

**BEFORE**  
**THE BIHAR ELECTRICITY REGULATORY COMMISSION**



FILING OF THE PETITION FOR ANNUAL PERFORMANCE REVIEW FOR FY 2013-14 AND REVISED ANNUAL REVENUE REQUIREMENT FOR FY 2014-15 BY BIHAR STATE POWER TRANSMISSION COMPANY LIMITED UNDER BERC (TERMS AND CONDITIONS FOR DETERMINATION OF TARIFF) REGULATIONS, 2007 ALONG WITH THE OTHER GUIDELINES AND DIRECTIVES ISSUED BY THE BERC FROM TIME TO TIME AND UNDER SECTION 45, 46, 47, 61, 62, 64 AND 86 OF THE ELECTRICITY ACT 2003 READ WITH THE RELEVANT GUIDELINES

FILED BY,

**BIHAR STATE POWER TRANSMISSION COMPANY LIMITED,**  
**Patna**



**Chief Engineer (Transmission O&M)**  
1ST FLOOR, VIDYUT BHAWAN, BAILEY ROAD,  
PATNA - 800 001

Date: 14<sup>th</sup> Nov, 2013



**BEFORE THE BIHAR ELECTRICITY REGULATORY COMMISSION, PATNA**

IN THE MATTER OF: Filing of the Petition for Annual Performance Review (APR) for FY 2013-14, Revised Annual Revenue Requirement (ARR) for FY 2014-15 under BERC (Terms and Conditions for Determination of Tariff) Regulations, 2007 along with the other guidelines and directions issued by the BERC from time to time and under Section 45, 46, 47, 61, 62, 64 and 86 of The Electricity Act 2003 read with the relevant guidelines.

AND

IN THE MATTER OF: BIHAR STATE POWER TRANSMISSION COMPANY LIMITED (hereinafter referred to as "BSPTCL" or "STU" or "Petitioner" which shall mean for the purpose of this petition the Licensee), having its registered office at Vidhyut Bhawan, Bailey Road, Patna.

The Petitioner respectfully submits as under: -

1. The Petitioner was formerly integrated part of Bihar State Electricity Board (hereinafter referred to as "BSEB" or "Board") which was engaged in electricity generation, transmission, distribution and related activities in the State of Bihar.
2. The Board is now unbundled into five (5) successor companies – Bihar State Power (Holding) Company Limited, Bihar State Power Generating Company Limited (hereinafter referred to as "Genco"), Bihar State Power Transmission Company Limited (hereinafter referred to as "Transco"), North Bihar Power Distribution Company Limited and South Bihar Power Distribution Company Limited (hereinafter referred to as "Discoms") as per Energy Department, Government of Bihar Notification no: संख्या प्र0-2/बोर्ड पुर्न0 सं0-31/2008 (खंड-1) **17** under *The Bihar State Electricity Reforms Transfer Scheme 2012*.
3. Pursuant to the enactment of the Electricity Act, 2003, every utility is required to submit its Aggregate Revenue Requirement (ARR) for the control period and Tariff Petitions as per procedures outlined in section 61, 62 and 64, of Electricity Act 2003, and the governing regulations thereof.
4. The Multi-year Tariff (MYT) petition for all the companies for control period FY 2013-14 to FY 2015-16 was filed on 14.11.2012 by BSPHCL on behalf of all companies and accordingly the Hon'ble Commission had issued common order for all entities.



5. The present petition is filed with the Hon'ble Commission for Annual Performance Review (APR) for FY 2013-14 and Revised Annual Revenue Requirement (ARR) for FY 2014-15 considering the approved values of MYT order dated 15.3.2013.
6. The present petition is filed on independent basis by the BSPTCL; however True-up petition for FY 2012-13 is being filed by BSPHCL on a consolidated basis for all the functions of generation, transmission and distribution.
7. This petition has been prepared in accordance with the provisions of Sections 61, 62 of the Electricity Act, 2003 and has taken into consideration the Chapter 6 – Multi-Year Tariff of the BERC (Terms and Conditions for Determination of Tariff) Regulations 2007.
8. BSPTCL along with this petition is submitting the regulatory formats with data & information to an extent applicable and would make available any further information/ additional data required by the Hon'ble Commission during the course of proceedings.

**Prayers to the Commission:**

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

- a) Admit this Petition;
- b) Examine the proposal submitted by the petitioner in the enclosed petition for a favourable dispensation;
- c) Allow the Truing-up of Transmission function for FY 2012-13 filed separately by BSPHCL to be carried out on a consolidated basis and pass on the revenue gap/ (surplus) in the respective petitions of NBPDC and SBPDCL as per the agreed principles;
- d) Pass suitable orders with respect to the APR for FY 2013-14 amounting Rs. **601.03** Crs and Revised ARR for FY 2014-15 amounting Rs. **687.79** Crs;
- e) Approve the Transmission charges as per the proposal and considering 1<sup>st</sup> independent year of performance, allow relaxation in MYT norms wherever sought for;
- f) Pass separate order for the petitioner against the present petition;
- g) BSPTCL may also be permitted to propose suitable changes to the respective ARRs, prior to the final approval by the Hon'ble Commission. BSPTCL believes that such an approach would go a long way towards providing a fair treatment to all the stakeholders and may eliminate the need for a review or clarification.



- h) Condone any inadvertent omissions/errors/shortcomings and permit BSPTCL to add/change/modify/alter this filing and make further submissions as may be required at a future date.
- i) Pass such Order, as the Hon'ble Commission may deem fit and appropriate keeping in view the facts and circumstances of the case.

Bihar State Power Transmission Company Limited  
Petitioner

Patna

Dated: 14<sup>th</sup> Nov, 2013



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## Chapter 1. Introduction

### 1.1 Background

1.1.1 Bihar State Electricity Board (“Board” or “BSEB”) originally constituted on 1st April 1958 under Section 5 of the Electricity (Supply) Act, 1948 and was engaged in the management of electricity generation, transmission, distribution and related activities in the State of Bihar.

1.1.2 Under the new 'Bihar State Electricity Reforms Transfer Scheme 2012', the BSEB has been unbundled into five companies: Bihar State Power (Holding) Company Limited (Holding company), Bihar State Power Transmission Company, Bihar State Power Generation Company, South Bihar Power Distribution Company and North Bihar Power Distribution Company with effect from 1st November' 2012 vide notification no. संख्या प्र0-2/बोर्ड पुर्न0 सं0-31/2008 (खंड-1) **17** dated 30.10.2012

- a) **“Bihar State Power (Holding) Company Limited”** means the Company that will own shares of newly incorporated reorganized four companies i.e. Bihar State Power Generation Company Limited, Bihar State Power Transmission Company Limited, South Bihar Power Distribution Company Limited, and North Bihar Power Distribution Company Limited
- b) **“Bihar State Power Generation Company Limited”** means the Generating Company to which the Generating Undertakings of the Board are to be transferred in accordance with this Scheme
- c) **“Bihar State Power Transmission Company Limited”** means the Transmission Company to which the Transmission Undertakings of the Board are to be transferred in accordance with this Scheme
- d) **“South Bihar Power Distribution Company Limited”** And **“North Bihar Power Distribution Company Limited”**, collectively mean the Distribution Companies, to which the Distribution Undertakings of the Board are to be transferred in accordance with this Scheme.

1.1.3 This petition is being submitted separately by “Bihar State Power Transmission Company Limited” for first time after unbundling of BSEB.

### 1.2 Profile of BSPTCL

1.2.1 The Transfer Scheme 2012 details out the following for transmission business:

- Schedule-A, Part-I: Description of Assets, Liabilities etc;

- Schedule-A, Part-II: Provisional Balance Sheet as on 1<sup>st</sup> April 2011;
- Schedule-B, Part-III: Function and Duties of BSPTCL;

1.2.2 Primarily, the transmission of power takes place at 400 kV, 220 kV and 132 kV voltage levels. The capacity additions in the transmission system in FY 2013-14 till August 2013 are provided in the table below:

**Table 1: Sub-station Capacity Addition in FY 2013-14**

Sub-stations	Opening FY 2013-14	Additions till Aug 2013	Closing Aug 2013
220 / 132/ 33 kV	10	--	10
220 /132 kV	1	--	1
132/ 33 kV	75	--	75
<b>Total</b>	<b>86</b>	<b>--</b>	<b>86</b>

**Table 2: Transmission Line Capacity Addition in FY 2013-14**

Transmission Lines (in CKM)	Opening FY 2013-14	Additions till Aug 2013	Closing Aug 2013
220 kV Single Ckt. Line	307.55	--	307.55
220 kV Double Ckt. Line	913.42	214.286	1127.706
132 kV Single Ckt. Line	2774.72	45.96	2820.68
132 kV Double Ckt. Line	2879.97	118.40	2998.37
<b>Total</b>	<b>6875.66</b>	<b>378.64</b>	<b>7254.306</b>

1.2.3 Further there is addition of 50 MVA of transformation capacity in FY 2013-14 till August 2013.

1.2.4 The details of the existing transmission infrastructure as on August 2013 are tabulated below for reference:

**Table 3: Existing Transmission Infrastructure - Summary**

Voltage	No of Subs- stations	Line Length (CKM)	Transformation Capacity (MVA)
<b>400 kV</b>	--	75	--
<b>220 / 132/ 33 kV</b>	10	1435	
<b>220 /132 kV</b>	1	--	3550
<b>132/ 33 kV</b>	75	5819	4952
<b>132/25 kV</b>	--	--	110
<b>Total</b>	<b>86</b>	<b>7329</b>	<b>8612</b>

\* As on 31<sup>st</sup> August 2013

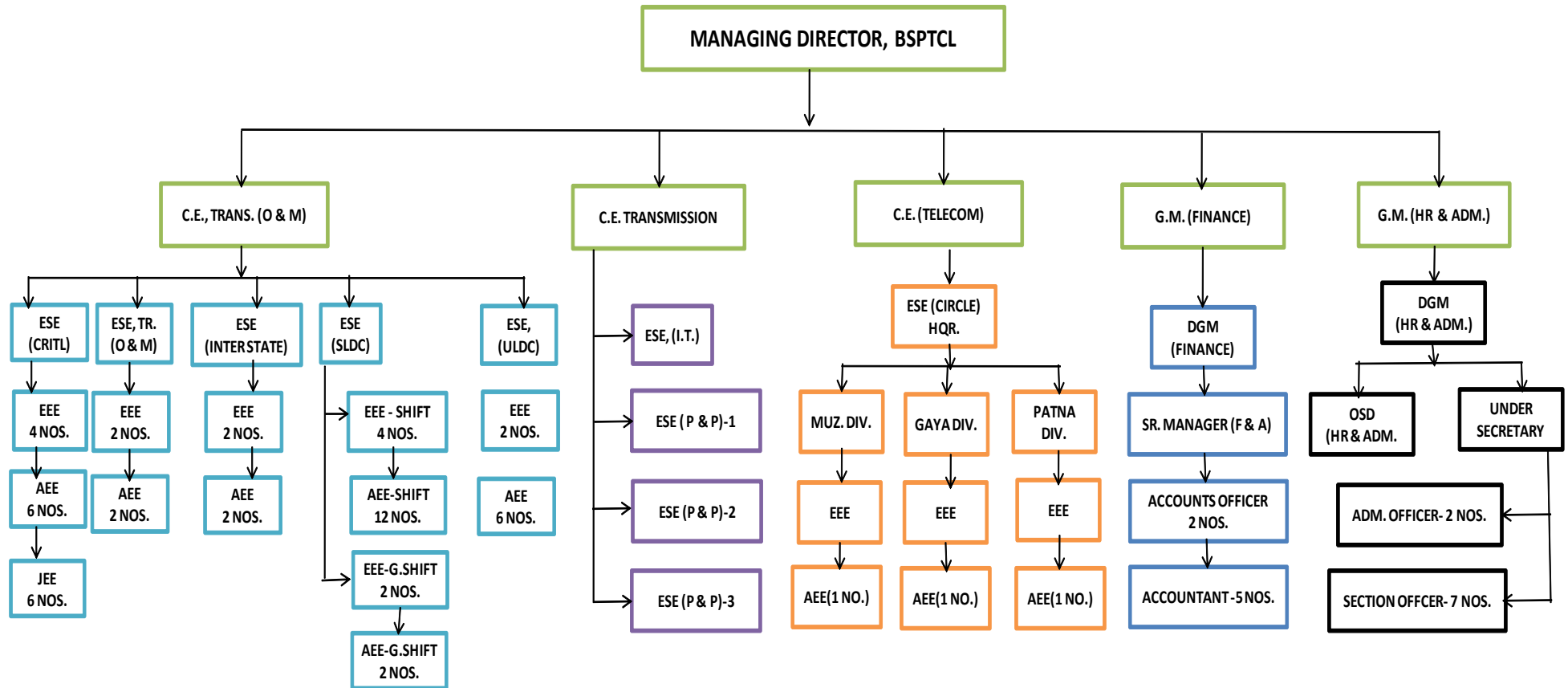


- 1.2.5 The details of the substations covering name of sub-station and capacity are provided at **Annexure 1: Details of Grid Sub-station**
- 1.2.6 The power supply position in the State of Bihar is improving and Bihar Utilities are taking all required steps to strengthen and develop the electricity infrastructure in transmission and distribution. Further the approvals have also been received for many projects under 12<sup>th</sup> Plan, Backwards Region Grant Fund (BRGF) and State Plan Funds. Hence there is need to invest in the transmission and distribution sector in the State of Bihar.
- 1.2.7 The works to be covered under 12<sup>th</sup> Plan Transmission Planning has been covered under three phases namely Phase-III, Phase-IV and Phase-V. Besides the works for removing the existing transmission constraints has also been identified and posed under Phase-II extension work.
- 1.2.8 The DPR for Phase-III work under 12<sup>th</sup> Plan Transmission Planning amounting has been submitted to Planning Commission for sanction of the scheme. Planning Commission has sent the DPR to CEA for its technical examination.
- 1.2.9 The DPR of works covered under Phase-IV Transmission Planning (Rs.3000 Crs) is being prepared by Bihar Grid Company Limited (BGCL). BSPTCL would like to submit that capital expenditure envisaged to be under taken in 2015-16 and for onward years would now be carried out by BGCL. The brief details of BGCL are as under:
- ✓ **Bihar Grid Company Limited** a joint venture company with 50:50 equity from Power Grid Corporation of India Ltd. (hereinafter to be referred as 'POWERGRID') and Bihar State Power (Holding) Company Limited, was registered on 04 January, 2013 and their registered address is 2<sup>nd</sup> Floor, Alankar Place, Boring Road, Panta - 800001, Bihar.
  - ✓ **BGCL** has been granted a Transmission License for 25 years by Hon'ble Commission vide order dated 29<sup>th</sup> April 2013 to implement the transmission projects for 12th Five Year Plan in a phased manner and to develop the projects on build, own, operate and maintain basis in the State of Bihar.
- 1.2.10 The works covered under Phase-V (Rs.1600 Crs) are being proposed under Public Private Participation (PPP) Mode.

### 1.3 Organisation Structure

1.3.1 The present organisation structure of the transmission company is provided in below figure:

Figure 1: Organisation Structure of BSPTCL





## 1.4 Procedural History

1.4.1 The procedural history of the filings of petition of erstwhile BSEB and BSPHCL is tabulated below for ready reference:

**Table 4: Procedural History of Filing**

Sr.	Scope of Filing in Petition	Filing Date	Order Date	Remarks
1	ARR & Tariff Petition for FY 2006-07	10.04.2006	29.11.2006	---
2	ARR & Tariff Petition for FY 2007-08	18.12.2007	---	Delayed filing & hence directed to file petition for FY 2008-09 by 31.01.2008
3	ARR & Tariff Petition for FY 2008-09	14.02.2008	26.08.2008	Review of FY 2006-07 was also undertaken in this order
4	ARR & Tariff Petition for FY 2009-10	09.10.2009	---	Delayed filing & hence directed to file petition for FY 2010-11.
5	ARR & Tariff Petition for FY 2010-11	03.02.2010	06.12.2010	Review of FY 2008-09 was also undertaken in this order
6	ARR & Tariff Petition for FY 2011-12	17.02.2011	01.06.2011	Order effective from 1.5.2011
7	True-up Petition for FY 2006-07, FY 2007-08 and FY 2008-09 + Addendum to this petition	01.09.2011 17.10.2011	04.01.2012	---
8	True-up Petition for FY 2009-10	13.10.2011	27.01.2012	---
9	Review of ARR for FY 2010-11 based on provisional accounts Submission of Audited Accounts for FY 2010-11 Submission of True-up petition for FY 2010-11 based on Audited Accounts	13.10.2011 02.03.2012 16.03.2012	---	Commission directed to file petition for review alongwith petition of FY 2012-13
10	ARR & Tariff Petition for FY 2012-13	15.11.2011	30.03.2012	Order included True-up of FY



Sr.	Scope of Filing in Petition	Filing Date	Order Date	Remarks
	Supplementary petition for FY 2012-13	02.01.2012		2010-11 & Review of FY 2011-12
11	Business Plan for Control Period FY 2013-14 to FY 2015-16 filed by BSPGCL, BSPTCL and 2 DISCOMs	20.09.2012	15.03.2013	-Commission directed to submit revise business plan
	Revised Business Plan as per Commissions directive	14.11.2012		-Commission again directed to submit revised business plan vide letter dt 21.12.2012
	Re-Revised Business Plan for BSPGCL & BSPTCL	03.01.2013		-Approved
	Re-Revised Business Plan for 2 DISCOMs	04.01.2013		alongwith MYT Order
12	Provisional True-up for FY2011-12, Review petition for FY 2012-13 and MYT Petition for FY 2013-14 to FY 2015-16 for BSPGCL, BSPTCL and 2 DISCOMs	15.11.2012	15.03.2013	Commission issued MYT order according to petition
	Revised petition for True-up of FY 2011-12 based on Audited Accounts	24.12.2012		

## 1.5 Current petition

1.5.1 Section 62 of the Electricity Act 2003 requires the licensee to furnish details as may be specified by the Commission for determination of tariff. In addition, as per the regulations issued by the Hon'ble Commission, BSEB or its unbundled companies is required to file petition for all reasonable expenses which it believes it would incur over the next financial year and seek the approval of the Hon'ble Commission for the same. The filing is to be done based on the projections of the expected revenue and costs.

1.5.2 It is submitted that the erstwhile BSEB is unbundled into five (5) separate entities viz. one Holding company, one Generation Company, one Transmission Company and two Distribution Companies and have come into existence with effect from 1<sup>st</sup> November 2012. This Petition considers proposal for the Transmission Company for the APR of FY 2013-14 and revised ARR for FY 2014-15.



1.5.3 Accordingly, BSPTCL prays to the Hon'ble Commission to process separate APR petition for FY 2013-14 and Revised ARR determination for FY 2014-15.

1.5.4 The current petition has been prepared in accordance with the provisions of the following Acts/ Policies/ Regulations:

- a) Electricity Act 2003;
- b) National Electricity Policy;
- c) National Tariff Policy;
- d) BERC (Terms and Conditions for Determination of Tariff) Regulations, 2007
- e) BERC (Terms and Conditions for Open Access) Regulations, 2005

1.5.5 BSPTCL has made genuine efforts for compiling all relevant information relating to the APR / ARR petition as required by the regulations issued by the Hon'ble Commission and has also made every effort to ensure that information provided to the Hon'ble Commission is accurate and free from material errors. However, there may be certain deficiencies owing to the limited operations of Transmission company on independent basis. It is yet to complete even 12 months of operations from the date of its existence. BSPTCL submits that it would be able to stabilise its operations in terms of MIS and other compliances after end of FY 2013-14. Hence, BSPTCL prays to the Hon'ble Commission that the information provided be accepted for the current filing and at the same time BSPTCL assures that it is taking appropriate measures to improve its management information system for improved data collection.

## **1.6 Contents of the petition**

1.6.1 This petition comprises of main section namely:

- ✓ Annual Performance Review for FY 2013-14
- ✓ Revised ARR for FY 2014-15



## Chapter 2. Overall approach for present filing

### 2.1 Present Approach:

- 2.1.1 The Commission in the order dated 15<sup>th</sup> March 2013 approved the true-up of FY 2011-12 for BSEB as a whole and also undertook the performance review for FY 2012-13 for BSEB as a whole. Further all the entities had filed separate Business Plan and MYT Petition for the control period FY 2013-14 to FY 2015-16 and accordingly the orders have been issued.
- 2.1.2 It is submitted that revised Business Plan filing for control period is not required as all desired elements/ parameters are covered in the present filing.
- 2.1.3 Since the performance of FY 2012-13 is approved by Hon'ble Commission on an aggregated basis for BSEB as a whole, the true-up of the same has been filed separately and the revenue gap / (surplus) would be allocated to both Discoms on agreed sharing basis.
- 2.1.4 It is submitted that since unbundling is effective from 1<sup>st</sup> November 2012, the audited accounts are available on following basis:
- April 2012 to October 2012 – BSEB on aggregate basis;
  - November 2012 to March 2013 – BSPHCL
  - November 2012 to March 2013 – BSPGCL
  - November 2012 to March 2013 – BSPTCL
  - November 2012 to March 2013 – NBPDC
  - November 2012 to March 2013 – SBPDCL
- 2.1.5 The true-up petition for FY 2012-13 is prepared on consolidated basis considering all above accounts and is filed separately. The final summary of the True-up petition for reference purpose is provided in subsequent chapter.
- 2.1.6 As per **Clause 90** of the Tariff Regulations 2007, the MYT Framework for implementation is provided as below:
- 90 (1) The Multi year frame-work shall feature a five year control period. However, the Commission shall fix the initial control period for transmission and distribution as three years, **due to data uncertainties and other practical considerations. In case of lack of reliable data, the Commission shall lay down assumptions in MYT for the first control period.** As and when more reliable data is available, the Commission shall start a fresh control period.*





**Emphasis added**

90 (2) Where operations have been much below the norms for the previous years, **the initial starting point in determining the revenue requirement and the improvement should be recognized at 'relaxed' levels and not the 'desired' levels.** The Commission shall however conduct suitable bench – marking studies to establish the desired performance standards and also to assess, for each utility, the capital expenditure required to meet the minimum service standards.

