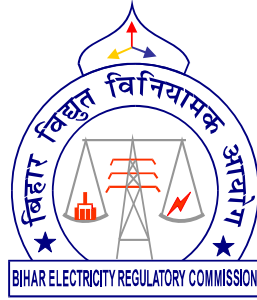


BIHAR ELECTRICITY REGULATORY COMMISSION

Ground Floor, Vidyut Bhawan-II

Jawahar Lal Nehru Marg

Patna-800 021



TARIFF ORDER

Passed in case No. TP-I of 2006

On

29th November, 2006

In the matter of:

**Determination of Aggregate Revenue Requirement (ARR)
and Retail Tariff for the FY 2006-07 for supply of electricity to consumers
in the State of Bihar by the Bihar State Electricity Board.**

Bihar State Electricity Board

Vidyut Bhavan
Jawahar Lal Nehru Marg
Patna

-

Petitioner

TABLE OF C O N T E N T S

Chapter No.	Title	Page No.
	Order	i-ii
1	INTRODUCTION	
	1.1 Background	1
	1.4 Tariff Filing	2
	1.5 Publication of Tariff Proposal for Notice of the Public	3
	1.6 Public Hearings	5
2	POWER SECTOR IN BIHAR – AN OVERVIEW	8
	2.1 GENERAL	8
	2.2 A BRIEF OVERVIEW OF BSEB	8
	2.3 GENERATION	8
	2.3.1 Installed Generation Capacity	8
	2.3.4 Capacity available from other sources	10
	2.3.5 Capacity Addition	10
	2.4 TRANSMISSION	11
	2.5 DISTRIBUTION	11
	2.5.1 Distribution Network	11
	2.5.2 Consumer Profile	11
	2.5.3 Transmission and Distribution (T&D) Losses	13
	2.5.4 Demand and Supply Position	13
	2.6 ENERGY BALANCE	14
	2.7 FINANCIAL PERFORMANCE OF THE BOARD	15
	2.7.1 Financial performance of BSEB: Profit and Loss Account	15
	2.7.2 Balance Sheet	17
	2.8 POWER SECTOR REFORMS AND RESTRUCTURING	18
	2.9 METERING	18
	2.10 ENERGY AUDIT	19
	2.11 BILLING AND COLLECTION EFFICIENCY	19
	2.12 ARREARS	19
3	TARIFF POLICIES AND PHILOSOPHY	
	3.0 BACKGROUND	20
	3.1 ELECTRICITY TARIFFS	21
	3.2 RATE OF RETURN AND PERFORMANCE BASED REGULATION	22
	3.2.1 Embedded cost and Marginal cost	22
	3.2.2 Rate of Return Regulation	23
	3.2.3 Performance Based Regulation	25
	3.3 TARIFF SETTING – PRINCIPLES AND PROCEDURES	26
	3.3.1 Electricity Act, 2003	26
	3.3.2 National Electricity Policy 2005	27
	3.3.3 Tariff Policy	27
	3.3.3.1 Tariff Framework: Tariff Policy	28
	3.3.3.2 Generation Tariff	28
	3.3.3.3 Transmission Tariffs	29
	3.3.3.4 Distribution Tariffs	29
	3.3.3.5 Multi Year Tariff	29
	3.3.4 Tariff Setting Procedure	30
	3.4 TARIFF DESIGN	30
	3.5 COMMISSION'S APPROACH	35

4	OBJECTIONS/SUGGESTIONS FROM THE CONSUMERS / STAKEHOLDERS ON THE TARIFF PETITION AND RESPONSE OF BSED			
	4.1	INVITING OBJECTIONS/COMMENTS ON TARIFF PETITION	32	
	4.2	PUBLIC HEARINGS	32	
	4.3	OBJECTIONS/SUGGESTIONS OF PUBLIC AND RESPONSE OF BSEB	33	
	4.4	COMMISSION'S COMMENTS	49	
5	SUMMARY OF AGGREGATE REVENUE REQUIREMENT FILING FOR 2006-07		50	
6	AGGREGATE REVENUE REQUIREMENT FOR 2006-07			
	6.1	BACKGROUND	60	
	6.2	ENERGY SALES FOR THE YEAR 2006-07	60	
		6.3.1	Kutir Jyoti – Rural and Urban	62
		6.3.2	Domestic – Metered and Unmetered	62
		6.3.3	Non-domestic – Metered and Un-metered	64
		6.3.4	Public Lighting	65
		6.3.5	Irrigation / Agricultural Pumpsets	65
		6.3.6	Public Water Works	67
		6.3.7	Low Tension Industry (LTIS)	67
		6.3.8	High Tension (HT) Industry	68
		6.3.9	Railway Traction	69
		6.3.10	Sales outside the State including Nepal	69
		6.3.11	Total Energy Demand (Sales)	70
	6.4	TRANSMISSION AND DISTRIBUTION (T&D) LOSSES	71	
	6.5	ENERGY REQUIREMENT AND ANALYSIS		73
		6.5.1	Energy Requirement	73
		6.5.2	BSEB's Own Generation	73
	6.5.3	Purchase of Power from CGSs and other sources	74	
6.6	ENERGY BALANCE	76		
6.7	EXPENDITURE		76	
	6.7.1	Generation Cost (BSEB's Own Generation)	76	
	6.7.2	Power Purchase Costs	78	
	6.7.3	Employee Cost	79	
	6.7.4	Administration and General (A&G) Expenses	81	
	6.7.5	Repair and Maintenance (R&M) Expenses	82	
	6.7.6	Interest and Finance Charges	83	
	6.7.7	Depreciation	86	
6.8	PROVISION FOR BAD AND DOUBTFUL DEBTS	87		
6.9	OTHER INCOME	87		
6.10	AGGREGATE REVENUE REQUIREMENT	88		
6.11	INCOME FROM EXISTING TARIFF	88		
6.12	GRANT FROM STATE GOVERNMENT	90		
6.13	REVENUE GAP	90		
6.14	REVENUE GAP AND RECOVERY THEREOF	91		
6.15	REGULATORY ASSET	91		
6.16	REVENUE FROM APPROVED TARIFF	91		
6.17	CROSS SUBSIDY	93		
7	TARIFF PRINCIPLES AND DESIGN			
	7.1	BACKGROUND	94	
	7.2	TARIFF PROPOSED BY THE BOARD AND APPROVED BY THE COMMISSION	95	
	7.3	TARIFF CATEGORIES	96	
	7.4	TARIFF RATES		100
7.4.1		Domestic	100	
7.4.2		Non-Domestic	101	

8	DIRECTIVES TO BSEB		
	8.1	Directive-1: Cent Percent Metering	129
	8.2	Directive-2: Replacement of Non-Functional / Defective meters	130
	8.3	Directive-3: Setting up of Independent Third Part Testing Arrangement	131
	8.4	Directive-4: Efficient Meter Reading, Billing and Collection	132
	8.5	Directive-5: Meter Reading of HT Services	132
	8.6	Directive-6: Replacement of old Electromagnetic Meters with Static Meters	133
	8.7	Directive-7: Reduction of Transmission and Distribution (T&D) Losses	134
	8.8	Directive-8: Energy Audit and Demand Side Management	135
	8.9	Directive-9: Pilferage of Electricity	135
	8.10	Directive-10: Enumeration of Agriculture Pumpsets and other Service Connections	137
	8.11	Directive-11: Assessment of Agricultural Consumption	137
	8.12	Directive-12: Regulations of Power Supply to Rural Areas	137
	8.13	Directive-13: Quality of Power Supply and Service to consumer	138
	8.14	Directive-14: Management Information System	138
	8.15	Directive-15: Annual Accounts of the BSEB	139
	8.16	Directive-16: Arrears	139
	8.17	Directive-17: Collection of Arrears	140
	8.18	Directive-18: Asset Register	142
	8.19	Directive-19: Time of Day (ToD) Tariff	142
	8.20	Directive-20: Recovery of Fuel Price Adjustment from Consumers Paying Monthly Minimum Charges	142
	8.21	Directive-21: Fuel and Power Purchase Price Adjustment	142
	8.22	Directive-22: Adjustment of Payment of Current Bills against Delayed Payment Surcharge (DPS)	143
	8.23	Directive-23: Organizing Operational Circles as Cost Centres	144
	8.24	Directive-24: Performance of BSEB Generating Stations and their Parameters	144
	8.25	Directive-25: New Generation Projects	145
	8.26	Directive-26: Employee Cost	145
	8.27	Directive-27: Energy Conservation	146
	8.28	Directive-28: Investment Programme	146
	8.28	Directive-29: APDRP Scheme	146
	8.29	Directive-30: Registered and Effective Consumers	147
	8.31	Directive-31: Cost of Supply and Cross Subsidy	147
	8.32	Directive-32: Restrictions on Consumption of Energy	147
	8.33	Directive-33: SCADA and Data Management	148

LIST OF TABLES

Table No.	Title	Page No.
2.1	BSEB – Installed Generation Capacity	9
2.2	Allocation from Central Sector Power Stations as on 15.11.2005	10
2.3	Transmission Network (As on 31.3.2005)	11
2.4	Distribution Network (As on 31.3.2005)	11
2.5	Consumer Profile (2005-06)	12
2.6	Power Supply Position	14
2.7	Energy Balance	14
2.8	Profit and Loss Account: FY 2001-02 & 2002-03 (Un-audited)	16
2.9	Balance Sheet for Financial Year 2002-03 and 2001-02	17
2.10	Sales and Revenue	18
5.1	Revised ARR for FY 2006-07 as submitted by BSEB	51
5.2	Aggregate Revenue Requirement for 2006-07	52
5.3	Revenue from Existing Tariff and Other Charges for 2006-07	53
6.1	Category-wise Actual Energy Sales for FY-2003-04 to FY 2005-06 and Projections for FY-2006-07	61
6.2	Energy Sales for FY 2006-07	70
6.3	Energy Requirement for 2006-07	73
6.4	Power Purchase as projected by BSEB for 2006-07	75
6.5	Energy Balance	76
6.6	Energy Purchase Costs Proposed by BSEB	79
6.7	Employee Cost	80
6.8	Administrative and General Expenses	82
6.9	Repair and Maintenance Expenses	83
6.10	Interest on Loans	83
6.11	Loans drawn, Repayments made and balance outstanding	84
6.12	Utilisation of State Government Loans	85
6.13	Depreciation	86
6.14	Other Income (Non-Tariff Income)	87
6.15	Aggregate Revenue Requirement (ARR) Projected by BSEB and Approved by the Commission	88
6.16	Revenue from Existing Tariff for 2006-07	89
6.17	Revenue Gap	90
6.18	Estimated Revenue from Approved Tariff in FY 2006-07	92
6.19	Cross Subsidy with Approved Tariff for 2006-07	93

LIST OF ANNEXURES

Annexure	Title	Page Nos.
1.1	List of Objectors	6
1.2	List of Participants in Public Hearings on 17 th and 18 th October 2006.	7
5.1	Existing Tariff and proposed tariffs by BSEB for 2006-07	54
7.1	Schedule for Retail Tariff Rates and Terms and Conditions of supply for FY 2006-07.	102

Chapter-1

Introduction

1.1 BACK GROUND

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

1.2 The functions of State Regulatory Commission have been specified under Section 86 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 (1) 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.

1.3 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. It is a deemed licensee in terms of Section 14 of the Electricity Act, 2003. Bihar State Electricity Board 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 and a licensee under the provisions of the Act for a period of one year from 10th June, 2003 i.e. the appointed date. Subsequently it has been mutually agreed by the Central Government and the Government of Bihar to authorize the Board to continue to function as a State Transmission Utility and Licensee. In the year 2000 the State of Bihar was bifurcated into two successor States of Bihar and Jharkhand and the; Bihar State Electricity Board was bifurcated into two separate Boards w.e.f. 1st April, 2001. The last tariff revision of the BSEB was made in the year 2001 for all categories of LT consumers and HTSS (Induction Furnaces), whereas the 1993 tariff for HT and Railway consumers remained unaffected but with addition of fuel surcharge.

1.4 TARIFF FILING

The Bihar State Electricity Board filed a petition before the Commission on 10th April, 2006 for acceptance of Aggregate Revenue Requirement (ARR) of Rs.2870.60 crore for the year 2006-07 and seeking revision of tariff to meet the aforesaid ARR of Rs. 2870.60 crore.

On scrutiny of the tariff petition it was observed that it does not contain necessary supporting informations/particulars/data in respect of demand forecast, AT & C losses, power purchase, revenue and expenses, revenue arrears, details of depreciation, interest on loan, audited accounts, percentage increase of tariff category wise etc. It was also observed that the gap between the ARR and Revenue income from existing tariff was substantial. The Commission communicated its observations and deficiencies in the petition to the Board vide its letter No. 175 dated 6.5.2006. The Board submitted further information/ data vide their letter No.452 dated 22.05.2006. The contents of the petition and the information/ data submitted by the Board vide aforesaid letter dated 22.05.2006 was discussed with the Board's officers on 06.6.2006 to seek further clarifications on the tariff proposal and subsequent information/ data submitted by them. Based on discussion, the Board furnished further clarifications to the Commission vide their letter nos. 507 dated 08.6.2006 and 513 dated 13.6.2006, revising the ARR which included a State Government assistance of Rs. 720.00 crores in the form of grant as a resource gap and reducing the interest component on State Govt. loans and also the revenue from Delayed Payment Surcharge. However the Board did not remove deficiencies noted in the Tariff proposal. Accordingly the Board was asked by the Commission vide letter No.222 dated 12.06.2006 to make available required information based on the

submissions made vide their letters dated 08.06.2006 and 13.06.2006 which was followed by reminders dated 19.06.2006 and DO letter dated 03.07.2006 and 18.07.2006.

The Board, instead of making available these information filed a revised petition on August 04, 2006 maintaining the original ARR of Rs. 2870.60 crores and revising the tariff upwards, completely ignoring the submissions made earlier before the Commission in their letters dated 08.06.2006 and 13.06.2006, in respect of State Government's grant and interest on State Government loans.

The Commission nevertheless took the revised tariff petition filed on 04.8.2006 on record on 11.8.2006 and marked as Case No. TP-I of 2006.

1.5 PUBLICATION OF TARIFF PROPOSAL FOR NOTICE OF THE PUBLIC.

In accordance with the provisions of Section 64(2) & 64(3) of the Electricity Act, 2003 the Commission with a view to ensure transparency in the process took a decision to hold public hearings. After the revised tariff petition was taken on record, the Board was directed to publish the revised tariff petition in abridged form as communicated by the Commission in two daily leading News Papers of the State having wide circulation and also to post it on the Board's Website inviting objections and suggestions from stake holders/ consumers. The public notice was published in the news papers as detailed below :

1. Time of India (English) on 13.8.2006
2. Hindustan Times (English) on 13.8.2006
3. Dainik Jagaran (Hindi) on 15.8.2006
4. Inqalab-e-Jadeed (Urdu) on 13.8.2006

Copies of revised tariff petition for the year 2006 – 07 were made available in the office of Chief Engineer (Commercial), BSEB Patna and also in the offices of all General Manager – cum - Chief Engineers Supply Areas of the Board for inspection and taking copies of the same.

Written objections/ suggestions/ comments on the tariff petition, in question, were received from seventeen (17) number of consumers/ consumer organisations by the Commission within the due date i.e. 18th September,2006 expressing concern over the proposed steep increase in tariff rates, the working of BSEB, high T&D losses

and a number of other issues. These objections/ comments have been described in brief in Chapter – 4 of the Tariff order.

The list of objectors is given in Annexure-1.1.

After the due date for filing objections to the tariff petition was over, a copy of order dated 18.9.2006 passed in CWJC No. 11430 of 2006 Birendra Pd. Sinha vs the State of Bihar & others in the matter of anomalies in charging urban domestic tariff from the residents of Brindavan colony, Phulwarisharif, Patna passed by the Hon'ble Patna High Court was received by the Commission. The order is reproduced below :

“Learned Counsel appearing for the respondent Electricity Board Mr. Mihir Kr. Jha appears and states that objections have been invited by the Bihar State Electricity Regulatory Commission and the petitioner, if so desired, may file objection. It is in this context, it is left to the petitioner to file objection before the appropriate Regulatory Commission, which will look into his objection and pass an appropriate order. In this view of the matter, we are not inclined to entertain this petition as a Public Interest Litigation.

Therefore, the petition shall stand dismissed. No cost.”

Sri Ajit Kumar, Advocate C/o Sri Birendra Prasad Sinha was informed to make his submission before the Commission in the public hearing to be held on 17.10.2006.

A copy of the order of Hon'ble Patna High Court was sent to the BSEB on 8.11.2006 for their view in the matter who responded vide letter dated 10.11.2006 as given below :

“The issue raised by Shri Birendra Prasad Sinha is relating to interpretation and implementation of provisions of Board's existing tariff. Local Board offices have to bill as per existing tariff, which will remove the anomaly if any in charging rural/ urban domestic tariff to the referred localities.

The issue raised does not need any consideration by Hon'ble Commission while determining tariff for Financial Year 2006-07.”

After the due date for filing objections to the tariff petition was over and response of BSEB thereon was received, BSEB vide letter No. Rev/ Kutir Jyoti/ 1098/ 2006 – 682 dated 11.10.2006 informed that the Board now proposes to charge the Urban BPL

consumers on the same rate as applicable to Rural BPL consumers and sought the approval of the Commission.

As the proposal was not covered by the Tariff petition earlier filed by the Board, the Board was directed to publish contents of the proposal in leading News Papers. The Board accordingly published the same in the following News Papers on 14.10.2006.

1. Times of India (English)
2. Hindustan Times (English)
3. Hindustan (Hindi)
4. Dainik Jagaran (Hindi)
5. Inqalab-e-Jadeed (Urdu)

1.6 PUBLIC HEARINGS

After receiving response from the BSEB, on the objections/ comments raised by various consumers/ consumer associations/ members of public, a public notice was published in the following leading Newspapers on 10th October 2006 giving due information to the general public, interested parties, objectors and the consumers, about public hearings to be held at Patna on 17th & 18th October 2006 and also on 19th October 2006 in case hearing remained inconclusive.

1. Times of India (English)
2. Aaj (Hindi)
3. Dainik Jagaran (Hindi)

Public Hearings were held as per schedule. Besides, the objectors who submitted the written objections / comments on the tariff petition and others who participated in the hearings were also heard.

The details of participants in Public Hearing are given in Annexure-1.2.

LIST OF OBJECTORS

Sl. No.	Name and Address of the Party
1	Sri Ashok Kumar Singh, Gandhipath, Sasaram (Rohtas)
2	Director Dina Metals, Didarganj, Patna
3	Sri Ranjan Kumar Thakur Rosra, Samastipur
4	Sri Sanjiv Kumar Sahu, Act. – President Uttar Bihar Udyamee Sangh, Muzaffarpur
5	Magadh Advertising Bureau S.P. Verma Road, Patna
6	Chief Elect. Engineer East Central Railway
7	Bihar Industries Association Patna
8	Patiliputra Co-operative Housing Const. Society Limited, Patna
9	Kalyanpur Cement Limited, Fraser Road, Patna
10	Biyahut Sabha, Muzaffarpur
11	The Bihar Chamber of Commerce Patna
12	Bihar Steel Manufacturers Association Exhibition Road, Patna
13	Sri Shyamdeo Prasad Singh Nawada
14	Er. Nagender Singh Patna
15	Sri. B.R. Mohan Patna
16	Sri. Jitendra Sharma Muzaffarpur
17	Sri Krishna Kumar Lal Patna

Annexure-1.2

List of Participants in Public Hearing on 17th and 18th October,2006

S.N	Name & address of the Participants	Date	
		17.10.06	18.10.06
1	Sri Nagendra Prasad Singh, Patna	✓	
2	Sri Krishna Kumar Lal, Patna	✓	
3	Sri Arjun Lal for Bihar Chamber of Commerce, Patna	✓	
4	Sri Dinesh Chandra Prasad for Biyahut Sabha, Muzaffarpur	✓	
5	Sri Shamdeo Prasad Singh, Nawada	✓	
6	Sri Arjun Lal for Bihar Industries Association, Patna	✓	✓
7	Sri K.G. Husnain for Dina Metals Limited, Patna	✓	
8	Sri B.R. Mohan for 440 V Vidyut Upbhokta Sangh, Patna		✓
9	Sri Arjun Lal for Kalyanpur Cements Limited		✓
10	Sri Laxmi Narayan Singh, NDS Consumer, Patna		✓
11	Sri Anil Kumar Sinha, Consumer, Patna		✓
12	Sri Parimal, Manager, Magadh Advertising Agency, Patna		✓
13	Sri Arjunlal for Bihar Steel Manufacturers Association		✓
14	Sri Ajit Kumar, Advocate	✓	

Chapter-2

Power Sector in Bihar – An Overview

2.1 GENERAL

A brief analysis of operational and financial performance of the BSEB is necessary to provide the perspective in which the Aggregate Revenue Requirement (ARR) and Tariff Proposal for the year 2006-07 filed by the Board has been examined. The objective is also to analyse the operational and financial efficiency levels of this power utility in the state. The Board is yet to introduce a credible management information system. The performance assessment is based on the information provided by the BSEB in the tariff petition and subsequent submissions during consideration of this petition.

2.2 A BRIEF OVER VIEW OF BSEB

The BSEB is an integrated power utility responsible for generation, transmission and distribution of electricity in the state of Bihar and is yet to be restructured as per Electricity Act, 2003. BSEB is the State Transmission Utility and a deemed licensee in the state for electricity distribution under the transitional provision as enjoined in section 172 of the Electricity Act, 2003.

2.3. GENERATION

2.3.1 Installed Generation Capacity

The BSEB has a total installed generation capacity of 540 MW (all thermal). The Bihar State Hydro Electric Power Corporation (BSHPC) has an installed capacity of 44.10 MW.

There has been no addition to thermal capacity over the last two decades, only some small Hydro capacity has been added.

2.3.2 BSEB has two coal based thermal power plants. The details of plants are as given in Table 2.1 below:

Table 2.1

BSEB – Installed Generation Capacity

S.N	Name of Plant	Capacity (MW)		Date of commissioning	Present status
1	Barauni TPS 320 MW	Unit-1	}	Have been retired	Have been retired
		Unit-2			
		Unit-3			
		Unit-4	50 MW	09.11.1969	Under shut down since 24/04/96
		Unit-5	50 MW	01.12.1971	Under shut down since 15/03/95
		Unit-6	110 MW	01.12.1984	Running under deteriorated condition
		Unit-7	110 MW	31.03.1985	
2	Muzaffarpur TPS 220 MW	Unit-1	110MW	31.03.1985	Both units are under shut down since October, 2003
		Unit-2	110 MW	17.03.1986	
	Total capacity	540			

Though the installed capacity is 540 MW, most of the units are under shut down for a long period and the actual generation is also very meager i.e. in the range of 30-50 MW.

