Saharsa
17.	Shri Anup Ganguly	Tech-I, Railway, Saharsa
18.	Shri Vishwanath Jha	Ward no. 11, Saharsa

Public Hearing at Purnea on 20.01.2013

LIST OF THE PARTICIPANTS AS UNDER **:**

Appearance on behalf of BSPHCL

1.	Shri Ramchandra Singh	E. S. Eng. (Com), BSPHCL, Patna
2.	Shri Jayant Bora	Consultant, BSPHCL
3.	Shri Sunil Kumar Shrivastava	ESE/Purnea cirle
4.	Shri Pranav Kumar	EEE/S/Electrical Supply Division Purnea
Appearance on behalf of stakeholder/Public		
1.	Shri Anil Kr. Chamaria	President, North Eastern Bihar Industries Association, Katihar
2.	Shri Sanjay Singh	Attorney, Purnea Petroleum Dealers Association, Gulabbagh, Purnea
3.	Shri J. L. Baishyantri	Secretary, Purnea Chamber of Commerce, Purnea
4.	Shri Durga Nand Choudhary	President, Purnea Chamber of Commerce
5.	Shri Jay Krishna Mehta	Dy. President (JDU) Purnea
6.	Md. Moin Khan	Consumer, Bhatta Bazar, Purnea
7.	Shri Rakesh Kumar Singh	Bihar Bikash Morcha, Purnea
8.	Shri Kumar Nav Bharat	Proprietor Amkey Distributors & Bharat Tower, Purnea
9.	Shri Narayan Saraf	Director, Fertiliser Association of Purnea, Purnea
10.	Md. Jardish	Consumer, Purnea city, Purnea
11.	Shri Bishwanath Mukira	President, North Eastern Bihar Chamber of Commerce & Industries, Katihar

Public Hearing at Chapra on 29.01.2013

LIST OF THE PARTICIPANTS AS UNDER **:**

Appearance on behalf of BSPHCL

1.	Shri Jayant Kr. Dubey	AEE (Tariff)
2.	Shri Ankur Satija	Consultant, BSPHCL
3.	Shri Purshotam Prasad	ESE/Bhagalpur, Electric Supply Div., Chhapra
Appearance on behalf of stakeholder/Public		
1.	Shri Shyam Bihari Agrawal	Founder President, Rotary Saran Club, Salempur, Chhapra
2.	Shri P. K. Agrawal	North Western Bihar Chamber of Commerce & Industry, Chhapra
3.	Dr. Akhilesh Kumar Singh	Advocate, Veer Kunwar Singh Colony, Chhapra
4.	Shri Abhishek Kumar	Businessman, Kumar Agencies, West of Municipal Chowk, Chhapra
5.	Shri Anil Kumar Singh	Advocate, Bhagwanur Bazar, Saran, Chhapra

6.	Shri Lallan Singh	Clerk (Retd.) Anandpuri, Shyam chowk, Chhapra
7.	Shri Ramayan Prasad	Consumer, New colony, Masorganj Bhagwan Bazar, Chhapra
8.	Shri Sudisht Singh	Former H.M, Shyamalchak, Bhagwan Bazar, Saran, Chhapra
9.	Shri Raj Kishore Singh	Teacher (Retd.) Masoorganj, Devi Mandir, Saran, Chhapra
10.	Shri Ramji Prasad	Consumer, Bishunpura, Saran, Chapra
11.	Dr. Ramesh Chandra Pandey	Private Medical Practioner, Kashi Bazar Chowk, Chhapra
12.	Shri Basudeo Sah	Puchhari, P.S. Baniyapur, Saran, Chhapra
13.	Shri Sanjay Kumar Kesri	Chapra
14.	Shri Binod Kumar Singh	Consumer, Isuwapur, Saran
15.	Shri Brajesh Kumar	Nagar Adhyaksh, JD (U) Byabsayik Prakostha, Chhapra
16.	Shri Rajeshwar Prasad	President, Chamber of Commerce, Chhapra
17.	MD. Alamgir	Gudari Bazar, Salafatganj, Chhapra
18.	Smt. Prabhawati Devi	Daulatganj, Chhapra
19.	Shri Mithilesh Singh	Chhapra
20.	Shri Murari Bhagat	Bhagwan Bazar, Chhapra