**Emphasis added**

- 2.1.7 BSPTCL submits to Hon'ble Commission that it is yet to complete 12 months of independent operations after coming into existence. BSPTCL requests Hon'ble Commission to determine the ARR for the years under consideration in present MYT control period based on actual audited accounts and considering the gap/ (surplus) accordingly. BSPTCL further submits that it would be prudent that Hon'ble Commission determines norms for the petitioner for the control period of 3 years starting from FY 2016-17 to FY 2018-19 based on the learnings and its independent operations till year 2015/ 2016. The next control period of 3 years starting from FY 2016-17 to FY 2018-19 would also ensure that it is in line with the CERC Tariff Regulations for next control period FY 2014-15 to FY 2018-19.
- 2.1.8 BSPTCL would like to submit that though Hon'ble Commission has approved MYT figures for FY 2013-14, FY 2014-15 and FY 2015-16; however as discussed in proceedings paragraph, the petitioner would seek opportunity to review/ revise its ARR for FY 2013-14 and FY 2014-15 so as to enable sound transition of new companies and also avoiding financial loss, if any to the petitioner in transition phase.
- 2.1.9 The revised ARR for FY 2015-16 would be filed in next year petition alongwith annual performance review of FY 2014-15, as BSPTCL believes the capital expenditure planning and operational performance would have settled by that time.
- 2.1.10 In line with the above, BSPTCL is filing its Annual Performance Review for FY 2013-14 and Revised Annual Revenue Requirement for FY 2014-15 for consideration of the Hon'ble Commission.



## 2.2 Data/Information for ARR

2.2.1 This petition contains the actual data for FY 2013-14 for certain period and revised estimates for FY 2014-15 for Capital Expenditure Schemes based on approved / sanction schemes.

## 2.3 Element Wise Approach for Transmission Function for FY 2013-14 & FY 2014-15

2.3.1 The petitioner would like to briefly summarise the approach adopted for computation of ARR for FY 2013-14 and FY 2014-15 for the various elements and also highlighting the brief approach of Hon'ble Commission in MYT order.

**Table 5: Approach for APR FY 2013-14 & FY2014-15**

Parameters	BERC Approach in MYT Order	Suggested / Revised Approach for APR & ARR
<b>Transmission Loss</b>	As proposed by BSPTCL	Considering Actual Transmission Losses and System Improvements/ strengthening of Transmission Capital Expenditure schemes
<b>Capital Expenditure</b>	As proposed by BSPTCL	Considering revised approvals from CEA and other bundled schemes and the progress thereon
<b>Capitalization</b>	30%, 30% & 40% for control period	Same as per MYT order for all type of schemes
<b>Funding of Capitalization</b>	As proposed by BSPTCL	BRGF Schemes funded by Equity and not as Grant and State Plan Funding which is on 100% Loan basis. Certain capitalization of assets through Internal Resources.
<b>Opening balances</b>		Opening Balances for GFA, Grants, Loans, Equity and CWIP considered as per provisional Balance sheet as on 31 <sup>st</sup> March 2013
<b>IDC</b>	As proposed by BSPTCL	Same as per MYT order principles
<b>Depreciation</b>	As proposed by BSPTCL	Same as per MYT order principles
<b>Interest on Loan</b>	Average Loan basis & Wtd Avg Interest Rate	Same as per MYT order principles
<b>Employee Expenses</b>	CPI Inflation for March 2012 over previous year	As per Revised Estimates of FY 2013-14 & Budget Estimates of FY 2014-15. New Manpower cost addition also considered. Terminal benefit provision for new company



Parameters	BERC Approach in MYT Order	Suggested / Revised Approach for APR & ARR
		considered. BE are presumed to be with cost escalation and hence separate inflation not considered.
<b>R&amp;M Expenses</b>	WPI Inflation for March 2012 over previous year	R&M Expenses as a % of GFA + Inflationary Increases to take care of material price increases
<b>A&amp;G Expenses</b>	WPI Inflation for March 2012 over previous year	As per Revised Estimates of FY 2013-14 & Budget Estimates of FY 2014-15. BE are presumed to be with cost escalation and hence separate inflation not considered.
<b>Allocation of Holding Company cost</b>	--	Considered as per provisions of Transfer Scheme 2012
<b>Interest Working Capital</b>	on As per Tariff Regulations 2007	As per Tariff Regulations 2007
<b>Return Equity</b>	on As per Tariff Regulations 2007	As per Tariff Regulations 2007
<b>Non-Tariff Income</b>	As proposed by BSPTCL	As per adopted accounts excluding Deferred Income

### Chapter 3. True-up Summary for FY 2012-13

#### 3.1 Approach of True-up Petition for FY 2012-13

3.1.1 The Commission in the order dated 15<sup>th</sup> March 2013 approved the True-up of FY 2011-12 for BSEB as a whole and also undertook the performance review for FY 2012-13 for BSEB as a whole. Further BSPHCL had filed separate Business Plan and MYT Petition for the control period FY 2013-14 to FY 2015-16 and accordingly the orders have been issued.

3.1.2 Since the performance of FY 2012-13 is approved by Hon'ble Commission on an aggregated basis for BSEB as a whole, true up exercise is undertaken by consolidating provisional accounts of erstwhile BSEB and provisional accounts of BSPGCL, BSPTCL, NBDPCL and SBPDCL.

#### 3.2 Summary of True-up for FY 2012-13

3.2.1 The summary of truing-up of FY 2012-13 on overall basis is hereby tabulated for reference purpose only. The effect of truing-up has been provided in the petitions of distribution companies.

3.2.2 The table below provides the summary of the ARR of all entities alongwith the revenue gap / (surplus) for FY 2012-13:

**Table 6: Summary of True-up of FY 2012-13**

Sr.	Particular	Rs.Crs	
		Approved FY12-13	Now proposed for True-up
1	Net Annual Revenue Requirement	4,270.45	5,508.07
2	Less: Total Revenue from Sale of Power	3,361.06	3,360.83
<b>3</b>	<b>Gap / (Surplus)</b>	<b>909.39</b>	<b>2,147.25</b>
4	Less: Additional Revenue Subsidy from Govt	1,859.83	1,918.39
<b>5</b>	<b>Net Gap / (Surplus)</b>	<b>(950.44)</b>	<b>228.86</b>

3.2.3 The Petitioner (BSPHCL) has requested Hon'ble Commission to approve the net revenue gap/ (surplus) for FY 2012-13 to be recovered through tariffs for FY 2014-15 of Distribution companies.

3.2.4 The Hon'ble Commission is requested to approve above mentioned Revenue gap and suggest the methodology for recovery of the same. As per Terms & Conditions of Tariff Regulations, 2007, Hon'ble Commission is requested to allow carrying cost of the same. Considering the financial health of erstwhile BSEB, only State Government



is providing working capital loan to erstwhile BSEB which is at the interest rate of 14.75%.

**Table 7: Revenue Gap/ (Surplus) with Carrying Cost for FY 2012-13**

Sr.	Particular	Rs.Crs
		Now proposed for True-up
1	Revenue surplus approved for FY 2012-13 to be carried forward	228.86
2	Interest for FY 2013-14 (SBI PLR @ 14.45%)	33.07
3	<b>Total Gap/ (Surplus) with Interest</b>	<b>261.92</b>

3.2.5 It is submitted that the above revenue gap alongwith carrying cost is apportioned between two distribution companies as per agreed principles by management.

## Chapter 4. Annual Performance Review for FY 2013-14 and Revised Annual Revenue Requirement for FY 2014-15

This Chapter covers in brief MYT approved by Hon'ble Commission for control period, Annual Performance Review (APR) for FY 2013-14 and revised Annual Revenue Requirement (ARR) for FY 2014-15.

### 4.1 Approved MYT Summary for Control Period

4.1.1 The Hon'ble Commission in the MYT order dated 15<sup>th</sup> March 2013, approved the ARR at table 7.39 for the MYT control period of 3 years which is provided in the table below for reference:

**Table 8: Approved MYT Summary for Control Period**

(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
<b>4.</b>	<b>O&amp;M Cost</b>	<b>89.56</b>	<b>107.05</b>	<b>130.11</b>
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
<b>9.</b>	<b>Total</b>	<b>213.35</b>	<b>262.93</b>	<b>304.89</b>
10.	Less: Non-tariff income	0.51	0.61	0.73
<b>11.</b>	<b>Net: Aggregate Revenue Requirement</b>	<b>212.84</b>	<b>262.32</b>	<b>304.16</b>

### Review of APR for FY 2013-14 and Revised ARR for FY 2014-15

#### 4.2 Transmission Loss and Revised Trajectory

4.2.1 The transmission loss the trajectory projected in the MYT petition by the petitioner and considered by the Commission in MYT order is provided in the table below:

**Table 9: Transmission Loss Approved in MYT Order**

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
<b>Transmission Loss</b>	4.07%	4.02%	3.97%	3.92%

4.2.2 The petitioner would like to submit that the transmission loss projected were on provisional basis as independent operations of the transmission company having started only wef 1<sup>st</sup> November 2012.

4.2.3 The petitioner would like to submit herewith comparison of transmission losses of other states which are in operation over last 5-7 years as an independent company.

**Table 10: Transmission Loss in Other States**

Particulars	FY 2012-13	FY 2013-14	FY 2014-15
<b>Gujarat</b>	4.15%	4.10%	4.10%
<b>Uttar Pradesh</b>	3.67%	--	--
<b>Maharashtra</b>	4.85%	4.85%	--
<b>Karnataka</b>	--	4.04%	4.02%
<b>Madhya Pradesh</b>	3.16%	--	--
<b>Rajasthan</b>	4.20%	--	--
<b>Jharkhand</b>	5.00%		
<b>Andhra Pradesh</b>	--	4.02%	--

- 4.2.4 As can be seen the losses in advances states and which have initiated reforms process much earlier are still having transmission loss more than 4%.
- 4.2.5 Further it would like to submit that substantial investments pertaining to the strengthening transmission network system by way of taking up improvement works like adding new/ link lines, augmentation of existing transformer capacities and establishment of new sub-stations closer to the load centers etc.
- 4.2.6 BSPTCL would like to mention that these works would result in:
- Reduction of transmission losses
  - Reduction of distribution losses
  - Improvement of system reliability
  - Enable creation of robust transmission network
- 4.2.7 So the improvement results would be reflecting only after 1-2 years after the commissioning of these transmission assets.
- 4.2.8 **Further BSPTCL would like to mention that the computation of the transmission loss should be based on the energy input into the BSPTCL grid and energy output as measured at interface points of DISCOMs.**
- 4.2.9 The petitioner submits and requests Hon'ble Commission to approve transmission losses for this control period on actual basis. Accordingly, BSPTCL provides herewith the revised transmission loss trajectory for the consideration and approval by Hon'ble Commission to be computed based on the above suggestion.

**Table 11: Revised Transmission Loss Trajectory**

Particulars	FY 2013-14	FY 2014-15	FY 2015-16
Approved % Transmission Loss	4.02%	3.97%	3.92%
Revised Trajectory of Transmission Loss	4.05%	4.05%	4.05%

4.2.10 The petitioner requests the Hon'ble Commission to approve the revised transmission loss trajectory in this petition for FY 2013-14 and FY 2014-15.

#### 4.3 Capital Investment Plan

4.3.1 The petitioner in the last year MYT petition had submitted detailed capital investment plan before Hon'ble Commission which was approved by the Commission.

**Table 12: BSPTCL's Capex Projection in MYT Petition**

Rs.Crs

S. No.	Planned Scheme	Total Cost	2012-13	2013-14	2014-15	2015-16	TOTAL MYT	Remaining (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	-
	<b>Grand Total</b>	<b>6845</b>	<b>835</b>	<b>319</b>	<b>844</b>	<b>1960</b>	<b>3957</b>	<b>2888</b>

**Table 13: Capex & Capitalisation Approved in MYT Petition**

**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	<b>Total (2+3)</b>	<b>292</b>	<b>388</b>	<b>739</b>	<b>968</b>	<b>1710</b>

4.3.2 The petitioner would like to submit that to meet the growing demand for power by the Consumers, its diversity in terms of geography and evacuating the power expected to be available from upcoming intra/ inter-state generating stations, Transmission Company has been undertaking various transmission network capacity



addition, augmentation and improvement projects for making reliable power uniformly available across the state.

4.3.3 BSPTCL had prepared the report on 'Evolution of Transmission System of Bihar' and submitted to Central Electricity Authority (CEA) for approval. The transmission system requirements of Bihar for the 12<sup>th</sup> plan had been proposed in three parts as under:

- i. Part-1: Bihar Sub-transmission Phase-2 Extension Scheme;
- ii. Part-2: Transmission System Strengthening Scheme- Phase-1 & Phase-2;
- iii. Part-3: ATS for Case-II projects i.e. Lakhisarai (2x660 MW), Pirpainti (2x660 MW) & Buxar (2x660 MW) and system strengthening for other projects viz BTPS Extension (2x250 + 150 MW), MTPS Extension (2x195 MW) etc;

4.3.4 The CEA has accordingly examined the proposal and mentioned that projects/ works are technically found to be in order. The copy of the letter no.69/1/2012-SP&PA/1203-05 dated 15<sup>th</sup> November 2012 is attached at **Annexure 2: CEA Letter dated 15.11.2012.**

4.3.5 As mentioned in para **1.2.9**, the DPR of works covered under Phase-IV Transmission Planning (Rs.3000 Crs) would be undertaken by Bihar Grid Company Limited (BGCL). Further the scope of certain schemes has also changed and is being executed in bundled schemes. Hence the capital expenditure plan provided in the MYT petition has undergone a change. The petitioner submits that it has presented the figures of Capital Expenditure, Capitalisation and Funding etc for FY 2015-16 for representation purpose only.

#### 4.3.6 **12<sup>th</sup> Plan Transmission & Sub-Transmission System Strengthening (PHASE-III)**

4.3.6.1 Under this scheme, the works related Transmission system for evacuation of power from Dabhangra & Motihari 400 kV sub-stations and Strengthening of Intra-State Transmission system. The earlier amount under 12<sup>th</sup> Plan BRGF projected in MYT petition has now been merged under this bundled package scheme with some schemes inter-shifted.

4.3.6.2 The total value of the scheme under DPR is Rs. **1,162.07** Crs. However another three schemes are bundled with this DPR scheme:

- Sonenagar 220 kV GSS and associated lines (Phase-III, Part-2, Proj-1) – **Rs.108.00 Crs;**
- R & M of 20 No's old operating 132/33 kv GSS (Phase-III, Part-2, Proj-2) – **Rs.99.96 Crs;**
- Other Planned Additional Works – **Rs.588.47 Crs**



4.3.6.3 Considering above main DPR scheme & other three schemes, total value of package is Rs. **1,958.50** Crs & details of the schemes under Phase-I are as under:

**Table 14: Details of 12<sup>th</sup> Plan Schemes under Phase-III**

Sr.	Particulars	Rs.Crs
A	Preliminary survey and soil investigation	3.35
B	Land acquisition for substation and R & R compensation	62.15
C	Cost of compensation for transmission lines	
	<i>Compensation for crop, tree and others</i>	62.46
	<i>Compensation towards forests</i>	3.97
D	Civil works	
	<i>Infrastructure for substations</i>	17.05
	<i>Non-residential buildings</i>	7.75
E	Equipment Cost	
	<i>Transmission Lines</i>	454.95
	<i>Sub-stations</i>	503.77
	<i>Data &amp; voice cennectivity</i>	12.78
<b>F</b>	<b>Sub-Total</b>	<b>1,128.23</b>
G	Contingencies (@3% of F)	33.84
	<b>Total Project Cost as per DPR</b>	<b>1,162.07</b>
H	Other Schemes included in the Package	
	<i>Sonenagar 220 kv GSS and associated lines (Phase-III, Part-2, Proj-1)</i>	108.00
	<i>R &amp; M of 20 No's old operating 132/33 kv GSS (Phase-III, Part-2, Proj-2)</i>	99.96
I	<i>Other Planned Additional works</i>	588.47
	<b>Grand Total of the Entire Package Scheme</b>	<b>1,958.50</b>

4.3.6.4 The similar break-up from the Detailed Project Report alongwith the details of transmission lines and substations are provided at **Annexure 3: Abstract from DPR Scheme 1162.07 Crs**. Further the details for above 12<sup>th</sup> Plan Transmission & sub-transmission system of Phase-1 can be found at Annexure-II (a) of CEA letter dated 15.11.2012.

#### 4.3.7 Strengthening of Sub-Transmission System in Bihar - Extension Scheme of Phase-2 Works (Revised)

4.3.7.1 Under this scheme, scope of work includes Removal of Constraints in Transmission System and Augmentation of Sub-station works. The earlier Rs.218 Crores projected in immediate removal of transmission constraints in MYT petition has now been merged under this scheme. The total value of the scheme is Rs. **472.53** Crs. The details of the scheme covering physical and financial scope are presented in the table below:

**Table 15: Details of 472.53 Crs Extn Scheme of Phase-2**

Sr	Activities	Total Scope		Jan to Mar 2014		April-Jun 2014		July-Sep 2014		Oct-Dec 2014		Total
		Physical	Financial (Rs.Crs)	Physical	Financial (Rs.Crs)	Physical	Financial (Rs.Crs)	Physical	Financial (Rs.Crs)	Physical	Financial (Rs.Crs)	Financial (Rs.Crs)
<b>1</b>	<b>Augmentation Work</b>											
a	07 No's, 220 /132 kV GSS (07 x 150 = 105 MVA)	1,050	71.64			150	10.23	450	30.70	450	30.70	71.63
b	12 No's, 132/33 kV GSS (06 x 50+6x 20=420 MVA)	420	61.54					210	30.77	210	30.77	61.54
<b>2</b>	<b>Re-conductoring</b>											
a	132 kV Line (ckm)	908	97.73	300	32.29	608	65.44					97.73
b	220 kV Line (ckm)	240	33.71	110	15.45	130	18.26					33.71
<b>3</b>	<b>New Construction</b>											
a	132 kV Line (ckm)	238	60.04	50	12.61	188	47.43					60.04
b	220 kV Line (ckm)	1	3.94			1	3.94					3.94
<b>4</b>	<b>Proc. of Equipmts</b>											
a	C.B. (nos)	65	3.75	65	3.75							3.75
b	C.T. (nos)	195	2.47	195	2.47							2.47
c	L.A. (nos)	35	0.08	35	0.08							0.08
d	ERS (sets)	2	9.70	2	9.70							9.70
e	Filtration Machine (nos)	1	0.08	1	0.08							0.08
f	Ganga Crossing (ckm)	10	49.00							10	49.00	49.00
	<b>Total</b>		<b>393.68</b>		<b>76.43</b>		<b>145.30</b>		<b>61.47</b>		<b>110.47</b>	<b>393.68</b>
	Contingency @3%		11.81		2.29		4.36		1.84		3.31	<b>11.81</b>
	<b>Sub-Total</b>		<b>405.49</b>		<b>78.72</b>		<b>149.66</b>		<b>63.31</b>		<b>113.78</b>	<b>405.49</b>
	Contingency @15% + ST		67.04		13.02		24.74		10.47		18.81	<b>67.04</b>
	<b>Grand Total</b>		<b>472.53</b>		<b>91.74</b>		<b>174.40</b>		<b>73.78</b>		<b>132.60</b>	<b>472.53</b>

4.3.7.2 The similar break-up from the Detailed Project Report for the total scheme value along with the details of transmission lines and substations are provided at **Annexure 4: Abstract from DPR Scheme 472.53 Crs**. Further the details for above Extension scheme of Phase-2 can be found at Annexure-I of CEA letter dated 15.11.2012.

