



BIHAR ELECTRICITY REGULATORY COMMISSION
Ground Floor, Vidyut Bhavan-II
Jawahar Lal Nehru Marg
Patna – 800 021

TARIFF ORDER

Passed in Case No.TP-3 of 2010

on

6th December, 2010

In the matter of :

**Determination of Aggregate Revenue Requirement (ARR)
and Retail Tariff for the FY 2010-11 for supply of electricity to consumers
in the State of Bihar by the Bihar State Electricity Board**

**Bihar State Electricity Board
Vidyut Bhavan-II
Jawahar Lal Nehru Marg
Patna - 800 021**

- Petitioner

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Abbreviations

1.	A&G	Administration and General
2.	Act	Electricity Act, 2003
3.	ARR	Aggregate Revenue Requirement
4.	BSEB	Bihar State Electricity Board
5.	BERC	Bihar Electricity Regulatory Commission
6.	CAGR	Compounded Annualized Growth Rate
7.	CAPEX	Capital Expenditure
8.	CEA	Central Electricity Authority
9.	CERC	Central Electricity Regulatory Commission
10.	CGS	Central Generating Station
11.	Ckt. Km.	Circuit Kilometer
12.	CPSU	Central Public Sector Undertaking
13.	D/C	Double circuit
14.	FC	Fixed charges
15.	FY	Financial Year
16.	GFA	Gross Fixed Assets
17.	HP	Horse Power
18.	HT	High Tension
19.	kVA	Kilo Volt Ampere
20.	kVAh	Kilo Volt Ampere Hour
21.	kWh	Kilo Watt hour
22.	LT	Low Tension
23.	MOP	Ministry of Power
24.	MU	Million Units
25.	MVA	Mega Volt Ampere
26.	MW	Mega Watt
27.	MYT	Multi-Year Tariff
28.	NHPC	National Hydro Power Corporation
29.	NTPC	National Thermal Power Corporation
30.	O&M	Operation and Maintenance
31.	O/H	Over head
32.	PGCIL	Power Grid Corporation of India Limited
33.	FPPCA	Fuel and Power Purchase Cost Adjustment

34.	R&M	Repairs and Maintenance
35.	RE	Revised Estimates
36.	REA	Regional Energy Accounting
37.	RLDC	Regional Load Despatch Centre
38.	RoE	Return on Equity
39.	S/C	Single circuit
40.	SS	Sub-station
41.	UI	Unscheduled Interchange
42.	VC	Variable charges
43.	ERLDC	Eastern Regional Load Despatch Centre
44.	ERPC	Eastern Regional Power Committee
45.	RGVY	Rajeev Gandhi Grameen Vidyutikaran Yojna
46.	ABT	Availability Based Tariff
47.	KBUNL	Kanti Bijlee Utpadan Nigam Limited
48.	TPS	Thermal Power Station
49.	BHEL	Bharat Heavy Electricals Limited
50.	BTPS	Barauni Thermal Power Station
51.	BHPC	Bihar State Hydro Power Corporation
52.	NHPC	National Hydro Power Corporation



Bihar Electricity Regulatory Commission
Ground Floor, Vidyut Bhawan – II
Jawahar Lal Nehru Marg, Patna – 800 021

Case No. TP – 3 of 2010

In the matter of:

Determination of Aggregate Revenue Requirement (ARR) and Retail Tariff for the Financial Year 2010-11 for supply of electricity to consumers in the State of Bihar by the Bihar State Electricity Board.

And

Bihar State Electricity Board Petitioner

Present :

B. K. Halder, Chairman

S. M. Sahay, Member

ORDER

(Passed on 6th Day of December, 2010)

The Commission in exercise of the powers vested in it under section 62(1)(d) read with Section 62(3) and Section 64 (3)(a) of the Electricity Act, 2003 and Terms and Conditions for Determination of Tariff Regulation 2007 issued by Bihar Electricity Regulatory Commission and other enabling provisions in this behalf, issues this order, determining the Aggregate Revenue Requirement (ARR) and the Retail Tariff for the Financial Year 2010-11 for supply of electricity by the Bihar State Electricity Board to the consumers in the whole state of Bihar. The Regulations state that the Distribution Licensee shall file Aggregate Revenue Requirement (ARR) and the tariff petition complete in all respect along with requisite fee as prescribed in the Commission's Fees, Fines and charges, Regulation on or before 15th November of

the preceding year. Accordingly the Licensee should have filed the ARR and Tariff Petition for the financial year 2010-11 on or before 15th November, 2009.

Bihar State Electricity Board filed the petition before the Commission on 3rd February, 2010 for acceptance of Aggregate Revenue Requirement (ARR) for FY 2010-11. On scrutiny it was observed that there were a number of shortcomings / deficiencies in the tariff petition which were subsequently filed by B.S.E.B vide letter dated 12th & 26th March, 2010 and 27th & 31st April 2010. The Commission has taken the aforesaid petition and other filings on record on 2nd July; 2010.

The Commission took into consideration the facts presented by the Board in its tariff petitions and subsequent various filings, the objections/suggestions received from stake holders, consumer organizations, general public and State Advisory Committee and response of the Bihar State Electricity Board to these objections. The Commission, to ensure transparency in the process of tariff determination, conducted public hearing at Patna on 25th, 26th and 27th October 2010 providing platform to the stakeholders and members of the public to discuss the issues raised by them and response of the Board. The Commission had an occasion to peruse other relevant facts and materials placed on the record.

Earlier the Board has to take prior approval of Commission once in six months to levy Fuel and Power Purchase Cost Adjustment (FPPCA). Keeping in view the representation of public and stake holders, the Commission has decided that FPPCA formula will be applied by the Board at the end of each quarter without making it necessary to go through any Regulatory Proceedings as detailed in this tariff order. The incremental cost per unit due to this FPPCA formula so arrived for a quarter shall be recovered / adjusted in three monthly installment in subsequent quarter.

It has been noticed that due to continuing deficit, power cut / load shedding becomes inevitable. To draw extra power in the peak hours, Board has to pay UI rate, which is very high. Further, the Commission apprehends that expensive power purchase quantum and cost both to increase substantially in coming months. As one of the measures to curtail the quantum of expensive power, the Commission has made Time of Day (TOD) tariff mandatory which has to be made fully applicable within three months from the date of issue of this tariff order. Due care has been taken to provide corresponding relief in off peak hours tariff to enhance the effectiveness of TOD mechanism. This will be applicable to high-tension category of consumers having contractual demand of 200KVA and above in the 1st phase.

Connected load is often an area of dispute between the Board and the LT consumers as connected load is directly equated with the contract demand in the existing tariff structure. Any tariff design based only on connected load does not allow the consumer much scope to optimize his fixed expenses due to the widely fluctuating load usage pattern. However, the demand is the correct indicator of the load imposed by a consumer at any given point of time. In order to encourage consumers to amend their electricity consumption pattern both in respect of timing and level of demand in accordance with proposal of BSEB the Commission has introduced demand based (Two Part) tariff for DS-II, NDS- II&III and LTIS –I&II category of three phase services on optional basis.

Various factors such as increasing economic activity and population growth are resulting in additional pressure on ever increasing power demand when the state is already facing acute power shortage. In such a scenario, Demand Side Management (DSM) can compliment supply side strategies to help to meet the demand by assisting Board to reduce purchase of power and avoid delay or costly capacity addition by slowing down demand growth. A separate chapter has been added to address this important issue.

A large number of single-phase consumers in the state are availing power supply through meter-less connection. Despite repeated pursuance and directive by the Commission, the extent of consumer metering continues to be not only at unacceptable levels but in fact, the number of such un-metered consumers have increased. The Commission urges the consumer to co-operate with BSEB in installation of meters against their existing un-metered service connections. "The energy accounting and audit at various levels in the distribution system such as 33/11 KV S/S, 33 & 11 KV feeders provides reliable and actionable data on the actual loss comprising of technical and commercial losses but in absence of metering it is not possible to account for losses at different bus voltage level. Out of existing 1502 number of 11 KV feeders the Board has given 277 Nos. of 11 KV rural feeders to different agencies on revenue collection based franchise but proper energy accounting is not being maintained. Similarly, as per record provided by the Board 16035 Nos. of distribution transformers are provided with meters against total of 51996 Nos. of existing distribution transformers. But so far distribution transformer-wise energy accounting has not been done. Commission has taken serious note of it and directive has been issued to the Board to draw a time bound actionable plan for

addressing all these important issues and submit as such actionable plan within 30 days”.

Distribution transformers are one of the important areas for reducing losses in the distribution system. It supplies power to all power consuming devices and remain energized throughout the year in the system. Considering the vast potential of energy saving and benefits of energy efficiency, Bureau of Energy Efficiency has come up with “star rating or star level” distribution transformers as required under section 58 of the Energy Conservation Act, 2001 which means the energy efficiency shall be displayed on the level of transformer on the basis of relative energy efficiency and loss standards. The Commission has decided that Board should go in for procurement of distribution transformers up to 200 KVA with minimum of two “star rating or star level. This will apply for purchase of all new transformers for which tender has not been so far floated / published in the newspaper by the Board.

This order is in nine chapters which include detailed analysis of the Aggregate Revenue Requirement (ARR) and approved Retail Tariff Rates for the financial year 2010-11. The revenue gap as scrutinized is only about 49.58 crore which comes to 2% of the total revenue arrived at on the basis of existing tariff and so the Commission has decided to increase the tariff rate marginally to meet this gap.

Though usually tariff should have been made applicable from the beginning of the financial year but due to delay in submission of tariff application by Bihar State Electricity Board it could not be implemented in time. Hence this order would be effective w.e.f. 01.12.2010. The Bihar State Electricity Board should ensure implementation of the order from the effective date after issuance of a Public Notice within a week.

This order shall remain in force till 31st March, 2011 or till the next tariff order of the Commission.

Sd/-
(S. M. Sahay)
Member

Sd/-
(B. K. Halder)
Chairman

Chapter-1

Background and Procedural History

1.1 BACKGROUND

- 1.1.1 The Bihar Electricity Regulatory Commission (herein after referred to as Commission or BERC) has been established by the Government of Bihar under Section 17 of the Electricity Regulatory Commission Act, 1998 vide Government of Bihar notification No.1284 dated 15th April 2002. The Electricity Regulatory Commission Act, 1998 along with Indian Electricity Act 1910 and Electricity (Supply) Act 1948 was repealed by Section 185 (1) of the Electricity Act 2003. The first proviso of Section 82 (1) has ensured continuity of the State Electricity Regulatory Commission by laying down that the State Electricity Regulatory Commission established by the State Government under Section 17 of Electricity Regulatory Commission Act 1998 and functioning as such immediately before the appointed date shall be the State Electricity Regulatory Commission for the purpose of the Electricity Act, 2003.
- 1.1.2 The functions of State Regulatory Commission have been specified under Section 86 in particular and section 181 and other sections in general of the Electricity Act, 2003. One of the major functions of the State Commission is determination of tariff of generation, supply, transmission and wheeling of electricity, wholesale, bulk or retail as the case may be in the State. Further Section 62 of the Act also stipulates that the Commission shall determine the tariff in accordance with the provisions of the Act for supply of electricity by a generating unit to a distribution licensee, transmission of electricity, wheeling of electricity and also retail sale of electricity.
- 1.1.3 The Bihar State Electricity Board (referred to as BSEB or Board hereinafter) was constituted under section 5 of Electricity (Supply) Act, 1948 on 1st April 1958. The BSEB is a deemed licensee in terms of section 14 of the Electricity Act, 2003 and is engaged in the business of generation, transmission and distribution of electricity in the State of Bihar. In terms of Section 172 of the Act, the Board constituted under the repealed laws shall be deemed to be the State Transmission Utility (STU) and a licensee under the provisions of the Act for a period of one year from 10th June 2003 i.e. the appointed date. On the request of Government of Bihar from time to time Central Government has agreed to extend the time to continue the Board to function

as a STU and Distribution licensee. Last extension granted to the Board is upto 31.12.2010.

1.2 PROCEDURAL HISTORY

1.2.1 BSEB is still a vertically integrated utility and is responsible for generation, transmission and distribution of electricity in the State of Bihar.

BSEB was required to file petition to the Commission for approval of Annual Revenue Requirement (ARR) and determination of retail tariff for the year 2010-11 by 15th November 2009 as required under clause 6(8) of BERC (Terms and Conditions for determination of Tariff) Regulations, 2007. It stipulates that the distribution licensee shall file ARR along with data in prescribed formats for each financial year by 15th November of the preceding year.

BSEB submitted its ARR and tariff petition for FY 2010-11 before the Commission on 03.02.2010 which was incomplete, as much data was wanting. The Commission directed the BSEB to furnish the shortcomings / deficiencies in the ARR and Tariff Petition vide letter No. 72 dated 25.02.2010. BSEB attended the shortcomings/ deficiencies and submitted the information vide letter No.192 dated 19.3.2010. On scrutiny of the information / data furnished by the Board, the Commission directed the Board to furnish further information and data vide letter No.117 dated 12.4.2010. BSEB submitted further data vide letter No. 248 dated 27.4.2010. As the data / information furnished was not complete and there were still some shortcomings / deficiencies, the Commission again directed the Board to attend to the shortcomings / deficiencies vide letter No.156 dated 17.5.2010. The Board furnished further information / data vide letter No. 438 dated 31.5.2010.

The petition was taken on record on 02.07.2010. In order to provide transparency and adequate opportunity to all stakeholders for making comments / suggestions as mandated under section 64 (3) of the Electricity Act 2003, the Commission vide its letter No. BERC 213 dated 02.07.2010 annexing there with a copy of notice directing BSEB to publish ARR and tariff petition for FY 2010-11 in an abridged form within five days inviting written objections / suggestions / comments on the tariff petition upto 6th August 2010 in two daily newspapers (one in English and the other in Hindi) and to repeat the same after seven days in order to have wide publicity. On the request of some consumers, the date for submission of objections / suggestions was subsequently extended upto 16th August, 2010 by the Commission asking BSEB vide

letter No.243 dated 30.07.2010 to publish 'Public Notice' in daily newspapers one in English and other in Hindi on or before 5th August 2010.

BSEB was also directed to post the complete ARR and tariff petition on their website and make available copies of the tariff petition in the Office of Chief Engineer (Commercial), BSEB, Patna and offices of all General Managers-cum-Chief Engineers supply areas of the Board for sale and for reference to the members of the public.

Accordingly ARR and tariff petition was published in abridged form by the Board on 8th July 2010 and on 17th July 2010 in the following newspapers having wide circulation in the State.

Sl.No.	Name of the Newspaper	Language	Date of Publication
1.	Times of India	English	8.7.2010 and 17.7.2010
2.	Hindustan	Hindi	8.7.2010
3.	Dainik Jagaran	Hindi	17.7.2010

Copies of the tariff petition were also sent by the Commission to the Energy Department, Government of Bihar, and gist of tariff petition to the members of the State Advisory Committee for their suggestions / comments.

Twenty-six (26) objections / suggestions has been received from consumers / consumer organisations upto 16th August, 2010. The list of objectors is given in Annexure-1.1 of this chapter. Copies of the objections / suggestions received were sent to BSEB vide Commission's letter No.269 dated 17.08.2010 directing to submit response of the BSEB latest by 26.08.2010.

BSEB submitted their response on objections/suggestions on 31.08.2010 to the Commission.

In the meantime General Election of State Legislative Assembly has been notified and "Model Code of Conduct" has come into force in the State from 08.09.2010. Considering the specified period of one hundred twenty days for issue of Tariff Order in the Act, the Commission vide its letter No. 309 dated 14.09.2010 apprised the Chief Electoral Officer, Bihar that it may not be proper to issue Tariff Order till Model Code of Conduct is in force, however Commission may go ahead to complete other formalities for determination of Tariff including Public Hearing during this period and

requested for permission / 'No Objection'. The office of the Chief Electoral Officer, Bihar communicated No Objection vide their letter No. 8345 dated 01.10.2010

After getting no objection from Chief Electoral Officer, Bihar the date of 'Public Hearing' to be held on 25th, and 26th, October, 2010 has been fixed and notice has been issued on 08.10.2010 as detailed hereinafter.

S.No.	Name of News Paper	Language	Date of publication
1	Times of India	English	09.10.2010
2	Hindustan	Hindi	09.10.2010
3	Dainik Jagaran	Hindi	09.10.2010

The objections / suggestions from consumers /consumers' organizations and general public have been dealt in detail in Chapter-3 of this order.

During the process of analysis of the information / data furnished by the BSEB in the ARR and Tariff Petition certain additional information / data has been obtained by the Commission.

The consultants and officers of the Commission held discussions with officers of BSEB from 27th October to 28th October 2010 for validation of data furnished by BSEB and obtained the clarifications.

BSEB vide their letter No. 887 dated 17.09.2010 submitted an alternative proposal in tariff structure for DS-II, NDS-II, NDS-III, LTIS-I and LTIS-II consumers. The proposal suggested two part tariff for all these consumer categories with fixed charges based on contract demand and energy charges. BSEB also in their alternative proposal dated 25.10.2010 proposed that all HT/EHT consumers having contract demand of 200 kVA and above may be allowed to have stand by transformer whose capacity shall not be more than the main transformer and the Railway Traction transformer capacity may be allowed to have 100% extra i.e. 200% of contract demand and in case of system failure the feed areas may be allowed to be extended by the Railways. Again BSEB vide their letter No. 1003 dated 25.10.2010 submitted the revised rate of alternative proposal. Since the alternative proposals have been received subsequent to issue of public notice on the ARR and Tariff Proposals, the alternatives proposal have been considered and offered as an alternative tariffs to the consumers. This is discussed in detail in Chapter-5 "Tariff Principles".

1.2.2 Public Hearing

With a view to give adequate opportunity for personal hearing to the objectors, notice for public hearing to be held on 25th and 26th October 2010 was published in the following leading newspapers of the State namely Times of India, Hindustan and Danik Jagaran on 09.10.2010.

Public hearings were held on 25th and 26th October 2010 as scheduled and also on 27th October for completing of part heard arguments at BERC Court Room, Patna. The Commission heard not only the persons and their legal representative who filed the objections /suggestions in writing but an opportunity was also given to all the participants who wished to express their views in the open hearing irrespective of whether they had filed written objection / suggestion on the ARR and tariff application or not. Thus, the Commission made efforts to hold wider consultations for arriving at its conclusions / decisions on the ARR and tariff filing.

The list of participants in the public hearings are given in Annexure-1.2 of this chapter.

1.2.3 State Advisory Committee (SAC)

A special meeting of the State Advisory Committee constituted under section 87 of the Electricity Act, 2003 was convened on 7th September, 2010 to solicit the views and advise of the members of the Advisory Committee on the ARR and tariff petition filed by BSEB. The observations and the valuable suggestions made in the meeting on the ARR and tariff petition were kept in mind while finalizing the tariff order.

1.3 VERIFICATION OF DATA BY AN INDEPENDENT AGENCY

As advised by the Ministry of Power, Government of India, third party verification / energy audit of technical and financial data furnished by BSEB in its ARR and tariff petition has been done.

1.4 The Tariff Petition has been taken on record on 02.07.2010 and in accordance with the provisions of Section 64(3) of the Electricity Act, 2003, the Commission is required to issue tariff order within one hundred twenty days, i.e. on or before 29th October, 2010. But during the process, the General Election of State Legislative Assembly has been declared on 08.09.2010 and Model Code of Conduct came into

force from 08.09.2010 to 26.11.2010 so the tariff order could be issued on 6th December 2010.

The Commission has thus taken necessary steps to ensure due process as contemplated under the Act and also Regulations framed by the Commission and adequate opportunity has been given to all stakeholders, consumers / consumer organizations and general public for presenting their views.

LIST OF OBJECTORS

Sl.No.	NAME AND ADDRESS OF THE PARTICIPANTS
1	M/s Kalyanpur Cements Ltd (HTS – III)
2	M/s Balmukund Concast Ltd, Patna (HTS – III)
3	Chief Electrical Engineer, East Central Railway, Hazipur
4	Sri Arun Kumar Mishra, Advocate, Patna City, Patna
5	M/s Dina Mahabir Re-Rollers Pvt Ltd., Patna
6	M/s Bihar Industries Association, Patna
7	M/s Bihar Chamber of Commerce, Patna
8	Sri M.C. Agarwal, Advocate, East boring Road, Patna
9	Bihar Steel Manufacturers Association, Patna
10	M/s Gangotri Iron & Steel Company Limited, Patna
11	M/s Gangotri Electro Castings Limited, Patna
12	M/s Patwari Udyog, Patna (C.D 400 KVA at 11 KVA in HTS-I category)
13	M/s Patwari Steel Pvt. Limited, Patna
14	M/s Patwari Forgings Pvt. Ltd, Patna
15	M/s Poddar Wires Industries Pvt Ltd., Patna city, Patna
16	M/s Lichhwi Foods (I) Pvt Ltd, Hajipur, Patna
17	M/s Shree Shambhu Re-rolling mills, Bettiah, West Champaram (Bihar)
18	M/s Bihar & Jharkhand Motion Picture Association, Patna
19	M/s Mahua Cooperative Cold Storage Ltd, Girjanagar, Bihar
20	M/s Bhol Ram Steels Pvt Ltd; Danapur, Patna
21	M/s State Bank of India, Local Head Office, Patna
22	Sri Doman Singh, Anand Bihar, Patna
23	Sri Nagendra Singh, Retd. G.M-cum-C.E, BSEB, East Champaran
24	Prof. Pramod Kumar Sharma, Ditawarpur, Bidhupur, Vaishali
25	Maulana Azad College of Engineering & Technology, Anisabad, Patna
26	M/s Dina Iron & Steel Limited, Didarganj, Patna

**LIST OF PARTICIPANTS IN PUBLIC HEARINGS HELD ON
25th, 26th and 27th October 2010**

Sl.No.	NAME AND ADDRESS OF PARTICIPANTS
1.	Shri P K Agarwal, Bihar Chamber of Commerce
2.	Shri K P S Keshri, Bihar Chamber of Commerce
3.	Shri Sanjay Khemka, Bihar Chamber of Commerce
4.	Shri Sanjay Bhartia, Dina Iron and Steels Pvt. Limited
5.	Prof. P K Sharma, Bidupur Bajar (Vaishali)
6.	Shri Doman Singh, Patna
7.	Shri Dimbalkar Jha
8.	Shri Shatrugan Saran Singh
9.	Shri Murthujanjai Mani
10.	Shri Suraj Samdarshi, Advocate, Patna High Court
11.	Shri S C Mishra
12.	Shri G K Sinha, Balmukund Concast Limited
13.	Shri S K Patwari, Patwari Group Industries
14.	Shri Anil Sultania, Shyam Wire Products Pvt.Ltd.
15.	Shri V K Poddar, Poddar Wire Industries Pvt. Ltd.
16.	Shri Mohd Tahir, Hotel Minar, Patna
17.	Shri A K Pashwan, NTPC Limited, LNJP, Patna
18.	Shri Arjuna Lal, Advocate
19.	Shri Bonu Suresh
20.	Shri Ajay Goenka, Patna
21.	Shri Ray Singh Meena, East Central Railways
22.	Shri A K Singh, Railways
23.	Shri Sanjay Bharatiya, Bihar Industries Association
24.	Shri S Narayan, Retired GM, Bank, GOI
25.	Shri G K Sinha, Balmukund Concast Ltd.
26.	Shri Jay Prakash Singh, Chamber of Commerce
27.	Shri Om Prakash Singh
28.	Shri T U P Singh, East Central Railways
29.	Shri Prabhat Kumar, East Central Railways
30.	Shri P Behena, CEDE/East Central Railways
31.	Shri Shashi Shekhar, Bar Association, High Court, Patna
32.	Suraj Samdarshi, Advocate for Dina Mahabir Re-Rollers
33.	Shri Sanjay Bhartiya, Bihar Steel Manufacturers Association
34.	Shri R C Gupta, Bihar Steel Manufacturers Association
35.	Shri A K Srivastava, Electrical Engineer, SBI, Patna

Chapter-2

Review of ARR for the Year 2008-09

2.1 BACKGROUND

2.1.1 The Commission had approved the ARR and Tariffs for the year 2008-09 in its Tariff Order dated 26.08.2008. The approval was based on the estimates presented by the Board for costs to be incurred and revenues likely to be generated by the Board during the year, after due scrutiny.

While furnishing data for the year 2010-11 in its letter No.84 dated 10.03.2010, the Board has furnished un-audited but adopted annual accounts for the year 2008-09, which vary in some parts as compared to the figures taken into account earlier by the Commission in the Tariff Order for the year 2008-09.

2.2 ENERGY DEMAND (SALES)

2.2.1 The Sales Projected by the Board in ARR for the year 2008-09 and sales approved by the Commission in the Tariff Order dt.26.08.2008 and actual sales now given by the Board as per adopted Annual Accounts for the year 2008-09 are given in Table-2.1 below:

Table-2.1
Energy Sales (2008- 09)

(MU)

S. No	Category	Proposed by BSEB in ARR for 2008-09	Approved by the Commission in T.O. 2008-09	Actuals as per annual accounts for 2008-09	Now Approved by the Commission
1	Kutir Jyoti				
	a) Rural	64.08	76.40	89.97	89.97
	b) Urban		3.60	1.21	1.21
2	Domestic	1565.28	1904.00	1677.53	1677.53
3	Non-Domestic	359.18	421.00	416.92	416.92
4	Public lighting	26.64	35.00	22.69	22.69
5	Irrigation	613.90	544.00	776.72	413.00
6	Public Water Works	170.00	178.00	160.93	160.93
7	Industrial L.T	185.10	213.00	152.72	152.72
8	Industrial H.T	935.60	1030.00	1275.40	1275.40
9	Railways	460.00	472.00	399.81	399.81
10	Sales to Nepal	250.00	250.00	*	
11	Total sales including Nepal	4629.78	5127.00	4973.90	4610.18
12	Sales to other states	500.00	500.00	**350.74	350.74
13	Total sales	5129.78	5627.00	5324.64	4960.92

*BSEB has not furnished units exported to Nepal separately in the annual accounts of 2008-09.

** This includes units exported to Nepal.

The actual sales as per annual accounts for all categories of consumers except for irrigation category are accepted by the Commission.

In the case of irrigation category the Commission has approved in its Tariff Order for the year 2008-09, sales of 544 MU against 614 MU projected by the BSEB. The approval was based on effective number of 58600 installations and effective connected load of 288232 KW. In the ARR and Tariff Petition for the year 2010-11, the actual number of installations and connected load of irrigation pumpsets for the year 2008-09 furnished by BSEB are as follows:

Year	No. of installations (effective)	Connected load (kW)
2008-09	51442	206475

The norm of 2000 KWh/ KW / annum approved by the Commission, for the year 2008-09 is considered liberal. With the above number of connections and corresponding connected load and with the already approved norm of 2000 kWh/kW/annum the consumption for irrigation pumpsets for the year 2008-09 would be 413MU.

Accordingly, the total energy sales to irrigation category is now approved at 413 MU for FY 2008-09 for review purpose and the total sales for all categories of consumers at 4961 MU against 5627 MU approved in the Tariff Order for the year 2008-09.

2.3 TRANSMISSION AND DISTRIBUTION LOSSES (T & D LOSSES)

2.3.1 The Commission in its Tariff Order 2008-09 had approved T&D losses at 38% for the year 2008-09. As per the annual accounts submitted by BSEB for the year 2008-09, the T&D losses for that year are 37.98 % with an assessed agriculture consumption of 776.72 MU.

The Commission therefore approves the T&D losses at 37.98% as per actuals for the year 2008-09.

2.4 BSEB OWN GENERATION

BSEB has one coal based thermal station of its own namely Barauni TPS (BTPS). The Muzaffarpur Thermal Power Station has come under joint venture and is under Kanti Bidyut Utpadan Nigam Limited.

The gross and net generation approved of BTPS by the Commission in the Tariff Order 2008-09 and actual generation for the year 2008-09 as per Annual Accounts are furnished in Table-2.2 below.

Table-2.2

Own Generation for 2008-09

(MU)

Sl. No	Particulars	Approved by Commission in Tariff Order		Actuals as per Annual Accounts 2008-09		Now approved by the Commission	
		Gross	Net	Gross	Net	Gross	Net
1	Barauni TPS (Unit 6)	310	279	102.14	93.34	102.14	93.34
2	(Unit 7)						
	Total	310	279	102.14	93.34	102.14	93.34

Actual thermal generation as per the information made available by BSEB through annual accounts for the year 2008-09 is 102.14 MU (Gross) and 93.34 MU (Net) with auxiliary consumption at 8.80 MU which works out to 8.61 % of gross generation.

The Commission now approves gross thermal generation for the year 2008-09 at 102.14 MU and net 93.34 MU as per actuals . The auxiliary consumption of 8.61% as per actuals is approved.

2.5 GENERATION COST

The Commission in its tariff order for FY 2008-09 approved generation cost of Rs.62.35 crore for own generation of 310 MU as detailed in Table 2.3 below. The details of actual generation cost for FY 2008-09 are also given in the same table.

Table-2.3

Generation Cost for 2008-09

Sl. No	States	Approved by the Commission				Actuals Submitted by BSEB				
		Gen (MU)	Coal(MT) / Cost (Rs.Cr)	Oil(KL) / Cost (Rs.Cr)	Total Cost (Rs.Cr)	Gen (MU)	Coal (MT) / Cost (Rs.Cr)	Furnace Oil (KL) / Cost (Rs.Cr)	L.D Oil (KL) / Cost (Rs.Cr)	Total Cost (Rs.Cr)
1	Barauni TPS- 6	310	310000 / 54.72	24609 / 7.63	62.35	102.14	98158/14.65	1890/5.92	-	20.57
2	TPS- 7									
	Total	310	310000 / 54.72	24609 / 7.63	62.35	102.14	98158/14.65	1890/5.92	-	20.57

Accordingly, the Commission now approves the fuel cost of Rs. 20.57 crore for gross generation of 102.14 MU for the year 2008-09.

2.6 POWER PURCHASE

2.6.1 The Commission in its Order for the year 2008-09 had approved net power purchase of 8790 MU. As per annual accounts for the year 2008-09, actual net purchases during 2008-09 are 8491.35 MU. The matter is further discussed in para 2.8.

2.7 ENERGY BALANCE

2.7.1 The details of energy requirement and availability approved by the Commission in Tariff Order of 2008-09, actuals now furnished by the BSEB and those approved by the Commission now are given in Table-2.4 below:

Table-2.4

Energy Balance – FY 2008-09

(MU)				
S. No	Particulars	Approved by Commission in Tariff Order 2008-09	Actuals as per annual accounts 2008-09	Now approved by the Commission
1	2	3	4	5
A. Energy requirement				
1	Energy sales (including Nepal) other than irrigation & UI	4583	4197.18	4197.18
2	UI Sales & outside state	500	350.74	350.74
3	Sales for irrigation	544	776.72	413.00
3	Total sales	5627	5324.64	4960.92
4	T&D Loss (%)	38	37.98	37.98
5	T&D losses	3142	3260.05	2823.20*
6	Total requirement (net)	8769	8584.69	7784.12
B. Energy available				
7	Own generation (Ex-bus)(MU)	279	93.34	93.34
8	Purchase Net (MU)	8490	8491.35	7690.78
9	Total	8769	8584.69	7784.12

* The approved T&D losses are reckoned on sales other than UI sales and sales to Nepal.

2.7.2 Total energy requirement now approved by the Commission is 7784 MU (Net) and the power purchase against the requirement is 7691 MU. The total power purchased by the Board owing to higher assessment of agricultural sales as discussed in para 2.2.1, the level approved by the Commission had resulted in increase in power purchase to an extent of 800 MU (8491–7691). The matter is further discussed in para 2.9.

The Commission now approves the total energy requirement at 7784 MU for the year 2008-09.

2.8 POWER PURCHASE COST

2.8.1 The Commission in its Tariff Order for the year 2008-09 had approved a cost of Rs.1656.44 crore for power purchase of 8490 MU (gross).

2.8.2 The actual gross power purchase for the year 2008-09 by the Board as per annual accounts is 8802 MU including Unscheduled Interchange(UI) of 113.49 MU and net power purchase of 8491.35 MU. The power purchase cost as per annual accounts for the year 2008-09 is Rs.1920.85 crore. The actual power purchase cost for 2008-09 is given at Rs. 1842.78 crore in Format – 7 of ARR.

Thus, the Board actually incurred an expense of Rs. 1842.78 crore for net power purchase of 8491.35 M.U.

2.9 EXPENSES DISAPPROVED BY THE COMMISSION

2.9.1 As discussed in para 2.3 above, the Board has achieved the T & D loss target approved by the Commission, in the tariff order for the year 2008-09 by over assessing the agricultural consumption. The Commission feels that the financial burden as measured by consequential additional power purchase on this account may not be passed on to the consumers but borne by the Board. As brought out in para 2.7 above, higher assessment of agricultural consumption has resulted in increased power purchase to an extent of 800 M.U. The cost of this 800 M.U. based on pro-rata cost of power purchase works out to Rs. 173.62 crore (1842.78 crore ÷ 8491) x 800.

The Commission thus disapproves expenses to the extent of Rs.173.62 crore on account of higher T&D losses than that approved due to higher assessment of agricultural consumption.

2.10 EMPLOYEE COST

The Commission in the Tariff Order for the year 2008-09 had approved employee cost of Rs.610.15 crore net of capitalization.

The details of employee costs approved by the Commission and actuals furnished by BSEB in the Annual Accounts for 2008-09 are furnished in Table 2.5 given below:

Table-2.5
Employee Cost – FY 2008- 09

(Rs. crore)

S. No	Particulars	Approved by Commission in T.O 2008-09	Actuals as per annual accounts for 2008-09	Now approved by the Commission
	Salary and allowances			
1	Basic + Salary pay	191.24	235.07	235.07
2	Dearness Allowance	99.14	85.07	85.07
3	House rent Allowance	11.18		-
4	Over time payment	-	5.85	-
5	Other allowances	3.50	14.16	14.16
6	Total salaries	305.06	340.15	334.30
	Other staff costs			
7	Medical reimbursement charges	2.09	1.18	1.18
8	Fixed medical allowance	1.63		
9	Leave encashment	23.23	16.82	16.82
	LTC			
10	Workmen compensation	1.19	0.21	0.21
11	Other expenses	23.60	1.24	1.24
12	Total other staff costs (7 to 11)	51.74	19.45	19.45
	Pension & Gratuity			
13	Gratuity	66.34	284.33	284.33
14	Pension	202.95		
15	Terminal benefits			
16	Total pension etc	269.29	284.33	284.33
17	Total (6+12+16)	626.09	643.93	638.08
18	Less: Amount capitalized	15.94	17.14	17.14
19	Net employee cost	610.15	626.78	620.94

The employee cost as per the Annual Accounts is Rs. 626.78 crore net of capitalisation. This includes Rs. 5.85 crore towards over time payment. The Commission has disallowed the provision towards over time payment in ARR for 2008-09.

The Commission, accordingly, approves employee cost at Rs. 620.94 crore after disallowing Rs. 5.85 towards over time payment.

2.11 ADMINISTRATION AND GENERAL EXPENSES

The Commission had approved Rs.33.13 crore towards Administration and General Expenses as projected by BSEB for the year 2008-09. As per annual accounts for FY 2008-09, actual expenditure is Rs.33.66 crore net of capitalization for the year 2008-09, a marginal increase over what was approved by the Commission. The details are furnished in Table-2.6 below.

Table-2.6

Administration and General Expenses - FY 2008- 09

(Rs. crore)

Sl. No.	Particulars	Approved by Commission for 2008-09	Actuals as per annual accounts for 2008-09	Now approved by the Commission
1	Rent, Rates & Taxes	1.27	0.91	0.91
2	Insurance	0.16	-	-
3	Telephone, Postage and telegraph etc	2.62	1.29	1.29
4	Legal Charges	1.88	0.75	0.75
5	Audit fee	1.50	3.86	3.86
6	Consultancy charges	0.36	0.01	0.01
7	Technical fees	-	0.01	0.01
8	Other Professional charges	-		
9	Conveyance & Travel	5.38	5.28	5.28
10	Other Expenses (Advertisement, computer billing, scrutiny, Misc. expenses)	19.96	23.08	23.08
11	Total	33.13	35.19	35.19
12	Less Capitalization	-	1.53	1.53
13	Net A&G expenses	33.13	33.66	33.66

Accordingly the Commission now approves Administration and General Expenses of Rs.33.66 crore for the year 2008-09.

2.12 REPAIR AND MAINTENANCE

The Commission had approved Rs.42.27 crore towards Repair and Maintenance expenses for the year 2008-09 as claimed by the BSEB. According to the annual accounts for the year 2008-09, Rs.38.20 crore was actually incurred. The water cost and miscellaneous charges shown in fuel costs at Rs. 3.20 crore by BSEB are to be included in R&M costs. After adding these costs the R&M expenses work out to Rs.41.40 crore.

Accordingly the Commission now approves R&M costs of Rs. 41.40 crore for the year 2008-09.

2.13 DEPRECIATION

2.13.1 The Commission had approved depreciation of Rs.90.99 crore in the tariff order for the year 2008-09 against Rs. 109.61 crore claimed by BSEB as per CERC regulations. As per annual accounts for the year 2008-09 submitted by BSEB, the depreciation for FY 2008-09 is Rs.55.55 crore.

Accordingly depreciation of Rs.55.55 crore is allowed for the year 2008-09.

2.14 INTEREST AND FINANCE CHARGES

The Commission approved interest and finance charges of Rs. 241.46 crore for the year 2008-09 as projected by the BSEB. As per the Annual Accounts for the year 2008-09 the interest and finance charges for the year are Rs. 888.38 crore which includes of Rs. 563.60 crore towards interest on State Government loans and Rs. 176.43 crore towards interest on State Government loans against Bonds issued to CPSUs towards power purchase bills. As these loans are not for asset creation the Commission allows Rs. 148.35 crore after excluding the interest on Government loans and interest on bonds (Rs. 740.03 crore)

The Commission, accordingly, approves the interest and finance charges at Rs.148.35 crore.

2.15 OTHER INCOME

The Commission had approved other income of Rs.136.44 crore in Tariff Order for the year 2008-09. As per annual accounts of the year 2008-09, the other income including meter rent / service line rental and miscellaneous recoveries is Rs.105.98 crore.

The Commission accordingly now approves other income of Rs.105.98 crore on actual basis for the year 2008-09.

2.16 GRANT / REVENUE SUBSIDY FROM GOVERNMENT OF BIHAR

As per annual accounts for the year 2008-09, the Board had received Rs.720 crore from the Government towards revenue subsidy and grant.

Accordingly the Commission accepts the Government of Bihar Grant / Revenue subsidy amount of Rs.720 crore.

2.17 PRIOR PERIOD EXPENSES / PRIOR PERIOD INCOME

As per annual accounts for the year 2008-09 of the Board, the net income is Rs.97.70 crore.

Accordingly the Commission takes into account the prior period net income of Rs.97.70 crore for the year 2008-09.

2.18 PROVISION OF FRINGE BENEFIT TAX (FBT)

As per annual accounts for the year 2008-09, the amount of FBT is Rs.0.35 crore. This expenditure is statutory payment made by the Board.

Accordingly the Commission approves expenditure of Rs.0.35 crore on account of Fringe Benefit Tax for the year 2008-09.

2.19 REVENUE FROM SALE OF POWER

As per annual accounts for the year 2008-09, revenue from sale of power is Rs.1659.31 crore.

Accordingly the Commission now approves the revenue from sale of power at Rs.1659.31 crore for the year 2008-09.

2.20 REVIEW OF ARR FOR THE YEAR 2008- 09

The aggregate revenue requirement for the year 2008-09 based on the above discussion is detailed in Table-2.7 below:

Table-2.7

Aggregate Revenue Requirement – FY 2008- 09

S.No	Particulars	Approved by Commission in T.O. 2008-09	Actuals as per Annual Accounts for 2008-09	Approval by Commission based on annual accounts for 2008-09
A	Energy requirement (MU)	8769	8585	7784
B	Energy Sales (MU)	5627	5325	4961
C	T & D loss (%)	38	37.98	38
D	Gross Expenditure (Rs. crore)			
1	Generation Cost	62.35	20.57	20.57
2	Power Purchase Cost	1656.44	1920.85	1842.78
3	Employee Cost	610.15	626.79	620.94
4	Administration & General Expenses	33.13	33.66	33.66
5	Repairs & Maintenance	42.27	41.40	41.40
6	Interest & Finance Charges	241.46	888.38	148.35
7	Depreciation	90.99	55.55	55.55
8	Return on NFA	-	-	-
9	Prior Period Expenses / Income	-	-	(97.70)
10	Other debits & extraordinary items	-	0.02	0.02
11	Fringe Benefit Tax etc	-	0.35	0.35
12	Total Revenue Requirement (Rs. crore)	2736.79	3587.22	2665.92
13	Less Expenditure disallowed due to higher T & D loss	-	-	173.62
14	Revenue Requirement (12-13)	2736.79	3587.22	2492.30
15	Less Non-Tariff Income	136.44	105.98	105.98
16	Net Revenue Requirement (Rs. crore)	2600.35	3481.24	2386.32
17	Revenue from Tariff (Rs. crore)	1846.88	1659.31	1659.31
18	Gap (16-17) (Rs. crore)	753.47	1821.93	727.01
19	Government subsidy	720.00	720.00	720.00
20	Net gap (Rs. crore)	33.47	1101.93	7.01

Thus from the review of Revenue Requirement for FY 2008-09, based on annual accounts for FY 2008-09, it is noticed that there is a net gap of Rs.7.01 crore.