2.3.3 Renovation & Modernisation (R&M) of the units should have been taken by the BSEB in time to make the plant operative and obtain the maximum output in order to bridge the demand – supply gaps.

It has been informed by the BSEB that R&M of the units 6&7 at Barauni TPS is being taken up and one unit would be put back in service by December, 2006 and the other during 2007.

The Muzaffarpur TPS has been taken over by a joint venture company comprising of NTPC & BSEB having holding of 51% and 49% respectively. The joint venture company shall be taking up the R&M of the units and the units are likely to become operational during the year 2007.

2.3.4 Capacity available from other sources

Besides availability of power from own power plants and BSHP, the BSEB has allocation from central sector generating stations and other sources as given in Table 2.2 below.

Table 2.2
Allocation from central sector power stations as on 15/11/2005

S.N	Station	Capacity (MW)	Share of BSEB (%)	Share in (MW)
NTPC				
1	Farakka TPS	1600	22.68	362.88
2	Khalgaon TPS	840	39.40	330.96
3	Talchar TPS	1000	32.50	325.00
				1018.84
NHPC				
4	Rangit HPS	60	35.00	21.00
5	Chukka HPS (Bhutan)	336 (270 MW)*	29.63	80.00
				101.00
6	Tala - @ (Bhutan)	1020 (867)	32.00	260.10

*capacity allocated to eastern region is 270 MW

@ Tala Hydro Electric Power Project has a capacity of 1020 MW (6X170MW); share of Eastern Region is 85% (867 MW). The first phase of 3X170 MW is programmed to be commissioned by October-December, 2006.

As per Ministry of Power Notification dated 7th July 2006, the share of Bihar in Kahalgaon TPS is withdrawn to the extent power is made available to Bihar from Tala Hydro Electric Power Project, similar to other states in Eastern Region.

The allocation from central generating stations is subject to minor adjustment from time to time. In addition, the state draws about 100 MU in a year from Nepal at 132 kV, 33 kV and 11 kV under a bilateral agreement.

2.3.5 Capacity Addition

No new generation capacity is under implementation or execution by the BSEB. Though capacity of about 4530 MW is programmed by BSEB during XIth and XIIth Plan Periods, no approval/ clearances as required for implementation of these power projects have been obtained by the BSEB.

2.4 TRANSMISSION

Bihar has a transmission network of 220 kV & 132 kV transmission lines as given in Table 2.3 below:

Table 2.3
Transmission Network (As on 31/03/2005)

Voltage	Transmission lines (Ckt. / km)	No. of Sub Stations	Total Sub Station capacity (MVA)	Number of Transformers
*440 kV	75.00	-	-	-
220 kV	957.02	5	1300	11
132 kV	3648.71	44	2077.90	93

* charged at 220 kV

The existing transmission system is capable to meet a demand of about 1000 MW.

Major investments are required for augmentation of transmission system to meet the future load growth.

2.5 DISTRIBUTION

2.5.1. Distribution Network

Sub transmission and distribution network in the state is given in Table 2.4 below:

Table 2.4
Distribution Network (as on 31/03/2005)

Voltage	Sub transmission / Distribution lines (CKt km)	No. of Sub Stations	Transformer capacity (MVA)
33 kV	5761.80	362	2544.46
11 kV	35053.77	35746*	2982915
LT lines	65859.81	-	-

* Distribution Transformers

About 900 MW of power is distributed through 33 kV, 11 kV & LT Systems.

2.5.2. Consumer Profile

An overall view of the distribution end of the business, in terms of category-wise number of consumers, their connected load, and the sale of electricity during the Financial Year 2005 – 06 is given in Table 2.5 below:

Table 2.5
Consumer Profile (2005 – 06)

Category	No. of consumer / connections (as on 01/04/2006)	Connected load (kW)	Energy consumption (MU)
1. Domestic			
i) Kutir Jyoti	270000	2700	58.30
ii) Domestic – I (Rural) (unmetered)	490000	405000	235.20
iii) Domestic – II	750000	850000	964.50
2) Non Domestic			
i) Non Domestic - I (Rural Unmetered)	14500	12600	6.96
ii) Non – Domestic - II	124000	150890	90.53
iii) Non – Domestic – III	5400	52490	197.67
iv) Non – Domestic – IV	1700	9600	5.76
v) Non – Domestic - V	175	2250	1.08
3. Irrigation & Agriculture Service			
i) Unmetered supply			
ii) IAS – I	55500	157600	1282.00
iii) IAS – II	2530	44300	
Metered supply			
i) IAS – I	-	-	-
ii) IAS – II	-	-	-
4) Low Tension Industrial Service			
i) LTIS – I - upto 25 HP	14502	89500	90.00
ii) LTIS – II - 25 to 99 HP	645	29500	41.00
iii) LTIS – III – upto 99 HP	783	24500	190.00
5. Street Lighting, Traffic Lighting and Mast			
i) SS – I (Metered supply)	-	-	-
ii) SS-II (Unmetered)	483	13095	23.00
iii) SS-III (Unmetered)	20	293	1.00
6) High Tension			
i) 11 kV HTS – I	625	139400	295
ii) 33 kV HTS – II	14	21637	78
iii) 132 kV (EHT)	1	13500	59
iv) Specified service (Induction furnaces) HTSS	13	61898	230
7. Railway Traction (RTS)			
i) RTS – I – 25 kV	3	29500	375
ii) RTS – II – 132 kV	10	39500	
Total	1730904	2179753	4224.00

The number of consumers and connected load given is stated to be estimated as compilation of data has not been done by the BSEB.

2.5.3 Transmission & Distribution (T&D) losses

The efficiency improvements in the Board are highly dependant on bringing down the distribution losses. The distribution losses comprise technical and commercial losses. Commercial losses being an euphemism for pilferage as well as inefficiencies due to lack of 100% metering, defective meters and inadequate systems and procedures for meter reading, billing and revenue collection.

The reported T&D losses in BSEB system for 2005-06 are at 37%. This is not based on measurement of losses in the system. It is only computed. It is the difference between energy input and energy metered and energy assessed for unmetered category of consumers. The actual distribution loss in the system would be much higher. In the absence of any energy audit, it is difficult to estimate reasonably the extent of energy losses, if the energy consumed by metered categories are not measured and unmetered categories are not reasonably assessed. It would also be necessary to segregate the Transmission & Distribution losses and Technical & Commercial losses in order to initiate remedial measures.

2.5.4 Demand and Supply Position

The state has power shortage both in terms of demand and energy. The state has little generation of its own and has to totally depend on the power allocation from central sector generating stations. The power availability is not adequate to meet the present demand and therefore the demand is restricted to the availability of power. Further high T&D losses also contribute for reduction in the availability restricting power supply further. The power supply position in the State for last three years is given in Table 2.6 below:

Table 2.6

Power Supply Position

Sl. No.	Details	Energy (MU)		
		2003 – 04 (Actuals)	2004 – 05 (Actuals)	2005 – 06 (estimated)
1	BSEB own generation	296.05	122.70	138
2	Central generating stations including Chukka	5363.244	6024.256	6961
	Less Loss in regional transmission system	(-) 160.897	(-) 180.727	(-) 258
3	Net energy from central sector	5202.347	5843.529	6703
4	4) BSHPC	42.297	39.431	40.00
5	5) Nepal	158.355	97.477	100.00
	Total	5699.029	6103.337	6981
6	Additional drawal from the system under UI charges	211.274	270.359	200
7	Total energy received in the system	5910.303	6373.696	7181

The BSEB does not have proper estimate of peak demand and energy requirement to assess the shortage both in demand and energy, and its demand is restricted to availability.

2.6 ENERGY BALANCE

The energy balance of the BSEB for the years 2003 – 04, 2004 – 05 & 2005 – 06 is given in Table 2.7 below:

Table 2.7

Energy balance

Energy sales	(MU)		
	2003 – 04 (Actuals)	2004 – 05 (Actuals)	2005 – 06 (estimated)
LT Sales	2775.51	2878.91	3187
Industrial HT sales	603.44	595.54	662
Railways	309.48	338.02	375
Inter state sales under UI charges	194.97	259.51	300
Total sales	3883.40	4071.98	4524
T&D losses	2026.903	2301.716	2657
T&D Loss (%)	(34.29)	(36.113)	(37.00)
Energy requirement	5910.303	6373.696	7181.00
Energy met by			
Own generation	296.05	122.70	138
Purchase from central Stations & Chukka	5202.347	5843.529	6703
BSHPC	42.297	39.631	40
Nepal	158.355	97.477	100
Addl. Drawl from the system	211.274	270.359	200
Energy Available	5910.303	6373.696	7181

The T&D losses are predetermined and not based on any energy audit or proper energy accounting.

2.7 FINANCIAL PERFORMANCE OF THE BOARD

The audited accounts of the Board are not available for the years 2002 – 03 to 2005 – 06. The Commission has given direction to get the accounts audited early. The latest accounts made available to the Commission are for the year 2002 – 03 (un audited)

2.7.1 Financial performance of BSEB : Profit and Loss Account

The Revenue account of the Board for the years 2001-02 and 2002-03 (un-audited) is given in Table 2.8 below:

Table 2.8

Profit & Loss Account: FY 2001- 02 & 2002-03 (Un-audited)

(Figures in Rupees)

Schedule	Item	2002 – 03 (Un audited)	2001-02
	Units sold (in millions)	3487.95	3843.61
	INCOME		
1*	Revenue from Sale of Power	9189347770	9098851756
4	Revenue subsidies and grants		
	(a) Subsidy for RE losses	5413000000	4718000000
	(b) Grants - in – Aid for debt services	-	-
5	Other Income	4093875995	4247263397
	Total	18696223765	18064115153
	EXPENDITURE		
6	Purchase of Power	10711488014	10349966693
7	Generation of Power	872119557	1158821761
8	Repair & Maintenance	206238576	272275982
9	Employee costs	3124852030	3392446957
10	Administration and Gen. Expenses	191717610	243103489
11	Depreciation and Related Debits (Net)	1354750267	1356851487
12	Interest and Finance charges	2108210861	1222710342
	Sub - Total	18569376915	17996176711
	Less: Expenses capitalized		
13	Interest and Finance charges capitalised	70500000	75000000
14	Other expenses capitalized	332388885	360657471
	Sub total	18166488030	17560519240
15	Other debits	1706997226	629921396
16	Extra - Ordinary items	-	-
	Total	19873485256	18190440636
	PROFIT / (LOSS) BEFORE TAX	(1177261491)	(126325483)
17	Provision for Income tax	-	-
	PROFIT / (LOSS) AFTER TAX	(1177261491)	(126325483)
	Net prior period credits (charges)	(33525330)	(301284800)
	SURPLUS / (DEFICIT)	(1210786821)	(427610283)
	Surplus as a percentage of the value of fixed assets of the Board in service at the beginning of the year as specified by the Electricity (Supply) Act, 1948. Minimum specified by the State Govt.	3% Not Specified	3% Not specified
	Actual (Minimum surplus specified by the Stat Govt. for subsequent year – Not specified)	(-) 5.76%	(-) 2.12%

* Schedule 2 and 3 relate to element-wise analysis of Revenue and Realization from sales of power, respectively.

2.7.2 Balance sheet

The Balance sheet of the Board for the years 2001-02 and 2002-03 (unaudited) is given in Table 2.9 below:

Table 2.9

Balance sheet for Financial Year 2002 – 03 & 2001-02

Schedule	Particulars	As at 31/03/2003	As at 31/03/2002
	NET ASSETS		
19*	Net Fixed Assets		
	Gross Block	21765223350	21006882722
	Less: Accumulated Depreciation	14712460731	13359125477
	Net Fixed Assets	7052762619	7647757245
21	Capital Expenditure in Progress	2456616060	2246269892
22	Assets not in use	36083009	36083009
23	Deferred costs	-	-
24	Intangible Assets	-	-
25	Investments	2152621200	2198610147
	Net current assets		
26	Total Current assets	33735296211	28313525921
	Less:		
	Total Current Liabilities		
27	(i) Security Deposits from consumers	178473157	101098629
28	(ii) Other current liabilities	50649363375	44716870562
	Total Current Liabilities (i+ii)	50827836532	44817969191
	Net current assets	(17092540321)	(16504443270)
29	Subsidy Receivable from Government	23571481440	18158481440
	NET ASSETS	18177024007	13782758463
	FINANCED BY		
30	Borrowings for working capital	-	-
31	Payments due on capital liabilities	6647791632	4949470528
32	Capital Liabilities	2051603486	2815905073
33	Funds from state Government	10359082100	6113569000
34	Contributions, Grants and Subsidies towards cost of capital assets	756923205	331413957
35	Reserves and Reserve funds	20688	10188
	Surplus / (Deficit)	(1638397104)	(427610283)
	TOTAL FUNDS	18177024007	13782758463

The balance sheet shows that the financial health of the Board leaves a lot to be desired.

2.7.3 The energy sales and revenue for the years 2003-04, 2004-05 and 2005-06 are given in Table 2.10 below:

Table 2.10

Sales & Revenue

Category	2003 – 04 (Actuals)		2004 – 05 (Actuals)		2005 – 06 (Estimated)	
	Sales (MU)	Revenue (Rs. crore)	Sales (MU)	Revenue (Rs. crore)	Sales (MU)	Revenue (Rs. crore)
LT Category	2775.51	462.13	2878.91	464.72	3187	484.87
HT Category	603.44	281.37	595.54	277.69	662	291.04
Railways	309.48	152.77	338.02	172.08	375	173.77
Inter state Sales	194.97	51.00	259.51	70.01	300	149.40
Total	3883.40	947.27	4071.98	984.50	4524	1093.72

The average realization is about Rs.2.42 / kWh. This is a computed figure as a number of consumers are billed at flat rate, not on billed energy.

2.8 POWER SECTOR REFORMS & RESTRUCTURING OF THE BSEB

Reforms in Power Sector in the State are necessary to improve the efficiency of the sector, reducing the T&D losses and costs etc. This is an important area as it has implications not only on consumer tariffs but also on the development of the electricity sector as a whole in the state. The Commission is of the firm view that structural reforms are essential if the efficiency of the power utility in the state is to improve. The State Government therefore, should take immediate steps for restructuring of the Board.

2.9 METERING

Out of total 17.31 lakh consumers of the BSEB, metered consumers are only about 9.00 lakh as on 31/03/2006. The balance 8.31 lakh consumers are not metered which are Kutir Jyoti, rural domestic and non domestic, and agricultural pumpsets. Under the provisions of section 55 of the Electricity Act, 2003 electricity shall not be supplied to any consumer without proper meter. These unmetered consumers are required to be provided with proper meters on top priority.

In addition there might be a number of installations with non functional / defective meters which are required to be replaced. Metering of unmetered installations and replacement of non functional / defective meters is essential for accounting the energy consumed by consumers accurately. This will help improving revenues of the Board and reducing distribution losses.

The Board should chalk out a time bound plan for implementation of cent percent metered supply at the consumer end and proceed to translate the same into action

forthwith in compliance with the provisions of the Electricity Act, 2003. Funding for installation of meters should be tapped from all available sources.

2.10 ENERGY AUDIT

Energy audit is another important area which appears to have been not taken up by the Board as it could be observed that quite a number of meters provided on feeders including 132 kV and 33 kV are defective.

Energy audit is essential to identify high loss areas, technical & commercial losses, so as to take effective steps, both technical & administrative to reduce the losses. The Board must take up on priority, energy audit by providing meters on all feeders upto 11 kV and distribution transformers. This should be taken up initially in all the towns with a population of 50,000 and above where substantial energy is sold and later extended to rural areas.

2.11 BILLING AND COLLECTION EFFICIENCY

Billing and collection efficiency requires considerable improvement. Monthly billing shall be done for all HT consumers and urban consumers, spot billing should be introduced preferably with palm held machines. This may initially be introduced in all urban areas and later extended to rural areas. This will improve the revenue realization. The collection efficiency from the present level of 85% should be improved to cent percent. The Board may outsource the activities of meter reading, billing and revenue collection with strict supervision on the agencies.

2.12 ARREARS

The arrears towards energy dues are as high as Rs. 5101.15 crores as on 31.03.2005. Board has launched one time settlement scheme for recovery of these dues offering waiver of delayed payment surcharge. Efforts should be made to recover the arrears. The consumers who do not come forward to settle the dues under this scheme may be disconnected and service lines dismantled after due notice. The legal action to realize the dues has to be taken up by the Board.

Chapter-3

Tariff Policies and Philosophy

3.0 BACKGROUND

Though the Bihar Electricity Regulatory Commission (BERC) was established in April 2002 under the Electricity Regulatory Commissions Act, 1998 (repealed by the Electricity Act 2003) to regulate the electricity sector in the state of Bihar, it became functional only in August, 2005.

The State Electricity Regulatory Commissions (SERCs) are mandated to discharge its functions under Section 86 of the Act. Besides other functions, the SERCs are mandated to determine the tariff for generation, supply, transmission and wheeling of electricity, wholesale, bulk or retail, as the case may be, within the State;

The BERC would therefore set tariffs in accordance with the principles laid down in the Electricity Act 2003 as well as the policies enunciated in the National Electricity Policy (2005) and the Tariff Policy (2006) notified by the Ministry of Power, Govt. of India.

The Bihar State Electricity Board (BSEB) has not been determining revenue requirements and fixing tariffs on the basis of realistic and economic costs of electricity, both in regard to raising sufficient resources to recover the costs and setting of efficient prices of electricity for consumers.

In the context of increasing challenges and responsibilities for the power sector in Bihar and the need to provide a transparent procedure that would clearly spell out the methodology even while balancing the interests of the utilities to run along commercial lines, the consumers need to be served electricity at a fair price and adequate quality and government subsidies be targeted to the deserving categories of consumers.

The Commission's philosophy and principles of tariff fixation needs to be articulated in the beginning itself. Accordingly, this chapter provides the underlying philosophy of tariff regulation for the electricity sector and spells out the salient features of the legislation and policies that would guide the methodology of tariff setting by the BERC on a sustainable basis.

3.1 ELECTRICITY TARIFFS

The fundamental philosophy of tariff regulation for any public utility is to ensure that the utility does not abuse its monopoly power and the rates set are fair to the utility as well as the consumers. In the absence of monopoly, the best solution to the issue of determining prices and quality of goods and services is a market-driven solution. However, since there is the natural monopoly nature of some portions of the electricity industry, a free market cannot be introduced in all segments of the industry and we must substitute a regulatory framework for the natural efficiency of the market. The market solution would consistently provide the quantum of power and the quality of service that consumers were willing to pay, supplied by the lowest cost producers of the service. This, then, becomes the goal for a Commission regulatory framework to achieve.

The supply of electricity to ultimate consumers involves three main activities:

- **Generation:** The act of producing electricity by thermal, hydro and other means, including the purchase from other sources.
- **Transmission:** "Moving" the electricity through extra high voltage and high voltage system up to distribution level.
- **Distribution:** The act of distribution and delivery to the consumers at suitable voltage.

Electricity priced at various stages of these activities is broadly classified as:

Generation tariff – Ex-bus delivery of electricity at the generating station.

Transmission charges – costs involved in transmission of electricity in bulk.

Distribution charges – costs involved in distribution of electricity

Bulk supply tariff – cost of electricity delivered in bulk mostly at EHV either for redistribution or self consumption.

Retail tariff – cost of electricity delivered to consumers at high, medium and low voltages.

With the introduction of open access in the Electricity Act 2003, it is also required that open access charges, wheeling charges, cross subsidy surcharge and additional surcharge would need to be determined by the Commission.

3.2 RATE OF RETURN AND PERFORMANCE BASED REGULATION

The Rate-of-Return regulation is the cost based regulation wherein the utility's costs are scrutinized by the regulator for its prudence in order to allow it to be passed on to the consumers. The utility is also allowed a rate of return on its capital base or equity as the case may be as its share of a fair return. It is often argued that the traditional rate of return regulation has an inherent problem of "gold plating" where capital costs tend to be inflated. In addition, the utility by earning a fair and pre-determined rate of return has no further incentive to improve its performance as the improved performance may be taken as a benchmark in the coming years thus putting pressure on the utility's earnings thus subjecting it to "regulatory risk". It is in this context that an incentive based or performance based regulation has been suggested that would mitigate the "regulatory risk" and allow the utility to share its efficiency gains with the consumers.

3.2.1 Embedded Cost and Marginal Cost

Cost based tariffs are based either on (a) Embedded costs of the utility or (b) Marginal Costs.

In Option (a) embedded costs represent the historic accounting costs that the licensees incur in supplying electricity to consumers. The embedded cost-based tariffs are determined by allocating the overall revenue requirement into individual consumer classes by using a set of factors reflecting cost characteristics of the licensees. For example, the overall revenue requirement can be divided into demand, energy and customer portions to reflect various types of fixed and variable costs incurred in electricity supply. Each portion can be then divided among voltage levels and then consumer classes based on billing determinants, such as demand, energy consumption, or number of customers.

The advantage of the embedded cost approach is that the embedded costs and billing determinants can be measured based on data that is typically recorded in the books of the licensees. The main disadvantage of the embedded cost approach is that the embedded cost based tariffs do not reflect the economic costs going forward that consumers impose on the licensees through their electricity consumption.

Embedded cost-based tariffs reflect the average historic costs of supply, which tend to be significantly different from the economic costs. As a result, the efficiency of embedded cost-based tariffs is poor and consumers make distorted decisions about the level of electricity consumption and investment in electricity consuming facilities.

Option (b) is the use of marginal cost in order to correct the efficiency problem of the embedded cost approach. Marginal cost represents the economic value that the licensee (or the society) has to give up in order to provide consumers with an additional unit of electricity. As a result, marginal cost-based tariffs provide efficient price signals to consumers and are suitable tools for measuring cross-subsidies.

The main disadvantage of marginal cost-based tariffs is that charging marginal costs as tariffs does not ensure appropriate cost recovery for the licensees. This is caused by the fact that marginal costs tend to be lower or higher than the average costs of supply, depending on the capacity utilisation of the transmission and distribution system. If the licensee charges all consumers marginal costs only, it experiences a revenue gap, i.e., difference between the revenues and the costs. This gap tends to be negative in the underutilized system and positive in the capacity-constrained system. This disadvantage, however, does not represent a problem for measuring cross-subsidies, because they are measured as a difference between the prevailing tariffs and the economic costs.

For the purposes of ease of calculation based on data that the utilities have, the embedded cost approach is often used.