#### 4.3.8 ADB Funded Scheme

4.3.8.1 The amount planned to be spent under this ongoing scheme is provided in the table below:

**Table 16: Phasing of Schemes under ADB Funding**

Sr. No.	Package	Contract Amount for Project	Phasing of Expenditure			
			FY 2012-13	FY 2013-14 (Expected)	FY 2014-15 (Expected)	FY 2015-16 (Expected)
1	Package G (Ganagwara & Dhanaha GSS)	49.15	4.82	20.33	24.00	-
2	Package H (Pusauli GSS)	47.98	4.45	19.53	24.00	-
3	Package I (132 kV Line)	58.24	5.42	25.00	27.82	-
4	Package J (220 kV Line)	41.53	3.83	25.00	12.70	-
5	Other works under ADB	100.00	-	-	40.00	60.00
	<b>Total</b>	<b>296.90</b>	<b>18.52</b>	<b>89.86</b>	<b>128.52</b>	<b>60.00</b>

4.3.8.2 The works covered under four packages though provided in last year MYT petition are re-produced below for reference:

**Table 17: Ongoing Works under ADB Funded Scheme details**

Package	S. No.	Details of Works	Total Cost (Rs.Crs)
<b>G</b>	i.	Construction of 2x50 MVA, 132/33 KV Grid Sub-station at Dhanha (West Champaran) on turnkey basis	<b>49.15</b>
	ii.	Construction of 2x50 MVA, 132/33 KV Grid Sub-Station at Gangwara (Darbhanga) on turnkey basis	
	iii.	Construction of 132 KV bay one each at Bettiah, Sasaram, Mohnia, Dinara, Lakhisarai and Seikhpura G.S.S.	
	iv.	Construction of 4 no. 33 KV bay at remote end 33/11 KV Power substations for down linking	
<b>H</b>	i.	Construction of 2x150 MVA 220/132 KV Grid Sub-Station at Pusauli (Kaimur)	<b>47.98</b>
	ii.	2 nos. 220 KV bay extensions at 220/132 KV Dehri Grid S/s	
<b>I</b>	<b>132 KV line (202 KM)</b>		
	i.	LILO of 132 kV Pandaul Line at Gangwara - 10 KMs (approx.)	2.41
	ii.	Pusauli (New) - Sasaram DCCS line -50 KMs (approx.)	12.03
	iii.	Pusauli (New) - Bhabhua DCCS line -15 KMs (approx.)	3.61
	iv.	Pusauli (New) - Dinara DCCS line -45 KMs (approx.)	10.83
	v.	Lakhisarai - Shekhpura DCCS line-32 KMs (approx.)	7.70
	vi.	Bettiah - Dhanha DCCS line-50 KMs (approx.)	12.03
		<b>Sub-total (i)</b>	<b>48.61</b>
	<b>33 KV line (40 KM)</b>		
	vii	New Line from132 kV Sub Station Dhanha (New) - 20 KMs (approx.)	4.81
	viii	New Line from132 kV Sub Station Gangwara (New) - 20 KMs (approx.)	4.81
		<b>Sub-total (i)</b>	<b>9.63</b>
		<b>Total for (i)</b>	<b>58.24</b>
<b>J</b>	i.	i. LILO of both ckts of Sasaram (PGCIL)- Ara (PGCIL) 220 KV D/C line at New Sub Station at Pusauli (New)- 6 KM	<b>41.53</b>
	ii.	Pusauli (New)-Dehri (BSEB) 220 KV D/C line - 8 KM	
-		Other Works under ADB Schemes	<b>100.00</b>
		<b>Grand Total</b>	<b>296.90</b>

#### 4.3.9 State Plan Scheme

4.3.9.1 There are certain transmission schemes which are undertaken through State Government Plan. The details of the schemes are provided in the table below:

**Table 18: Schemes under State Government Plan**

Sr. No.	Scheme	Approved amount (Rs.Cr.)	Cumu. Amount Spent till 31.8.2013
1	Construction of 132/33 kV grid substation connected to Jandaha transmission line, under district Vaishali	25.00	11.97
2	Construction of 132/33 kV grid substation connected to transmission line at Tehta (Jehanabad) and Imamganj (Gaya)	51.20	21.69
3	Construction of 132/33 kV grid substation connected to transmission line at Ekma (Saran)	5.10	3.84
4	Scheme to extend tower height of middle 132 kV transmission line tower at bank of Bagmati river, Block- Runnisaipur, district- Sitamarhi.	6.15	0.56
5	Dismantling of 132/33 kV 2X50 MVA Meethapur Grid substation and 33/11 kV Power Substation at R. K. Nagar from its place and construction of 132/33 kV 4X50 MVA Grid Substation and 33/11 kV 2X10 MVA Power Substation at Kabrigahiya	77.36	53.06
6	Scheme to construct 132/33 kV Sherghati Grid Substation and 132 kV Bodhgaya - Sherghati Transmission Line , under State Plan with scrutinized cost of 25.10 Cr.	25.10	17.76
7	Re-construction of Muzaffarpur-Sitamarhi Transmission Line	1.72	0.67
8	Construction of Transmission facility to evacuate power from	26.12	1.86
9	Construction of additional 132 kV Transformer bay at 132/33 kV Substation Sitamarhi, Bihta, Khagaul, Ara and Nawada	5.00	-
10	Construction of 5 No's of additional 33 kV Transformer Bays at 132/33 kV Grid Substation , Sitamarhi, Bihta, Khagaul, Ara and Nawada and construction of 05 no's of Line Bays with Sonnagar (02 No's) and each at Jainagar, Phulparas, Bihta	3.70	-
11	Construction of 2X100 MVA , 220/132 kV Grid Substation at Bihta	99.65	5.29
12	Purchase of 03 No's 50 MVA 132/33 kV Transformers for Siwan, Nawada and Jamalpur Grid Substations	7.92	-
13	Purchase of 17 No's Transformers to minimize gap between capacity addition of old six no's of grid and transmission & distribution capacity of 08 no's of substations: Bodhgaya - 150 MVA (01 No.), Bihar-shariff - 150 MVA (01 No.), Fatuha - 100 MVA (01 No.), Begusarai - 100 MVA (01 No.), Sabaur - 50 MVA (01 No.), Sitamarhi - 50 MVA (01 No.), Gopalganj Grid - 50 MVA (02 No.), Champaran (W) Grid - 50 MVA (02 No.), Samastipur Grid - 50 MVA (01 No.), Sitamarhi Grid - 50 MVA (01 No.), Saharsa Grid - 50 MVA (02 No.), Chapra Grid - 50 MVA (01 No.),	49.04	-
14	Scheme to renovate 15 No's of old Grid Substations	8.88	-
15	Special scheme to purchase specific testing equipments of worth Rs. 6.26 Cr. for the testing of Grid substation equipments	6.26	-
16	Construction of Park and beautification of Karbigahia Thermal Power Complex	27.31	-
17	Construction of Control Room Building, Residential Complex and Building, Boundry wall, Internal Road and Drinking Water Sanitation at Old GSS	76.83	-
	<b>Total</b>	<b>502.33</b>	<b>116.71</b>



**4.3.10 Installation of GSS (under State Plan Scheme)**

4.3.10.1 The petitioner is also planning for Installation of 14 nos of Grid Sub-stations in the areas where there is need for augmentation of the transmission capacity and the funding of the same is through State Government Plan. The value of this scheme is Rs. **350.00** Crs.

**4.3.11 Establishment of BSPTCL's Training Centre**

4.3.11.1 The petitioner is also planning for Establishment of Training Center to train its employee's alongwith employees of other subsidiary companies on paid basis. The Training Centre shall also be available / open for external members/ utilities/ employees and shall act as a 'Profit Center' and not as a 'Cost Center'. The proposed Training Centre shall be well equipped with all the facilities, equipments, testing kits, functional proto types and demos. Further the Training Center shall also have facility for Faculty member including accommodation. The Training Centre shall have the facilities of laboratories which shall be based on the norms accredited by certified national agencies. The cost of the proposed training centre is Rs. **3.00** Crores.

**4.3.12 Capital Expenditure Schemes through Internal Resources Fund**

4.3.12.1 The petitioner submits that it is also undertaking certain capital expenditure schemes through Internal Resources Fund (IRF). The details of such schemes are provided in the table below:

**Table 19: Capital Expenditure through IRF**

Sr. No.	Project Work Details	Contract Amount for Project	Rs.Crs Phasing of Expenditure	
			FY 2013-14 (Expected)	FY 2014-15 (Expected)
1	ULDC upgradation project work	5.98	3.59	2.39
2	Other Miscellaneous works - Renovation of 4th Floor BSPTCL Office	2.50	1.00	1.50
3	Office Furniture, Computers, Vehciles etc (lumpsum)	5.00	1.00	4.00
<b>4</b>	<b>Total</b>	<b>13.48</b>	<b>5.59</b>	<b>7.89</b>

4.3.12.2 The petitioner is executing the upgradation of ULDC in association with PGCIL. The total capital estimate is of Rs.80.24 Crs out of which the share of petitioner is Rs. **5.98** Crs. The upgradation works would be executed through internal resources of petitioner. The details of the scheme are provided at **Annexure 5: ULDC Upgradation works**



4.3.12.3 The other capital expenditure schemes are renovation of office building and purchase of furniture, computers, vehicles etc which would be capitalised in FY 2014-15 except for computers value of Rs. **1.00** Cr which would be capitalised in FY 2013-14 itself.

4.3.12.4 The summary of the Capital Investment Plan is provided in the table below:

**Table 20: Capital Investment Plan FY14 to FY16**

S. No.	Planned Scheme	Total Cost	Rs.Crs				Total
			2012-13	2013-14	2014-15	2015-16	
1	12th Plan Transmission & Sub-Transmission System Strengthening in Bihar - PHASE-III	1,958.50	-	300.00	1,000.00	658.50	<b>1,958.50</b>
2	Strengthening of Sub-Transmission System in Bihar - Extension Scheme of Phase-2 Works (Revised)	472.53	-	125.00	347.53	-	<b>472.53</b>
3	ADB Funded Scheme	296.90	18.52	89.86	128.52	60.00	<b>296.90</b>
4	State Plan Scheme	502.33	109.12	139.64	253.57	-	<b>502.33</b>
5	Installation of 14 No's of GSS through BSPTCL's <i>(funding through state Plan)</i>	350.00	-	-	140.00	210.00	<b>350.00</b>
6	Establishment of BSPTCL's Training Centre <i>(funding through State Plan)</i>	3.00	-	0.30	1.50	1.20	<b>3.00</b>
7	Capital Expenditure Schemes through Internal Resources Fund	13.48	-	5.59	7.89	-	<b>13.48</b>
	<b>Grand Total</b>	<b>3,596.74</b>	<b>127.64</b>	<b>660.39</b>	<b>1,879.02</b>	<b>929.70</b>	<b>3,596.74</b>

4.3.13 As can be seen from the above table and last year projections, the revision in capital plan is not substantial but the year wise phasing has got revised due to delayed approvals and also due to the fact that certain schemes are bundled together including swapping of certain schemes from one planned scheme to another. The details of the each of the scope alongwith the activities, capital expenditure plan etc are discussed in subsequent paragraphs.

4.3.14 The petitioner requests the Hon'ble Commission to approve the total capital expenditure plan proposed in this petition for FY 2013-14 and FY 2014-15.

#### 4.4 Capitalisation Schedule

4.4.1 The capitalisation has been considered from the schemes in Opening Capital WIP, the new schemes under BRGF, ADB and others which are classified as New Schemes and R&M Schemes. However, the petitioner has adopted the approach of Hon'ble Commission from the MYT order and considered the capitalisation schedule as under:

**Table 21: Assumptions for Capitalisation**

Particulars	1st Year	2nd Year	3rd Year
For New Scheme	30%	30%	40%
For R&M Scheme	30%	30%	40%
For Opening CWIP for FY 2013-14	30%	30%	40%

4.4.2 Generally the transmission schemes are completed in 2-3 years time frame and hence, the capitalisation schedule has been assumed as 30% in the first for capital expenditure year, 30% for second year and 40% in the third year.

**Table 22: Year wise Capitalisation**

Sr.	Planned Scheme	Rs.Crs					Total
		2013-14	2014-15	2015-16	2016-17	2017-18	
1	Total Investment	660.39	1,879.02	929.70			<b>3,469.10</b>
2	<b>Capitalisation OP CWIP</b>	113.68	113.68	151.57			378.94
	<b>Capitalisation New Invts</b>						-
3	<i>From Capex during 2013-14</i>	197.44	201.03	261.92	-	-	660.39
4	<i>From Capex during 2014-15</i>	-	569.23	561.34	748.45	-	1,879.02
5	<i>From Capex during 2015-16</i>	-	-	278.91	278.91	371.88	929.70
	<b>Grand Total</b>	<b>311.12</b>	<b>883.94</b>	<b>1,253.74</b>	<b>1,027.36</b>	<b>371.88</b>	<b>3,848.04</b>

4.4.3 The petitioner requests Hon'ble Commission to approve the proposed capitalisation schedule for FY 2013-14 and FY 2014-15.

#### 4.5 Funding for Capital Expenditure and Capitalisation

4.5.1 Based on the capital expenditure plan, the petitioner has planned to fund the schemes through a combination of Equity, State Government Grants, Loans from Financial Institutions as well as from State Government. The Opening CWIP is also considered for funding on the basis of Grants & Loans in the ratio of 40:60. The petitioner submits that the State Government has provided funds for BRGF Schemes as 'Equity' and not 'Grant'; hence the funding pattern has been changed from previous filing.

4.5.2 Since the Hon'ble Commission approves funding based on the Capitalisation amount and not on capital expenditure, the petitioner has computed the scheme wise funding details for both Capital Expenditure and Capitalisation in the table below:



**Table 23: Scheme Wise Funding for Capital Expenditure**

						Rs.Crs
Sr.	Planned Scheme	Ratio	Capital Expenditure	2013-14	2014-15	2015-16
1	<b>12th Plan Transmission &amp; Sub-Transmission System Strengthening in Bihar - PHASE-III</b>		<b>1,958.50</b>	<b>300.00</b>	<b>1,000.00</b>	<b>658.50</b>
	<i>Equity</i>	100%	1,958.50	300.00	1,000.00	658.50
	<i>Grants</i>	0%	-	-	-	-
2	<b>Strengthening of Sub-Transmission System in Bihar - Extension Scheme of Phase-2 Works (Revised)</b>		<b>472.53</b>	<b>125.00</b>	<b>347.53</b>	<b>-</b>
	<i>Equity</i>	100%	472.53	125.00	347.53	-
	<i>Grants</i>	0%	-	-	-	-
3	<b>ADB Funded Scheme</b>		<b>296.90</b>	<b>89.86</b>	<b>128.52</b>	<b>60.00</b>
	<i>Grants</i>	0%	-	-	-	-
	<i>Loans</i>	100%	296.90	89.86	128.52	60.00
4	<b>State Plan Scheme</b>		<b>502.33</b>	<b>139.64</b>	<b>253.57</b>	<b>-</b>
	<i>Grants</i>	0%	-	-	-	-
	<i>Loans</i>	100%	502.33	139.64	253.57	-
5	<b>Installation of 14 No's of GSS (<i>funding through state Plan</i>)</b>		<b>350.00</b>	<b>-</b>	<b>140.00</b>	<b>210.00</b>
	<i>Equity</i>	0%	-	-	-	-
	<i>Loans</i>	100%	350.00	-	140.00	210.00
6	<b>Establishment of BSPTCL's Training Centre (<i>funding through State Plan</i>)</b>		<b>3.00</b>	<b>0.30</b>	<b>1.50</b>	<b>1.20</b>
	<i>Equity</i>	0%	-	-	-	-
	<i>Loans</i>	100%	3.00	0.30	1.50	1.20
7	<b>Capital Expenditure Schemes through Internal Resources Fund</b>		<b>13.48</b>	<b>5.59</b>	<b>7.89</b>	<b>-</b>
	<i>Equity</i>	100%	13.48	5.59	7.89	-
	<i>Loans</i>	0%	-	-	-	-
8	<b>Balance CWIP</b>		<b>378.94</b>			
	<i>Grants</i>	40%				
	<i>Loans</i>	60%				
9	<b>Grand Total</b>		<b>3,469.10</b>	<b>660.39</b>	<b>1,879.02</b>	<b>929.70</b>
	<i>Grants</i>		-	-	-	-
	<i>Equity</i>		<b>2,444.51</b>	<b>430.59</b>	<b>1,355.42</b>	<b>658.50</b>
	<i>Loans</i>		<b>1,024.59</b>	<b>229.80</b>	<b>523.59</b>	<b>271.20</b>

**Table 24: Scheme Wise Funding for Capitalisation**

						Rs.Crs
Sr.	Planned Scheme	Ratio	Captilisation	2013-14	2014-15	2015-16
1	<b>12th Plan Transmission &amp; Sub-Transmission System Strengthening in Bihar - PHASE-III</b>		<b>1,097.55</b>	90.00	390.00	617.55
	<i>Equity</i>	100%	1,097.55	90.00	390.00	617.55
	<i>Grants</i>	0%	-	-	-	-
2	<b>Strengthening of Sub-Transmission System in Bihar - Extension Scheme of Phase-2 Works (Revised)</b>		<b>333.52</b>	37.50	141.76	154.26
	<i>Equity</i>	100%	333.52	37.50	141.76	154.26
	<i>Grants</i>	0%	-	-	-	-
3	<b>ADB Funded Scheme</b>		<b>184.97</b>	26.96	65.51	92.50
	<i>Grants</i>	0%	-	-	-	-
	<i>Loans</i>	100%	184.97	26.96	65.51	92.50
4	<b>State Plan Scheme</b>		<b>291.78</b>	<b>41.89</b>	<b>117.96</b>	<b>131.93</b>
	<i>Grants</i>	0%	-	-	-	-
	<i>Loans</i>	100%	291.78	41.89	117.96	131.93
5	<b>Installation of 14 No's of GSS (<i>funding through state Plan</i>)</b>		<b>147.00</b>	-	<b>42.00</b>	<b>105.00</b>
	<i>Equity</i>	0%	-	-	-	-
	<i>Loans</i>	100%	147.00	-	42.00	105.00
6	<b>Establishment of BSPTCL's Training Centre (<i>funding through State Plan</i>)</b>		<b>1.53</b>	<b>0.09</b>	<b>0.54</b>	<b>0.90</b>
	<i>Equity</i>	0%	-	-	-	-
	<i>Loans</i>	100%	1.53	0.09	0.54	0.90
7	<b>Capital Expenditure Schemes through Internal Resources Fund</b>		<b>13.48</b>	<b>1.00</b>	<b>12.48</b>	-
	<i>Equity</i>	100%	13.48	1.00	12.48	-
	<i>Loans</i>	0%	-	-	-	-
8	<b>Balance CWIP</b>		<b>378.94</b>	<b>113.68</b>	<b>113.68</b>	<b>151.57</b>
	<i>Grants</i>	40%	151.57	45.47	45.47	60.63
	<i>Loans</i>	60%	227.36	68.21	68.21	90.94
9	<b>Grand Total</b>		<b>2,448.77</b>	<b>311.12</b>	<b>883.94</b>	<b>1,253.71</b>
	<i>Grants</i>		<b>151.57</b>	<b>45.47</b>	<b>45.47</b>	<b>60.63</b>
	<i>Equity</i>		<b>1,444.55</b>	<b>128.50</b>	<b>544.24</b>	<b>771.81</b>
	<i>Loans</i>		<b>852.65</b>	<b>137.15</b>	<b>294.23</b>	<b>421.27</b>

#### 4.6 Summary of CWIP, Capex, Capitalisation and Funding

4.6.1 The table below provides the summary of the Capital WIP, Capital Expenditure, Capitalisation and Funding details for FY 2013-14 and FY 2014-15 alongwith the Commission approved figures.

**Table 25: Summary of CWIP, Capex, Capitalisation & Funding**

Sr.	Particulars	Rs.Crs			
		2013-14 (T.O.)	2013-14 (RE)	2014-15 (T.O.)	2014-15 (RE)
1	Opening CWIP	682.00	378.94	613.00	728.20
2	Add: New Investment	319.00	660.39	844.00	1,879.02
3	<b>Total (1+2)</b>	<b>1,001.00</b>	<b>1,039.32</b>	<b>1,457.00</b>	<b>2,607.22</b>
4	Less: Capitalisation	388.00	<b>311.12</b>	739.00	<b>883.94</b>
a	<i>CWIP Capitalisation</i>	42.00	113.68	55.00	113.68
b	<i>New Invt Capitalisation</i>	346.00	197.44	684.00	770.26
5	<b>Closing CWIP (3-4)</b>	<b>613.00</b>	<b>728.20</b>	<b>718.00</b>	<b>1,723.28</b>
6	<b>Funding of Capitalisation:</b>				
a	<b>CWIP Capitalisation</b>	<b>42.00</b>	<b>113.68</b>	<b>55.00</b>	<b>113.68</b>
i	<i>Grant</i>	17.00	45.47	22.00	45.47
ii	<i>Loans</i>	25.00	68.21	33.00	68.21
b	<b>New Invt Capitalisation</b>	<b>346.00</b>	<b>197.44</b>	<b>684.00</b>	<b>770.26</b>
i	<i>Grant</i>	194.00	-	491.00	-
i	<i>Equity</i>	-	128.50	-	544.24
ii	<i>Loans</i>	152.00	68.94	193.00	226.02
7	<b>Total Grants</b>	<b>211.00</b>	<b>45.47</b>	<b>513.00</b>	<b>45.47</b>
7	<b>Total Equity</b>	-	<b>128.50</b>	-	<b>544.24</b>
8	<b>Total Loans</b>	<b>177.00</b>	<b>137.15</b>	<b>226.00</b>	<b>294.23</b>

#### 4.7 Computation of IDC

4.7.1 The petitioner submits that 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 is assuming 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 26: Computation of IDC**

Sr.	Particulars	Rs.Crs			
		2013-14 (T.O.)	2013-14 (RE)	2014-15 (T.O.)	2014-15 (RE)
1	Loan Drawn	177.00	137.15	226.00	294.23
2	Average Loan	88.50	68.57	113.00	147.11
3	Weighted Avg Interest Rate	13%	13%	13%	13%
4	Interest during Construction	<b>11.51</b>	<b>8.91</b>	<b>14.69</b>	<b>19.12</b>

4.7.2 The petitioner requests Hon'ble Commission to kindly approve the IDC computations as proposed for FY 2013-14 and FY 2014-15.

#### 4.8 Gross Fixed Assets

4.8.1 The petitioner hereby submits the computation of Gross Fixed Assets considering the opening GFA as per provisional balance sheet as on 31<sup>st</sup> March 2013. It is submitted

that during the process of restructuring the assets are re-valued and the petitioner request Hon'ble Commission to consider the same figures for ARR purpose.

- 4.8.2 The petitioner would like to refer to PART XIII, REORGANISATION OF BOARD and Section 131 thereof from the Electricity Act 2003. The relevant section is extracted for reference purpose which provides that any transaction pursuant to transfer scheme shall be binding on all persons.

*131 (3) Notwithstanding anything contained in this section, where,-  
(b) a transaction of any description is effected in pursuance of a transfer scheme, it shall be binding on all persons including third parties and even if such persons or third parties have not consented to it.*

- 4.8.3 The computation of Gross fixed assets based on the capitalisation schedule for FY 2013-14 and FY 2014-15 is tabulated below:

**Table 27: Details of Gross Fixed Assets**

Sr.	Particulars	Rs.Crs			
		2013-14 (T.O.)	2013-14 (RE)	2014-15 (T.O.)	2014-15 (RE)
1	Opening GFA	1,547.13	3,513.08	1,946.64	3,833.11
2	Additions during year	388.00	311.12	739.00	883.94
3	Interest during Construction	11.51	8.91	14.69	19.12
4	<b>Closing GFA (1+2+3)</b>	<b>1,946.64</b>	<b>3,833.11</b>	<b>2,700.33</b>	<b>4,736.17</b>

- 4.8.4 The petitioner requests Hon'ble Commission to approve the GFA as per above table and considering provisions of section 131 of EA 2003 and Transfer Scheme.

#### 4.9 Depreciation on GFA

- 4.9.1 The depreciation has been computed annually based on straight line method by applying weighted average rate of depreciation on the average GFA. For this purpose, the petitioner has adopted the approach considered by Hon'ble commission in its Tariff order for FY 2013-14. 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 to be charged. The computation of depreciation on the assets created out of Grants and Consumer Contributions is based on the actual ratio of 'Grants and Consumer Contributions' and GFA.

**Table 28: Computation of Depreciation**

					Rs.Crs
Sr.	Particulars	2013-14 (T.O.)	2013-14 (RE)	2014-15 (T.O.)	2014-15 (RE)
1	Opening GFA	1,547.13	3,513.08	1,946.64	3,833.11
2	Additions during year	388.00	311.12	739.00	883.94
3	Interest during Construction	11.51	8.91	14.69	19.12
4	<b>Closing GFA (1+2+3)</b>	<b>1,946.64</b>	<b>3,833.11</b>	<b>2,700.33</b>	<b>4,736.17</b>
5	<b>Average GFA (1+4)/2</b>	<b>1,746.89</b>	<b>3,673.09</b>	<b>2,323.49</b>	<b>4,284.64</b>
6	<b>Weighted Avg Rate of Depreciation</b>	<b>5.12%</b>	<b>5.12%</b>	<b>5.12%</b>	<b>5.12%</b>
7	<b>Depreciation (5*6)</b>	<b>89.44</b>	<b>188.06</b>	<b>118.96</b>	<b>219.37</b>
8	Opening Grants	679.31	1,622.44	890.31	1,667.91
9	Grants during year	211.00	45.47	513.00	45.47
10	<b>Total Grants (8+9)</b>	<b>890.31</b>	<b>1,667.91</b>	<b>1,403.31</b>	<b>1,713.39</b>
11	<b>Average Grants (10+8)/2</b>	<b>784.81</b>	<b>1,645.18</b>	<b>1,146.81</b>	<b>1,690.65</b>
12	Weighted Avg Rate of Depreciation	5.12%	5.12%	5.12%	5.12%
13	Depreciation for GFA on Grants (11*12)	40.18	84.23	58.72	86.56
14	<b>Net Depreciation for GFA on Loans (7-13)</b>	<b>49.26</b>	<b>103.83</b>	<b>60.24</b>	<b>132.81</b>

4.9.2 The petitioner requests Hon'ble Commission to approve the computation of depreciation which is based on the weighted average rate derived as per CERC Tariff Regulations 2009 and also as approved by the Hon'ble Commission in MYT order.