This gap is only indicative, as the annual accounts are only adopted by the Board and not yet audited by the Accountant General.

Chapter-3

Summary of Objections / Suggestions of Consumers/ Stakeholders – Response of BSEB and Observations of the Commission

3.1 INVITING OBJECTIONS / COMMENTS ON TARIFF PETITION

The salient features of the Aggregate Revenue Requirement (ARR) and the Tariff Petition for FY 2010-11 filed by the BSEB were published in leading newspapers of the State inviting objections/suggestions on these proposals in the Tariff Petition from the public and stakeholders. The list of newspapers in which the public notice was published are given in Chapter-1 and the list of objectors who filed the written objections/suggestions on the Tariff Petition is given in the Annexure-1.1 of Chapter-1 of the Tariff Order.

The Commission has received a total of twenty six objections / suggestions and perusal of the objections filed shows the active participation of the consumers in the proceedings.

All written objections were forwarded by the Commission to BSEB as and when they were received and BSEB was asked to submit its replies in respect of the objections. BSEB submitted their replies / responses to these objections / suggestions.

3.2 PUBLIC HEARINGS

To ensure transparency in the process of determination of Aggregate Revenue Requirement and tariff as envisaged in the Electricity Act, 2003 public hearings were held at BERC Court Room, Patna on 25th, 26th and 27th October, 2010. On the first day of hearing, BSEB made an oral presentation on the ARR and Tariff proposals. In the public hearings, some of the objectors who had submitted their objections in writing earlier, presented their objections and suggestions personally, before the Commission. It is observed that the objectors had made meticulous and in depth preparations on the issues and raised relevant and useful issues. Other participants from the general public, who had not submitted written objections earlier, were also given an opportunity to present their views in respect of the Tariff proposals. The list of such participants is annexed as Annexure –1.2 of Chapter-1 of the Tariff Order.

The major issues raised by different consumers and consumer groups are briefly discussed below along with the response of the BSEB and views of the Commission.

3.3 OBJECTIONS / SUGGESTIONS AND BSEB RESPONSE

Issue 1: Admissibility of the petition

Bihar Chamber of Commerce and Dina Mahabir Re-Rollers (P) Ltd submitted that the ARR and Tariff Petition for 2010-11 was required to be submitted on or before 15th November 2009 but the same was submitted in the middle of the current FY 2010-11 and BSEB requested for approval of ARR with revised tariff schedule giving effect from 01-01-2010 which is highly unlawful, objectionable and so the same deserves to be rejected by the Commission.

Response of BSEB

Board has apprised the Commission about the reasons for delay in filing the tariff petition in 2009-10. That petition of 2009-10 was withdrawn as per the direction of the Commission and tariff petition for FY 2010-11 has been filed. Board has filed the petition on 03-02-2010 following all the norms and Regulations with a request to make it effective from 01-04-2010 or the date which the Commission deems fit.

Issue 2: Auditing Accounts

Bihar Chamber of Commerce and Dina Mahabir Re-Rollers, Poddar Wire Industries, Bihar Industries Association, Dina Iron & Steel Ltd and Sri Arun Kumar Mishra pointed that the auditing of annual accounts of BSEB for financial years 2007-08 and 2008-09 are not yet done and the ARR for 2010-11 is submitted based on the estimated accounts of 2009-10 with the projected accounts for 2010-11 without any review or truing up of earlier years and so the ARR for 2010-11 submitted is completely unreliable.

Response of BSEB

The annual accounts of Board upto 2007-08 has been audited by AG Bihar and certificates of the same have been submitted to the Commission. Annual accounts of 2008-09, duly adopted by the Board has been submitted to AG Bihar for auditing. Annual accounts of 2009-10 is not due for submission and is under compilation.

Issue 3: Function wise separate accounts

Bihar Steel Manufactures Association suggested that separate tariff for generation, transmission and distribution should be determined. Again generation tariff is to be determined in two parts i.e., capacity / fixed charges and variable charges. Similarly

capacity / fixed charges and variable charges are also to be determined for transmission as well as for distribution tariffs.

Response of BSEB

Separate accounting is possible only after restructuring of the Board for which State Government has already taken steps.

Issue 4: Adoption of Multiyear Tariff

Kalyanpur Cements, Bihar Steel Manufacturers Association, Dina Mahabir Re-Rollers. have pointed that under National Tariff Policy, utilities have to adopt Multi Year Tariff since 01-04-2006. CERC made the tariff regulations for block periods of 01-04-2004 to 31.03.2009 and 01-04-2009 to 31-03-2014. The Board should be directed to file petition for Multiyear Tariff for 5 years.

Response of BSEB

Commission in its last tariff order has expressed that at present Multi Year Tariff is not possible to be introduced due to inadequate MIS & regulatory reporting system of the Board.

Issue 5: Non-Compliance of Directives:

Kalyanpur Cements Ltd, Bihar Steel Manufactures Association, Bihar Industries Association, Bihar Chamber of Commerce have submitted that the following directives issued by the Commission in Tariff Order FY 2008-09 are not complied in full:

Directive 1: Cent Percent metering

Directive 2: Replacement of non-functional/defective meters

Directive 4: Efficient meter reading, Billing and Collection

Directive 7: Reduction of T&D Losses

Directive 8: Energy Audit and demand side management

Directive 9: Pilferage of energy

Directive 11: Assessment of agricultural consumption

Directive 15: Annual accounts of the BSEB

Directive 17: Collection of arrears

Directive 19: Time of day (TOD) Tariff

Directive 22: Adjustment of payment of current bills against delayed payment surcharge (DPS)

Directive24: Performance of BSEB's own generating stations and their parameters

Directive 26: Employee Cost

Directive 31: Cost of Supply and Cross Subsidy

Response of BSEB

Status on each directive has been furnished in the tariff petition. Further action based on the directives is being taken.

Issue 6: Revenue Earning and Revenue Gap

Balamukund Concast Ltd. pointed out that an amount of Rs. 4370.30 crore is shown towards expenditure which is 46% of increase over expenditure of FY 2008-09. The quantum of power purchase is high and the cost of power purchase from NTPC stations is to be get reduced by 55Ps/Unit and the transmission charges are to be reduced by Rs. 165 crore and so the revised ARR will be only Rs. 3681.32 crore. Revenue earning is shown as only Rs. 3791.65 crore, the delay payment charges to be increased from Rs. 35.77 crore to Rs. 1245 crore.

By increasing the revenue from Rs. 3791.65 crore to about Rs. 5000 crore and by reducing the expenditure to Rs. 3681.32 crore, the Board will have a surplus of about Rs. 1319 crore instead of the deficit projected.

Response of BSEB

he petitioner has suggested to reduce the average cost of purchase of power from NTPC stations by 55Ps/Unit. Board has adopted the cost of power purchase from NTPC and other sources based n the actual bills paid during April 2009 to December 2009. The transmission charges to PGCIL is also based on the bills for the above period and as per transmission tariff approved for Eastern Region by CERC. The projected expenditure submitted by the Board under different heads are based on the realistic projection of the estimated expenditure during 2010-11.

The petitioner has suggested to revise revenue earnings for FY 2010-11, considering a DPS of Rs. 1245 crore against the projection of Rs. 35.77 crore by the Board. Board's figure is based on past trend of actual realisation of the DPS.

The petitioner on the basis of other assumptions has mentioned that even without revision of tariff, Board would have a surplus of about Rs. 1319 crore. Since the assumptions have been made without any basis, so the surplus amount shall also be base less.

Issue 7: Cost of Board's own generation

Bihar Chamber of Commerce, Bihar Industries Association, Dina Mahabir Rerollers, Gangotri Iron and Steel Co., Gangotri Electro Castings, Sri MC Agarwal and Sri Arun Kumar Mishra pointed that the cost of generation in respect of unit 6 of Barauni TPS is very high. This unit is running at 11% PLF and there is no justification for running a generating station with 11% PLF. A generating plant should operate at 80% PLF to recover full fixed charges from consumers. Board cannot recover fixed charges of other units since they are non-productive. The Board may be allowed to recover fixed cost / capacity charge in respect of unit 6 from consumers at the average plant load factor of 11%. The projected PLF of 39.37% during 2010-11 is also not realistic. Rs. 45.15 crore should be disallowed against total fuel cost of Rs. 77.62 crore claimed by BSEB. Considering the salaries, R&M, depreciation etc, it works out to Rs. 6.50/unit from Board's own generation.

Response of BSEB

All the units of Barauni TPS are more than 25 years old and already units 1 to 5 have been retired. Unit 7 is under shut down. After R&M work unit 6 (110mW) has been made operational. To improve the PLF and operating parameters, major renovation and modernization work has been entrusted to BHEL.

In the present situation of limited availability of power to BSEB system, it is not possible to shut down the running units even at low PLF, more over, without completion of renovation and modernization of old units, PLF will not improve.

Issue 8: Power purchase cost

Most of the objectors submitted that the power purchase cost from NTPC stations have been increased by 55Ps/Unit stating imported coal is being used by NTPC stations. The projections for FY 2010-11 for power purchase cost are inflated in respect of fixed and variable costs. The transmission and RLDC charges of Rs. 190 crore is on high side. Prof. Pramod Kumar Sharma pointed out about the high cost of power of Kanti Bijli Utpadan Nigam Limited.

Some of the objectors submitted that in the tariff order of JSEB for FY 2010-11 the power purchase is as given in Table below and expressed that the Board has claimed Rs. 339.78 crore excess towards power purchase.

Source	Energy projected (2) (MU) Vol. I Page – 23 (Item Nos. 1 to 5)	Per unit energy cost as claimed by Board (Paise/Unit) Vol. I page 23	Per unit energy Cost as approved by JSERC (Paise/Unit) JSERC Tariff Order page 115	Difference (Ps per Unit)	Excess amount claimed by Board (Rs. Crore)
Farakka	2760	277	247	30	82.80
Kahalgaoon-I	1600	253	170	83	132.80
Kahalgaoon-II	645	250	170	80	51.60
Talcher	2600	182	155	27	70.20
Chukha HE	560	159	158	1	0.56
Tala	1820	184	183	1	1.82
TOTAL	9985				339.78

Some of the objectors also submitted that the power purchase losses from KBUNL station, Nepal, UI and own generating station are very high, costing Rs. 374 crore out of the total power purchase cost of Rs. 2848 crore.

Response of BSEB's

Procurement of power from Central Generating Stations, Nepal, KBUNL, UI etc are done as per share allocated and availability from these sources. Even in the condition, the estimated shortage of power is in the order of 700MW. Any reduction in purchase of power from any source will have the impact on the availability of power in the State.

Station wise average cost of power adopted in the tariff petition is based on actual monthly bills paid to the NTPC for the period from April 2009 to December 2009. No comments can be made on the submission made by the petitioner that the JSERC has approved lower rates for purchase of power from NTPC. The petitioner's suggestion to adopt JSERC rates and thereby reduce the cost of power purchase is not acceptable.

The transmission charges of central sector transmission lines and associated grid substations are as approved by the CERC. The monthly charges of transmission system are realized by power grid in proportion to the share of the State in generation.

Issue 9: FPPCA mechanism

Most of objectors requested to abolish fuel and power purchase cost adjustment as there is no need to revise or adjust fuel and power purchase cost through any formula. If there is increase in power purchase cost, it should reflect only after trying

up of accounts. Some stake holders requested to implement the same on monthly basis prospectively. Some stake holders suggested that CERC approved FPA formula does not discriminate between consumers and the Commission also to device FPPPA formula on normative basis without excluding any category of consumers.

Response of BSEB

The FPPCA charge becomes recoverable when the actual cost of power purchased / generated exceeds the approved rates given in the tariff. Suggestion to abolish this is without any argument and should be rejected. Since, it is based on actual cost of power and generation, it is always worked and after the benefit is over i.e six months and will always be from retrospective effect. However, to remove the retrospective aspect, the Commission may authorize the Board to recover provisionally on month to month basis subject to final order by the Commission after completion of six months.

Issue 10: Induction furnace capacity for reckoning Contracted Demand

Balmukund Concast Ltd have requested the Commission that the induction furnace capacity be fixed as 600 kVA/MT for reckoning the contracted Max demand Bholaram Steels Pvt. Ltd submitted certain extracts and rates applicable to HTSS consumers in AP, Chhattisgarh & DVC and requested to include arc furnace (Ferro Alloy) & re-rolling mills in HTSS category and wanted that CMD may be fixed on total Capacity of arc furnace. M/s Gangotri Iron and Steel Company Ltd., Bihta has requested to include ferro alloys, sponge iron and oxygen plants etc., running with Induction Furnace under HTSS Tariff.

Response of BSEB

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

The actual maximum demand recorded by the petitioner is 6880 KVA against the contract demand of 7749 KVA (about 90% of the contract demand), which almost matches, with the contract demand.

They have quoted some extract from the tariff order of BERC dt. 26.08.2008. BSEB refrains from making any comment on the tariff order of BERC quoted by the petitioner.

The commission has already agreed to follow the practice of other SEBs to fix the contract demand as per technical specifications in respect of new units.

Conditions of other States vastly differ especially in respect of own generation, Hydel mix, imported power mix, deficit/surplus in power, consumer mix. The tariff rates are therefore not comparable with other States without consideration of various inputs.

Issue 11: Transformer Capacity for HT Services

Kalyanpur Cements, Balmukund Concast Ltd, Bihar Steel Manufactures Association, Gangotri iron & steel company, Gangotri Electro Castings Ltd, Patwari Udyog, Patwari Steels Pvt Ltd, Patwari forgings, Lichwi foods (i) Pvt Ltd, Bihar and Jharkhand Motion Picture association, Mahua Coop Cold Storage Ltd, M/s SBI, Patna have requested to dispense with the condition that:

The Transformer Capacity of HT Consumers shall not be more than 150% of CMD. They have all suggested allowing the Industrial Consumers (HT Cat III) to keep a spare Power Transformer for use in case of emergency. Also the stipulation of assessing the load as 2/3rd capacity of Transformer may be dispense with

Response of BSEB

Provision of allowing 150% transformer capacity of the contract demand is in practice for last 17 years. This matter was contested by consumers in High Court and Supreme Court and this provision was upheld.

Issue 12: Capital cost

Kalyanpur cements, Bihar Steel Manufacturers Association submitted that the starting point for determination of tariff of a utility is the 'capital cost' for generation (Thermal), generation (Hydel) and transmission of a utility, the actual expenditure incurred in the past subject to prudent check by the Commission can only be admitted as capital cost. Since the Commission has not admitted the capital cost for the year 2009-10 which would be the starting point for arriving at the capital cost for the tariff period of 2010-11. No expenses can be capitalized till the Commission admits it after prudent check.

Response of BSEB

Capital cost is being updated every year as per the works completed and brought into service and the same is shown as amount capitalized.

Issue 13: O&M expenses

Kalyanpur Cements, Bihar Steel Manufacturers Association, Bihar Chamber of Commerce, Gangotri Iron & Steel Co., Gangotri Electro Castings, Bihar Motion Pictures Association, Mahua Co-op Cold Storage, SBI have submitted that the O&M expenses projected are on the high side as given in Table below and are inflated figures.

(Rs. in crore)

Expenses	2006-07 (Actuals)	2007-08 (Actuals)	2008-09 (Actuals)	Average of Actuals	2009-10 (Estimated)	2010-11 (Projected)
Repair and Maintenance	26.01	31.49	41.73	33.08	99.36	105.39
Administration and General	23.38	24.00	40.59	29.32	46.64	55.61
Employee Cost		558.71	626.79	592.75	745.07	821.22
TOTAL				655.15	891.07	982.22

The O&M expenses should be Rs. 19.24 lakhs / MW and Board is not entitled to O&M expenses on non-productive generating units.

The objectors pointed that the administrative & general expenditure of Rs. 55.61 crore in 2010-11 is 20% higher compared to 2009-10 and the estimated expenditure under R&M of Rs. 105.39 crore is also on higher by 10%. Similarly the projected employee cost of Rs. 821.22 crore is on very high side increasing 23%, while number of employees have been reduced from 12650 to 11506. The average employee costs are showing at Rs. 7.14 lakh / employee / annum which is 35% excess over 2008-09 tariff. These costs must be reduced.

Sri Arun Kumar Mishra objected that payment of GPF, GSS, LS, RE etc should not be shown as expenditure under employee cost. BSEB should maintain separate bank account in respect of employee's contribution towards GPF & GSS and should not be shown under 'expenditure' head.

Response of BSEB

Transmission tariff issued by CERC as indicated by the petitioner is not applicable in present situation as BSEB is a integrated utility and no transmission and generation tariff is separately worked out.

Increase in employee cost mainly consists of six monthly revision of DA and also the revision of pay which has been provisionally given from 01/05/2009. Full impact of the revision has been taken in 2010-11.

The projection of A&G expenses is based on item wise actual expenditure of last year and the estimated expenditure of current year. Before APDRP and RSVY, the capital expenditure on infrastructure was very less. After implementation of the schemes under APDRP and RSVY, a major infrastructure has been brought into operation. Hence, there is jump in R&M expenses.

Due to various reasons, Board has not been able to maintain separate bank account to meet the expenditure of GPF, GSS etc. Board has been forced to utilize the employee's contribution for its expenses owing to serious financial constraints. Hence, the interest payable on these deposits have been included under the head employees cost.

Issue 14: Interest and Finance Charges

M/s Kalyanpur Cements, Bihar Steel Manufactures Association, M/s SBI Patna & M/s Dina Mahabir Rerollers Pvt. Ltd. have pointed out that in the format-15 of BSEB Tariff Petition the interest and finance charges workout to Rs. 364.15 Crore inclusive of interest liability on State Government loans of Rs. 210.68 Crore. State Government loans are to be discharged only when BSEB has surplus revenue and hence this is to be deleted from ARR.

They have also indicated that the outstanding dues from Consumers are Rs. 5101.15 Crore and dues from State Government departments is Rs. 2367.50 Crore and suggested that the BSEB shall prepare, area wise list of consumers with huge arrears and furnish to Commission's perusal.

Response of BSEB

The amount of ` 364.15 crore under interest & other finance charges also includes interest payable to State Govt. for loan given for capital expenditure amounting to` 210.68 crore.

Board has not included any interest on the grant given by the state govt. as resource gap.

Interest payable on GPF and GSS deposit are liability to be met from ARR because such funds are not maintained in separate Bank accounts.

The existing practice for different rebate for different category consumers is in existence for a long time. Any change in rebate rate will be counter productive as the same also forms the part of ARR.

Issue 15: Interest on Security deposit

Sri MC Agarwal, Bihar Chamber of Commerce, Gangotri iron & steel company, Gangotri Electro Castings Ltd, Patwari Udyog, Patwari Steels Pvt Ltd, Patwari forgings, Shambu Re-Rolling mills, Bihar & Jharkhand Motion Picture association, Mahua Coop Cold Storage Ltd requested that -

- i) BSEB should not insist for more than 2 months Security deposit
- ii) Interest on SD payable by Board is 6%, which is quite meager
- iii) Board has to provide interest to consumers @ 26% on Security deposit which is being levied as DPS,
- iv) Board to accept Bank Guarantee as Security Deposit
- v) Board to accept interest free installments to pay Security Deposit

Response of BSEB

- i. As per BERC tariff order, the Board is taking only two months security deposit. The petitioner has wrongly quoted that three months security deposit is being taken.
- ii. Interest on S.D. is being allowed as per tariff order.
- iii. Cash security deposit is taken because the supply to the consumer is given initially on credit basis. The cash is required to meet the monthly expenditure on revolving basis to provide electricity to consumer.

Issue 16: Depreciation

Sri MC Agarwal, Bihar Chamber of Commerce, Gangotri iron & steel company, Gangotri Electro Castings Ltd, Patwari Udyog, Patwari Steels Pvt Ltd, Patwari forgings, Shambu Re-Rolling mills, Bihar & Jharkhand Motion Picture association, Mahua Coop Cold Storage Ltd suggested that the depreciation claimed is required to be segregated into generation, transmission and distribution. BSEB has not furnished break up wise details. Depreciation cannot be claimed for non-productive assets. (Generating units 5 & 7)

The depreciation charges are increased from Rs. 55.55 crore (FY 2008-09) to Rs. 97.45 crore (FY 2010-11) even through no thermal project was commissioned by BSEB.

Response of BSEB's

The depreciation projected for FY 2009 were based on work expected to be completed. Due to various reasons the work under APDR could not be fully completed and the schemes were short closed. As a result, depreciation amount was less.

Issue 17: Demand charges and energy charges

Balmukund Concast Ltd, Gangotri Iron & Steel Co., Gangotri Electro Castings Ltd. who are HT consumers, submitted that the proposal to increase demand charges from Rs.165/KVA/M to Rs. 220/KVA/M is not justified. Further they requested that the billing demand should be 75% of the contract demand but not at 85% of contract demand. Some objectors, who are HTSS consumers requested to reduce the billing demand from 100% of CMD to 85% of CMD on par with other HT consumers.

The objectors furnished the comparative tariff rates of neighbouring states viz Jharkhand, Orissa, West Bengal, Bihar existing and proposed tariff rates of HT categories and expressed that the tariffs of neighbouring utilities are lower than the existing tariff rate of BSEB.

Response of BSEB

The hike in tariff rates is mainly on account of increased cost of power purchase and Sixth Pay revision.

Conditions of other states vastly differ especially in respect of own generation, hydel mix, imported power mix deficit / surplus in power, consumer mix. The tariff rates are, not comparable with other States without consideration of various inputs.

Issue 18: Fixed Charges and Monthly Minimum Charges

Fixed Charge:

Bihar Industries Association, has stated that the fixed charge for LTIS category is very high. The connected load is taken as the sanctioned load by BSEB for billing purpose. A diversity factor of 0.3 is to be adopted. They have suggested to allow trivector meters for use in billing purpose.

Lichwi Foods (I) Pvt Ltd, Bihar & Jharkhand Motion Picture association and Mahau Coop Cold Storage Ltd have pointed out that due to their seasonal load, they may not operate for the full year and hence argued for reduction in fixed / demand charges.

MMC

Kalyanpur Cements, Balmukund Concast Ltd, Dina Mahabir rollers Pvt Ltd, Bihar Industries Association, Gangotri iron & steel company, Gangotri Electro Castings Ltd, Patwari Udyog, Patwari Steels Pvt Ltd, Patwari forgings, Podar wires Industries Pvt Ltd, Lichwi foods (i) Pvt Ltd, Bihar & Jharkhand Motion Picture association, Mahua Coop Cold Storage Ltd, have submitted that most of the SEBs have abolished MMC. The MMC charges are higher in Bihar. For in HTSS category, the MMC which is Rs. 1220 / kVA / month is proposed to be increased to 1402 / kVA / month which is unjustified.

Response of BSEB

BSEB has no objection if LTIS-II Category (Load of 25HP and above) is given an alternative demand based tariff based on trivector meter readings.

The actual monthly consumption of all HTSS consumers is in the range of 70-90%. The MMC specified for HTSS consumers is 260 units per KVA per month (about 40% L.F.) and is in no way affecting their monthly bills. HTSS consumers are also availing the Load Factor rebate on higher consumption.

It is a fact that the consumers are not being burdened by MMC as Government of Bihar has exempted them from MMC under Industrial Policy. However, the State Govt. is compensating the Board with the equivalent amount, which has been given to the consumer as relief.

Issue 19: Provision of Clause 13 of HT Agreement

M/s Bihar Industries Association, M/s Patwari Udyog, Patwari Steels Pvt Ltd, Patwari forgings, M/s Mahua Coop Cold Storage Ltd have submitted that when MMC is introduced, clause 13 of HT agreement shall not be abolished as it provides relief to demand charges and guaranteed energy charges.

Response of BSEB

This clause 13 of HT agreement is no more applicable because it relates to giving relief under AMG. Specially HTSS consumers have already been given a method to claim relief if hours of supply is less than stipulated in the monthly bill.

Issue 20: Exceeding Contract Demand

Kalyanpur Cements, Bihar Steel Manufacturers Association, Gangotri Iron & Steel Co., Gangotri Electro Castings, Patwari Udyog, Patwan Steel (P)Ltd, Lichwi Foods (P) Ltd, Bihar, Motion Pictures, Mahua Cold Storage requested that,

- (i) No penalty is imposed for exceeding the demand upto 110% of CMD.
- (ii) If the demand exceeds 110% of CMD, penalty on excess demand of 110% of demand has to be charged at normal rate instead of twice the rate of normal demand charge.

Sri Nagendra Singh stated that in case of LT consumers if the connected load exceeds the sanctioned load it will be charged at twice the rate for one year which HT consumers if the demand exceeds upto 110% of CMD it will be charged at normal rate.

Response of BSEB

Board imposes penalty for exceeding 110% of contract demand as provided in the Tariff Order approved by BEREC, to discourage extra drawal which effects the normal system stability. For LT consumers fixed charges are levied based on their connected load.

Issue 21: Power factor Surcharge & rebate

Kalyanpur Cements, Balmukund Concast Ltd, Sri Arun Kumar Mishra, Bihar Industries Association, Sri MC Agarwal, Patwari Udyog, Patwari Steels Pvt Ltd, Patwari forgings, Lichwi foods (i) Pvt Ltd, Bihar & Jharkhand Motion Picture association, SBI, have suggested that -

- i) If average Pf falls below 0.85, a penalty of 1% for every 0.01 fall in Pf from 0.85 to 0.60 plus 2% for every 0.01 fall below 0.60 to 0.30 is to be levied.
- ii) Rebate: If average Pf is maintained more than 0.85, a rebate of 1% for every 0.01 gain and if Pf is >0.95, a rebate of 2% is to be allowed.

Response of BSEB

Petitioner has not mentioned any technical ground to lowering the P.F. level from 0.9 to 0.85. Board does not agree with the suggestion. Accordingly, the revised penalty & rebate proposal of the petitioner is also not acceptable.

Issue 22: Delayed Payment Surcharge (DPS)

Kalyanpur Cements, Balmukund Concast Ltd, Dina Mahabir Rollers Pvt Ltd, Bihar Steel Manufactures Association, Gangotri iron & steel company, Gangotri Electro Castings Ltd, Patwari Udyog, Patwari Steels Pvt Ltd, Patwari forgings, Podar wires

Industries Pvt Ltd, Lichwi Foods (I) Pvt Ltd, Bihar & Jharkhand Motion Picture association, Mahua Coop Cold Storage Ltd, SBI, submitted that the delayed payment surcharge of 0.5% per week or 2% per month is being calculated by BSEB irrespective of number of days delayed.

They have requested the Commission to approve the following Proposal:

- i) DPS be levied @ Rs. 1.25 Per month on the amount remaining unpaid on day to day basis
- ii) No interest (DPS) / compensation charges be imposed after the line is Permanently disconnected.
- iii) Maintaining separate accounts for Energy bill, Electricity duty, arrears, DPS, surcharge and Payments to be adjusted accordingly.

Response of BSEB

DPS account is being indicated separately. The 1.5% rate of DPS is in line with the Bank's lending rate on which the Board has to borrow money quite often.

Issue 21: Prompt Payment rebate

Kalyanpur Cements, Balmukund Concast Ltd, Bihar Industries Association, Bihar Steel Manufactures Association, Gangotri iron & steel company, Gangotri Electro Castings Ltd, Patwari Udyog, Patwari Steels Pvt Ltd, Patwari forgings, Podar wires Industries Pvt Ltd, Lichwi foods (i) Pvt Ltd, Bihar & Jharkhand Motion Picture association, Mahua Coop Cold Storage Ltd have requested that in order to encourage Prompt Payment, incentive for Prompt Payment may have to be considered.

Their main contention is that originally the Prompt Payment rebate of 5 Paise/Unit was subsequently reduced to 1 Paise/Unit by BEREC in its order dt 29-11-2006. they have requested to adopt the OERC (Orissa) provision of allowing

- a) 10 Ps/Unit if made in 7 days
- b) 1 % of bill if payment made in 3 days

Response of BSEB

The existing practice for different rebate for different category is in existence for a long time. Any change in rebate rate will be counter reproductive as the same also forms the part of ARR.

Issue 23: Load factor rebate

Kalyanpur Cements, Balmukund Concast Ltd, Bihar Steel Manufacturers Association, Gangotri Iron & Steel Co., Gangotri Electro Castings etc Some objectors submitted that the rebate of 5P/U on excess units consumed is not sufficient and suggested the LF rebate as under:

Range of LF (%)		Proposed rebate (in Paise)
Maximum	Minimum	
60	50	15
70	60	25
80	70	40

Response of BSEB

The proposed high rebate is not workable because, if the revenue gets reduced due to heavy load factor rebate, the same amount will get reflected in higher rates of toehr categories of consumers. Therefore, the Board feels that the existing slab of rebate may continue.

Issue 24: T&D Losses

Kalyanpur Cements Ltd & M/s Bihar Steel Manufactures association have pointed out that there are 9.62 Lakhs unmetered consumers under BPL, Rural domestic, non-domestic & Agl Consumers. Even though the Electricity Act 2003 requires all consumers to be metered within 2 years, BSEB has not taken any action; and BSEB is losing revenue to the tune of Rs. 2540 Crore.

Balamukund Concast Ltd, M/s Dina Mahabir Re-rollers (P) Ltd, M/s Bihar Chamber of Commerce, M/s Gangotri Iron & Steel, M/s Gangotri Electro Castings Ltd, M/s Podar wires Industries Pvt Ltd, M/s Dina Iron & Steel Ltd have suggested the Commission

- i) to monitor T&D loss reduction programme and achieve 100% metering
- ii) BSEB may be instructed to install meters on all feeders and also meters to 80 to 90% LT consumers.

Response of BSEB:

Tariff proposal submitted for FY 2010-11 has been filed on the basis of normative T&D losses approved by the Commission, which is 32% for FY 2010-11. The difference between the actual loss and the approved T&D loss is to be borne by the Board and is not passed on to the consumers.

They have referred to the Appellate Tribunal New Delhi Judgment in the appeal No. 126 of 2008. As directed by Tribunal regular reports are being submitted to the BERC.

The tariff rates are being approved by BERC on the basis of normative T&D losses approved by the commission as a long range T&D reduction program. Accordingly T&D loss for Tariff Petition for 2010-11 has been based on 32% and not on the estimated higher T&D losses. As a result, Board is bearing the loss on account of normative T&D losses.

Providing the meters to meter less consumers, replacement of defective meter and also meters for new connection is estimated to require large fund. In the absence of any specific scheme, Board is under taking this work with available resources.

The petitioner has referred the T&D loss reduction target and also makes analysis on that basis. The petitioner has not referred to the revised T&D loss target fixed for the 2008-09 to 2011-12, as approved by the Commission in the tariff dated 26-08-2008.

Issue 25: Separate category for cold storages

Some objectors requested to provide separate concessional tariff for cold storages which is agricultural based for preservation of potatoes, vegetables and other green products. Now these are charged at HT –I category.

Response of BSEB

Any concession given to such type of consumers result in reduction of revenue. To make that, the same will have to be levied on other consumers.

Issue 26: Cost of Supply and Cross Subsidy

Kalyanpur Cements, Bihar Steel Manufactures Association, Bihar Chamber of Commerce, Gangotri Iron & Steel Company, Gangotri Electro Castings Ltd. have submitted that due to a very large no. of consumers with meter less connection, realistic assessment of energy is not possible and contented that as per Sec 61 of Electricity Supply Act 2003, the tariff should progressively reflect cost of supply and there by reduce Cross Subsidy.

Their main contention is that revision of tariff may be done duly taking into account the category wise cost of supply of each category of consumers and the subsidy allowed to domestic/agricultural consumers may be adjusted in relation to these consumers without effecting HTSS consumers.

Response of BSEB

Board feels that in present situation the voltage based tariff is not workable. Commission has also approved tariff rate on the basis of overall cost of power. Hence the first target should be to bring all the tariff rate in the range of $\pm 20\%$ of the average cost. In addition wherever state govt. wants to give subsidized rate for any category, they can do it by paying such amount to the Board in accordance with Electricity Act 2003. There is scope to gradually bring all the tariff rates within $\pm 20\%$ of the average cost of power supply.

Issue 27: Revenue earned under Sections 126 and 135

Mr. M. C. Agarwal & Dina Mahabir Rerollers Pvt. Ltd. have pointed out that the revenue earned in respect of amount collected under U/S 135 and U/S 126 should be taken as collection of revenue during 2009-10 in ARR, so that the honest consumers may get proper adjustments.

Sri MC Agarwal suggested that the matter U/S 126 and 135 to 152 are not efficiently dealt in the Board and so the Board's officers and staff need training with relevant subject matter.

Response of BSEB

Revenue earned U/S 126 and U/S 135 are included in overall revenue. The details have been given in Annexure No. 14 of Vol.-II of the tariff petition.

The Board has taken necessary steps to streamline action U/S 126 and U/S 135.

Issue 28: Standards of Performance and improvement in quality of supply

Kalyanpur Cements Ltd, Bihar Steel Manufactures Association have clearly pointed out that Board is not adhering to Standards of Performance. Due to frequent trippings and outages, heavy loss is sustained by the industries. They submitted that penalty be levied on Board for non compliance of Standards of Performance.

Sri Arun Kumar Mishra and Sri M.C Agarwal Pointed out that there is no improvement in quality of supply by BSEB and also remarked as –

- i) Power factor improvement like Capacitors installed at the sub-stations.
- ii) Very old distribution transformers are not utilized most of the time being repaired and put into service.

Response of BSEB

The Standard of Performance and penalties have been approved and notified by the BEREC and the same is applicable in the entire BSEB system. Petitioner's request for any other compensation is not acceptable and feasible.

Capacitors installed in the system are utilized as per requirement of the system for improvement of P.F.

Old transformers which come for repairing in TRW are examined and transformers having cores not in good conditions are discarded. It is not possible to replace all the old transformers at a time, as it requires huge finance. Board is replacing it in phased manner.

Issue 29: State Government grant

Poddar wires industries, Dina Iron & Steel have submitted that the State Government grant of Rs. 1080 Crore is to be distributed in equitable manner to all categories of consumers. They further pointed out that after considering State Government grant of Rs. 0.94 / Unit and 25% profit, actual purchase cost is Rs. 1.88/Unit, considering T&D losses at 11%, the net cost for HTS-1 consumer should not exceed Rs. 2.40 percent.

Response of BSEB

All categories of consumers are getting benefit from the state Government grant.

State Govt. grant of Rs.1080 crore cannot be distributed in equitable manner to all categories as this will cause heavy burden on low consumption consumers. However, all categories including HTSS is getting the benefit of State Govt. grant.

3.4 STATE ADVISORY COMMITTEE MEETING

The meeting of the State Advisory Committee (SAC) held on 07.09.2010 in the office of the Commission. A number of valuable suggestions, views were given by the various members of the Committee and the same has been taken care of / incorporated in the Tariff Order.

3.5 COMMISSION OBSERVATIONS

The Commission has taken careful note of the objections and suggestions made by the stakeholders / members and public as mentioned herein before in Chapter-1 and has considered the same while recording its analysis and conclusions of different components of ARR and tariff proposal in Chapter-4 and 5. Keeping in view a number of critical remarks made by some of the objectors and also to meet some of the requirements of Electricity Act, 2003, National Electricity Policy and Tariff Policy. The Commission has also given certain directives to the BSEB in Chapter-7&8 of this order.

Chapter-4

. Analysis of Aggregate Revenue Requirement (ARR) for 2010-11

4.1 BACKGROUND

BSEB is a vertically integrated utility and is responsible for generation, transmission, distribution and supply of electricity in the State of Bihar. BSEB in its Aggregate Revenue Requirement (ARR) and Tariff Petition for the FY 2010-11 has furnished data for the Board as a whole. On a directive from the Commission the Board has furnished the function wise breakup of expenses for generation, transmission and distribution for the years 2008-09, 2009-10 and 2010-11. The proposal has, however, been analyzed as an integrated utility based on the available data / information and the ARR arrived at. The function wise ARR and costs are also arrived at based on data furnished by the Board.

4.2 ENERGY SALES FOR THE YEAR 2010-11

4.2.1 BSEB has projected the energy sales at 7784.59 MU for the year 2010-11 in its ARR and Tariff Petition.

The Board has not furnished the basis on which the sales for 2010-11 have been projected. The Board has however furnished the actual energy sales for the years 2006-07, 2007-08 and 2008-09 and estimated consumption for the year 2009-10 in its ARR and Tariff Petition at 4541.68 MU, 4851.56 MU 5324.64 MU and 6236 MU respectively. The projected sales for 2010-11 are 7784.59 MU.

The category and sub-category wise sales for the year 2006-07 to 2008-09 (actuals) and 2009-10 (estimated) and projected sales for the year 2010-11 as furnished by the Board in its ARR and Tariff Petition are given in Table-4.1 below:

Table-4.1

Category wise, Energy Sales for the years 2006-07, 2007-08 & 2008-09 & 2009-10 and projections for the year 2010-11 as submitted by BSEB

S.No	Category	FY 2006-07 (Actuals)	FY 2007-08 (Actuals)	FY 2008-09 (Actuals)	FY 2009-10 (Estimated)	CAGR FY for 3 Years	FY 2010-11 (Projected)
I	Low Tension (LT)						
1	Domestic						
i)	Kutir Jyoti (Rural)	85.75	53.07	89.97	51.60 (metered) 95.40 (unmetered)	19.68	274.60 (metered) 95.40 (un-metered)
ii)	Kutir Jyothi (Urban)	0.77	0.93	1.21	2.64	50.79	5.70
iii)	DS-I	515.00	613.47	638.50	729.00	12.28	892.80
iv)	DS-II	848.13	1032.51	1039.03	1462.36	19.91	1771.20
	Sub-Total	1450.45	1699.98	1768.71	2341.00	17.30	3039.70
II	Commercial						
i)	NDS-I (Rural)	10.50	15.39	21.39	13.40	8.47	26.88
ii)	NDS-II (Urban)	293.99	347.15	395.53	480.00	17.75	597.05
iii)	NDS-III (Temples etc)	4.70	9.31	-	8.60	22.31	11.84
	Sub-Total	309.19	371.85	416.92	502.00	17.53	635.77
III	Street Lights						
i)	SS-II (metered)	2.16	-	2.27	4.60	28.66	5.50
ii)	SS-II (Unmetered)	20.50	23.90	20.42	19.40	-1.82	22.00
iii)	SS – III (street light) (unmetered)	2.52	-	-	-	-	-
	Sub-Total	25.18	23.90	22.69	24.00	-1.59	27.50
IV	LT Industry						
i)	LTIS-I	72.10	98.96	152.72	106.68	13.95	154.94
ii)	LTIS-II	39.07	40.06	-	65.32	18.69	80.99
iii)	LTIS-III (Public Water works)	163.90	150.98	160.93	176.00	19.21	200.00
	Sub-Total	275.07	290.00	313.65	348.00	8.5	435.93
V	Agriculture (Irrigation)						
i)	IAS – I (Private)	-	400.44	776.72	411.00	1.31	483.78
ii)	IAS-II (Govt)	-	258.63	-	156.00	-22.34	171.91
	Sub-Total	709.14	659.12	776.72	567.00	-7.19	655.69
VI	High Tension						
i)	HTS-I	339.48	450.57	535.62	540.00	16.73	620.00
ii)	HTS-II	126.50	126.62	160.82	160.00	8.15	220.00
iii)	HTS-III	58.60	60.90	61.40	64.00	2.98	120.00
iv)	HTSS	237.50	326.05	517.56	700.00	43.38	590.00
	Sub-Total	762.08	964.14	1275.40	1464.00	24.31	1550
VII	Railway Traction						
i)	RTS-I-25 kVA	-	-	-	-	-	-
ii)	RTS-II-132 kVA	363.92	384.80	399.81	460.00	8.12	570
	Sub-Total	363.92	384.80	399.81	460.00	8.12	570
VIII	Interstate sales / UI and Nepal	626.65	457.77	350.74	180 350		300 570
	Sub-Total	626.65	457.77	350.74	530		870
	Total	4541.68	4851.56	5324.64	6236.00	12.45	7784.59

The category wise sales indicated above are with restricted hours of supply, particularly, in rural areas as the state has power shortage. The projections for FY 2010-11 are discussed in the following paragraphs, keeping in view of the restrictions as in the earlier years as much change in power availability is anticipated during 2010-11

4.2.2 Consumption by Un-metered Categories

The following categories of consumers are not metered.

- Kutir Jyoti : Rural areas
- Domestic consumers in rural areas
- Non-domestic consumers in rural areas
- Streetlights both in urban and rural areas.
- Irrigation / Agricultural pumpsets (private) and State Government

It is stated by Board in its ARR & tariff petition that the consumption of above categories of consumers who are un-metered is assessed as under:

Kutir Jyoti	: 30 Units per month per connection
DS-I	: 80 Units per month per connection
NDS-I	: 80 Units per month per connection
IAS-I (Private)	: 125 Units per month per HP i.e., 2000 Units per KW annually)
IAS-II (State Govt.)	: 225 Units per month per HP
Street Lights	: 200 Hours of burning in rural areas and 300 Hours of burning in urban areas

4.2.3 Consumer Base:

It is stated that the consumer base under different categories at the end of 2010-11 and its load has been projected on the basis of average annual growth. The actual number of consumers at the end of each of the following years as submitted by BSEB are as given below.