3.2.2 Rate of Return Regulation

The traditional framework for setting electricity prices is Rate-of-Return (RoR) regulation wherein the regulated entity is able to collect from its customers all its prudently-incurred expenses plus a regulated return on its prudent investment. In general, this method sets the total allowed revenues of the utility according to the following formula:

$$RR = [RB \times RoR] + ED + EO\&M + T$$

Where:

RR = the total annual revenue requirement of the utility

RB = the rate base (required investment) of the utility

RoR = the allowed rate of return (debt and equity) on investment

ED = annual depreciation expense

EO&M = annual operation & maintenance (O&M) expense

T = annual taxes paid by the utility

Under this general framework, the utility has the burden of proving to the regulatory body's satisfaction that each proposed element of the revenue requirement formula is a prudently incurred cost required to serve the public's electricity needs. For example, investments must be shown to be prudently used and useful in the provision of electric service, in order to be included in the RB term. Similarly, individual operating expense items (including purchased power costs) must be shown to be prudent and necessary for the provision of service in order to be included in the EO&M term.

The revenue requirements of the regulated company are set based upon the values for the terms in the formula during a Test Year, usually a past year adjusted for known and measurable changes so as to reflect conditions expected to prevail in the coming year.

There are several advantages of RoR regulation. First, this approach fixes prices based upon a test year and they are unchangeable until the next tariff proceeding. After prices are set, the regulated entity's rate of return varies, depending upon variations in costs and sales and upon the company's ability to control those costs, which can be controlled. Second, as a result of the first, there is some incentive for the utility to minimize costs between tariff proceedings. Third, tariff design to meet the required revenue including price relief for some categories of consumers are easiest to meet using this system. Last, the hearings on tariff changes provide consumers with frequent forums to present their views regarding the performance of the regulated utility.

This approach also has several disadvantages. First, its cost-plus nature blunts the incentive for the utility to minimize cost in the long run. Second, if the allowed rate-of-return is greater than the actual cost of capital then there will be an incentive for the utility to inflate its capital expenditure. Last, there can be fairly high administrative costs associated with regulatory scrutiny of utility costs in this system, and the hearings can be time-consuming.

These disadvantages can be minimized to a certain extent when RoR regulation is combined with elements of the Performance Based Regulation (PBR) that introduce a system of rewards and penalties in relation to the performance of the utility.

3.2.3 Performance Based Regulation

Under Performance Based Regulation (PBR), baseline rates are set using RoR principles for longer periods of time – typically 3-5 years. Between these baseline tariff cases, tariffs are adjusted based on specific formulas that include as variables, measures of the utility's performance, cost indexes, etc. PBR seeks to eliminate some of the regulator command and control aspects of RoR regulation and substitute for it a system of incentives or penalties for performance by the regulated entity outside a "normal" range.

A PBR system can be quite simple and focus on a single area of utility operations, such as generating plant reliability or system losses, or more complex and wide-ranging in its applicability, taking into account such things as customer satisfaction, outages at the consumer level, customer load growth, general inflation and prices to consumers, among others. The focus of a good PBR should be on controllable aspects of the utility's operations. There is no point in creating a goal that the utility can never achieve. Second, the system should be put into effect for a period of sufficient length of time to recognize the short term and long term trade-offs made by the utility. For proper design of a good PBR system, comprehensive and reliable data is an essential requirement.

A good PBR system of regulation has advantages and disadvantages. The advantages are the same as those listed for the RoR method with two important additions. First, a definite incentive for cost minimization and improving service quality can be built into the system. Second, an effective PBR system may reduce the need for frequent tariff filings by the licensee(s), which would lead to reduced administrative costs. However, the first disadvantage of a PBR system is that, unless the system is carefully designed, there may be an incentive for the regulated entity to lower service quality while pursuing monetary incentives in other areas. Second, there is less regulatory scrutiny in a well-designed PBR system because incentives take the place of such oversight, at least between proceedings to reset the baseline tariffs. Third, there is less public input to the tariff process under this system because hearings are not held as frequently as under a RoR system.

3.3 TARIFF SETTING - PRINCIPLES AND PROCEDURES

The Principles and Procedures for tariff setting are laid out in the Electricity Act 2003. These should be read along with guidelines provided in the National Electricity Policy 2005 and the Tariff Policy 2006.

3.3.1 Electricity Act, 2003

Section 61 of the Electricity Act states that:

The Appropriate Commission shall, subject to the provisions of this Act, specify the terms and conditions for the determination of tariff, and in doing so, it shall be guided by the following, namely –

- a) the principles and methodologies specified by the Central Commission for determination of the tariff applicable to generation companies and transmission licensees;
- b) the generation, transmission, distribution and supply of electricity are conducted on commercial principles;
- c) the factors which would encourage competition, efficiency, economical use of the resources, good performance and optimum investments
- d) safeguarding of consumers' interest and at the same time, recovery of the cost of electricity in a reasonable manner;
- e) the principles for rewarding efficiency in performance
- f) multi year tariff principles;
- g) that the tariff progressively reflects the cost of supply of electricity, and also reduces and eliminates cross-subsidies within the period to be specified by the Appropriate Commission
- h) the promotion of co-generation and generation of electricity from renewable sources of energy
- i) the National Electricity Policy and tariff policy

3.3.2 National Electricity Policy, 2005

The National Electricity Policy was brought out by the Gol in compliance with Section 3 of the Electricity Act 2003. The Policy aims at achieving the following objectives:

- Access to Electricity – Available for all households in next five years
- Availability of Power – demand to be fully met by 2012. Energy and Peaking shortages to be overcome and adequate spinning reserve to be available
- Supply of reliable and quality power of specified standards in an efficient manner and at reasonable rates
- Per capita availability of electricity to be increased to over 1000 units by 2012
- Minimum lifeline consumption of 1 unit/household/day as a merit good by year 2012
- Financial turnaround and commercial viability of electricity sector
- Protection of consumers interest

The National Electricity Policy states that there is an urgent need for ensuring recovery of cost of service from consumers to make the power sector sustainable. It does indicate a minimum level of support for consumers of the very poor category – say 30 units per month which may be supported through cross subsidies. However, the tariffs for even this category, the Policy suggests, should be at least 50% of the average cost of supply. Regarding Availability Based Tariff, the Policy advises all SERCs to introduce the ABT regime at the State level within one year.

Setting appropriate tariffs would be a pre-requisite to ensure the sustainability and viability of the electricity sector in the long run. The Tariff Policy sets out the guidelines for tariff setting in the electricity sector.

3.3.3 Tariff Policy, 2006

The Tariff Policy was brought out by the Gol in compliance with Section 3 of the Electricity Act 2003. The objectives of the Tariff Policy is to:

- Ensure availability of electricity to consumers at reasonable and competitive rates
- Ensure financial viability of the sector and attract investments
- Promote transparency, consistency and predictability in regulatory approaches across jurisdictions and minimize perceptions of regulatory risks

- Promote competition, efficiency in operations and improvement in quality of supply

With the view of meeting these objectives, the Tariff Policy lays down a framework for performance based cost of service regulation in respect of aspects common to generation, transmission and distribution. (Section 5.3)

3.3.3.1 Tariff Framework: Tariff Policy

- **Return on investment:** A balance needs to be maintained between the interests of consumers and the need for investments while setting the rate of return. The Central Commission would notify the rate of return on equity for generation and transmission projects taking into account the prevalent cost of capital and its assessment of risk. The SERCs may adopt the rate of return notified by the CERC and make appropriate modification for distribution taking into account the higher risks involved.
- **Equity Norms:** A debt equity ratio of 70:30 should be adopted. Promoters would be free to have a higher equity but equity in excess of this norm would be treated as loans at the weighted average rate of interest and for equity below this norm, the actual equity would be used for the determination of return on equity.
- **Depreciation:** The Central Commission would notify the depreciation rates in respect of generation and transmission assets. Depreciation rates for distribution with appropriate modifications would be evolved by the Forum of regulators. The depreciation rates would be applicable for the purposes of tariffs as well as accounting, and there would be no advance against depreciation.
- **Operating Norms:** Operating parameters in tariffs should be at normative values and suitable performance norms of operations together with incentives and disincentives would need to be evolved. The State Commissions would adopt the norms notified by the Central Commission from time to time.

3.3.3.2 Generation Tariffs:

A two part tariff structure would be adopted for all long term contracts to facilitate Merit Order dispatch. The Commissions can also introduce differential rates of fixed charges for peak and off-peak hours for better management of loads.

Procurement of energy from non-conventional sources shall be done at differential tariffs determined by the Commissions from time to time.

3.3.3.3 Transmission Tariffs

The National Electricity Policy mandates that the national tariff framework should be sensitive to distance, direction and related to quantum of power flow. The Central Commission would put into place such a tariff mechanism taking into consideration the advice of the CEA.

3.3.3.4 Distribution Tariffs

A suitable transition framework would need to be put into place to ensure that the loss making distribution entities are transformed into profitable ventures even while ensuring that the interests of consumers are taken into account. Efficiency in operations should be encouraged. Gains of efficient operators with reference to normative parameters should be shared between consumers and licensees.

3.3.3.5 Multi year Tariff

As per Section 61 of the Electricity Act 2003, the terms and conditions of determining tariff would be guided by multi-year tariff principles where the incentives and penalties are clearly spelled out. The framework would feature a five year control period – however the initial control period would be of three years duration. When reliable data is not available, the Commission may state the assumptions on which the MYT is based and a fresh control period would be started as and when more reliable data is available. Once the revenue requirement of the utility is calculated, controllable and uncontrollable costs must be segregated. Uncontrollable costs such as fuel costs, costs on account of inflation, taxes and cess, variations in power purchase unit costs etc., should be recovered speedily to ensure that future consumers are not burdened with past costs.

The most important efficiency parameter for distribution companies is the control and reduction of distribution losses. Under the multi year tariff framework the gains from efficient operations with reference to normative parameters should be shared between the consumers and the licensees.

3.3.4 Tariff Setting Procedure

The tariffs have to be set by the Commission after due process of public consultations. The brief of the tariff petition has to be published in leading local dailies and objections are invited by the Commission on the Utility's tariff petition. Some of the objections are heard in person at the public hearing on a pre notified date and venue set by the Commission. The Commission takes into consideration the various objections of the stakeholders and consumer groups as well as the responses of the utility before finalizing its order.

3.4 TARIFF DESIGN

The tariff design is currently determined by the historical design of tariffs in a particular state – on which the Commission would have to move towards a more economic and optimal approach to cost recovery and efficiency of use. In a country with large socio-economic inequalities and an overarching goal of food security, it is but natural that ability to pay also becomes a concern on the part of the Commission that designs the tariff. However, the Commission would be guided by the legislation and the policies and seek to limit the cross subsidies in the system, and ensure that direct government subsidies go to the deserving.

Section 61(g) of the Electricity Act, 2003 states that the Appropriate Commission shall be guided by the objective that the tariff progressively reflects the efficient and prudent cost of supply of electricity. In addition, Section 62(3) states that the Appropriate Commission shall not, while determining the tariff under this Act, show undue preference to any consumer of electricity but may differentiate according to the consumer's load factor, voltage, total consumption of electricity during any specified period or the time at which the supply is required or the geographical position of any area, the nature of supply and the purpose for which the supply is required.

The tariff must progressively reflect the cost of supply such that by 2010-2011, tariffs are within +/- 20% of the average cost of supply.

Tariffs for consumers below the poverty lines (BPL) who consume electricity below a specified level, say, 30 units a month, may receive a special support through cross subsidy. Tariffs for these groups must be at least 50% of the average cost of supply.

Tariffs for agricultural use may be set at different levels for different parts of the state depending on the condition of ground water tables to prevent excessive depletion of ground water.

Extent of subsidy for different categories of consumers can be decided by the State Government keeping in view various relevant aspects. The subsidized rates of electricity should be permitted only up to a pre-determined level of consumption beyond which tariffs reflecting efficient cost of service should be charged from the consumers.

3.5 COMMISSION'S APPROACH

In view of several advantages and disadvantages of various options discussed above, the Commission proposes:

- to adopt the Rate of Return Regulation (RoR) for determining the revenue requirement with certain performance targets for better performance of the utility.
- to adopt average cost of supply approach in determination of tariff to different class of consumers.
- to develop plan to reduce cross subsidization gradually with improved efficiency of the utility.
- to suggest that tariff filings should be on yearly basis during the next two years till demand and supply conditions as well as costs become stable and required reliable data built to introduce multi-year tariff.

Chapter-4

Objections/Suggestions from the Consumers/ Stakeholders on the Tariff Petition and Response of BSEB

4.1 INVITING OBJECTIONS/ COMMENTS ON TARIFF PETITION

The salient features of the Aggregate Revenue Requirement (ARR) and Tariff Petition for financial year 2006-07 filed by the BSEB were published on 13.8.2006 & 15.8.2006 in the leading newspapers of the state inviting objections/ suggestions/ comments on the tariff proposals from the public and stakeholders by 18.09.2006. The news papers in which 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-I of Chapter-1 of the tariff order. BSEB pursuant to receipt of these objections submitted their response to these objections / suggestions.

4.2 PUBLIC HEARINGS

In order to ensure transparency in the process of determination of tariff as envisaged in the Electricity Act, 2003, public hearings were held at Patna on 17th & 18th October 2006. The BSEB on the first day of hearing made a presentation on the ARR and tariff proposals.

During the public hearings, some of the objectors who submitted their objections in writing earlier, presented their objections and suggestions personally before the Commission. Other participants from the general public, who did not submit written objections earlier, were also given an opportunity to present their views in respect of tariff proposals. The officers of BSEB were present during the public hearings who responded to the issues raised by the consumers.

4.3 OBJECTIONS/ SUGGESTIONS OF PUBLIC AND RESPONSE OF BSEB

The objections and suggestions of the public and stakeholders, on the tariff petition, in question received in writing and also made during the public hearings are discussed below:

I. Objectors :

1. The Bihar Chamber of Commerce, Patna
2. Bihar Industries Association, Patna
3. Bihar Steel Manufactures Association, Patna
4. Dina Metals Limited, Patna
5. Kalyanpur Cements Limited, Patna

Objections/ Suggestions :

The issues raised by the above consumer organizations are broadly as under:

1. **Aggregate Revenue Requirement:** The Board has estimated an Annual Revenue Requirement of Rs. 2870.60 crores for the FY 2006-07. As almost half of the year is over, the Board must have, by now, tentative actuals of its operating expenses during this FY. Requirement of funds, to meet the expenses during the remaining six months period may be assessed based on the above.
2. **Delay in finalization of accounts:** So far the annual accounts of FY 2001-02 only has been audited and published. Thus all the data available in the Tariff Petition are either estimated or provisional and are not worth basing them for making future projections, especially for tariff related exercise.
3. **Power Purchase:** Between the FYs 2003-04 to 2006-07 (four years) there was an increase of Rs. 425.04 crores in the Board's Cost of Power Purchase, which in percentage terms would be 41.92%, but surprisingly there has been no growth in the Board's revenue earnings and in fact it has declined by 8.67%.
4. **Cost of own generation:** The average cost of Board's own generation is 320 paise/kwh.

The total cost of generation per unit would be around 600 paise/ kwh if components like salaries, R&M, depreciation and other expenses are considered.

The permissible cost should be 190 paise/ kwh at which rate power is available from central sector generating stations and not 320 paise/ kwh.

5. **Employee Cost:** The number of employees in the BSEB is much higher in comparison to all – India figures. For example, during FY 2001 – 02, the number of employees per Mkw (MU) of electricity sold in Bihar was 5.41, while the all – India average was 2.53 employee. Similarly, the number of employees per thousand consumers in Bihar was 11.09 as against all – India average of 7.59.

Under the heading of “Terminal Benefits”, the Board has sought following provisions, under the sub-headings of G.P.F. and Group Saving Scheme.

(Rs. in crore)

Item	Financial Year 2006–07
G.P.F.	52.00
Group Saving Scheme	9.00

Both these schemes in the Board are exclusively funded by the monthly contributions of the employees of the Board therefore, these two items must be excluded from the ambit of the Board’s revenue requirement.

6. **Interest & Finance Charges:** The annual liability under this head has been shown to be Rs. 600.38 crores, inclusive of interest liability on State Government loan amounting to Rs. 532.56 crores.

The interest charges on State Government loans are to be discharged only when the Board is having surplus of revenue after meeting all the operating expenses.

As per the tariff petition, the State Government owes energy dues to the Board of Rs. 2367.50 crores as on 31/03/2005. The Board should be asked to adjust the interest charges on State Government loans with the revenue arrears which the State Government owes to the Board.

7. **Depreciation:** Since Board’s two thermal generating stations have now become separate companies and they do not belong to BSEB; hence the Board may be asked to delete the component of depreciation charges of the thermal power stations from its Aggregate Revenue Requirement.
8. **Board’s Revenue Earnings:** The revenue of the Board has come down from Rs. 1442.51 crores during FY 2003 – 04 to Rs.1316.77 crores during FY 2006 - 07.

9. **Revenue Deficit:** A sum of Rs. 645.56 crores has been overstated by the Board on its expenditure side and a sum of Rs. 645.56 crores has been understated on the income side. Considering the above, the position of deficit would be as given below:

Revenue Deficit – FY 2006-07

(Rs. in crore)

S.N	Details	As proposed by the Board	As being suggested
1	Revenue earnings	1316.77	2077.00
2	Operating expenses	2870.60	2225.04
3	Revenue deficit	1553.83	148.04

10. **AT & C losses:** Though the AT & C loss level in Transmission & Distribution systems of the Board for the year 2004 – 05 has been worked out and found to be 60.61% the Board in its Tariff Petition has shown the AT & C loss for FY 2004 – 05 as 48.30%. If the statistics worked out by the Planning Commission are to be believed the AT & C loss of Bihar is 74.09%. Hence, the latest level of Board's AT & C Loss is somewhere between 60.61 to 74.009%.
11. **Delayed payment surcharge:** Delayed payment surcharge (DPS) has been reduced from 2 percent per month to 1.5 percent per month. But it is still quite high and may be kept at 1.25 percent per month. The interest on delayed payment of bills may be charged on the basis of days of delay and not on the monthly basis. A delay of a few days should not attract (DPS charged) for the whole month. The Hon'ble Commission may direct the Board to keep separate account of DPS and no part of DPS be cleared through adjustment of current energy bill.

Further no DPS should be charged, after the line is permanently disconnected.

12. **Power Factor Surcharge**

The penalty & rebate on account of power factor deviation may be provided on the pattern of Jharkhand State Electricity Board as given below :

- (a) **Penalty :** If the average power factor falls below 0.85, a penalty @ 1% for every 0.01 fall in power factor from 0.85 to 0.60. and 2% for every 0.01 fall below 0.60 to 0.30 be levied.
- (b) **Rebate :** If the average power factor is maintained by the consumer more than 0.85, a rebate @ 1% for every 0.01 gain in P.F. & if the power factor is more than 0.95 a rebate of 2% be allowed.

Both the penalty & rebate are payable on the total of demand & energy charges of the monthly bill.

13. **Transformer capacity:** The existing tariff of HT category as well as the one proposed by the Board has similar provision regarding limiting transformer capacity of HT consumers to the extent of 150% of the contract demand. The HT consumers found using Power Transformer with a capacity of more than this are supposed to indulge in “malpractice” and be penalized heavily by hypothetically assuming their actual load to be 2/3rd value of the capacity of transformer installed in the consumer’s premises. The penal bill is prepared at twice the normal rate of tariff and that, too, for a period upto six months.

In case the transformer becomes defective / damaged, its repair / replacement takes long period.

Hence it is strongly suggested that industrial consumers be allowed to keep spare Power Transformer capacity for use strictly in case of emergency and the Board’s regulation regarding limiting transformer capacity to the value of 1.5 times of the consumer’s contract demand be dispensed with.

14. **Load factor rebate:** The BSEB in its tariff petition has appreciated the need of giving Load Factor (LF) rebate, but the quantum (5P/kwh) on “such excess units” consumed is very meager and would not be sufficient to motivate the consumers to raise their load factor.

Proposed LF rebate to HT & HTSS category

S.N	Rate of Load Factor (%)		Proposed Rebate in Energy charge %
	Maximum	Minimum	
1	60	50	15%
2	70	60	25%
3	80	70	40%

15. **Charges for exceeding contracted demand:** The Tariff Petition of the Board proposes very stiff penalty for consumers whose actual demand of power is found to exceed the contracted demand.

In other SEBs only the excess load (kVA) beyond the contracted load is subjected to an additional penal rate. It is, therefore, proposed that:

- (a) No penalty be imposed for exceeding load upto 110% of the consumer’s contract demand, and

(b) If the maximum demand exceeds the limit of 110% of the contract demand, then a penalty on such excess load beyond 110% of contract demand be charged @ 110% of the normal demand charge.

16. **Security Deposit:** The amount of Security Deposit retained by the Board is for a very long time period and hence interest applicable for a short-term lending is not at all justified.

The Board should pay the same interest on the amount of security deposit to the consumer at which it is charging DPS from its consumers.

The Board may not insist for payment of Security Deposit in cash, rather it should accept bank guarantee also as the industrial consumers do not get loans from Financial Institutions for the purpose of Security Deposit.

17. **Tariff Proposals:** The tariff must be determined alike tariff rates of neighbouring states like Jharkhand, Orissa and West Bengal. The tariff rates fixed by BSEB five years back are still much higher than the present tariff rates in neighbouring states.

The BSEB has proposed an unprecedented tariff in the form of fixed charges per kW on domestic category.

The proposed demand charges are increasing with the level of supply voltage, while the established norm is that the charges should have been inversely related to supply voltage because cost of supply at higher voltage is less and T&D losses are less.

18. **Monthly Minimum Charges (MMC):** The existing provision of Annual Minimum Guarantee (AMG) charges has been replaced by MMC. In tariff order of 1993 the Board had introduced MMC for first time, but it was struck down by the Hon'ble Supreme Court and thereafter the Board switched over to AMG charges and the same is still continuing. The same may be continued instead of MMC.

19. **Fixed charges:** The liability of the consumer to pay the minimum charges which would ensure a reasonable return on capital expenditure incurred by the Board to meet the possible maximum demand of the consumer should not exceed 15% of the cost of service line.

As per Board's annual accounts for the FY 2002 – 03, the gross and net fixed assets are Rs.1581 crores and Rs. 565.5 crores respectively and 15% of net fixed

assets is Rs. 84.83 crores only, whereas the expected income from fixed / demand charges is Rs. 485.95 crores.

20. **Requirement of electricity for Induction furnaces:** The Board's existing tariff has a blanket provision for determination of minimum electricity requirement for induction furnace. It has been provided that " the supply to induction furnace shall be available only after ensuring that the loads sanctioned are corresponding to the load requiring to tonnage of furnaces. The minimum load of one tonne furnace in no case be less than 600 kVA".