#### 4.10 Interest on Loan

4.10.1 The petitioner has considered the opening loan balance for 1<sup>st</sup> April 2013 as per provisional accounts for Nov 2012 to March 2013 of the petitioner.

4.10.2 Further the additions to loans are considered as per funding mechanism discussed earlier and the interest is applied on the average loan balances.

4.10.3 The petitioner has considered weighted average rate of interest for existing as well new loans.

**Table 29: Computation of Interest on Loan**

Sr.	Particulars	Rs.Crs			
		2013-14 (T.O.)	2013-14 (RE)	2014-15 (T.O.)	2014-15 (RE)
1	Opening Loan	190.23	172.05	317.97	205.37
2	Additions during year	177.00	137.15	226.00	294.23
3	Repayment	49.26	103.83	60.24	132.81
4	<b>Closing Loan (1+2-3)</b>	<b>317.97</b>	<b>205.37</b>	<b>483.73</b>	<b>366.79</b>
5	<b>Average Loan (1+4)/2</b>	<b>254.10</b>	<b>188.71</b>	<b>400.85</b>	<b>286.08</b>
6	Rate of Interest	13%	13%	13%	13%
7	<b>Interest Charges</b>	<b>33.03</b>	<b>24.53</b>	<b>52.11</b>	<b>37.19</b>

4.10.4 The petitioner requests Hon'ble Commission to approve the Interest rate as well as Interest on loan amount for FY 2013-14 and FY 2014-15.

#### 4.11 Operation and Maintenance Expenses

##### 4.11.1 Inflation Indices

4.11.1.1 The petitioner would like to submit that it had projected O&M expenses in the MYT petition by applying inflation indices of 2-3 years. However the Hon'ble Commission has considered inflation of particular month i.e March 2012 which is not ideal representative index for providing inflation for next year. It is submitted that most of the SERCs have adopted a weighted average method of WPI: CPI in the ratio of 45:55 and considered last year average inflationary increases for approving O&M expenses.

4.11.1.2 The petitioner would like to propose following inflation index for Employee and A&G expenses for FY 2013-14 and FY 2014-15.

$$INDX_n = 0.55 * CPI_n + 0.45 * WPI_n$$

4.11.1.3 The petitioner would like to propose following inflation index for R&M Expenses for FY 2013-14 and FY 2014-15.

$$R\&M_n = K * GFA * (1 + WPI_n)$$

Where,

- 'K' is a constant (expressed in %) governing the relationship between R&M costs and Gross Fixed Assets (GFA) and will be calculated based on the % of R&M to GFA of the preceding year of the Base Year;
- 'GFA' is the opening value of the gross fixed asset of the nth year;
- WPI<sub>n</sub> is the WPI increase for immediate preceding year over previous year

4.11.2 The computation of Inflationary Indices for O&M expenses are as under:

**Table 30: Inflation Factor for WPI & CPI**

**WPI Inflation**

Month/Year	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Average
FY 2012-13	163.5	163.9	164.7	165.8	167.3	168.4	168.5	168.8	168.8	170.3	170.9	170.1	<b>167.58</b>
FY 2011-12	152.1	152.4	153.1	154.2	154.9	156.2	157.0	157.4	157.3	158.7	159.3	161.0	<b>156.13</b>

[http://www.eaindustry.nic.in/wpi\\_data\\_display/display\\_data.asp](http://www.eaindustry.nic.in/wpi_data_display/display_data.asp)

**CPI Inflation**

Month/Year	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Average
FY 2012-13	205.0	206.0	208.0	212.0	214.0	215.0	217.0	218.0	219.0	221.0	223.0	224.0	<b>215.17</b>
FY 2011-12	186.0	187.0	189.0	193.0	194.0	197.0	198.0	199.0	197.0	198.0	199.0	201.0	<b>194.83</b>

<http://labourbureau.nic.in/indtab.pdf>

Period	WPI	CPI	Total
Weightage	<b>0.45</b>	<b>0.55</b>	<b>1.00</b>
Indexation for FY12	156.13	194.83	
Indexation n-1 (Index * Wt)	70.26	107.16	177.42
Indexation for FY13	167.58	215.17	
Indexation n (Index * Wt)	75.41	118.34	193.75
<b>Combined Inflation (Indxn/Indxn-1)</b>	<b>9.21%</b>		

**4.11.3 Employee Expenses**

4.11.3.1 The employee expenses primarily include costs towards salaries, dearness allowances, bonus, staff welfare and medical benefits, leave travel and earned leave encashment, and the terminal benefits in the form of pension, gratuity etc.

4.11.3.2 The petitioner has considered Revised Estimates for FY 2013-14 and Budget Estimates of FY 2014-15 for the purpose of projecting revised employees expenses. Based on the above, the net employee costs for tariff determination are projected in the table below:

**Table 31: Details of Employee Expenses**

Sr.	Particulars	Rs.Crs			
		2013-14 (T.O.)	2013-14 (RE)	2014-15 (T.O.)	2014-15 (RE)
1	Employee Cost	162.25	129.87	176.25	145.49
2	Less: Terminal benefits pertaining to erstwhile BSEB	84.05	36.91	81.42	42.46
<b>5</b>	<b>Sub Total</b>	<b>78.20</b>	<b>92.96</b>	<b>94.83</b>	<b>103.03</b>
5	Less: Employee Cost Capitalised @1.8%	2.93	1.67	3.17	1.85
<b>6</b>	<b>Total Employee Cost</b>	<b>75.27</b>	<b>91.29</b>	<b>91.66</b>	<b>101.18</b>

4.11.4 The explanation to the above computation is as under:

a) The employee cost has been taken from Revised Estimates (RE) for FY 2013-14 and Budget Estimates (BE) for FY 2014-15. The details are provided in the table below:

- b) Further, after unbundling of erstwhile BSEB the State Government is expected to fund the terminal liabilities of Transco and hence the amount considered in RE & BE are deducted from gross employee cost;
- c) The provision to Master Trust for terminal benefits of employees to be made by the petitioner is taken as per actual provision in last 5-6 months of FY 2013-14. Similarly slight higher provision is made for FY 2014-15;
- d) The petitioner has not considered any addition to new manpower cost in RE & BE and hence the same is estimated herewith;
- e) While determining the employee cost, the petitioner has reduced the same by employee cost capitalised to arrive at the net employee cost for the year. For this purpose, the employee cost capitalised for the FY 2013-14 and FY 2014-15 has been considered @1.80% as approved by Hon'ble Commission in MYT order.

The details of RE & BE projections for gross employee expenditure is as under:

**Table 32: Budget Estimate for Employee Expenses**

Sl. No.	Particulars	Revised Estimates (2013-14)	Budget Estimates (2014-15)
		Rs.Lakhs	Rs.Lakhs
1	2	3	4
<b>(A)</b>	<b>SALARIES &amp; ALLOWANCE</b>		
1	Pay of Officers	1,115.81	1,138.16
2	Pay of Workmen	2,466.17	2,410.75
3	Dearness Allowances (Officers)	1,004.23	1,160.92
4	Dearness Allowances (Workmen)	2,219.55	2,458.97
5	Pay of Officers (Contract Basis)	40.70	41.24
6	Pay of Workmen (Contract Basis)	256.58	257.03
7	Compensatory Allowance	6.37	6.32
8	Special Pay	4.94	6.00
9	Medical Allowance	27.52	26.73
10	House Rent Allowance	236.55	242.56
<b>(B)</b>	<b>OTHER ALLOWANCES</b>		
1	Conveyance Allowance	6.20	8.75
2	City Transport Allowance	21.90	24.21
3	Emergency Allowance	6.11	6.39
4	Short Hand Allowance	-	-
5	Cash Handling Allowance	0.42	0.46
6	Others	9.95	11.15
7	Over Time	199.86	238.41
8	Medical Re-imburement	23.78	28.73
9	Medicine	5.00	10.00
10	Leave Travel Assistance	2.76	3.30
11	Earned Leave Encashment	474.60	511.37
12	Compensation Act. (Workmen & Outsider accidental case)	48.30	54.00





Sl. No.	Particulars	Revised Estimates (2013-14)	Budget Estimates (2014-15)
		Rs.Lakhs	Rs.Lakhs
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
13	Honorarium	2.36	2.70
14	Contribution to New Pension Scheme	87.69	108.18
15	Contribution to Master Trust	1308	1500
16	New Manpower Cost	150	500
17	Staff Welfare Expenses		
	(a) Uniform & Liveries	9.99	12.13
	(b) Social Welfare	2.65	2.90
	(c) Free Electricity	32.54	42.98
<b>(C)</b>	<b>TERMINAL BENEFITS</b>		
	(a) Pension	2,460.87	2,857.57
	(b) Gratuity	755.63	877.14
	(c) GPF	-	-
	<b>TOTAL :</b>	<b>12,987.03</b>	<b>14,549.05</b>

4.11.5 The Hon'ble Commission is requested to approve the revised projections of employee expenses for FY 2013-14 and FY 2014-15.

#### 4.11.6 Repairs and Maintenance Expenses

4.11.6.1 The petitioner would like to submit that post unbundling it has initiated major drive for maintenance and upkeep of its transmission assets. Further the petitioner is also undertaking huge capital expenditure schemes to the tune of Rs3500 Crores and hence Repairs and Maintenance expenses are bound to increase. The methodology adopted by Hon'ble Commission to approve expenses based on past trend and with inflation would deprive petitioner of its legitimate claim and would deprive licensee for the R&M expenses on the assets added during the year.

4.11.6.2 Hence the R&M expenses are provided as a % of Gross Fixed Assets as the licensee needs to eventually maintain assets and generally the inflation over previous year expenditure is insufficient as it ignores R&M cost towards additions of new assets.

4.11.6.3 The petitioner would like to provide precedence of some states where R&M expense is allowed as a % of Gross Fixed Assets.

**Table 33: R&M Expenses in Other States**

Particulars	R&M as a % of GFA
Punjab (PSTCL)	2.75%
Uttar Pradesh (UPPTCL)	2.50%
Delhi (DTL)	2.19%
Uttarakhand (PTCUL)	3.18%
<i>Source: Tariff Orders FY 2013-14</i>	

4.11.6.4 Hence considering the same, the petitioner has projected R&M expenses as 3.0% of opening GFA and further inflationary increases to take care of material and labour price increases. The R&M expenses are provided in the table below:

**Table 34: Details of R&M Expenses**

Sr.	Particulars	Rs.Crs			
		2013-14 (T.O.)	2013-14 (RE)	2014-15 (T.O.)	2014-15 (RE)
1	Opening GFA		3,513		3,833
2	R&M (% of GFA)		3.0%		3.0%
<b>3</b>	<b>R&amp;M Cost</b>	<b>9.31</b>	<b>105.39</b>	<b>10.03</b>	<b>114.99</b>
4	Inflationary Index		9.21%		9.21%
<b>5</b>	<b>R&amp;M Cost</b>	<b>9.31</b>	<b>115.10</b>	<b>10.03</b>	<b>125.58</b>

4.11.6.5 The petitioner in its RE & BE has also projected the R&M expenses around the same amount. The petitioner requests the Hon'ble Commission to approve the R&M expenses as projected in this petition for FY 2013-14 and FY 2014-15.

#### 4.11.7 Administration & General Expenses

4.11.7.1 Administration and General expenses mainly comprise costs towards rent charges, telephone and other communication expenses, professional charges, conveyance and travelling allowances and other debits.

4.11.7.2 The petitioner has considered Revised Estimates for FY 2013-14 and Budget Estimates of FY 2014-15 for the purpose of projecting revised A&G expenses. Based on the above, the net A&G expenses for tariff determination are projected in the table below:

**Table 35: Details of A&G Expenses**

Sr.	Particulars	Rs.Crs			
		2013-14 (T.O.)	2013-14 (RE)	2014-15 (T.O.)	2014-15 (RE)
1	A&G Expenses	5.18	11.19	5.58	14.59
2	Less: A&G Expns Capitalised	0.20	0.20	0.22	0.22
<b>3</b>	<b>Total A&amp;G Expenses</b>	<b>4.98</b>	<b>10.99</b>	<b>5.36</b>	<b>14.37</b>

4.11.8 The petitioner has considered A&G capitalisation amount same as approved by Hon'ble Commission in MYT order for the projection purpose and shall consider it on actual basis at the time of truing purpose.

4.11.9 The details of RE & BE projections for gross employee expenditure is as under:

**Table 36: Budget Estimate for A&G Expenses**

Sl. No.	Particulars	Revised Estimates (2013-14)	Budget Estimates (2014-15)
		Rs.Lakhs	Rs.Lakhs
1	2	3	4
1	Rent, Rates & Taxes	2.00	2.15
2	Insurance	140.00	150.00
3	Postage, Telegram & Telex Charge	2.63	3.47
4	Telephone & Trunk Call Charges	19.47	22.68
5	Legal Expenses	23.57	29.85
6	Audit Fees	10.00	15.00
7	Consultancy Charges & Tech. Fees	100.00	175.00
8	Conveyance Expenses	16.98	28.97
9	Travelling Allowance	54.60	68.73
10	Vehicle Expenses (Light)	101.20	127.45
11	Vehicle Expenses (Heavy)	7.70	9.75
12	License-Registration (Vehicle)	2.85	3.90
13	Books & Periodicals	2.34	2.95
14	Printing & Stationary	18.60	32.19
15	Advertisement	38.50	85.50
16	Fees & Subscriptions	90.65	95.70
17	Electric & Water Charges	164.30	242.50
18	Entertainment	4.73	7.67
19	Misc. Expenses	24.97	32.01
20	Security Guard	220.84	244.79
21	Freight & Other expenses	2.95	3.48
22	Training Cost	70.00	75.00
	<b>Total :</b>	<b>1,118.88</b>	<b>1,458.74</b>

4.11.9.1 The petitioner requests the Hon'ble Commission to approve the A&G expenses as projected in this petition for FY 2013-14 and FY 2014-15.

#### **4.12 Allocation of Holding Company Cost**

4.12.1 The SCHEDULE 'D' HOLDING UNDERTAKING, PART III of the Bihar State Electricity Reforms Transfer Scheme, 2012 defines the Functions and Duties of Bihar State Power (Holding) Company Limited.

4.12.2 As per Clause (i) of the above Schedule 'D', the Holding Company shall handle all issues relating to the subsidiary companies in respect of: -

- *Business of purchasing, importing, exporting and trading of power subject to the provisions of Electricity Act, 2003 and to supply electric power generated by other plants to transmission companies, distribution companies, trading companies, other generation companies and other Persons, and in this regard execute agreements with Central and State generating authorities, departments or companies, Independent Power Producers and other Persons.*

4.12.3 Further the expenses of BSPHCL for the period from November 2012 to March 2013 are also claimed to the extent of O&M expenses. BSPHCL provides common services to all the segregated entities. The Functions and Duties of Bihar State Power (Holding) Company Limited are provided in SCHEDULE 'D' HOLDING UNDERTAKING PART III of the Transfer Scheme 2012. The relevant portion of the Transfer Scheme 2012 is extracted for reference as under:

*(f) Operating expenses incurred by the Holding Company like administration & general expenses legal and consulting fees etc. would be shared by the Bihar State Power Generation Company Limited, Bihar State Power Transmission Company Limited, North Bihar Power Distribution Company Limited and South Bihar Power Distribution Company Limited, **in the ratio of their respective equity.***

***Emphasis added***

4.12.4 As per Schedule 'F', the Holding Company shall handle all issues relating to the subsidiary companies in respect of: -

SCHEDULE "F" REORGANISATION OF BSEB & TRANSFER OF PERSONNEL Part II  
COMMON SERVICES

*The Testing Divisions, Training Department at Head-Quarter and all the Departments at the Corporate Head Office like –*

- *General Administration*
- *Accounts and Finance*
- *IT*

- Stores & Purchase
- Transmission/Distribution/Generation
- Personnel
- Publicity
- Legal
- Vigilance and Security
- Commercial
- Planning
- Civil Engineering
- Transmission (O&M)
- Rural Electrification

shall constitute „Common Services“ which shall continue to provide services to all successor entities during the Interregnum period, until issue of further transfer notifications allocating the employees to respective companies.

4.12.5 Hence the operating expenses of the holding company have been considered accordingly in the respective petitions for FY 2013-14 and FY 2014-15.

**Table 37: Expenses of Holding Company for FY 2013-14**

Head	Rs. Lacs							
	Apr-13	May-13	Jun-13	Jul-13	Total of 4 months	Monthly Average	Projections for 8 months	Total of 12 months
Establishment	241.20	186.42	156.34	119.40	<b>703.36</b>	175.84	1,406.72	2,110.08
Administrative	158.65	123.00	17.93	27.27	<b>326.85</b>	81.71	653.70	980.55
O&M	15.71	0.36	2.02	0.58	<b>18.67</b>	4.67	37.34	56.01
<b>Total</b>	<b>415.56</b>	<b>309.78</b>	<b>176.29</b>	<b>147.25</b>	<b>1,048.88</b>	<b>262.22</b>	<b>2,097.76</b>	<b>3,146.64</b>

4.12.6 The allocation of the Holding company expenses for FY 2013-14 as per provisions of Transfer Scheme 2012 are tabulated below:

**Table 38: Allocation of Expenses of Holding Company for FY 2013-14**

Head	Rs. Crs				
	Total for FY13-14	BSPGCL	BSPTCL	NBPDCL	SBPDCL
<b>Establishment Expenses is Allocated on the basis of Employee Cost Ratio</b>					
Employee Cost for FY12-13	<b>203.26</b>	12.32	33.93	62.03	94.98
Employee Cost Ratio	<b>100.00%</b>	6.06%	16.69%	30.52%	46.73%
Allocation of Establishment Expenses - a	21.10	1.28	3.52	6.44	9.86
<b>Administrative and O&amp;M Expenses are Allocated on the basis of Equity Deployed Ratio</b>					
Opening Equity for FY 13-14	<b>1,974.88</b>	551.99	375.41	385.00	662.48
Equity Deployed Ratio	<b>100.00%</b>	27.95%	19.01%	19.49%	33.55%
Allocation of Administrative Expenses - b	<b>9.81</b>	2.74	1.86	1.91	3.29
Allocation of O&M Expns - c	<b>0.56</b>	0.16	0.11	0.11	0.19
<b>Total Allocation for FY 2013-14 (a+b+c)</b>	<b>31.47</b>	<b>4.18</b>	<b>5.49</b>	<b>8.46</b>	<b>13.34</b>

4.12.7 Similarly, the expenses for FY 2014-15 are escalated by WPI-CPI index of **9.21%** over FY 2013-14 figures of each company under each heads and are tabulated below:

**Table 39: Allocation of Expenses of Holding Company for FY 2014-15**

Head	Rs. Crs				
	BSPGCL	BSPTCL	NBPDCL	SBPDCL	Total for FY14-15
Establishment Expenses - a	1.40	3.85	7.03	10.77	<b>23.04</b>
Administrative Expenses - b	2.99	2.04	2.09	3.59	<b>10.71</b>
O&M Expns - c	0.17	0.12	0.12	0.21	<b>0.61</b>
<b>Total Expenses for FY 2014-15 (a+b+c)</b>	<b>4.56</b>	<b>6.00</b>	<b>9.24</b>	<b>14.56</b>	<b>34.36</b>

4.12.8 The Hon'ble Commission is requested to approve the same as part of overall O&M expenditure for FY 2013-14 and FY 2014-15.

#### 4.12.9 Summary of O&M Expenses

4.12.9.1 The summary of the O&M expenses is tabulated below for reference:

**Table 40: Summary of O&M Expenses**

Sr.	Particulars	Rs.Crs			
		2013-14 (T.O.)	2013-14 (RE)	2014-15 (T.O.)	2014-15 (RE)
1	Employee Expenses	75.27	91.29	91.66	101.18
2	R&M Expenses	9.31	115.10	10.03	125.58
3	A&G Expenses	4.98	10.99	5.36	14.37
4	Allocated O&M Expenses	-	5.49	-	6.00
<b>4</b>	<b>Total O&amp;M Expenses</b>	<b>89.56</b>	<b>222.86</b>	<b>107.05</b>	<b>247.12</b>

#### 4.13 Interest on Working Capital

4.13.1 The petitioner has arrived at the working capital requirement according to applicable norms for transmission function provided in the BERC (Terms and Conditions of Tariff) Regulations, 2007 which are reproduced in the following table for reference:

**Table 41: Norms for Working Capital Requirement**

Sr.	Particulars	Norm
1.	Operation & Maintenance Expns	One month
2.	Maintenance spares	@ 1% of the historical cost escalated at 6% per annum
3.	Receivables	Two months of transmission charges
4.	Rate of interest on working capital	Short –term Prime Lending Rate of State Bank of India on 1 <sup>st</sup> April of the year.

4.13.2 The rate of interest applied on the proposed working capital is as per the SBI PLR as on 1 April 2013, which is 14.45%.

4.13.3 The proposed interest on working capital for FY 2013-14 & FY 2014-15 computed based on the above norms are given in the following table.

**Table 42: Interest on Working Capital**

Sr.	Particulars	Rs.Crs			
		2013-14 (T.O.)	2013-14 (RE)	2014-15 (T.O.)	2014-15 (RE)
1	O&M Expenses - 1 month	7.46	18.57	8.92	20.59
2	Maintenance Spares - 1% of GFA	16.40	37.24	20.63	40.63
3	Receivables - 2 months	35.65	100.34	43.98	114.80
4	<b>Total Working Capital</b>	<b>59.51</b>	<b>156.15</b>	<b>73.53</b>	<b>176.03</b>
5	Interest Rate %	14.45%	14.45%	14.45%	14.45%
6	<b>Interest on Working Capital</b>	<b>8.60</b>	<b>22.56</b>	<b>10.63</b>	<b>25.44</b>

4.13.4 The petitioner requests Hon'ble Commission to approve the computation of Interest on Working capital and the interest charges thereon for FY 2013-14 and FY 2014-15.