Year	No. of Consumers (in lakhs)
2006-07	18.45
2007-08	19.91
2008-09	21.64
2009-010	24.84
2010-11	35.08

The category wise number of consumers and the connected load as submitted by BSEB are given in table 4.2 below.

Table – 4.2

Category wise number of consumers and the connected load

Sl. No.	Category of Consumers	No. of consumers (Actual)	Connected Load in kW (Actual)	No. of consumers (Actual)	Connected Load in kW (Actual)	No. of consumers (Actual)	Connected Load in kW (Actual)
		As on 31.3.2007	As on 31.3.2007	As on 31.3.2008	As on 31.3.2008	As on 31.3.2009	As on 31.3.2009
1.	Kutir Jyoti (Rural)	238208	14292	245719	14745	254091	14395
2.	Kutir Jyoti (Urban)	2141	215	2574	258	4130	412
3.	D.S.I	537298	436876	634029	524068	690488	549191
4.	D.S.II	849341	974456	874646	1002891	981148	1180733
5.	D.S.III (Apartment)	-	-	-	-	-	-
6.	N.D.S.I	17504	17364	22284	22451	19965	19730
7.	N.D.S.II	128585	213567	134626	235998	145852	277833
8.	N.D.S.III	758	7612	1736	12192	1605	8408
9.	S.S.I (Metered)	2	500	1	120	10	147
10.	S.S. (Un-metered)	342	4753	300	4229	349	4055
11.	S.S.III (Un-metered Mast Light)	35	587	40	641	-	-
12.	L.T.I.S.I	10629	83284	11805	89664	12595	93903
13.	L.T.I.S.II	1018	31775	1128	36612	1226	40909
14.	L.T.I.S.III (PWW)	689	18726	762	19862	818	21385
15.	I.A.S.I	55093	198870	53464	186768	49316	166488
16.	I.A.S.II upto 100 HP	2488	48133	2298	43165	2126	39987
17.	H.T.S.I	662	134835	726	160338	821	168710
18.	H.T.S.II	21	35269	21	33227	27	39558
19.	H.T.S.S	15	68387	15	81395	17	108385
20.	H.T.S-III	1	13500	1	13500	2	14400
21.	R.T.S-I 25 kV	3	29500	3	26550	3	26550
22.	R.T.S.II 132 kV	10	69500	12	75600	12	75600
	Total	1844843	2402001	1991190	2584274	2164604	2845378

There is substantial increase in the number of consumers and the connected load under domestic category particularly under 'Kutir Jyoti' due to implementation of Rural Electrification (Village Electrification) programme and connecting up consumers under RGGVY. This has naturally resulted in increase in consumption of these categories.

4.3 The category wise sales of the earlier years and the projection for the year 2010-11 are discussed below.

4.3.1 Kutir Jyoti (Rural and Urban)

BSEB has projected the sales for the Kutir Jyoti consumers in rural and urban areas at 375.70 MU during 2010-11. The consumption is arrived at 30 units / month / service.

Kutir Jyoti services in rural areas are allowed one light of 40 watt or 60 watt and urban services to have one bulb of 100 watts each.

With restricted hours of supply, it would be difficult to consume 30 units with 40 watt or 60 watt bulb in rural areas. In view of this, the Commission has approved consumption of 18 units per month per service in the rural areas and 30 units in the urban areas in the tariff order 2008-09.

Though the Kutir Jyoti consumers in urban areas are metered, the Board has not furnished the consumption based on meter readings. Hence the consumption for this category is assessed 30 units / month / service.

The Commission approves 18 units/service/month in rural areas and 30 units/service/month in urban areas. Based on this norm the Commission approves 230.63 MU to Kutir Jyoti (rural and urban) for 2010-11 as detailed below:

Details	No. of Consumers	Norm Adopted/month	Consumption for 2010-11 (MU)
Rural (metered)	776400	18 units	167.70
Rural (un-metered)	265000		57.24
Urban (metered)	15800	30 units	5.69
Total	1057,200		230.63

The number of consumers as projected by the Board is accepted as large number of villages are being electrified and BPL households are connected under RGGVY.

The Board is directed to insist on the Kutir Jyoti consumer to provide 2 x 15 watt CFL, in place of one number 40/60 watt incandescent or fluorescent tube light. This gives substantial saving in the consumption of Kutir Jyoti consumers.

4.3.2 Domestic-I (Rural)

BSEB has projected the energy sales of 892.80 MU to domestic-I consumers for the year 2010-11 at about 80 units /month/service.

The number of consumers and the consumption during the last 4 years as furnished by the BSEB is as under:

Year	No. of Consumers	Energy consumption (MU)	Consumption/month (Specific consumption) (kWh)
2006-07	537298	515.80	80.00
2007-08	634029	613.47	80.60
2008-09	690488	638.50	77.10
2009-10	760000	729	79.90
2010-11	930000	893	80.00

BSEB has 7.60 lakh consumers under this category during 2009-10 and proposes to add another 1.70 lakh consumers. It is possible to add the additional consumers under DS-I with large-scale electrification of villages under RGGVY. With the specific consumption of 80 units / connection / month, which is being adopted by the Board for this category, the consumption works out 893 MU. It is expected that restricted hours of supply would continue during 2010-11 also

The Commission therefore, assesses with the present pattern of restricted hours of supply, energy consumption of 893 MU for the DS-I category of consumers for 2010-11 as suggested by the Board.

4.3.3 Domestic-II and III (Metered)

This category under domestic supply is metered and such consumers are mostly in urban areas. BSEB has projected the consumption of this category at 1771.20 MU for the year 2010-11.

The number of consumers and the energy consumption during the last 4 years and projection for 2010-11 as submitted by BSEB are given below:

Year	No. of Consumers	Energy consumption (MU)	Specific consumption (kWh)
2006-07	849341	848.13	83.25
2007-08	874646	1032.51	98.37
2008-09	981148	1039.03	88.24
2009-10	1060000	1462.36	115.00
2010-11 (Projected)	1230000	1771.20	120.00

It is seen from Table 4.1 that the CAGR for 3 years (2006-07 to 2009-10) is about 20% where as the growth for the projected consumption for 2010-11 over the consumption 2009-10 is about 21%.

The specific consumption over the years has gone up. Since the consumers are in urban areas where the quality of supply is said to have been improved, the projected consumption is in line with CAGR and reasonable specific consumption with improved quality of supply with additional power being available. The projected consumption is considered reasonable.

The Commission approves the consumption of 1771.20 MU to Domestic-II (DS-II) category for the year 2010-11 as projected by the Board.

4.3.4 Non-Domestic-I (Un-metered) - Rural

The Non-Domestic-I (Commercial) consumers are the consumers in the rural areas, who are not metered. The BSEB has projected the consumption of this category at 26.88 MU for the year. This is an assessed consumption at 80 units / month / connection.

The number of consumers, the energy consumption and the specific consumption over the last 4 years as submitted by BSEB are given below:

Year	No. of Consumers	Energy consumption (MU)	Specific consumption (kWh)
2006-07	17504	10.50	50.00
2007-08	22284	15.39	57.55
2008-09	19965	21.39	89.28
2009-10	22300	13.40	50.00
2010-11 (Projected)	28000	26.88	80.00

As mentioned above, this is an un-metered category in rural areas. It is seen that the specific consumption of this category has been absorbing about 50 units/month. They are all small consumers whose number is also in thousands. It is considered that specific consumption of about 60 units/month/service is considered reasonable. The growth of consumers also is only about 5700 over that of 2009-10.

The Commission approves the energy consumption of 20.16 MU for the year 2010-11, for these 28000 consumers of NDS-I against 26.88 MU projected by the Board.

4.3.5 Non-Domestic-II - Urban (Metered)

BSEB has projected the consumption of 597.05 MU for the year 2010-11 for this category. This category is a non-domestic (Commercial) in urban areas and are metered.

The number of consumers, the consumption and the specific consumption are given below.

Year	No. of Consumers	Energy consumption (MU)	Specific Consumption/ month (kWh)
2006-07	128585	393.09	190
2007-08	134626	347.15	215
2008-09	145852	395.53	226
2009-10	154500	480.00	259
2010-11 (Projected)	180000	597.05	276

As seen from table 4.1, the CAGR over three years (2006-07 to 2009-10) period is about 17.7%, whereas the growth considered for 2010-11 over 2009-10 is about 24.3%. It is seen that the number of consumers have increased by 25500 during 2010-11 compared to earlier year, where the annual increase had been only about 10,000. The Board has not given any reasons for this high growth in the number of consumers. Though the increase in number of consumers is high, this might be possible as the socio economy in the State is improving over the last few years. There is an increase in the specific consumption and this is understandable with the increase in quality of supply. In view of this, the growth of consumers and energy consumption proposed by BSEB is reasonable.

The Commission approves the energy consumption of 597.00 MU to NDS-II category for the year 2010-11 as proposed by BSEB.

4.3.6 NDS-III (Non-Domestic – Religious Places)

BSEB projected the energy consumption of 11.84 MU to NDS-III, applicable to places of worship (temples etc.). This category is applicable only to about 2000 consumers in the entire State and energy consumption is less.

The Commission approves the consumption of 11.84 MU for this category for the year 2010-11 as proposed by the Board.

4.3.7 Public Lighting (Street lights)

This category consists of both metered and un-metered. BSEB has projected the consumption of this category at 27.5 MU for the year 2010-11.

The number of installations, and the consumption over the last four years and the projected consumption for 2010-11 are given below:

Year	No. of Installations	Consumption (MU)
2006-07	379	22.60
2007-08	341	23.90
2008-09	359	22.69
2009-10	385	24.00
2010-11	440	27.50

It is seen from table 4.1 that the CAGR over the 3-year period (from 2006-07 to 2009-10) is about 2%. The growth considered by the Board for the 2010-11 consumption over 2009-10 is about 14%. The growth during 2009-10 over 2008-09 is about 6%. Since a number of villages are being electrified under RGGVY, all streetlights would be provided in all these villages. It is considered that the growth in consumption projected is reasonable. The consumption is hardly about 27.5 MU. Any variation in the consumption will not have any impact on the overall energy requirement.

The Commission approves the energy consumption of 27.50 MU to Public Lights (Street lights) for the year 2010-11 as proposed by BSEB.

4.3.8 Irrigation/agriculture Pumpsets

The BSEB has projected the energy consumption for the irrigation / agricultural pump sets as 655.69 MU for the year 2010-11, i.e. an increase of about 15.6% over the consumption of 2009-10. BSEB has considered a norm of 2000 units per kW per annum. As seen from table 4.1, the consumption of this category over the years is not consistent.

The number of installations, and the consumption over the last 4 years, the projected consumption for the year 2010-11 as submitted by BSEB are given below:

Year	No. of Installations (effective)	Connected Load (HP)	Energy Consumption/ (MU)
2006-07	57581	247003	-
2007-08	55762	229933	659.12
2008-09	51442	206475	776.00
2009-10	53300	247740	567.00
2010-11	62500	288100	655.69

As mentioned earlier the category is un-metered. Commission while assessing the consumption with a norm of 2000 units per kW per annum in the Tariff order for 2008-09, stated as follows:

“The norm is liberal, taking into consideration the number of hours of supply as made available to the pumpsets, rainy season and the duration between different crops, when no power is needed for pumpsets. The norm approved is for FY 2008-09 and will not be a precedent and the Commission may consider reviewing this in future”

The norm of 2000 units / kW / annum means that the agricultural pumpset runs at full load for about 5.5 hours per day on an average for all the 365 days in a year.

Based on the feedback obtained, Commission considers a norm of consumption of 1485 units / kW/annum for 2010-11 i.e. considering 5.5 hours of average utilization per day for 270 days in a year. Based on the norm of 1485 units / kW/ annum, the consumption for 2010-11 works out to about 428 MU with the connected load of 288100 kW.

The Commission approves the consumption of 428 MU for the irrigation / agricultural pump sets for the year 2010-11.

4.3.9 Public Water works

The BSEB has projected an energy consumption of 200 MU to this category for the year 2010-11.

The number of consumers and the consumption over the last 3 years and projected consumption for 2010-11 as submitted by BSEB are given below.

Year	No. of Consumers	Energy consumption (MU)
2006-07	689	103.90
2007-08	762	150.98
2008-09	818	160.93
2009-10	850	176.00
2010-11	880	200.00

It is seen that the CAGR over a period of 3 years (2006-07 to 2008-09) is about 19%. The growth considered by the Board for 2010-11 is about 13.6%.

The Commission approves the consumption of 200 MU for Pubic Water Works during the year 2010-11 as projected by BSEB.

4.3.10 LT Industry

The Board has projected the consumption of this category at 235.93 MU for the year 2010-11. The number of consumers, the energy consumption over the last 4 years and the projected consumption for the year 2010-11 as submitted by BSEB are given below:

Year	No. of Consumers	Energy consumption (MU)
2006-07	11647	97.20
2007-08	12933	122.86
2008-09	13821	175.41
2009-10	14920	172.00
2010-11	16480	235.93

The CAGR for the 3-year period is about 21% and growth considered by the Board for projecting the sales of 2010-11 over 2009-10 is about 37%. Since there is scope for increasing the industrial production, it is not proposed to curtail the consumption of this category as the industry is picking up after the recession and there is scope for industrialization, particularly, with improvement in availability of power.

The Commission approves the consumption of LT industry at 235.93 MU for the year 2010-11 as proposed by Board.

4.3.11 HT Industry

BSEB has projected the consumption of HT category (HTS-1, HTS-II, HTS-III, and HTSS) at 1550 MU for the year 2010-11.

The number of consumers under all the four categories and the consumption over the last four-years and the projected consumption for the year 2010-11 as submitted by BSEB are given below:

Year	No. of Consumers	Consumption in MU				Total Energy consumption (MU)
		HTS-I	HTS-II	HTS-III	HTSS	
2006-07	699	340	127	59	238	762.08
2007-08	763	451	127	61	326	964.14
2008-09	867	536	161	61	518	1275.40
2009-10	910	540	160	64	700	1464.00
2010-11 (Projected)	958	620	220	120	590	1550.00

It could be seen for the above table that there is increase in the energy consumption (over 20%) during the last 3 years, but the increase considered by the Board for 2010-11 over 2009-10 is only 2.4%.

There had been increase in the number of consumers (104) during 2008-09 over 2007-08. In the later years the increase is only 43 during 2009-10 and the increase considered for 2010-11 is only 48. There is no reason for the reduced consumption particularly, when the industry is picking up. The Board has considered lower consumption for HTSS, the consumption during 2009-10 was 700 MU against this the Board has considered only 590 MU for 2010-11. The Board has not furnished any reasons for reduction in consumption during 2010-11. Considering the increase in all categories of consumers i.e. HTS-I, HTS-II and HTS-III, there is no reason to drastically reduce the consumption for HTSS category, which had shown considerable increase over the previous years.

It is considered reasonable to assume consumption of HTSS at least at the same level as in 2009-10, which would be 700 MU against 590 MU projected.

The Commission approves the consumption for HT categories of consumers at 1660 MU for the year 2010-11 against 1550 MU projected by the Board.

4.3.12 Railway Traction

The Board has projected the consumption of Railway traction load at 570 MU for the year 2010-11 for 25 kV and 132 kV supply. The consumption of railway traction load for the last four years and the projected consumption for 2010-11 are given below:

Year	No. of Supply Points	Energy consumption (MU)
2006-07	13	384
2007-08	15	385
2008-09	15	400
2009-10	15	460
2010-11 (Projected)	17	570

The Board has considered an increase of about 24% for 2010-11 over the 2009-10. The increase is 2009-10 over 2008-09 was about 15%. The Board has not given any reasons for the steep increase in the consumption. There is an increase in number of points of supply from 15 during earlier years to 17 during 2010-11, that shows there is likely to be additional demand to be met. Since there are no restrictions in the supply to railways and the full demand has to be met, the consumption proposed by the Board is agreed to.

The Commission approves the consumption of 570 MU for railway traction during 2010-11 as proposed by the Board.

4.3.13 Sales outside the State including Nepal

The Board has projected the energy sales of 870 MU [300 MU to Nepal and 570 to other States under un-scheduled interchange (UI)] for the year 2010-11. Since the regional system is under Availability Based Tariff (ABT) framework, any UI exchange from one utility to another is charged at the rates determined by CERC based on the system frequency at that point of time.

BSEB is not able to provide satisfactory power supply to its consumers due to shortage conditions. Under such circumstances the un-scheduled supply to other States could be only during off peak hours, particularly night hours and also in a situation where the Board is not able to meet the demand of its consumers due to transmission and distribution constraints in some areas or there might be restricted power supply to its consumers to sell power to earn additional revenue.

The Board had supplied energy to other States under UI and to Nepal during the last four years as below:

Year	Power Supply to Nepal (MU)	Power Supply to Other States Under UI (MU)
2006-07		
2007-08		
2008-09		
2009-10	350	180
2010-11 (Projected)	300	570

The projected sales to Nepal at 300 MU is approved, as it is obligatory to supply power to Nepal. The projected sales outside the State will be decided on examination of the energy availability and the consumption of its consumers without restriction particularly during night hours. The sales to other states under UI is not desirable. The Board should fully meet the demand of its consumers, particularly in the rural areas without restrictions. Any surplus on meeting the full demand of its consumers, the power could be sold to other States under UI.

4.3.14 Total Energy Demand (Sales)

The Commission assesses the energy sales with restricted hours of supply at 6946 MU for the year 2010-11 including the inter-state sales to Nepal against 7216 MU projected by the Board in the ARR filing. The consumer category-wise energy sales as projected by BSEB and assessed by the Commission are given in Table-4.3 below:

Table-4.3

Energy Sales for FY 2010-11

Sl. No.	Category of consumers	Projected by the Board	Assessed by the Commission with restricted hours of supply
1.	Kutir Jyoti (Rural and Urban)	376	231
2.	Domestic (DS-I & DS-II)	2664	2664
3.	Non-Domestic (NDS-I, NDS-II & NDS-III)	636	629
4.	Public Lighting	28	28
5.	Irrigation and Agriculture	656	428
6.	Public Water Works	200	200
7.	Industrial (LT)	236	236
8.	Industrial (HT)	1550	1660
9.	Railway Traction	570	570
10.	Sales to Nepal	300	300
11.	Sales to other state under UI	570	*
	Total	7786	6946

* Sales to common pool consumers (UI) is discussed later in this chapter, on examining the availability of power to the State.

As already discussed above, the sales projected by the Board and assessed by the Commission are based on mostly on the past energy consumption trends which are severely restricted due to power shortage in the state with some correction wherever required.

4.4 TRANSMISSION AND DISTRIBUTION (T&D) LOSSES

BSEB has submitted the T&D losses in BSEB system during the last few years as under:

Year	T&D Loss (%)
2006-07	42.61
2007-08	39.06
2008-09	38.007

The Commission had approved the T&D losses at 38% for 2008-09 and also fixed loss trajectory as below:

Year	T&D Loss (%)
2008-09	38
2009-10	35
2010-11	32
2011-12	29

It is stated by BSEB in the tariff petition that in the background of T&D losses over the last three years, the Board is estimating the T&D loss of 35% for 2009-10 and 32% for 2010-11. The loss level of 32% is what Commission had fixed for 2010-11 in the tariff order for 2008-09.

The Commission has considered the T&D losses at 32% for the year 2010-11 and the T&D loss level of 29% for the year 2011-12.

4.5 ENERGY REQUIREMENT AND AVAILABILITY

4.5.1 Energy Requirement

The total energy requirement to meet the system demand would be the sum of estimated energy sales including inter state sales to Nepal and the estimated system losses approved by the Commission. The estimated energy sales with restrictions on power supply for the year 2010-11, T&D losses and the energy requirement projected by BSEB and assessed by the Commission are given in Table 4.4 below:

Table 4.4

Energy Requirement for 2010-11

(MU)			
Sl. No	Particulars	As projected by BSEB in ARR	As assessed by the Commission with restricted hours of supply
1	Total energy sales including Nepal (MU)	7786	6946
2	T&D loss (%)	32	32
3	T&D Loss (MU)	3664	3269
4	Total Energy Requirement (MU) (1 + 3)	11450	10215

With the assessed sales and T&D losses, the total energy requirement would be 10215 MU against 11450 MU projected by the Board.

4.5.2 Energy Availability

The sources from which energy available to BSEB to meet its demand are (i) Own generation (ii) Central generating stations, (iii) BHPC, (iv) Tala HES from Bhutan, (v)

KBUNL (Joint venture of BSEB & NTPC) and (vi) Nepal. The availability from each of the sources is discussed below:

(a) Own Generation

At present BSEB has only one thermal generating station at Barauni, whose installed capacity is 320 MW. The other thermal generating station i.e. Muzaffarpur -TPS was transferred to Joint venture company of NTPC & BSEB viz. Vishali Power Generating Company during 2007-08

The details of Barauni thermal generating station with its vintage are given below.

Sl. No	Name of the Plant	Capacity (MW)	Date of Commission	Present status
1	Baraun TPS Units 1,2&3	Have been retired		
2	Unit-4	50	09.11.1969	Under shutdown since 24.04.96
3	Unit-5	50	01-12-1971	Under shutdown since 15.03.95
4	Unit-6	110	01.12.1984	After renovation unit synchronized on 24.11.07
5	Unit-7	110	31.03.1985	This unit will be put under R&M

After R&M, the unit-6 (110 MW) was synchronized on 24-11-07 and was running at a load of 60-65 MW. Due to problem in T.G bearing the unit was shutdown on 04.05.2008. After attending to the repairs by BHEL, the unit was brought back to operation on 31.01.2009 and is in service since then. The generation from the unit is in the order of 10 to 30 MU/Month. It is stated that the generation from this unit would be about 360 MU (gross) and 324 MU (net) with an auxiliary consumption of 36 MU during 2010-11.

No new generating station is coming up during 2010-11.

The Commission approves the gross generation of 360 MU and net 324 MU from BTPS with an auxiliary consumption of 36 MU (10%) as projected by BSEB.

(b) Power Purchase

BSEB has projected the Power Purchase from different sources for the year 2010-11 as given in Table 4.5 below:

The power purchases form Central generating stations, and Tala are based on the allocation to Bihar by Ministry of Power, Government of India and purchase from BHPC & Nepal is based on the availability from the sources.

The Commission has issued Renewable Purchase Obligations Regulations, 2010 dated 16th November 2010 making it obligatory to purchase 1.5% of the total energy consumption during 2010-11 from RE sources. This is also taken into consideration under energy purchase.

Table-4.5
**Power Purchase and from Own Generation
 FY 2010-11**

S.No	Source	Energy (MU)
	NTPC	
1	Farakka	2760
2	Kahalgaoon	
	Stage – I	1600
	Stage – II	645
3	Talcher	2600
	Subtotal	7605
	PTC	
4	Chukka HEP	560
5	Tala HEP (Bhutan)	1020
	NHPC	
6	Ranjeet HEP	145
7	Teesta HEP	550
	Sub-total from CGS & Tala	9880
8	Transmission loss in regional system (3.7)	365
	Net total	9515
	Others	
9	BSHPC	50
10	Nepal	50
11	Kanti BUNL	500
	Sub total	600
12	RE purchase	55
	Total Purchases (excluding regional transmission losses)	10170
	Own generation	324
	Total energy available	10494

Total energy available (exclusive of losses in regional system) for BSEB for sale in the State and to Nepal will thus be 10494 MU including own generation (324 MU net)

The energy requirement including sales to Nepal as worked out in para 4.5.1 above is 6946 MU, the requirement including T&D loss would be 10215 MU and the rest 279 MU available is considered for sale outside the State under UI sales. The BSEB has arrived at the availability from each of the sources based on the norms fixed by CERC for Central generating stations and the energy that was available from these stations over the last two years (2008-09 & 2009-10) and the latest shares from the stations.

The estimated energy availability from the Central generating stations and other sources considered by BSEB has been verified with the estimated schedules given by Regional Power Committee of Eastern Region and found to be in order. Hence the energy purchases furnished by BSEB from various sources are considered for arriving at the power purchase costs.

BSEB shall draw the entire share from the Central generating stations and other sources and meet the unrestricted requirement of its own consumers taking into consideration, the constraints, if any, in transmission and distribution system and may sell balance power to other states which earn additional revenue. The first priority shall be to meet the requirement of its consumers fully. As mentioned earlier the energy sales projected for 2010-11 are based on restricted consumption during earlier years. If the basic requirement of earlier years had been unrestricted the sales projected for 2010-11 would have been much higher

No drawal from regional network under UI is considered. However, energy if any drawn under UI, based on system exigencies will be considered under 'True up'.

The Commission approves the purchase of 10494 MU from Central Generating Stations and other sources for the year 2010-11.

4.5.3 Energy Balance

The energy balance is the difference between the energy sales to various categories of consumers and T&D losses (i.e.) energy requirement and energy available from own generation and power purchase from various sources. The Commission approves the limits for energy requirement and energy availability as given in Table 4.6 below:

Table-4.6
Energy Balance – 2010-11

SI.No.	Particulars	Energy (MU)
A	Energy Requirement	
1.	Total projected energy sales (Metered and assessed)	6946
2.	T&D loss (32%)	3269
3.	Energy requirement (within the State and Nepal)	10215
B	Energy available (Net)	
1.	Own Generation (Net)	324
2	Energy purchase from other sources	10170
	Total	10494
3	Sales to other States under UI	279

4.6 CAPITAL EXPENDITURE

BSEB has furnished the capital expenditure details for the year 2008-09, 2009-10 and 2010-11 as detailed in the Table-4.7 below:

Table-4.7

Capital Expenditure

i) 2008-09

(Rs. crore)

Schemes / programme	Capital expenditure		
	Grant	Loan	Total
APDRP	49.2	49.20	98.40
State Plan	-	48.23	48.23
RSVY	585.00	-	585.00
Total for 2008-09	634.20	97.43	731.63

ii) 2009-10

(Rs. crore)

Schemes / programme	Capital expenditure		
	Grant	Loan	Total
APDRP	57.77	57.77	115.54
State Plan	-	279.86	279.86
RSVY	1095.89	-	1095.89
Total for 2009-10	1153.66	337.63	1491.29

ii) 2010-11

(Rs. crore)

Schemes / programme	Capital expenditure		
	Grant	Loan	Total
APDRP	57.77	57.77	115.54
State Plan	-	279.86	279.86
RSVY	510.89	-	510.89
Total for 2010-11	568.66	337.63	906.29

BSEB has given the particulars of works-in-progress in Format -26 of ARR, which is detailed in the Table-4.8 below.

Table-4.8

Works-in-progress projected by BSEB

(Rs. in crore)

S. N	Particulars	2008-09 (Actuals)	2009-10 (Estimated)	2010-11 (Projected)
1.	Opening balance	808.73	934.10	1623.07
2.	Add: New investment	196.54	811.13	1710.50
3.	Total	1005.27	1745.23	3333.57
4.	Less: Investment capitalized	71.18	122.17	233.35
5.	Closing balance	934.09	1623.07	3100.22

In format 21 of ARR the proposed capital expenditure was projected at Rs. 811.14 crore for 2009-10 and at Rs. 1710.50 crore for 2010-11. The function wise / scheme wise details were provided for the proposed capital expenditure. The Commission found discrepancies in these two formats and when they were pointed out, BSEB has submitted revised formats 21 and 22 with their letter dated 25/02/2010. There were certain mistakes even in the revised formats and they were again referred to the BSEB and BSEB has submitted these two formats again with revised figures in the letter dated 31/05/2010 and requested that all the data submitted earlier may kindly be ignored.

The details of funds received by BSEB for different schemes (Format 21) and scheme wise expenditure (Format 22) are summarized in the Table-4.9 given below.

Table-4.9

**Scheme wise funds received and scheme wise expenditure for the years
2009-10 and 2010-11**

(a) Sources of funding the schemes (Format – 21)

		(Rs. crore)		
Sl. No.	Name of scheme	Sources of funding	2009-10	2010-11
1	Generation			
(i)	RSVY	GOI	155.21	239.75
(ii)	State Plan	GOB		
	(a) BTPS (Ext.)		180.00	284.05
	(b) KBUNL		31.42	89.00
	(c) JV Nabinagar		128.00	324.00
	(d) Land acquisition for new projects at Chawsa, Pirpainti & Kajra			384.00
	Sub total		494.63	1320.80
2	Transmission			
(i)	Phase I (RSVY)	GOI	-	-
(ii)	Phase II (Part I & II) (RSVY)	GOI	220.79	500.00
(iii)	State Plan	GOB	95.00	130.90
	Sub total		315.79	630.90
3	Sub Transmission & Distribution			
(i)	APDRP	PFC	-	-
(ii)	State Plan	GOB	95.00	465.34
	Sub total		95.00	465.34
4	RGGVY (Village Electrification)			
(i)	PGCIL (Agency)	REC	115.29	304.23
(ii)	NHPC (Agency)	REC	101.66	116.09
(iii)	BSEB	REC	52.34	327.01
	Sub total		269.29	747.33
	Grand Total		1174.71	3164.37

(b) Scheme wise expenditure (Provisional) (Format – 22)

(Rs. crore)

Sl. No	Name of scheme	Sources of funding	2009-10	2010-11
1	Generation			
(a)	RSVY	GOI	155.21	239.75
(b)	State Plan	GOB		
	(i) BTPS (Ext.)		-	400.00
	(ii) KBUNL		31.42	89.00
	(iii) JV Nabinagar		128.00	324.00
	Sub total		314.63	1052.75
2	Transmission RSVY			
(i)	Phase I (RSVY)	GOI	-	-
(ii)	Phase II (Part I & II) (RSVY)	GOB	376.41	500.00
	Sub total		376.41	500.00
3	Distribution			
(a)	APDRP			
	(i) By PGCIL (Agency)	GOI	71.17	150.00
	(ii) By BSEB	GOB	31.16	-
	(iii) Do for land	PFC	-	-
(b)	State Plan	GOB	54.79	450.00
	Sub total		157.12	600.00
4	RGGVY (Village electrification)			
(i)	PGCIL	REC	326.38	350.00
(ii)	NHPC	REC	340.78	70.00
(iii)	BSEB	REC	90.11	550.00
	Sub total		757.27	970.00
	Grand Total		1605.43	3122.75

As observed from the above Table the scheme wise expenditure for the years 2009-10 and 2010-11 is Rs. 1605.43 crore and Rs. 3122.75 crore respectively.

Capitalization proposed for the years 2009-10 and 2010-11

BSEB has furnished the details of addition of (capitalization of) assets (Format 25 of ARR) during the years 2008-09 (actual), 2009-10 (estimate) and 2010-11 (projected) as detailed in the Table-4.10 below:

Table-4.10

Original cost of Fixed Assets and Capitalization projected

(Rs. crore)

S. N	Particulars	Closing balance at the end of previous year 2007-08	Addition during the year 2008-09	Closing balance at the end of year 2008-09	Addition during the current year 2009-10 (Estimated)	Closing balance at the end of current year 2009-10	Addition during ensuing year 2010-11 (projection)
1	Generation (Thermal)	309.69	-	309.69	252.35	562.04	395.77
2	Generation (Hydro)	7.80	-	7.80	-	7.80	-
3	Transmission	630.25	12.78	643.03	220.79	863.82	350.90
4	Distribution	1470.60	125.39	1595.99	95.00	1690.99	142.80
	Total	2418.34	138.17	2556.51	568.14	3124.65	889.47

BSEB was requested to furnish the scheme wise capital expenditure incurred during 2009-10 and the proposed capital expenditure with all the details for the years 2009-10 and 2010-11. It was specified to furnish the broad details of physical assets that are going to be added to the gross block, the cost benefit analysis in terms of release of new services category wise, the distribution network expansion, reduction in the T&D losses and improvement in the quality of service.

In respect of difference in capitalization figures as per format 25 and format 26 BSEB has clarified that addition in fixed assets during the year consists of two components (I) Transfer from capital works in progress to the extent of value of work commissioned and (II) Direct capitalization in fixed assets on commissioning of small projects such as strengthening of distribution network, new service connections etc.

It is seen from the above Table that BSEB has proposed capitalization to the extent of Rs. 568.14 crore during 2009-10 and Rs. 889.47 crore during 2010-11. The proposed capitalization includes addition of thermal generation assets to the extent of Rs. 252.35 crore during 2009-10 and Rs. 395.77 crore during 2010-11. BSEB has not explained these thermal assets proposed to be capitalized and the additional capacity added and additional generation in the ARR on account of capitalization of generation assets. BSEB has mentioned that no generation station or additional unit at existing generation is under execution vide para 2.01 (c) page 4 of ARR. Such being the position BSEB has been asked to clarify the capitalization of thermal assets as the capitalization adds to the asset base that has the effect of increasing the

capital employed and depreciation without adequate benefits by way of generation etc.

BSEB has clarified that expenditure incurred is for renovation and modernization of the existing units which do not contribute to additional capacity addition.

The Commission has obtained the provisional accounts of BSEB for the FY 2009-10. Based on these provisional accounts the original cost of fixed assets to end of 2009-10 and with the proposed addition of assets during 2010-11 and the assets to end of FY 2010-11 are given in the Table-4.11 below.

Table-4.11

Gross Fixed Assets to end of 2010-11

(Rs. crore)

S.N	Particulars	Balance as on 01/04/2009	Additions during 2009-10 (Provisional Accounts)	Balance as on 01/04/2010	Proposed additions during 2010-11	Balance to end of 2010-11
1	Generation (Thermal)	309.69	-	309.69	395.77	705.46
2	Generation (Hydel)	7.80	-	7.80	-	7.80
3	Transmission	643.03	43.07 (-) 2.03	684.06	350.90	1034.96
4	Distribution	1595.99	262.05	1858.04	142.80	2000.84
	Total	2556.50	303.09	2859.59	889.47	3749.06

It is seen from the above Table that there is no capitalization under thermal generation during 2009-10 as per the provisional accounts.

BSEB has one thermal generating plant located at Barauni with an installed capacity of 320MW. Units 1, 2 & 3 have been retired. Units 4 & 5 are under shut down since long. Units 6 and 7 were commissioned in FY 1984-85. Unit 7 is proposed for R&M. Unit 6 is operating with very low PLF. The actual generation in BTPS for April to September 2010 is given at 100MU. Under these circumstances the proposed capitalization of generation assets under thermal generation to the extent proposed without any cost benefit is not justified. Some of the consumers who have submitted their written objections on the ARR and Tariff Petition and those who have participated in the public hearing objected to the expenditure without any additional capacity and generation.

The Commission finds merit in the objection raised and is not in favour of accepting the Rs. 395.77 crore proposed during 2010-11 and depreciation is considered excluding the capitalization of generation assets.

4.7 GROSS FIXED ASSETS

BSEB has projected the GFA at Rs. 3124.65 crore to end of March 2010 and Rs. 4014.12 crore to end of March 2011. The Gross Fixed Assets during 2008-09 to 2010-11 furnished by BSEB are given in Table-4.12 below:

Table-4.12

Gross Fixed Assets projected by BSEB

(Rs. crore)

Year	Opening balance	Additions during the year	Closing balance
FY 2008-09	2418.34	138.17	2556.51
FY 2009-10	2556.51	568.14	3124.65
FY 2010-11	3124.65	889.47	4014.12

The Gross Fixed Assets will be the base for considering the depreciation under Regulation 85 (ii) (13).

The addition of assets (capitalization) during the year 2009-10 is estimated. Commission has obtained the provisional accounts of BSEB for the year 2009-10. Based on the provisional accounts the Gross Fixed Assets will be as detailed in the Table-4.13 below.

Table-4.13

Gross Fixed Assets based on provisional accounts for FY 2009-10

(Rs. crore)

Year	Opening balance	Additions during the year	Closing balance
FY 2008-09	2418.34	138.17	2556.51
FY 2009-10	2556.51	303.08	2859.59
FY 2010-11	2859.59	889.47	3749.06

Commission has not accepted the addition of assets under thermal generation during FY 2010-11 for the reasons explained in para 4.6 of the order. Accordingly GFA for the years 2009-10 and 2010-11 are considered as detailed in the Table-4.14 below:

Table-4.14

Gross Fixed Assets considered by the Commission

(Rs. crore)

Year	Opening balance	Additions during the year	Closing balance
FY 2009-10	2556.51	303.09	2859.59
FY 2010-11	2859.59	493.70	3353.29

The depreciation charges are regulated accordingly taking into consideration the GFA mentioned above.

The Audit Report of the Comptroller & Auditor General of India on the Accounts of BSEB for the year ended 31st March 2008 reveals that Fixed Assets Register was not maintained by the BSEB. Para 5.1 of the CAG report is extracted below:

Para 4.03 of Audit Report for 2007-08 -

“Fixed Assets Register was not maintained either at the board Hqr or at the circle level including (BTPS & MTPS) despite instructions issued by the Board in August 2001 for maintaining fixed assets register, and audit observations during earlier years. No unit produced such register for audit scrutiny. As a result fixed assets could not be verified physically either at Board Hqr. or its field offices. Therefore, correctness of the value shown in the balance sheet could not be verified in audit”.

The fixed assets value given by BSEB is not audited based on which the depreciation is to be arrived. Since assets are in place physically and the service is being rendered to consumers the utility cannot be deprived of depreciation.

BSEB is directed to arrange for the preparation of the asset and depreciation registers, get them duly audited and certified and submit to the Commission along with the next ARR.

4.8 REVENUE REQUIREMENT FOR FY 2010-11

BSEB has projected a total revenue requirement of Rs. 4370.30 crore for the year 2010-11. The summary of expenses under each head are given in the Table-4.15 below:

Table-4.15

Expenses projected by BSEB for FY 2010-11 (Format – 28)

(Rs. crore)

S.N	Particulars	2010-11
1.	Cost of fuel (Board's own generation)	77.62
2.	Cost of power purchase	2848.86
3.	Employee cost (Net)	821.22
4.	R&M expenses	105.39
5.	Adm. & Gen. Expenses	55.61
6.	Depreciation	97.45
7.	Interest charges	364.15
8.	Return on NFA	-
9.	Total Revenue Requirement	4370.30

The expenses projected by BSEB under each head and the Commission's analysis and decisions are discussed below in detail.

4.8.1 Generation cost (Board's own generation)

Board has projected Rs. 77.62 crore towards fuel cost for gross generation of 360MU for FY 2010-11 as given below.

(i) Gross generation	-	360MU
(ii) Auxiliary consumption 10%	-	36MU
(iii) Net generation	-	324MU
(iv) Station heat rate	-	4650 Kcal/kWh
(v) Coal consumption	-	@ 0.95kg/kWh, Total 342000 tonnes
(vi) Oil consumption	-	@ 20ml/kWh, Total 7200 KL
(vii) Cost of coal	-	Rs. 56.56 crore @ Rs. 1651 = per tonne
(viii) Cost of oil	-	Rs. 21.16 crore @ Rs. 29389/KL
(ix) Total fuel cost	-	Rs. 77.62 crore

The specific consumption of oil and coal shown are on very high side.

The maximum norm provided for old coal based generating stations of DVC by CERC is 3.0ml/kWh. The Barauni Unit 6 is already renovated and so, is expected to perform and meet the norms. For the year 2010-11, specific consumption of oil at 10.0ml/kWh is considered by the Commission against 20.0ml/kWh proposed by the BSEB. Efforts shall be taken by BSEB to bring down the specific oil consumption to the level of CERC norm.

Similarly the norm of gross station heat rate considered by CERC for the old thermal generating stations of DVC is 3100Kcal/kWh, where as BSEB has shown the station heat rate as 4650Kcal/kWh and projected the specific coal consumption as 0.95Kg/kWh. Since the Barauni Unit 6, which is renovated, is expected to improve the performance, specific coal consumption of 0.9Kg/kWh is considered by the Commission. Efforts shall be taken by BSEB to improve the SHR to the level of CERC norm.

In the tariff Order for FY 2006-07, Commission has approved specific coal consumption of 0.9Kg/kWh and specific oil consumption of 10ml/kWh for the Barauni Unit-6.

The above operational parameters are considered by the Commission to arrive at generation cost of BSEB generating station. The Board shall submit the operational parameters of their generating station for approval by the Commission. Un till this, the Fuel Adjustment Formula will not be applicable for Boards own generation.

With the above parameters, for gross generation of 360MU projected by BSEB, the fuel cost will be as under:

Quantity of coal required	=	324000 MT
Cost of coal at Rs. 1651 per MT	=	Rs. 53.49 crore
Quantity of oil required	=	3600 K.L
Cost of oil at Rs. 29389/KL	=	Rs. 10.58 crore
Total fuel cost	=	Rs. 64.07 crore

The Commission approves the fuel cost for BSEB's own generation at Rs. 64.07 crore for FY 2010-11.

4.8.2 Power Purchase Cost

The Board has estimated the power purchase costs at Rs. 2848.86 crore including transmission and RLDC charges for purchase of 11530 MU including 250MU under UI purchase.