The power consumption of modern induction furnace has come down substantially as the power density has now come down to 400 to 450 kVA / MT. This has been possible due to improved design. Hence the steel manufacturers must be allowed to have contract demand as per the actual requirement.

21. **Cross subsidy:** The industrial consumers are subjected to huge burden of cross subsidization which is in the range of 65% to 107%. The BERC would notify a road map with a target that at least by end of year 2010 – 11 the tariff are within $\pm 20\%$ of the average cost of supply.

BSEB's Response:

The BSEB has responded to each of these issues raised by the consumer organizations as given below:

1. No comments.
2. Reasons for delay in compilation of annual accounts and its audit by AG Bihar has been already furnished in the tariff petition.
3. The comment about there being no hike in revenue is inaccurate. The revenue from sale of power between FY 2003-04 and projected for FY 2006-07 has rather increased from Rs. 947.27 crores to Rs. 1272.77 crores, which shows a rise of about 35%.
4. Operating expenses of BSEB's own generation is only projection. If generation is less, then the operating expenses also shall be less. The other components like salary, depreciation, R&M etc. are included in the overall figures given for FY 2006 - 07.
5. Due to retirement of employees, non recruitment of fresh man power, the ratio of employee / supply (kwh) and employee per thousand consumers has improved.

Liability of terminal benefits, like GPF, GSS are being met from current revenue earnings. There is no separate account or fund maintained for these items. Board has always remained revenue deficit and it does not have any other source of income to meet all liabilities from revenue income.

6. The Objector's suggestion for not considering the interest amount payable on State Government's loan is impractical. The interest liability is also required to be paid out of Board's revenue earnings.
7. The position has been explained in item (3) above.
8. The position has been explained under above items.
9. Measures being taken by the Board for reduction of T&D losses have been given in tariff petition. However it will take time to get results.
10. Board has already proposed to reduce DPS from 2% per month to 1.5% per month. CPSU also charges 1.5% from Board for delayed payment.
11. A P.F. of 0.9 for industrial loads was prescribed since October 2002. Reducing PF to 0.85 now is not justified.
12. Board has already prescribed in 'General Terms and Conditions of Supply of Electricity', that one standby transformer be maintained by HT consumer under specified conditions.
13. In the tariff petition, rebate has been suggested on the extra units consumed by a consumer.
14. The penal rate proposed for exceeding the contracted demand upto 110% and over 110% is a measure to regulate contract demand.
15. The rate of interest on security deposit is specified in Electricity Act, 2003.
16. It is not practicable because the relevant information for determination of tariff of other States is not available. The tariff revision and requirement of ARR is in order.
17. In the proposed tariff AMG has been abolished.
18. The assumed fixed charges are not correct. Any reduction in fixed charge or energy charge will lead to increase in deficit.
19. The existing induction furnaces are very old i.e. about 20 years, and hence they are inefficient.
20. No comments.

II. Objector:

1. Chief Engineer, Eastern Central Railway, Hajipur

Objections / Suggestions :

1. The proposed traction tariff of the Railways be reduced further and brought down to reasonable level proportionate to BSEB's cost of supply to Railways.
2. To withdraw the proposed Monthly Minimum Charges at the rate of 260 units per KW and to charge on the basis of actual energy consumption.
3. BSEB has proposed abnormal hike of demand charges from existing Rs. 140 / kVA / Month to Rs. 300 / kVA / Month which may not be accepted.
4. Penalties on exceeding contract demand which is due to various external factors beyond the control of Railways is aggravating the cost of traction energy.
5. The demand charges for the Railways should be levied based on the simultaneous maximum demand recorded at all the contiguous Railway Traction Sub-station (TSS) fed by same grid transformer of BSEB.
The State Regulatory Commission in the States of Rajasthan, Delhi and Madhya Pradesh have already directed to charge the Railways based on simultaneous maximum demand for all traction sub – divisions for computing excess demand.
6. In case of supply failures from BSEB due to any reason, feed has to be extended from the adjacent traction sub – station fed by BSEB. Maximum Demand (MD) recorded should be ignored during emergency extension and should not be considered for maximum demand charges and any other charges applicable.
7. As per existing tariff, billing demand is considered as 75% of CMD or MD recorded whichever is higher. In the proposed tariff the billing demand is modified as CMD or MD recorded whichever is higher which may not be accepted.

BSEB's Response:

1. The overall increase in rate is less than 5%. This tariff, if approved will be after a gap of more than 5 years.
2. The MMC are fixed as per the nature of consumer and their normal consumption pattern. Since level of consumption is normally much above the prescribed

monthly minimum charge for Railway Traction this provision will not have any bearing in their normal monthly bills.

3. The reason for increase in demand charges has been dealt in tariff petition. Any reduction in the demand charge will mean corresponding increase in energy rate to bring the overall average rate of electricity to desired level.
4. All the consumers declare their load and accordingly Board sanctions power. If no penalty is imposed for exceeding contract load, the system cannot cope with unlimited demand and system's reliability will be affected.
To avoid penalty for exceeding contracted demand, Railway may review and if considered necessary revise the contracted demand at necessary locations.
5. All the existing Railway Traction loads are being fed from different grid sub stations of the Board, hence the request is technically not tenable.
6. This is an operational problem and will be considered on specific case to case basis.
7. The maximum demand charges proposed are on consideration of charges on 100% contracted demand. If the demand charges are changed at 75% of contracted demand then the rate too will need to be increased.

III. Objector:

1. Patliputra Co-operative House Construction Society Limited, Patna

Objections / Suggestions

1. The quantum and cost of power purchase from own generation and components like interest and depreciation appears to be high.
2. The T&D losses actuals and projected are high.
3. The proposed tariff rates for domestic category are very high. Fixed charge of Rs.100 kW / month would increase the average cost of power not less than Rs 7/- per unit.
4. The proposed rates for public water works and street lights are very high.
5. The provision for temporary supply for marriages etc not included in the tariff petition.
6. The slabs for domestic and non-domestic consumers may be increased.
7. The fixed charges and monthly minimum consumption charges should be reduced.
8. The bills should be made available within three days of its preparation so that the consumers get atleast 10/12 days time for payment.

BSEB's Response:

1. No comments can be made as no ground or reasons to refuse the figures given in tariff petition have been given.
2. T&D losses are being computed close to actual in the existing conditions viz., about 50% of consumers are on flat rate tariff. Installation of meters in feeders of grid and PSS have not yet been completed.
3. The tariff structure consists of fixed / demand charge and energy charge. Removal of fixed charges will require increase in energy rate to achieve over all rate.
4. All proposed rates are aimed to achieve around average cost of power at consumers end and to avoid cross subsidy.
5. Temporary supply is included in terms and conditions of supply of electricity.
6. No comments. Reasons for increase in the No. of slabs have not been given.
7. Any reduction in fixed charge or energy charge will lead to increase in deficit.
8. These matters will be taken up in terms and conditions of supply.

IV. Objector:

1. Magadh Advertising Bureau, Patna

Objection :

1. For maintenance of street lights, PESU has entered into an agreement at a rate of Rs. 170/- per bulb per pole per month for vapour bulb lights upto 250 watt. Now it is proposed to charge Rs. 170/- per light per month for 100 watt bulb for towns having population above 1.0 lakh and to charge prorata in case of other load. In Patna all electric poles are having 150 watt or 250 watt bulbs. At pro-rata Rs. 255/- to Rs. 425/- per bulb per month has to be paid which is very high. Increase in existing tariff for street light in Patna may not be accepted.

BSEB's Response:

The proposed rate is based on cost of power at consumer end. Reduction in rate will mean increase in deficit which is not sustainable.

V. Objector :

Sri. Ashok Kumar Singh, C/o Sasta Bhandar, Gandhipath, Rohtas Dt., Sasaram.

Objection:

The proposed tariff rates for FY 2006 – 07 have been shown without mentioning the present tariff. Notifying the present rate of tariff also should indicate the percentage of proposed increase.

BSEB's Response:

Board's existing tariff is available on internet. It is also given as Annexure to the Tariff Petition (Vol – II)

VI. Objector :

Er. Nagendra Singh, Retd. G.M. & C.E., C/o SSI Paraslok Complex, Patna

Objections / Suggestions:

1. In respect of commercial tariff, the minimum guarantee charges are proposed to be fifty units, per kW per month. The minimum guarantee charges should be computed on yearly basis as it is likely that in some months the consumption may be higher and in some months lower.

Maximum ceiling of 300 units per connection should be linked to sanctioned load.

2. The proposed agriculture tariff at Rs. 723/- per HP per month is an increase by ten times. Agriculture connection with metered supply is not mentioned in tariff petition. The agriculture tariff should be based on actual units consumed besides lowering the proposed flat rate.

BSEB's Response:

1. In existing tariff monthly minimum unit is same as 50 units per kW per month. The minimum units per month are kept low to avoid seasonal variation in usage.
2. In the tariff schedule both flat rate and metered tariff have been proposed for agriculture sector change over to metered supply will take time.

VII. Objector

Sri Sanjeev Kumar Sahu, Acting President, Uttar Bihar Udyog Sangh, Muzaffarpur

Objections / Suggestions :

1. "DPS' received amount shown in the petition is more than 50% of sale of power which do not look reasonable.
2. Employee's cost, interest & financial charges, T&D losses are high. BSEB is incurring loss due to its mismanagement and transferring the burden to poor public and small industries.
3. The proposed tariff for LTIS – I and LTIS – II categories are beneficial to those units who are running very well and consume more units than required as per MMG. But large no. of SSI units are running in adverse condition like poor power supply, lack of infrastructure and other problems.

Hence the fixed charge which is already on high side should not be increased. Monthly Minimum Charges should be abolished in terms of Industrial Policy–2006.

BSEB's Response:

1. The figures of 'DPS' given along with the details are not realised but only billed where dues are outstanding
2. BSEB did not respond to this issue.
3. Fixed charges have been proposed for increase whereas the rate of energy has been reduced.

VIII. Objector :

Shri Jitendra Sharma, Advocate, District Courts, Muzaffarpur

Objection:

BSEB has announced DPS Waiver Scheme on 12/04/2006 leading to discrimination between classes of consumers who are regular payees of monthly energy bills and those who are habitual defaulters. The short fall in receivable revenue due to above has not been envisaged in the ARR for FY 2006-07. The ARR submitted by BSEB has to be recast and resubmitted before Hon'ble Commission taking into consideration the excess finance and revenue loss incurred by BSEB.

BSEB's Response:

There are no specific comments on the tariff petition. Even when reference to data given in the tariff petition is made, it is non-specific and no supporting figure has been given.

IX. Objector :

Shri Krishna Kumar Lal, Patna

Objections:

1. Meter reading is very irregular. Sometimes without taking reading, 'Nil' consumption is being recorded during which monthly minimum charges have to be paid which is not being adjusted in next month's bill.
2. The bills are given just 3 or 4 days before due date of payment. 15 day's time for payment of bills should be given.
3. Board should commit the services such as fault repair, Change of damaged service wire, periodic inspection of meter etc.

BSEB's Response:

No objection or suggestion has been made on the tariff petition. Matter of standards of performance has been mentioned. Hence no comments.

X. Objector :

Sri B.R. Mohan, General Secretary of Arc welding and 440 Vidyut Upbhokta Sangh, Patna

Objections / Suggestions:

1. Fuel surcharge and electricity duty to be charged on actual units sold but not on unconsumed units based on monthly minimum guarantee.
2. LTIS – I and LTIS – II categories should be made into a single category as in JSEB and Rs. 60/- per month fixed charges and Rs. 3.50 per unit on consumed units to be charged.
3. The load of arc welding set should be considered as 5 HP only and not as minimum 7.5 HP. If BSEB suspects, the Board officials may examine the matter by Electrical Officer. If there is no name plate the capacity should not be taken as 15 HP. Actual rating should be taken.

BSEB's Response:

1. No comment
2. No Comment
3. The minimum load and conditions of Arc Welding set is as per existing tariff provision in force since 2001 and the same has been retained.

XI. Objector :

Sri Shyam Deo Prasad Singh, Nawada.

Objections / Suggestions:

1. Power supply in Rural areas is very bad. The tariff rates should be based on availability of power.
2. If theft and unauthorised use of electricity is strictly controlled then the sale price per unit will not be more than Rs. 3/-.
3. The proposed rate of Rs. 750/- per HP per month for agriculture category is abnormally high. It is impossible for agricultural consumer to pay Rs. 45,000/- per annum for running the Irrigation pump set. Due to bad power supply the consumer has to spend money for purchasing diesel also.
4. BSEB may be instructed to arrest misuse of electricity in big houses, industries, Government buildings and to collect arrears from them. Then there may not be necessity to revise the tariff rate.

BSEB's Response:

1. It is dependent on share in central sector generating plants. Board's own generation is low which may improve after renovation.
2. It is being dealt by Ante Power Theft Wing and Vigilance of the Board / State Government.
3. State Government may like to consider giving subsidy to this sector.
4. No reply furnished.

XII. Objector :

Sri Dinesh Chandra Azad, Biyahut Sabha, Muzaffarpur

Objections/ Suggestions:

1. Smaller non-domestic consumers are also charged at normal rate. Therefore smaller consumers face difficulty in making payment.
2. Certain MLA, MLC, MP and Board's employee are provided free electricity to some extent which is not correct.
3. For political gain free electricity to some category of consumers is given which increases Board's deficit.
4. Flat rate tariff for rural areas results in misuse of electricity.
5. Different rates for rural and urban are not rationale.
6. Sale of power at profit from Board's share to other states through Power Trading Corporation keeping the consumers in the State in darkness should be avoided.
7. Fixed charges should not be charged when there is no guaranteed power supply.

BSEB's Response:

1. The minimum load for non-domestic services is 1 kW, as such small consumers are also charged for 1 kW.
2. Bills are raised as per tariff rates. Limit of electricity entitlement is the policy of concerned Department / Assembly.
3. It is a State policy.
4. Along with flat rate proposal for metered tariff is also given. Change over will take time.
5. Some consideration is given for rural areas because of economic / poor development.
6. It is done as per operational need and to keep the monthly power bill within manageable level.
7. It is the tariff structure. If fixed charge is removed or reduced then energy unit charges will be increased accordingly.

XII. Objector:

Shri Ranjan Kumar Thakur, Rosra, Samastipur District.

Objections:

1. The vast difference between fixed charges of Rs.25/- for domestic and Rs.125/- for non-domestic should be removed.
2. The vast difference of Rs.1.80 per unit for domestic category and Rs.4.00 per unit for non-domestic category should be removed.

3. Instead of charging for 40 units minimum monthly, the units recorded by the meter should only be charged.
4. Similarly for category 3 and category 5 consumers also action needs to be taken to reduce rates.

BSEB's Response:

1. The proposed tariff has reduced the gap between domestic and non-domestic categories.

XIII. Objector:

Shri Sri Ajit Kumar, Advocate, C/o Sri Birendra Pd. Sinha

Objection:

Electricity connection has been provided from the PSS (Bhusaula) of BSEB to the consumers of Brindavan colony and are treated as urban area connection. While the consumers in the adjacent colonies ie Officer colony, Vishal colony, Police colony, Neelkanth colony and adjoining places connected with same PSS are treated as rural area connections. Therefore, the consumers of Brindavan colony should also be treated as rural area consumers.

BSEB's Response:

The issue raised is relating interpretation and implementation of provisions of Board's existing tariff. Local Board offices have to bill as per existing tariff, which will remove the anomaly if any in charging rural/ urban domestic tariff to the referred localities.

The issue raised does not need any consideration by Hon'ble Commission while determining tariff for FY 07.

XIV. Objector:

Shri Sri Anil Kumar Sinha, Consumer, Patna.

Objection:

The BSEB in its ARR for FY 06-07 has included the cost of payment to pensioners, the payment of pension should be done by State Government as the BSEB was created by the State Government under Central Act. He also objected for huge AT&C losses. These two elements will reduce the ARR.

BSEB's Response:

The BSEB's comment was that this is a policy matter related to the State Govt. The BSEB is trying to reduce the AT&C losses.

4.4 COMMISSION'S COMMENTS

The Commission has taken careful note of the objections, comments and suggestions made by the stakeholders/ members of public as mentioned hereinbefore and has considered the same while recording its analysis and conclusions of different components of tariff proposal in Chapters 6 and 7. Besides, the Commission has also given certain directions to the BSEB, the deemed licensee in Chapter 8 of this order keeping in view a number of critical remarks made by some of the objectors and also regard being had to some of the requirements of the Electricity Act 2003, National Electricity Policy and Tariff Policy.

Some of the objectors have given their views and suggestions on matters of cross subsidy, standards of performance etc. These requirements are being met by Regulations, Laws and National Policies and therefore, are not discussed in the tariff order.

Chapter-5

Summary of Aggregate Revenue Requirement Filing for 2006-07

5.1 The BSEB filed ARR and tariff petition in two volumes (Vol. I & II) before the Commission on 10th April, 2006 for determination of retail tariffs for the year 2006-07. In the petition BSEB computed ARR at Rs. 2870.60 crore and projected revenue on existing tariffs and other income at Rs. 2006.77 crore for FY 2006-07. Since the petition did not contain all the required and necessary information / data, the Commission, vide letter No. 175 dated 6th May, 2006 communicated to the Board, its observations and deficiencies in the petition asking them to make available the desired information / data to the Commission within a fortnight.

In pursuance of the same, the Board submitted further information / data in Vol. III vide letter No. 452 dt. 22nd May, 2006. In order to seek certain clarifications on the ARR and subsequent data furnished by the Board, discussions were held by the officers / consultants of/to the Commission with senior officers/consultant of/to the Board on 6th June, 2006. Based on discussion, the Board furnished revised ARR and certain other data vide letter No. 507 dated 8th June 2006 and letter No. 513 dated 13th June 2006. The ARR as per the revised proposal was for Rs. 2338.04 crore and revenue recoverable from sale of power at Rs.1574.04 crore. Whereas, projected revenue from sale of power from the proposed tariff remained at Rs.1925.13 crore. Thus a mismatch surfaced between figure of actual revenue recoverable given in letter dated 8th June, 2006 and projected revenue from proposed tariff as given in letter dated 13th June, 2006. The details of revised ARR and revenue income as submitted by the BSEB in letter dated 08.06.2006 are given in Table 5.1 below:

Table 5.1

Revised ARR for FY 2006-07 as submitted by BSEB

Sl.No	Item	Rs. in crore
1	Cost of power including own generation	1566.90
2	Employee cost	525.91
3	A&G Expenses	21.26
4	R&M Expenses	25.20
5	Depreciation	170.95
6	Interest and Finance Charges	67.82
7	Interest on State Government Loan	(532.56) not included
	Total	2378.04
	Less capitalization	(-) 40.00
	Net	2338.04

Revenue Income

1	Meter Rent	9.00
2	Other Income	15.00
3	DPS (Realizable)	20.00
4	State Government grant for FY 2006-07 (subsidy)	720.00
5	Net amount recoverable from sale of power	1574.04
	Total	2338.04

The notable features of the revised ARR submitted by the Board vide letter dt. 8th June, 2006 are:

- Reduction of interest and finance charges from Rs. 600.38 crore to Rs. 67.82 crore. Interest on State Govt. loan not claimed.
- State Govt. grant of Rs. 720 crore shown as revenue income.
- Reduction in delayed payment surcharge from Rs. 710 crore to Rs. 20 crore.

Since the above changes affected the revenue requirement substantially, it was difficult to arrive at a figure of revenue gap particularly in absence of revenue recoverable from existing tariffs. Further, the tariff structure as proposed by the Board in its petition dated 10th April, 2006 needed change so as to be in conformity to submission made by the Board in letter dated 8th June, 2006. This was pointed out by the Commission vide letter No. 229 dated. 19th June 2006 and also in a meeting held with Chairman, BSEB on 24th June, 2006. During discussion, it was agreed that BSEB would recast the tariff structure based on the revised ARR submitted vide letter dated 8th June 2006 and would send it to the Commission within a week. As

required information was not forthcoming, D.O. letter No. 246 dated 3rd July 2006 and D.O. No. 259 dated 18th July, 2006 were sent from Chairman, BERC to Chairman, BSEB to expedite the same. This was further followed by letter No. 278 dated 1st August, 2006.

The Board submitted revised petition (Revised Vol. I of tariff petition) on 4th August, 2006 maintaining the original ARR of Rs. 2870.60 crore without taking into consideration submissions made by them in their letters dated 8th June, and 13th June, 2006. The only notable feature of the revised petition (Vol. I) is upward revision in proposed tariffs for all categories of consumers and thereby raising revenue recoverable from Rs. 1925.13 crore to Rs. 2720.44 crore.

The summary of the ARR as per the revised petition submitted on 4th August, 2006 is given in Table 5.2 below:

Table 5.2
Aggregate Revenue Requirement for 2006-07

Sl.No.	Particulars	Estimated Expenditure
1.	Purchase of Power	1438.90
2.	Own Generation charges	128.00
3.	Repair and Maintenance	25.20
4.	Employee cost (Net of capitalization)	485.91
5.	Administration and General Charges	21.26
6.	Interest and Finance charges	600.38
7.	Depreciation	170.95
8.	Total	2870.60

The Board retained the Revenue Requirement at its original proposal (i.e. Rs. 2870.60 crore) restoring back interest and finance charges of Rs.600.38 crore.

The revenue from the exiting tariffs and other charges as per revised petition is given in Table 5.3 below:

Table 5.3

Revenue from Existing Tariff and Other Charges for 2006-07

(Rs. in crore)

Sl.No.	Particulars	Amount
1.	Revenue from existing tariff	1272.77
2.	Delayed payment surcharge	20.00
3.	Meter rent	9.00
4.	Miscellaneous Receipts	15.00
5.	Total	1316.77

The State Government grant of Rs.720.00 crore indicated in Vol. III of the petition and reiterated in letter dated 8th June, 2006 was not considered in computation of total revenue in the revised proposal.

The Board in the revised petition moved Commission for revision in existing tariff ranging from (-) 1% to 1622% for different categories of consumers. The existing tariffs and the tariff proposed by the BSEB in the revised petition are given in Annexure-5.1.