#### 4.14 Return on Equity

4.14.1 The petitioner hereby submits the computation of equity is considering as per the closing equity balance in true-up petition of FY 2012-13. It is submitted that during the process of restructuring the equity component has got re-valued and the petitioner request Hon'ble Commission to consider the same figures for ARR purpose. The petitioner would like to submit that equity capital is excluding revaluation of reserves and subsidies and is claimed as per Regulation 72 (2) (c) of BERC Tariff Regulations 2007.

4.14.2 The petitioner would like to refer to PART XIII, REORGANISATION OF BOARD and Section 131 thereof from the Electricity Act 2003. The relevant section is extracted for reference purpose which provides that any transaction pursuant to transfer scheme shall be binding on all persons.

*131 (3) Notwithstanding anything contained in this section, where,-  
(b) a transaction of any description is effected in pursuance of a transfer scheme, it shall be binding on all persons including third parties and even if such persons or third parties have not consented to it.*

4.14.3 The computation of return on equity for FY 2013-14 & FY2014-15 is tabulated below:

**Table 43: Return on Equity**

Sr.	Particulars	Rs.Crs			
		2013-14 (T.O.)	2013-14 (RE)	2014-15 (T.O.)	2014-15 (RE)
1	Opening Equity	235.00	1,630.46	235.00	1,758.96
2	Add: Equity during year	-	128.50	-	544.24
3	Closing Equity	235.00	1,758.96	235.00	2,303.20
<b>4</b>	<b>Average Equity</b>	<b>235.00</b>	<b>1,694.71</b>	<b>235.00</b>	<b>2,031.08</b>
5	Rate of Return %	14.0%	14.0%	14.0%	14.0%
<b>6</b>	<b>Return on Equity</b>	<b>32.90</b>	<b>228.26</b>	<b>32.90</b>	<b>246.25</b>

4.14.4 The petitioner requests Hon'ble Commission to approve the computation of return on equity for FY 2013-14 and FY 2014-15.

#### 4.15 Non-Tariff Income

4.15.1 In absence of actual data for entire financial year, the petitioner proposes to consider the provisional figures of 5 months available from Nov 2012 to March 2013 for FY 2013-14 and FY 2014-15 i.e Rs. **1.02** Crs.

4.15.2 The petitioner requests Hon'ble Commission to approve the Non-Tariff Income for FY 2013-14 and FY 2014-15 as proposed in above table.

#### 4.16 Transmission ARR for FY 2013-14 and FY 2014-15

4.16.1 The Annual Fixed Charges or Transmission charges are arrived at by aggregating all the expenses detailed in pervious sections viz., Depreciation, Interest on Loan, Interest on Working Capital, O&M expenses and ROE. The total expenses less Non-Tariff Income are the net Annual Fixed Charges or Transmission charges.

4.16.2 Accordingly, following is the summary of revised projections and approval by Hon'ble Commission of Aggregate Revenue Requirement for Transmission Company for FY 2013-14 and FY 2014-15.



**Table 44: ARR for FY 2013-14 & FY 2014-15**

Sr.	Particulars	Rs.Crs			
		2013-14 (T.O.)	2013-14 (RE)	2014-15 (T.O.)	2014-15 (RE)
1	Depreciation	49.26	103.83	60.24	132.81
2	Interest & Finance Charges	33.03	24.53	52.11	37.19
3	Interest on Working Capital	8.60	22.56	10.63	25.44
4	O&M Expenses	89.56	222.86	107.05	247.12
a	Employee Expenses	75.27	91.29	91.66	101.18
b	R&M Expenses	9.31	115.10	10.03	125.58
c	A&G Expenses	4.98	10.99	5.36	14.37
d	Allocation of Holding Company Cost	-	5.49	-	6.00
5	Return on Equity	32.90	228.26	32.90	246.25
6	<b>Total Requirement</b>	<b>213.35</b>	<b>602.05</b>	<b>262.93</b>	<b>688.82</b>
7	Less: Non-Tariff Income	0.51	1.02	0.61	1.02
8	<b>Net Annual Revenue Reqt</b>	<b>212.84</b>	<b>601.03</b>	<b>262.32</b>	<b>687.79</b>

4.16.3 The petitioner would like to submit that the Transmission charges for the years under consideration are estimated based on the applicable rules and regulations and the methods adopted by Hon'ble Commission in its MYT order dated 15<sup>th</sup> March 2013. The various costs are estimated in accordance with the regulatory norms, assumptions and detailed justifications provided in this petition. In view of the submitted facts and explanations, the petitioner humbly prays Hon'ble Commission for approval of the revised ARR for FY 2013-14 and FY 2014-15 and resultant Transmission Charges to be recovered from the two distribution companies.

#### 4.17 Revenue Gap / (Surplus) for FY 2013-14 and FY 2014-15

4.17.1 The petitioner submits that it has been recovering transmission charges from the distribution licensees as per the charges approved by Hon'ble Commission in Table 7.40 of the MYT order. The transmission charges as per revised projections are depicted in the table below:

**Table 45: Transmission Charges for FY 2013-14 & FY 2014-15**

Sr.	Particulars	Rs.Crs			
		2013-14 (T.O.)	2013-14 (RE)	2014-15 (T.O.)	2014-15 (RE) *
1	Annual Transmission Charges (Rs.Crs)	212.84	601.03	262.32	687.79
2	Transmission Cost to be realised per month from Distribution Companies	17.74	50.09	21.86	57.32

\* without adjustments of past revenue gap

4.17.2 The revenue gap considering the transmission charges as per approved figures is as below:



**Table 46: Revenue Gap/ (Surplus) for FY 2013-14 & FY 2014-15**

Sr.	Particulars	Units	Units	Amount
1	Revised ARR for FY 2013-14	a	Rs.Crs/ p.a.	601.03
2	Less: Approved Annual Transmission charges for FY13-14	b	Rs.Crs/ p.a	212.84
3	Revenue Gap / (Surplus) for FY13-14	c=a-b	Rs.Crs	388.19
4	Add: Revised ARR for FY 2014-15	d	Rs.Crs	687.79
5	Annual Transmission charges to be recovered in FY 2014-15	e=c+d	Rs.Crs	1,075.99
6	<b>Revised Transmission Charges for FY 2014-15 to meet the full revenue gap/ (surplus)</b>	<b>f=e/12</b>	<b>Rs.Crs/ month</b>	<b>89.67</b>

4.17.3 The petitioner requests Hon'ble Commission to approve the transmission charges including revenue gap/ (surplus) of FY 2013-14.

## Chapter 5. Determination of Transmission and Open Access Charges

### 5.1 Transmission Charges to be recovered from Open Access Consumers

5.1.1 The petitioner submits that Hon'ble Commission in its previous MYT and other orders has determined the Transmission charges for Long Term and Short Term Open Access Consumers which was on lower side when compared to other states. The petitioner would like to provide herewith the brief comparison of transmission charges of few states for FY 2012-13 and FY 2013-14 which is approved by the respective State Regulatory Commissions.

**Table 47: Comparison of Transmission Charges of Other States**

Comparison of Transmission Charges for FY 12-13 & FY 13-14 (Rs/MW/Day)						
Sr. No.	Utility, State	FY 2012-13 (Rs/MW/Day)	Reference for FY12-13	FY 2013-14 (Rs/MW/Day)	Reference for FY13-14	Increase (%)
1	GETCO, Gujarat	2780	Pg 52 Order 12-13	2970	Pg 63 Order FY 13-14	6.8%
2	BSPTCL, Bihar	438	Pg 336 Order 12-13	533	Pg 346 MYT order	21.6%
2	MPPTCL, Madhya Pradesh	4100	Pg 46 Order 12-13	4273	Pg 69 Order FY 13-14	4.2%
3	MSETCL, Maharashtra	7113	Table, Pg 8 Order 12-13	8377	Table 7, Pg 9 Order 13-14	17.8%
3	MSETCL, Maharashtra ** (Rs.Crs/Yr)	3272	Table, Pg 10 Order 12-13	5583	Table, Pg 12 Order 13-14	70.6%
4	CSPTCL, Chattisgarh * (Rs.Crs/Yr)	592	Pg 188 Order 13-14 petition	802	Pg 188 Order 13-14 petition	35.5%
5	KPTCL, Karnataka	3741	Table 6-2 Order 12-13	3620	Table 6.2 Order FY 13-14	-3.2%
6	RVPN, Rajasthan	4909	Pg 104 Order 12-13	5368	Pg 2 Order FY 13-14	9.3%
7	Tantransco, Tamil Nadu	6843	Pg 36 Order 12-13	1973	Pg 92 Order FY 13-14	-71.2%
7	Tantransco, Tamil Nadu ** (Rs.Crs/Yr)	2847	Pg 177 Order 13-14	1533	Pg 268 Order 13-14	-46.2%

\* Charges claimed by CSPTCL in Petition in terms of Rs.Crs payable on an annual basis by Distribution Co.

\*\* Charges approved by Commission in terms of Rs.Crs payable on an annual basis by Distribution Co.

5.1.2 As can be seen from the above table, the charges of BSPTCL are the lowest and hence Hon'ble Commission needs to approve the transmission charges matching to its expenditure.

5.1.3 In line with the methodology adopted by the Hon'ble Commission, the petitioner has computed transmission tariff as provided in clause 75 of the BERC (Terms and conditions for determination of Tariff) Regulations, 2007. The sum of allocated capacity to all long term transmission customers of the state transmission system has been taken in consideration. The transmission capacity is around 2700 MW and hence capacity as considered earlier in MYT order i.e.2736 MW has been considered for the purpose of computation of transmission charges. Based on the transmission cost worked out earlier the approved transmission charge for open access consumers for the FY 2012-13 is given in table below:

**Table 48: Computation of Long Term and Short Term Transmission Charges**

Particulars	Units	FY 2014-15
Transmission ARR - Rs.Crs	a	1,075.99
Average Transmission Capacity(MW)- Allocated capacity to all long term Open Access Customers of State - MW	b	2,736
Transmission Charges for long term Open Access Customers (Rs./MW/Month)	$c=a/b/12$	327,725
Transmission Charges for long term Open Access Customers (Rs./MW/Day)	$d=a/b/365$	10,775
Transmission Charges for Short Term Open Access Customers (Rs/MW/Day)	$e=a*25\%/b/365$	2,694

5.1.4 The petitioner requests Hon'ble Commission to approve the proposed Long Term and Short Term Transmission Charges for FY 2014-15 to be recovered from Long Term and Short Term consumers.

## 5.2 Transmission Charges to be recovered from DISCOMs

5.2.1 In view of the ARR & revenue gap computed in the earlier chapter, the petitioner humbly prays Hon'ble Commission for approval of Transmission Charges to be recovered from the two distribution companies @ Rs. **89.67** Crs per month for FY 2014-15.

5.2.2 The Hon'ble Commission may also indicate the amount separately to be recovered from NBPDC and SBPDCL for FY 2014-15.

### Annexure 1: Details of Grid Sub-station

#### 220/132/33 kV Operational Grids:

Sr. No.	Operational Grid Sub-Station	Capacity at 220/ 132 kV level (MVA)	Capacity at 132/ 33 kV level (MVA)
1	Sipara	2X150	2X50
2	Khagaul	3X100	3X50
3	Fatuha	4X100	3X50
4	Gopalganj	2X100	2X20
5	Darbhangha	2X100	1X50+1X20
6	Madhepura	2X100	2X20
7	Dehri	3X100+1X50	2X50
8	Biharshariff	3X150	1X20
9	Bodhgaya	3X150	2X50
10	Begusarai	2X100	2X50
11	Hajipur	2X100	Nil
12	KBUNL*	3X100	Nil

*\* KBUNL Grid is associated with KBUNL Thermal Power Project.*

#### 132/33 kV Operational Grids:

Sr. No.	Operational Grid Sub-Station	Capacity 132/33 kV level (MVA)
1	Forbeshganj	2X20
2	Sonenagar	1X50+1X10+1X20
3	Rafiganj	2X20
4	Aurangabad	2X20
5	Goh	2X20
6	Buxar	2X20
7	Dumraon	2X20
8	Sabour	2X50
9	Sultanganj	3X20
10	Kahalgaon	2X20
11	Naugachia	2X20
12	Ara	2X20
13	Banka	2X20
14	Motihari	2X20
15	Dhaka	2X10
16	Raxaul	2X20
17	Chandauti	2X50
18	Belaganj	1X10+1x20
19	Tekari	2X20



Sr. No.	Operational Grid Sub-Station	Capacity 132/33 kV level (MVA)
20	Wazirganj	2X20
21	Jamui	2X20
22	Jehanabad	2X20
23	Hulasganj	2X20
24	Katihar	3X20
25	Khagaria	2X20
26	Kishanganj	2X20
27	Mohania	2X20
28	Karmnasa	1X50+1X20
29	Lakhisarai	3X20
30	Udakishanganj	2X20
31	Muzaffarpur	2X50
32	Jamalpur	1X50+1X20
33	Madhubani	2X20
34	Pandaul	2X20
35	Jainagar	2X10
36	Phulparas	1X10+1X20
37	Nawadah	2X20
38	Baripahari	2X50
39	Rajgir	2X20
40	Ekargarsarai	2X20
41	Jakkanpur	3X50+1X20
42	Masaurhi	2X20
43	Bihta	2X50
44	Gaighat	2X50
45	Mithapur	2X50
46	Katra	2X50
47	Hathidah	3X20
48	Barh	2X20
49	Purnea	2X50+1X20
50	Sasaram	2X20
51	Bikramganj	2X20
52	Banjari	2X20
53	Sitamarhi	1X20+1X50
54	Chapra	1X20+1X12.5+1X50
55	Sheetalpur	1X20+1X10
56	Siwan	2X20
57	Samastipur	1x50+2X20
58	Dalsinghsarai	2X20
59	Supaul	2X10



Sr. No.	Operational Grid Sub-Station	Capacity 132/33 kV level (MVA)
60	Kataiya	3X20
61	Saharsa	2X20
62	Sheikhpura	2X20
63	Hajipur	1x50+2X20
64	Vaishali	2X20
65	Bettiah	2X20
66	Ramnagar	2X20
67	Karpi(Ataula)	2X20
68	Musrakh	2X20
69	Harnaut	2X20
70	Digha	2X50
71	Sherghati	2X20
72	SKMCH	2X50
73	Jagdishpur	2X20
74	Runnisaidpur	2X20
75	Nalanda	2X20



**Annexure 2: CEA Letter dated 15.11.2012**





भारत सरकार  
Government of India  
विद्युत मंत्रालय  
Ministry of Power  
केन्द्रीय विद्युत प्राधिकरण



Central Electricity Authority

प्रणाली योजना एवं परियोजना मूल्यांकन प्रभाग

System Planning & Project Appraisal Division [ISO: 9001:2008]

सेवा भवन ए आर ए केण पुरम ए नई दिल्ली-110066

Sewa Bhawan, R. K. Puram, New Delhi-110066

No. 69/1/2012-SP&PA/1203-05

Dated: 15/11/2012

**Shri Y.K. Thakur**  
**Chief Engineer (transmission)**  
**Bihar State Power Transmission Company Limited (BSPTCL)**  
**Bailey Road, Patna.**  
Tel No: 0612-2504984

Sub: Report on Evolution of Transmission System for Bihar.

Ref.: (i) BSEB Ir. No. 29/P&D/4077/07/2122 dated 06-11-12  
(ii) POWERGRID Ir. No. C/ENG/E/00/SEF/PLG dated 02-11-12

Sir,

BSEB vide letter dated 6-11-12 has referred to the final Study Report prepared and forwarded by POWERGRID on 2-11-12 to CEA on the subject identifying 12<sup>th</sup> Plan transmission strengthening requirements and evacuation systems associated with Case-II thermal projects namely Lakhisarai-2x660MW, Pirpainti-2x660MW & Buxar-2x660MW in Bihar, and sought the concurrence of CEA on the proposed 12<sup>th</sup> Plan works.

In this regard, it is to mention that earlier, a study report (pre-revised) on the same subject was prepared by POWERGRID in co-ordination with BSEB and it was discussed in CEA on 18/9/12. Based on the observations as emerged and suggested by CEA with regard to 12<sup>th</sup> Plan load generation scenario, non-materialization of Case-II projects by 2016-17, system strengthening requirements, etc., POWERGRID in consultation with BSEB has subsequently carried out the revised planning exercise to review the 12<sup>th</sup> Plan system requirements of BSEB. Accordingly, transmission system requirements of BSEB for the 12<sup>th</sup> Plan have been proposed in three parts i.e. Part-I, Part-II and Part-III as given below for implementation in phased manner.

- 1) Part-1: **Bihar Sub-transmission Phase-2 Extension Scheme.**
- 2) Part-2: **Transmission System Strengthening Scheme-Phase-1 & Phase-2**
- 3) Part-3: **ATS for the Case-II projects i.e. Lakhisarai (2x660MW), Pirpainti (2x660MW) & Buxar (2x660MW) and system strengthening for the other Projects viz. BTPS Extn. (2x250 +150 MW), MTPS Extn. ( 2x195 MW),etc.**

The results of the above studies are examined and our views are given below:

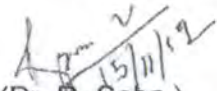
- (i) Two load-generation scenarios for the 12<sup>th</sup> Plan are considered. In one scenario the Case-II projects viz. Lakhisarai-2x660MW, Pirpainti-2x660MW & Buxar-2x660MW are excluded from the 12<sup>th</sup> Plan of Bihar due to uncertainty, as FSA and other tie-ups are yet to take place. With the ground realities, it is felt that these projects could not be materialized in the 12<sup>th</sup> plan. In the other case, Case-II projects are considered in 12<sup>th</sup> Plan in which 2000 MW export is envisaged. As regards load projection, load demand in Bihar by the end of 12<sup>th</sup> Plan has been considered 10% higher compared to the 18<sup>th</sup> EPS load forecast, presuming that the actual load growth will exceed the estimated projection.

श्री य.के. थाकुर  
मुख्य अभियंता  
22-11-12

→ श्री य.के. थाकुर  
मुख्य अभियंता  
21/11/2012

- (ii) **The Part-I proposal** is relating to immediate implementation of additional intra-state transmission & sub-transmission works of BSEB, for which BSEB has intended to execute the works **as an extension to the on going Phase-II scheme**, utilizing the unspent amount of Rs. 228.28 crores out of Rs. 1240.86 cr sanctioned cost for the on going Phase-II Scheme being completed shortly. Of late, the proposal of BSEB for the additional works was recommended by CEA. As per the present studies, POWERGRID in consultation with BSEB has suggested some modifications to the above works to cater to the system requirements. The list of the revised requirements of the additional works vis-à-vis earlier recommended works is given in **Annexure-I**. The modification proposals are found to be technically in order.
- (iii) **The Part-II proposal** is divided into two phases i.e. Phase-1 & Phase-2, which include strengthening of intra-state transmission & sub-transmission systems to cater to the projected load demand of the State corresponding to 12<sup>th</sup> Plan. Strengthening in Phase-1 is primarily for removal of system constraints in near future, and Phase-2 works is to cater to the future demand growth in Bihar. The system strengthening includes strengthening of the State grid from upcoming 400kV sub-stations at Darbhanga (PG) and Motihari(PG). Two new 400kV intra-state sub-stations at Fatuha and Bihta and associated 400 kV D/C interconnection with 400 kV Patna (PG) have been considered to cater to about 1500 MW estimated load growth in the area. A ring around Patna with a combination of 400kV and 220 kV transmission lines connecting Patna (PG), Fatuha, Gaighat, Jakkan, Khagaul and Bihta, is contemplated and it would enable to provide reliable power supply to the load centers in the city area. The list of the detail strengthening works under Phase-1 & Phase-2 is given at **Annexure-II (a) & Annexure-II (b)** respectively. It is also observed from the two set of studies, with and without Case-II projects in the 12<sup>th</sup> Plan, the intra-state system strengthening formulated under the Part-1 & Part-2 are independent of the system requirements associated with the Case-II Projects. These works are found to be technically in order.
- (iv) **The Part-III proposal** is primarily associated with power evacuation for generation linked scheme including Case-II Projects corresponding to the 12<sup>th</sup> Plan time frame. The evacuation system for each of the Case-II projects is contemplated at 400 kV level and the proposed system(s) are given at **Annexure-III (a)**. The combined ATS evolved for Lakhisarai-2x660MW and Pirpainti-2x660MW involves setting up of 400kV common Pooling point at Kajra (south Bihar) which is proposed to be strongly connected to Fatuha at around Patna and Darbhanga(PG) in North Bihar. For Banka TPS, power is injected to Bihta (around Patna), Mohania and Dumrao sub-stations of BSEB in south Bihar through a combination of 400 kV and 220 kV transmission lines to enable to meet the load growth in south Bihar. It is observed that even if Case-II projects be delayed and scheduled beyond the 12<sup>th</sup> Plan, the evacuation system could be taken-up matching with the commissioning of the respective generation project. The proposed evacuation arrangements for Case-II Projects are found to be technically in order. Further, system strengthening as proposed by BSEB for BTPS Extension (2x250 +150 MW), MTPS Extension (2x195 MW) and other projects are given at **Annexure-III (b)** and it is generally in order.

Encl: As above.

  
(Dr. R. Saha)  
Director (SP&PA)

Copy to: (i) Shri Pankaj Kumar, Executive Director, SEF, Power Grid Corporation of India Ltd., "Saudamini", Plot No. 2, Sector-29, Gurgaon-122 001.