Board has adopted the cost of power purchase bills paid during the period from April 2009 to December 2009. The power purchase costs as projected by BSEB are given in Table-4.16 below:

Table – 4.16

Power Purchase Costs (Projected by BSEB)

S.N	Source	Energy (MU)	Average cost (Ps./kWh)	Total cost (Rs. crore)
1.	Farakka	2760	277	764.52
2.	Kahalgan			
	Stage - I	1600	253	404.80
	Stage - II	645	250	161.25
3.	Talcher	2600	182	473.20
4.	Chukha HE	560	159	89.04
5.	Tala HE	1820	184	334.88
6.	Rangeet He	145	176	25.52
7.	Teesta HE	550	174	95.70
8.	BSHPC	50	249	12.45
9.	Kanti BUNL	500	365	182.50
10.	Nepal	50	400	20.00
11.	UI	250	380	95.00
	Total	11530		2658.86
	Transmission and RLDC charges			190.00
	Total			2848.86

For the query of the Commission in letter No. 72 dated 25/02/2010 BSEB has clarified in their letter No. 192 dated 19/03/2010 as “It is reported by CE (Tran O&M) that there was mistake in projection of availability of power from Tala HE during FY 2010-11. The correct figure is 1020MU in place of 1820 MU”. Due to this, the above projected power purchase cost for FY 2010-11 by BSEB gets reduced to Rs. 2701.66 crore from Rs. 2848.86 crore.

There has been abnormal increase in average power purchase costs from NTPC generating plants due to use of imported coal. In order to meet the additional cost due to increase in power, the Board has requested the Commission for approval of the increase in power purchase under Fuel & Power Purchase Cost Adjustment formula approved by the Commission to recover the increase in cost from the consumers. The Commission has already approved the increase in power purchase cost for the periods October 2008 to March 2009 and April 2009 to September 2009 (First half of 2009-10). Since the Commission has approved the average cost per kWh for the first half of FY 2009-10 (April 2009 to September 2009) the average unit price approved by the Commission for each of the stations and is to be recovered from consumer, it is appropriate to consider this average unit price (except BSHPC for which the tariff is approved at Rs. 2.49/kWh by the Commission) as base price and approve the purchase cost for 2010-11. Any increase over this base price

approved by the Commission, the Board may claim the cost under price adjustment formula.

The power purchase cost for FY 2010-11 based on the average unit cost approved by the Commission for April – September 2009 is given in Table 4.17 below:

Table - 4.17

Power purchase cost approved by the Commission

S.N	Source	Energy (MU)	Average cost (Rs./kWh)	Total cost (Rs. crore)
1.	Farakka	2760	2.78	767.28
2.	Kahalgan			
	Stage - I	1600	2.52	403.20
	Stage - II	645	2.52	162.54
3.	Talcher	2600	1.89	491.40
4.	Chukka	560	1.59	89.04
5.	Tala (PTC)	1020	1.84	187.68
6.	NHPC (Ranjeet)	145	1.72	24.94
7.	Teesta (NHPC)	550	1.71	94.05
8.	BSHPC	50	2.49	12.45
9.	Kanti BUNL	500	3.62	181.00
10.	Nepal	50	4.15	20.75
11.	RE Purchase	55	4.25	23.38
	Total	10535		2457.63
12	Transmission & RLDC charges@ 18 Ps/kWh			177.84
	Grand Total			2635.47

The Commission approves the power purchase cost at Rs. 2635.47 crore for purchase of 10535 MU for FY 2010-11.

4.8.3 Employee Cost

The employee cost comprises salaries and wages, dearness and other allowances, pension, gratuity and staff welfare expenses etc. The BSEB has projected the employee cost at Rs. 82121.94 lakhs (net employee cost after capitalization of Rs. 1998.75 lakhs for the year 2010-11). The details of employee cost for the years 2008-09 (actual) 2009-10 (estimated) and 2010-11 (projected) are given in Table-4.18 below:

Table – 4.18

Employee cost projected by BSEB

(Rs. lakhs)

Sl. No	Particulars	2008-09 (Provisional)	2009-10 (Estimate)	2010-2011 (Projection)
	SALARIES & ALLOWANCES			
1	Basic Pay + Special Pay	23507.93	26262.38	26930.84
2	Dearness Pay			
3	Dearness Allowance	8506.84	6084.78	9090.65
4	House rent Allowance	1008.87	1856.80	2031.84
5	Fixed Medical Allowance	134.77	121.38	122.06
6	Medical Reimbursement Charges	118.24	110.39	249.81
7	Over time payment	584.44	873.04	1125.74
8	Other allowances (detailed list to be attached)	396.54	378.73	424.94
9	Generation incentive			
10	Bonus			
11	Total (1 to 10)	34257.63	35687.50	39975.88
12	Leave Encashment	1682.31	4287.76	5080.85
13	Gratuity	4098.29	11536.89	12408.10
14	Commutation of Pension			
15	Workman Compensation	20.46	115.50	138.00
16	Ex-gratia	0.52		
17	Total (12 to 16)	5801.58	15940.15	17626.95
	Pension Payment			
18	Basic Pension	24277.76	23032.47	24579.59
19	Dearness Pension			
20	Dearness allowance			
21	Any other expenses	55.95	1631.36	1938.27
22	Total (18 to 21)	24333.71	24663.83	26517.86
23	Total (11+17+22)	64392.92	76291.48	84120.69
24	Amount Capitalized (-)	1714.00	1784.35	1998.75
25	Net amount	62678.92	74507.13	82121.94
26	Add prior period expenses	5446.14		
27	Grand Total	68125.06	74507.13	82121.94

BSEB has mentioned that employee cost including retirement benefit and regular pension is being met by the Board from revenue income as there is no separate fund available for the retiring employees. It is stated that the employee cost actual for 2008-09 was Rs. 626.79 crore against Rs. 558.71 crore incurred during 2007-08. The increase is mainly on account of 12% increase in DA and also on account of sanction of annual increment etc. It is further stated that projection of employee cost for 2009-10 includes estimated increase due to Sixth Pay Commission. The pay revision is

due from 01/01/2006 in accordance with the existing practice / norm and the estimated rise in salaries is about 30% for serving and also for retired employees.

BSEB has explained, with regard to creation of trust for payment of Terminal Benefits and GPF, Board is facing liquidity crunch due to huge monthly deficit between its revenue and expenditure. The present average tariff is not even sufficient to meet cost of power and therefore even after formation of trust for terminal benefits and fund, it may be difficult to maintain separate fund to this purpose.

BSEB has clarified that over time payment to workmen becomes a liability as per Factory Act and all the grid stations and 33/11kV sub stations manned by workmen and they are to be paid over time if there is no regular spare gang to relieve the staff working on 8 hourly shift.

Commission's Analysis:

BSEB has projected the employee cost under salaries and allowances with 4.17% escalation in estimates for 2009-10 over actuals for 2008-09 and 12.02% in 2010-11 over estimates for 2009-10. Under leave encashment the increase proposed for 2009-10 over 2008-09 is 155% and it is 18.51% in 2010-11 over 2009-10 estimates. In respect of gratuity the increase proposed in 2009-10 estimates is 181% over 2008-09 actuals and it is 7.55% in 2010-11 over 2009-10 estimates. The high increase proposed under these two components is not substantiated. The leave encashment and gratuity mostly relate to the terminal benefits of the retiring employees on attaining superannuation. As seen from the details given in Format 8 the number of employees retired in 2008-09 was 1486 while it is likely to be 1301 during 2009-10 and 1144 during 2010-11. The abnormal increase projected in the terminal benefits estimated / projected for 2009-10 and 2010-11 does not match with the number of employees likely to retire. When this was pointed out, the BSEB has not substantiated the abnormal increase in the employee cost in their reply dated 25/02/2010. On further insistence on this the BSEB has clarified in letter dated 27/04/2010 that due to implementation of 6th Pay Commission in BSEB the pay etc has been enhanced substantially resulting in enhanced projection under the heads leave encashment, gratuity and pension for FY 2009-10 and 2010-11 and the projections for FY 2009-10 and 2010-11 under the above heads also includes the arrears payable for the earlier years. However the BSEB has not indicated the arrears separately. BSEB has been requested to furnish the employee cost actuals for the year FY 2009-10 component wise indicating the arrears separately in

Commission's letter No. 156 dated 17/05/2010. BSEB in letter dated 31/05/2010 instead of furnishing the component wise details of employee cost actuals for FY 2009-10 has mentioned that provisional employee cost during FY 2009-10 based on diversion of funds is about Rs. 740.93 crore.

Some of the objectors who participated in the public hearing have pointed out that increase in employee cost projected is on very high side while number of employees reduced from 12650 to 11506.

Commission has obtained the provisional annual accounts for the FY 2009-10 from the BSEB. The actual employee cost net of capitalization for FY 2008-09 is Rs. 626.79 crore. The gross employee cost for FY 2009-10 is Rs. 600.28 crore as per provisional accounts. The employee cost for 2009-10 net of capitalization is Rs. 583.71 crore (Rs. 600.28-16.57) as per provisional accounts for 2009-10.

The above analysis clearly indicates that the employee cost net of capitalization projected at Rs. 821.22 crore is not at all justified. The Board has projected the Employee Cost at Rs.660.01 crore for FY 2010-11 in the function-wise breakup of expenses vide Annexure-VII of ARR volume-II and this projection works out to 10% increase over the employee cost of Rs.600.28 crore for 2009-10 as per provisional accounts. The employee cost net of capitalization with 10% increase over the employee cost of 2009-10 for the year 2010-11 works out to Rs.642.08 crore. BSEB has submitted that on account of implementation of 6th Pay Commission recommendations the pay etc., has been enhanced substantially resulting in higher projections which include payment of arrears to its employees. It is further mentioned that in case of gratuity, the limitation of the amount payable which was to the tune of Rs.3.5 lakhs earlier has been enhanced to Rs.10 lakhs on implementation of 6th Pay Commission. Keeping in view the submission of BSEB the Commission determines the employees cost at Rs.660 crore for the year 2010-11, which is in line with BSEB's projection given in the function-wise breakup of expenses in Annexure-VII of ARR volume-II.

The Commission, accordingly, approves the employee cost net of capitalization at Rs. 660 crore for the year 2010-11.

4.8.4 Repairs and Maintenance (R&M) Expenses

The BSEB has projected the R&M expenses at Rs. 105.39 crore for the year 2010-11. The details of R&M expenses for 2008-09 (actuals) 2009-10 (estimated) and 2010-11 (projected) furnished by the Board are given in the Table-4.19 below:

Table-4.19

Repairs and Maintenance expenses projected by BSEB

(Rs. lakhs)

S.N	Particulars	Previous year (Actuals) FY 2008-09	Current year (Estimate) FY09-10	Ensuing Year (Projection) FY10-11
1.	Plant & Machinery	1984.36	2945.14	3033.00
2.	Building	201.80	627.56	664.40
3.	Hydraulic works & civil works	193.88	391.00	412.70
4.	Line cable & network	1405.69	1097.78	1206.35
5.	Vehicles	19.48	55.77	61.25
6.	Furniture & fixtures	1.62	15.87	21.64
7.	Office equipments	12.84	34.63	41.85
8.	Operating expenses	320.28	721.00	1047.75
9.	Total expenses	4139.95	5888.75	6488.94
10.	Add cost of materials procured from Board's Hdqrs. for R&M	33.03	4047.00	4050.00
11.	Net Expenses	4172.98	9935.75	10538.94
12.	Add prior period	-	-	-
13.	Total expenses charged to revenue	4172.98	9935.75	10538.94

BSEB has mentioned that the Board has been facing acute liquidity crunch due to big gap between revenue and expenditure and it is not in a position to incur required expenditure on R&M of its assets as such the actual expenditure on R&M has always been suppressed. It is further mentioned that many grid substations / power stations, transmission lines and related electrical infrastructure have been constructed during 2008-09 and many more are under construction. Board has claimed that it needs adequate fund for R&M as well as additional employees for maintenance work and to improve the standard of performance. Taking all these into consideration, it is mentioned that the Board has projected Rs. 105.39 crore under R&M including operating expenses for the year 2010-11.

Commission's Analysis:

The actual R&M expenditure was Rs. 41.40 crore during the year 2008-09 as per Annual Accounts. Against this the Board has estimated R&M expenditure at Rs. 99.36 crore for 2009-10 with an increase of 140% over actual for 2008-09 and

the increase projected in 2010-11 is 6% over the estimate for 2009-10. The Board has included Rs. 40.47 crore for 2009-10 and Rs. 40.50 crore for 2010-11 towards procurement of materials from Board's headquarters against the actual given at Rs. 0.33 crore for 2008-09. This additional component of expenditure was not there in the Annual Accounts for 2008-09. BSEB has not explained this huge provision sought for under R&M. Even after excluding this additional item of expenditure Board has estimated the R&M expenditure (other than the additional component of expenditure) with an increase of 42% for 2009-10 over 2008-09 actuals and 10.19% increase for 2010-11 over 2009-10 estimates.

BSEB has not furnished the actual R&M expenses during 2009-10. Commission has obtained the provisional accounts of BSEB for 2009-10. The R&M expenses are Rs. 60.15 crore for 2009-10 as per the provisional accounts.

With reference to a query from the Commission BSEB has explained in their letter dated 25/02/2010 that R&M expenses were low during earlier years on account of financial crunch. Major addition has been made in fixed infrastructure of transmission, sub transmission and distribution system and therefore higher allocation is required under R&M. It is further explained that so far Board has not been able to procure meters required for replacement of defective as well as changing of electronic meters with static meters beyond the provision of APDRP. On closure of the APDRP, it is stated, the Board proposed to include procurement of some meters from the provision of R&M. Further Board has not been able to provide required adequate materials for R&M works and therefore it is now proposed to arrange the materials in phases for R&M in centralized way from head quarters.

In view of neglect of R&M over years due to non-availability of resources, the distribution is in a bad shape adversely affecting the quality of supply.

In view of the special circumstances explained by the Board, the R&M expenses are approved at Rs.95 crore to improve the distribution segment in Board.

The Commission approves the R&M expenses at Rs. 95 crore for the year 2010-11 against Rs. 105.39 crore projected by BSEB.

4.8.5 Administration and General (A&G) Expenses

BSEB has projected the A&G expenses at Rs. 55.61 crore (net of capitalization) for the year 2010-11. The details of these expenses actuals for 2008-09 estimates for

2009-10 and projection for 2010-11 as furnished by the Board in Format – 14 are given in the Table-4.20 below:

Table-4.20

Administration and General (A&G) Expenses

(Rs. lakhs)

S.N	Particulars	Previous year 2008-09	Current year 2009-10 (Estimated)	Ensuing year (Budgeted FY 2010-11) (Projected)
1	2	3	4	5
1	Rent, rates & taxes	90.70	137.09	144.07
2	Insurance	0.28	9.02	14.40
3	Telephone, postage & Telegrams	128.9	348.43	390.69
4	Consultancy fees	1.15	182.05	199.65
5	Technical fees	1.41	105.00	105.00
6	Other professional charges	0.07		
7	Conveyance & travel expenses	527.80	312.38	370.49
8	Electricity & Water charges	548.98	182.82	240.01
9	Others(as per details given below)	2524.03	3051.32	3666.06
10	Freight	45.88	76.2	88.94
11	Vehicle expenses	343.08	450.62	566.77
12	Total expenses	4212.28	4854.93	5786.08
13	Less Capitalized	153.00	190.00	225.00
14	Net expenses	4059.28	4664.93	5561.08
15	Add Prior period			
16	Total expenses charged to revenue	4059.28	4664.93	5561.08

Details of other expenses

1	Fee and subscription	125.57	112.28	152.10
2	Books and Periodicals	5.88	10.66	13.54
3	Printing and Stationary	64.16	108.27	175.94
4	Advertisement	326.70	355.50	382.45
5	Entertainment	14.37	21.02	27.00
6	Computer Billing	274.64	578.75	673.45
7	Home guard/Security Guard	252.78	424.17	495.10
8	Miscellaneous Expenses	649.28	359.12	410.34
9	Legal Charges	74.74	187.88	210.24
10	Audit Fee	385.87	150.00	150.00
11	Training Cost		114.00	267.00
12	Franchisee Cost	350.04	629.67	708.90
13	Total	2524.03	3051.32	3666.06

BSEB has mentioned that increase in A&G expenses is mainly due to increase in various activities for anti power theft and collection of revenue by use of internet / mobile, franchisee.

Commission's Analysis:

BSEB has furnished the A&G expenses at Rs. 40.59 crore for the year 2008-09 while the actuals were Rs. 33.66 crore as per the Annual Accounts for 2008-09. Taking the actual A&G expenses into consideration the increase estimated for 2009-10 is 38.6% and for 2010-11 the increase is 19.2% over the estimates for 2009-10.

The Commission has obtained the provisional accounts for the year 2009-10 and the A&G expenses for the year are Rs. 35.89 crore.

The A&G expenditure is a controllable item of expenditure and any increase proposed should be to off set the inflation. The Commission is of the opinion that an 8% increase per annum should meet the requirement.

The Commission accordingly approves the A&G expenses Rs. 38.76 crore for the year 2010-11 with 8% escalation over actuals for 2009-10 against Rs. 55.61 crore projected by BSEB.

4.8.6 Depreciation

The BSEB has projected depreciation at Rs. 97.45 crore for the year 2010-11. The details of assets and depreciation function wise, actuals for the year 2008-09, estimate for the year 2009-10 and projection for the year 2010-11 as furnished by the Board are given in the Table-4.21 below.

Table-4.21

Assets and Depreciation projected by BSEB

(Rs. crore)

S.N	Particulars	Assets as on 1/4/2008	Depreciation for 2008-09	Assets as on 1/04/2009	Depreciation for 2009-10	Assets as on 1/4/2010	Depreciation 2010-11
1	Thermal	309.69	2.42	309.69	8.71	562.04	16.89
2	Hydro	7.80	-	7.80	-	7.80	-
3	Transmission	630.25	10.82	643.03	20.13	863.82	27.27
4	Distribution	1470.60	42.31	1595.99	50.39	1690.99	53.29
	Total	2418.34	55.55	2556.51	79.23	3124.65	97.45

BSEB has explained that Board's assets have been reduced due to (i) transfer of Kosi Hydrel Generating Plant to Bihar State Hydrel Power Corporation and (ii) transfer of Muzaffarpur Thermal Power Station to Joint venture company. It is further stated that State Government has only transferred the management, administrative and technical control of Kosi Hydrel and therefore the value of assets is still appearing in

the Accounts of BSEB. BSEB has explained that increase in depreciation is due to fresh capital works completed / to be completed in transmission sector and distribution sector under various ongoing schemes.

The Board has mentioned that depreciation charges have been worked out as per the percentage adopted by CERC.

Commission’s Analysis:

The addition of assets during 2008-09 was as per the annual accounts. The addition of assets during 2009-10 is estimated at Rs. 568.14 crore which includes Rs. 252.35 crore towards thermal generation and Rs. 220.79 crore towards transmission. The depreciation estimated / projected on account of the above addition is quite substantial in 2009-10 and 2010-11 resulting in higher depreciation. BSEB has been requested to clarify the asset addition under thermal generation and transmission and whether they have been capitalized during 2009-10.

BSEB in its reply dated 19/03/2010 has explained that substantial addition in the Original Cost of Fixed Assets (OCFA) estimated for the years 2009-10 and 2010-11 has been made keeping in view the assets created / being created under various schemes such as, APDRP, RSVY etc and that there was substantial capital expenditure in progress to end of March 2009 to the extent of Rs. 934.09 crore and most of this capital expenditure in progress is expected to convert into fixed assets during FY 2009-10 and FY 2010-11. But BSEB has not clarified the asset addition under thermal generation and transmission projected in the ARR. With reference to further query BSEB has mentioned in its reply dated 27/04/2010 that capital expenditure in progress amounting to Rs. 934.09 crore appearing in the Annual Accounts for the year 2008-09 is likely to be added into fixed assets during the years 2009-10 and 2010-11 under generation, transmission and distribution functions as detailed in Table-4.22 below:

Table-4.22
Function-wise Asset Addition

Function	Asset addition
Generation	33.66
Transmission	145.70
Distribution	754.73
Total	934.09

(Rs. crore)

In Format-25 of ARR the addition of assets for the years 2009-10 and 2010-11 is given as detailed in Table-.4.23 below:

Table-4.23

Function-wise Asset Addition for FY 2009-10 and 2010-11

(Rs. crore)

Function	Asset addition	
	2009-10	2010-11
Generation (Thermal)	252.35	395.78
Generation (Hydel)	-	-
Transmission	220.79	350.90
Distribution	95.00	142.80
Total	568.14	889.48

It is observed from the above that function wise capitalization of assets during 2009-10 in the Tables 4.22 and 4.23 above do not match.

When BSEB has been requested to clarify whether the projected capitalization has been achieved during 2009-10 BSEB has mentioned in its reply dated 17/05/2010 that function wise actual capital expenditure and function wise capitalization made in 2009-10 shall be furnished after compilation of the Annual Accounts for FY 2009-10.

The Commission has obtained the provisional accounts of the Board for the year 2009-10 and the function wise assets and depreciation as per these accounts are given in the Table-4.24 below:

Table-4.24

Function wise assets and the depreciation for FY 2009-10 as per provisional accounts

(Rs. crore)

S.N	Particulars	Assets as on 01/04/2009	Depreciation for 2009-10	Assets as on 01/04/2010
1	Thermal	309.69	2.43	309.69
2	Hydro	7.80	-	7.80
3	Transmission	643.03	10.91	684.06
4	Distribution	1595.99	46.38	1858.04
	Total	2556.51	59.72	2859.59

The depreciation actual as per provisional accounts for the year 2009-10 is Rs. 59.72 crore against Rs. 79.23 crore estimated by BSEB.

Regulation 85 (13) of BERC (Terms and Conditions for Determination of Tariff) Regulations, 2007 reads as follows:

“Depreciation on assets capitalized based on investment programme approved by the Commission and actually in use. Depreciation shall be calculated annually based on the straight line method over the useful life of the asset and at the rates prescribed by the Central Electricity Regulatory Commission”.

The depreciation for the year 2010-11 on the assets as on 01/04/2010 works out to Rs. 75.72 crore as detailed in Table-4.25 below:

Table-4.25

Depreciation Approved for FY 2010-11

(Rs. crore)

S.N	Particulars	Assets as on 01/04/2009	Depreciation for 2009-10	Assets as on 01/04/2010	Addition during 2009-10	Depreciation for 2010-11
1	Thermal	309.69	2.43	309.69	-	2.43
2	Hydro	7.80	-	7.80	-	-
3	Transmission	643.03	10.91	684.06	41.03	13.07
4	Distribution	1595.99	46.38	1858.04	262.05	60.22
	Total	2556.51	59.72	2859.59	303.08	75.72

Some of the objectors who have sent their written objections on ARR and Tariff Petition filed by BSEB and objectors who have participated in the public hearing process have mentioned that depreciation cannot be claimed for non productive generating units 1 to 5 and 7.

The units 1 to 3 of Barauni TPS have been retired, units 4 and 5 have been shutdown. Units 6 which was commissioned on 01/12/1984 and the unit-7 on 31/03/1985. Both the units are of vintage. As has been rightly pointed out by objectors no further depreciation could be accepted on these thermal units. However as the asset is already in position generating some power, depreciation is allowed on the asset.

The Commission accordingly approves the depreciation charges at Rs. 75.72 crore for the year 2010-11 against Rs. 97.45 crore projected by BSEB.

4.8.7 Interest and Finance charges

The BSEB has projected an amount of Rs. 364.15 crore towards interest and finance charges for the year 2010-11. The details of interest charges for 2008-09 (actuals), 2009-10 (estimate) and 2010-11 (projection) as furnished by the Board are given in the Table 4.26 below:

Table – 4.26

Interest and Finance charges projected by BSEB

(Rs. crore)

S.N.	Source of loan	Previous year 2008-09 (Actuals)	Current year 2009-10(RE)	Ensuing year 2010-11 (Projections)
(1)	(2)	(3)	(4)	(5)
1	SLR Bonds	10.67	4.93	-
2	Non SLR Bonds			
3	LIC			
4	REC		15.36	15.36
5	Commercial Banks			
6	Bills discounting		17.32	18.50
7	Lease rental			
8	PFC	33.23	31.65	40.15
9	GPF	25.88	28.46	31.31
10	Interest on CSD	3.73	4.11	4.52
11	Working capital loan	59.95	66.01	27.11
12	Others	29.15	32.07	35.27
13	Total	162.61	199.91	172.22
14(a)	Add State Govt. Plan Loan	135.16	168.54	210.68
14(b)	Add State Govt. Non Plan Loan*	604.87	643.25	661.88
15	Total (13 +14a)	297.77	368.45	382.90
16	Less capitalization	14.26	15.00	18.75
17	Net Interest	283.51	353.45	364.15
18	Add prior period			
19	Total Interest			
20	Finance charges			
21	Total Interest and finance charges			

* Interest on State Government Non Plan Loan not included in the total interest by the Board

BSEB has stated that interest payable on loans to different institutions as well as interest payable on GPF, GSS and consumer security deposits during FY 2008 has been computed (actual) basis and interest on working capital has been computed on the basis of one months capital requirement as given in Format 35. The Board has requested the Commission to take two months requirement for working capital. The Board has taken the average rate of interest as 11.5% per annum.

As per Regulation 85 (ii) (6) of BERC Tariff Regulations interest charges on loans borrowed for capitalized assets is to be considered.

Interest charges claimed (Sl.No.1 to 12 of Table 4.26) on loans from Financial Institutions and commercial banks are on the existing loans borrowed for the assets capitalized in the past and for working capital purpose.

The rebate for prompt payment of current consumption bills is as per Tariff conditions. Interest on security deposits is covered under Tariff Regulations. Interest on GPF and GSS is on the subscriptions recovered from the employee salaries. These funds are not separately maintained by creating a Trust etc., and utilized by the Board and they are considered.

The interest charges claimed on existing Government loans are not considered as these funds are not utilized by BSEB for asset creation.

Thus the interest and finance charges on items 1 to 12 of Table-4.26 are Rs.172.22. The interest capitalization is given as Rs.18.75 crore on Rs.382.90 crore. The proportionate interest for capitalization works out to Rs.8.43 crore on the interest and finance charges of Rs.172.22.

The asset capitalized during 2009-10 is Rs.303.08 crore as per provisional accounts. The interest on this works out to Rs.23.34 crore as detailed below:

(Rs. crore)

Assets capitalized during FY 2009-10	303.08
<u>Less:</u> Contribution, Grants and subsidies during FY 2009-10	129.98
Loan portion	173.10
Interest @ 11.75% (SBI PLR as on 1.4.2010)	20.34

During the year 2009-10 BSEB has accounted for a Government loan of Rs.557.86 crore and REC loan of Rs.5.24 crore against the asset capitalization of Rs.303.08 crore in 2009-10 as per provisional accounts. Therefore, interest on loans portion utilized for asset capitalization is only allowed now.

The Commission, accordingly approves the interest and finance charges at Rs.184.13 crore (Rs.172.22 + 20.34 (-) 8.43 crore) for the year 2010-11 against net interest charges of Rs.364.15 crore projected by BSEB.

4.8.8 Return on Net Fixed Assets (NFA)

BSEB has mentioned that the admissible return to the Board as per Electricity Act, 2003 is to be based on guidelines issued under National Tariff Policy. It is further mentioned that the provisions stipulate the rate of return on equity for generation and transmission and requested to consider distribution margin as basis for allowing return in distribution business. There is no equity participation in Boards investment and the return has to be based on projected fixed assets of the Board as on 01/04/2010 and requested the Commission to allow a reasonable return on the basis of net worth.

The BSEB has given the capital base as on 01/04/2010 as Rs. 1257.04 crore as detailed in the Table-4.27 below.

Table-4.27

Projected Capital Base and Return for FY 2010-11

		(Rs. crore)
S.N	Particulars	2010-11
1.	Capital at the beginning of the year	3124.65
2.	Less: Accumulated depreciation	1800.08
3.	Net capital at the beginning of the year	1304.57
4.	Less: Consumer contribution at the beginning of the year	47.53
5.	Net fixed assets at the beginning of the year	1257.04
6.	Reasonable return @ 3% on NFA	

There is no provision for reasonable return in the BERC (Terms and Conditions for Determination of Tariff) Regulations, 2007 and therefore, the return on net fixed assets is not considered.

4.9 NON-TARIFF INCOME

BSEB has projected the non-tariff income at Rs. 172.08 crore for the year 2010-11. Non-tariff income includes meter rent, miscellaneous income, income from trading, late payment surcharge from consumers, interest on bank deposits etc.

The details of non-tariff income actuals for 2008-09, RE for 2009-10 and projection for 2010-11 furnished by BSEB in Format 20 of ARR and given in the Table-4.28 below:

Table-4.28

Non-tariff income actuals for 2008-09, RE for 2009-10 and projection for 2010-11

(Rs. in lakhs)

S.N	Particulars	Previous year 2008-09	Current year 2009-10(RE)	Ensuing year 2010-11 (Projected)
1	Meter / service rent	1343.00	1596.50	1743.21
2	Late payment surcharge (on basis of collection)	2612.69	3053.30	3577.15
3	Theft / pilferage of energy			
4	Misc. receipts	3383.07	5014.44	5155.82
5	Misc. charges (except PLEC)	280.90	1375.10	1628.21
6	Wheeling charges			
7	Interest on staff loans & advances	0.62		
8	Income from trading	131.10	400.00	441.51
9	Income from welfare activities			
10	Rental tender registration fee		286.84	312.29
11	Interest on bank deposit	2847.06	4275.58	4350.00
12	Total income	10598.44	16001.76	17208.19
13	Add prior period income			
14	Total non-tariff income	10598.44	16001.76	17208.19

The actual non-tariff income for the year 2009-10 is Rs. 154.21 crore as per the provisional accounts. The Commission accepts the projection made by BSEB at Rs. 172.08 crore for the year 2010-11.

The Commission, therefore, approves the non-tariff income at Rs. 172.08 crore as projected by BSEB for the year 2010-11.

4.10 REVENUE FROM THE EXISTING TARIFF

BSEB has furnished the revenue from existing tariff at Rs. 2539.57 crore for the year 2010-11 while the revenue from existing tariff during the year 2009-10 is given at Rs. 2032.81 crore vide BSEB's letter dated 31/05/2010.

The revenue from sale of power projected by BSEB is detailed in the Table-4.29 below.

Table-4.29

Revenue from Sale of Power at existing tariff Projected by BSEB

Sl. No.	Consumer Categories	FY 2009-10		FY 2010-11	
		Sales (MU)	Revenue (Rs.crore)	Sales (MU)	Revenue (Rs.crore)
1	Kutir Jyoti (Rural)	147.00	17.32	370.00	44.08
2	Kutir Jyoti Urban	2.64	0.31	5.70	0.85
3	DS-I (Rural)	729.00	72.96	892.80	89.28
4	DS-II	1462.36	377.99	1771.20	456.23
	Sub-Total	2341.00	468.58	3039.70	590.44
5	NDS-I (Rural)	13.40	3.34	26.88	4.20
6	NDS-II (Urban)	480.00	259.24	597.05	322.25
7	NDS-III	8.60	2.31	11.84	3.34
	Sub-Total	502.00	264.89	635.77	329.79
8	LTIS-I	106.68	54.63	154.94	76.89
9	LTIS-II	65.32	34.11	80.99	41.70
10	Public Water Works	176.00	59.93	200.00	67.77
	Sub-Total	348.00	148.67	435.93	186.36
11	IAS-I (Private)	411.00	32.89	483.78	38.70
12	IAS-II (Government)	156.00	29.21	171.91	32.09
	Sub-Total	567.00	62.10	655.69	70.79
13	Street Light-I (Metered)	4.60	1.56	5.50	1.87
14	Street Light-II (Unmetered)	19.40	4.66	22.00	5.38
	Sub-Total	24.00	6.22	27.50	7.25
15	HTSS-I	540.00	272.71	620.00	313.07
16	HTSS-II	160.00	79.05	220.00	109.12
17	HTSS-III	64.00	30.14	120.00	58.10
18	HTSS	700.00	251.16	590.00	224.20
	Sub-Total	1464.00	633.06	1550.00	704.49
19	RTS-I	460.00	233.69	570.00	281.05
	Sub-Total	460.00	233.69	570.00	281.05
	Total	5706.00	1817.21	6914.59	2170.17
20	Common Pool / UI	180.00	75.60	570.00	239.40
21	Nepal	350.00	140.00	300.00	130.00
	Grand Total	6236.00	2032.81	7784.59	2539.57

BSEB has not submitted complete details of revenue from existing tariff category / sub category and slab wise. For a query from the Commission vide letter No. 72 dated 25/02/2010 to furnish the above details, BSEB vide letter No. 192 dated 19/03/2010 informed that "it is not possible to furnish slab wise consumption detail because such data are not being compiled". On further persuasion vide BERC letter No. 117 dated 12/04/2010, BSEB vide letter No. 248 dated 27/04/2010 furnished category wise and sub category wise (but not slab wise) revenue with existing tariff for the year 2009-10, 2010-11 and with the proposed tariff for the year 2010-11.

For a proper analysis and realistic estimation of revenue from existing / proposed tariff the particulars of number of consumers, sales, connected load / contracted demand, revenue with fixed charges, revenue with variable charges, any other

revenue category wise, sub category wise and slab wise are essential. BSEB has come under the regulatory regime and BEREC has already issued two tariff orders for 2006-07 on 29/11/2006 and for 2008-09 on 26/08/2008. The above data is a regulatory requirement and BSEB is supposed to maintain or build up the data base as per the regulatory requirement.

In the absence of the above required data, the average tariff rates as adopted by BSEB and as arrived at by the Commission are taken into consideration category / sub category wise and the revenue with the existing tariff on sales approved for the year 2010-11 in Table 4.3 has been computed at Rs. 2451.49 crore as detailed in the Table 4.30 below:

Table-4.30

**Revenue from Sale of Power at existing tariff assessed by Commission
for FY 2010-11**

Sl.No	Category	Estimated by BSEB		Estimated by the Commission	
		Energy Sales (MU)	Revenue (Rs. crore)	Energy Sales (MU)	Revenue (Rs. crore)
1	Kutir Jyoti (Rural)	370.00	44.08	224.94	43.74
2	Kutir Jyoti (Urban)	9.70	0.85	5.69	0.86
3	DS-I (Rural)	892.80	89.28	893.00	89.00
4	DS-II	1771.20	456.23		
	Single phase	-	-	1667.20	436.64
	Three phase	-	-	104.00	40.25
5	NDS-I (Rural)	26.88	4.20	20.16	4.20
6	NDS-II (Urban)	597.05	322.25	-	-
	Single phase	-	-	410.00	217.66
	Three phase	-	-	187.00	116.28
7	NDS-III	11.84	3.34	11.84	3.34
8	LTIS-I	154.94	76.89	154.94	76.89
9	LTIS-II	80.99	41.70	80.99	41.70
10	Public Water Works	200.00	67.70	200.00	67.70
11	IAS-I (Private)	483.78	38.70	357.46	38.70
12	IAS-II (Government)	171.91	32.09	70.54	32.09
13	Street Light-I (Metered)	5.50	1.87	5.50	1.87
14	Street Light-II (Unmetered)	22.00	5.38	22.00	5.38
15	HTSS-I	620	313.07	620	313.07
16	HTSS-II	220	109.12	220	109.12
17	HTSS-III	120	58.10	120	58.10
18	HTSS	590	224.20	700	246.20
19	RTS-I	570	281.05	570	281.05
20	Nepal	300	130.00	300	130.00
21	UI / sales outside	570	239.40	279	*97.65
	Total	7784.59	2539.57	7224.26	2451.49

* The Board has considered outside sales rate at Rs.4.20 per unit. Considering present market condition the rate of Rs.3.50 per unit is taken.

4.11 REVENUE REQUIREMENT

The summary of revenue requirement of BSEB for the year 2010-11 as analyzed in the preceding paragraphs is given in the Table-4.31 below:

Table-4.31

Revenue Requirement for the year 2010-11

(Rs. crore)

S.N	Particulars	2010-11 projected by BSEB	Approved by the Commission
1.	Cost of fuel	77.62	64.07
2.	Cost of power purchase	2848.86	2635.47
3.	Employee cost (Net)	821.22	660.00
4.	R&M expenses	105.39	95.00
5.	Adm & Gen. Charges	55.61	38.76
6.	Depreciation	97.45	75.72
7.	Interest charges	364.15	184.13
8.	Return on NFA		-
9.	Total Revenue Requirement	4370.30	3753.15
10.	Less: Non tariff income	172.08	172.08
11.	Net Revenue Requirement (9-10)	4198.22	3581.07
12.	Less: Revenue from existing tariff	2539.57	2451.49
13.	Gap (11-12)	1658.65	1129.58
14.	Grant from GOB	1080.00	1080.00
15.	Net gap (13-14)	578.65	49.58
16.	Energy sales (MU)	7784.99	7225
17.	Average cost of supply (Net) (Rs./kWh)	5.39	4.96

It can be seen from the above that there is a revenue gap for the year 2010-11 to the extent of Rs. 49.58 crore against the gap of Rs. 578.65 crore projected by BSEB.

4.12 FUEL AND POWER PURCHASE COST ADJUSTMENT

The Commission in its Tariff Order for 2006-07 had approved a formula for Fuel and Power Purchase Cost Adjustment to claim any increase in fuel and power purchase costs approved by the Commission in the Tariff Order whenever such increase is more than five paise per unit. In the Tariff Order for 2008-09, the Commission had approved the power purchase costs from central generating stations and other sources at an average cost based on the power purchase bills paid during that period. It is stated in the Tariff Order that if there is any variation in the average energy charges approved, the Board may claim the costs under Fuel and Power Purchase Cost price adjustment formula.

BSEB has submitted that there was an abnormal increase in average cost of power from NTPC generating stations due to use of imported coal since October 2008. The Board had submitted proposal to the Commission vide letter No. Com/Misc/SC/1166/09-1453 dated 10/02/2009 for approval to recover the increase in purchase cost from the consumers during period October 2008 to March 2009. The approval sought was for Rs. 173.94 crore. The Commission had approved the cost to be recovered from the consumers other than Kutir Jyothi (rural and urban) and private agricultural consumers at 69Paise per unit during the period October 2008 to March 2009 vide its order dated 30th March 2010 under case No. FPPCA '01/2010.

As the increase in power purchase costs continued, the Board had again approached the Commission for approval for increase in average cost of Fuel and Power purchase for the period April 2009 to September 2009 of its own generation and other stations. The Commission has approved the increase in Fuel and Power Purchase cost at Rs. 210.80 crore to be recovered at 69 paise / Unit from the consumers other than Kutir Jyoti (rural & urban) and agricultural consumers (private) on the energy consumption during the period April 2009 to September 2009 vide its order dated 19th May 2010 under case No. FPPCA 02/10. Thus the Board had allowed to recover the increase in power purchase cost of Rs. 384.74 crore for the period October 2008 to September 2009 (12 months).

The Board has also submitted proposal for approval for the increase in power purchase cost for the periods October 2009 to March 2010 and April 2010 to September 2010 for an increase of Rs. 361.47 crore and Rs. 508.468 crore

respectively which will result in the recovery of 138 paise per unit during the October 2009 to March 2010, and 171 paise during the period April 2010 to September 2010.

Some of the consumer organizations have approached the Appellate Tribunal, New Delhi and High Court, Patna on the FPPCA approved by the Commission. The decision of the APTEL and High Court is awaited. However, these proposals are being examined by the Commission.

The State Government has sanctioned a grant of Rs. 90 crore for adjustment against FPPCA bills raised by the Board. The Board shall reduce the recovery of the charges from the consumers to the extent State Government has provided grant.

4.13 FUNCTION-WISE BREAKUP OF ARR FOR 2010-11

BSEB has not furnished the function wise break up ARR in full shape in the ARR and Tariff Petition. BSEB has been asked to furnish break up of all commercial and financial parameters split into generation, transmission and distribution functions for determination of ARR of each function separately vide Commission's letter dated 25/2/2010. BSEB has furnished the function wise break up of expenses for the year 2010-11 in the letter dated 19/03/2010.

The expenses for generation, transmission and distribution, as furnished by BSEB for FY 2010-11 are given in Table- 4.32 below:

Table-4.32

Function-wise break up of expenses for 2010-11 as projected by BSEB

(Rs. crore)

Sl. No.	Item	Generation	Transmission	Distribution	Total
1.	Cost of Power purchase	-	-	2848.86	2848.86
2.	Fuel Cost	88.10	-	-	88.10
3.	R&M expenses	6.85 (9.03%)	33.71 (44.42%)	35.32 (46.55%)	75.88 (100.00%)
4.	Employee cost	49.56 (7.51%)	71.02 (10.76%)	539.43 (81.73%)	660.01 (100.00%)
5.	A & G Expenses	2.52 (6.83%)	3.56 (9.63%)	30.87 (83.54%)	36.95 (100.00%)
6.	Depreciation	16.89	27.27	53.29	97.45
7.	Interest and Finance charges	54.62 (15.00%)	53.20 (14.61%)	256.33 (70.39%)	364.15 (100.00%)

The Commission approved the ARR in Para 4.11 above. The expenses approved in the ARR for 2010-11 are apportioned in the ratio projected by BSEB.

The function wise expenses namely generation, transmission and distribution approved by the Commission are detailed in the Table-4.33 below:

Table – 4.33

Function wise break up of ARR approved for the year 2010-11

(Rs. crore)

S.N	Item	Cost approved for 2010-11	Generation	Transmission	Distribution
1	Fuel costs	64.07	64.07	-	-
2	R&M expenses	95.00	8.58	42.20	44.22
3	Employee cost	674.60	50.66	72.59	551.35
4	A&G expenses	38.76	2.65	3.73	32.38
5	Depreciation	75.72	2.43	13.07	60.22
6	Interest on Finance charges	184.13	27.62	26.90	129.61
7	(i) Total fixed costs (2 to 6)	1068.21	91.94	158.49	817.78
	(ii) Variable costs	64.07	64.07	-	-

The power purchase cost of Rs.2655.32 crore is not taken into account in the above computation, as it pertains to retail tariff.