Public Hearing at Gaya on 01.02.2013

LIST OF THE PARTICIPANTS AS UNDER **:**

Appearance on behalf of BSPHCL

1.	Shri Ram Chandra Prasad	E.S.E (Commercial)
2.	Shri C. L. Prakash	G. M. cum CE Gaya
3.	Shri Ram Narayan Choudhary	EEE, Electric Supply Div. Gaya
4.	Shri Ankur Satija	Consultant, BSPHCL
5.	Shri Nanhe Lal Ram	EEE, Gaya (Rural)
Appearance on behalf of stakeholder/Public		
1.	Shri Jay Singh	Chairman, Hotel Association Bodh Gaya
2.	Shri Sanjay Kumar Singh	General Secretary, Hotel Association Bodh Gaya
3.	Shri Shiv Shankar Yadav	Member, Hotel Association Bodh Gaya
4.	Shri S. Shekhar	Prop., Hotel Association Bodh Gaya
5.	Shri Uma Pandey	Consumer, Mastipur, Bodh Gaya
6.	Shri Sudama Prasad	Managing Director, Hotel Mahamaya, Gaya
7.	Shri Ram Pukar Singh	Sr. Citizen, Akhtiyarpur, Bisunpur, Gaya
8.	Shri Prem Narayan Prasad	President, Bunkar Samiti, Gaya
9.	Shri Ramji Singh	DDC, Nawada
10.	Shri Musafir Paswan	Ex. Zila Parishad Member, Gaya
11.	Shri Satrunjay Mishra	Executive Officer, Nagar Parishad, Aurangabad
12.	Shri Om Prakash	Vaiskiyar Flower Mill, Gaya
13.	Shri Manish Kumar	Consumer, Gaya
14.	Shri Manish Kumar Jain	Arihant Guest House, Gaya
15.	Shri Sudhir Kumar	Convenor, Hotel Association, Gaya
16.	Shri Arbind Kumar	President- South Bihar Industries Association
17.	Shri Manish Agrawal	Executive Member, Central Bihar Chamber of Commerce.
18.	Shri Brij Nandan Pathak	Vidyut Upbhokta Sangharsh Samiti, Gaya

Public Hearing at Patna on 07.02.2013 & 08.02.2013

LIST OF THE PARTICIPANTS AS UNDER **:**

Appearance on behalf of BSPHCL

1.	Shri Satish Kr. Singh	Chief Engineer (Commercial)
2.	Shri K. N. Jha	DGM (Finance)
3.	Shri K. N. Jha	OSD (Revenue)
4.	Shri Vijay Kumar	FC II (Exp.)
5.	Shri Ramchandra Singh	E. S. Eng. (Com), BSPHCL, Patna
6.	Shri Indu Bhusan Prasad	Finance Controller
7.	Shri Amit Kumar Garg	Manager Deloitte
8.	Shri Jayant Bora	Tariff Consultant
9.	Shri Ankur Satija	Consultant
10.	Smt. Sruti Mahrotra	Trainees, BSPHCL
Appearance on behalf of stakeholder/Public		
1.	Shri Arbind Kr. Paswan	DGM, NTPC
2.	Shri H. C. Meena	Chief Electrical Distribution Engineer Eastern Central Railway Hajipur
3.	Shri Arjun Lal	Advocate, M/s Kalyanpur Cements
4.	Shri P. K. Choubey	President, M/s Kalyanpur Cements
5.	Shri Umesh Poddar	Member, Energy Sub Committee Bihar Industries Association, Patna
6.	Shri Sanjeev Choudhary	CMD, Gangotri Iron & Steel Co. Ltd.
7.	Shri Sachida Nand	Electric Incharge, Deepak Veg. Pro Pvt. Ltd. Durgawati, Kaimur
8.	Shri Anil Kr. Pd. Sinha	Secretary General, Bihar Chamber of Commerce and Industries.
9.	Shri Anil Kr. Shrivastawa	Director, Shyam Wire Products Pvt. Ltd, Patna city
10.	Shri Sudhes Kumar Patwari	Director, Patwari Steels Pvt. Ltd.
11.	Shri Sunil Kr. Thakur	Authorized signatory- M/s Bhola Ram Steel Pvt. Ltd. Nasariganj, Danapur, Patna
12.	Shri Kailash Pd. Bhawarika	Chairman, Public Policy Technology Sub Committee, BIA Patna
13.	Prof. Pramod Kumar	Vaishali Vidyut Upbhokta Sangh, Bidupur, Vaishali
14.	Shri Sanjay Bharatiya	M/s Dina Iron & Steel Ltd.
15.	Shri S. K. Patwari	Bihar Industries Association, Patna
16.	Shri Nand Kishore Singh	Convenor, Mahangi Bijlee Virodhi Sangharsh Morcha, Patna
17.	Shri Bijay Kumar	Consumer, Jamal Road, Patna
18.	Shri Anil Kr. Pd. Sinha	M/s Natraj Engineers Pvt. Ltd. Sarai, Vaishali
19.	Shri Chakradhar Pd. Singh	Mahangi Bijlee Virodhi Sangharsh Manh, Patna
20.	Shri Ashok Kumar alias Deshbhakta	Vice-chairman, Akhil Bhartiya Desbhakta Morcha, Patna
21.	Shri Ram Saran Singh	New Chetna Manch,Mokama, Patna
22.	Shri Mritunjay Kumar	Farmer, Nauwatpur
23.	Shri Abhimanyu Kr. Saha	Sr. Citizen, Magistrate Coloney, Ashiyana Nagar, Patna

24.	Shri Sanjay Kumar Bhartiya	Bihar Steel Manufacturers Asso. , 307 Ashiyana Tower, Exhibition Road, Patna
25.	Shri Doman Singh	Retd. Engineer, B-44, Road No. 2, Anand Bihar, Patna
26.	Shri Padma Raj Kr. Jain	Bhojpur Chamber of Commerce, Ara, Bhojpur
27.	Shri M. L. Choudhary	Bihar Agriculture University, Sabour, Bhagalpur
28.	Shri Ghanshyam Kr. Pandit	Bihra Bazar, Saharsa