(ii) Shri H.L. Tayal, Head (BD), IL&FS Energy Development Company Ltd., 1<sup>st</sup> Floor, Ambience Corporate Tower, NH-8, Gurgaon-122 001

## Annexure-1

**Strengthening of Sub-Transmission System in Bihar – Extension Scheme of Phase-2 Works  
(Revised)**

A.	Revised scope of Transmission Lines	Remarks
1.0	132kV D/c Banka(PG) – Sultanganj line	New requirement
2.0	132kV D/c Lakhisarai(PG) – Lakhisarai line #	
3.0	132kV D/c Lakhisarai(PG) – Jamui line #	
4.0	<b>Reconductoring of 132kV Transmission Lines</b> (i) Baripahari - Fatuha – Gaighat – Mithapur -Jakkanpur S/c line – 70 km (ii) BTPS – Naugachia & Purnea – Khagaria S/c line – 280 km (iii) Darbhanga – Pandaul S/c – 20km (iv) Chapra – Siwan S/c – 70km (v) Biharsharif – Hathidah D/c and Hathidah – Lakhisarai S/c – 60.5km (vi) Samastipur – Darbhanga S/c (vii) MTPS – Muzaffarpur D/c (viii) Lalmatia – Sabour S/c (ix) MTPS – Motihari S/c (x) Purnea – Dalkhola S/c (xi) Bettia – Ramnagar S/c 317.5km	Earlier recommendation was Baripahari - Fatuha -Jakkanpur S/c line – 65 km  As recommended earlier  Earlier re-conductoring of one circuit of Biharsharif-Hathidah line was recommended. Now, for both circuits re-conductoring is proposed.
5.0	<b>Reconductoring of 220kV transmission lines</b> (i) Bodhgaya – Biharsharif 220kV D/c - 80km (ii) Biharsharif-Fatuha 220kV D/c - 40km	As recommended earlier, length revised to 80km As recommended earlier  Length of Bodhgaya-Biharsharif 220 KV line to be taken as 80 kms., in place of 40 kms considered earlier
6.0	Patna(PG) – Sipara(BSEB) 220kV S/c line (line length is negligible as both the substations are adjacent)	As recommended earlier
7.0	220 kV D/c Hazipur - Fatuha Transmission Line (Restoration of the line)	As recommended earlier
<b>B.</b>	<b><u>Substation works</u></b>	<b>Scope of Work</b>
1.0	Augmentation of 220/132kV Fatuah substation (extension) by addition of 4 <sup>th</sup> no. 150MVA, 220/132 kV Transformer along with associated bays	As recommended earlier
2.0	Augmentation of 220/132kV Biharsharif substation (extension) by addition of 4 <sup>th</sup> no. 150MVA, 220/132 kV Transformer along with associated bays	
3.0	Augmentation of 220/132kV Begusarai substation (extension) by addition of one no. 150MVA, 220/132 kV Transformer along with associated bays	

**Strengthening of Sub-Transmission System in Bihar – Extension Scheme of Phase-2 Works  
(Revised)**

	Revised scope of Transmission Lines	Remarks
4.0	Augmentation of 220/132kV Bodhgaya substation (extension) by addition of 4 <sup>th</sup> 150MVA, 220/132 kV Transformer along with associated bays	As recommended earlier
5.0	Augmentation of 220/132kV Gopalganj substation (extension) by addition of 3 <sup>rd</sup> 150MVA, 220/132 kV Transformer along with associated bays	
6.0	Augmentation of 220/132kV Darbhanga substation (extension) by addition of 3 <sup>rd</sup> 150MVA, 220/132 kV Transformer along with associated bays	
7.0	Augmentation of 132/33kV Khagaul substation (extension) by addition of 4 <sup>th</sup> 50MVA, 132/33 kV Transformer along with associated bays	
8.0	Augmentation of 132/33kV Bihta substation (extension) by addition of 3 <sup>rd</sup> 50MVA, 132/33 kV Transformer along with associated bays	
9.0	Augmentation of 132/33kV Sitamarhi substation (extension) by Addition of one no. 50MVA, 132/33 kV Transformer along with associated bays at each substation	Earlier, 2x20MVA, 132/33kV transformer was recommended by replacing 1x50 MVA transformers capacity
10.0	Augmentation of 132/33kV Ara substation (extension) by Addition of one no. 50MVA, 132/33 kV Transformer along with associated bays at each substation	
11.0	Augmentation of 132/33kV Nawada substation (extension) by Addition of one no. 50MVA, 132/33 kV Transformer along with associated bays at each substation	
12.0	Augmentation of 132/33kV Sabaur substation (extension) by Addition of one no. 50MVA, 132/33 kV Transformer along with associated bays at each substation	
13.0	Augmentation of 132/33kV Naugachia substation (extension) by addition of 3 <sup>rd</sup> 20MVA, 132/33 kV transformer along with associated bays at each substation	Earlier 2x10 MVA, 132/33 kV transformer was recommended
14.0	Augmentation of 132/33kV Jainagar substation (extension) by addition of one no. 20MVA, 132/33 kV transformer along with associated bays at each substation	
15.0	Augmentation of 132/33kV Phulparas substation (extension) by Addition of one no. 20MVA, 132/33 kV transformer along with associated bays at each substation	
16.0	Augmentation of 132/33kV Supaul substation (extension) by Addition of one no. 20MVA, 132/33 kV transformer along with associated bays at each substation	
17.0	Augmentation of 132/33kV Dhaka substation (extension) by Addition of one no. 20MVA, 132/33 kV transformer along with associated bays at each substation	
18.0	Augmentation of 132/33kV Belaganj substation (extension) by Addition of one no. 20MVA, 132/33 kV transformer along with associated bays at each substation	
19.0	Augmentation of 220/132kV Sipara substation (extension) by addition of 3 <sup>rd</sup> 150MVA, 220/132 kV Transformer along with associated bays and 1 No. 220kV Line Bay	
20.0	400/220kV Patna substation (extension), 1 No. 220kV Line Bay	

**Strengthening of Sub-Transmission System in Bihar – Extension Scheme of Phase-2 Works  
(Revised)**

	Revised scope of Transmission Lines	Remarks
21.0	400/132 kV Banka substation (POWERGRID - extension) , 2 No. 132kV Line Bays (for Sultanganj line)	New requirement
22.0	132/33kV Lakhisarai substation (BSEB - extension) , 2 No. 132kV Line Bays	
23.0	132/33kV Jamui substation (BSEB - extension), 2 No. 132kV Line Bays	
24.0	132/33kV Sultanganj substation (BSEB - extension) , 2 No. 132kV Line Bays	
25.0	Provision for procurement of critical equipment viz the breaker, CT's and other critical items etc. is to be made for meeting the requirement on medium term basis. <ul style="list-style-type: none"> <li>• 220 KV breaker : 10 sets.</li> <li>• 132 KV breaker : 25 sets.</li> <li>• 33 KV breaker : 30 sets.</li> <li>• 220 KV CT : 30 Nos.</li> <li>• 132 KV CT : 75 Nos.</li> <li>• 33 KV CT : 90 Nos.</li> <li>• Lightning Arrestor 220 KV : 05 Nos.</li> <li>• Lightning Arrestor 132 KV : 10 Nos.</li> <li>• Lightning Arrestor 33 KV : 20 Nos.</li> <li>1000 GPH oil filtration machine : 01 No.</li> </ul>	New requirement
26.0	Procurement of two sets of emergency restoration system upto 220 KV level.	Earlier one set was recommended

*# Note : 4 nos. 132 kV line bays required at Lakhisarai (POWERGRID) for termination of lines from Lakhisarai(BSEB) and Jamui are already under construction as part of 2x200 MVA, 400/132 kV Lakhisarai (POWERGRID) sub-station.*

**B. The following works excluded from the earlier recommendation for the PHASE-II extension scheme but presently considered under MTPS Extn. (2X195MW) and for power evacuation from Banka & Lakhisarai (also shown in Annexure-III (b))**

**X Under MTPS Extension scheme (2X195MW)**

- (i) Stringing of 2nd circuit of MTPS-Gopalgunj 220 KV transmission line. This line is presently single circuit strung
- (ii) Stringing of 2nd circuit of MTPS-Darbhanga 220 KV transmission line. This line is presently single circuit strung
- (iii) Stringing of 2nd circuit of MTPS – SKMCH (Muzaffarpur) 132 kV D/c line

**Under Power evacuation from Banka & Lakhisarai scheme**

- X (i) LILO of both circuits of 132 KV D/C Kahalgaon – Sultanganj D/c line at Banka 400/132 kV sub-station of POWERGRID\*
- (ii) 132kV D/c line from Banka 400/132 kV sub-station of POWERGRID to 132/33 kV Banka sub-station of BSEB
- (iii) LILO of both circuits of 132 KV D/C Sultanganj – Lakhisarai 400kV D/c line at Lakhisarai sub-station of POWERGRID\*
- (iv) Stringing of 2<sup>nd</sup> ckt. Of 132kV D/C Banka-Sabour line.

**[\*Note: (i) & (iii) have been considered in place of LILO of 132kV D/C Kahalgaon-Lakhisarai D/C at 400/132kV GSS at Lakhisarai and Banka recommended earlier]**

**12<sup>th</sup> Plan Transmission & Sub-Transmission System Strengthening in Bihar - PHASE-1****A. Transmission system for evacuation of power from Darbhanga & Motihari 400 kV sub-stations****From Darbhanga**

1	Darbhanga 400/220 kV - Darbhanga (BSEB) 220kV D/c line
2	2X160MVA + 3x50 MVA, 220/132/33 kV new sub-station at Bhikhanpura
3	LILO of Darbhanga(BSEB) - Kanti 220 kV D/c line at Bhikhanpura new
4	LILO of Kanti - Bhikhanpura 132 kV D/c at Bhikhanpura new 220/132/33 kV sub-station
5	Darbhanga 400/220 kV - Bhikhanpura new 220kV D/c line
6	2x160 MVA + 2x50 MVA, 220/132/33kV new sub-station at Samastipur-new
7	LILO of Begusarai(BSEB) - Kanti TPS 220 kV D/c at Samastipur-new sub-station
8	Darbhanga 400/220 kV - Samastipur new 220kV D/c line (S/c strung)
9	Samastipur 220/132/33 kV new S/s - Samastipur 132/33 kV S/s 132 kV D/c (Zebra Conductor)
10	2x160 MVA + 2x50 MVA, 220/132/33 kV new sub-station at Supaul-new
11	Darbhanga 400/220 kV - Supaul new 220kV D/c line
12	Supaul 220/132/33 kV new S/s - Supaul 132/33 kV S/s 132 kV D/c (Zebra Conductor)

**From Motihari**

1	Motihari 400/132 kV - Motihari (BSEB) 132 kV D/C line
2	Motihari 400/132 kV - Betiah 132kV D/C line
3	Motihari 400/132 kV - Raxaul 132kV D/C line
4	Addition of 2x50 MVA, 132/33 kV transformer at Motihari 132/33 kV sub-station
5	Addition of 1x50 MVA, 132/33 kV transformer at Raxaul 132/33 kV sub-station

**B. Transmission system for evacuation of power from BTPS Extension (2x250 + 1x150 MW)**

1	LILO of both circuit of 220 KV D/C Biharshariff-Begusarai line at BTPS Extn.
2	LILO of both circuit of 220 KV D/C Begusarai - Purnea lines at BTPS Extn.
3	BTPS Extn. - Hazipur 220/132kV S/s 220 KV D/C line
4	Provision of 220/132 KV, 2X150 MVA ICT at BTPS Extn. for interconnection of both projects (under the scope of Generation Project)

## C. Strengthening in Intra-State Transmission System

1	Re-conductoring of Purnea (PG) - Purnea (BSEB) 132 kV line (3 ckts.) by high capacity conductor
2	Replacement of 1x20 MVA, 132/33 kV transformer by 1x50 MVA, 132/33 kV transformer at Purnea 132/33 kV sub-station
3	LILO of Baripahari - Nalanda 132 kV S/c at Biharsharif
4	Addition of 1x50 MVA, 132/33 kV transformer at Baripahari 132/33 kV sub-station
5	Replacement of 1x20 MVA, 132/33 kV transformer by 1x50 MVA, 132/33 kV transformer at Sitamarhi 132/33 kV sub-station (another 50 MVA transformer already proposed under extension of Bihar ST Phase-II Scheme)
6	2 <sup>nd</sup> circuit stringing of Kishanganj - Forbesganj 132 kV D/c line
7	2 <sup>nd</sup> circuit stringing of Forbesganj - Kataiya 132 kV D/c line
8	LILO of Madhepura(Saharsa-New) - Sonbarsha 132 kV S/c (on D/c Tower) at Saharsa (existing)
9	2nd circuit Stringing of Madhepura(Saharsa-New) - Saharsa 132kV line
10	2 <sup>nd</sup> circuit stringing of Muzaffarpur (Bhikhanpura) - Vaishali 132 kV D/c line
11	Addition of 1x50 MVA, 132/33 kV transformer at Forbesganj 132/33 kV sub-station
12	Addition of 1x50 MVA, 132/33 kV transformer at Sonenagar 132/33 kV sub-station
13	Addition of 1x50 MVA, 132/33 kV transformer at Rafiganj 132/33 kV sub-station
14	Replacement of 1x20 MVA, 132/33 kV transformer by 1x50 MVA, 132/33 kV transformer at Dumraon 132/33 kV sub-station
15	Addition of 2x50 MVA, 132/33 kV transformer at Sultanganj 132/33 kV sub-station
16	Addition of 1x50 MVA, 132/33 kV transformer at Kahalgaon 132/33 kV sub-station
17	Addition of 1x50 MVA, 132/33 kV transformer at Banka 132/33 kV sub-station
18	Addition of 1x50 MVA, 132/33 kV transformer at Bodhgaya 132/33 kV sub-station
19	Addition of 1x50 MVA, 132/33 kV transformer at Chandauti (Gaya) 132/33 kV sub-station
20	Addition of 1x50 MVA, 132/33 kV transformer at Jehanabad 132/33 kV sub-station
21	Addition of 1x50 MVA, 132/33 kV transformer at Karamnasa 132/33 kV sub-station
22	Addition of 1x50 MVA, 132/33 kV transformer at Pandaul 132/33 kV sub-station
23	Replacement of 1x20 MVA, 132/33 kV transformer by 1x50 MVA, 132/33 kV transformer at Jakkanpur 132/33 kV sub-station
24	Addition of 1x50 MVA, 132/33 kV transformer at Dehri 220/132/33 kV sub-station
25	Replacement of 2x20 MVA, 132/33 kV transformer by 2x50 MVA, 132/33 kV transformer at Hazipur 132/33 kV sub-station
26	Addition of 3x50 MVA, 132/33 kV transformer at Pusauli(Mohania) 220/132 kV sub-station being established by BSEB**  ** Note : 2X160MVA, 220/132 kV sub-station at Pusauli(Mohania) with LILO of Ara - Pusauli 220 kV D/c line is already being taken up by BSEB under ADB scheme with 132 kV lines to Sasaram, Mohania (Bhabhua) & Dinara, 132/33 kV S/s. Addition of 3x50 MVA, 132/33 kV transformers are to be included in the present scheme

## Annexure-II (a) (Contd.)

27	Stringing 2 <sup>nd</sup> circuit of Darbhanga-Phulparas 132 kV
28	LILO of one circuit of Darbhanga-Phulparas 132 kV D/c line at Pandaul
29	LILO of other circuit of Darbhanga-Phulparas 132 kV D/c line at Madhubani
30	2X160MVA + 3x50 MVA, 220/132/33 kV new sub-station at SKMCH-New
31	LILO of Darbhanga (BSEB) - Kanti 220 kV D/c line at SKMCH new sub-station
32	SKMCH 220/132/33 kV new S/s - Sitamarhi 132 kV D/c line
33	SKMCH 220/132/33 kV new S/s - SKMCH 132/33 kV S/s 132 kV D/c (Zebra Conductor)
34	2 <sup>nd</sup> circuit stringing of Motihari - Daka - Sitamarhi 132 kV D/c line
35	2 <sup>nd</sup> circuit stringing of Betiah - Raxaul 132 kV D/c line
36	Darbhanga 220/132 kV (BSEB) - Gangwar 132 kV D/c § § Note : In case of space constraints at Darbhanga / Gangwar, LILO of 132 kV D/c Darbhanga 220/132 kV - Darbhanga 132/33 kV line may be done at Gangwar
37	New 2x50 MVA, 132/33 kV sub-station at Shivhar
38	LILO of one circuit of Daka - Sitamarhi 132kV D/c line at Shivhar
39	Addition of 1x50 MVA, 132/33 kV transformer at Aurangabad 132/33 kV sub-station
40	Addition of 1x50 MVA, 132/33 kV transformer at Begusarai 220/132/33 kV sub-station
41	Addition of 1x50 MVA, 132/33 kV transformer at Buxar 132/33 kV sub-station
42	Addition of 2x50 MVA, 220/132/33 kV transformer at Gopalganj 220/132/33 kV sub-station
43	Addition of 1x50 MVA, 132/33 kV transformer at Katihar 132/33 kV sub-station
44	Addition of 1x50 MVA, 132/33 kV transformer at Khagaria 132/33 kV sub-station
45	Addition of 1x50 MVA, 132/33 kV transformer at Kishanganj 132/33 kV sub-station
46	Addition of 1x50 MVA, 132/33 kV transformer at Siwan 220/132/33 kV sub-station
47	Addition of 1x50 MVA, 132/33 kV transformer at Saharsa 220/132/33 kV sub-station
48	Addition of 1x50 MVA, 132/33 kV transformer at Gaightat 132/33 kV sub-station



12<sup>th</sup> Plan Transmission & Sub-Transmission System Strengthening in Bihar - PHASE-2

1	LILO of Purnea-Naugachia/Khagaria 132 kV D/c at Katihar
2	LILO of Purnea-Khagaria 132 kV circuit at Naugachia
3	LILO of Barauni-Naugachia 132 kV circuit at Khagaria
4	2X160MVA, 220/132 kV new sub-station at Chhapra
5	Chhapra 220/132 kV S/s - Siwan 132 kV D/c line
6	Chhapra 220/132 kV new S/s - Chhapra 132/33 kV S/s 132 kV D/c (Zebra Conductor)
7	Hazipur - Chhapra 220 kV D/c
8	2X160MVA, 220/132 kV new sub-station at Sonenagar
9	Sonenagar 220/132 kV new S/s - Sonenagar 132/33 kV S/s 132 kV D/c (Zebra Conductor)
10	Gaya (POWERGRID) - Sonenagar new 220 kV D/c line
11	Charging of Dehri - Sonenagar 220 kV D/c at rated voltage (220 kV)
12	2X160MVA + 3x50 MVA, 220/132/33 kV new sub-station at Gaya (Manpur)
13	LILO of Biharsharif-Bodhgaya 220 kV D/c at Gaya new (Manpur)
14	Gaya (POWERGRID) - Gaya new (Manpur) 220/132/33 kV S/s 220 kV D/c line
15	LILO of Bodhgaya - Chandauti (Gaya) 132 kV D/c (circuit 3 & 4) at Gaya new (Manpur) 220/132/33 kV S/s
16	LILO of Bodhgaya - Wajirganj 132 kV S/c at Gaya new (Manpur) 220/132/33 kV S/s
17	Gaya new (Manpur) - Hulanjanj 132 kV S/c on D/c tower
18	2x500 MVA, 400/220 KV Sub-Station (to be constructed in the premises of Bihta 220/132/33 kV S/s being established by BSEB.) and addition of 2x50 MVA, 132/33 kV transformer at Bihta.#  # Note : Bihta 400/220 kV new S/s to be constructed in the premises of Bihta 220/132/33 kV S/s proposed to be established by BSEB. The 2x50 MVA, 132/33 kV transformer would be added at Bihta 220/132/33 kV S/s.
19	2X500MVA, 400/220 kV and 2x160 MVA, 220/132 kV ICT at 400/220/132 kV New GIS Sub-station near Gaighat
20	Gaighat 400/22/132 kV new S/s - Gaighat 132 kV S/s 132 kV D/c (Zebra Conductor)
21	2X500MVA, 400/220 kV New Sub-station at Fatuha
22	Fatuha 400/220 kV new S/s - Fatuha 220/132 kV S/s 220 kV D/c
23	Fatuha new - Gaighat new 400 kV D/c line
24	Bihta 400/220 kV - Patna (POWERGRID) 400 kV D/c line
25	Patna (POWERGRID) - Fatuha new 400 kV D/c line
26	LILO of Biharsharif - Muzaffarpur 400 kV D/c line at Gaighat 400/220/132 kV sub-station
27	Bihta-Digha 132 kV D/c line
28	Bihta-Khagaul 220 kV D/c line
29	Bihta - Sipara 220 kV D/c line

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30	Patna(PG) - Khagaul 220 kV D/c line
31	LILO of Ara – Khagaul 220 kV D/c line at Bihta
32	3X160MVA + 4x50 MVA, 220/132/33 kV new GIS Substation at Jakkanpur / BSEB Colony
33	3X160MVA, 220/132 kV GIS Substation at Mithapur existing site / Karbigahiya (4x50 MVA, 132/33 kV sub-station already under constuction at Karbigahiya by BSEB)
34	Jakkanpur / BSEB Colony 220/132/33 kV new S/s - Khagaul 220 kV D/c line
35	Gaighat 400/220/132 kV new sub-station – Mithapur / Karbigahiya 220/132 kV new S/s 220 kV D/c line
36	Gaighat 400/220/132 kV new sub-station – Jakkanpur / BSEB Colony 220/132/33 kV new S/s 220 kV D/c line
37	Patna (POWERGRID) – Mithapur / Karbigahiya 220/132 kV new S/s 220 kV D/c line
38	Fatuha 400/220 kV new S/s - Gaighat 400/220/132 kV new S/s 220 kV D/c line
39	Addition of 1x50 MVA, 132/33 kV transformer at Ara 132/33 kV sub-station (another 50 MVA transformer already proposed under extension of Bihar ST Phase-II Scheme)
40	Addition of 1x50 MVA, 132/33 kV transformer at Naugachhia 132/33 kV sub-station
41	Addition of 1x50 MVA, 132/33 kV transformer at Gangwar 132/33 kV sub-station
42	Addition of 1x50 MVA, 132/33 kV transformer at Jamui 132/33 kV sub-station
43	Addition of 1x50 MVA, 132/33 kV transformer at Madhepura 220/132/33 kV sub-station
44	Addition of 1x50 MVA, 132/33 kV transformer at Vaishali 132/33 kV sub-station
45	Addition of 2x50 MVA, 132/33 kV transformer at Bihta 220/132/33 kV sub-station #  # Note : Bihta 400/220 kV new S/s to be constructed in the premises of Bihta 220/132/33 kV S/s proposed to be established by BSEB. Further, 2x50 MVA, 132/33 kV transformer to be added at Bihta under the present scheme
46	2X160MVA, 220/132 kV new Substation at Sabour
47	2X160MVA + 2x50 MVA, 220/132/33 kV new Substation at Jamalpur
48	2X160MVA + 2x50 MVA, 220/132/33 kV new Substation at Sheikhpura
49	2X160MVA + 2x50 MVA, 220/132/33 kV new Substation at Nawada
50	Sabour 220/132 kV new S/s - Sabour 132/33 kV S/s 132 kV D/c (Zebra Conductor)
51	LILO of Kahalgaon - Sultanganj 132 kV D/c (with high capacity conductor) at Sabour 220/132 kV new sub-station
52	Sabour new – Jamalpur new 220 kV D/c (High Capacity)
53	Jamalpur new – Shekhpura new 220 kV D/c (High Capacity)
54	LILO of Sultanganj - Lakhisarai 132 kV D/c (with high capacity conductor) at Jamalpur 220/132/33 kV new sub-station
55	Jamalpur 220/132/33 kV new S/s - Jamalpur 132/33 kV S/s 132 kV D/c (Zebra Conductor)
56	Shekhpura new – Nawada new 220 kV D/c (High Capacity)
57	Nawada new – Gaya new (Manpur) 220 kV D/c (High Capacity)
58	220/132 kV new Substation at Hathidah new

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## Annexure-II (b) (Contd.)