The ARR for generation, transmission and distribution for the year 2010-11 approved by the Commission is given in Table-4.34 below:

Table-4.34

ARR for Generation, Transmission and Distribution for FY 2010-11 as approved by the Commission

(Rs. crore)

Item	Fixed charges	Variable charges	Total
Generation	91.94	64.07	156.01
Transmission	158.49	-	158.49
Distribution	817.78	-	817.78
Total	1068.21	64.07	1132.28

Tariff Principles, Design and Tariff Schedule

5.1 BACKGROUND

5.1.1 The Commission in determining the revenue requirement of BSEB for the year 2010-11 and the retail tariff has been guided by the provisions of the Electricity Act, 2003, the National Tariff Policy (NTP), Regulations on Terms and Conditions of Tariff issued by the Central Electricity Regulatory Commission (CERC) and Regulations on Terms and Conditions of Tariff notified by the BEREC in April 2007. Section 61 of the Act lay down the broad principles, which shall guide determination of retail tariff. As per these principles the tariff should “Progressively reflect cost of supply” and also reduce cross subsidies “within the period to be specified by the Commission”. The Act lays special emphasis on safeguarding consumer interests and also requires that the costs should be recovered in a reasonable manner. The Act mandates that tariff determination should be guided by the factors, which encourage competition, efficiency, economical use of resources, good performance and optimum investment.

The NTP notified by Government of India in January 2006 provides comprehensive guidelines for determination of tariff as also working out the revenue requirement of power utilities. The Commission has endeavored to follow these guidelines as far as possible.

5.1.2 NTP mandates that the Multi Year Tariff (MYT) framework be adopted for determination of tariff from 1st April 2006. However the Commission is not in a position to introduce MYT regime in the State mainly because of lack of requisite and reliable data. The present MIS and regulatory reporting system of the Board is very inadequate for any such exercise at this stage. The accounts of the Board for FY 2008-09 have been compiled and adopted by the Board, which are yet to be audited. **There has been no study to assess voltage wise losses in the absence of metering of all feeders, distribution transformers and consumers. Technical and commercial losses are yet to be segregated and quantified voltage wise. The Commission issued a directive to the BSEB in the Tariff Order 2006-07 to chalk out a long-term action plan for reduction of T & D losses for both**

technical and non-technical with relevant load flow studies and submit to the Commission by March 2007. But so far there is no concrete action from the Board. Under these conditions it would not be practicable to implement the MYT framework this year. The Commission taking into account all factors, has decided to introduce MYT from the year 2012-13.

The mandate of the NTP that tariff should be within plus / minus 20% of the average cost of supply by 2010-11 has not been possible for the Commission to lay down the road map for reduction of cross subsidy, mainly because of lack of data regarding cost of supply at various voltage levels. The BSEB furnished the voltage-wise cost of supply, based on annual accounts, assuming certain percentage of voltage-wise losses without proper load flow studies, which cannot be taken into consideration. Hence, in working out the cost of supply, the Commission has gone on the basis of average cost of supply in the absence of relevant data for working out consumer category wise cost of supply. However in this tariff order an element of performance target has been indicated by setting target for T&D loss reduction for the years 2010-11 to 2012-13. This better performance by reduction of loss level will result in substantial reduction in average cost of supply.

5.2 TARIFF PROPOSED BY THE BOARD AND APPROVED BY THE COMMISSION

5.2.1 BSEB in its tariff petition for FY 2010-11 has proposed for revision of retail tariffs to various categories of consumers to earn an additional revenue of Rs.528.97 crore leaving gap of Rs. 49.70 crore. However on detailed and prudent scrutiny of the aggregate revenue requirement filed by the Board, the Commission has arrived at a more realistic revenue requirement which requires only an additional revenue of Rs.49.58 crore. The average cost of supply has been worked out at Rs.4.96 / kWh against Rs. 5.39 per kWh projected by the Board.

The Board has proposed tariff revision. The proposed increase in tariff by the Board would result in an overall increase of about 21.8% in tariffs, the increase for different categories varying from 8.9% to 87.5%.

5.2.2 Tariff Categories

In the ARR and Tariff Petition of 2010-11, Board has not proposed any changes in the existing categories of consumers and tariff structure. However, one new category i.e. NDS-IV-Bulk Supply having contract demand of 40 kW and above upto 70 kW with the condition to record monthly maximum demand and energy consumption

through trivector meter. Another change has been proposed regarding mode of charging fixed charge in case of DS-II category.

Subsequently in Letter No.: Com/tar/02/10 (I) 1003 dated 25-10-2010, Board has proposed demand based tariff for DS-II, NDS-II, NDS-III, LTIS-I and LTIS-II categories. Since these changes were not provided in the ARR and Tariff petition of 2010-11 these demand-based tariff are introduced as optional tariffs in this tariff order.

5.3 TARIFF CATEGORIES

The approved tariff categories / sub-categories along with different slabs are given below:

LT Categories: LT tariff shall be applicable for connections upto a maximum connected load of 60 kW except for tariff categories LTIS-II (upto 99 HP), Public Water Works (upto 99 HP) and Irrigation and Agriculture category IAS-II (upto 100 HP).

1. Domestic - light, fans and power – single phase and three phase connections.

1.1 Kutir Jyoti

i) Kutir Jyoti – BPL (Rural)

Unmetered

Connected load: upto 60 Watt

Metered

Connected load: upto 60 watt and energy consumption upto 30 units / month.

ii) Kutir Jyoti – BPL (Urban)

Metered only

Connected load: upto 100 watt and energy consumption upto 30 units per month

1.2 Domestic-I – Rural

Unmetered

Connected load: Upto 2 kW

Metered

Connected load: upto 2 kW

1.3 Domestic-II – Urban – Metered only

Connected load:

Single phase – upto 5 kW
Three phase – 5 kW and above } Urban connections
Rural connection above 2 kW

1.3.1 Domestic II (A) – OPTIONAL

Demand based tariff

Contract demand between 5 kW and 60 kW

- Demand Charges
- Energy Charges

1.4 Domestic-III – Urban - metered - residential cooperative societies, apartments, etc.

2. Non-Domestic (Commercial) - Lights, fans and power – Single phase and three phase connections.

2.1 Non- Domestic-I : Rural

Unmetered

Connected load: Upto 2 kW

Metered

Connected load: Upto 2 kW

2.2 Non- Domestic-II: Urban

Metered

Connected load: upto 60 kW for urban consumers and above 2 kW for

Rural consumers

2.2.1 Non-Domestic II (A) – OPTIONAL

Demand based tariff

Contract demand between 5 kW and 60 kW

- Demand Charges
- Energy Charges

2.3 Non- Domestic-III: Metered (Places of worship etc.)

Connected Load: Upto 30 kW

2.3.1 Non-Domestic III (A) – OPTIONAL

Demand based tariff

Contract demand between 5 kW and 30 kW

- Demand Charges
- Energy Charges

3. Irrigation and Agricultural Pumpsets – for Bonafide Agricultural Operations, hatcheries, poultries with more than 1000 birds and fisheries (Fish ponds)

3.1 IAS-I: Private Tube wells

(i) **Unmetered** – Private tube wells including bonafide agricultural Operations.

- Rural feeder
- Urban feeder

(ii) **Metered** – Private tube wells including bonafide agricultural Operations and hatcheries, poultries and fisheries (Fish ponds)

- Rural feeder
- Urban feeder

3.2 IAS-II: State Tube Wells / State Lift Irrigation Pumps/ State Irrigation Pumps

Connected Load: Upto 100 HP

(i) **Unmetered**

- Rural feeder
- Urban feeder

(ii) **Metered**

- Rural feeder
- Urban feeder

4. Low Tension Industry

Metered

4.1 LTIS-I: Upto 25 HP

- Fixed Charges
- Energy Charges

4.1.1 LTIS-I (A) – OPTIONAL

Demand based tariff

Contract demand upto 15 kW

- Demand Charges
- Energy Charges

4.2 LTIS-II: Above 25 HP upto 99 HP

- Fixed Charges
- Energy Charges

4.2.1 LTIS-II (A) – OPTIONAL

Demand based tariff

Contract demand above 15 kW and upto 60 kW

- Demand Charges
- Energy Charges

5. Public Waterworks

PWS – Upto 99 HP

6. Street Light, Mast Light and Traffic Light / Blinkers

6.1 SS-I Metered Supply

6.2 SS-II Unmetered Supply

The unmetered connections of all street light services shall be converted into metered ones within six months in urban areas and within one year in rural areas.

7.0 High Tension Supply

7.1 HTS-I – 11 /6.6 kV supply

For installations having contract demand of 75 kVA to 1500 kVA.

- Demand charges
- Energy charges

7.2 HTS-II – 33 kV supply

For installations having contract demand of 1000 to 10000 kVA

- Demand charges
- Energy charges

7.3 HTS –III - 132 kV supply

For installations having contract demand of 7.5 MVA and above

- Demand charges

- Energy charges

7.4 HTSS - 33/11 kV supply - Specified Services for Induction furnaces and allied loads.

- Demand charges

- Energy charges

8. Railway Traction

RTS: 132/25 kV supply

- Demand charges

- Energy charges

9. Temporary Supply

- LT

- HT

10. Seasonal Supply

The approved Tariff Schedule which shall be effective from 1st December 2010 is annexed as Annexure-5.1.

SCHEDULE

**FOR RETAIL TARIFF RATES AND TERMS AND CONDITIONS OF SUPPLY
FOR FY 2010-11**

(Effective from 01.12.2010)

PART - A : LOW TENSION SUPPLY

System of supply: Low Tension – Alternating Current, 50 cycles

Single Phase supply at 230 Volts

Three Phase supply at 400 Volts

The tariffs are applicable for supply of electricity to L.T consumers with a connected load upto 60 kW for domestic and non-domestic category, upto 99 HP for industrial (LTIS) and for public water works (PWS) category and upto 100 HP for irrigation category.

Single Phase supply upto 5.0 kW

Three Phase supply 5.0 kW and above

CATEGORY OF SERVICE AND TARIFF RATES

1.0 DOMESTIC SERVICE

Applicability

Applicable for supply of electricity to domestic purposes such as lights, fans, radios, televisions, heaters, air-conditioners, washing machines, air-coolers, geysers, refrigerators, ovens, mixers and other domestic appliances including motor pumps for lifting water for domestic purposes. This is also applicable to the common facilities in the multistoried, purely residential apartments, buildings.

1.1 Kutir Jyoti Connection (KJ) – Rural / Urban

This will be applicable to (i) all huts (Kutir) and dwelling houses of rural and urban poor Below the Poverty Line (BPL) (ii) houses built under schemes like Indira Awas Yojana and similar such schemes.

- i) Hut (Kutir) is meant a living place with mud wall and thatched roof or house built under Indira Awas Yojana and other similar schemes which shall not exceed 200 Sq ft area.

- ii) Not more than 30 watts C.F. Lamps both in rural areas and urban areas will be permitted in each hut / living place and maximum consumption upto 30 units per month.
- iii) **In case it is detected that the norms prescribed in para (i) and (ii) above are violated, the Kutir Jyoti Tariff shall immediately become inoperative and rates applicable to DS – I, II category with appropriate penal charge shall apply in such cases.**

1.2 Domestic Service – I (DS – I)

Applicable to domestic premises in rural areas for a load upto 2 kW not covered by areas indicated under DS-II and not being fed from urban / town feeders.

1.3 Domestic Service – II (DS – II)

Applicable for domestic premises in urban areas covered by Notified area committee / Municipality / Municipal Corporation / Development Authority / All District and Sub divisional towns / Block Head Quarters / Industrial areas /Contiguous Sub urban areas and also areas getting power from Urban / Town feeders for single phase supply for load upto 5 kW and three phase supply for load of 5 kW and above. Rural consumers having sanctioned load above 2 kW will come under this category. Consumer has the option to take 1-phase or 3-phase supply connection for a load of 5KW.

1.4 Domestic Service – III (DS – III)

Applicable for registered societies, for their residential colonies, having not less than 15 houses / flats in the colony. Residential colonies / multistoried residential complexes taking load in bulk at a single point with a minimum load of 2 kW per flat / house and maximum total load upto 60 kW.

TARIFF RATES

1.0 DOMESTIC SERVICE

	Category of consumer		Fixed charge (Rs.)	Energy charge (Ps / Unit.)
1.1	Kutir Jyoti - BPL Consumers			
	i.	K.J. (Rural) upto 30 watts C.F. Lamps (Consumption upto 30 units per month) i. Unmetered ii. Metered	Rs.35 / connection / per month x	x 120 Ps/unit subject to Monthly Minimum Charge of Rs.25 per month per connection.
	ii.	K.J. (Urban) upto 30 watts C.F. Lamps (consumption upto 30 units per month) Metered only	x	150 Ps/unit subject to Monthly Minimum Charge of Rs.35 per connection per month.

No Fuel and Power Purchase cost Adjustment (FPPCA) charges applicable.

1.2	Category of consumer	Fixed charge (Rs.)	Energy charges	
			Consumption in a month (Units)	Rate P/unit
	DS – I Connected load: Upto 2 kW only			
	Unmetered Connected load: upto 1kW Connected load: above 1kW upto 2 kW	Rs.90/connection/ per month Rs.130/connection /per month	x	x
	Metered	x	First 50 units 51-100 units Above 100 units	135 160 180
		x	Subject to monthly minimum charge of 1 st kW – 40 units per month 2 nd kW – 20 units per month	

Fuel and Power Purchase cost Adjustment (FPPCA) charges as applicable will be charged extra.

1.3	Category of consumer	Fixed charge (Rs.)	Energy charges	
			Consumption in a month (Units)	Rate Ps/unit
	Single phase Up to 5 kW	First kW-Rs.30/ month/connection Addl. kW-Rs.10/ kW or part thereof per month.	1-100 units 101-200 units 201-300 units	220 270 325
	Three Phase 5 kW and above	5 kW-Rs.200/ month/connection Addl. kW-Rs.10/ per kW or part thereof per month	Above 300 units	405
			Subject to monthly minimum charge of 1 st kW - 40 units per month Additional kW or part thereof - 20 units per month	

Fuel and Power Purchase Cost Adjustment (FPPCA) charges as applicable will be charged extra.

OPTIONAL

Domestic - DS-II (A) – Demand Based

All those consumer under DS-II category with 3 phase meter connection with contract demand between 5 kW and 60 kW opting for demand based tariff shall be required to pay at the rates indicated below:

1.3.1	Category of consumer	Demand charge (Rs./kW/month)	Energy charges	
			Consumption in a month (Units)	Rate Ps/unit
	DS-II (A)- (OPTIONAL) Demand Based Tariff			
	Contracted demand of 5 kW to 60 kW	Rs. 50/kW per month or part there of on recorded demand or contract demand whichever is higher.	1-100 units 101-200 units 201-300 units Above 300 units	220 270 325 405
Subject to (i) Monthly minimum charge of 50 units per month/kW on recorded demand or contract demand, whichever is higher. (ii) If in any month the recorded maximum demand exceeds 110% of the contract demand, that portion of the demand in excess of the contract demand will be billed at twice the normal rate.				

Fuel and Power Purchase Cost Adjustment (FPPCA) charges as applicable will be charged extra.

	Category of consumer	Fixed charge (Rs.)	Energy charges	
1.4	DS – III (Metered)		Consumption in a month (Units)	Rate (Ps/unit)
		Rs. 30/- kW/ month	All units	280
			Subject to monthly minimum charge 1 st kW – 40 units / flat per month Additional kW or part there of – 20 units/flat per month	

FPPCA as applicable will be charged extra.

2.0 NON-DOMESTIC SERVICE (NDS)

Applicability

Applicable for supply of electrical energy for non domestic consumers having sanctioned load upto 60 kW, using electrical energy for light, fan and power loads for non – domestic purposes like shops, hospitals, nursing homes, clinics, dispensaries, restaurants, hotels, clubs, guest houses, marriage houses, public halls, show rooms, centrally air-conditioning units, offices, commercial establishments, cinemas, X-ray plants, Non – Government schools, colleges, libraries and research institutes, boarding / lodging houses, libraries, railway stations, fuel – oil stations, service stations, All India Radio / T.V. installations, printing presses, commercial trusts, societies, banks, theatres, circus, coaching institutes, common facilities in multistoried commercial office / buildings Government and Semi – Government Offices, Public Museums and other installations not covered under any other tariff schedule.

Government educational institutions, their hostels and libraries, Government hospitals and Govt. research institutions and non – profitable Government aided educational institutions their hostels and libraries.

Non-profitable recognized charitable cum public institutions.

Places of worship like temples, mosques, gurudwaras, churches etc. and burial / crematorium grounds.

2.1 Non – Domestic Service (NDS-I)

Applicable to loads upto 2 kW in rural areas not covered by areas indicated under NDS – II and not being fed from urban / town feeders.

Tariff Rates – NDS-I

	Fixed charge (Rs.)	Energy charges	
		Consumption in a month (Units)	Rate P/unit
Unmetered			
Connected Load Upto 500 W (0.5kW)	Rs.115/connection/ per month	x	x
Above 0.5 kW upto 1 kW	Rs.135/connection per month	x	x
Above 1 kW upto 2 kW	Rs.175/connection/ per month	x	x
Metered	x	1-100 units	145
	x	101-200 units	165
	x	Above 200 units	205
	x	Subject to monthly minimum charge for Load upto 500 watts – 30 units Above 0.5 kW and upto 1 kW – 50 units Above 1 kW – 70 units	

FPPCA charges as applicable will be charged extra.

2.2 Non – Domestic Service – NDS – II (Metered)

Applicable to loads upto 60 kW in urban areas covered by Notified Area Committee / Municipality / Corporation / Development Authority / All District and Sub – divisional towns / Block Head quarters / Industrial areas / contiguous sub urban areas getting power from urban / town feeders, except those covered under NDS-III.

Rural consumers having sanctioned load above 2 kW will also come under this category.

Tariff Rates – NDS-II

Fixed charge (Rs.) Per month	Energy charges	
	Consumption in a month (Units)	Rate P/unit
Single phase Rs.140 /kW or part thereof upto 5 Kw	1-100 units	425
	101-200 units	455
	Above 200 units	485
Three Phase Rs.170/kW or part thereof for loads 5 kW and above		
Subject to a monthly minimum charge of 50 units/kW or part thereof		

FPPCA charges as applicable will be charged extra.

OPTIONAL

2.2.1 Non-Domestic Service - NDS – II (A) – Demand Based

All those consumers under NDS-II with 3 phase supply and contract demand between 5 kW and 60 kW opting for demand based tariff shall be required to pay at the rates indicated below:

2.2.1	Category of consumer	Demand charge (Rs./kW/month)	Energy charges	
	NDS-II (A) – (OPTIONAL) Demand Based Tariff		Consumption in a month (Units)	Rate Ps/unit
	Contract demand of 5 kW to 60 kW	Rs. 240/kW per month or part there of on recorded demand or contract demand whichever is higher.	1-100 units 101-200 units Above 200 units	425 455 485
Subject to (i) Monthly minimum charge of 70 units per month/kW on recorded demand or contract demand, whichever is higher. (ii) If in any month the recorded maximum demand exceeds 110% of contract demand, that portion of the demand in excess of the contract demand will be billed at twice the normal rate.				

Fuel and Power Purchase Cost Adjustment (FPPCA) charges as applicable will be charged extra.

2.3 Non-Domestic Service - NDS – III (Metered)

Applicable for places of worship like temples, mosques, gurudwaras, churches etc. and burial / crematorium grounds. If any portion of the premises is used for commercial purposes, a separate connection shall be taken for that portion and NDS-II tariff schedule shall be applicable for that service.

Tariff Rates-NDS-III

Fixed charge (Rs.)	Energy charges	
	Consumption in a month (Units)	Rate P/unit
Rs.45 /kW with minimum of Rs.165 per connection / month For load upto 30 KW.	1-100 units	215
	101-200 units	280
	Above 200 units	335
	Subject to monthly minimum charge of 50 units/kW or part thereof.	

PFPCA charges as applicable will be charged extra.

OPTIONAL

2.3.1 Non-Domestic Service - NDS – III (A) – Demand Based

All those consumers under NDS-III category with 3 phase supply and with contract demand between 5 kW and 30 kW opting for demand based tariff shall be required to pay at the rates indicated below:

2.3.1	Category of consumer	Demand charge (Rs./kW)	Energy charges	
	NDS-III (A) – (OPTIONAL) Demand Based Tariff		Consumption in a month (Units)	Rate Ps/unit
	Contract demand of 5 kW to 30 kW	Rs. 70/kW per month or part there of on recorded demand or contract demand whichever is higher.	1-100 units 101-200 units Above 200 units	215 280 335
Subject to				
(i) Monthly minimum charge of 70 units per month/kW on recorded demand or contract demand, whichever is higher.				
(ii) If in any month the recorded maximum demand exceeds 110% of contract demand, that portion of the demand in excess of the contract demand will be billed at twice the normal rate.				

Fuel and Power Purchase Cost Adjustment (FPPCA) charges as applicable will be charged extra.

3.0 IRRIGATION and AGRICULTURAL SERVICE (IAS)

Applicability

Applicable for supply of electrical energy for bonafide use for Agricultural purposes including Processing of Agricultural Produce, confined to Chaff - Cutter, Thrasher, Cane crusher and Rice Hauler when operated by the agriculturist in the field or farm and does not include rice mills, flour mills, oil mills, dal mills or expellers. This is also applicable to hatcheries, poultries (with more than 1000 birds) and fisheries (Fish ponds).

3.1 IAS - I

Applicable for all purposes indicated above including Private Tube wells.

Tariff Rates

Unmetered Supply

Rural feeder - Rs.100 / HP per month

Urban feeder - Rs.120 /HP per month

Note: Hatcheries, poultries and fisheries are not covered under unmetered supply they have to be metered only.

Metered supply

All units

Rural feeder – 80 Ps/unit

Urban feeder – 130 Ps/unit

Subject to monthly minimum energy charges of –

Rural feeder - Rs. 75/HP per month

Urban feeder - Rs.120/HP per month

No FPPCA charges applicable.

3.2 IAS – II

Applicable to State Tube Wells / State lift irrigation pumps / State Irrigation pumps upto 100 HP.

Unmetered Supply

Rural feeders - Rs.450 /HP per month

Urban feeders - Rs.480/HP per month

Metered supply

- Rural feeder – 155 Ps/unit
- Urban feeder – 205 Ps/unit

Subject to a monthly minimum energy charge of 225 units /HP per month.

FPPCA charges as applicable will be charged extra.

4.0 LOW TENSION INDUSTRIAL SERVICE (LTIS)

Applicability

The tariff is applicable for supply of electricity to low tension industrial consumers with a connected load upto 99 HP and below including incidental lighting for industrial processing or Agro – industries purposes, Arc welding sets, Flour Mills, Oil Mills, Rice Mills, Dal Mills, Atta Chakki, Hauler. Expellers etc.

4.1 LTIS-I (Connected load upto 25 HP)

Tariff Rates

Fixed charge (Rs.)	Energy charges	
	Consumption in a month (Units)	Rate (Ps/unit)
Rs.65/HP or part thereof / per month	All units	420
	Subject to monthly minimum charge of 70 units/HP or part thereof.	

FPPCA charges as applicable will be charged etc.

OPTIONAL

4.1.1 LTIS-I (A) Contracted demand 5 kW to 15 kW - Demand Based Tariff

All those consumers under LTS-I category with 3 phase supply and with contract demand 5 kW to 15 kW opting for demand based tariff shall be required to pay at the rates indicated below:

4.1.1	Category of consumer	Demand charge (Rs./kW)	Energy charges	
	LTIS-I (A) (Demand Based Tariff) (OPTIONAL)		Consumption in a month (Units)	Rate Ps/unit
	Contract demand 5 kW to 15 kW	Rs. 130/kW per month or part there of on recorded demand or contract demand whichever is higher.	All units	420
Subject to				
(i) Monthly minimum charge of 125 units per month/kW on recorded demand or contract demand, whichever is higher. (ii) If in any month the recorded maximum demand exceeds 110% of contract demand, that portion of the demand in excess of the contract demand will be billed at twice the normal rate.				

Fuel and Power Purchase Cost Adjustment (FPPCA) charges as applicable will be charged extra.

4.2 LTIS-II (Connected load above 25 HP and upto 99 HP).

Fixed charge (Rs.)	Energy charges	
	Consumption in a month (Units)	Rate (Ps/unit)
Rs.85/HP or part thereof per month	All units	435
Subject to monthly minimum charge of 100 units/HP or part thereof.		

FPPCA charges as applicable will be charged extra.

Consumers with a connected load above 79 HP and upto 99 HP have option to avail power under LTIS / HTS category.

OPTIONAL

4.2.1 LTIS-II (A) (Contract demand above 15 kW and upto 60 kW – Demand Based Tariff)

All those consumers under LTS-II category with 3 phase supply and with contract demand above 15 kW and upto 60 kW opting for demand based tariff shall be required to pay at the rates indicated below:

4.2.1	Category of consumer	Demand charge (Rs./kW)	Energy charges	
	LTIS-II (A) (Demand Based Tariff) (OPTIONAL)		Consumption in a month (Units)	Rate Ps/unit
	Contract demand above 15 kW and upto 60 kW	Rs. 150/kW per month or part there of on recorded demand or contract demand whichever is higher.	All units	435
Subject to (i) Monthly minimum charge of 180 units per month/kW on recorded demand or contract demand, whichever is higher. (ii) If in any month the recorded maximum demand exceeds 110% of contract demand, that portion of the demand in excess of the contract demand will be billed at twice the normal rate.				

Fuel and Power Purchase Cost Adjustment (FPPCA) charges as applicable will be charged extra.

5.0 Public Water Works (Connected load upto 99 HP)

Applicability

The tariff is applicable to Public water works, Sewerage treatment plant and Sewerage pumping stations functioning under State Government and State Government Under takings and local bodies.

Fixed charge (Rs.)	Energy charges	
	Consumption in a month (Units)	Rate (Ps/unit)
Rs. 100/HP or part thereof per month	All units	330
Subject to monthly minimum charge of 165 units / HP or part thereof.		

FPPCA charges as applicable will be charged extra.

Consumers with a connected load above 79 HP and upto 99 HP have option to avail power under PWS / HTS category.

6.0 STREET LIGHT SERVICES

Applicability

Applicable for supply of electricity for street light system, including signal system in Corporation, Municipality, Notified area, Committees, Panchayats etc. and also in areas not covered by Municipality and Notified Area Committee provided the number of lamps from a point of supply is not less than five. Also applicable for Traffic Lights, Mast lights / Blinkers etc.

Tariff Rates

6.1 SS-I Metered Supply

All units – 345 Ps./unit

Subject to monthly minimum charge of –

- i). Gram Panchayats – 160 units / kW or part thereof.
- ii) For Nagar Palika / NAC / Municipality – 220 units / kW or part thereof.
- iii) For Municipal Corporations – 280 units / kW or part thereof.

FPPCA charges as applicable will be charged extra

6.2 SS-II Unmetered Supply

Fixed Charges

Sl. No.	Light Point Wattage	Gram Panchayat	Nagar Palika / NAC / Municipality	Municipal Corporation
(i)	Upto 100 W	Rs.60/month	Rs.100/month	Rs.110/ month
(ii)	101-250 W	Rs.150/month	Rs.190/ month	Rs. 230/month
(iii)	251-500 W	Rs.300/month	Rs.350/month	Rs. 400/month
	Monthly Minimum Charges per Mast	Rs.1500/month	Rs.1800/month	Rs. 1900/month

Above 500 watts the rates shall be on pro-rata basis of the rates indicated for 100 Watts.

FPPCA charges as applicable will be charged extra.

TERMS AND CONDITIONS OF LOW TENSION TARIFF

The foregoing tariffs are subject to the following conditions.

1. Rebate for prompt payment

The due date for making payment of energy bills or other charges shall be 15 days from the date of issue of the bill. Rebate will be allowed for making payment of energy bills on or before due date specified in the bill as given below:

i.	Kutir Jyoti (Unmetered)	Rs.2/- per connection per month.
ii.	DS-I and NDS-I (Unmetered)	Rs.3/- per connection per month.
iii.	Agricultural and Irrigation pumpsets (Unmetered)	Rs.5/- per HP/month
iv.	Street Lights (Unmetered)	Rs.3/- per connection/month
v.	All metered categories	10 paise per unit, on units billed

In case a consumer makes full payment after due date but within 10 days after the due date, no DPS shall be leviable for this period but rebate for prompt payment will not be admissible.

2. Delayed Payment Surcharge (DPS)

In case a consumer does not pay energy bills in full within 10 days grace period after due date specified in the bill, a delayed payment surcharge of one and half (1.5) percent per month or part thereof on the principal amount of bill will be levied from the due date for payment until the payment is made in full without prejudice to right of the licensee to disconnect the supply in accordance with Section 56 of the Electricity Act, 2003. The licensee shall clearly indicate in the bill itself the total amount, including DPS, payable for different dates after the due date after allowing for the grace period of 10 days. No DPS shall be charged on DPS arrear. The bill shall indicate the energy charges for the month, arrears of energy charges and DPS separately.

3. Duties and Taxes

Other statutory levies like electricity duty or any other taxes, duties etc., imposed by the State Government / Central Government or any other competent authority, shall be extra and shall not be part of the tariff as determined under this order.

4. Defective / Damaged / Burnt meters supply

In case of meter being defective / damaged / burnt the Board or the consumer as the case may be shall replace it within the specified period prescribed in “Standards of Performance for Distribution Licensee”, Regulations issued by the Commission.

Till defective / damaged / burnt meter is replaced the consumption will be assessed and billed on an average consumption of last 12 months from the date of meter being out of order. Such consumption shall be treated as actual consumption for all practical purposes including calculation of electricity duty until the meter is replaced/rectified.

5. Shunt Capacitor Installation

- a) Every LT consumer including irrigation pump set consumers whose connected load includes induction motor (s) of capacity 3 HP and above and other low power factor consuming appliances shall arrange to install low tension shunt capacitors of appropriate capacity at his cost across terminals of his motor (s). The consumer shall ensure that the capacitors installed by him are properly matched with the actual rating of the motor so as to ensure power factor of 90%.
- b) All LT consumers having welding transformers will be required to install suitable shunt capacitor (s) of adequate capacity so as to ensure power factor of not less than 90%.
- c) The capacitors shall be of standard manufacture and meet the Bureau of Indian Standards specification.
- d) Consumers not complying to above shall be liable to pay a surcharge of 5% (five percent) of the billed amount excluding DPS till the capacitors are installed.
- e) Any LT consumer in whose case, the meter installed has power factor recording feature and who fails to maintain power factor of 90% in any month shall pay a surcharge of 5% (five percent) of the billed amount excluding DPS till the defective capacitors are replaced and power factor of 90% is maintained.
- f) No new supply to LT installations having low power factor consuming equipment such as induction motor of 3 HP and above or welding transformers etc., will be released unless shunt capacitors are installed to the satisfaction of the Board.
- g) The ratings of shunt capacitor to be installed on the motors of different ratings are provided in the “Electric Supply Code” notified by the Commission.

PART - B: HIGH TENSION SUPPLY

7.1 HTS – I (11 kV/6.6 kV)

Applicable for supply of electricity for use in installations with a minimum contract demand of 75 kVA and maximum contract demand of 1500 kVA.

Character of service: AC, 50 cycles, 3 phase at 11 kV or 6.6 kV.

Tariff rates

Demand charge Rs./ kVA / Month of billing demand	Energy charges Paise / kWh
220	All units - 423

- (i) The billing demand shall be the maximum demand recorded during the month or 85% of the contract demand whichever is higher.
- (ii) Minimum base energy charge will be billed on the basis of energy consumption at a load factor of 30% and power factor of 90% on contract demand payable at 423 Ps/unit, monthly.
- (iii) Surcharge of 7.5% will be levied on the demand and energy charges for supply at 6.6 kV.
- (iv) If in any month the recorded maximum demand exceeds 110% of contract demand, that portion of the demand in excess of the contract demand will be billed at twice the normal charges.

FPPCA charges as applicable shall be charged extra.

7.2 HTS – II (33 kV)

Applicable for use in installations with a minimum contract demand of 1000 kVA and maximum contract demand of 10,000 kVA.

Character of service: AC, 50 cycles, 3 phase at 33 kV.

Tariff rates

Demand charge Rs. / kVA / Month of billing demand	Energy charges (Paise / unit)
220	All units - 415

- (i) The billing demand shall be the maximum demand recorded during the month or 85% of the contract demand whichever is higher.
- (ii) Minimum base energy charge will be billed on the basis of energy consumption at a load factor of 35% and PF of 90% on contract demand payable at 415 Ps/unit monthly.

- (iii) If in any month the recorded maximum demand exceeds 110% of contract demand, that portion of the demand in excess of the contract demand will be billed at twice the normal charges.

FPPCA charges as applicable shall be charged extra.

7.3 HTS – III (132 kV)

Applicable for installations with a minimum contract demand of 7.5 MVA.

Character of service: AC, 50 cycles, 3 phase at 132 kV

Tariff rates

Demand charge Rs. / kVA / Month of billing demand	Energy charges (Paise / unit)
220	All units – 410

- (i) The billing demand shall be the maximum demand recorded during the month or 85% of the contract demand whichever is higher.
- (ii) Minimum base energy charge will be billed on the basis of energy consumption at a load factor of 50% and PF of 90% on contract demand payable at 410 Ps/unit, monthly.
- (iii) If in any month the recorded maximum demand of the consumer exceeds 110% of the contract demand, that portion of the demand in excess of the contract demand will be billed at twice the normal charges.

FPPCA charges as applicable shall be charged extra.

7.4 HTSS (33 kV/11 kV)

The tariff is applicable for supply of electricity to all consumers who have contract demand of 300 kVA and more for induction furnace including Ferro Alloy loads. This tariff will not apply to casting units having induction furnace of melting capacity of 500 Kg and below.

The capacity of induction furnace shall be 600 kVA per metric tonne as existing for determining the contract demand of induction furnace in the existing HTSS service connections. However, for new connection and if the furnace is replaced with a new one for the existing connections, the contract demand shall be based on total capacity of the furnace and equipment as per manufacturer technical specifications, and in case of difference of opinion, the provisions of clause Nos. 6.39 and 6.40 of the Bihar Electricity Supply Code shall apply.

Those consumers who are having rolling/re-rolling mill in the same premises will take additional contract demand for the rolling/re-rolling mill over and above the contract demand required for induction furnace. The consumer will have the option to segregate the rolling/re-rolling mill and take separate new connection following all

prescribed formalities with a separate transformer. This new connection, if taken by the consumer will be allowed to be billed in appropriate tariff schedule. Such rolling/re-rolling mill will be allowed to avail power at 33 kV.

Character of service: **AC, 50 cycles, 3 phase at 33 kV or 11kV.**

Tariff rates

Demand charge Rs. / kVA / Month of billing demand	Energy charges (Paise / unit)
700	All units 205

- (i) Minimum monthly charges at Rs. 1233 per kVA of contract demand per month shall be payable on monthly basis. Minimum hours of supply will be 630 hours per month. If for any particular month the hours of supply are less than the minimum assured hours of supply as shown above then the minimum monthly charges for the month will be –

$$\left(\text{Rs. 700} + \frac{\text{Rs. 533} \times \text{Actual hours of supply}}{630 \text{ (Assured hours of supply)}} \right)$$

- (ii) The billing demand shall be the maximum demand recorded during the month or the contract demand whichever is higher.
- (iii) If in any month the recorded maximum demand of the consumer exceeds 110% of contract demand that portion of the demand in excess of the contract demand will be charged at twice the normal charges.
- (iv) If the power is availed at 11 kV a surcharge of five (5)% will be charged extra on demand **and energy charges.**

FPPCA charges as applicable shall be charged extra.

8.0 Railway Traction Service (RTS)

Applicable to Railway Traction loads only.

Tariff rates at 132 kV

Demand charge Rs. / kVA / Month of billing demand	Energy charges (Paise / unit)
180	All units 438

- (i) 10 Ps/unit of surcharge, is to be billed for availing supply at lower voltages than 132 kV.

- (ii) The billing demand shall be the maximum demand recorded during the month or 85% of the contract demand whichever is higher.
- (iii) The minimum base energy charge will be billed on the basis of energy consumption at a load factor of 25% and PF of 90% on contract demand payable at 438/448 Ps/unit as applicable.

FPPCA charges as applicable shall be charged extra.

Time of Day tariff (TOD)

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

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

Time of use	Demand Charges	Energy Charges
(i) Normal period (5:00 a.m. to 5:00 p.m)	Normal Rate	Normal rate of energy charges
(ii) Evening peak load period (5:00 p.m to 11.00 p.m)	Normal Rate	120% of normal rate of energy charges
(iii) Off-peak load period (11:00 p.m to 5:00 a.m)	Normal Rate	85% of normal rate of energy charges

Applicability and Terms and Conditions of TOD tariff:

- (i) TOD tariff will be optional for all HT consumers having contract demand below 200 kVA. TOD tariff will be mandatory for all HT consumers having contracted demand of 200 kVA and above. BSEB shall implement this condition within 3 months from the date of this order.
- (ii) The facility of aforesaid TOD tariff shall not be available to HT consumers having captive power plants and/or availing supply from other sources through wheeling of power.
- (iii) The HT industrial consumers who have installed standby generating plants shall also be eligible for the aforesaid TOD tariff.
- (iv) After electing TOD tariff, if any industrial HT consumer on account of some reasons wants to go back to the earlier tariff according to the agreement, this facility shall be available to him only once in two years.

- (v) If the actual monthly consumption of such HT consumer, whose monthly minimum charges are based on units, is less than minimum consumption, then the difference (deficit) of units between the minimum consumption and actual consumption shall be billed at normal rate of energy charge prescribed for “Normal Period”.
- (vi) In the event of applicability of TOD tariff to a consumer, the terms and conditions of the applicable tariff (such as monthly tariff minimum charge, etc.) shall continue to apply.
- (vii) In case, the consumer exceeds 110% of the contract demand, the demand in excess of contract demand shall be billed at twice the normal tariff applicable for the day time i.e. 5:00 a.m. to 5.00 p.m. irrespective of the time of use.

Load Factor Rebate for all HT services

All HT consumers except Railway Traction shall be given rebate for higher consumption as noted below only on excess units consumed.

Category	Load Factor	Rebate on energy charge (only on excess units consumed)
(i) HTS-I (MMC-30% LF)	Above 50%	3%
	Above 60%	4%
	Above 70%	5%
	Above 80%	6%
(ii) HTS-II (MMC-40% LF) and	Above 60%	4%
	Above 70%	5%
(iii) HTSS (MMC-40% LF)	Above 80%	6%
	Above 90%	7%
(iv) HTS-III (MMC-50% LF)	Above 70%	5%
	Above 80%	6%
	Above 90%	7%

TERMS AND CONDITIONS OF HT TARIFF

The foregoing tariffs are subject to the following conditions.

1. **Rebate for Prompt Payment**

The due date for making payment of energy bills or other charges shall be 15 days from the date of issue of the bill.

The tariff rates are subject to prompt payment rebate of 1 (one) paise per unit on units billed provided the bill is paid by due date specified therein. If the consumer makes full payment after due date but within 10 days after due date, no DPS shall be leviable for this period but rebate for prompt payment will not be admissible.

2. **Delayed Payment Surcharge (DPS)**

In case of consumer does not pay energy bills in full within 10 days grace period after due date specified in the bill, a delayed payment surcharge of half (0.5)% per week or part thereof on the principal amount of bill will be levied from the original due date for payment until the payment is made in full without prejudice to right of the licensee to disconnect the supply in accordance with Section 56 of the Electricity Act, 2003. The licensee shall clearly indicate in the bill itself the total amount, including DPS, payable for different dates after the due date after allowing for the grace period of 10 days. No DPS shall be charged on DPS arrear.

3. **Duties and Taxes**

Other statutory levies like electricity duty or any other taxes, duties etc., imposed by the State Government / Central Government or any other competitive authority, shall be extra and shall not form part of the tariff as determined under this order.

4. **Power Factor Surcharge**

The average power factor (monthly) of the supply shall be maintained by the consumer not less than 0.90.

If the monthly average power factor falls below 90% (0.9) he shall pay a surcharge in addition to his normal tariff at the following rates:

(i). For each fall of 0.01 in power factor upto 0.80	One percent on demand and energy charge
(ii). For each fall of 0.01 in power factor below 0.80	1.5 (one and half) percent on demand and energy charge (Actual Recorded)

If the average power factor falls below 0.70 consecutively for 3 months, the Board reserves the right to disconnect the consumer's service connection without prejudice for the levy of the surcharge.

5. Power Factor Rebate

In case the average power factor (monthly) of the consumer is more than 90% (0.90) a power factor rebate at the following rates shall be allowed.

For each increase of 0.01 in power factor above 0.90 upto 0.95	0.5 (half) percent on demand and energy charge (Actual Recorded)
For each increase of 0.01 in power factor above 0.95	1.0 (one) percent on demand and energy charges. (Actual Recorded)

6 Transformer Capacity

The transformer capacity of HT consumer shall not be more than 150% of the contract demand, consumer found to be utilizing transformer of higher capacity than admissible for his contracted load, will fall under malpractice.

If standard capacity is not available for exact requirement then relaxation in transformer capacity upto 10% extra can be allowed in individual cases on request.