Existing Tariff and proposed tariffs by BSEB for 2006-07

Sl. No.	Category	Existing Tariff		Tariff Proposed by BSEB		Percentage increase proposed by BSEB
		Fixed Charges Rs./kWh/HP/month	Energy Charges Paise / kWh	Fixed Charges Rs./kWh/HP/month	Energy Charges Paise / kWh	
1	Kutir Jyoti (KJ)					256.70%
	i) Unmetered	Rs.30/PM/ connection	-	Rs.107/ PM/ connection	-	
	ii) Metered	MMC Rs.25/PM/ connection	50 P	MMC Rs.40/PM per connection	285	
2	Domestic-Rural DS-I Upto 2 KW					245.20%
	i) Unmetered	Rs.62/PM/ connection	-	Rs.214/PM/ connection	-	
	ii) Metered				-	
	First 200 units	-	-	-	285 P	
	Remaining units	-	-	MMC 40 units/month/ connection	500 P	

Sl. No.	Category	Existing Tariff		Tariff Proposed by BSEB		Percentage increase proposed by BSEB
		Fixed Charges Rs.	Energy Charges Paise / Unit	Fixed Charges Rs.	Energy Charges Paise / Unit	
3	Domestic Service (DS-II) All metered	Single phase Rs.25/M upto 1 kW Above 1 kW Rs.50/ 3 Phase Rs.150/M	1-100 - 180 P/U 101-300 - 225 P/U 301 and Above 280 P/U MMC Rs.70 / M for load upto 1 kW and Rs.40/- for each additional kW.	Rs.100/PM/kW	1-200 units-285 P/unit Above 200 units-500 P/U MMC 40 units PM for 1 st kW 30 units PM for each additional kW	157.5%
4	Domestic Service (DS-III)		All units – 250 P MMC Rs.70/M for load upto 1 kW and Rs.40/- for each additional kW	Rs.100/M/kW	1-300 units-265 P 301 and above 480 P/U MMC 40 units PM for 1 st kW 30 units PM for each additional kW	92%
5	Non-Domestic Services (NDS-I)	Unmetered Rs.95/connection/M	–	Unmetered Rs.214/connection/P M Metered Rs.200/kW/PM	Metered 1-200 units-300 P/U Above 200 units 500 P/U MMC 30 units /kW PM.	125.15%
6	Non-Domestic Service (NDS-II)	Rs.125/kW or part/M	1-150 units-400 Above 150 units-440	Rs.200/kW/PM	1-200 units-300 P Above 200 units-500 P/U MMC 50 units/kW/PM	19.5%
7	Non-Domestic Service (NDS-III)	Rs.150/kW/M	0-150 units-400 P/U above 150 units- 440 P/U MMC 50 units/kW	Same as NDS-II	Same as NDS-II	

Sl. No.	Category	Existing Tariff		Tariff Proposed by BSEB		Percentage increase proposed by BSEB
		Fixed Charges Rs.	Energy Charges Paise / Unit	Fixed Charges Rs.	Energy Charges Paise / Unit	
8	Non-Domestic Service (NDS-IV)	Rs.120/kW/ PM	1-100 units-190 P/U 101-300 units-250 P/U Above 300 units-290 P/U MMC 50 units /kW upto 4 kW 100/units/kW for above 4 kW.	Same as NDS-II	Same as NDS-II	Merged with NDS-II and III.
9	Non-Domestic Service (NDS-V)	Rs.40/kW with minimum of Rs.150 / connection/M.	1-100 units-200 P/U 101-300 units-250 P/U Above 300 units-300 P/U	Same as NDS-II	Same as NDS-II	16%
10	LT Industry Service LTIS-I	Rs.60/HP or part /M	All units – 390 P/U MMC 70 units/HP/M	Rs.200/HP/M	All units – 285 P/U MMC 80 units/HP/M	23.43%
11	LT Industry Service LTIS-II	Rs.80/HP/M	All units – 410 P/U MMC 100 units/HP/M	Rs.250 / HP/M	All units – 285 P/U MMC 100 units/HP/M	28.46%
12	LT Industry Service LTIS-III		All units – 280 P/U MMC Rs.485 / kW/M	Rs.250 / HP/M	1-235 units – 430 P/U Above 235 units – 535 P/U MMC 235 units/HP/M	91.30%
13	Street Light Service SS-I Metered		Metered All units - 290 P/U	MMC Same as per rate of Unmetered supply of SS-II, SS-III	All units-535 P/U / PM	84.5%

Sl. No.	Category	Existing Tariff				Tariff Proposed by BSEB			Percentage increase proposed by BSEB
		Fixed Charges Rs.		Energy Charges Paise / Unit		Fixed Charges Rs.		Energy Charges Paise / U	
14	Street Light Service SS-II Unmetered	Light point wattage	For villages & town having population upto 10,000	Population between 10,000 & 1,00,000	For remaining towns/ cities	Wattage	Population upto 1 lakh	Population Above 1 lakh	216.23%
		i) Upto 100 W	Rs.55	Rs.60	Rs.65	i) for 100 W	Rs.160/M	Rs.170M	
		ii) 101-250 W	Rs.140	Rs.155	Rs.170	ii) upto 101-250 W	Rs.400/PM	Rs.500/PM	
		iii) 251-500 W	Rs.280	Rs.300	Rs.325				
15	Street Light Service (Mast) SS-III Unmetered	Wattage	Population upto 10,000	Population between 10,000 and 1,00,000	Remaining towns / cities	Population upto 1 lakh	Population above 1 lakh	21.74%	
		Above 250 W	Rs.280/ per bulb/PM	Rs.300/ bulb/PM	Rs.325 / bulb/PM	Rs.2000 PM per mast.	Rs.2500 PM per mast.		
		Minimum – Rs. 1000/month/mast							

Sl. No.	Category	Existing Tariff		Tariff Proposed by BSEB		Percentage increase proposed by BSEB
		Fixed Charges Rs.	Energy Charges Paise / Unit	Fixed Charges Rs.	Energy Charges Paise / Unit	
16	Irrigation and Agriculture Service IAS-I	Unmetered Upto 10 HP – Rs.75/HP/M Above 10 HP-Rs.80/HP PM	Metered As per Rural schedule All units at 70 P/U MMC Rs.50/HP/M As per Urban Schedule All units –290/unit MMC Rs.90/HP/M	Unmetered Supply Rs.723/HP/M Metered Rs.200/HP/M	Metered Upto 200 Units/HP PM 375 P Balance units 535 P MMC 140 units/HP/month	1622.31%
17	Irrigation and Agriculture Service IAS-II	Unmetered Rs.350/HP/M Metered Rs.100/connection/M	Metered All units – 100 P/U	Unmetered Rs.1206/HP/ PM Metered Rs.350/HP PM	Metered Upto 200 units-375 P Balance units-535 P MMC 225 Units/HP/M	
18	High Tension Service HTS-I	Rs.125/kVA /M	All units – 178+244 =422 P MMC Energy charges based on LF of 25% and PF of 0.85% on contract demand	Rs.500 / kVA/M	All units – 275 P/unit MMC Rs.1040/kVA of contract MD/ per month	2.19%

Sl. No.	Category	Existing Tariff		Tariff Proposed by BSEB		Percentage increase proposed
		Fixed Charges Rs.	Energy Charges Paise / Unit	Fixed Charges Rs.	Energy Charges Paise /Unit	
19	High Tension Service HTS-II	Rs.115/kVA/M MMC	All units – 172+244 =416 P/U 30%LF	Rs.700/kVA/M MMC Rs.1390 / kVA of contract demand PM.	All units -266 P/U	16.29%
20	High Tension Service HTS-III	Rs.110/kVA/M	All units 169+244 = 413 P/U MMC 50%LF	Rs.1000/kVA/M MMC Rs.1755/kVA of contract demand/PM.	All units-230 P/U	19.89%
21	High Tension Specified Service HTSS	Rs.700/kVA/M	All units -120 P/U MMC Rs.1012 per kVA of contract demand PM	Rs.900/kVA/M MMC Rs.1552/kVA of contract demand/PM.	All units-225 P/U	25.57%
22	Railway Traction Service (25 kV) RTS-I	Rs.140/kVA/M	All units-200+244= 444 P/U MMC 25%LF	Rs.300/kVA/M	All units-400 P/U MMC 260 units/kVA/M	1.56%
23	Railway Traction Service (132 kV) RTS-II	Rs.140/kVA/M	All units-194+244 = 438 P/U MMC 25%LF	Rs.300/kVA/PM	All units-415 P/U MMC 260 units /kVA/ PM	(-)1.07%

Chapter-6

Analysis of Aggregate Revenue Requirement for 2006-07

6.1 BACK GROUND

As mentioned earlier, BSEB is a vertically integrated utility and is responsible for generation, transmission and distribution of electricity in the State of Bihar. Though BSEB in its Aggregate Revenue Requirement (ARR) and tariff petition for FY 2006-07 has furnished data for the Board as a whole disintegrated data for generation, transmission and distribution has not been furnished. Hence data/information furnished by BSEB is incomplete and inadequate. However the proposal has been analysed within the available data / information.

6.2 ENERGY SALES FOR THE YEAR 2006-07

The BSEB has estimated energy sales at 5268 MU for the year FY 2006-07. The actual category-wise energy sales for FY-04 and FY-05, estimated sales for FY-06 and projections for FY-07 as furnished by BSEB are given in Table 6.1 below:

Table 6.1

**Category-wise Actual Energy Sales for FY-2003-04 to FY 2005-06
and Projections for FY-2006-07**

Sl. No.	Category	Sale of Energy in MU							
		FY 2003-04 (A)	FY 2004-05 (A)	Growth of 2004-05 over 2003-04	FY 2005-06 (E)	Growth of 2005-06 over 2004-05 (%)	*CAGR for 2 years FY-2003-04 to FY 2005-06 (%)	FY 2006-07 (P)	Growth of 2006-07 over 2005-06
		(MU)	(MU)	(%)	(MU)			(MU)	(%)
1.	Domestic	1111.20	1132.3	1.89	1258	11.11	6.40	1465	16.45
	i) Kutir Jyoti							64.8	
	ii) Rural Domestic (un-metered)							244.80	
	iii) Domestic (metered)							1155.4	
2.	Non-Domestic	280.01	282.36	0.84	302	6.96	3.85	346	14.57
3.	Public Lighting	21.86	21.90	0.18	24	9.59	4.78	29	20.83
4.	Irrigation	1068.5	1153.7	7.97	1282	11.12	9.53	1493	16.46
5.	Public water works	174.64	178.68	2.31	190	6.34	4.30	200	5.26
6.	Industrial LT	119.27	110.00	-7.77	131	19.09	4.80	161	22.90
7.	Industrial HT	603.44	595.54	-1.31	662	11.15	4.74	772	16.62
8.	Railways	309.48	338.02	9.22	375	10.94	10.08	437	16.53
9.	Inter State Sale and UI sale	194.97	259.51	33.10	300	15.60	24.04	365	21.67
10.	Total	3883.40	4071.98	4.86	4524.00	11.10	7.93	5268.00	16.45

*CAGR = Cumulative average growth rate.

It is observed that the above estimated category-wise energy sales for FY 2006-07 are not based on any scientific method of estimation of demand such as trend, end use, econometric or combination of these methods. The Board has arrived at the total energy sales for FY 2006-07 by simply deducting the predetermined T&D losses @36% from the total energy available from own generation and purchases. The energy thus arrived at is apportioned based on the actuals as obtained during FY 2004-05 among different categories of consumers in the same proportion.

The energy sales for FY 2003-04 and FY 2004-05 are actuals and the sales for FY 2005-06 are estimated as the final sales figures for FY 2005-06 are yet to be compiled. These figures can be treated as actuals as FY 2005-06 is already over and not much variation is expected in the final compilation.

The Kutir Jyoti, rural domestic and rural non-domestic services with connected load upto 2 kW and irrigation pumpsets are not metered except few cases under domestic and non-domestic in rural area. Thus it is seen that even actual energy sales for FY 2003-04, FY 2004-05 are based only on assessed consumption of unmetered categories. About 35% of the total sales is not metered but only assessed. The assessment is also not done by any scientific method. Hence the sales particularly for domestic and irrigation pumpsets furnished for different years, cannot be considered as actuals.

6.3 The category-wise sales of the earlier years and the projections for the year 2006-07 are discussed below:

6.3.1 Kutir Jyoti – Rural and Urban

The number of consumers, under Kutir Jyoti during FYs 2004-05 and 2005-06 and projected for FY 2006-07 is as below:

Year	No. of Consumers	Energy Consumption (MU)
2004-05	2,36,239	51.03
2005-06	2,70,000	58.30
2006-07	3,20,000	68.80

The average consumption per Kutir Jyoti household works out to about 18 kWh / month.

The Board proposes to add about 30,000 installations in rural areas during the year 2006-07 and the total consumption for 3,00,000 installations works out to 64.80 MU.

The Board has also proposed to extend “Kutir Jyoti” scheme to urban areas. It is informed that about 20,000 new connections would be released under Kutir Jyoti in urban area during the remaining months of 2006-07. Considering the number of households at 3,20,000, the **Commission approves energy consumption of 68.80 MU for the Kutir Jyoti installations for FY 2006-07.**

6.3.2 Domestic – Metered and Unmetered

The Board has projected energy consumption of domestic consumers excluding Kutir Jyoti – metered and un-metered at 1400.20 MU for the year 2006-07. The number of consumers and the energy consumption under this category for the years 2004-05, 2005-06 and projected for 2006-07 are as below:

Year	No. of Consumers	Energy Consumption (MU)
2004-05	11,77,383	1081.72
2005-06	12,40,000	1199.70
2006-07 (Projected)	12,95,000	1400.20

The Board added about 63,000 consumers during FY 2005-06 and proposes to add about 55,000 consumers during FY 2006-07. The Board has furnished two class of consumers under each category i.e. registered and effective as shown below:

Year	Registered	Effective
2004-05	14,96,956	11,77,383
2005-06	Not available	12,40,000

It is informed that the registered consumers are those as per books and the effective are those whose services are effective and utilizing electricity.

The Board has announced an one-time settlement scheme by waiving delayed payment surcharge (DPS) for those who come forward to settle the outstanding energy dues. It is not known as to how many would avail this scheme. In addition, there is intensive electrification programme under Rajeev Gandhi Grameen Vidyutikaran Yojna (RGGVY) to extend electricity to more villages and households. In view of this, the trend method based on past growth would not give proper projection. It would be more appropriate to adopt end use method based on specific consumption of each household and number of households.

The average consumption per domestic consumer during FY 2005-06 was at 80.63 kWh/month (967.50 kWh/year) which is restricted demand in view of power shortage. If this norm is applied for the projected number of 12.95 lakh consumers during FY 2006-07, the consumption works out to 1252.91 MU against 1400.20 MU projected by the Board. In view of the one time settlement scheme (OTS) and intensive electrification of households, it is possible that more number of consumers would be availing electricity supply but it is difficult to estimate the number of households / consumers that would come up. Hence the energy consumption projected by the Board at 1400 MU appears reasonable and may provide margin to provide better

supply to existing consumers and shall meet the demand of additional consumers likely to be connected.

The Commission therefore approves energy consumption of 1400.20 MU for domestic consumers both metered and unmetered for the year 2006-07.

6.3.3 Non Domestic – Metered and Un-metered

The Board has projected energy consumption for non-domestic consumers – metered and un-metered at 346 MU for the year 2006-07.

The number of consumers and energy consumption for last three years i.e. 2003-04, 2004-05, 2005-06 and projected for 2006-07 are as given below:

Year	No. of consumers		Consumption (MU)
	Registered	Effective	
2003-04 (Actual)	2,58,561	1,25,235	280.01
2004-05 (Actual)	2,66,672	1,39,256	282.36
2005-06 (Estimated)	NA	1,45,775	302.00
2006-07 (Projected)	NA	1,50,000	346.00

From Table 6.1, the CAGR for two years i.e. 2004-05 and 2005-06 is about 3.85%, whereas the growth for projected consumption for 2006-07 is about 14.57% over that of 2005-06 consumption, which is considered to be high. The past trend may not give reasonable estimates for future since some of the consumers whose services were disconnected may get supply restored under OTS.

The specific energy consumption of non-domestic consumers during the FYs 2003-04, 2004-05 and 2005-06 is as given below:

Year	Specific Consumption / Year (Units)
2003-04	2236
2004-05	2028
2005-06	2072

Considering average consumption of 2236 units, being highest during above three years, the projected energy consumption for the year 2006-07 works out to 335.4 MU. As mentioned above some of the consumers whose services are under disconnection may get supply restored under OTS and the intensive electrification

may add some additional consumers. Taking these factors into consideration the projected consumption of 346 MU is considered reasonable.

The Commission therefore approves energy consumption of 346 MU for non-domestic consumers for the year 2006-07.

6.3.4 Public Lighting

The Board has projected energy consumption for public lighting at 29 MU for FY 2006-07.

The number of installations and energy consumption for three years i.e. 2003-04, 2004-05, 2005-06 and projected for 2006-07 are as given below:

Year	No. of Installations		Consumption (MU)
	Registered	Effective	
2003-04	1555	482	21.86
2004-05	1555	503	21.90
2005-06 (Estimated)	-	503	24.00
2006-07 (Projected)	-	503	29.00

From Table 6.1, CAGR is 4.78% for the years 2003-04 to 2005-06. Based on this CAGR, the projected energy consumption for FY 2006-07 works out to 25 MU. Street lighting is a public service and some of the installations may get supply restored under OTS if it has been disconnected. With intensive electrification of villages, some more villages may be provided with streetlights thereby increasing the consumption. Hence, the energy consumption of 29 MU projected by BSEB is considered reasonable.

The Commission therefore approves the demand of 29 MU for street lighting for the year 2006-07.

6.3.5 Irrigation / Agricultural Pumpsets

BSEB has projected energy sales for Irrigation pumpsets at 1493 MU for FY 2006-07, which shows an increase of 16.43% over FY 2005-06, compared to 7.47% in FY 2004-05 and 11.12% in FY 2005-06 and a CAGR of 9.53% for years FY 2003-04 to FY 2005-06.

Basically the assessed consumption for irrigation pumpsets is exceedingly high. The total number of registered and effective connections (including State tube wells) for FY 2004-05 is projected to be 1,76,050 and 57,289 and the projected connected loads as 4,61,513 kW and 1,99,160 kW respectively. The registered loads for FY 2005-06 and FY 2006-07 are not made available. The effective number of installations and connected load for FY 2006-07 are 58,600 and 2,05,500 kW respectively. With an effective connected load of 2,05,500 kW, and the projected agricultural consumption of 1,493 MU for FY 2006-07, the average energy consumption works out to about 7,265 kWh/kW/Year, which means that each pumpset works for an average of about 20 hours per day on all the 365 days in a year. The ground realities however do not subscribe to this, the power supply in rural areas is stated to be available only for a few hours in a day as per the submission made by the consumers during the public hearings. This indicates that, if the actual agricultural consumption is as projected, the so-called connections, which are not effective, and also other unauthorized connections may be utilizing electricity. Any consumption by the disconnected service connections and other unauthorized pumpsets has to be accounted under commercial losses and cannot be taken as genuine consumption of irrigation pumpsets. BSEB therefore has to take concrete steps to identify those pumpsets, which are working unauthorizedly, remove them or regularize them. The BSEB shall report action initiated in this regard by 31.3.2007. Meanwhile, consumption by the authorized (effective) connections have to be assessed fairly accurately.

The agricultural energy consumption norm being adopted by some of the States is as follows:

Sl. No	State	KWh/KW/Annum
1	Andhra Pradesh	1700
2	Gujarat	2300
3	Haryana	1452
4	Karnataka	1600
5	Maharashtra	1250
6	Uttar Pradesh	1100
7	Chhattisgarh	1314

In view of the ground water level being higher in Bihar, the norm for Agricultural Consumption is considered at 2000 kWh/kW/annum, on an average for private and State Government tube wells and lift irrigation pumps which works out to be 411 MU.

This norm is however found to be liberal. It is quite possible that a number of disconnected services also might be using electricity and it may be difficult to effectively check these unauthorized connections in view of pumpsets spread out in large areas and also due to lack of adequate machinery. It is quite possible that some of these consumers may avail OTS facility and get supply restored. If 20% of the disconnected (not effective) consumers also are considered who would avail the supply, the total connected load works out to be about 2,88,232 kW, in which case, the consumption of irrigation pumpsets would be about 576 MU.

Taking a liberal view of the problems involved the Commission approves the energy sales for irrigation category at 576 MU for FY 2006-07 against 1493 MU, projected by BSEB.

6.3.6 Public Water Works

The Board has projected a demand for Public Water Works at 200 MU for the year 2006-07. The number of installations and energy consumption for the last three years i.e. 2003-04, 2004-05 and 2005-06 and projected for 2006-07 are given below:

Year	No. of Consumers		Energy Consumption (MU)
	Registered	Effective	
2003-04 (Actual)	1212	820	174.64
2004-05 (Actual)	1212	820	178.68
2005-06 (Estimated)	-	783	190.00
2006-07 (Projected)	-	783	200.00

From the Table 6.1, the CAGR would appear to be 4.3% for the years 2003-04, 2004-05 and 2005-06. Assuming the same CAGR for 2006-07 the estimated energy consumption works out to 198 MU against 200 MU projected by the Board. The projected demand of 200 MU by BSEB is considered reasonable as some of the installations may get restored under OTS.

The Commission therefore approves 200 MU for Public Water Works for year 2006-07 as projected by the Board.

6.3.7 Low Tension Industry (LTIS)

The Board has projected energy consumption for Low Tension Industry category at 114.20 MU for the year 2006-07. The number of consumers and energy consumption

for the last three years i.e. 2003-04, 2004-05, 2005-06 and projected for 2006-07 are given below:

Year	No. of Consumers		Energy Consumption (MU)
	Registered	Effective	
2003-04(Actual)	64222	10613	119.27
2004-05(Actual)	68098	15037	110.00
2005-06(Estimated)	-	15147	131.00
2006-07(Projected)	-	15257	161.00

From Table 6.1, the CAGR would appear to be 4.8% for the years 2004-05 and 2005-06. Assuming the same growth during 2006-07, the demand would be about 137 MU against projected demand of 161 MU. There are about 50,000 numbers of disconnected services and a number of LT Industries might have been closed due to recession during the past few years. With the Industrial activity picking up substantially in the country and the announcement of friendly Industrial Policy by the Government of Bihar many closed industries might get electricity supply restored under OTS scheme for making them functional. In view of this, the projected demand of 161 MU is considered reasonable.

The Commission therefore approves energy consumption for LT Industry at 161 MU for the year 2006-07.

6.3.8 High Tension (HT) Industry

a) HTS – (HTS-I, II, III & HTSS)

The Board has projected a demand for HT Industry category (HTS – I, HTS – II, HTS – III & HTSS) at 772 MU for the year 2006-07.