59	LILO of Begusarai –Biharsharif 220 kV D/c line at Hathidah 220/132 kV new sub-station
60	2X160MVA, 220/132 kV new sub-station at Dumraon
61	LILO of Ara (POWERGRID) - Pusauli (POWERGRID) 220 kV D/c line at Dumraon new
62	2 <sup>nd</sup> circuit stringing of Dumraon-Buxar 132 kV D/c line
63	2 <sup>nd</sup> circuit stringing of Dinara - Kudra 132 kV D/c line
64	Sheikhpura 220/132/33 kV new S/s - Biharsharif 132 kV S/c on D/c Tower
65	Sheikhpura 220/132/33 kV new S/s - Sheikhpura 132/33 kV S/s 132 kV D/c (Zebra Conductor)
66	Nawada 220/132/33 kV new S/s - Nawada 132/33 kV S/s 132 kV D/c (Zebra Conductor)
67	Hathidah 220/132 kV new S/s - Hathidah 132/33 kV S/s 132 kV D/c (Zebra Conductor)
68	Dumraon 220/132 kV new S/s - Dumraon 132/33 kV S/s 132 kV D/c (Zebra Conductor)

## Generation Linked Schemes

Transmission system for evacuation of power from Case-II project viz. Lakhisarai (2x660MW), Pirpainti (2x660MW) & Buxar (2x660MW) TPS and for MTPS extension (2X195MW) and BTPS extension (2X250 + 1X250MW)

**A. Case-II project :**

**(i) Transmission system for evacuation of power from Lakhisarai & Pirpainti TPS**

1	New 2x500 MVA, 400/220 kV Pooling Station near Kajra
2	Pirpainti TPS – Kajra Pool 400kV D/c (Triple Snowbird)
3	Lakhisarai TPS – Kajra Pool 400kV D/c (Triple Snowbird)
4	Kajra Pool - Darbhanga 400 kV D/c (Triple Snowbird)
5	Kajra Pool - Fatuha 400 kV D/c (Triple Snowbird)
6	Kajra Pool – Shekhpura 220 kV D/c
7	Kajra Pool – Nawada 220 kV D/c
8	Pirpainti TPS - Sabour new 220 kV D/c (High Capacity)
9	2x500 MVA, 400/220 kV ICTs each at Pirpainti & Lakhisarai - under the scope of respective generation project

**(ii) Transmission system for evacuation of power from Buxar TPS**

1	Buxar TPS - Bihta 400 kV D/c
2	Buxar TPS - Dumraon new 220 kV D/c (High Capacity)
3	Buxar TPS – Mohania (Pusauli-BSEB) 220 kV D/c (High Capacity)
4	Buxar TPS - Dehri 220 kV D/c
5	2x500 MVA, 400/220 kV ICT at Buxar generation switchyard - under the scope of respective generation project

**Scheme of BSEB**

- A. Proposed arrangement of Power evacuation from Banka & Lakhisarai 400/132 kV sub-stations of POWERGRID**
- LILO of both circuits of 132 KV D/C Kahalgaon – Sultanganj D/c line at Banka 400/132 kV sub-station of POWERGRID
  - 132kV D/c line from Banka 400/132 kV sub-station of POWERGRID to 132/33 kV Banka sub-station of BSEB
  - LILO of both circuits of 132 KV D/C Sultanganj – Lakhisarai 400kV D/c line at Lakhisarai sub-station of POWERGRID
- B. Proposed arrangement of Power evacuation from MTPS Extension project (2X195MW):**
- Stringing of 2<sup>nd</sup> circuit of MTPS-Gopalgunj 220 KV transmission line. This line is presently single circuit strung
  - Stringing of 2<sup>nd</sup> circuit of MTPS-Darbhangra 220 KV transmission line. This line is presently single circuit strung
  - Stringing of 2<sup>nd</sup> circuit of MTPS – SKMCH (Muzaffarpur) 132 kV D/c line
  - New 132 KV D/C line between MTPS and Sheohar/ Runni saidpur
- C. Proposed arrangement of Power evacuation from BTPS Extension project (2X250 + 1X250MW):-**
- LILO of both circuit of 220 KV D/C Biharshariff-Begusarai line at BTPS Extn.
  - LILO of both circuit of 220 KV D/C Begusarai – Purnea lines at BTPS Extn.
  - Construction of 220 KV D/C line between 220/132 KV Hazipur GSS (New) and BTPS Extn.
  - Provision of 220/132 KV 2X150 MVA ICT at BTPS Extn. for interconnection of both projects.
- D. New 220/132 kV Grid Stations tentatively proposed by BSEB (Included in the PGCIL's study report):**

Sl. No.	Tentative / Proposed Grid Sub-Stations	Tentative / Proposed inter-connection with the grid
1	Supaul	Madhepura (D/C) under construction phase - II part-2
2	Sonenagar	Bodh-Gaya (Existing) Dehri (Existing)
3	Sheohar	MTPS
4	Katihar	Kisangunj (400KV PG) U/C - New Madhepura (D/C) under construction phase - II part-2
5	Khagaul (2)	Patna (PG) Jakkanpur (2) proposed
6	Jakkanpur (2)	Gaighat (2) proposed Khagaul (2) proposed
7	Gaighat	Patna (PG) Jakkanpur (2) proposed Fatuha (2) proposed
8	Samastipur	MTPS Begusarai (Existing)
9	Sabour	Purnea (PG) Begusarai (Existing)
10	Hulasgunj	Biharshariff (BSEB), Existing Bodh-Gaya Existing
11	Forbisgunj	Kisangunj (400KV PG) U/C - New
12	Chapra	Hajipur (BSEB,U/C)
13	Bikramgunj	Ara (PG) Pusauli (PG Sasaram)
14	Bihta	Sipara (U/C)

**Annexure-III (b) (Contd.)**

**E. Other works being implemented under State Plan / External Assistance(Included in the PGCIL's study report):**

- i) Imamganj 2x20 MVA, 132/33 kV GSS with Bodhgaya – Sherghati (2nd circuit stringing) – Imamganj 132 kV S/c line
- ii) Jandaha 2x20 MVA, 132/33 kV GSS with LILO of one circuit of Hazipur – Samastipur 132 kV line
- iii) Tehta 2x20 MVA, 132/33 kV GSS with LILO of Chandauti (Gaya) – Jakkanpur (Patna) 132 kV line



**Annexure 3: Abstract from DPR Scheme 1162.07 Crs**

Sr. No.	Work detail	KM	Equipment Cost (Rs.Lacs)
<b>A</b>	<b>Transmission Lines</b>		
1	Darbhanga(400/220 kv)- Darbhanga(BSEB) 220 kv D/C line	10	657.23
2	LILO of Darbhanga (BSEB) KANTI 220 kv D/C line at Bhikanpura New	30	1,712.73
3	LILO of KANTI-Bhikanpura 132 kv D/C line at Bhikanpura New	30	1,313.84
4	Darbhanga(400/220 kv)- Bhikanpura (New) 220 kv D/C line	70	3,677.10
5	LILO of Begusarai- KANTI 220 kv D/C line at Samastipur New	30	1,740.99
6	Darbhanga-Samastipur 220 kv D/C line (C/S strung)	50	2,520.86
7	Samastipur(220/132 kv New substation)-Samastipur 132 kv D/c line (with ZEBRA Conductor)	10	657.54
8	Darbhanga(400/220 kv) Supaul New 220 kv D/C line	90	6,698.64
9	Supaul(220/132 kv) New substation-Supaul 132 kv D/C line (with ZEBRA Conductor )	10	601.88
10	Motihari(400/132 kv)-Motihari(BSEB)132 kv D/C Line	15	652.65
11	Motihari (400/132 kv)- Betiah 132 kv D/C line	55	2,173.80
12	Motihari(400/132 kv)-Raxaul 132 kv D/C line	50	1,819.92
13	LILO of Both circuits of Biharshariff-Begusarai 220 kv D/C line at BTPS extension	30	1,731.37
14	LILO of both circuits of Begusarai-Purnea 220 kv D/C Line at BTPS extension	40	2,265.75
15	BTPS extension-Hazipur , 220 kv D/C line	100	5,275.11
16	Reconductoring of 132 kv line (3 circuits)of purnea (PG)-Purnea(BSEB) with high capacity conductor	1.5	123.26
17	Second circuit stringing of 132 kv D/C Kishanganj-Forbesganj 132 kv D/C line	88.447	1,141.05
18	Second circuit stringing of 132 kv D/C Forbesganj-Kataiya 132 kv D/C line	39.842	517.00
19	LILO of Madhepura (Saharsa New) - Saharsa 132 kv S/C line (on D/C Power)at Saharsa(Existing)	20	814.63
20	Second circuit stringing of Madhepura9Saharsa new)-Saharsa 132 kv line	28.08	270.29
21	Second circuit stringing of Muzzaffarpur(Bhikampura)-Vaishali 132 kv line	30.357	395.17
22	Second circuit stringing of Darbhanga-Phulpur 132 kv line	71.816	934.42



Sr. No.	Work detail	KM	Equipment Cost (Rs.Lacs)
<b>A</b>	<b>Transmission Lines</b>		
23	LILO of one circuit of Darbhanga-Phulparas 132 kv D/C line (on D/C Tower)at Pandauland other circuit at Madhubani	5	343.34
24	LILO of Darbhanga (BSEB)-KANTI 220 kv D/C line at SKMCH new substation	30	1,734.54
25	SKMCH 220/132/33 kv new substation-Sitamarhi 132 kv D/C Line	60	2,391.86
26	SKMCH 220/132/33 kv new substation-SKMCH 132 kv D/C line (with ZEBRA conductor)	5	399.05
27	Second circuit stringing of Motihari-Dhaka-Sitamarhi 132 kv D/C line	76.62	936.32
28	Second circuit stringing of Bettiah-Raxaul 132 kv D/C line	37.185	484.44
29	Darbhanga 220/132 kv (BSEB)-Gangwar 132 kv D/C line	12	532.26
30	LILO of one circuit of Dhaka-Sitamarhi 132 kv D/C line at Shivhar	15	978.03
	<b>Total</b>		<b>45,495.07</b>

Sr. No.	Work detail	Equipment Cost (Rs.Lacs)
<b>B</b>	<b>Substations</b>	
1	220/132/33 kv Bhikanpura (New substation)	5,921.88
2	220/132/33 kv Samastipur (New substation)	5,085.77
3	220/132/33 kv SKMCH (New substation)	5,605.17
4	220/132/33 kv Supaul (New substation)	4,417.75
5	132/33 kv Shivhar (New substation)	2,105.93
6	132/33 kv Bhikanpura(Muzaffarpur) extension	154.19
7	132/33 kv SKMCH(Muzaffarpur) extension	231.47
8	132/33 kv Sitamarhi extension	789.36
9	220/132/33 kv Darbhanga extension	724.36
10	132/33 kv Pandaul extension	826.30
11	132/33 kv Madhubani extension	264.74
12	132/33 kv Sitamarhi extension	230.53
13	132/33 kv Motihari extension	1,535.43
14	132/33 kv Dhaka extension	232.22
15	132/33 kv Bettiah extension	389.72





Sr. No.	Work detail	Equipment Cost (Rs.Lacs)
<b>B</b>	<b>Substations</b>	
16	132/33 kv Khagaul extension	958.40
17	132/33 kv Vaishali extension	121.26
18	132/33 kv Hazipur extension	850.79
19	132/33 kv Siwan extension	587.73
20	220/132/33 kv Gopalganj extension	861.37
21	132/33 kv Gangawara substation extension	225.13
22	132/33 kv Baripahari substation extension	437.92
23	132/33 kv Bodhgaya substation extension	561.43
24	132/33 kv Chandauti substation extension	598.18
25	132/33 kv Jehanabad substation extension	629.85
26	132/33 kv Jakkanpur substation extension	459.21
27	132/33 kv Phulparas substation extension	193.19
28	132/33 kv Supaul substation extension	282.33
29	132/33 kv Saharsa substation extension	1,143.86
30	220/132/33 kv Madhepura substation extension (Phase-1)	148.71
31	132/33 kv Kataiya substation extension	192.75
32	132/33 kv Forbesganj substation extension	853.87
33	132/33 kv Kishanganj substation extension	742.36
34	132/33 kv Purnea substation extension	481.26
35	132/33 kv Katihar substation extension	616.80
36	132/33 kv Kahalgaon substation extension	592.76
37	132/33 kv Banka substation extension	583.55
38	132/33 kv Sultanganj substation extension	1,181.03
39	220/132/33 kv BTPS substation extension	1,667.23
40	132/33 kv Khagaria substation extension	486.19
41	220/132/33 kv Begusarai substation extension	585.97
42	220/132/33 kv Dehri substation extension	605.49
43	220/132/33 kv Pusauli(Mohania) substation extension	1,727.27
44	132/33 kv Sonenagar substation extension	548.33
45	132/33 kv Dumraon substation extension	548.36
46	132/33 kv Buxar substation extension	589.42
47	132/33 kv Aurangabad substation extension	583.03
48	132/33 kv Karamnasa substation extension	669.01
49	132/33 kv Rafiganj substation extension	548.36
	<b>Total</b>	<b>50,377.22</b>



**Annexure 4: Abstract from DPR Scheme 472.53 Crs**

<b>Sr. No</b>	<b>Particulars</b>	<b>Rs.Crs</b>
A	A Preliminary survey and soil investigation	2.68
B	Land acquisition for substation and R & R Compensation	-
C	Cost of compensation for transmission lines	
	<i>Compensation towards crop, tree and PTCC</i>	11.36
	<i>Compensation towards Forest</i>	0.66
D	Civil works	
	Infrastructure for substation	5.10
	Non-residential buildings	-
	Colony for Trans. Lines & sub-stations	-
E	Equipment Cost	
	<i>Trans. Lines</i>	209.31
	<i>Sub-stations</i>	151.64
	<i>Special tools and Plants (ERS sets)</i>	11.88
<b>F</b>	<b>Sub-Total</b>	<b>392.62</b>
G	Contingencies (@3% of F - C)	11.76
H	Consultancy charges of Powergrid @15% plus service tax	68.15
	<b>Total Project Cost</b>	<b>472.53</b>



Sr. No	Work detail	Length (Km)	Equipment Cost (Rs.Lacs)
<b>A</b>	<b>Transmission Lines</b>		
1	132 kv D/C Banka- Sultanganj Line	45	1,786.81
2	132 kv D/C Lakhisarai (PG)- Lakhisarai Line	26	1,149.03
3	132 kv D/C Lakhisarai- Jamui 132 kv D/C Line	48	1,950.45
4	Reconductoring of 132 kv Transmission line	820	7,794.29
5	Reconductoring of 220 kv Transmission line	120	3,121.00
6	220 kv S/C Patna-Sipara(BSEB) transmission Line	1	250.43
7	220 kv D/C Hazipur- Fatuha Transmission Line	12	4,878.81
	<b>Total Line Cost</b>		<b>20,930.82</b>
<b>B</b>	<b>Substations</b>		
1	220/132 kv Fatuha (Extension Sub-station)		928.25
2	220/132 kv Biharshariff (Extension Sub-station)		923.25
3	220/132 kv Begusarai (Extension Sub-station)		923.25
4	220/132 kv Bodhgaya (Extension Sub-station)		915.46
5	220/132 kv Gopalganj (Extension Sub-station)		902.48
6	220/132 kv Darbhanga (Extension Sub-station)		1,385.03
7	132/33 kv Khagaul (Extension Sub-station)		537.45
8	132/33 kv Bihta (Extension Sub-station)		517.59
9	132/33 kv Sitamarhi (Extension Sub-station)		526.15
10	132/33 kv Ara (Extension Sub-station)		526.15
11	132/33 kv Nawada (Extension Sub-station)		526.15
12	132/33 kv Sabaur (Extension Sub-station)		526.15
13	132/33 kv Naugachiya (Extension Sub-station)		469.87
14	132/33 kv Jainagar (Extension Sub-station)		457.27
15	132/33 kv Phulparas (Extension Sub-station)		457.27
16	132/33 kv Supaul (Extension Sub-station)		457.27
17	132/33 kv Dhaka (Extension Sub-station)		457.27
18	132/33 kv Belaganj (Extension Sub-station)		455.83
19	220/132 kv Sipara (Extension Sub-station)		1,046.62
20	400/220 kv Patna (Extension Sub-station)		215.11
21	400/132 kv Banka (PG) (Extension Sub-station)		269.54
22	132/33 kv Sultanganj (Extension Sub-station)		271.61
23	132/33 kv Jamui-Sultanganj (Extension Sub-station)		286.32
24	132/33 kv Lakhisarai-Sultanganj (Extension Sub-station)		285.18
25	Substation Equipment on medium term basis		897.17
	<b>Total Substation work Cost</b>		<b>15,163.69</b>

**Annexure 5: ULDC Upgradation works**

**Upgradation of SLDC**

Revised Budget Estimate for 2013-14 (Capital Head) for the work being done from IR

SN	Item Name	Qty	Cost in Lac Rs.	Remarks
1	Civil Construction excluding Electrical fitting & furniture.	49 Sites	450	Awarded by Civil wing.
2	Electrical fitting (AC, Lights Fan etc) including furniture in newly constructed ULDC rooms at different GSS (Lump sum)	49 Sites	98	To be executed by Civil/Electrical wing.
3	Renovation of SLDC Control Room (Lump sum)	1 Lot	50	Being done by Civil wing under floor renovation
<b>Total Cost</b>			<b>598</b>	

Revised Budget Estimate for 2013-14 (Capital Head) for the work being done by Powergrid.

SN	Item Name	Qty	Cost in Rs.	Remarks
4	EMS/ SCADA System including RTU	1 lot with 101 RTU	1026*	LOA placed by Powergrid
5	Communication Package (OPGW & PLCC including accessories)	1061 KM	6200*	Consent already given to Powergrid
6	DCPS System (Lump sum)	50 Sites	200*	Powergrid may be requested
<b>Total Cost</b>			<b>7426*</b>	

**GRAND TOTAL COST**

**8024**

\*investment/ expenditure done by Powergrid shall be recovered as ULDC tariff as t decided by CERC after completion of work likely after Sep, 2014.

*Shakti*  
23/09/13  
A.E.X.E./ULDC



## **Annexure 6: Transmission Tariff Filing Formats**



<b>Tariff Filing Formats (Transmission)</b>	
<a href="#">FORM- 1</a>	Summary Sheet
<a href="#">FORM- 1 A</a>	Return on Equity
<a href="#">FORM-2</a>	Details of Transmission Lines and Substations
<a href="#">FORM-3</a>	Normative Parameters to be considered for tariff calculations
<a href="#">FORM- 4</a>	Details of Foreign loans
<a href="#">FORM-5</a>	Abstract of Admitted Cost for the existing Projects
<a href="#">FORM-5B</a>	Break-up of Project Cost for Transmission System
<a href="#">FORM-9</a>	Statement of Additional Capitalisation after COD
<a href="#">FORM- 11</a>	Statement of Depreciation
<a href="#">FORM- 12</a>	Calculation of Depreciation Rate
<a href="#">FORM- 13</a>	Calculation of Weighted Average Rate of Interest on Actual Loans
<a href="#">FORM- 14</a>	Calculation of Advance Against Depreciation (AAD)
<a href="#">FORM- 15</a>	Calculation of Interest on Working Capital
<a href="#">FORM- 16</a>	Draw Down Schedule for Calculation of IDC & Financing Charges
<a href="#">FORM - 17</a>	Details of operation and maintenance expenses

FORMAT- 1

APR FY 2013-14 AND REVISED ARR FY 2014-15

SUMMARY OF TARIFF PROPOSAL

(Rs. Crore)

S. No.	Particulars	Format No	FY 2013-14 (RE)	FY 2014-15 (Projected)
1	Depreciation	Format-11	103.83	132.81
2	Interest on Loan	Format-13 A	24.53	37.19
3	Interest on Working Capital	Format-15	22.56	25.44
4	O & M Expenses	Format-17	222.86	247.12
5	Return on Equity (RoE)	Format-18	228.26	246.25
6	Less: Non Tariff Income		1.02	1.02
	<b>Annual Fixed Charges</b>		<b>601.03</b>	<b>687.79</b>

**FORMAT- 1A****APR FY 2013-14 AND REVISED ARR FY 2014-15****RETURN ON EQUITY****(Rs. Crore)**

<b>S.No.</b>	<b>Particulars</b>	<b>FY 2013-14 (RE)</b>	<b>FY 2014-15 (Projected)</b>
1	Opening Equity	1,630.46	1,758.96
2	Addition in Equity	128.50	544.24
3	Closing Equity	1,758.96	2,303.20
4	Average Normative Equity	1,694.71	2,031.08
5	Rate of Return on Equity (%)	14.0%	14.0%
6	<b>ROE Amount</b>	<b>228.26</b>	<b>246.25</b>



FORMAT- 2

APR FY 2013-14 AND REVISED ARR FY 2014-15  
DETAILS OF TRANSMISSION LINES & SUBSTATIONS

Transmission Lines

S. NO.	Name of line	Type of line AC/HVDC	S/C or D/C	Voltage level kV	Line length CKT-kM.
1	Details provided in Annexure 3 of Tariff Petition				
2					
3					
4					
-					
-					

Substations

S.NO.	Name of Sub-station	Type of Substation Conventional/ GIS	Voltage level kV	No. of transformers/ Reactors/ SVC etc (with capacity)	No. of Bays
1	Details provided in Annexure 3 of Tariff Petition				
2					
3					
4					
-					
-					

**FORMAT- 3**

**APR FY 2013-14 AND REVISED ARR FY 2014-15**

**Normative parameters considered for tariff computations**

<b>Sr. No.</b>	<b>Particulars</b>	<b>Unit</b>	<b>FY 2013-14 (RE)</b>	<b>FY 2014-15 (Projected)</b>
<b>1</b>	Target Availability	%	-	-
<b>2</b>	Normative O&M per ckt.km	Rs. lakhs	-	-
<b>3</b>	Normative O&M per bay	Rs. lakhs	-	-
<b>4</b>	Spares for WC as % of O&M	%	1%	1%
<b>5</b>	Receivables in Months for WC	Months	2	2
<b>6</b>	Rate of Return on Equity (%)	%	14%	14%

Note: It is requested to Commission to determine norms in the next ARR filing so that independent operations of BSPTCL are also available for substantial period

FORMAT- 4

APR FY 2013-14 AND REVISED ARR FY 2014-15  
 DETAILS OF FOREIGN LOANS

Exchange Rate at COD  
 Exchange Rate as on 31.03.