All HT/EHT consumers having contract demand of 200 kVA and above may be allowed to have a stand by transformer, whose capacity shall not be more than the main transformer. The technical/physical arrangement shall be approved by the Board's officer before it is installed. If any consumer violates the condition, then line will be disconnected and standby facility shall be withdrawn.

Considering the special need of the Railway, the RTS consumer may be allowed to have 100% extra i.e. 200% of the contract demand. Stand by transformer may also be allowed, which should not be more than the capacity of the main transformer.

7 Defective / Damaged / Burnt meter replacement

In case of meter being defective / damaged / burnt the Board or the consumer as the case may be shall replace the same within the period specified in "Standards of Performance for Distribution Licensee" Regulations issued by the Commission. Till defective meter is replaced the consumption will be assessed and billed on an average consumption of last 12 months from the date of meter being out of order. Such consumption shall be treated as actual consumption for all practical purposes including calculation of electricity duty until the meter is replaced/rectified.

8. If the actual recorded demand of a consumer exceeds 110% consecutively for three months Board may issue a notice and inform the consumer to get additional contract demand sanctioned or to limit their drawal as per their contract. Otherwise Board will take action as per provisions of the Act/Rules/Regulations.
9. The prevailing practice will continue for determining the contract demand of induction furnaces in the existing services connections. However, for new connections and where the furnaces are replaced in existing connections, contract demand shall be based on the total capacity of the furnace and equipment as per manufacturer technical specifications and in case of difference of opinion, the provisions of clause No.6.39 and 6.40 of Bihar Electricity Supply Code shall apply.
10. The Government of Bihar had issued "Industrial Incentive Policy Bihar-2006" in order to create favourable environment and accelerated industrial growth of the State.

The Policy states -

(a) Existing and New Units:

"Working units at present and new units will avail exemption from AMG/MMG from the date of declaration of the New Industrial Policy. The facility will be granted five years"

(b) Sick units:

*The following facilities are provided to sick units.
Exemption from Annual Minimum Guarantee (AMG), Monthly Minimum Guarantee (MMG) and Delayed Payment Surcharge (DPS) would be available to the unit from the date of declaration of the unit as sick unit.
This facility would be admissible for a period of five years.*

The Board shall comply with the Industrial Policy of Government of Bihar. Such Industrial Policy shall be extended to other eligible consumers who comes under the Policy.

9.0 Temporary Supply (LT and HT)

9.1 Applicability

This tariff is for connection of temporary in nature for period of less than one year. The applicability shall be as given in the respective category tariff rate schedule.

Temporary supply cannot be claimed by a prospective consumer as a matter of right but will normally be arranged by the Board when a requisition is made giving due notice subject to technical feasibility and in accordance with electricity supply code issued by the Commission.

9.2 Tariff

Fixed charge and energy charge shall be chargeable at one and half times the normal tariff as applicable to the corresponding appropriate tariff category.

9.3 Terms of Supply

- (a) Temporary supply under any category of service may be given for a period not exceeding 30 days in the first instance. The duration of which, however may be extended on month-to-month basis subject to maximum of one year.
- (b) In addition to the charges mentioned above, the consumer shall have to deposit the following charges before commencement of the temporary supply:
 - (i) Estimated cost of erection of temporary service line and dismantling.
 - (ii) Cost of irretrievable materials which cannot be taken back to service.
 - (iii) Meter rent for the full period of temporary connection as per appropriate Tariff Schedule and miscellaneous charges.
 - (iv) Rental on the cost of materials as per estimate framed but not payable by the consumer shall be payable at the rate of Rs. 15/- per month on every Rs. 100/- or part thereof.
 - (v) Ten per cent on the total cost of the estimate for the temporary service connection to cover as security for loss of materials and contingencies. In case such loss is not noticed, the amount will be refunded.
- (c) The applicants for temporary supply shall be required to make a deposit in advance of the cost as detailed above including the energy consumption charges estimated for full period on the basis of connected load. This will however, be adjusted against the final bill that will be rendered on disconnection of supply month to month basis.

- (d) If the consumer intends to extend the temporary supply beyond the period originally applied for, he will have to deposit in advance all charges as detailed above including the estimated electricity consumption charges, for the period to be extended and final bill for the previous period, as well.
- (e) The temporary supply shall continue as such and be governed by the terms and conditions specified above until the supply is terminated or converted into permanent supply at the written request of the consumer. The supply will be governed by the terms and conditions of permanent supply only after the consumer has duly completed all the formalities like execution of agreement, deposit of security money, cost of service connection and full settlement of the account in respect of the temporary supply etc.

10.0 Seasonal Supply (LT and HT)

1. Seasonal supply shall be given to any consumer on written request to the Board subject to the following conditions.

	Period of Supply	Tariff Rate
1.	Upto 3 consecutive months in a year	Appropriate tariff plus 30 percent
2.	More than 3 consecutive months and upto 6 consecutive months in a year	Appropriate tariff plus 20 percent
3.	More than 6 consecutive months and upto 9 consecutive months in a year	Appropriate tariff plus 15 percent
4.	More than 9 consecutive months but less than one year	Appropriate tariff plus 5 percent.

2. The meter rent and other charges as provided in the appropriate tariff are applicable to seasonal loads and would be charged extra for the entire period of supply.
3. The supply would be disconnected after the end of the period unless the consumer wants the supply to be continued.
Any reconnection charges have to be borne by the consumer.
4. Consumer proposing to avail seasonal supply shall sign an agreement with the Board to avail power supply for a minimum period of 3 years in the case of HT, and 2 years in the case of LT category of supply.
5. The consumers must avail supply in terms of whole calendar month continuously.
6. The consumer is required to apply for seasonal supply and pay initial cost and security deposit as an applicant for normal electricity supply.
7. The consumer shall ensure payment of monthly energy bills within 7 days of its receipt. The supply will be disconnected if payment is not made on due date.

PART-C: Miscellaneous AND GENERAL CHARGES

11.0 The Miscellaneous and General charges are approved by the Commission as below:

11.1 Meter Rent

Particulars	Applicable Charges
Kutir Jyoti	Rs.10/month
a) Single Phase LT except Kutir Jyoti	Rs. 20/month
b) Three Phase LT Upto 100 Amps	Rs. 50/month
c) LT meter with CT	Rs. 500 / month
d) 6.6 kV and 11 kV HTS-I (i) Metering at low voltage (ii) Metering at 6.6/11 kV	Rs. 500 / month Rs. 700 / month
e) 33 kV HT metering equipment for HTS-II and HTSS	Rs. 3000 / month
f) 132 kV EHT metering equipment for HTS-III	Rs. 15000 / month
g) 25 kV RTS	Rs.3000/month
h) 132 kV RTS	Rs.15000/month

11.2 Application fee for new connection / reduction of load / enhancement of load / request for permanent disconnection:

No.	Category / class	Rate
(i)	Kutir Jyoti	Exempted
(ii)	LT Single phase	Rs. 30.00
(iii)	LT Three phase	Rs. 60.00
(iv)	LT Industrial	Rs. 100.00
(v)	HT Connection	Rs. 200.00

11.3 Testing / Inspection of consumer's installation:

No.	Category / class	Rate
(i)	Initial Test / Inspection	Free of cost
(ii)	Subsequent test and inspection necessitated by fault in installation or by not complying with terms and conditions of supply	Rs. 50.00 for single phase connection Rs. 100.00 for three phase LT connection Rs.300.00 for HT connection.

11.4 Meter Testing Fee:

No.	Category / class	Rate
(i)	Single Phase meter	Rs. 50.00
(ii)	Three Phase meter	Rs. 100.00
(iii)	Three Phase meter with CT	Rs. 150.00
(iv)	Trivector and special type meter	Rs. 600.00
(v)	33 kV or 11 kV metering equipment	Rs. 2000.00
(vi)	132 kV/220 kV metering equipment	Rs. 3000.00

If the meter is tested at third party testing laboratory at the request of the consumer then the fees charged by the testing laboratory will be payable by the consumer.

11.5 Removing / Re-fixing / Changing of Meter / Meter Board at consumer's request:

No.	Category / class	Rate	Cost of material, as required, will be borne by the consumer
(i)	Single Phase meter	Rs. 50.00	
(ii)	Three Phase meter	Rs. 100.00	
(iii)	Three Phase meter with CT	Rs. 150.00	
(iv)	Trivector and special type meter	Rs. 200.00	
(v)	High tension metering equipment	Rs. 400.00	

11.6. Reconnection charge:

Sl.No .	Category/class	Rate
(i)	Single Phase supply	Rs. 50.00
(ii)	Three Phase supply	Rs. 100.00
(iii)	Three Phase LT industrial supply	Rs. 300.00
(iv)	HT supply	Rs. 1000.00

11.7 Supervision, Labour and Establishment charge for service connection:

Sl.No.	Category/class	Rate
(i)	Single Phase LT	Rs. 180.00
(ii)	Three Phase LT	Rs. 360.00
(iii)	Three Phase industrial	Rs. 500.00
(iv)	HT	As per approved estimate

11.8 Security Deposit:

- (a) The consumer (except Kutir Jyoti rural and Kutir Jyoti urban) shall pay initial security deposit equivalent to the estimated energy charges including fixed / demand charges for a period of two months or as per the provisions of Bihar Electricity Supply Code notified by the Commission.
- (b) All Central Government and State Government departments are exempted from payment of security deposit. However all public sector undertakings and local bodies shall pay security deposit, as applicable.

(c) The amount of security deposit is liable to be enhanced every year, in April-May of next year on the basis of average bills for previous years. In default of payment of additional security deposit, wherever payable after review, the service line may be disconnected on serving thirty days notice and connection thereafter can be restored only if the deposit is made in full along with the prescribed reconnection charges and surcharge @1.5% per month or part thereof on the amount of outstanding.

11.9 Interest on Security Deposit

Security deposit made by a consumer shall bear interest as specified in Bihar Electricity Supply Code, payable at Bank rate notified by RBI from time to time. The interest will be calculated for full calendar months only and fraction of a month in which the deposit is received or refunded, shall be ignored. The interest for the period ending 31st March shall be adjusted and allowed to the consumer in the energy bill for May issued in June and in subsequent month (s), if not adjusted completely against the bill for the month of May.

12.0 The other terms and conditions of supply of electricity not specially provided in this tariff order will continue to be regulated by the provisions specified in the Bihar Electricity Supply Code notified by the Commission.

PART D: FORMULA FOR FUEL AND POWER PURCHASE COST ADJUSTMENT

The approved fuel and power purchase cost adjustment (FPPCA) formula is given below:

$$\text{FPPCA (Paise / kWh)} = \frac{\text{Qc(RC2-RC1)+Qo(RO2-RO1)+QPp(Rpp2 -Rpp1)}}{(\text{QPg} + \text{QPp}) \times (1-\text{L}) - \text{PSE}} \times 100$$

Where,

- Qc = Quantity of coal consumed during the adjustment period (in M.T)
= (SHR x QPg) (1+TSL)x1000 / GCV
- RC1 = Weighted average rate of coal supplied ex-power station coal yard as approved by the Commission for the adjustment period in Rs. / M.T
- RC2 = Weighted average rate of the coal supplied ex-power station coal yard as per actual for the adjustment period in Rs. / M.T
- Qo = Quantity of oil (in KL) consumed during the adjustment period
= Generation (in MU) X Specific oil consumption approved by the Commission (ml. / kWh)
- RO1 = Weighted average rate of oil ex-power station (in Rs./KL) approved by the Commission for the adjustment period
- RO2 = Weighted average actual rate of oil ex-power station supplied (in Rs. / KL) during the adjustment period
- QPp = Power purchased from different sources and fed into Board's system (in MUs)
- Rpp1 = Average rate of power purchase as approved by the Commission (in Rs. / kWh)
- Rpp2 = Average rate of power purchased during the adjustment period (in Rs. / kWh)
- QPg = Board's own power generation (in MUs) at generator terminal – approved auxiliary consumption
- L = T & D loss as approved by the Commission or actual, whichever is lower.
- PSE = Power sold to exempted categories (agriculture (private) and BPL consumers only)
- SHR = Station Heat Rate as approved by the Commission.
- TSL = Transit and Stacking Loss as approved by the Commission.

GCV = Weighted average gross calorific value of coal fired at boiler front during the adjustment period (in Kcal / Kg)

Note:

- 1) Amount of variable charges on account of change of cost of unknown factors like water charges, taxes or any other unpredictable and unknown factors not envisaged at the time of tariff fixation subject to prior approval of the Commission
- 2) Adjustment, if any, to be made in the current period to account for any excess / shortfall in recovery of fuel or power purchase cost in the past adjustment period, subject to the approval of the Commission.

The approved (FPPCA) formula is subject to following conditions:

- (i) The basic nature of FPPCA is 'adjustment' i.e. passing on the increase or decrease, as the case may be.
- (ii) The operational parameters / norms fixed by the Commission in this tariff order shall be the basis of calculating FPPCA charges.
- (iii) The FPPA will be recovered in the form of an incremental energy charge (Rs/kwh) in proportion to the energy consumption and will be forming a part of the energy bill to be served on monthly/bimonthly or any other periodical basis.
- (iv) Incremental cost of power purchase due to deviation in (respect of generation mix) power purchase at higher rate, etc. shall be allowed only if it is justified to the satisfaction of the Commission.
- (v) Any cost increase by the Board by way of penalty, interest due to delayed payments, etc. and due to operational inefficiencies shall not be allowed.
- (vi) FPPCA charges shall be levied on all categories of consumers, except agriculture (private) and Kutir Jyoti / BPL consumers.
- (vii) The data in support of FPPCA claims shall be duly authenticated by an officer of the Board, not below the rank of Chief Engineer on affidavit.
- (viii) Variation of FPPCA charge will be allowed only when it is five (5) paise and more per unit.
- (ix) The formula will be applied at the end of each quarter by BSEB without making it necessary to go through the regulatory proceedings. The incremental cost per kWh due to this FPPCA arrived for a quarter shall be recovered in 3 monthly installments in the subsequent quarter (for example the additional cost arrived at due to FPPCA for the quarter October to

December of a certain year shall be recovered in 3 monthly installments in the months of January, February and March of the next year) through energy bills and so on. The BSEB shall, however, be obligated to provide all relevant information to the Commission simultaneously and in any case where the Commission observes any discrepancies, the same will be adjusted during the next quarter. This mechanism will provide administrative and regulatory simplicity.

- (x) The approved formula is subject to review, as the Commission may deem fit.

Chapter-6

Generation, Transmission, Wheeling Charges and Open Access Charges

6.1 GENERATION TARIFF

The generation tariffs are worked out based on the generation ARR the net generation approved in para 4.13 of the chapter 4 of this order. The approved generation tariff is given in Table-6.1 below:

Table-6.1

Generation Tariff

Net generation (MU)	Fuel (Variable) costs (Rs.Cr.)	Fixed costs (Rs. crore)	Variable cost (Paise/ kWh)	Fixed cost / kWh (Paise/ kWh)	Total cost / kWh (Paise/ kWh)
324	64.07	91.94	198	284	482

6.2 TRANSMISSION TARIFF

The transmission ARR, as approved in para 4.13 of chapter 4 is Rs.148.93 crore.

Based on the above, the transmission tariff is worked out, as given in Table-6.2 below:

Table-6.2

Transmission Tariff

S.No.	Particulars	Unit	Approved by the Commission
1	Total costs of transmission	Rs. crore	158.49
2	Energy available for transmission	MU	10494
3	Transmission losses assumed	%	420 (4%)
4	Energy delivered to distribution	MU	10074
5	Transmission tariff (1÷4)	Ps./kWh	15.73

Accordingly, the Commission approves transmission charges at 15.73 paise / kWh for the year 2010-11.

6.3 WHEELING CHARGES

The distribution ARR as approved in para 4.13 of chapter 4 is Rs.729.98 crore.

The wheeling charges shall be based on the costs of the distribution licensee for its wire business.

The wheeling charges worked out for 33 kV voltage level are given in Table – 6.3 below:

Table – 6.3

Wheeling charges at 33 kV Voltage Level

S.No.	Details	Units	Approved by the Commission
1	Energy input into transmission system	MU	10494
2	Losses in transmission system	%	420 (4%)
3	EHV sales (as approved by the Commission)	MU	714 (at 132 kV)
4	Energy input into 33 kV system [1-(2+3)]	MU	9360
5	Total distribution cost	Rs. Crore	817.78
6	Distribution cost for 33 kV voltage levels (assuming 35% of item 5)	Rs. Crore	286.22
7	Wheeling charges for 33 kV voltage level (item 6÷4)	Paise/Unit	30.58

Accordingly, the Commission approves wheeling charges at 30.58 paise/kWh at 33 kV voltage level for the year 2010-11.

The wheeling charges worked out for 11kV voltage level are given in Table 6.4 below:

Table-6.4

Wheeling charges for 11 kV Voltage Level

S.No.	Details	Units	Approved by the Commission
1	Energy input into 33 kV system	MU	9360
2	Losses in 33 kV	%	562 (6%)
3	Energy sales in 33 kV system as approved by the Commission	MU	1010
4	Energy input into 11 kV system [1-(2+3)]	MU	7788
5	Total distribution cost	Rs. Crore	817.78
6	Distribution cost for 11 kV voltage levels (assuming 30% of item 5)	Rs. Crore	245.33
7	Wheeling charges for 11 kV level (item 6÷4)	Paise/Unit	31.50

Accordingly, the Commission approves wheeling charges at 31.50 Ps/unit at 11 kV voltage level for the year 2010-11.

6.4 OPEN ACCESS CHARGES

Pursuant to Section 39, 40 and 42 and all other enabling provisions of Electricity Act, 2003, the Commission issued the “Terms and Conditions for open access” Regulations 2006 on 20th May 2006. In these regulations, the Commission has introduced open access in phases as given below, having regard to operational constraints, and other relevant factors.

Sl. No.	Phase	Category of consumers	Open access to be allowed from
1	Phase-I	Consumers with demand of 15 MW and above	June 1, 2006
2	Phase-II	Consumers with demand of 10 MW and above	December 1, 2006
3	Phase-III	Consumers with demand of 5 MW and above	December 1, 2007
4	Phase-IV	Consumers with demand of 1 MW and above	December 1, 2008

6.4.1 Transmission Charges

Based on the transmission costs worked out earlier, the approved transmission charges for open access consumers for the year 2010-11 are as given in Table-6.5 below:

Table-6.5
Transmission Charges

Transmission ARR (Rs. crore)	158.49
Average transmission capacity (MW)	1500
Transmission charges for long term open access customers (Rs. /MW/Month)	Transmission ARR ÷ (Average transmission capacity X 12) = 88,050
Transmission charges for short term open access customers (Rs./MW/Day)	Transmission ARR x 0.25) ÷ (Average transmission capacity X365) = 724

The Commission decides that the transmission charges in cash will be Rs.88050 / MW / month or part thereof for long term open access consumers and Rs.724 / MW / day or part thereof for short term consumers. In addition transmission losses of 4% will be reduced in kind from the energy input (i.e. energy injected at the point of injection) at the point of delivery.

6.4.2 Wheeling Charges

For the energy input at 33 kV the wheeling charge shall be at 30.58 paise/kWh. In addition 6% of energy in kind will be deducted from the energy input, towards assumed losses in 33 kV network.

For energy input at 11 kV the wheeling charges shall be 31.50 Ps./kWh. In addition, 8% of energy in kind will be deducted from the energy input towards assumed losses in 11 kV network.

6.4.3 SLDC Charges

Open access consumer shall pay the scheduling and system operation charges payable to State Load Dispatch Centre (SLDC), as determined by the Commission under section 32 of the Act and as per the Regulation 19 (1) of “Terms and Conditions for Open Access” Regulations, 2006 of BERC.

These charges are not proposed at present as no separate SLDC is established in Bihar so far. These charges will be examined and determined on case-to-case basis.

In addition to the above the open access consumers are required to pay the following:

6.4.4 Cross Subsidy Surcharge

The open access consumers are liable to pay the cross subsidy surcharge to compensate the utility for any loss of revenue due to the shifting of the consumer to the open access system. The cross subsidy surcharge for open access consumers for the year 2008-09 is calculated as per the following formula recommended in the National Tariff Policy.

$$S = T - [C (1+L/100)+D]$$

Where,

S = Surcharge

T = Tariff payable by the relevant category of consumers

C = Weighted average cost of power purchase of top 5% at the margin excluding liquid fuel based generation and renewable power.

D = Wheeling charges (Transmission and Distribution)

L = System losses for the applicable voltage level, expressed as a percentage.

The cost subsidy surcharge is not proposed as the power purchase cost from various sources will be varying from time to time. Hence, as and when any consumer approaches for open access the cross subsidy will be determined on case to case basis.

6.4.5 Additional Surcharge

For the present the Commission is not in favour of levy of any additional surcharge, in the absence of the necessary data, as the same is leviable only if it is conclusively demonstrated by the licensee that his obligations on fixed cost commitments are stranded. The BSEB should indicate the quantum of such stranded cost and the period over which they would be stranded for considering allowing of this additional surcharge.

6.4.6 Reactive Energy charges

The open access consumers should pay a reactive energy charge to the BSEB, for drawal / injection of reactive energy. The Commission feels that a reactive energy charge is leviable, but the rate at which this charge should be levied has to have some basis. The BSEB should conduct a study to establish the reasonableness of the reactive energy charge and come up with proposal in next tariff application. Till then the reactive drawal shall be charged at 4 paise/kVAR. This is fixed for the present based on the concept paper on open access in inter-state transmission issued by the CERC.

Chapter-7

Directives to BSEB

7.1 GENERAL

In the last tariff orders of 2006-07 and 2008-09 the Commission had observed that while there was ample scope for reducing costs and increasing efficiency in the operations of BSEB, serious efforts appear to be lacking. It is in the above context that certain directives were issued for compliance by the Board. The Commission expected that Board would take prompt action on the directives and monitor their implementation. Unfortunately, action is yet to be taken on most of the important directives, which could make significant difference in operational efficiency and cost. In some cases action has no doubt been initiated, but overall the seriousness with which the directives were issued by the Commission does not appear to have gone home.

In the above background, the Commission is constrained to repeat most of the directives which were given in the last tariff order and which have not been fully complied with, but also gives specific new directions. In this chapter, the Commission has reviewed compliance with the directives issued in the last two tariff orders viz., 2006-07 and 2008-09.

7.2 DIRECTIVES ISSUED IN TARIFF ORDER FOR THE YEAR 2006-07

The Commission in its first tariff order dated 29th November 2006 had given certain specific and important directives to the BSEB on improvement in operational and financial efficiency and consumer services. Commission's views on the status of compliance of the directives by the BSEB are given below:

Directive-1: Cent Percent Metering

Henceforth no electricity connection will be released to any category of consumer without a correct meter by the Board.

The Board has about 8.8 lakh un-metered consumers under BPL, Rural Domestic and Non-Domestic and Agricultural categories.

BSEB shall take immediate action to provide meters to all such un-metered consumers and shall submit road map for providing meters to all these consumers and priority shall be given in providing meters to domestic and commercial

consumers. Metering plan hence should be submitted to the Commission by 31st March 2007 so as to enable the Commission to review the progress and issue further directions in the matter as may be considered necessary.

Compliance by BSEB – 2008-09

The Board has issued instructions to its field officers, not to give any new service connection without a meter.

With regard to providing meters to existing un-metered category of consumers, whose number is about 8.8 lakhs single phase services, the Board has approved the plan as given below:

Sl. No	Phase	Period	No. of single phase electromagnetic meters to be installed.
1	Phase – I	1.4.2008-31.3.2009	1.50 lakhs
2	Phase - II	1.4.2009 – 31.3.2010	1.50 lakhs
3	Phase – III	1.4.2010 – 31.3.2011	1.50 lakhs
4	Phase –IV	1.4.2011 – 31.3.2012	1.50 lakhs
5	Phase -V	1.4.2012 – 31.3.2013	2.80 lakhs
		Total	8.80 lakhs

The estimated cost for procurement of 8.80 lakhs single-phase static meters and its installation works out to roughly Rs. 57.00 crore. The Board has requested the State Govt. for providing fund for implementation of this directive. The Board shall also utilize its own resources. On getting fund action is also planned for installation of about 55000 three-phase meters in agriculture sector, which are at present meter less. Board had invited tenders for 4 (four) lakhs Single phase 2 wire, 5-30 Amps, whole current electronic energy meters. Tenders were opened on 16.1.2008 and bids are being processed. The scope is turnkey upto installation.

Commission’s observations – 2008-09:

The action taken by the Board stating that instructions are issued not to release new services without meters is noted. This must be ensured by periodical reviews.

The roadmap of about 5 years to meter all the 8.8 lakh un-metered services is too long and is not acceptable to the Commission. Since tenders are being finalized for purchase of 4.0 lakh meters, substantial number of these shall be utilized for metering un-metered services.

As provided in the Bihar Electricity Supply Code clause 8.8, the consumer shall be permitted to supply his own meter as per the specifications of the Board to avoid releasing new service connections and replacement of defective / burned meters, in which case no meter rent shall be collected from the consumers.

APDRP provides funds for metering. Board may also approach PFC and REC for funds to provide meters and see that total metering is done in the next two years

2008-09 and 2009-10. Action taken and status to be reported to the Commission by December 2008.

Compliance by BSEB in its Tariff Petition for FY 2010-11

New service connections are being given with meter. Order for 4 lakh single phase static meters is being processed. Out of this 3 lakh meters are proposed to be installed in meter-less category of consumers.

Commission's Observations:

There is no improvement in what was stated in the compliance report. It was stated that the Board has invited tenders for 4 lakh meters. Same thing is repeated again now. At present the number of un-metered consumers have gone up to about 12.80 lakh consumers against 8.80 lakh consumers during 2006-07. No action has been taken to meter the existing consumers who are being supplied electricity without meters. This gives an impression that the Board has no intention of providing meters to the consumers who are being supplied power without meters. This is gross violation of the provisions of the Electricity Act, 2003 and utter disregard to the direction of the Commission. Unless the Board initiates action and provide meters to about 4 lakh consumers by 31st March 2011 and provide a roadmap to meter the balance services, the Commission is constrained to take drastic action against the Board.

Directive-2: Replacement of non-functional / defective meters

BSEB is directed to report the number of non-performing / defective meters category-wise in the system as on 30.11.2006 along with an action plan to replace them and the report must be submitted by 31st January, 2007 to the Commission.

Compliance by BSEB - 2008-09

There are about 9.6 lakhs single – phase metered consumers and about 30,000 three phase metered consumers. Out of this about 1.6 lakhs meters were defective as on 31.1.2007, which has been reported to BERC, vide letter no. 100 dated 2.3.07. Under APDRP scheme, provision has been made for replacement of single phase and three phase meters with static meters.

The work in 8 supply circles namely Gaya, Rohtas, Darbhanga, Bhagalpur, Chapra, Purnia, Saharsa and Munger has been given to Power Grid under APDRP schemes. The total provision of meters for replacement of defective / functional electromagnetic meters by static meters, is about 2.85 lakhs single phase and about 11858 three phase out of this 1.19 lakhs numbers Single phase meters and 53 numbers 3 phase meters have been replaced so far.

BSEB is executing replacement of meters in four circles namely, PESU (East), PESU and Muzaffarpur. The total provision of meters under this scheme is about 2.46 lakhs single phase meters and about 58700 three phase meters. 223458 numbers single phase meters and 14349 numbers three phase meters have been replaced so far.

The work of replacement of meters under above 12 circles is in progress and so far 3.48 lakhs single phase meters and about 14402 three phases meters have been installed. In addition 123 H.T meters have also been replaced.

The Board is also taking action for replacement of about 40000 defective meters in remaining four supply circles i.e., namely Arrah, Nalanda, Samastipur & Motihari

Commissions' observations – 2008-09:

It is noted that the Board has taken action to replace 3.48 lakh single phase meters and about 14,402 three phase meters in 12 circles out of about 4.00 lakh single phase meters and about 26,000 three phase meters and replacement of balance defective meters is in progress. Replacement of balance defective meters keeping in view the provisions for replacement of defective meters as provided in the Standards of Performance for Distribution licensee shall be completed within three months and compliance reported by December, 2008.

Compliance by BSEB in Tariff Petition FY 2010-11

Replacement of defective meters was undertaken under APDRP schemes in 12 circles. There has been reduction in percentage of defective meters. The current status of defective meters is given as under:

DS-II	101303
NDS-II	18969
NDS-III	303
LTIS-I	3093
LTIS-II	585
Total	124253

The Board is planning to utilize one lakh single phase static meters out of 4 lakh being purchased for replacement of single phase meters. All defective 3 phase LT meters and meterless agricultural pumpsets are being provided with new static meters. There is available stock of about 40,000 three phase static LT meters out of which about 6000 meters have been installed.

Commission's Observations:

There are still 1,24,253 defective meters to be replaced. The Board is directed to replace all the defective meters by 31st March 2011, and submit compliance report by 30.04.2011.

Directive-3: Setting up of independent third party meter testing arrangement

It is high time that BSEB should put in place an accredited independent third party meter testing arrangement in all districts under its licensed area and also prepare norms for allowing consumers to purchase their own meters duly tested and certified by such third party testing agency so that scope for consumer complaints is minimized and complaints that arise are settled expeditiously to the satisfaction of the consumers without the need for any recourse to consumer forum.

Compliance by BSEB – 2008-09

Board explored the possibility of establishing independent meter testing arrangements in technical institutes of Bihar. There has not been any positive response so far.

The Board decided to take action which required for improving the existing testing arrangement in all MRT Divisions of supply circle by gradually upgrading the testing facilities, and also increasing testing capacities by installing additional testing benches.

Further, the Board has decided to establish one High Tech Computerized Meter Testing Laboratory in Patna, for which tenders were invited. Technical evaluation has been completed and price part will be opened shortly.

After the establishment of this High tech Lab, it will be possible to send tested meters to the field officers for installation of meters. The output of the high – tech lab is about 20 Meters / hour.

Commission's observations – 2008-09:

The National Electricity Policy (NEP) emphasizes the need for establishment of an independent third party meter testing arrangement. It is noted that the Board has not been successful in establishing reliable Independent Testing Laboratories. The Board shall inform the action taken in this regard.

The Board shall establish more number of testing laboratories in each circle to test more number of meters either new or defective. Setting up of a meter testing lab may not cost much but the persons have to be trained in testing. The progress on upgrading the existing labs and setting up of new labs may be reported to the Commission quarterly. The first such report shall be submitted by December, 2008.

Compliance by BSEB in Tariff Petition of FY 2010-11

This matter is under consideration of BIT Mesra (Patna Campus). They want approximate number of meters to be tested every month. They also wanted to know any financial help can be given by BSEB or not for installation of the laboratory. Board has sent a reply to BIT and awaiting further response from them.

Computerized test benches obtained from PGCIL as a package has been installed in 4 areas of Board viz., Patna, Gaya, Muzaffarnagar and Sahara. Action is being taken to make them functional.

For early establishment and commissioning of High Tech fully computerized laboratory, the Chairman, BSEB has discussed the matters with the president M/s MTE Service Private Limited, New Delhi who is the supplier of equipment and its installation.

In spite of repeated requests M/s MTE has not taken action for supply and installation of equipment.

Commission's Observations

The Board is directed to intimate the present status of independent third party meter testing arrangement and commissioning of 4 Nos. Computerized Test benches obtained from PGCIL. The Board shall obtain similar test benches in all circles for testing meters. Action taken shall be reported to the Commission, by 31st March 2011.

Directive-4: Efficient meters reading, billing and collection

Timely meter reading, billing and collection for energy consumed by the consumers can significantly improve the cash flow of the Board. The present system should be reviewed with a view to streamline the process and minimize the time between actual delivery of power and receipt of revenue. Supervisory officers must counter check the meter readings taken by the meter readers. Further, the area of meter readers should be changed every year.

The Board should introduce billing through Meter Reading Instrument (MRI) for all HT consumers and large non-domestic consumers. Spot billing preferably by palm top computers may be introduced in the urban areas.

Compliance by BSEB – 2008-09

Board has introduced MRI for most of the H.T. consumers and for H.T. consumers of four circles i.e., PESU (E) , PESU(W), Patna and Muzaffarpur circles special types of H.T. Trivector Meters with Compatible Meter Unit has been procured with a provision of SIM Card and its installation is in progress. Board has also introduced spot billing by providing Palm Top Computers, which in first phase is going to be taken in Capital Town of Patna under SCADA, which is being implemented by Power grid. Due to financial crunch, it has not been extended to other circle.

Commission's observations – 2008-09:

Action taken is noted. Spot billing with palm top computer may be extended to other towns also. It is understood the cost of the computers have come down to

Rs.10,000/each and should be possible to provide more number on priority as introduction of spot billing with handheld computers have several advantages.

The present status of MRI for the HT consumers in all the circles shall be reported by October 2008.

Compliance by BSEB in Tariff Petition of FY 2010-11

MRI is being done every month in existing HT consumers having static meters. With increasing number of LT consumers and reducing number of meter readers (due to retirement) it is becoming difficult to ensure regular meter readings. Board has therefore outsourced meter reading, bill distribution work and computerized billing from 1st September 2009 in all circles of BSEB except PESU (E) and PESU (W) circles.

Commission's Observations:

It is seen from the compliance report, all HT consumers have not been provided with static meters. All HT services shall be provided with static meters and read with MRI. Spot billing shall be extended to all urban areas this will reduce the cost of bills distribution and human errors in billing etc. As already directed the Board officers at different levels shall take check readings so that the accuracy in meter reading / malpractices could be avoided. Since the cost of palm held machines has come down this might be possible to introduce in all the areas. The outsourcing Agency may be asked to provide such machines. The roadmap for introducing spot billing in all circles may be submitted to the Commission by February 2011. The percentage of check readings taken at different levels to be reviewed monthly by higher officers. Board shall report whether there is any improvement in revenue realization and reduction in consumer complaints on billing where spot billing is introduced.

Directive-5: Meter Reading of HT services

The monthly meter reading of HT services shall be entrusted to a committee of high level officers of the Board. All the HT services below 500KVA contracted maximum demand, meter reading may be done by the concerned Assistant Engineer and those above 500KVA by the concerned Executive Engineer. Further certain percentage of meter readings in each category of consumers shall be done by senior officers of the Board upto the level of Chief Engineer to control pilferage of electricity. BSEB shall issue suitable instructions in this regard immediately and the Board shall also review the percentage of check readings and take action in case of variation between normal meter reading read by meter reader and the check meter reading taken by the officers of the Board.

Compliance by BSEB – 2008-09

The Board has issued directives related to meter reading of HT consumers and inspection of industrial connections vide letter no. Com / Misc- 1059 / 06-795 dt. 14.12.2006 to all its officers for compliance.

Commission's observations – 2008-09:

It shall be ensured that these instructions are being implemented by the field officers for which a suitable monitoring mechanism shall be established in the Board. Condition of the meter and meter seals shall also be mentioned in the report / meter reading statement. Board shall also submit a report whether there is any improvement in consumption levels etc., after issue of these instructions by October, 2008.

Compliance by BSEB in Tariff Petition of FY 2010-11

The instructions have been issued for taking regular monthly meter readings of HT consumers by teams constituted in each circle. The average consumption per kVA per year during last four years as given below:

Category/ year	Annual consumption in kWh/kVA			
	2005-06	2006-07	2007-08	2008-09
HT-I	1793	2266	2529	2857
HT-II	3240	3228	3430	3659
HT-III	3960	3907	4060	3837
HTSS	3120	3126	3605	4298

Commission's Observations:

The senior officers shall also periodically visit HT services and take check readings to ensure that there are no malpractices in taking meter readings and the meters are not tampered etc.

Directive-6: Replacement of old electromagnetic meters with static meters

A report on the status of metering, type of meters provided in HT and other high value LT installations along with a programme for replacement of such meters with static meters shall be submitted to the Commission by 31st January 2007.

Compliance by BSEB - 2008-09

In compliance to the directive, the Board has furnished the details of H.T meters and high value L.T. meters vide letter No 100 dt 2-3-07. The status reported earlier is given below:

There were 303 defective H.T. meters, and 64 electromagnetic meters. In the metering package for 4 circles being done by BSEB, provision of 295 HT meters has been made. Out of this, 123 H.T. meters have been installed. In other 8 circles being

done by PGCIL, there is a provision of 166 H.T meters. The stock of LT three phase meters available with the Board is adequate to meet 100% requirement of existing 3 phase consumers.

Commission's observations 2008-09:

The current status of replacement of old electro magnetic meters in HT services and high value LT services may be reported by 31st December 2008.

Compliance of BSEB in Tariff Petition of FY 2010-11

Metering was being done under APDRP scheme which had been short closed w.e.f. 31.3.2009 as per guidelines of Ministry of Power, Government of India. The status of replacement of electromagnetic meters by electronic meters of HT and high value LT consumers is given below:

Number of consumers with Electro Magnetic Meters.

Sl. No.	Title	HT consumers	LT High value consumers
1	Number of consumers	879	3197
2	Number of consumers with static meters	541	1827
3	No. of consumers with electromagnetic meters	272	741
4	Number of consumers with defective meters		
	- Private	10	272
	- Government	214	227
5	Number of consumers without meters		
	- Private	0	1
	- Government	26	325

Commission's Observations:

There are still a number of electromagnetic meters both in HT and High value LT consumers. It is surprising to note there are HT and LT high value services without meters in Government and private premises. All These meters shall be replaced in a time bound programme by March 2011.

Directive-7: Reduction of Transmission and Distribution (T&D) Losses

A long term action plan for reduction of T&D losses for both technical and non-technical with relevant load flow studies be chalked out and submitted to the Commission by March, 2007. The Board should ensure reduction of the T&D losses to 38% during FY 2007-08 and 34% during FY 2008-09.

Compliance by BSEB – 2008-09

It has been planned to install systems with high accuracy class (0.2) ABT energy meters at grid sub stations to take all feeders under surveillance and close monitoring of power in flow and out flow from the grid sub stations with feeder wise metering. In turn, this will identify the most loss making feeders. This will be done by installing new generation electronic energy meters, which shall have communication

facility to transmit data related to power flow, which shall also indicate load pattern as well as tampering details. It can be programmed that any tampering done at any place would be instantly intimated to area offices and / or head office wherever the associated equipments for surveillance will be installed and programmed. This project is planned for feeders of 220 KV, 132 KV and 33 KV voltage level.

This will be done in phases and for first phase, proposals amounting to Rs. 10 crore has been sent for approval to the Govt.

Once the fund is received the work of first phase is likely to be completed in one year.

Commission's observations 2008-09:

The directive is that the Board shall chalk out a long-term action plan for reduction of technical and non-technical losses. The reply is that the Board proposes to install high accuracy (0.2) meters ABT meters on 220 kV, 132 kV and 33 kV feeders at cost of Rs.10.00 crore. These do not require such high accuracy meters for energy accounting on feeders. The ABT meter may be required at generating stations and at input points. What is required is to draw an action plan for reduction of technical and non-technical losses. Whereas certain investments are required for reduction of technical losses for augmentation system etc., the reduction of non-technical losses requires better metering, proper billing, etc., and better management of the system. The Board appears to be not serious on reduction of T&D losses, other-wise they would have paid attention for preparation of action plan, rather than giving a general reply.

The Board is directed to pay serious attention and prepare an action plan for reduction of losses and submit the action plan by October 2008. The Board may also furnish the details of high accuracy meters proposed to be provided and obtain approval of the Commission for investment of Rs.10.00 crore on the metering.

Compliance by BSEB in Tariff Petition of FY 2010-11

For reduction on of T&D losses BSEB has taken up the challenging job under the following four fronts

- Improving infrastructure
- Cent percent metering
- System metering
- Prevention of unauthorized use of electricity

Commission's Observations:

The position is that the Board does not have any correct estimation of the T&D losses due to lack of proper metering in the system. Board is adopting T&D losses

fixed by the Commission in the ARR and arriving at energy requirement to meet the demand. Most important action to be taken is providing hundred percent metering, unless this is done Board cannot conduct energy audit to identify the high loss areas and take corrective action to improve the infrastructure at appropriate level to reduce technical losses. Still there are about 12.8 lakh consumers without meters. No effective steps have been taken over the last 5 years to provide meters to the meter-less consumers. System metering is also not provided on all feeders and distribution transformers to arrive at the system losses and to arrive at the quantum of energy pumped to the LT system and energy consumed.

The Board is directed to submit current status of providing hundred percent metering for all consumers and also metering all feeders and distribution transformers.

Resources could not have been a constraint to provide meters to all the consumers continuously over the last 5 years. An action plan shall be submitted with definite time schedule for providing meters to all consumers by 31st January 2011.

Directive-8: Energy Audit and Demand Side Management

Energy audit is an important and essential tool to identify the high loss (technical and commercial) areas in the system. For carrying out the energy audit, meters are required to be provided at all the feeders from 220KV to 11KV level and also distribution transformers on LT side.

Though it is stated by the Board that meters are provided on a number of feeders, many of them are defective or non-functional. BSEB is directed to replace all such meters and provide correct meters on all feeders from 220KV to 11KV level as well as LT side of the distribution transformer on highest priority.

The energy audit should be taken up first in all the towns with a population of fifty thousand and above. The first status report on the action taken for energy audit in all the towns should be reported to the Commission by 31st March, 2007 to issue further directives in this regard, if required.

Compliance by BSEB – 2008-09

To have effective Energy accounting, the Board has to provide feeder meters from 220 KV to 11 KV. Under APDRP schemes, being executed by Power Grid in 8 circles and by Board in 4 circles following provision has been made.