The number of consumers and the energy consumption for the last three years i.e. 2003-04, 2004-05, 2005-06 and projected for 2006-07 are given below:

Year	No. of Consumers		Energy Consumption (MU)
	Registered	Effective	
2003-04 (Actual)	870	496	603.44
2004-05 (Actual)	1001	647	595.54
2005-06 (Estimated)	-	653	662.00
2006-07 (Projected)	-	658	772.00

It would be seen from above table that the energy consumption has declined marginally during the year 2004-05 though there is increase in number of effective consumers over the year 2003-04 and CAGR is 4.74% for the years 2004-05 and

2005-06. The low growth might be due to industrial recession over the last few years. Assuming the same growth for 2006-07, the projected demand would be 693 MU. Since Industry has now revived and is picking up across the country, it is expected that the industry may pick up in the State of Bihar also particularly with the liberal Industrial Policy announced by the State Government. In view of this it is considered that the projected demand of 772 MU is required with the opportunity provided under OTS to all consumers and liberal State Government Industrial Policy.

The Commission therefore approves energy consumption for HT Industry (HT-I, II, III & HTSS) at 772 MU for FY 2006-07.

6.3.9 Railway Traction

The Board has projected energy consumption for Railway Traction at 437 MU for the year 2006-07. The demand of Railway Traction load for the last three years is given below:

Year	Energy Consumption (MU)
2003-04 (A)	309.48
2004-05 (A)	338.02
2005-06 (E)	375.00

From Table 6.1, the CAGR of Railway traction load appears to be 10.08%. Assuming the same growth for 2006-07 though the demand works out to 413 MU, the Board has projected a demand at 437 MU for FY 2006-07 i.e a growth of 16% over FY 2005-06. The reason for such projection has not been furnished. Since traction load is generally met fully without restrictions, there could be some minimum increase in traffic, which may result in marginal increase in demand and not 16%. Considering projected growth of 12%, the demand works out to be 420 MU.

The Commission therefore approves a demand for Railway traction at 420 MU for 2006-07.

6.3.10 Sales outside the State including Nepal

The Board has projected energy sales of 365 MU under inter-state and unscheduled interchange (UI). Since regional power system is under Availability Based Tariff (ABT) framework, any UI exchange from one Utility to another is charged based on system frequency prevailing at that point of time.

Presumably under the current situation of power shortage conditions in Bihar, BSEB is not able to provide satisfactory power supply to its consumers. In such a situation, the unscheduled supply to other states could be during off peak hours particularly night hours or the Board might be restricting supply of power to its consumers to supply power to other States under UI. The BSEB has supplied energy to other states under UI during the last three years as given below:

Year	Energy sale under UI (MU)
2003-04 (Actual)	195
2004-05 (Actual)	260
2005-06 (Estimated)	300
2006-07 (Projected)	365

Since supply of power to other States as well as Nepal is going on for last few years, the Commission approves inter-state energy sale at 365 MU for FY 2006-07 as projected by BSEB, as a special case.

6.3.11 Total Energy Demand (Sales)

The Commission approves energy sales at 4338 MU for FY 2006-07, including Inter-state sale and U.I exchange against 5268 MU projected by BSEB in the ARR filing. The consumer category-wise energy sales as projected by BSEB and that approved by the Commission are given in Table 6.2 below:

Table 6.2

Energy Sales for FY 2006-07

Sl. No	Category	Projected by BSEB (MU)	Approved by the Commission (MU)
1.	Kutir Jyoti	64.80	68.80
2.	Domestic	1400.20	1400.20
3.	Non-Domestic	346	346
4.	Public Lighting	29	29
5.	Irrigation & Agriculture	1493	576
6.	Public Water Works	200	200
7.	Industrial L.T	161	161
8.	Industrial H.T	772	772
9.	Railway Traction	437	420
10.	Inter State Sale and U.I	365	365
11.	Total	5268	4338

6.4 TRANSMISSION AND DISTRIBUTION (T&D) LOSSES

The BSEB has indicated T&D losses for the years 2003-04 to 2005-06 and projected for the year 2006-07 as under:

Year	T&D Loss (%)
2003-04 (Actual)	34.3%
2004-05 (Actual)	36.11%
2005-06 (Estimated)	37.00%
2006-07 (Projected)	36.00%

BSEB has projected one percent reduction in T&D losses in FY 2006-07 over FY 2005-06. No breakup of technical and commercial losses has been furnished by BSEB. The Board appears to have arrived at the losses by deducting the metered energy sales and assessed energy sales of unmetered categories from the total energy available (i.e. own Generation + Power Purchase). Based on this, the details for the year 2006-07 are given below:

Total energy available (Generation + Purchase)	8232 MU
Energy Loss (36%)	2964 MU
Net energy available for sale	5268 MU

The loss is therefore, predetermined and not assessed.

In a scenario where supply to agriculture pumpsets (about 28%, as projected by BSEB) and some of the domestic and non-domestic services, including Kutir Jyoti, are not metered and also energy losses in the system are not metered by providing meters on the feeders from generating station to distribution transformer level, it is difficult to have a realistic assessment of T&D losses. It could only be a rough estimate, which depends mostly on the correctness of assessed consumption of the agricultural pumpsets and other unmetered connections.

As discussed in para 6.3.5 above, the assessed consumption for irrigation pumpsets is abnormally high. With connected load of 2,05,500 kW and energy consumption of 1,493 MU by irrigation sector for FY 2006-07 as furnished by the BSEB, the average consumption works out to be 7265 kWh/kW/Annum. Considering agricultural consumption norm of 2000 kWh/kW/annum, the consumption for irrigation pumpsets will be only 411 MU and taking another 20% connections stated to be not functional as working, the connected load adds upto 2,88,232 kW and the agricultural

consumption at 576 MU, against 1493 MU estimated by BSEB for FY 2006-07. At this level of agricultural consumption, the total energy sales for FY 2006-07 would be 4338 MU only, in which case the T&D losses for the year FY 2006-07 works out to be as under:

If the energy sales of 4338 MU is considered, with the same energy input of 8232 MU, (as originally projected by BSEB) the loss level would be 47.30% (3894 MU) as detailed below:

	(MU)
Total energy input (Generation + purchase)	8232
Energy sales (approved)	4338
Energy loss	3894
Energy loss (%)	47.30

As discussed in para 6.5.3 below, the net energy purchases are revised by the Board to 7188 MU. With the revised energy purchase the total energy input including own generation would be 7401 MU against 8232 MU projected by BSEB earlier.

Keeping the energy sales at 4338 MU the energy loss would be 41.4% as given below:

	(MU)
Total energy input in the system	7401
Energy sales	4338
T&D Losses	3063
Percentage T&D Loss	41.386

Since the realistic loss levels are not available, the loss is arrived at keeping the energy sales as approved by the Commission.

Thus a realistic T&D losses in BSEB system for FY 2006- 07 would be 41.40%. The loss levels are very high which the State cannot afford under the present severe power shortage conditions. Though the Commission expresses concern over the high percentage of T&D losses, however, sets the T&D loss at 41.40% for the year 2006-07 and also sets the following targets for reduction of losses in BSEB system.

2006-07	41.40%
2007-08	38.00%
2008-09	34.00%

BSEB shall send a factual status report on line losses in the system to the Commission by 31.03.2007.

Separate directive is issued on the reduction of T&D loss.

6.5 ENERGY REQUIREMENT AND AVAILABILITY

6.5.1 Energy Requirement

The total energy requirement to meet the demand of the system would be the sum of estimated energy sales including inter-state sales and the estimated system losses (T&D losses) as approved by the Commission. The estimated energy sales for the year 2006-07, T&D losses and the energy requirement as projected by BSEB and as approved by the Commission are give in Table 6.3 below:

Table 6.3
Energy Requirement for 2006-07

Sl. No	Particulars	As Projected by BSEB in ARR (MU)	As approved by the Commission (MU)
1	Total Energy Sales	5268	4338
2	T&D Losses (%)	36	41.40
3	T&D Losses (MU)	2963	3063
4	Total Energy Requirement (1+3)	8231	7401

The Commission approves the total energy requirement at 7401 MU for the year 2006-07.

The energy required has to be met from BSEB's own generation and power purchases from central generating stations and other sources.

6.5.2 BSEB's Own Generation

The BSEB has a total installed generation capacity of 540 MW of its own and is totally thermal. The responsibility for development of hydro potential in the State is with Bihar State Hydro Electric Power Corporation (BSHPC), which has an installed capacity of 44.10 MW.

The details of the BSEB's two coal based thermal power stations, their capacity and vintage are given in Table 2.1 under Chapter-2.

BSEB has projected a net generation of 400 MU for FY 2006-07 from its own power plants in its tariff petition. The Commission obtained the actual generation details from these plants from April 2006 to August 2006. While there is no generation at

Muzaffarpur TPS from April 2006 to August 2006, generation at Barauni TPS was as given below:

Barauni TPS - Unit 7

Sl. No	Particulars	Apr 2006	May 2006	Jun 2006	July 2006	Aug 2006	Total
1	Gross Generation (MU)	Nil	7.86	2.09	12.87	14.43	37.25
2	Auxiliary power consumption (MU)	0.4	1.85	1.01	2.78	3.07	9.11
3	Net Generation (MU)	(-)0.4	6.01	1.08	10.09	11.36	28.14

The net generation from Barauni TPS unit during first five months of FY 2006-07 has been 28.14 MU. Based on the generation performance during these five months, gross and net generation for the year FY 2006-07 can be considered at 90 MU and 68 MU respectively with auxiliary consumption at 24.46%, as in case of first five months of FY 2006-07.

Barauni TPS - Unit 6

BSEB have stated that Unit No.6 at Barauni TPS is under R&M and is expected to be operational by December 2006. Assuming that this unit after R&M will be operating at 68.5% PLF for 3 months during 2006-07, gross and net generation from this unit will be 165 MU and 145 MU respectively with an auxiliary consumption of 12%, (as it is expected to be less after R&M).

The total gross and net generation from Units 6 and 7 at Barauni TPS will be 255 MU and 213 MU respectively.

Thus the total net energy available from own generation of BSEB will be only 213 MU against 400 MU originally projected by the BSEB.

6.5.3 Purchase of Power from CGSs and other Sources

The BSEB has projected energy purchase of 7692 MU, (excluding system loss in the regional network) from Central generating stations (CGSs) and other sources. Later with the commissioning of Tala project, Government of India has revised the allocation from various central generating stations to constituent States in the Eastern Region. Based on the revised allocation and actual drawal from April to September 2006, the Board has revised the projected drawals from the Central generating stations and other sources. The revised purchases projected by BSEB are given in Table 6.4 below:

Table-6.4

Power Purchase as projected by BSEB for 2006-07

Sl. No.	Source	Capacity (MW)	Share (%)	Projected Energy Purchase for 2006-07 (MU)
Central Sector (CGSs)				
1	Farakka TPS	1600	22.6	2350
2	Kahalgaon TPS	840	39.4	2000
3	Talchar TPS	1000	32.5	2300
4	Rangit H.E.P	60	35.6	40
5	Chukka H.E.P	270	29.6	500
6	Tala H.E.P	3x170	30	150
Total from Central Agency				7340
7	Bihar HPC	44.1	100	40
8	Nepal	-	-	80
Total purchase				7460
Less transmission loss in Regional system (3.7%) (on items 1 to 6 &7)				(-) 272
Net purchase				7188

The BSEB had been drawing power from the regional system under Unscheduled Interchanges (UI). The drawal under UI during the last three years is as given below:

Year	Energy Drawn under UI (MU)
2003-04	211.274
2004-05	270.359
2005-06	200.00

The BSEB has not shown any purchase/drawal under UI during 2006-07. Since the availability from central generating stations is comparatively more during 2006-07 than previous years, BSEB may not be considering any purchase / drawal under UI during 2006-07. The drawal from central generating stations and other sources during 2006-07 is 7188 MU compared to 6961 MU during 2005-06.

The Commission approves the proposed purchase of 7188 MU from Central generating stations and other sources for FY 2006-07.

6.6 ENERGY BALANCE

The energy balance is the difference between the energy sales to various categories of consumers i.e. the energy requirement and energy available from own generation and power purchases. The Commission approves limits for energy requirement and availability as given in Table 6.5 below:

Table 6.5
Energy Balance

Sl.No.	Particulars	Energy (MU)
A.	Energy Requirement	
1	Total Projected Energy sales (metered and assessed)	4338
2	T&D losses (41.4%)	3063
3	Net Energy Requirement	7401
B	Energy Available	
1	Own generation (Net)	213
2	Energy Purchases from other sources +UI	7188
	Total	7401

Any shortfall might be adjusted from Inter-State sales, if necessary.

6.7 EXPENDITURE

6.7.1 Generation Cost (BSEB's Own Generation)

The Board has informed that Unit-7 in service has consumed 40940 MT of coal at a cost of Rs.1600/MT, 1263 KL, furnace oil at a cost of Rs.22532/KL and LD oil at a cost of Rs.33,015/KL for gross generation of 37.25 MU during the 5 months from April to August 2006. The specific coal consumption works out at 1.10 Kg/kWh and specific oil consumption at 33.90 ml./kWh.

The specific consumptions of coal and oil are very high. The BSEB has not furnished the Heat Rates of the power stations upto the year 2004-05. The Heat rate has been estimated at 5668 Kg./kWh for 2005-06 and 5364 Kg/kWh for 2006-07, which are on very high side. The calorific value of coal has been estimated at 4968 KCL/Kg for 2006-07. During discussions with BSEB officials, it has been gathered that there is no systematic sampling and measurement of calorific value of coal and oil and the heat values furnished are only estimated exercise.

In general, the existing performance parameters of the BSEB's generating stations are not clearly spelt out and no effort seem to have been made to improve them and

the fuel cost projected is abnormally high. No performance parameters set by CERC or any other SERC can be applied in this case as the performance of the BSEB's power stations is quite poor.

However, as the year 2006-07 is coming to an end and generation is very low, the specific consumptions of coal and oil, PLF and auxiliary consumption, as per actuals for the 1st five months of 2006-07 is accepted for the Unit-7 by the Commission, as a special case, in order to arrive at the generation costs.

With the R&M of units 6 and 7 at Barauni TPS, BSEB should come out with reasonably good performance parameters such as Heat Rate, auxiliary power consumption, specific oil consumption, plant load factor, transit loss of coal etc., which should be in consonance with CERC norms, in the tariff petition to be filed for FY 2007-08. A reliable arrangement shall also be made to measure the calorific value of coal being received at power station.

Barauni TPS – Unit - 7

The following are the cost parameters as per actuals for Barauni TPS - Unit 7 for the 1st five months of 2006-07 as furnished by BSEB.

Gross generation MU	Total coal Consumption MT	Sp. Coal Consumption Kg. / kWh	Total Oil Consumption KL	Sp. Oil Cons. MI/kWh	Aux Cons. %	Cost of coal Rs. / MT	*Cost of oil Rs. / KL
37.25	40940	1.10	1263	33.90	24.46	1600/-	24629

* Cost of LDO (Low density oil)	=	Rs. 33015 / KL
Cost of FO (Furnace oil)	=	Rs. 22532 / KL
As 20% LDO and 80% FO is used, weighted average cost of oil = Rs. 24629 KL.		

As mentioned in para 6.5.2 above, the Commission approves the gross generation for Barauni TPS Unit-7 at 90MU during 2006-07. The cost for this generation is as follows:

- Quantity of coal required for 90 MU generation = 99000MT
- Cost of coal = Rs. 15.84 crore
- Quantity of oil required = 3051 KL
- Cost of oil = Rs. 7.51 crore
- Total fuel costs for Unit 7 = Rs. 23.35 crore

Barauni TPS – Unit-6

As the unit – 6 is expected to commence generation during December 2006, after R&M, the performance parameters are expected to improve at par with CERC norms. Taking a liberal view for the 3 months in 2006-07, the Commission approves the following performance parameters for unit – 6 at Barauni TPS.

Specific coal consumption	=	0.9 Kg/kWh
Specific oil consumption	=	10ml/kWh

With the above parameters, for a gross generation of 165 MU the fuel costs will be as under:

• Quantity of coal required for 165 MU generation	=	148500 MT
• Cost of coal	=	Rs. 23.76 crore
• Quantity of oil required	=	1650 KL
• Cost of oil	=	Rs. 4.06 crore
Total fuel costs for Unit 6	=	Rs. 27.82 crore

Total fuel costs for BSEB's own generation of 255 MU will be Rs. 51.17 crore.

The Commission approves the fuel costs for BSEB's own generation at Rs. 51.17 crore for 2006-07.

6.7.2 Power Purchase Costs

As discussed in para 6.5.3 above, BSEB revised power purchase in the revised tariff proposal based on revised allocation of power from Central generating stations etc., by the Government of India.

The BSEB proposes to purchase 7460 MU of energy from CGSs and other sources during 2006-07 at a total cost of Rs.1354.15 crore as given in Table-6.6 below:

Table-6.6

Energy Purchase Costs Proposed by BSEB

Sl. No.	Source	Energy (MU)	Average Energy Charges (Rs./kWh)	Total Cost (Rs. crore)
1.	Farakka STPS (NTPC)	2350	1.73	406.55
2.	Kahalgaon STPS (NTPC)	2000	1.99	398.00
3.	Talchar STPS (NTPC)	2300	1.26	289.80
4.	Tala HEP (Bhutan)	150	1.84	27.60
5.	Chukka HEP (Bhutan)	500	1.55	77.50
6.	Rangit HEP (NHPC)	40	6.43	25.72
7.	BSHPC	40	2.00	8.00
8.	Nepal	80	3.30	26.40
	Total Power Purchase	7460	1.69	1259.57
9.	PGCIL Transmission charges	-	-	91.84
10.	ERLDC charges	-	-	2.74
11.	Total Power purchase costs	-	-	1354.15

The power purchase costs have been arrived at based on average energy charges billed by NTPC and charges of PGCIL and ERLDC during 6 months i.e. April to September 2006. No increase in average energy charges is considered. Any increase in charges could be recovered under power price adjustment with the approval of the Commission.

The Commission approves power purchase of 7460 MU from CPSUs and other sources at a total cost of Rs.1354.15 crore for 2006-07.

6.7.3 Employee Cost

The employee cost comprises salaries and wages, dearness allowance, pension, gratuity and staff welfare expenses. The BSEB has projected employee cost at Rs.525.91 crore for FY 2006-07. The break-up of the employees cost for the FY 2005-06 and FY 2006-07 along with actuals for the FY 2003-04 and FY 2004-05 are given in Table 6.7 below:

Table 6.7

Employee Cost

Sl.No.	Item	FY 2003-04	FY 2004-05	FY 2005-06	FY 2006-07
1.	Salary including special Pay	166.34	163.16	160.07	168.00
2.	DA	87.10	97.70	122.00	136.00
3.	Compensatory/ City Allowance	0.95	1.00	1.00	1.00
4.	Over time	2.15	0.76	1.00	1.00
5.	Medical Allowance	1.00	1.00	0.90	0.90
6.	House Rent Allowance	10.15	10.00	9.80	9.70
7.	Other allowance	2.31	3.79	3.00	3.00
	Sub-Total (1 to 7)	270.00	277.41	297.77	319.60
	Terminal Benefits				
8.	Leave salary and pension contribution	0.03	0.25	0.25	0.25
9.	CPF contribution	0.06	0.06	0.06	0.06
10.	Pension	91.81	112.53	118.00	125.00
11.	Gratuity	28.01	19.89	19.00	20.00
12.	Group saving scheme	8.15	8.91	9.00	9.00
13.	GPF	45.93	65.98	60.00	52.00
	Sub-Total (9 to 14)	173.99	207.62	206.31	206.31
	Grand Total (1 to 14)	443.99	485.03	504.08	525.91

There is an increase in employee cost in 2006-07 by 4.33% over the previous year which is considered reasonable to cover increments, increase in DA etc.

The Board has manpower comprising 1,216 officers and 14,966 other employees to attend to operation and maintenance of generating stations, transmission and distribution network and to serve about 17.00 lakh effective consumers, which works out to 9.52 employees / 1000 consumers and 3.9 employees / MU sold. This shows that manpower strength in BSEB is high, compared to employee cost prevailing in other State Electricity Boards / Utilities which is as given below:

Employees in other SEBs – Comparison

Name of the State	No. of Employees	
	Per 1000 consumers	Per MU sold
Maharashtra	8.90	2.12
Andhra Pradesh	5.72	2.54
Gujarat	7.40	1.55
Karnataka	5.11	2.31
Kerala	4.2	2.14
Chhattisgarh	6.10	1.89
Bihar	9.52	3.9

The Board has to take effective measures to rationalize the manpower and utilization thereof by proper training and redeployment. Directive is issued separately on this.

A provision of Rs. 206.31 crore is made towards terminal benefits viz., pension, gratuity, GPF, GSS etc. Some of the consumers / consumer organizations objected to the provision of this amount as this has to be met from monthly contribution of the employees and should not be charged to the consumers. It was however explained by BSEB that since there is no separate account or fund maintained for paying terminal benefits to its employees from its revenue account Board was treating the amount contributed by employees as internal resource and expenditure on this account is therefore to be met from its revenue.

This is however approved by the Commission as a special case. The Board shall take steps to invest contribution of employees towards pension etc., through a Trust and make arrangements to pay the pension, gratuity etc., from the earnings of the investments through the Trust.

A provision of Rs.1.00 crore is made under the employee cost towards payment of overtime. With adequate number of employees in position, there is no case to pay over time.

The Commission however approves this for the year 2006-07, as a special case, and overtime will not be allowed in future.

With the above observations the Commission approves Rs. 525.91 crore towards employee cost for FY 2006-07.

6.7.4 Administrative and General (A&G) Expenses

The BSEB has claimed an amount of Rs.21.26 crore towards A&G expenses for FY 2006-07. These expenses cover miscellaneous expenditure such as rents and taxes, insurance, consultancy charges, legal charges, audit fees, electricity, water charges, telephone, printing and stationery, conveyance, travel expenses etc.

The actual expenditure for the FY 2003-04 and FY 2004-05 and estimated expenditure for FY 2005-06 and proposed expenditure for FY 2006-07 are given in Table 6.8 below:

Table-6.8

Administrative and General Expenses

(Rs. in crores)

Sl. No.	Item	FY 2003-04 (Actual)	FY 2004-05 (Actual)	FY 2005-06 (Estimated)	FY 2006-07 (Projected)
1.	Rent and Taxes	0.66	0.63	0.70	0.80
2.	Insurance	-	0.01	0.01	0.01
3.	Telephone	1.51	1.67	1.70	1.80
4.	Legal charges	0.87	0.79	0.80	0.70
5.	Audit fee	1.91	1.00	1.00	1.10
6.	Other fee charges	0.01	0.03	0.03	0.03
7.	Advertisement	0.71	0.96	1.00	1.00
8.	News paper, Books, periodicals	0.04	0.47	0.40	0.40
9.	Electricity charges	1.97	2.03	2.10	2.10
10.	Entertainment charges	0.10	0.10	0.12	0.12
11.	Other office miscellaneous expenditure	11.95	7.98	8.00	8.50
12.	Freight	0.34	0.63	0.70	0.70
13.	Conveyance and Travel	3.84	3.72	3.80	4.00
	Grand Total	23.91	20.02	20.36	21.26

The increase in A&G expenditure in 2006-07 over the previous year 2005-06 is 4.42% which is considered reasonable.