(Rs. in lacs)

Financial Year (Starting from COD)	Year 1				Year 2				Year 3 and so on			
	Date	Amount (Foreign Currency)	Exchange Rate	Amount (Rs.)	Date	Amount (Foreign Currency)	Exchange Rate	Amount (Rs.)	Date	Amount (Foreign Currency)	Exchange Rate	Amount (Rs.)
1	<b>Not Applicable</b>											
Currency <sup>1</sup>												
At the date of Draw <sup>2</sup>												
Scheduled repayment date of principal												
Scheduled payment date of interest												
At the end of Financial year												
Currency <sup>2</sup>												
At the date of Draw <sup>2</sup>												
Scheduled repayment date of principal												
Scheduled payment date of interest												
At the end of Financial year												
Currency <sup>3</sup> & so on												
At the date of Draw <sup>2</sup>												
Scheduled repayment date of principal												
Scheduled payment date of interest												
At the end of Financial year												

1 Name of the currency to be mentioned e.g. US \$, DM, etc. etc.

2 In case of more than one drawl during the year, Exchange rate and the date of each drawl to be given.

**FORMAT- 5****APR FY 2013-14 AND REVISED ARR FY 2014-15  
ABSTRACT FOR ADMITTED CAPITAL COST OF EXISTING PROJECTS**

<b>Capital cost as admitted by BERC</b>	
<b>Capital cost admitted as on _____</b>	
(Give reference of the BERC relevant Order with Petition No. & Date)	
Foreign Component, if any (In Million US \$ or the relevant Currency):	N. A.
Domestic Component (Rs. Cr.):	
Foreign Exchange rate considered for the admitted cost:	N. A.
Hedging cost, if any, considered for the admitted Capital cost	N. A.
<b>Total Project cost admitted (Rs. Cr):</b>	

FORMAT- 5B

APR FY 2013-14 AND REVISED ARR FY 2014-15  
ELEMENT WISE BREAKUP OF PROJECT COST FOR TRANSMISSION SYSTEM

Sl.No.	Break Down	Cost in Rs. Crores As per original Estimates	
1	2	3	
<b>A</b>	<b>TRANSMISSION LINE</b>	Details provided in Table-15, 18, 19 and Annexure-4 of Tariff Petition	
1.00	<b>Preliminary works</b>		
1.10	Design & Engineering		
1.20	Preliminary investigation, Right of way, forest clearance, PTCC , general civil works etc.		
1.30	<b>Total Preliminary works</b>		
2.00	<b>Transmission Lines material</b>		
2.10	Towers Steel		
2.20	Conductor		
2.30	Earth Wire		
2.40	Insulators		
2.50	Hardware Fittings		
2.60	Conductor & Earthwire accessories		
2.80	Spares		
2.90	Erection, Stringing & Civil works including foundation		
	<b>Total Transmission Lines material</b>		
3.00	<b>Taxes and Duties</b>		
3.10	Custom Duty		
3.20	Other Taxes & Duties		
	<b>Total Taxes &amp; Duties</b>		
	<b>Total -Transmission lines</b>		
<b>B.</b>	<b>SUBSTATIONS</b>		Details provided in Table-15, 18, 19 and Annexure-4 of Tariff Petition
4.00	<b>Preliminary works &amp; land</b>		
4.10	Design & Engineering		
4.20	Land		
4.30	Site preparation		
	<b>Total Preliminary works &amp; land</b>		
5.00	<b>Civil Works</b>		
5.10	Control Room & Office Building including HVAC		
5.20	Township & Colony		
5.30	Roads and Drainage		
5.40	Foundation for structures		
5.50	Misc. civil works		
	<b>Total Civil Works</b>		
6.00	<b>Substation Equipments</b>		
6.20	Switchgear (CT,PT, Circuit Breaker, Isolator etc)		
6.30	Transformers		
6.40	Compensating Equipment( Reactor, SVCs etc)		
6.50	Control , Relay & Protection Panel		
6.60	PLCC		
6.70	HVDC package		
6.80	Bus Bars/ conductors/Insulators		
6.90	Outdoor lighting		
6.10	Emergency D.G. Set		
6.11	Grounding System		
6.12	Structure for switchyard		
	<b>Total Substation Equipments</b>		
7.00	<b>Spares</b>		
8.00	<b>Taxes and Duties</b>		
8.10	Custom Duty		
8.20	Other Taxes & Duties		
8.30	<b>Total Taxes &amp; Duties</b>		
	<b>Total (Sub-station)</b>		
9.00	<b>Construction and pre-commissioning expenses</b>		
9.10	Site supervision & site admn.etc.		
9.20	Tools and Plants		
9.30	construction insurance		
	<b>Total Construction and pre commissioning expenses</b>		
10.00	<b>Overheads</b>		
10.10	Establishment		
10.20	Audit & Accounts		
10.30	Contingency		
	<b>Total Overheads</b>		

FORMAT- 9

APR FY 2013-14 AND REVISED ARR FY 2014-15  
STATEMENT OF ADDITIONAL CAPITALISATION AFTER COD

Sl.No.	Year	Work/Equipment proposed to be added after COD up to Cut off Date / Beyond Cut off Date	Amount Capitalised / Proposed to be capitalised	Justification	Admitted Cost <sup>1</sup>
(1)	(2)	(3)	(4)	(5)	(6)
<h1>Not Applicable</h1>					

**FORMAT- 11**

**APR FY 2013-14 AND REVISED ARR FY 2014-15**

**STATEMENT OF DEPRECIATION**

(Rs. Crore)

<b>Financial Year</b>	<b>FY 2013-14 (RE)</b>	<b>FY 2014-15 (Projected)</b>
<b>Gross Depreciation on Capital Cost (total depr)</b>	188.06	219.37
<b>Net Depreciation on Capital Cost</b>		
<b>Depreciation on Additional Capitalisation</b>		
Amount of Additional Capitalisation	320.03	903.06
Depreciation Amount	16.39	46.24
<b>Depreciation on Grants to be deducted</b>		
Depreciation amount	84.23	86.56
<b>Depreciation recovered during the Year</b>		
Advance against Depreciation recovered during the Year	-	-
<b>Depreciation &amp; Advance against Depreciation recovered during the year (less Depr on Grants)</b>	<b>103.83</b>	<b>132.81</b>
<b>Gross Cumulative Depreciation</b>	204.31	423.68

**FORMAT- 12**

**APR FY 2013-14 AND REVISED ARR FY 2014-15  
CALCULATION OF DEPRECIATION RATE**

(Rs. Crore)

Sl. no.	Name of the Assets	Depreciation Rate (CERC)	Cost of asset as on 31.03.2014	Depreciation Amount (RE)	Cost of asset as on 31.03.2015	Depreciation Amount (Projected)
1	Land and land rights	0%		-		-
2	Building	3.34%		-		-
3	Hydraulic Works	5.28%		-		-
4	Others Civil Works	3.34%		-		-
5	Plant and Machinery	5.28%		-		-
6	Lines and Cable Net Works	5.28%		-		-
7	Vehicles	9.50%		-		-
8	Furniture and Fixture	6.33%		-		-
9	Office Equipments	6.33%		-		-
	<b>TOTAL</b>		<b>3,673.09</b>	<b>188.06</b>	<b>4,284.64</b>	<b>219.37</b>
	<b>Weighted Average Rate of Depreciation (%)</b>	<b>5.12%</b>			<b>5.12%</b>	



**FORMAT- 13**

**APR FY 2013-14 AND REVISED ARR FY 2014-15**

**CALCULATION OF WEIGHTAGE AVERAGE RATE OF INTEREST ON ACTUAL LOANS**

(Rs. Crore)

<b>Sl. no.</b>	<b>Particulars</b>	<b>FY 2013-14 (RE)</b>	<b>FY 2014-15 (Projected)</b>
	<b>Total Loan (Existing &amp; Normative)</b>		
	Gross loan - Opening	172.05	205.37
	Cumulative repayments of Loans upto previous year	-	-
	Net loan - Opening	-	-
	Drawal during the year	137.15	294.23
	Increase/ Decrease due to ACE	-	-
	Repayment (s) of Loans during the year	103.83	132.81
	Net loan - Closing	205.37	366.79
	Average Net Loan	188.71	286.08
	Interest on loan	24.53	37.19
	<b>Weighted average Rate of Interest on Loans</b>	<b>13%</b>	<b>13%</b>

**FORMAT- 14**

**APR FY 2013-14 AND REVISED ARR FY 2014-15  
CALCULATION OF ADVANCE AGAINST DEPRECIATION (AAD)**

**(in Rs Crores)**

Particulars	FY 2013-14 (RE)	FY 2014-15 (Approved)
1/10th of the Loan(s)		
Repayment of the Loan(s) as considered for working out Interest on Loan		
Minimum of the Above		
Less: Depreciation during the year		
(A)		
Cumulative Repayment of the Loan(s) as considered for working out Interest on Loan		
Less: Cumulative Depreciation		
(B)		
Advance Against Depreciation (Minimum of A & B)		

**Not Claimed at present**

FORMAT- 15

APR FY 2013-14 AND REVISED ARR FY 2014-15  
CALCULATION ON INTEREST ON WORKING CAPITAL

(Rs. Crore)

Sl. No.	Particulars	FY 2013-14 (RE)	FY 2014-15 (Projected)
1	O & M expenses : One Month	18.57	20.59
2	Maintenance Spares : 1% of GFA	37.24	40.63
3	Recievables : 2 Month	100.34	114.80
4	<b>Total Working Capital</b>	<b>156.15</b>	<b>176.03</b>
5	Rate of Interest	14.45%	14.45%
6	<b>Interest on Working Capital</b>	<b>22.56</b>	<b>25.44</b>

**FORMAT- 16**

**APR FY 2013-14 AND REVISED ARR FY 2014-15  
DRAW DOWN SCHEDULE FOR CALCULATION OF IDC & FINANCING  
CHARGES**

(Rs. Crore)

Sl. No.	Draw Down Particulars	FY 2013-14 (RE)	FY 2014-15 (Projected)
<b>1</b>	<b>Loans</b>		
<b>1.1</b>	<b>Foreign Loans</b>		
<b>1.1.1</b>	<b>Foreign Loan 1</b>		
	Draw down Amount		
	IDC		
	Financing charges		
<b>1.1</b>	<b>Total Foreign Loans</b>		
	Draw down Amount		
	IDC		
	Financing charges		
<b>1.2</b>	<b>Indian Loans</b>		
<b>1.2.1</b>	<b>Indian Loans</b>		
	Draw down Amount	137.15	294.23
	IDC	8.91	19.12
	Financing charges		
<b>1.2</b>	<b>Total Indian Loans</b>		
	Draw down Amount	137.15	294.23
	IDC	8.91	19.12
	Financing charges		
<b>2</b>	<b>Equity</b>		
<b>2.1</b>	<b>Foreign equity drawn</b>		
<b>2.2</b>	<b>Indian equity drawn</b>		
	<b>Total equity deployed</b>		

Not  
Applicable

Not  
Applicable

**FORMAT- 17**

**APR FY 2013-14 AND REVISED ARR FY 2014-15  
DETAILS OF OPERATION AND MAINTENANCE EXPENSES**

(Rs. Crore)

<b>Sr.</b>	<b>ITEMS</b>	<b>FY 2013-14 (RE)</b>	<b>FY 2014-15 (Projected)</b>
<b>1</b>	<b>Repair and Maintenance</b>	115.10	125.58
<b>2</b>	<b>Administrative Expenses</b>	10.99	14.37
<b>3</b>	<b>Employee Cost</b>	91.29	101.18
<b>4</b>	<b>Alloacted O&amp;M Expenses</b>	5.49	6.00
<b>5</b>	<b>Total O&amp;M Expenses</b>	<b>222.86</b>	<b>247.12</b>

**PFC CONSULTING LTD.**

**पीएफसी कंसल्टिंग लिमिटेड**

(पावर फाइनेंस कॉर्पोरेशन लिमिटेड की पूर्णतःस्वामित्वाधीन सहायक का)

**PFC CONSULTING LIMITE**

(A wholly owned subsidiary of Power Finance Corporation Limit

OSD to MD (North/South)

FC (North) ✓

MP 10/10/13

Ref. No.: 02/12/BSEB/A-076/OR

October 9, 2013

7764/CMD  
10-10-13

Chairman cum Managing Director  
Bihar State Power (Holding) Company Ltd,  
Bailey Road,  
Patna



**Sub.: Implementation of R & R in BSEB: Transfer Scheme.**

Sir,

The Transfer scheme notified by Government of Bihar vide notification no प्र०/बोर्ड पुनो सं० -31/2008 खंड 1 - 17 dated 30.10.2012 provided that classification of property, rights, assets liabilities to be provisional for a period of one year from the Effective date. It was further provided that on the expiry of one year from the effective date the transfer of undertaking, property, interest, right, assets, liabilities, personnel and proceeding shall become final.

The Transfer Scheme had notified the opening Balance Sheet of respective companies as on 1-4-2011. Since then, the closing Balance Sheet as on 31-10-2012 of BSEB has been finalised and presently under Government Audit. Based on the closing Balance Sheet of BSEB the Balances of Assets and Liabilities to be transferred to the respective companies as on 1-11-2012 have been also finalised and submitted to BSPHCL.

To give effect to the opening balances of Assets and Liabilities to be transferred to the transferee companies as on the date of transfer, the final transfer scheme has to be notified before November 1, 2013. The draft Final Scheme covering the amendments in the provisions provided in the provisional transfer scheme and the Balance Sheets as on 1-11-2012 to be notified as schedules are enclosed for approval of BSHPCCL & Government of Bihar and its notification.

Assuring you the best of services at all the times.

Thanking You

Yours sincerely

EVP(OR), PFCCL  
(S. Mulchandani)

Enclosures: a/a

**GOVERNMENT OF BIHAR  
ENERGY DEPARTMENT**

No.

Dated:

**NOTIFICATION**

**THE BIHAR STATE ELECTRICITY REFORMS TRANSFER SCHEME, 2013- FINAL**

In pursuance of the provisions of section 131 , 133 and other applicable provisions of the Electricity Act, 2003, the Government of Bihar notified the transfer scheme 2012 vide its notification no प्र०/बोर्ड पुनर्ग सं० -31/2008 खंड 1 - 17 dated 30.10.2012 for giving effect to the provisional transfer of properties, interests, rights, assets, liabilities, obligations, proceedings and personnel of Bihar State Electricity Board. To give effect to the Final transfer of properties, interests, rights, assets, liabilities, obligations, proceedings and personnel of Bihar State Electricity Board, the Government of Bihar hereby notify the following amendments to the provisional transfer Scheme 2012. The amendments are to be read along with the Transfer Scheme 2012 notified by Government of Bihar:

**(I) Amendments to the Clauses :**

In the said notification:

**Under Clause 5:**

**Clause 5.8: shall be read as :** The transfer value of the Assets & Liabilities forming part of the Schedules A, B, C & D of the respective Transferee have been taken at Book Values as on October 31st 2012.. The land assets are revalued on the basis of Govt. values as on October 31st 2012 . Buildings, Equipment and Machinery valued at their depreciated book value.

**Under Clause 6:**

**Clause 6.6: shall be read as :** Notwithstanding transfer of personnel to Holding Company and further transfer to Transmission, Generation and Distribution companies, as per para 6.2 and 6.3 above, the personnel shall discharge the duties and functions as may be assigned to them from time to time by Transmission, Generation and Distribution companies, as the case may be and the Transmission, Generation and Distribution companies shall have the power to exercise all administrative and disciplinary control over such personnel transferred to them as per this Scheme.

**Clause 6.10: shall be read as :** The Holding Company shall, in consultation with the 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 , finalize the transfer to and permanent absorption of the Personnel in the subsidiary companies taking into

account the suitability, ability and experience of the personnel, number and nature of the vacancies and other relevant factors and issue appropriate orders for such permanent absorption, after the same is approved by the Board of Holding Company.

Under Clause 9:

**Clause 9.2: shall be read as :** The State Government may, by order further notify, amend, vary, modify, add, reduce, delete or otherwise change terms and conditions of the transfer including items included in the transfer, and transfer such properties, interests, rights, assets, liabilities, personnel and proceedings and forming part of an Undertaking of one Transferee to that of any other Transferee or the Board or to the State Government in such manner and on such terms and conditions as the State Government may consider appropriate.

**Clause 9.3: Deleted**

(II) Amendments to the Schedules : Enclosed

Schedule A Part- II- Aggregate Assets and Liabilities vested in Bihar State Power Transmission Company Ltd as on 01-11-2012.

Schedule B Part- II- Aggregate Assets and Liabilities vested in Bihar State Power Generation Company Ltd as on 01-11-2012.

Schedule C Part- II- Aggregate Assets and Liabilities of each of the Distribution Companies as on 01-11-2012 : A. South Bihar Power Distribution Company Ltd and B. North Bihar Power Distribution Company Ltd.

Schedule D Part- II - Aggregate Assets and Liabilities vested in Bihar State Power (Holding) Company Ltd as on 01-11-2012.

Order:- Ordered that this notification be published in Bihar Gazette Extraordinary issue for information to general public.

*By order of the Governor of Bihar*

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Secretary (Energy) to Government

Memo No

Patna, Dated.....2013

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Copy To:



**SCHEDULE ' D ' HOLDING UNDERTAKING  
PART II**

**Aggregate Assets and Liabilities vested in Bihar State Power (Holding) Company Ltd:**

Balance Sheet as on 1-11-2012		Holding Co.
Sl No.	PARTICULARS	Rs In Crs.
	<b>NET ASSETS</b>	
	<b>Net Fixed Assets</b>	
1	Gross Block	981.42
2	Less: Accumulated Depreciation	9.61
	Net Fixed Assets (1-2)	971.81
3	Capital Expenditure in Progress	0.00
4	Assets not in use	
5	Investments	278.81
	Investments in Subsidiaries- JV	
	Investments in Subsidiaries	6965.66
6	<b>Current Assets</b>	
a	Stocks	0.00
b	Receivables against supply of power	0.00
c	Cash and Bank Balances	84.81
d	Loans & Advances	41.47
e	Sundry Receivables	35.05
	<b>Total Current Assets (A)</b>	<b>161.33</b>
7	<b>Total Current Liabilities</b>	
a	Security Deposits from Consumers	0.00
b	Other current Liabilities	377.11
c	Borrowings for Working Capital	
	<b>Total Current Liabilities (B)</b>	<b>377.11</b>
8	<b>Net Current Assets (A-B)</b>	<b>(215.78)</b>
9	Subsidy Receivable from Government	
	<b>NET ASSETS</b>	<b>8000.50</b>
	<b>FINANCED BY</b>	
10	<b>Equity Capital</b>	<b>7986.34</b>
11	Payments due on Capital Liabilities	
12	Capital Liabilities	0.00
13	Funds from state Government	0.00
14	Contributions, Grant and Subsidies towards Cost of Capital assets	14.15
15	Reserves and Reserve Funds	0.01
16	Surplus/(Deficit)	
	<b>TOTAL FUNDS</b>	<b>8000.50</b>

**Notes:**

1. The above opening balance sheet has been drawn based on the Balance Sheet of the Board as on October 31<sup>st</sup>, 2012.
2. The shares to the extent of the value of the share capital mentioned above shall be issued to the State Government at par as on the Effective date.
3. Operating expenses incurred by the Holding Company like administration & general expenses legal and consulting fees etc. would be shared by the 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 , in the ratio of their respective equity. The Employee cost of Holding Company would be shared in Employee cost ratio of subsidiary companies.

**SCHEDULE 'A' TRANSMISSION UNDERTAKING  
PART II**

**Aggregate Assets and Liabilities vested in Bihar State Power Transmission Company Ltd:**

Balance Sheet as on 1-11-2012		Transmission Co.
Sl No.	PARTICULARS	Rs. In Crs
	<b>NET ASSETS</b>	
	<b>Net Fixed Assets</b>	
1	Gross Block	3507.51
2	Less: Accumulated Depreciation	603.90
	Net Fixed Assets (1-2)	2903.61
3	Capital Expenditure in Progress	312.68
4	Assets not in use	
5	Investments	74.94
	Investments in Subsidiaries- JV	
	Investments in Subsidiaries	
6	<b>Current Assets</b>	
a	Stocks	58.31
b	Receivables against supply of power	0.00
c	Cash and Bank Balances	7.07
d	Loans & Advances	17.22
e	Sundry Receivables	13.70
	<b>Total Current Assets (A)</b>	<b>96.30</b>
7	<b>Total Current Liabilities</b>	
a	Security Deposits from Consumers	0.00
b	Other current Liabilities	45.16
c	Borrowings for Working Capital	
	<b>Total Current Liabilities (B)</b>	<b>45.16</b>
8	<b>Net Current Assets (A-B)</b>	<b>51.14</b>
9	Subsidy Receivable from Government	
	<b>NET ASSETS</b>	<b>3342.37</b>
	<b>FINANCED BY</b>	
10	<b>Equity Capital</b>	<b>1630.46</b>
11	Payments due on Capital Liabilities	
12	Capital Liabilities	0.00
13	Funds from state Government	86.64
14	Contributions, Grant and Subsidies towards Cost of Capital assets	1625.27
15	Reserves and Reserve Funds	
16	Surplus/(Deficit)	
	<b>TOTAL FUNDS</b>	<b>3342.37</b>

**Notes:**

1. The above opening balance sheet has been drawn based on the Balance Sheet of the Board as on October 31<sup>st</sup>, 2012.
2. The shares to the extent of the value of the share capital mentioned above shall be issued to the Bihar State Power (Holding) Company Ltd at par as on the Effective Date.