33 KV feeder	-	444 nos.
11 KV feeder meters	-	1000 nos.
DT meters	-	11613 nos.

So far 201 nos. of 33 KV meters and 620 nos. of 11KV meters and 4187 no of D/T meters have been installed.

Action for remaining 4 circles is being processed by the Board and for execution of the same, the State Govt. has been requested to release fund.

Regarding consumer meters, the action plan has been given in compliance of directive No.1 for meter less category of consumers and for the replacement of defective meters; action plan has been indicated in compliance of Directive No.2.

Commission's observations – 2008-09:

BSEB shall submit a single line diagram showing feeders from 220 kV to 11 kV clearly indicating where functional meters exist, where meters are to be replaced and where new meters are to be installed. A tabular chart indicating the status – feeders and DT-wise of the meters shall also be submitted by October, 2008.

Providing of meters on balance feeders and distribution transformers may be expedited. The reply is silent on providing meters on 132 kV and 220 kV feeders and these feeders also are to be metered if not done already. The meters have to be read periodically and the energy loss to be arrived at. This is an important task, to conduct energy audit. A report may be submitted by December, 2008 on the energy audit conducted so far and the loss levels arrived at.

The Board has not indicated as to what action has been taken for energy audit in towns with a population of fifty thousand and above as required under this directive . Action taken report in this regard shall be submitted by October, 2008.

Compliance by BSEB in Tariff Petition of FY 2010-11

The work will be taken up in towns with more than 30,000 population. There are 71 towns in Bihar having population of 30,000 and more, out of this 10 towns have been selected for installation of necessary infrastructure, meters, IT enabling system, energy audit under restructured APDRP.

Commission's Observations:

The energy accounting and audit at various levels in the distribution system such as 33/11 KV S/S, 33 & 11 KV feeders provides reliable and actionable data on the actual loss comprising of technical and commercial losses but in absence of metering it is not possible to account for losses at different bus voltage level. Out of existing 1502 number of 11 KV feeders the Board has given 277 nos. of 11 KV rural feeders to different agencies on revenue collection based franchise but proper energy accounting is not being maintained. Similarly, as per record provided by the Board 16035 nos. of distribution transformers are provided with meters against total of 51996 Nos. of existing distribution transformers. But so far distribution transformer-wise energy accounting has not been done. Commission has taken serious note of it and directive has been issued to the Board to draw a time bound actionable plan for

addressing all these important issues and submit a such actionable plan within 30 days.

Directive-9: Pilferage of Electricity

The need of the hour is to activate the organization to curb the pilferage of power within the premises of provisions of Indian Electricity Act 2003 and also the Indian Penal Code. A task force is to be constituted in different zones to which the entire licensee area is to be divided to carry out massive raid to arrest pilferage. In case of detection of such theft/pilferage, the concerned authority of the area and personnel attached to them, who have duties to supervise the work, have to be made answerable for punitive action. Those found committing mischief of pilferage should be booked and penal action should visit them.

Compliance by BSEB-2008-09

To prevent theft of energy and to catch the culprits engaged in theft of energy, Board has created one Anti Power Theft (APT) cell at Patna. All supply circles have also a cell for APT. Regular raids are being conducted in different areas.

Board at times has difficulty in getting force and magistrate for conducting raids. Recently on Board's request DGP, Bihar has sent instructions to field offices to provide required force to Board for carrying out raids. In addition, Board is installing meters of Secure Meters make which are tamper proof and can detect pilferage and can send message to computers and mobile phones.

Recently Board has created a Special Task Force (STF) with selected engineers to organize raids to detect theft and to curb the power theft.

Commission's observations – 2008-09:

Action taken by the Board in organizing the raids to detect pilferage etc., of energy is noted. This has to be intensified further and the work of Taskforce is to be monitored at higher level. Wherever, if it is observed that malpractice or pilferage of energy took place due to negligence of the departmental personnel, suitable disciplinary action shall be initiated against such person. Energy audit will help in identifying high loss areas so as to concentrate on such areas.

The Board shall also check the energy supplied to HT and high value LT consumers on the basis of load flow from the power sub-stations.

Compliance by BSEB – 2010-11

The status report of raids carried out during 2008-09 has already been submitted and the position from April 2009 to November 2009 is as under:

Status Report on Raids carried out from April to December 2009

Sl No	Name of Month	No of premises inspected during the month	No of premises where FIR lodged U/S 135 of the Act	No of premises where action taken U/S 126 of the Act	Amount billed/assessed		Amount realized	
					U/S 135 of the Act(Rs in lakh)	U/S 126 of the Act(Rs in lakhs)	U/S 135 of the Act (Rs. in lakhs)	U/S 126 of the Act (Rs. in lakhs)
1	April,09	132	7	125	22.23		26.487	
2	May,09	87	24	63	24.73		8.641	
3	June,09	213	92	121	67.67		1.5	
4	July,09	181	70	111	134.44		32.509	
5	Aug,09	179	89	90	178.13		26.399	
6	Sept,09	130	25	105	31.02		68.52	
7	Oct,09	183	77	106	117.15		89.046	
8	Nov,09	180	136	146	37.33		55.34	
9	Dec,09							

Commission's Observations:

The number of consumer premises raided during the period April-November 2009 is not adequate for the entire state. The raids have to be intensified concentrating more in all the towns, HT and high value LT consumers since bulk of energy is sold in towns and to HT and high value consumers.

The Board is directed to submit quarterly reports on the raids conducted and energy billed and amount realized as a result of raids.

Directive-10: Enumeration of Agriculture Pumpsets & Other Service Connections

It is understood that there are a number of unauthorized agricultural pumpsets and other service connections connected to the system particularly in the rural areas. The Board shall get all agricultural pumpsets and other service connections enumerated to identify the unauthorized connections and get them regularized by providing meters. A report on the action taken to get agricultural and other connections enumerated to identify the unauthorized connection and to regularize them shall be placed before the Commission by 30th June, 2007.

Compliance by BSEB - 2008-09

Form the statistics given for growth of numbers of consumers, it is found that there is practically no new demand of electricity for agriculture pumpsets. This trend is continuing for over past 10 years. In view of this, most of the lines and infrastructure of old disconnected pupmsets are in damaged conditions and in many places conductors from lines have been stolen. APT, which conducts raids, has no reports of any regular use of disconnected old pumpsets. Even after OTS scheme no demand has come from old disconnected pumpsets for regularization / reconnection.

Due to shortage of manpower it is difficult to identify unauthorized agricultural and other connections and therefore it is difficult to regularize the connections.

Commission's observations 2008-09:

A large percentage of electricity is being consumed by the agriculture sector. There might be unauthorized connections. Thus it would be necessary that the agriculture pumpsets and other service connections are get enumerated to identify such unauthorized connections. The consumption by such unauthorized connections come under non-technical losses. It is essential to identify them and then either regularize or remove them. A special task force shall be constituted for this work within a month and the work completed within a time frame of 6 months.

Compliance of constitution of a taskforce along with its terms of reference to identify such connections shall be reported by September 2008.

Compliance by BSEB in Tariff Petition of FY 2010-11

Compilation of data from field offices is in process.

Commission's Observations:

A directive had been issued in the tariff order 2006-07 to get all the agricultural services enumerated. Even after 4 years it is stated that the compilation of data from field officers is in process. This type of attitude is not expected from the Board.

The Board is directed to immediately take steps to get the number of agricultural consumers connected to the network and submit a report latest by February 2011.

Directive-11: Assessment of Agricultural Consumption:

Though energy consumed by agriculture sector constitutes a significant part of total energy consumption in the State, all the irrigation pumpsets in the State are unmetered and billed at flat rate basis. The BSEB for realistic assessment of energy consumption by agriculture sector, shall take steps to correctly assess consumption / load factor of agriculture consumers based on connected load, area, region, cropping pattern, number of crops, water sources, etc. by arranging proper metering for all irrigation pumpsets in the State wherever it is not done. Since it may take time, meanwhile meters shall be installed on LT side of Distribution Transformer exclusively connected to agriculture consumers/ pumpsets. This would give fairly reasonable assessment about consumption of electricity by pumpsets. **The BSEB shall come out with an action plan for this job by 31st March, 2007 to be placed before the Commission and pursuant thereto the action taken on the plan shall also be made available to the Commission by 31st July, 2007.**

Compliance by BSEB - 2008-09

As explained in status of directive No.1 the Board has planned to provide meters to all the meter less consumers in phases. The agricultural pump sets having flat rate tariff will be covered by providing meters. Therefore, assessment of consumption in an area, region and water sources basis can be undertaken after meters are installed.

Commission's observations- 2008-09:

*Providing of meters for pumpsets may be expedited. Meters may be provided at few distribution transformers exclusively feeding pumpsets and arrive at the consumption of pumpsets connected to the transformers. This gives fairly realistic consumption of pumpsets. Action taken shall be reported by **March, 2009.***

Compliance by BSEB in Tariff Petition of FY 2010-11

ESEs of Sasaram, Gaya, Patna and Nalanda circles have identified four 11 KV feeders in each circle and have also identified about 40 agricultural pumpsets for pilot study. Action for providing meters to these meterless agricultural pumpsets has been taken.

Commission's Observations:

The results of pilot study conducted in the four circles shall be reported to the Commission immediately by January 2011, pending providing meters to all agricultural consumers. Similar study may be conducted in other circles also to benchmark the consumption of pumpsets in the State. While taking action for providing meters to all agricultural consumers, meters may be provided to some of the distribution transformers exclusively feeding pumpsets and the consumption pattern studied. The report on the action taken shall be submitted by March 2011.

Directive-12: Regulation of Power Supply to Rural Areas

The Board may study the practices being followed in other States and draw out a scheme to regulate power supply to rural areas, particularly, to agricultural pumpsets, and submit such a scheme to the Commission for consideration and approval by 31st March 2007.

Compliance by BSEB - 2008-09

In Bihar most of the feeders are mixed in both urban and rural. So in the present situation, practically it is not possible to make distinction between rural and urban supply.

The Board sent a team of officers to study the arrangement in Gujarat for power supply to rural areas. In Gujarat rural feeders provide power for 8 hours a day.

The rural feeders are required to be separated so that any policy with regard to rural supply can be formulated and implemented. In this connection a special task force was constituted under Dr. Satish C. Jha, Chairman, Special Taskforce on Bihar of the Planning Commission to prepare a road map for development of power sector. A sum of Rs. 6710 crore has been estimated towards strengthening of distribution network in the state.

Presently, with large number of PSS coming up in rural areas under Rajeev Gandhi Grameen Vidyutikaran Yojna (RGGVY), Board will be able to separate large number of rural feeders. We also intend to strengthen network specially for agricultural pumpsets. With the available resources it will take some time.

Commission's observations 2008-09:

In Gujarat all villages get 24 hours 3 phase supply. Only irrigation pumpsets get 8 hours supply. 11 kV Feeders feeding pumpsets are separated from the village feeders.

At least 3 hours of power supply to agricultural consumers shall be ensured during lean period between 00-00 hours to 06-00 hours every day. The timings of this arrangement in various areas has to be announced in advance.

A report on the status of implementation of RGGVY and how it would improve the quality of supply to the villages and agricultural pumpsets shall be submitted to the Commission by December, 2008.

Compliance by BSEB – 2010-11

Board has taken action to regulate power to rural areas in view of requirement for farming. Public has also been informed through newspaper.

Status of implementation of RGGVY as on 31.10.2009 is as under:

Sl. No.	Description	Un-electrified villages	Electrified	Total
1	Infrastructure partially developed	16529	128	16657
	(a) No. of villages completed as per new definition	-	-	11761
	(b) Percentage of villages completed as per new definition	-	-	84.03
2	Villages energized and handed over			
	(a) Villages energised			7483
	(b) Villages handed over			5949
	(c) Villages in which GPC obtained			6259

Commission's Observations:

Action taken to regulate power supply and how it is regulated is not given by the Board.

The Commission directs the Board to ensure minimum hours of supply to agricultural pumpsets consumers shall be informed of the hours in advance so that they can operate the pumpsets.

Directive-13: Quality of Power Supply and Service to Consumer

It is understood that a number of LT lines in the rural areas have no conductors and the villagers / consumers are without supply. The Board may drawout a scheme to restore all such lines and to strengthen the distribution system wherever required, as it is necessary to provide power supply to all consumers at a reasonable voltage and with minimum interruptions. The funds available from RGGVY and other Rural electrification schemes shall be availed to improve the system. The Board shall submit its scheme to strengthen the transmission & distribution systems to the Commission by 31st March 2007.

Compliance by BSEB - 2008-09

The Board has formulated schemes under APDRP which covers restoration of damaged lines, construction of new 33/11 KV PSS, 11KV lines and PSS as well as augmentation of existing 33/11 KVPSS and 11KV line and DSS. Strengthening of sub-transmission system is also under execution under RSVY.

In addition to this, the Board has also formulated following schemes under state plan for execution during 2007-08.

S. N	Name of scheme	Total Value in Crore	Required for (07-08) in Crore
1	Installation of L.T. capacitor in DT in selected areas of Patna and divisional towns. (Gujarat Pattern)	5.00	2.00
2	Capacitor Bank in P/S/S for Patna (10 nos.)	4.80	2.00
3	Distribution system strengthening (not covered in any scheme)	75.00	2.42
4	Additional RE work on the pattern of Gujarat system.(for separation of 11 KV feeders)	2358.68	33.90
	Total	2831.59	109.07

Commission's observations-2008-09:

*A report on the implementation of the schemes under APDRP and State Plan along with, start/completion/target dates and how many villages are getting quality supply on implementation of the schemes shall be submitted by **October, 2008.***

Compliance by BSEB in Tariff Petition of FY 2010-11

Board is following the norms given in Standards of performance. The existing system has been upgraded and strengthened under APDRP schemes. This will be further improved when Restructured APDRP schemes are implemented.

Commission's Observations:

The compliance report is not satisfactory.

A detailed report shall be submitted by March 2011, indicating that to how many villages the network is restored under APDRP, State Plan, and RGGVY and the quality supply was made available to the consumers.

Directive-14: Management Information System

The Board is directed to take urgent steps to build a credible and accurate database and management information system with unbundled costs and expenditure of the three businesses of the Board viz. Generation, Transmission and Distribution to make information available on operational and financial issues and get such data updated on monthly basis. Advantage of IT must be taken to institute the MIS. Action must be taken urgently on this and the action taken shall be reported to the Commission by 31st March, 2007. Care must be taken to see that the next tariff petition is supported by an accurate and credible database.

Compliance by BSEB - 2008-09

The Board has already-initiated steps for developing IT infrastructure so as to introduce an effective management Information System in the Board. In fact, Bihar State Electricity Development Corporation Ltd. (a Govt. of Bihar Undertaking) have also been approached for providing Consultancy services and send a techno-commercial proposal to study BSEB's core business functions, analyze the IT related requirement and formulate an IT strategy and road map of the Board. Bihar State Electricity Development Corporation Ltd. has also sent their techno – commercial proposal recently, which is under examination. Once the IT infrastructure including adequate software application is developed, the Board will be in a position to build a credible and accurate database and management information system with unbundle costs and expenditure of the three business of the Board viz., Generation, Transmission and Distribution to make information available on operational and financial issues and get such data updated on monthly basis.

As regards availability of information / data required on operational and financial matters with the BSEB, it is to mention that the Board is maintaining most of the financial data as required under the provision of Electricity (Supply) (Annual Accounts) Rule, 1985 and preparing annual accounts of every year accordingly. So far as the details of units actually consumer units billed, amount billed for consumers under various sub – categories as per tariff, are concerned, it is relevant to mention the Revenue Statement No- I have been revised so as to generate all the information as per the approved tariff of BERC, However, in view of acute shortage of manpower

in the Board, the compilation of data in the revised format could not start so far. Efforts are being made to avail the help of computer to get the Revenue Statement No –I compiled in revised format.

Commission's observations-2008-09:

The current status of implementation of IT shall be submitted to the Commission by September, 2008. It is observed that whenever some data is called for, it is stated that information has to be obtained from field. A system has to be developed so that entire data is available at headquarters and one agency for providing data / information to the Commission notified.

Compilation of data for Revenue statement No.1 in the revised format to generate all data / information as per the approved tariffs for the BERC shall be implemented without any further delay and the compliance reported to the Commission by October, 2008.

Compliance by BSEB in Tariff Petition of FY 2010-11

Government of India has included MIS in the Restructured APDRP scheme for execution during 11th Five Year Plan. Schemes are to be executed for which Power Finance Corporation is Nodal agency. The schemes are limited to the towns with population of 30000 and above. There are 71 such towns out of which 10 towns have been selected in first phase. Out of short listed consultants by PFC, Board has appointed M/s TCIL, New Delhi as consultant.

Commission's Observations:

It is observed that the Board has done nothing to build up proper MIS. Every time any data is called for, the stock reply is either it is being "called from the field" or "the information is being compiled". The implementation of RAPDRP is not going to help, it is only limited to few towns. The Board is directed to submit a report on the action taken to buildup credible data apart from RAPDRP. The Board shall submit a report on the action taken to build up credible MIS by June 2011.

Directive-15: Annual Accounts of the BSEB

The Board is directed to accord highest priority and ensure that the accounts of these years are duly audited by Accountant General, Bihar by March, 2007. BSEB should file the ARR and Tariff Petition for the next year supported with audited accounts.

Compliance by BSEB - 2008-09

The Board has been according highest priority to update its pending annual accounts. As on date, the annual accounts for the year 2002-03 has already been certified by the Accountant General. Annual Accounts for the year 2003-04 and 2004-

05 have also been audited by the Account General, Bihar and are in the process of certification. Annual accounts for the year 2005-06 has been approved by the Board and submitted to A.G. Bihar for audit. Further annual accounts of 2006-07 is process of being finalized.

Commission's observations-2008-09:

Action taken is noted. Certification of Accountant General for FYs 2004-05 and 2005-06 shall be obtained by October, 2008. Annual Accounts for FYs 2006-07 and 2007-08 shall be got audited by Accountant General, Bihar by October, 2008 and December, 2008 respectively.

Compliance by BSEB in Tariff Petition of FY 2010-11

Certificate from AG, Bihar has been obtained upto 2006-07. Annual Accounts for 2007-08 has been submitted to AG, Bihar. Certificate is awaited. Annual Account for 2008-09 has been adopted by the Board and is in the process of submission to A.G. Bihar.

Commission's Observations:

Expeditious action is to be taken in finalizing the Annual Accounts every time and submit to the AG within three months of closure of financial year, so that AG completes the Audit by September of the year.

It shall be ensured that Audited Accounts of previous year is available with filing of ARR and tariff petition before the Commission.

Directive-16: Arrears:

The Board should prepare area-wise list of consumers having huge arrears and furnish to the Commission in the format given below.

The outstandings from the State Government Departments, Government Undertakings, local bodies and private parties shall also be furnished separately by 31st January, 2007 in the following format given below:

Format

(Rs. lakhs)

S. N	Name of consumer / organization	Month & year the amount due	Energy Charges billed	Delayed payment surcharge	Total

Action taken shall be reported to the Commission by 31st March, 2007.

Compliance by BSEB - 2008-09

Electricity supply division wise, Electricity Supply Circle Wise and electric Supply Area wise details of outstanding dues (provisional) as on 31.03.2007 are enclosed.

Electric Supply Circle wise and Government Department wise details of outstanding dues (provisional) as on 31.3.2007 are also enclosed Annexure – XIV

As regard furnishing consumer wise details of outstanding dues, all concerned field officers have been instructed to furnish the consumer wise details to the Chief Engineer (Commercial) for submission to the Commission. However, it is to be mentioned in this connection that consumer wise details are available in the consumer ledger maintained in respective Division / Sub Division and Circle level, which may be verified on the spot, if required.

So far as the question of taking steps with the State government at the level of Chief Secretary for collecting the outstanding dues against Government Departments and its undertaking etc., as suggested by the Commission is concerned it is to be mentioned that as per decision taken in the meeting held under the Chairmanship of the Chief Secretary Bihar a committee consisting of the following officers has been constituted vide Office Order No. 30 dated 09.05.2007 of Energy Department, Government of Bihar:

- | | |
|--------------------------------|-----------------|
| 1. Finance Commissioner, Bihar | Chairman |
| 2. Secretary, Energy Deptt. | Member |
| 3. Chairman, BSEB, | Member |
| 4. Secretary, BSEB, | Convener Member |

The aforesaid committee has taken decision on the following points in its first meeting held on 11.7.2007:

- i. Joint verified amount of arrear energy bill outstanding against various State Government Department (Except Urban Development) to be paid to the Bihar State Electricity Board in installment during the current financial year after making additional budget provision.
- ii. Joint verified DPS amount outstanding against different State Government Departments be adjusted out of loans and interest thereon paid to the Bihar State Electricity Board from the State Government.
- iii. Payment of regular monthly energy bills raised against State Government Department after making budget provision.

As per decision of the aforesaid committee the Secretary Department of Energy, Bihar Patna has been requested vide Board's letter no. 1831 dt. 13.8.2007 for taking action for adjustment of Joint Verified DPS amount against the loan received from the State Govt. and interest thereon.

Commission's observations-2008-09:

Huge arrears of DPS raised against very old arrears – in many cases where the consumer/institutions cannot even be located – which may not be realizable is lying in the Boards accounts. Suitable action on this has to be initiated. The DPS raised shall be collected promptly at least in future.

Action taken is noted. A report on the progress made so far on joint verification of amount of arrear energy bill, DPS amount on regular monthly energy bills outstanding against various Government departments shall be submitted before the Commission by October,2008. The current status of arrears of Government Departments after due adjustment etc., and from consumers shall also be submitted to the Commission by December 2008 along with a soft copy.

Compliance by BSEB in Tariff Petition of FY 2010-11

The total dues from the consumers are and the State Government Department as on 31.3.2009 are as under:

		(Rs. crore)
1	Dues from all categories of consumers	6776
2	Dues from State Government Departments	3250
	Total	10,026

The dues include DPS.

Commission's Observations:

As seen that amount of dues both from State Government Departments and other consumers is huge. As directed earlier this requires consumer-wise study and decision has to be taken on measures of recovery. If the amount cannot be recovered due to any reason, a decision has to be taken to write off and steps shall also be taken to recover under Land Revenue Recovery Act . Report called for during 2006-07 is not submitted in the proforma given. The latest information as on 31.3.2010 may be furnished now in the proforma. This report shall be submitted to the Commission by March 2011.

Directive-17: Collection of Arrears

The Board should submit the details of recovery of arrears under the first OTS announced in April 2006 and also the recovery under the second OTS scheme in force from October 2006 onwards in format given below. The first report shall be submitted by 31st January 2007 and the second report after the scheme is over in March 2007.

Format

						(Rs. lakhs)
S. N.	Name of the consumer / organization	Amount of arrears due	Amount of DPS due	Arrears collected	DPS waived	Total collection

Compliance by BSEB - 2008-09

All concerned field offices have been instructed to furnish the details of recovery of arrears under One Time Settlement Scheme in the prescribed format.

Electricity Supply Circle wise and Electricity Supply Area wise details of outstanding dues, collection under OTS, DPS waived etc in 1st phase i.e. from 12.4.2006 to 30.04.2006 and 2nd phase i.e. from 2.10.2006 to 31.03.2007 are enclosed.

As regards submission of consumer wise details it is to mention that consumer wise detail are voluminous. The consumer wise details are available in the consumer ledger maintained at respective Division / Sub division and Circle level, which may be verified on the spot if required. Annexure-XV.

Commission's observations-2008-09:

The information furnished on amounts collected under OTS 1 and 2 are noted. However, reply given with regard to submission of consumer-wise details is not acceptable. The information called for on the subject may be submitted in the proforma already furnished by the Commission by December 2008.

Compliance by BSEB in Tariff Petition of FY 2010-11

Last year FY 2009 State Government released Rs. 649.47 crore towards old energy dues. State Government has taken steps to adjust Rs. 1057.73 crore being DPS component of dues against Loan/interest given to Board.

Action is in process for joint verification of old bills of State Government Departments. These will be processed further for getting payment from State Government. Action is also being taken for collection of dues from private consumers. The details of collection of Rs. 27.96 crore under OTS scheme during March and April 2009 has been submitted to the Commission vide letter no. 984 dated 13.7.2009 of Chief Engineer (Commercial).

Commission's Observations:

Action taken in collection of dues both from State Government Departments and private consumers is noted. This has to be further intensified, particularly, the collection of dues from private consumers.

The latest report on recovery of dues from State Government departments and private consumers shall be submitted to the Commission by March 2010.

Directive-18: Asset Register

The Board shall maintain separate asset registers for the 3 businesses viz. Generation, Transmission and Distribution. If such registers are already available, the same may be submitted to the Commission for perusal. In case such registers are not available the same may be got prepared by July, 2007

Compliance by BSEB - 2008-09

Assets register showing the details of individual assets related to Board's different activities viz., Generation, Transmission and Distribution have not been prepared since inception. The Board has issued direction to its field officers for preparation of asset register in the proforma designed and evolved for the purpose and circulated in the year 2000. However, in view of acute shortage of accounts personnel in the Board, most of the accounting of assets (sub- head wise) showing opening value, additions during the year, subtraction during the year, depreciation charged during the year and closing value of assets namely, land and land rights, building, Hydraulic works other civil works plant and machinery, lines and cable network, vehicles, furniture and fixtures, office equipments in each of the accounting units. The said details are compiled and exhibited in schedule – 19 to the annual accounts as per the provision of Electricity (Supply) (Annual Accounts) Rule, 1985.

Commission's observations-2008-09:

The reply given by BSEB for delay in preparing the asset register is not acceptable. Preparation of the asset register is being prolonged since the year 2000. BSEB, seems to have circulated the instructions to prepare the asset register in the proforma designed, but has not pursued properly.

It is essential to maintain the asset register function-wise. Asset Register for three business i.e. Generation, Transmission and Distribution, as required, should be prepared so that there is smooth transfer of assets when the Board is unbundled into Generation, Transmission and Distribution Companies. Without Asset Register it is also difficult to identify those assets which have fully been depreciated. Accordingly, a group of officers need to be constituted and made responsible for preparation of the Asset Register within a time frame. If it is difficult to get it done with the existing manpower, outsourcing this job may be examined. Asset registers have to be got prepared and compliance reported by March, 2009.

Compliance by BSEB in Tariff Petition of FY 2010-11

At present, it is very difficult to prepare asset register for each and every item. Even by outsourcing the work, the cost will be enormous as the work involved is voluminous and spread over the entire State. At present block assets is being compiled and updated at each accounting units of the Board every year.

Commission's Observations:

Asset Register is a must for every organization. Without asset register it is not possible to have the value of fixed assets and how many of the assets have been depreciated etc.

The Board shall constitute teams of Board's Personnel from Offices and other field units to build up the register. Six years have already lapsed without taking any action. The Board shall report on the action taken to buildup Asset Register by January 2011.

Directive-19: Time of Day (ToD) Tariff

Some consumer organizations have suggested to introduce TOD tariff which will help flattening of load curve and reduce peak demand. The National Electricity Policy also stipulates for introduction of TOD tariff. BSEB shall come up with a plan for introduction of TOD tariff and metering for HT consumers in the first phase followed by LT industries and Non –Domestic consumers. Such plan shall be submitted to the Commission along with next tariff petition.

Compliance by BSEB - 2008-09

In the tariff petition, for the revision of tariff for FY 2008-09, contains proposal of TOD rates for all the H.T. category of consumers except railway traction.

Commission's observations-2008-09:

The Commission has considered the proposal and taken appropriate decision in the tariff order.

Compliance of BSEB in Tariff Petition of FY 2010-11

Tariff for TOD has been introduced as per the tariff order dated 26.08.2008. Notice has been published in newspapers for wide publicity.

Commission's Observations:

Commission has taken note of the compliance and other factors also and appropriate order has been incorporated in the Tariff Schedule.

Directive-20: Recovery of Fuel Price Adjustment from Consumers Paying Monthly Minimum Charges

An issue has been raised by a number of consumers/consumer organizations that the Board is recovering the fuel adjustment charges on monthly minimum

consumption and not on the actual energy consumption by the consumer. Thus the consumer has to pay fuel adjustment charges for the energy actually not consumed. The Commission is of the opinion that the fuel adjustment charges shall be charged only on energy actually consumed and not on monthly minimum consumption.

The BSEB shall submit a factual report in the matter to the Commission by 31st January 2007.

Compliance by BSEB in Tariff Petition of FY 2008-09

As per Board's circular No. Misc –2424/98/ED/3 dated 4.9.1999 the fuel surcharge was being recovered from all categories of the consumers except HT consumer on the basis of Minimum Monthly Units fixed by the Board as per Tariff. However as per Tariff order issued by the Bihar Electricity Regulatory Commission date 29.10.2006 effective from 1.11.2006 no fuel surcharge is being recovered from the consumer.

Commission's observations – 2008-09:

The issue is recovery of fuel price adjustment on energy not consumed. Relevant reply is not furnished by the Board. Is the Board recovering fuel surcharge on the energy not consumed or on total energy consumed? This shall be clarified by September, 2008.

Compliance by BSEB in Tariff Petition of FY 2010-11

After the introduction of the revised tariff w.e.f.1.6.2001 the fuel price has been merged in the tariff, hence no fuel surcharge is being realised both for consumed or unconsumed units.w.e.f.1.6.2001

Commission's Observations:

The commission is allowing recover/adjustment of FPPCA only on energy actually consumed not on monthly minimum charges.

Directive-21: Fuel and Power Purchase Price Adjustment

A formula is approved by the Commission for adjustment of any increase / decrease in fuel prices and power purchase price. Any adjustments in the Fuel / Power purchase costs, the additional cost to be recovered from consumers or to be refunded shall be got approved by the Commission on furnishing all relevant details and data required to enable proper calculation.

Compliance by BSEB - 2008-09

The Board has not submitted any proposal to the Hon'ble Commission for the fixation of fuel and power purchase adjustment.

Commission's observations-2008-09:

The Board is advised to submit suitable proposal for power purchase adjustment costs, if any, half yearly with all relevant details and data for approval by the Commission.

Compliance by BSEB – 2010-11

Board has submitted proposal to the Commission for approval of FPPCA charges for the period Oct'08 to Mar 2009.

Commission's Observations:

As mentioned above the price increase for the periods October 2008 to March 2009 and April 2009 to September 2009 is already approved by the Commission.

Directive-22: Adjustment of Payment of Current Bills against Delayed Payment Surcharge (DPS)

The issue shall be examined in detail and a report on the procedure followed shall be submitted to the Commission by 31st January 2007 in order to enable the Commission to make a study of the issue and issue necessary directions in the matter.

Compliance by BSEB - 2008-09

As per notification no. 477 dated 29.10.2002 of the Board any payment made by a consumer shall first be adjusted towards the interest / surcharge, if any, and then against arrears / dues, if any and thereafter against the current dues which is absolutely in order.

It is also to mention in this connection that in all financial Instructions like Banks, LIC, PFC etc. the amount deposited by the defaulter customers is first adjusted against the outstanding amount of interest and after liquidating the amount of interest, the principal amount is adjusted. Board feels that this procedure should continue for its survival.

Commission's observations-2008-09:

Though the system of adjusting the amount first for surcharge etc., is followed, account is to be maintained separately that how much is adjusted towards surcharge etc., and how much towards current bills due. Such information should be available to the consumer.

Compliance by BSEB – 2010-11

As directed by the Hon'ble Commission details of DPS charged and recovered are being maintained for each individual consumer in the billing offices.

Commission's Observations:

Action taken is noted.

Directive-23: Organizing Operational Circles as Cost Centres

The Board was directed to draw out a action plan to organize the cost centres upto division level to make them accountable for their performance on profit and loss account and submit reports to Commission by 31st March 2007.

Compliance by BSEB - 2008-09

The Board has already decided to book all its expenditure including cost of power and generation as also expenses on transmission attributable to operating circle with effect from April 2007 so as to make them independent profit centre accountable for their performance by setting targets in the area of (I) energy accounting, i.e., energy drawn and billed in the circle, Distribution loss, (ii) Metering, (iii) Meter reading, billing & revenue collection.

Commission's observations-2008-09:

Action taken making circles as cost / profit centers is noted and appreciated. The same concept may be extended to division level also to make the divisions more accountable.

*The Board shall submit the targets set and performance of the operation as independent profit centres for the year 2007-08 as reported in the above compliance to the directive **before December, 2008.***

Compliance by BSEB in Tariff Petition of FY 2010-11

Report on circle-wise profit and loss for FY 2007-08 has already been submitted to Hon'ble Commission vide letter no 296, dt 20-5-2009. Report for FY 2008-09 is under compilation.

Commission's Observations:

The report for 2008-09 and 2009-10 shall be submitted to the Commission by 31st March 2011. The Board is also directed to analyze and submit report whether there is any improvement in the performance of the circles after making them cost centers in terms of revenue, revenue collection, T&D loss reduction, consumer service, quality of supply etc.

Directive-24: Performance of BSEB's own generating stations and their parameters

The Board shall submit a detailed report on the current status of R&M and restoration of generating units at both the power stations along with report on action taken about performance parameters of its generating stations by 31st January, 2007.

Compliance by BSEB - 2008-09

Muzaffarpur TPS has been transferred to joint venture company i.e., Vaishali Power Generating Company. Its performance parameters will be fixed by CERC while approving the tariff, of MTPS.

Barauni TPS under Board's control has 2 units of 50 MW and 2 Units of 110 MW each. All the units were under shutdown. Work of R&M of one 110 MW unit has been given to BHEL. For which Rs. 257.10 crore has been sanctioned under RSVY scheme.

This unit of 110 MW after renovation and modernization (R&M) work was put on operation, in July 2007 but due to some technical snag the unit tripped after sometime. The unit has again started generation from 24-11-2007. After the unit becomes stable then the realistic performance parameters will be furnished. The BHEL has assured 80% availability of units after successful completion of R&M work.

Commission's observations-2008-09:

The operational performance of the unit shall be reported, as the performance of Barauni TPS unit is very erratic even after R&M. Action taken on R&M of the other 110 MW shall be reported. The programme for R&M of units shall be reported to the Commission by October, 2008.

Compliance by BSEB in Tariff Petition of FY 2010-11

The R&M is taken for the two units of 110 MW. Unit-6 is taken out for R&M and put back in service after R&M on 24.11.2007. The unit was shutdown due to some technical problems. The unit is brought back into service on 30.01.2009 and is giving about 70-80 MW load. However due to poor quality of coal the unit could give around 40 MW .

Unit -7, which is under shutdown and yet to be taken out for R&M.

Commission's Observations:

The load factor of unit-6 of BTPS should be improved and the programme of unit-7 R&M shall be completed as soon as possible.

Directive-25: New Generation Projects

The BSEB is directed to expedite the process of setting up of new generation projects in the State and submit quarterly progress report on the same to the Commission. The first such report shall be submitted in April 2007.

Compliance by BSEB - 2008-09

1. Action has already been initiated for setting up extension of 2X250 MW units at BTPS on turn key basis at an estimated cost of Rs. 2250 Cr under state plan, for which BHEL has submitted technical offer which is under examination.

2. Extension units of 2X250MW have been sanctioned at an estimated cost of Rs.2250 Cr at MTPS and will be carried out by VPGCL, a joint venture company of NTPC and BSEB.
3. BSEB has cleared 8 coal based power projects under Merchant Power plant for which MoU has been signed with M/s Vikash Metal & Power, Kolkata for setting up 2X250 MW units at Begusarai. MoU has also been signed with M/s JAS Infrastructure Capital Pvt. Ltd. for setting up 9X135 MW units at Pirpainti.
4. There is also a proposal to set up (3X660 MW) TPP at Nabinagar which will be carried out by Joint Venture Company of NTPC and Govt. of Bihar. After the units become operational 75% of power (1485 MW) will be available to BSEB. MoU has already been signed.

Commission's observations-2008-09:

The current status on setting up of 2x250 MW units at BTPS and its likely Commissioning schedule and also the current status of other projects mentioned may be reported to the Commission by October, 2008.

Compliance by BSEB in Tariff Petition of FY 2010-11

The following projects are proposed under generation:

I	Under BSEB	
1	Extension of Barauni-TPS – Expected to be commissioned - 2013-14	2x250 MW
2	Muzaffer TPS Extension – Under Joint venture BSEB and NTPC Expected date of commissioning - 2013-14	2x195 MW
3	Nabinagar Super TPS – Joint venture of BSEB and NTPC Expected schedule of Commissioning - 2014-15	3x680 MW
II	IPPS – Case- II Tariff Based Biddings	
1	Buxar Bijlee Company Private Limited Commissioning schedule -2015-16	2x660MW
2	Lakhi Sarai Bijlee Company Ltd Schedule commissioning - 2015-16	2x660 MW
3	Pinpainti Bijlee Company Limited Expected date of commissioning - 2015-16	2x660 MW
III	IPP Power Stations (MOU Signed with BSEB)	
1	M/s Jas Infrastructure Capital Pvt Ltd Expected schedule – 12 th Plan	4x660 MW
2	M/s Nalanda Power Company Ltd Expected schedule – 12 th Plan	4x500 MW
3	M/s Vikas Metal and Power Ltd Expected schedule – 12 th Plan	500 MW
4	M/s Adhunik Power & Natural Resources Ltd, Expected schedule – 12 th Plan	2x500 MW
IV	Other IPP Projects Approved by State Investment Planning Board.	
1	M/s Subhas Projects & Marketing Ltd,	1200 MW
2	M/s IL & FS, New Delhi	500 MW
3	M/s India Power Corporation Ltd,	1650 MW
4	M/s Cement Manufacturing Company Ltd.,	500 MW
5	M/s Essar Power, Ranchi	1800 MW

6	M/s Usha Martin, New Delhi	1200-1320 MW
7	M/s East-West Power Generation Co. Ltd.,	1000 MW
8	M/s Triton Energy Ltd.,Gurgaon,	1320 MW
9	M/s Krishak Bharti Co-operative Ltd,	1320 MW
10	Nuclear Power Project	4x700 MW

Commission's Observations:

To meet immediate requirement of power, bidding process for (1500-450) 1050 MW should be initiated without any delay. The status of the projects shall be updated every three months and submitted to the Commission by 31st December 2010.

Directive –26: Employee cost

As per information made available by the BSEB, the employee cost of BSEB is high which stands at about 40% of the total revenue income from sale of power at existing tariff. It works out to be around 120 paise per kWh of energy sold, whereas, in other states, even where the State Electricity Board has not been restructured, it is of the order of 60 paise per kWh of energy sold. There is no infrastructure in some crucial and important activities whereas there is excess staff in some departments, which are not so significant. The BSEB is directed to enforce economy and austerity measures in their operations and take urgent steps to reduce establishment cost by utilizing the existing man-power optimally imposing restrictions on creation of posts, introducing revised work load norms and also reducing posts which are not significant BSEB shall set up a committee to suggest and recommend deployment of existing man-power to achieve optimum utilization of available work force.

BSEB is also directed to identify the surplus staff and deploy them, after proper training, in the areas of customer service, such as meter reading, billing and revenue realization, so as to provide better service to the consumers.

A report on the action taken may be sent to the Commission by 30th June 2007.

Compliance by BSEB - 2008-09

1. A Committee was constituted vide Board's office order no. 473 dt. 12.2.2007 read with office order no. 909 dt. 26.3.2007 under the chairmanship of Sri B P Ambastha, Chief Engineer (Project & Design) to suggest and recommend deployment of existing man- power to achieve optimum utilization of available work force and to identify the surplus staff and their deployment after proper training in the areas of customer service, such as meter reading, billing and revenue realization.
2. The Committee in its meeting held on different dates discussed the issue in detail and observed that some of the posts should be abolished and the employee if any on that post be utilized in suitable required job.

As per report of the committee all-together in 14 categories of officers, a total of 109 posts are to be abolished. Similarly in 103 categories of workmen, 1302 posts are to be abolished. The services of 148 workmen working on the above posts has been recommended for utilization in areas of meter reading, billing, revenue accounts technical and other posts keeping in view their pay- scale status and suitability. The matter is being placed before the board for approval of the recommendation of the Committee.

Commission's observations-2008-09:

Action taken is noted. A detailed study report shall be submitted to the Commission on norms of workload and manpower required to rationalize the manpower and reduce the costs. Unless action is taken to get the costs reduced, Commission may not approve this level of high costs in future. Likely cost savings by implementation of the recommendation of the Committee may be submitted to the Commission by October, 2008.

Compliance by BSEB in Tariff Petition of FY 2010-11

Board has not engaged any outside agency to examine the issue of work load and manpower in view of pending restructuring of Board. The actual manpower is already getting reduced due to retirements every year.

Commission's observations:

The employees cost is very high and requires to be reduced considerably. The manpower requires total review. As directed in the 2008-09 tariff order a detailed study shall be submitted to the Commission on norms of workload and manpower required to rationalize the manpower and reduce the costs. No such study is got conducted. Action shall be taken immediately to get such a study conducted. The action taken may be submitted by March 2011.

Directive-27: Energy conservation

A well-known proverb is that energy conserved is energy generated and to conserve energy, the consumers are required to be well educated by way of demonstrations, holding meetings at various levels and through print media so that energy consumption can be reduced considerably by adopting economy measures such as use of energy efficiency lighting, high efficiency and standard make household appliances, high efficiency pumpsets preferably with labels of Bureau of Energy Efficiency (BEE) and other energy conservation devices. All categories of consumers should be well apprised of the newly developed latest energy conservation devices so that the energy conserved can be utilized for more productive purposes and in

consonance with direction issued by the Ministry of Power, Government of India, it shall be made mandatory to use ISI mark motor pumpsets, power capacitor, foot / reflex valves in all new connections in agriculture sector.