The Commission approves an expenditure of Rs.21.26 crore under Administrative and General charges for the year 2006-07.

6.7.5 Repair and Maintenance (R&M) Expenses

The BSEB proposes an expenditure of Rs.25.20 crore under repair and maintenance expenses for the year 2006-07, which include expenditure on maintenance and routine repairs of plant and machinery, vehicles, transmission and distribution network, buildings etc. The actual expenditure for FY 2003-04 and FY 2004-05 and estimated expenditure during FY 2005-06 and proposed expenditure during FY 2006-07 are given in Table 6.9 below:

Table-6.9

Repair and Maintenance Expenses

(Rs. in crores)

Sl. No.	Item	FY 2003-04 (Actual)	FY 2004-05 (Actual)	FY 2005-06 (Estimated)	FY 2006-07 (Projected)
1.	Plant and machinery	13.58	12.40	14.38	16.00
2.	Line cable and works	9.01	4.20	3.08	4.00
3.	Building	1.22	1.20	2.81	2.85
4.	Civil work	1.86	1.00	1.45	1.50
5.	Hydraulic works	0.30	--	0.01	0.05
6.	Vehicles	0.22	0.20	0.35	0.40
7.	Furniture and fixtures	0.03	0.30	0.05	0.05
8.	Office equipments	0.24	0.28	0.31	0.35
9.	Sub total	26.46	19.58	22.44	25.20

The increase in R&M expenses for 2006-07 over the previous year i.e. 2005-06 is 12.3%. Since the generation plant and allied network is old, it requires considerable expenditure towards repair and maintenance. The norm generally is about 2% of gross fixed assets (which works out to about Rs.48 crore) and the amount claimed is well within this norm.

The Commission approves an expenditure of Rs.25.2 crores under Repair and Maintenance (R&M) expenses for FY 2006-07.

6.7.6 Interest and Finance Charges

The Board has claimed an amount of Rs.600.38 crore on Interest and Finance charges for the year 2006-07. The interest on various loans for the last three years and projected for 2006-07 is given in Table 6.10 below:

Table 6.10

Interest on Loans

(Rs. in crores)

Sl.No.	Institution	2003-04	2004-05	2005-06	2006-07
1.	State Government	229.56	346.99	435.30	532.56
2.	LIC	9.64	8.19	5.22	4.34
3.	REC	12.62	12.62	12.62	12.62
4.	Market borrowing	13.37	10.67	10.67	10.67
5.	PFC	-	-	6.25	25.19
	Short term loans				
6.	REC	-	3.45	4.33	4.00
7.	Canara Bank	-	1.27	1.27	1.00
8.	Over Draft	2.91	6.57	15.00	10.00
	Total	268.10	389.76	490.96	600.38

It is seen that major interest charge pertain to State Government loans.

The loans outstanding at the end of the year 2002-03, drawal and repayments made during the years 2003-04 to 2005-06 and proposed to be drawn and repaid during the year 2006-07 are given in Table 6.11 below:

Table - 6.11

Loans drawn, Repayments made and balance outstanding

S.N	Details	2002-03	2003-04(Prov)			2004-05(Prov)			2005-06(R.E)			2006-07(Projected)		
		Balance	Drawal	Repayment	Balance	Drawal	Repayment	Balance	Drawal	Repayment	Balance	Drawal	Repayment	Balance
(A)	Institutional Creditors													
	(1) Open market Loans (Bonds)	68.14	-	-	68.14	-	-	68.14	-	-	68.14	-	-	68.14
	(2) LIC	125.63	-	-	125.63	-	-	125.63	-	-	125.63	-	8.07	117.56
	(3) REC	168.55	102.06	1.65	268.96	18.13	-	287.09	68.00	0.40	354.69	-	-	354.69
	(4) IDBI	0.45	-	0.45	-	-	-	-	-	-	-	-	-	-
	(5) PFC	-	-	-	-	64.68	-	64.68	56.80	2.87	118.61	205.60	20.04	304.17
	(6) Others	-	-	2.10	-	-	-	-	-	-	-	-	-	-
	Total (A)	362.77	102.06		462.73	82.81	-	545.54	124.80	3.27	667.07	205.60	28.11	844.56
(B)	STATE GOVERNMENT													
	(1) Loans	1035.91	671.61	-	1707.5	861.02	-	2568.5	1053.5	-	3622.00	747.18	-	4369.2
	(2) Equity	-	-	-	-	-	-	-	-	-	-	-	-	-
	(3) Total (B)	1035.91	671.61	-	1707.5	861.02	-	2568.5	1053.5	-	3622.00	747.18	-	4369.2
	TOTAL (A)+ (B)	1398.68	773.67	2.10	2170.3	943.83	-	3114.1	1178.3	3.27	4289.07	952.78	28.11	5213.7

It is seen from the above table that the magnitude of State Government loans has been Rs. 3622 crore at the end of the year 2005-06, and it would appear from the data furnished that the State Government loans are not utilized for addition of assets and about 75% thereof has been utilized to meet the revenue expenditure mainly for payment to central generating companies etc., towards power purchase. The details in respect of utilization of State Government loans as furnished by the Board are as given in Table 6.12 below:

Table 6.12

Utilisation of State Government Loans

(Rs. in crores)

Year	Amount of loan drawn	Amount utilized to meet revenue expenditure	Amount utilized for capital expenditure
Upto 2002-03	1035.91	659.85	376.06
2003-04 (Actual)	671.61	412.44	259.17
2004-05 (Actual)	861.02	540.58	320.54
2005-06 (Estimated)	1053.46	946.63	106.83
2006-07 (proposed)	747.18	*720.00	27.18
Total	4369.18	3279.40	1089.78

*It is stated by the Board that the amount of Rs.720 crores is being released by the State Government as grant for direct payment of power purchase bills to NTPC.

The Commission accordingly allows interest on loans utilized for addition of asset and not to meet revenue expenditure. The interest on loans from PFC, REC and other sources which are borrowed to meet capital expenditure will however be allowed. The Commission however will not allow interest on short-term loans and over draft. The interest on State Government loans utilized for capital works stands at Rs.1062 crore and the loan proposed to be drawn during 2006-07 is about Rs.27.48 crore. The interest on this loan allowed is 13%, which works out to Rs.139.90 crore.

The Commission approves interest payments on various loans for the year 2006-07 as below:

(Rs. crores)

Sl.No.	Institution	Interest projected by the SEB	Interest approved by the Commission
1.	State Government	532.56	139.90
2.	LIC	4.34	4.34
3.	REC	12.62	12.62
4.	Market borrowing	10.67	10.67
5.	PFC	25.19	25.19
	Short term loans		
6.	REC	4.00	-
7.	Canara Bank	1.00	-
8.	Over Draft	10.00	-
	Total	600.38	192.72

Under Section 67-A of Electricity (Supply) Act, 1948 the interest on State Government loans may be paid out of the balance of the revenue, if any after meeting all other expenses. Though the Electricity (Supply) Act, 1948 stands revoked on enactment of Electricity Act, 2003, the spirit of the provision is that the interest on State Government loans could be paid only when the Board generates surplus

revenue after meeting all expenses. The State Government may either waive interest on State Government loans till the financial position of the Board improves or convert the loan utilized to meet revenue expenditure, as grant. The State Government has provided grant of Rs.357.50 crore during 2005-06 and Rs.720.00 crore during 2006-07 for payment of power purchase bills of NTPC. On the same lines the assistance provided to meet revenue during earlier years may also be converted as grant. Since the State Government decided to restructure the Electricity Board this may be dealt in the “Financial Restructuring Plan” so that the new entities on restructuring may start with clean Balance Sheets.

The Commission approves the interest and finance charges at Rs.192.72 crore for FY 2006-07 against Rs.600.38 crore claimed by the Board.

6.7.7 Depreciation

Though the BSEB has claimed depreciation of Rs.170.90 crore for the year 2006-07, which has been stated to be in accordance with the guidelines issued by the Ministry of Power, Government of India vide notification dated 29th March 1994 and subsequent amendments, the depreciation has to be calculated on straight line method at the rates of depreciation as laid down in the CERC (Terms and Conditions of Tariff) Regulations, which is also endorsed in the National Tariff Policy. Subsequently, the Board calculated and furnished the depreciation for 2006-07 based on the rates as per the CERC Regulations at Rs.83.75 crore as against Rs. 170.90 crore claimed earlier by BSEB, as given in Table 6.13 below:

Table 6.13

Depreciation

(Rs. crore)

Sl.No.	Particulars	Asset Value at the end of 2006-07	90% Value of Asset	Depreciation
1.	Generation			
	i) Thermal	587.69	528.92	16.55
	ii) Hydro	7.79	-	-
2.	Transmission	675.28	607.75	21.28
3.	Distribution	1491.75	1342.58	45.92
	Total	2762.51	2479.25	83.75

The Commission approves depreciation of Rs.83.75 crore for determination of tariff for FY 2006-07.

BSEB is directed to prepare and maintain fixed assets register clearly defining the category of assets along with their respective ages.

6.8 PROVISION FOR BAD AND DOUBTFUL DEBTS

The BSEB has not made any provision for bad and doubtful debts. However as on 31st March 2005 a sum of over Rs.5101.15 crore of energy dues is outstanding to be recovered from consumers. The Board is directed to issue notices to all defaulters for clearing the dues within a specified period and in case of failure to do so, electricity supply to such consumers shall be disconnected and action taken in accordance with the provisions of the Act and Regulations. The Board shall review the status of recovery of dues and make out a proposal to write off of bad debts, which are not recoverable.

6.9 OTHER INCOME

The Board has estimated Rs.44.00 crore as other income for the year 2006-07 which includes meter rent, delayed payment surcharge and miscellaneous receipts as per details given in Table 6.14 below:

Table 6.14

Other Income (Non-Tariff Income)

(Rs. crore)					
Sl.No.	Item	FY 2003-04 (Actual)	FY 2004-05 (Actual)	FY 2005- 06 (Estimated)	FY 2006-07 (Projected)
1.	Meter Rent	6.87	6.75	8.00	9.00
2.	Delayed payment surcharge	473.16	537.49	619.00	20.00
3.	Misc. receipt	15.21	14.51	18.32	15.00
	Total	495.24	558.75	645.32	44.00

Drastic reduction in the recovery of delayed payment surcharge has been proposed in FY 2006-07 without furnishing any valid justification in this regard. However, the Board subsequently clarified that the amounts for delayed payment surcharge indicated for the years 2003-04, 2004-05 and 2005-06 are the amounts assessed and billed only and not realized but the amount indicated for 2006-07 is the amount that is likely to be realized.

The Commission tentatively approves Rs.44.00 crore under other income for FY 2006-07.

6.10 AGGREGATE REVENUE REQUIREMENT

The Board has applied for a net revenue requirement of Rs.2826.55 crore for the year 2006-07. Based on the discussion in this chapter, **the Commission approves ARR for the Board at Rs. 2170.16 crore as given in Table 6.15 below:**

Table 6.15

Aggregate Revenue Requirement (ARR) Projected by BSEB and Approved by the Commission

(Rs. crore)

Sl. No.	Particulars	2006-07	
		ARR Projected by BSEB	ARR Approved by the Commission
A	Energy Available (MU)	8232	7401
B	Energy sales (MU)	5268	4338
C	T&D loss (%)	36	41.4
D	Gross Expenditure		
1.	Generation cost	128.00	51.17
2.	Power purchase cost	1438.90	1354.15
3.	Employee cost	525.91	525.91
4.	Administrative and General expenses	21.26	21.26
5.	Repair and Maintenance cost	25.20	25.20
6.	Interest and finance charges	600.38	192.72
7.	Depreciation	170.90	83.75
E	Less: Interest and other expenses capitalized	(-)40.00	(-)40.00
F	Other Appropriations	-	-
1	Provision for Bad debts and other debts	-	-
2	Income tax etc.	-	-
G	Net Expenditure	2870.55	2214.16
H	Less: Other income	(-) 44.00	(-) 44.00
I	Aggregate Revenue Requirement (G-H)	2826.55	2170.16
J	Average cost of supply (Rs. / unit)	5.37	5.00

6.11 INCOME FROM EXISTING TARIFF

Income from supply of electricity to consumers is estimated based on the existing tariff applicable to different category of consumers and for the quantity of electricity sold to them as approved by the Commission.

BSEB has projected the revenue from existing tariffs at Rs.1272.77 crore based on consumer category-wise energy sales projected for 2006-07. The revenue estimated by the Board and the Commission is given in Table 6.16 below:

Table 6.16

Revenue from Existing Tariff for 2006-07

Sl. No.	Category of consumers	Estimated by the Board		Estimated by the Commission	
		Energy Sales (MU)	Total Revenue (Rs. crore)	Energy Sales (MU)	Total Revenue (Rs. crore)
1.	Domestic				
	i) Kutir Jyoti (KJ)	64.80	10.80	68.80	11.52
	ii) DS-I	244.80	37.94	244.80	37.94
	iii) DS-II	1155.40	231.27	1155.40	231.27
2.	Non-Domestic				
	(i) Non-Domestic-I	7.20	1.71	7.20	1.71
	(ii) Non-Domestic-II	240.40	118.68	240.40	118.68
	(iii) Non-Domestic-III	91.00	45.84	91.00	45.84
	(iv) Non-Domestic-IV	6.00	2.60	6.00	2.60
	(v) Non-Domestic-V	1.40	0.40	1.40	0.40
3.	Agriculture Service (IAS)				
	Unmetered Supply				
	(i) I.A.S.-I	1493	19.30	576	19.30
	(ii) I.A.S-II		25.61		25.61
	Metered Supply				
	(i) I.A.S.-I				
	(ii) I.A.S.-II				
4.	Low Tension Industrial Service (LTIS)				
	(i) LTIS – I upto 25 HP	112.75	52.15	112.75	52.15
	(ii) LTIS-II upto 26 HP to 99 HP	48.25	23.14	48.25	23.14
	(iii) LTIS-III upto 99 HP	200.00	56.00	200.00	56.00
5.	Street Light Service (SS)				
	a) SS-I (Metered supply)				
	b) SS-II (Unmetered)	28.00	7.95	28.00	7.95
	c) SS-III Unmetered	1.00	0.46	1.00	0.46
6.	High Tension (Voltage) Supply				
	11 kV HTS-I	369	179.05	369	179.05
	33 kV HTS-II	75	34.51	75	34.51
	132 kV Extra High Tension	59	26.35	59	26.35
	Special Service (for Induction Furnace (HTSS))	269	90.05	269	90.05
7.	Railway Traction Service (RTS)				
	(i) RTS-I (25 kV)	102.20	50.88	102.20	50.88
	(ii) RTS-II (132 kV)	334.80	159.61	317.80	151.50
8.	Inter-State	365	98.47	365	98.47
	Total	5268.00	1272.77	4338.00	1265.38

6.12 GRANT FROM STATE GOVERNMENT

The State Government in letter No.1412 dated 26.4.2006 communicated sanction of a grant of Rs.720 crore as a resource gap during 2006-07 towards payment of power purchase bills of NTPC. This grant also figures in the Volume-III of the tariff petition submitted by the BSEB vide letter dated 22.05.2006.

The Commission considered the Rs.720 crore as a resource to cover the revenue gap during 2006-07.

6.13 REVENUE GAP

Based on the analysis and scrutiny of various items of expenses and the Annual Revenue Requirement of BSEB for the year 2006-07 as approved by the Commission, the revenue gap is worked out. The State Government has approved a grant (subsidy) of Rs.720.00 crore during the Financial Year 2006-07 as a revenue resource for payment to NTPC towards power purchase. Revenue requirement, revenue income at existing tariff, the Government grant (subsidy) and Revenue Gap are as under.

Table 6.17
Revenue Gap

(Rs. crore)			
Sl. No.	Item	Claimed by BSEB	Approved by the Commission
1.	Aggregate Revenue Requirement	2870.60	2214.16
2.	Less non-tariff income	(-) 44.00	(-) 44.00
3.	Revenue Requirement form sale of power	2826.60	2170.16
4.	Revenue at existing tariff	1272.77	1265.38
5.	Grant from State Government as Resource Gap	-	720.00
6.	Surplus (deficit) (4-3-5)	(1553.83)	(184.78)

6.14 REVENUE GAP AND RECOVERY THEREOF

The Commission has arrived at revenue gap of Rs.184.78 core for the year 2006-07. This revenue has to be made good by the Commission through tariff revision.

6.15 REGULATORY ASSET

The Commission has decided to convert Rs.60.00 crore out of the gap of Rs.184.78 crore into a Regulatory Asset. This Regulatory Asset of Rs.60.00 crore along with interest thereon is proposed to be recovered from the consumers during next two years viz., 2007-08 and 2008-09. The balance revenue gap of Rs.124.78 crore is proposed to be recovered from the consumers during the current year through tariff revision approved by the Commission. The Commission has adopted this device to protect the revenue interest of the Board and also to ensure that the consumers are not subjected to high tariff escalation.

6.16 REVENUE FROM APPROVED TARIFF

The expected revenue at approved tariff is given in the tariff schedule and average approved tariff for the year 2006-07 for various categories of consumers is given in Table 6.18 below:

Table 6.18

Estimated Revenue from Approved Tariff in FY 2006-07

Sl. No.	Category of consumers	Approved sales (MU)	Revenue estimation at approved tariff (Rs. crore)	Average Tariff (Ps./Unit)
1	Domestic			
	i) a Kutir Jyoti (KJ) - Rural	64.80	12.60	194
	b Kutir Jyoti (KJ) - Urban	4.00	0.84	210
	ii) DS-I	244.80	48.24	197
	iii) DS-II	1155.40	277.78	240
	iv) DS-III	-	-	-
2	Non-Domestic			
	(i) Non-Domestic-I	7.20	1.96	272
	(ii) Non-Domestic-II	337.40	186.66	553
	(iii) Non-Domestic-III	1.40	0.44	314
3	Agriculture Service (IAS)			
	Unmetered Supply			
	(i) I.A.S.-I	448	23.04	51
	(ii) I.A.S.-II	128	30.80	241
	Metered Supply			
	(i) I.A.S.-I	-	-	-
	(ii) I.A.S.-II	-	-	-
4	Low Tension Industrial Service (LTIS)			
	(i) LTIS – I upto 25 HP	112.75	56.24	499
	(ii) LTIS-II 26 HP to 99 HP	48.25	24.85	515
	(iii) LTIS-III upto 99 HP	200	63.35	317
5	Street Light Service (SS)			
	a) SS-I (Metered supply)	-	-	-
	b) SS-II (Unmetered)	28.00	8.75	313
	c) SS-III Unmetered – Mast Lighting	1.00	0.47	470
6	High Tension (Voltage) Supply			
	11 kV HTS-I	369.00	190.42	516
	33 kV HTS-II	75.00	36.54	487
	132 kV Extra High Tension HTS-III	59.00	27.55	467
	Special Service (for Induction Furnace) HTSS	269.00	95.52	355
7	Railway Traction Service (RTS)			
	(i) RTS-I (25 kV)	102.20	51.67	506
	(ii) RTS-II (132 kV)	317.80	154.02	485
8	Inter-State	365	98.47	270
	Total	4338	1390.21	320

6.17 CROSS SUBSIDY

In the business of electricity distribution, the tariff structure of different categories of consumers has been distorted over the years. Some consumer categories are paying far below the average cost of supply and some above the average cost. The level of cross subsidy with the approved tariff is given in Table 6.19 below:

Table 6.19
Cross Subsidy with Approved Tariff for 2006-07

Sl. No.	Category of consumers	Average Unit rate (Ps./Unit)	Average cost of supply (Ps./Unit)	Cross subsidy (Ps./Unit)
1	Domestic			
	i) a Kutir Jyoti (KJ) - Rural	194	500	(-)306
	b Kutir Jyoti (KJ) - Urban	210	500	(-)290
	ii) DS-I	197	500	(-)303
	iii) DS-II	240	500	(-)260
	iv) DS-III	-	500	-
2	Non-Domestic			
	(i) Non-Domestic-I	272	500	(-)228
	(ii) Non-Domestic-II	553	500	(+)53
	(iii) Non-Domestic-III	314	500	(-)186
3	Agriculture Service (IAS)			
	Unmetered Supply			
	(i) I.A.S.-I	51	500	(-)449
	(ii) I.A.S-II	241	500	(-)259
	Metered Supply			
	(i) I.A.S.-I	-	500	-
	(ii) I.A.S.-II	-	500	-
4	Lower Tension Industrial Service (LTIS)			
	(i) LTIS – I upto 25 HP	499	500	(-)1
	(ii) LTIS-II upto 26 HP to 99 HP	515	500	(+)15
	(iii) LTIS-III upto 99 HP	317	500	(-)183
5	Street Light Service (SS)			
	a) SS-I (Metered supply)	-	500	-
	b) SS-II (Unmetered)	313	500	(-)187
	c) SS-III mast	470	500	(-)30
6	High Tension (Voltage) Supply			
	11 kV HTS-I	516	500	(+)16
	33 kV HTS-II	487	500	(-)13
	132 kV Extra High Tension HTS-III	467	500	(-)33
	Special Service (for Induction Furnace HTSS)	355	500	(-)145
7	Railway Traction Service (RTS)			
	(i) RTS-I (25 kV)	506	500	(+)6
	(ii) RTS-II (132 kV)	485	500	(-)15
8	Inter-State	270	500	(-)230
	Overall for the Board	320	500	(-)180

Chapter-7

Tariff Principles and Design

7.1 BACKGROUND

7.1.1 The provisions of Electricity Act 2003 (EA 03), National Electricity Policy (NEP) and National Tariff Policy (NTP) and the Tariff Philosophy have been discussed in Chapter-3 of this order. The Commission has been broadly guided by the tariff principles enshrined in the EA 03 and the policies in determination of retail tariff. These principles are that the tariff should “Progressively reflect cost of supply of Electricity” and also “reduce the element of cross subsidies” within the time specified in the Tariff Policy. The EA 03 lays special emphasis on safeguarding consumer’s interest and also requires that the cost should be recovered in a reasonable manner. The EA 03 mandates that tariff determination should be guided by factors, which “encourage competition, efficiency, economical use of resource, 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 to the best of its capacity has endeavoured to follow these guidelines as far as possible:

7.1.2 The NTP mandates that multi-year tariff (MYT) framework be adopted for determination of tariff from April, 2006. However, the Commission is not in a position to introduce MYT regime in the State at present mainly due to lack of requisite and reliable data. The present MIS and regulatory reporting system of the Board is inadequate for any such exercise. The audited accounts of the Board from 2002-03 onwards are not available, there has been no study to assess voltage-wise losses in the absence of meters on all feeders, distribution transformers and consumer, premises. Technical and Commercial losses are yet to be segregated and quantified voltage-wise. Under these conditions it would not be practicable to implement MYT

frame work this year. The Commission taking into account all these factors, has decided to introduce MYT no sooner the audited accounts of BSEB and required reliable data are available.