Compliance by BSEB - 2008-09

Board is adopting different measures from time to time for creating awareness among consumers regarding conservation of energy.

Commission's observations-2008-09:

The action taken is evasive. More thrust is required to be given on energy conservation. This will be possible by creating awareness among consumers for conservation of energy and by educating the ways and means to be taken by the consumers to conserve energy. In this regard a campaign programme through electronic and print media has to be developed and implemented.

The Board shall report on the concrete steps taken by the Board in educating the consumers on the need for energy conservation etc., and the initiatives taken by the Board in its own organization to implement energy conservation by December, 2008. BSEB shall also initiate a programme to encourage the consumers including Kutir Jyoti to use compact florescent lamps (CFL) to help in conservation of energy.

Compliance by BSEB in Tariff Petition of FY 2010-11

Steps have been taken up for awareness of energy conservation amongst the general public on regular basis. People are aware of using CFL lamps for energy consumption.

Commission's observations:

The board has not explained what measures are taken to educate consumers on energy conservation. It was directed earlier to report on the initiatives taken by the Board in its own organization to implement energy conservation. No report is received from the Board. The Board is directed to educate consumers / public on the need for energy conservation, particularly, in a power deficit State like as Bihar more stress shall be in urban areas where substantial power is consumed. Board shall take the assistance of some NGOs and other agencies for educating consumers on energy conservation and come out with concrete action plan to implement energy consideration measures. Report on the action taken shall be submitted to the Commission by June 2011.

Directive-28: Investment Programme

It is observed that the Board has neither submitted any future investment programme nor the details of capital works in progress (CWIP) with the Tariff Petition. The BSEB

is directed to submit within next three months their investment programme for the next 5 years and details of CWIP. A quarterly progress report on major investment works should also be furnished regularly to the Commission and the first such report for quarter ending March, 2007 be submitted in April 2007.

Compliance by BSEB – 2008-09:

Major Capital Works in progress:

Generation

- ❖ R&M of Barauni Thermal Power Station Unit No. 6&7 and Muzaffarpur Unit No. 1&2 sanctioned under RSVY.
- ❖ Estimated cost – Rs.506 crore
- ❖ Rs. 193 crore released to BHEL and NTPC.
- ❖ Barauni Unit No. 6 and Muzaffarpur Unit No.2 being restored to start generation 60-70 MW in November 2007.
- ❖ Complete R&M of units to be completed by 2009.

Transmission

- ❖ **Sub- transmission scheme Phase –I:**
 - The revised sanctioned scheme amounting to Rs. 552.40 crore under RSVY.
 - Work executed by PGCIL.
- ❖ **Physical progress**
 - Construction of Grid S/S - 17 Nos.
 - Construction of Power S/S - 01 Nos.
 - Transmission Line - 876 KM
- ❖ **Sub – Transmission Scheme, Phase – II, Part – I:**
 - Approved cost - Rs. 629 crore
 - Fund released to Powergrid - Rs. 409.66 crore
 - The revised estimated cost - Rs. 1023.13 crore under RSVY.
 - Work is under progress
 - Land for the construction of 9 (Nine) Nos. Grid Sub- station identified and acquisition of land is under progress. Orders placed by PGCIL. Progress is going on.
- ❖ **Sub – Transmission Scheme, Phase – II, Part – II:**
 - The scheme approved under RSVY - Rs. 1240.80 crore
 - Execution of scheme is likely to start shortly.
 - Rs. 271.00 crore also posed to ADB for funding.
- ❖ **Transmission (State Plan)**
 - 132/33 KV Grid Sub- station at Belaganj is operating with one power transformer. 2nd transformer installation under progress.
 - Grid Sub- station at Masaurhi and Kishanganj (2X20 MVA) under construction to be operational by end of December 2007;
 - Emergency Restoration System at the cost of Rs. 9.40 crore being procured to be available by March'08.
 - Thermo Vision Camera, Distance Fault Locator and other important testing equipments have been procured.
 - Construction of 132 KV Fatuha – Gaighat transmission lines is to be taken up shortly.

- Construction of transmission system for evacuation of surplus power of 3 Nos. Sugar Mills already taken up.

Distribution

- ❖ Construction of 16 Nos. new Power S/S at different places being taken up.
- ❖ Procurement of distribution transformers of capacity 200 KVA, 100 KVA & 63 KVA - 300 Nos. (approx.) to augment the distribution system.
- ❖ Re- conducting of 438 KM of overloaded 33 KV, 11KV, LT line.
- ❖ Temporary LT line on Bansh Balla - 800 KM being converted in regular manner.
- ❖ Construction of new TRW (3Nos)
- ❖ Construction of High Tech fully computerized Lab at Patna for expeditious meter testing.
- ❖ Procurement of Mobile Vehicle with hydraulic telescopic equipments---14 nos. to ease maintenance work.
- ❖ Provision of capacitor Bank at Power S/S and Distribution S/S
- ❖ Underground cabling at Patna for drinking water pumpsets.
- ❖ Establishment of training center for both officers and staff at Patna.
- ❖ Regular progress report on major capital works shall be quarterly submitted.

Commission's observations-2008-09:

The R&M works of Muzaffarpur Power Station would not come now under BSEB as it has been handed over to a joint venture company. For transmission and distribution projects the following details may be furnished.

- *Works already completed with costs and sources of funds.*
- *Works under execution with costs sources of funds and completion schedule.*
- *Works programmed for future with costs and completion schedule and sources of funds.*

A report may be furnished by December, 2008.

It is also directed to furnish whether the works are planned based on any study and if, so a copy of the study may be submitted to the Commission along with the above report.

Compliance by BSEB in Tariff Petition of FY 2010-11

APDRP scheme has been short closed w.e.f. 31.3.09 as per guidelines of MOP, GOI. Further investment will be made under 11th plan through Restructured APDRP scheme in which the left over and new works will be taken up after the receipt of detailed guidelines from PFC who is nodal agency for RAPDRP. Year-wise investment under RAPDRP has not been finalized by PFC/MOP.

Commission's Observations:

The details of works planned and executed are not given. A report had been called for whether the works were planned based as any study, if so a copy of such study was asked to be furnished. The details of works planned and executed and whether the works have been carried out based on any study are not furnished.

The Board is directed to furnish the details of works carried out and the study report if any and the cost – benefit analysis of the investments by June 2011.

Directive-29: APDRP Schemes

The status of implementation of these schemes, amount utilized upto 31st December, 2006, the benefits accrued by way of increase in metered sales, reduction of distribution loss, improvement in quality of supply, revenue etc. shall be reported to the Commission by 31st March 2007.

Compliance by BSEB - 2008-09-2008-09

APDRP

Approved cost	-	Rs. 854 crore
Revised sanctioned cost of the scheme -		Rs. 1066.58 crore
Amount paid to PGCIL & others	-	Rs. 599.62 crore

Physical Progress:

- New 33/11 KV Power S/S - 29 Nos.
- R&M of Power S/S - 198 Nos.
- New 33KV Line - 289 KM
- New 11 KV Line - 585 KM
- Re – conductoring of 33 KN Line - 634 KM
- Re – conductoring of 11 KN Line - 3400 KM
- Consumer Meter - 283325 Nos.
- System Meter - 2190 Nos.
- New DT - 1806 Nos.
- R&M of DT - 5275 Nos.
- The scheme is being executed by PGCIL under 12 circles of the State.
- Action is being taken to start the work under rest of 4 (four) circles.

Rural Electrification:

- The RE work of 24 districts are being executed by PGCIL at the sanctioned cost of Rs. 1384.53 crore.
 - The RE work of 6 districts are being executed by NHPC at the sanctioned cost of Rs. 233.50 crore.
 - The RE work of 8 districts is to be taken up by Bihar State Electricity Board at the proposed cost of Rs. 635.23 crore under RGGVY.
 - Present status of RE works
- | | | |
|----------------------------|---|-------|
| Total Villages | - | 39015 |
| Total Electrified Villages | - | 28941 |

Commission's observations-2008-09:

The progress is noted. The Board is directed to furnish total works programmed under APDRP and works already completed and the programme for completion of balance works, if any. Is the benefit of these works evaluated either by PGCIL or BSEB, if so, the report may be furnished to the Commission. A report containing the above details shall be submitted to the Commission by December, 2008.

Compliance by BSEB in Tariff Petition of FY 2010-11

APDRP scheme has been closed w.e.f. 31.3.2009 as per guidelines of MOP, GOI.

The status of expenditures incurred is given below:

- (a) Original approved cost of the scheme - Rs. 854.00 crore
- (b) Revised sanctioned cost of scheme - Rs.1066.58 crore
- (c) Amount paid to PGCIL & others - Rs. 815.18 crore

The circle-wise details of expenditure year-wise has been given in Volume-II of Tariff Petition.

Commission's Observations:

The report on the benefits accrued by execution of the works under APDRP have been called for. No such report has been submitted. The report shall be submitted by June 2011. The works programmed under RAPDRP shall also be furnished by June 2011.

Directive-30: Registered and effective consumers

It is observed from the tariff petition filed by BSEB that the consumers are categorized as registered and effective. The registered consumers are those entered in the books and effective consumers are those whose services are alive. Thus a large number of consumers who are on books (registered) are not live and billed. It could be possible that some of these consumers might be availing electricity.

The services of consumers which are not live for more than three months should be given notice for clearing the arrears and getting the supply restored within a specified time. If they fail to do so, the connection of these consumers shall be dismantled and action taken to realize the dues. Such services shall be closely monitored by the Board and stringent action under the provisions of the Electricity Act, 2003 against such consumers be taken who are availing supply. The service connections having no dues and not willing to take reconnection should be removed from the books immediately. A report on the action taken shall be sent to the Commission by 31st March, 2007.

Compliance by BSEB - 2008-09

Details of Registered and Effective consumers as on 31.3.2006 is enclosed.

As desired by the BERC all concerned field officers have been instructed to submit the action taken report to the Chief Engineer (Commercial).

Commission's observations-2008-09:

The current status of registered and effective consumers shall be furnished invariably to the Commission by December, 2008.

Compliance by BSEB in Tariff Petition of FY 2010-11

Registered consumer data is maintained at billing offices for record purpose, as well as for settlement of dues / DPS / certificate cases in respect of disconnected consumers. However for all practical purpose details of only effective consumers are adopted.

Commission's Observations:

Action taken is noted.

Directive-31: Cost of supply and cross subsidy

As per Clause (g) of section 61 of the Electricity Act, 2003, the Commission is to ensure that the tariff progressively reflects the cost of supply and cross subsidy is reduced within a specified period. In this context, the Commission directs the Board to carry out a study to ascertain voltage-wise and consumer category-wise cost of supply. This is necessary for the purpose of better tariff design as also to find out the nature and extent of cross subsidy. The BSEB shall carry out the study and submit the study report to the Commission within a period of six months.

Compliance by BSEB - 2008-09

The Board has been calculating the cost of supply Voltage wise and consumer category – wise in the proforma of Central Electricity Authority, New Delhi every year based on its annual accounts.

Commission's observations-2008-09:

What is being done is the cost arrived at based on the revenue realized dividing energy consumed for each category. The study required is how much it costs to the Board to serve each category of consumers. This study shall be got done and report submitted to the Commission by December, 2008.

Compliance by BSEB in Tariff Petition of FY 2010-11

No action has been taken for study of cost of supply and cross subsidy.

Commission's Observations:

It is necessary to have cost of supply to each category of consumers. The data required shall be built up and such study shall be got conducted by June 2011.

Directive-32: Restrictions on consumption of Energy

Since generation of energy is quite insignificant in the State and the power available including that purchased from other agencies is not adequate, the Board has been resorting to unscheduled load shedding. Though some part of the urban areas are privileged in this matter for getting supply of electricity, rural area is the worst casualty. The view of the Commission is that if one does not have adequate

resources to cater to the requirement of the vast masses who are needy, rationing is the only option in a welfare state where everyone has equal right for use of a scarce commodity. It is high time in the State that people should be conscious in the matter of energy consumption and should put restriction on use of electricity voluntarily which would be self regulating, though it cannot be ruled out that exigency may arise when it could be regulatory compulsion for mandatory restriction on consumption of electricity. **The Commission directs the Board to educate the consumers to cooperate with the Board in restricting the use of electricity by voluntary effort.**

Compliance by BSEB - 2008-09

In view of the limited power availability in the State, Board has to meet all the essential loads, which results in other town and rural areas to suffer load shedding. The question of putting restriction in consumption appears to be difficult. Moreover the per capita consumption in Bihar is the lowest and the same is required to be improved over a period of time set under National tariff policy.

Commission's observations-2008-09:

Since the energy available to the States from Central generating stations has considerably improved, power available to both urban and rural areas might have been improved. The current status of power supply available to both urban and rural areas may be furnished to the Commission. Action may be taken to educate or prevail on consumers to conserve energy in view of shortage conditions prevailing in the State. This is a part of energy conservation measure.

Compliance by BSEB in Tariff Petition of FY 2010-11

The power supply to different 132/33 KV grid substations of Bihar depends on the availability vis-a-vis load at different time of the day. Due to shortage of power, actual duration of supply to Grids varies. Hence further restriction is not imposed.

Commission's Observations:

The availability of power from various sources is fairly reliable round the clock. The unrestricted demand of various categories of consumers is known over a day. The Board shall regulate the power supply to the extent of availability. Restrictions may be imposed during specific hours spread out to all urban and rural areas except industry so that the demand matches the availability. With this arrangement, there may not be need for unscheduled load shedding. The consumers would know they would get power during specified hours.

The Demand Side Management (DSM) would be such that the Agricultural consumers and rural households gets power with a predefined schedule.

A report on the action taken shall be submitted to the Commission by 30th June 2011.

Directive-33: SCADA and Data management

The Commission feels that for effective working of distribution system a time bound programme for implementation of SCADA and data management is essential. A report on implementation of such a scheme should be submitted by the Board for approval by the Commission by March, 2007.

Compliance by BSEB - 2008-09

With a view to provide integrated management of all aspect of distribution system, Capital Town of Patna has been identified and work has already been taken up under SCADA, which is being implemented by Powergrid. The major areas of work to be implemented under SCADA /DMS project for efficient & effective operation, maintenance of distribution network as follows:-

- (i) Computerized Billing and Collection System
- (ii) Computerized customer Care System
- (iii) SCADA /DMS System
- (iv) Communication System
- (v) A Common Master Billing Centre, Customer Care & SCADA /DMS Center at Patelnagar, Board Colony, Patna
- (vi) 30 Billing Collection Centres
- (vii) 45 Remote Terminal Unit / Data Concentrators
- (viii) A Mix of FO/ MAR Network for data / voice communication.

The work is in the final stage of its completion and expected completion schedule as submitted by Power grid is 31/12/2007. However with all constrains, the work is most likely to be completed by 31/03/2008.

As far its implementation for entire distribution system of Bihar is concerned, it will be taken up after arranging necessary fund aid creating infrastructure along with considering the experience of SCADA project presently under progress of Patna town.

Commission's observations-2008-09:

The commissioning of the SCADA has been delayed. Concerted efforts have to be made for immediate commissioning. The current status of implementation of SCADA and the area covered by the system shall be reported to the Commission by October, 2008.

Compliance by BSEB in Tariff Petition of FY 2010-11

The SCADA being implemented by the Power Grid under APDRP at PESU (East) and PESU(West) is not yet Commissioned though Power Grid has revised target dates number of times.

Commission's Observations:

The implementation of SCADA is very much delayed. The Board is directed to take up this matter at the highest level of PGCIL and the schedule dates of commissioning may be reported to the Commission by 31st January 2011.

Directives brought forward for continued compliance

The Commission feels that all the directives in the tariff order FY 2006-07 needs to be repeated in the present tariff order for FY 2010-11 also.

7.3 DIRECTIVES ISSUED IN THE TARIFF ORDER FOR FY 2008-09

Directive-1: HT Consumer cells in BSEB

HT industrial consumption accounts for 34% of the total energy sales and the contribution to the revenue of the Board is substantial. The industrial consumers are cross subsidizing the domestic and agricultural consumers who are supplied power below the average cost of supply. It is therefore expected that the Board provides them quality power and service to them. Their complaints regarding electricity supply should be attended promptly. Keeping this in view, it is desirable that the Board establishes a HT cell in the head office at Patna and at important Urban Industrial Centres in the state. The cell at the headquarters should be headed by an Executive Engineer with supporting staff. The cell shall be a single window contact for attending to all their problems. The Board shall prepare a scheme for establishment of such cells and ensure that these are functional within a period of three months. Compliance may be reported by 31st December 2008.

Compliance by BSEB

In compliance to the directive Board has created a HT cell under one Electrical Executive Engineer vide O.O.No. 4192 dated 24.12.2008. A notice has also been published in newspaper for wide publicity amongst the H.T. consumers.

Commission's Observations:

The action taken in creating HT cell is noted. A report shall be submitted on the functioning of the cell and the reaction of HT consumers on setting up of such a cell by January 2011.

Directive-2: Issues relating to high value consumers

The number of HT consumers, LT high value consumers (both L.T industrial and commercial) and the estimated revenue for the year 2007-08 as given in Tariff Petition – Format-1 and Format-27 are indicated as follows:

S.No	Category	No. of Consumers	Revenue (Rs Lacks)	% of Total Revenue
1	H.T (other than Railway)	708	36568	25.3
2	H.T Railway	15	21364	14.7
3	L.T Industry	14130	12086	8.3
4	L.T Commercial -II	140000	16575	11.5

723 HT consumers are contributing 40% of the total revenue.

14130 L.T industrial consumers are contributing 8.3% of total revenue.

1,40,000 L.T Commercial consumers are contributing 11.5% of total revenue.

Similarly High value domestic consumers contribute large portion of revenue.

If meter reading, billing and collection of these consumers are tackled on priority basis 60% of revenue is ensured.

Priority is to be given on following operational aspects in case of above consumers.

- Replacement of electromagnetic meters by static meters
- Replacement of stopped / defective meters.
- Checking of all H.T services by the Special Task Force officers atleast once in 3 months.
- Checking of Nil consumption & Bill stopped services which were earlier recording about 1000 units per month.
- High value LT industrial commercial services and domestic consumers (monthly bill exceeding Rs 1000) to be inspected by Special Task Force atleast once in six months.

Compliance by BSEB

Hon'ble Commission's direction to give high priority to the high value consumers is being followed by all concerned Executive Engineers and Superintending Engineers. However inspection by Special Task Force once in Six months of all HT, LT industrial, commercial and high value domestic consumers may not be possible due to large number of consumers.

Commission's Observations:

The action taken is noted. The Special Task Force (more than one) shall be constituted to check all the high value services once in six months. It is necessary to ensure revenue from this consumers without any leakage.

Directive-3: Monitoring of H.T and High Value L.T consumer meter readings

Meter readings of different consumers are taken by BSEB officers/staff at different levels.

At the time of taking meter readings, the meter reading staff shall observe the followings aspects.

- Condition of seals of terminal box and meter cover
- Condition of meter box
- Condition of meter glass, C.T connections etc.
- External condition of the service
- Proportionate consumption with reference to existing load usage.

The meter reader shall record the condition of above aspects for every service, where the meters are read and submit the recorded observation to the next immediate officer. The officers concerned shall go through these observations and initiate action for rectification of any defects/ deficiencies immediately. This will help in arresting revenue leakage.

BSEB shall cause necessary instructions to the concerned officers and staff and monitor the compliance. Action taken may be reported to the Commission by 31st December 2008.

Compliance by BSEB

Monitoring of the meter readings of different categories of consumers are done at different levels at regular intervals. Field officers have been instructed to follow the points given in this directive while taking meter readings.

Commission's observations:

Action taken is noted, and the efforts should continue.

Directive-4: Prompt release of supply to new consumers

New applicants approaching Board for new connections are to be dealt with promptly and action taken avoiding delays at every level.

Required number of meters shall be procured and kept in stock. Providing connections to new consumers shall not be delayed for want of meters. It is brought to the notice of the Commission that in certain cases release of new connections is being delayed for want of meters. In such cases, Board shall allow consumers to purchase their own meters of specified quality, capacity and make. Such meters may

be tested at Board's testing labs and provide new connections avoiding all possible delays.

Compliance by BSEB

Generally new connections are being released promptly. Complaints if received are looked into by higher authorities.

Commission's observations:

The reply is vague. The Board is directed to confirm whether the Standards of Performance are met without any deviation in all urban and rural areas and also furnish average number of days taken to give a new connection.

Directive-5: Reduction of AT & C Losses

The AT&C losses for FY 2006, FY2007 and FY 2008 which are indicated in the tariff petition for FY 2008-09 are very high. The segregation of technical and commercial losses through proper loss study shall be done and report on this shall be submitted before the Commission by December, 2008.

The BSEB shall collect 100% of the monthly bills amount and another minimum 10% of the arrears outstanding every month.

Compliance by BSEB

It has not been possible to under take proper loss study so far. After all feeder meters are installed, energy accounting and specific study can be done.

Commission's observations:

As already directed providing of meters to all feeders and distribution transformers shall be expedited to conduct a meaningful study on AT&C losses. Apart from this it is necessary to meter all the consumers to have effective energy audit and loss study.

Directive-6: Furnishing information and data

The BSEB is not able to furnish the necessary information and data whenever required by the Commission and many times, the information or data furnished was inadequate and or contradictory. BSEB shall update regularly and keep the necessary information and data readily available. BSEB shall ensure that whenever required by the Commission, the correct and complete information or data shall be furnished promptly.

Compliance by BSEB

Hon'ble Commission's instruction regarding furnishing of data has been noted. Most of the data are being compiled after closing of financial year because there is no IT enabling system in field offices, which causes delay in updating of information.

Commission's Observations:

As already directed the Board shall buildup credible MIS with computerization in the entire organization.

Directive-7: Peak Load Restriction

In view of shortage of power in the State, the BSEB may resort to load restrictions during peak hours between 6 PM to 10 PM to industries except continuous process industry depending on availability of power.

Compliance by BSEB

The load management both for normal shortage of power and during abnormal conditions (CPU-breakdown/low generation), Board is regulating power by rotational restriction of drawal of power by the entire 132/33 KV grid substation. The status of availability of power is also given through newspaper for general information of all concerned.

Commission's observations:

Demand Side Management (DSM) tariff has been provided in the tariff order and it has been made mandatory for high tension consumers having contract demand of 200 kVA and above in this tariff order. Board may regulate power during abnormal conditions beyond their control.

Directive-8: Strengthening / Maintenance of Distribution Network

The Commission has observed in the past that there had been frequent interruptions in power supply to consumers due to faults in distribution system. In order to provide quality supply to these consumers it is essential that regular maintenance works are carried out for this purpose. BSEB is directed to chalk out a programme short-term as well as long-term for strengthening / maintenance of the distribution network and submit to the Commission by December 2008.

Compliance by BSEB

Strengthening of distribution network in urban areas is proposed to be covered under Restructured APDRP scheme. PFC has selected 10 out of 71 towns having population of 30000 and above in first phase. For this consultant has already been appointed.

Commission's Observations:

The scheme RAPDRP covers only few towns. The Board shall find resources from other sources to strengthening the network in all urban and rural areas after getting proper studies conducted. Action initiated by the Board should be reported by September 2011.

The Commission had issued a number of directives in the tariff order, 2006-07 and 2008-09 to improve the performance of the Board. But none of the important directives have been fully implemented. The Board is directed to take effective steps to comply with all the directives issued. Most important directive is hundred percent metering of all the consumers. Non-implementation of the important directive is gross violation of the provisions of the Electricity Act, 2003. The Board should take immediate action to provide meters to all consumers.

All the directives along with the fresh directives are again repeated for compliance in this tariff order.

7.4 NEW DIRECTIVES IN THE TARIFF ORDER FY 2010-11

Directive – 1: Prepaid Meters

Prepaid meters eliminates cost of meter reading, bill serving, disconnection/reconnection and avoids wrong readings, delay in bill serving etc. Since the payment is upfront it improves the cash flow of the Board. Initially Board may procure some prepaid meters after ensuring service facilities and provide to some domestic consumers as a pilot study to encourage and make the consumers to observe the advantages of having prepaid meter facility. Subsequently Board may suggest the consumers to purchase the prepaid meters at their own cost by offering some rebate say about 10% in energy charges. There shall be no security for prepaid consumers. *The action taken report shall be furnish to the Commission by 30th April 2011.*

Directive – 2: Star Rating Distribution Transformers

Distribution transformers are one of the important area for reducing losses in the distribution system. It supplies power to all power consuming devices and remain energized throughout the year in the system. Considering the vast potential of energy saving and benefits of energy efficiency, Bureau of Energy Efficiency has come up with “star rating or star level” distribution transformers as required under section 58 of the Energy Conservation Act, 2001 which means the energy efficiency shall be displayed on the level of transformer on the basis of relative energy efficiency and loss standard. The Commission has decided that Board should go in for procurement of distribution transformers up to 200 kVA with minimum of two “star rating or star level”. This will apply for purchase of all new transformers for which tender has not been so far floated / published in the newspaper by the Board. *The action taken report shall be furnished to the Commission by 30th April 2011.*

Directive – 3: Providing Meters at LV side of all Distribution Transformers

BSEB has stated that 16035 distribution transformers against the existing 51996 distribution transformers have been provided with meters. But so far transformer-wise energy accounting has not been done.

BSEB is directed to provide meters to all the balance distribution transformers within six months and energy accounting shall be done in the areas where meters have already provided for the distribution transformers and copies of such reports may be submitted to the Commission every month. If the quantum of energy billed is less than 85% of the energy sent out from the particular distribution transformer, Board

should held the concerned officer responsible and the officer has to explain the reasons.

The status report of energy accounting in respect of those distribution transformers in which meters have been installed shall be reported by 31st March 2011.

Directive – 4: CFLs to Kutir Jyoti (Rural) Consumers

It appears from the perusal of ARR petition FY 2010-11 that large number of Kutir Jyoti (urban) and Kutir Jyoti (rural) consumers are going to be added to due to implementation of RGGVY programme. As such the implementing agency may provide CFL lamps upto 30 watts which will save instead of 60 / 100 watts incandescent lamps which will save considerable amount of energy.

Action taken report shall be submitted to the Commission by 31st January 2011.

Directive-5: Connecting up Renewable Energy source to the State Grid

The developer of Renewable Energy Sources shall construct the transmission line up to the State Electricity Board network at the voltage as suggested by the BSEB at his cost under the supervision of the Board. The supervision charges have to be paid to the Board as per Board's procedure.

The Board shall make arrangements for supervision of the construction of the line when approached by the developer and facilitate to connect the line to the Board's network. The Board shall extend cooperation and see that the transmission for evacuation of power would be in place to extend power supply from the renewable source well in time.

The status of such transmission lines for evacuating energy from RE sources shall be reported to the Commission by 31st March 2011.

Directive-6: Demand Side Management (DSM)

Demand Side Management can complement supply side strategies and help consumer to amend their electricity consumption pattern both with respect to timing and level of electricity demand. A separate chapter-8 has been added and it is expected that Board will take effective steps for demand side management. *Regarding implementation of Demand Side Management and implementation of TOD Tariff by the BSEB shall be reported quarterly. First such report upto 31st March 2011 shall be furnished to the Commission by 30th April 2011.*

8. Power Sector in Bihar – A way forward

Indian power sector is witnessing major changes. The power generating industry is evolving rapidly with private participation and diversification of fuel mix with conducive policy environment. Now there is surge in multidirectional power flows due to development of power trading and power exchange. State Transmission Utilities (STU) and Central Transmission Utilities (CTU) are responsible for operation and maintenance of intrastate and interstate transmission network. Private Public Participation in transmission and distribution system, private participation in nuclear power generation projects, demand side management, franchises in distribution system, renewable energy regime and purchase obligation and many other activities in Indian power sector are picking up pace in the last few years. The Electricity Act, 2003 provides an enabling framework for accelerated and more efficient development of power sector. The Act seeks to encourage competition with appropriate regulatory intervention. As a result power sector is now becoming competitive in overall efficiency gains and in terms of availability of quality power to consumers at competitive rate.

Power sector is a critical infrastructure for development of Bihar and supply of reliable and quality power at reasonable and competitive rate can transform the pattern of agriculture production, village industry development and other commercial and industrial activities can bring renaissance in the rural economy and raise standard of living of people of Bihar.

The per capita power consumption in the State is around 85 units. No new generating units have come up in the State since 1985 other than those in the Central Sector. The total installed capacity in the State including hydel and cogeneration is around 385 MW. The total power available in terms of million units from BTPS, BSHPC and cogeneration from two sugar mills M/s New Swadeshi Sugar Mills, Narkatiaganj and Bharat Sugar Mills, Gopalganj is around 390 MU against a total of 9800 MU available during 2009-10. Thus the total power availability in the state from state sector is around 4% and balance 96% is from Central Sector. The Kanti Thermal Power Station (2x110 MW) is a joint venture of NTPC BSEB called -Kanti Bijli Utpadan Nigam Ltd. During 2009-10 BSEB has purchased 500 MU of power from this joint venture at the provisionally adopted rate of 365 paise per unit.

This per unit rate is higher than the average rate of power purchased from NTPC thermal power generating units at Farakka, Kahalgaon and Talchar which is about 2.49 paise per unit. Even with very low plant factor, the cost of generation excluding employee cost, as they are there even without any generation from BSEB's own generating unit at BTPS is less than the purchase cost from NTPC thermal generating stations. More so own generation puts the Board in more strong footing in terms of energy security and also in terms of power purchase / trading. Another important aspect is equitable distribution of whatever power available in the State. A system has to be there to see that all areas are equally treated in terms of power supply except in special circumstances and lack of such approach is a matter of concern to the Commission. The 17th Power Survey of India has made a forecast that power requirement of the State by 2012 would be around 3600MW. In view of this projection the generating capacity would be required for around 4500 MW on the basis of 80% normative availability. The present availability of power is around 900 to 1500 MW and capacity-wise it is around 1875 MW. As a result most of the districts of the State are starving of power.

Bihar State Electricity Board is still a vertically integrated power utility responsible for power generation, transmission and distribution of supply in the State. BSEB is also a transmission utility (STU) and a deemed licensee under section 172 (a) of the Electricity Act, 2003.

The Electricity Act 2003 specially stipulated the restructuring of State Electricity Board through unbundling into separate companies. It was initially mandatory but was diluted later on to allow phased implementation. The legal merit of unbundling has been re- interpreted by the Appellate Tribunal for Electricity in its judgment on 15th July 2009, where it is deliberated that unbundling of SEB is not mandatory under the Act. But in practice most of the States have unbundled their SEB. Bihar is yet to do this. There are various incentive available for re-structured SEB and re-structuring appears viable option for growth of power sector in the State.

At present BTPS is the only generating unit under Bihar State Electricity Board. No new or additional unit has come up in the last 25 years. Board has constructed a number of 220KV and 132KV transmission lines and total of 14 Nos. of transmission lines of 220KV with a circuit km length of 1127 km and 80 transmission lines of 132KV with a circuit km length of 4350 km in the State in the last three years. There are 7 nos. of 220 / 132KV and 62 nos. 132/33KV grid sub-stations commissioned in the State. The work of sub transmission scheme under RSVY. Phase-I Part-I & II

under Phase Part-II scheme and work of construction of grid sub-station and 132KV line under State Plan are under different stages of pipeline/ under progress. But the total power evacuation capacity as on now is still 1700MW to 1800 MW only. The distribution system in the State is not stable although efforts have been made to strengthen the distribution system under APDRP and restructured APDRP and other schemes.

Issues to be Addressed to Improve Power Sector Performance in the State

Nuclear Power Generation

Nuclear power is an established source of energy to meet the base load demand. Today, India is almost self-sufficient in meeting the needs of Indian designed Nuclear Power generating units. Present installed capacity in India is 4560 MW and 5350 MW. Capacity addition is under way. There is target of achieving 20,000 MW generation by FY 2020. Nuclear Power Corporation of India is in talk with NTPC, IOCL, Indian Railway and various Electricity Boards to form joint venture for nuclear power generation. BSE Board and State Government should take up the matter with NPCIL and other appropriate authority for setting up nuclear power plants in Bihar.

Natural Gas / LNG based Power Generation

Gas fired power plants have their advantages over other forms of fossil fuels and can be of great help in meeting peak demand. Nearly 10% of generation in India is gas based. BSEB has proposed combined cycle gas-based thermal power station under Rastriya Sam Vikas Yojna as Gas Authority of India Ltd. is extending the HBJ Gas Pipeline of Bombay off-shore to Haldia pipeline which is to pass through Bihar from Mohania-Sasaram-Dehri-Gaya route. Gas Authority of India Limited is on way to supply of natural gas to Barauni Fertilizer plant. Board and State Government should set up a separate cell at Apex Level to monitor ,co-ordinate and expedite the matter.

Thermal Power Generation

In the present scenario of availability-based tariff no power utility can survive without having a reasonable generating capacity of its own. In spite of exploitation of all available energy sources coal would remain the primary source fuel for meeting future electricity demand of the state presently. With financial crunch Board / State Govt. can explore IIP / JVC mode of power generation. Generation initiatives like (1) expansion of BTP (2x500 MW) (2) New plant at Navinagar (3x660MW) through JVC of BSEB, NTPC needs to be expedited. MOU for purchase of power from M/s Jas

Infrastructure Capital, M/s Nalanda Power Company, M/s Adhunik Power and Natural Resources Pirpanti has signed by BSEB. Any difficulty in maintaining schedule of construction / commissioning should be monitored and necessary help at the Government level should be provided.

Setting up of IPP at Banka (4x660MW), Pirpainti (2000MW) and Kahalgaon (2x660MW) (4) Purchase of power through competitive bidding should be expenditure. Now Mega power policy has also been amended to hasten the growth of capacity addition, which allows selling power through tariff based competitive bidding with priority in coal linkage norms. The process needs to be examined / re-looked by the BSEB and the Government of Bihar.

Transmission System

The Board has taken initiative for transmission system under different phases and it is expected that with the implementation of these phases, the transmission capacity would be adequate and will meet the requirement of proper corridor for open access customers. But Board should make a study of all the existing intrastate and interstate transmission system and accordingly prepare a ten-year plan keeping in view of open access requirement so that future demand is adequately met.

Distribution Loss

The distribution is the most critical segment of the power sector and the real challenge of reforms lies in efficient management of distribution system. The present high level of T&D loss in BSEB is a matter of great concern. The Commission has been constrained to limit the level of loss each year at pre defined level and accordingly incorporated in the ARR of tariff petition of the Board. Now the fact is that the Board is not able to measure the actual T&D loss in absence of metering in the system. It is adopting the T&D losses fixed by the Commission in the ARR and arriving at the energy requirement to meet the demand. The Commission has observed that during 2006-07 T&D loss was as high as 57.6%. The energy accounting and audit at various level in distribution system such as 33/11 kV S/S, 33 & 11 KV feeders provides reliable and actionable data on the actual loss comprising of technical, commercial losses & theft etc. but in absence of metering it is not possible to account for losses at different bus voltage level. Out of existing 1502 number of 11 kV feeders the Board has given 277 Nos. 11 kV rural feeders to different agencies on revenue collection based franchise but proper energy accounting is not being maintained. Similarly, as per record provided by Board 16035

Nos. of distribution transformers are provided with meters against total of 51996 nos of existing distribution transformers. But so far distribution transformer-wise energy accounting has not been done. An agency was also hired to take meter reading of such DT for a year but it is hardly of any use in absence of distribution transformer wise consumer billing ledger. These are the serious issues, which needs to be addressed by the Board.

The Commission has also conducted third party energy audit of technical and financial data submitted by the Board in this tariff petition submitted by BSEB. Board has taken action to replace 3.48 lakhs single-phase meter and about 14,400 three phase meter out of 4 lakhs single phase and 26000 three phase meters available. But the number of unmetered consumers has gone up from 8.80 in the year 2006-07 to 12.80 lakhs at present. The situation is such that even 440 one number of government office and residential quarter have defective meters. This is gross violation of the provision of Section 55 of Electricity Act, 2003 and this gives an impression that Board is not sincere on this issue of 100% metering which is benchmark for any utility for carrying distribution business. The MIS system has not been implemented in all the districts of Bihar. SCADA system started under PESU area in 2005 but it is yet to be fully commissioned. With growing number of consumers it is not possible to analyses the technical and financial data. MIS system needs to be implemented without any further delay.

The reform needs to start from consumer metering end, which will not only improve the revenue but will reduce losses and improve the existing system stability. Focus needs to be given outsourcing some of the of activities of distribution system like distribution transformer / feeder-wise accountability, energy audit, MIS, increase in outsourcing of collection points, HVDS system in selected feeders etc.

Renewable Energy

Cogeneration from bagasse and generation from biomass has more than 600 MW potential in the State, which can be tapped immediately. There are several success stories of village electrification, and for agricultural and lighting purpose stand alone type biomass based generation in the state and this needs to be replicated. State is favourably placed for harnessing solar power on de-centralized basis. This has immense potential on decentralized basis which also suits our State for meeting the power requirement particularly of rural areas. Such power can be generated without any gestation period.

Bihar lies on low wind zone. A few places like boarder area of Nepal, river bank areas, some advantageous hill formation to tunnelise wind velocity may have some potential for small power generation. C-Wet is carrying out wind measurement at different places Adhaura, Lalganj, Simultala, Raxaul, Bodh Gaya, etc. The actual wind resources can be known only after such survey is done. But there is potential for low velocity wind pumps with improved design.

To promote renewable energy in the State, the Commission has framed regulations on Renewable Power Purchase Obligations, its Compliance and REC Framework Implementation. Under these Renewable Purchase Obligations, the Board shall have to purchase 1.5% of its total energy consumption (total energy input – T&D loss) during 2010-11. Further, the 0.25% of the renewable purchase obligation so specified shall be procured from generation based on solar energy. The Commission has also designated Bihar Renewable Energy Development Agency as State Agency for accreditation and recommending the renewable energy projects for registration.

Demand Side Management (DSM)

9.1 INTRODUCTION

Demand Side Management (DSM) programme consists of planning, implementation and monitoring of utility's activities designed to encourage customer to amend their electricity consumption patterns both with respect to timing and level of electricity demand so as to help the consumer to use electricity more efficiently. Various factors such as increasing economic activities and population growth are resulting in additional pressure in ever increasing power demand when the State is already facing acute power shortage. There is hardly any generation of its own and the state solely depends on purchase of power from central generating stations at a fairly high cost. Besides, addition of generating capacity to meet the demand involves huge capital investment.

To promote DSM, new energy conservation legislation and various other policies and programmes have led to widespread marked development through better standards appliances and equipments, energy efficiency labeling, mandatory energy audit, awareness and training, financial and physical incentives, etc. However, at present there are some deficiencies in the existing regulatory and policy framework as a result there is lack of clarity of obligation for distribution utilities to take up DSM measures. The Commission is framing DSM Regulation, which will be obligatory on the part of utilities in the State to implement once it is framed and enforced. However, some of the important aspect of the DSM is highlighted which the Board is expected to follow:

9.2 DEMAND SIDE MANAGEMENT IN BSEB

There is unacceptable high T&D losses in the Board and the Commission has been constrained to limit the level of loss each year at predefined level and accordingly incorporated in the ARR and Tariff Petition of the Board and the fact is that Board is adopting the T&D loss fixed by the Commission in the ARR and arriving at the energy requirement to meet the demand. But the actual level of power loss is apparently high and Board is incurring huge losses. Demand Side Management initiative can be

one important tool to reduce power demand and improve revenue of the Board which includes:

- (a) Demand outstripping the capability to power supply particularly peak load.
- (b) Improving the cash flow revenue of the Board.
- (c) Improve the quality / reliability of power supply.
- (d) Mitigate the impact of rising tariff.

DSM programme particularly in residential and agricultural sector would have a positive effect on Board's revenue and a very significant power saving potential. In this tariff order, some of the measures like mandatory TOD tariff, two part tariff for three phase consumers have been reduced but some of the other DSM programme that can be taken up and their associated advantages are:

- (1) The National Electricity Policy envisages that adoption of energy efficiency and demand side management would lead to potential energy savings.
- (2) It is a cheap option as compared to capacity addition.
- (3) It enables reducing carbon emission and also defers investment to subsequent years.
- (4) Energy improvements needs to be targeted in sectors like residential sector, commercial building, street light and agriculture sector, small and medium enterprises.
- (5) Use of CFL and LED lights can be encouraged with adequate arrangement for disposal of unserviceable CFLs.

The objectives like power shortage mitigation, peak reduction, cost effective energy saving, reduction green house gases, lowering the cost of electricity should be the basis of DSM programme. In the first phase, an assessment of the technical potential needs to be estimated. Thereafter a DSM target should be set after DSM plan is prepared. For implementation of the programme a DSM Cell should be constituted in the Board with its role and responsibilities clearly defined.

The Board should focus on orientation / workshop for creating awareness among the consumers. Apart from building of awareness Board should concentrate on:

- Reduction of T&D losses
- Improving the quality of power supply

- Providing reactive compensation like capacitors etc.
- Metering and billing.
- Implementation of energy efficient motors in agriculture pumps.
- CFL and LED light for domestic consumers.

The above measures are expected to reduce the energy consumption and demand and save cost and make power available to hitherto starved rural areas.