7.1.3 The mandate of the NTP that tariff should be within plus / minus 20% of the average cost of supply by the year 2010-11 has been the guiding principle. In this effort, however, the Commission could not lay down the road map for reduction of cross subsidy mainly due to lack of data regarding cost of supply at various voltage levels.

7.1.4 In working out the cost of supply, the Commission has followed on the basis of average cost of supply in the absence of relevant data for working out consumer category-wise cost of supply. With regard to method of price regulation the Commission has broadly followed, as already mentioned in Chapter-3, the Rate of Return regulation (RoR) method. However, in this tariff order an element of performance target has been indicated. The Commission has set a loss reduction target for the years 2007-08 and 2008-09, as better performance will result in substantial efficiency gains to the Board and conversely shortfall in performance levels will result in losses.

7.2 TARIFF PROPOSED BY THE BOARD AND APPROVED BY THE COMMISSION

7.2.1 The retail tariff proposed by the Board is on the basis of a net revenue gap of Rs.1553.83 crore out of which the proposal for revision of tariff is designed to earn an additional revenue of Rs.1447.67 crore leaving a gap of Rs.106.16 crore. However, on a detailed scrutiny of the revenue requirement filed by the Board, the Commission has arrived at a more realistic revenue requirement, which requires only an additional revenue of Rs.184.78 crore. The Commission has therefore, proceeded to rationalize the tariff with marginal increase for different categories. The average cost of supply has been worked out at Rs.5.00 per unit against Rs.5.37 per unit projected by the Board. Since the average cost of supply itself is quite high at Rs.5.00 per unit, most of the categories of consumers are being supplied electricity at below the cost of supply, some marginally above, and some far below the cost of supply, hence the task of the Commission and the Board is to reduce the average cost of supply by reducing the losses and to improve efficiency before making an attempt to rationalize the tariff to reduce cross subsidy.

7.2.2 The Board proposed to bring the tariffs of certain categories of consumers, particularly domestic and agriculture who have been paying far below the average cost of supply, at par with average cost of supply. This resulted in substantial

increase in proposed tariff rates of these categories and marginal increase in the case of non-domestic and industrial consumers. Since the revenue gap has been reduced to Rs.184.78 crores, against Rs.1553.83 crores projected by the Board, the Commission has not envisaged any major changes in the tariff structure except making some marginal increase. A number of non-domestic and industrial consumers have represented that the existing tariff for these two categories have been high compared to neighbouring States and requested reduction in the tariffs.

While attempting the rationalization, the Commission has kept in view the guidelines of the NTP to provide concessional tariff for BPL consumers.

7.3 TARIFF CATEGORIES

The Commission approves the following tariff categories:

LT Categories: LT tariff shall be applicable for connections upto a maximum connected load of 60 kW except for tariff categories LTIS-II and III, Irrigation and Agriculture categories who are allowed upto 99 HP and 100 HP respectively.

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

a) Kutir Jyoti – BPL consumers is newly introduced.

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

Connected load: upto 100 Watt and

Energy consumption upto 30 units per month

0-30 units / month

b) Domestic-I – Rural

Unmetered

Connected load: Upto 2 kW

Metered

Connected load: upto 2 kW

0-50 units/month

51-100 units/month

Above 100 units/month



c) Domestic-II – Urban – metered

Connected load:

Single phase – upto 4 kW

Three phase – above 4 kW



Urban connections

Rural connection above 2 kW

1-100 units / month

101-200 “

201-300 “

Above 300 “

d) Domestic-III – Urban - metered - residential societies etc.

All units

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

a) Non- Domestic-I : Rural

Unmetered

Connected load: Upto 2 kW

Metered

Connected load: Upto 2 kW

1-100 units / month

101-200 units / month

Above 200 units / month

b) Non- Domestic-II: Urban

Metered

Connected load: upto 60 kW for urban consumers

Above 2 kW for Rural consumers

1-100 units / month

101-200 units / month

Above 200 units / month

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

Connected Load: Upto 30 kW

0-100 units / month

101-200 units / month

Above 200 units / month

3. Irrigation and Agricultural Pumpsets – for Bonafide Agricultural Operations

a) IAS-I: Private Tube wells – IAS-I

(i) Unmetered

- Rural feeder
- Urban feeder

(ii) Metered

- All units - Rural feeder
- All units - Urban feeder

**b) 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

- All units
- Rural feeder
- Urban feeder

4. Low Tension Industry

Metered

- a) **LTIS-I:** Upto 25 HP
All units
- b) **LTIS-II:** 26-99 HP
- c) **LTIS-III:** Public Water works
Upto 99 HP

5. Street Light, Mast Light and Traffic Light

a) SSI: Metered

- All units - Gram Panchayats
 - Nagar Palika/NAC/Municipality
 - Municipal Corporation

b) SS-II: Unmetered

- (i) Gram Panchayats
- (ii) Nagar Palika / NAC/ Municipality
- (iii) Municipal Corporation

c) SS-III: Unmetered (Mast Lighting)

- (i) Gram Panchayats
- (ii) Nagar Palika / NAC/ Municipality
- (iii) Municipal Corporation

6.0 High Tension Supply

a) HTS-I – 11 kV supply

Connected Load: for installations having contract demand of 75-1500 kVA.

- Demand charges
- Energy charges

b) HTS-II – 33 kV supply

Connected Load: for installations having contract demand 1000-10000 kVA

- Demand charges
- Energy charges

c) HTS –III - 132 kV supply – Industrial consumers

Connected Load: for installations having contract demand of 7.5 mVA and above

- Demand charges

- Energy charges

d) HTSS - Specified Services – Induction furnaces

- Demand charges

- Energy charges

7. Railway Traction

a) RTS-I: 25 kV supply

- Demand charges

- Energy charges

b) RTS-II: 132 kV supply

- Demand charges

- Energy charges

8. Temporary Supply

- LT

- HT

7.4 TARIFF

The following changes have been introduced in the LT categories for application of tariffs.

7.4.1 Domestic

(a) Kutir Jyoti - BPL Consumers

Kutir Jyoti Scheme has been extended for BPL families in urban areas also which was hitherto limited to rural areas. **Only metered supply will be provided to this new category – Kutir Jyoti (Urban).**

(b) Domestic (Rural) DS-I

(i) Unmetered

Two slabs are introduced in the connected load.

Upto 1 kW

Above 1 kW upto 2 kW

(ii) Metered

Three slabs are introduced as below:

0-50 units / month

51-100 units / month

Above 100 units / month

c) Domestic – DS-II

Second slab of 101-300 units is split into two slabs.

101 – 200 units/month

201-300 units/month

7.4.2 Non-Domestic

a) Non-domestic (Rural) – NDS-I

(i) Unmetered

Three slabs are introduced as below:

Connected load - upto 500 watts

- 501 Watts to 1.0 kW

- Above 1.0 kW upto 2.0 kW

(ii) Metered

Three slabs are introduced as below:

0-100 units / month

101-200 units/month

Above 200 units/month

b) Non-Domestic (Urban) – Metered – NDS-II

Three slabs are introduced as below:

0- 100 units / month

101 – 200 units / month

Above 200 units / month

c) Non-Domestic – III and IV are merged with NDS-II

d) Non-Domestic - III is introduced in place of NDS-V

The approved tariff schedule is annexed as **Annexure- 7.1.**

**SCHEDULE
FOR
RETAIL TARIFF RATES
AND
TERMS AND CONDITION OF SUPPLY FOR FY 2006-07**

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 60kW for domestic and non-domestic category, upto 99 HP for industrial (LTIS) category and upto 100 HP for irrigation category.

Single Phase supply upto 4.0 kW
Three Phase supply above 4.0 kW

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 Scheme (KJ) – Rural / Urban

This will be applicable to (i) all huts (kutir) and dwelling houses of rural and urban poor below the poverty line including SC and ST families. (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 one light of 40 watt or 60 watt in rural area and upto 100 watt in urban area 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) & (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 area getting power from Urban / Town feeders for single phase supply for load upto 4 kW and three phase supply for load exceeding 4 kW. Rural consumers having sanctioned load above 2 kW will come under this category.

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

	Category of consumer		Fixed charge (Rs.)	Energy charge (Ps / Unit.)
(i)	<u>Kutir Jyoti - BPL Consumers</u>			
	1.1	<u>Unmetered</u> K.J. (Rural)	Rs. 35/ connection/PM	x
	1.2	<u>Metered</u> K.J. (Rural) K.J. (Urban)	x	120 P/unit 150 P/unit
				Subject to monthly minimum charge of KJ (Rural) - Rs.25/- and KJ (Urban) - Rs.35/-.

	Category of consumer	Fixed charge (Rs.)	Energy charges	
(ii)	<u>DS – I</u> Connected load: Upto 2 kW		Consumption in a month (Units)	Rate P/unit
	<u>Unmetered</u> Connected load: upto 1kW	Rs.75/connection/ per month	x	x
	Connected load: above 1kW upto 2 kW	Rs.110/connection /per month		
	<u>Metered</u>	x	First 50 units	125
		x	51-100 units	150
			Above 100 units	170
		x	Subject to monthly minimum charge of 1 st kW - 40 units per month 2 nd kW - 20 units per month	

(iii) DS – II (Metered)

Fixed charge (Rs.)	Energy charges	
	Consumption in a month (Units)	Rate P/unit
Single phase- Rs.30/ month/ connection	1-100 units	200
Three Phase-Rs.180/ month/ connection	101-200 units	250
	201-300 units	300
	Above 300 units	370
	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 will be extra as applicable

(iv) DS – III (Metered)

Energy charges	
Consumption in a month (Units)	Rate P/unit
All units	275 P
	Subject to monthly minimum charge 1 st kW – 40 units/flat per month Additional kW – 20 units/flat per month

FPPCA will be charged extra as applicable.

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, central 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, poultry farms, 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, Govt. hospitals and Govt. research institutions and non – profitable Govt. 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

	Category of consumer	Fixed charge (Rs.)	Energy charges	
			Consumption in a month (Units)	Rate P/unit
	Unmetered			
	Connected Load Upto 500 W (0.5kW)	Rs.105/connection/ per month	x	x
	Above 0.5 kW upto1 kW	Rs.120/connection per month	x	x
	Above 1 kW upto 2 kW	Rs.150/connection/ per month	x	x
	Metered	x	1-100 units	140
		x	101-200 units	160
		x	Above 200 units	200
		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 will be charged extra as applicable.

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

Fixed charge (Rs.) Per month	Energy charges	
	Consumption in a month (Units)	Rate P/unit
Rs.140 /kW or part thereof upto 4 kW	1-100 units	420
	101-200 units	450
	Above 200 units	480
Rs.170/kW or part thereof for loads above 4 kW.	Subject to a monthly minimum charge of 50 units/kW or part thereof	

FPPCA will be charged extra as applicable.

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

Fixed charge (Rs.)	Energy charges	
	Consumption in a month (Units)	Rate P/unit
Rs.45 /kW with minimum of Rs.165 per connection / month	1-100 units	210
	101-200 units	275
	Above 200 units	330
	Subject to monthly minimum charge of 50 units/kW or part thereof.	

PFPCA will be charged extra as applicable.

3.0 IRRIGATION & 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.

3.1 IAS - I

Applicable for all purposes indicated above including Private Tubewells.

Tariff Rates

Unmetered Supply

- Rural feeder - Rs.100 / HP per month
- Urban feeder - Rs.120/HP per month

Metered supply

All units

Rural feeder -80 P/unit

Urban feeder -130 P/unit

Subject to monthly minimum energy charges of –

Rural feeder - Rs. 75/HP per month

Urban feeder - Rs.120/HP per month

3.2 IAS – II

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

Unmetered Supply

Rural feeders - Rs.420 /HP per month

Urban feeders - Rs. 450/HP per month

Metered supply

- Rural feeder – 150 P/unit

- Urban feeder – 200 P/unit

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

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 P/unit
Rs.65/HP or part thereof / per month	All units	415
	Subject to monthly minimum charge of 70 units/HP or part thereof.	

FPPCA will be charged extra as applicable.

4.2 LTIS – II (Connected load 26-99 HP)

Fixed charge (Rs.)	Energy charges	
	Consumption in a month (Units)	Rate P/unit
Rs.85/HP or part thereof per month	All units	430
	Subject to monthly minimum charge of 100 units/HP or part thereof.	

FPPCA will be charged extra as applicable.

4.3 Public Water Works – LTIS – III

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

Fixed charge (Rs.)	Energy charges	
	Consumption in a month (Units)	Rate P/unit
Rs.85/HP or part thereof per month	All units	300
	Subject to monthly minimum charge of 165 units / HP or part thereof.	

FPPCA will be charged extra as applicable.

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

5.0 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.

Category of services

- 5.1 SS – I - Metered street light service, Mast light & Traffic light
- 5.2 SS – II - Unmetered street light service, Traffic light service / Blinkers
- 5.3 SS – III - Unmetered Mast light service

Tariff Rates

SS – I

Metered Supply

All units - 300 P/Unit

Subject to monthly minimum charge for –

- 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.

SS – II**Unmetered Supply****Villages / Towns****Fixed Charges**

Sl. No	Light Point Wattage	Gram Panchayat	Nagar Palika / NAC/Municipality	Municipal Corporation
(i)	Upto 100 W	Rs. 60/PM	Rs.65 /PM	Rs.70/PM
(ii)	101- 250 W	Rs. 150/PM	Rs. 165/PM	Rs.185/PM
(iii)	251-500 W	Rs. 300/PM	Rs. 320/PM	Rs. 360/PM

In case of light points above 500 W the rates shall be worked out on prorata basis at item (iii) above.

FPPCA will be charged extra as applicable

SS – III**Unmetered supply****Villages and Towns****Fixed Charges**

Light Point Wattage	Gram Panchayat	Nagar Palika / NAC/Municipality	Municipal Corporation
Above 250 W Upto 500 W	Rs. 300/PM	Rs.330 /PM	Rs.355/PM
Subject to monthly minimum per mast.	Rs.1500	Rs.1650	Rs.1775

In case of light points above 500 watts, the rates shall be worked out on pro-rata basis.

FPPCA will be charged extra as applicable.

TERMS AND CONDITIONS OF LOW TENSION TARIFF

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.

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 1.5% per month or part thereof on the principal amount of bill will be levied from the original date 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.

Example:

Amount payable by due date Rs.100.00
 Due date 1st November 2006

Amount payable

On or before 10 th November 2006 Rs.100/- (No prompt payment rebate)	On or After 11 th November 2006 Rs.101.50	After 1 st December 2006 Rs.103.00
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3. 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 (except agriculture connection having load upto 5 HP) whose connected load includes induction motor of capacity of 5 HP and above, 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 (except agricultural connection having load upto 5 HP) 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 induction motor of 5 HP and above or welding transformers will be released unless shunt capacitors are installed to the satisfaction of the Board.
- g) The appropriate ratings of shunt capacitor to be installed on the motors of different ratings are provided in the “Electric Supply Code” issued by the Commission.

PART - B: HIGH TENSION SUPPLY

System of supply: High Tension – Alternating Current, 50 cycles, Three Phase at 11 kV/6.6kV and above.

1.1 HTS – I (11 kV/6.6 kV)

Applicable for supply 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
180	All units - 425

- (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 425 P/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.

1.2 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
175	All units - 420 P.

- (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 420 P/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.

1.3 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
170	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 50% and PF of 90% on contract demand payable at 415 P/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.

1.4 HTSS (11 kV/33 kV)

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

Character of service: AC, 50 cycles, 3 phase at 33 kV/11kV

Tariff rates

Demand charge Rs. / kVA / Month of billing demand	Energy charges Paise / unit
750	All units 135 P

- (i) Minimum monthly charges at Rs.1101 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 -

$$\text{Rs.} \left(750 + \frac{351 \times \text{Actual hours of supply}}{630 (\text{Assured hours of supply})} \right)$$

- (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.

1.5 Railway Traction Service

Applicable to Railway Traction loads only.

Tariff rates

	Demand charge Rs. / kVA / Month of billing demand	Energy charges Paise / unit
RTS - I		
25 kV supply	Rs. 160	All units-444 P
RTS - II		
132 kV supply	Rs.160	All units-438 P

- (i) The billing demand shall be the maximum demand recorded during the month or 85% of the contract demand whichever is higher.
- (ii) 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 444/438 P/unit

FPPCA will be extra as applicable for all HT categories including Railway traction service.

TERMS AND CONDITIONS OF HT TARIFF

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 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 1.5% per month or part thereof on the principal amount of bill will be levied from the original date 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.

Example:

Amount payable by due date Rs.100.00
Due date 1st November 2006

Amount payable

On or before 10 th November 2006	After 11 th November 2006	After 1 st December 2006
Rs.100/-	Rs.101.50	Rs.103.00
(No prompt payment rebate)		

3. 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 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

If the average power factor falls below 0.70 consecutively for 3 months, the Board reserves the right to disconnect the consumer installation 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
For each increase of 0.01 in power factor above 0.95	1.0 (one) percent on demand and energy charge

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.

7 Defective / Damaged / Burnt meter supply

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.

TEMPORARY SUPPLY

Temporary Supply (LT & HT)

1.0 Applicability

This tariff is for connection of temporary nature. 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.

1.1 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.

1.3 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 six months.
- (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 & 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 & 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 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 & 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 & 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.

SEASONAL SUPPLY

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 40 percent
2.	More than 3 consecutive months and upto 6 consecutive months in a year	Appropriate tariff plus 30 percent
3.	More than 6 consecutive months and upto 9 consecutive months in a year	Appropriate tariff plus 20 percent
4.	More than 9 consecutive months but less than one year	Appropriate tariff plus 10 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.

FORMULA FOR FUEL AND POWER PURCHASE COST ADJUSTMENT

In the tariff petition for 2006 – 07, BSEB has stated that fuel adjustment has been provided in the existing tariff as the tariff was not being revised annually. Since the tariff would be fixed annually in future, there may not be need for any fuel adjustment formula in a normal condition as tariff rates would be fixed after giving due consideration in the relevant year's projected revenue income & revenue requirement.

However, irrespective of the period of tariff revision it is considered necessary to have a formula approved by the Commission for fuel and power purchase cost adjustment as given below.

Formula

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

$$\text{FPPCA (Per / kWh)} = \frac{Q_c(RC_2-RC_1)+Q_c(RO_2-RO_1)+Q_{pp}(R_{pp^2}-R_{pp1}) + V_z + A}{(Q_{Pg} + Q_{PP}) \times (1-L) - PSE} \times 100$$

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 per actual 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 approved by the Commission for the adjustment period (in Rs. / KL)
- RO2 = Weighted average actual rate of oil ex-power station supplied during the adjustment period (in Rs. / KL)
- QPg = Board's own power generation at generator terminal – approved auxiliary consumption (in MUs)

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 purchase during the adjustment period (in Rs. / kWh)
VZ	=	Amount of variable charges on account of change of cost of unknown factors like water charges, taxes or any other unpredictable and unknown factor not envisaged at the time of tariff fixation (subject to prior approval of the Commission)
A	=	Adjustment, if any, to be made in the current period to account for any excess / shortfall in recovery of fuel or power purchase cost in the past adjustment period, subject to the approval of the Commission.
L	=	T&D loss as approved by the Commission or actual, whichever is lower.
PSE	=	Power sold to exempted categories (presently agriculture and BPL consumers)
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)

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) 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.
- (iv) 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.
- (v) FPPCA charges shall be levied on all categories of consumers, except agriculture and BPL consumers.
- (vi) 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.

- (vii) Variation of FPPCA charge will be allowed only when it is five (5) paise and more per unit.
- (viii) The FPPCA charges shall be reviewed by the Board for the first time after six months from the date of implementation of this order and every six months thereafter.
- (ix) The approved formula is subject to review, as the Commission may deem fit.

Since the operational parameters for generating stations of BSEB are not approved by the Commission in the tariff order, the Board shall submit the operational parameters of the power plants after R&M of the plant and get the parameters approved by the Commission before implementation of the fuel cost adjustment provision.

SCHEDULE FOR MISCELLANEOUS AND GENERAL CHARGES

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

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 & 11 kV supply unit Metering at medium voltage Meters for HT 6.6/11 kV - HTS-I	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

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

No.	Category / class	Rate
(i)	Kutir Jyoti	Rs. 15.00
(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

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 & conditions of supply	Rs. 50.00 for single phase connection Rs. 100.00 for three phase LT connection Rs.300.00 for HT connection.

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 & 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

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 & special type meter	Rs. 200.00	
(v)	High tension metering equipment	Rs. 400.00	

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

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

8. Initial Security deposit for availing power supply:

The consumer shall pay initial security deposit equivalent to the estimated energy charges including fixed / demand charges for a period of three months.

- (a) All Central Government and State Government departments are exempted from payment of security deposit. However all public sector undertakings & local bodies shall pay security deposit, as applicable.
- (b) 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.

(c) Interest on Security Deposit

Security deposit made by a consumer shall bear interest at a rate at par with the interest payable on Saving Bank Account of Nationalized Bank. 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 as rebate 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.

Chapter-8

Directives to BSEB

8.0 It is observed from the ARR and Tariff Petition for the FY 2006-07 filed by the BSEB that its operational and financial performance requires considerable improvement at all levels in reducing T&D losses and costs and also increasing efficiency on part of the Licensee in order to improve quality of supply and service to the consumers in the State of Bihar. Significant initiatives are yet to be taken by the BSEB even at operational level. Structural reforms envisaged under the Electricity Act, 2003. The Board also lacks an effective management information system and credible data base in its operation. It is in this context that the Commission issues these directives to the BSEB within the parameters of Section 61 of the Electricity Act, 2003 which stipulates that the Commission shall be guided by the factors which would encourage competition, efficiency, economical use of the resources, good performance and optimum investments in specifying the terms and conditions of determination of tariff.

8.1 Directive – 1

Cent Percent Metering

If mandate enshrined under section 55 of the Electricity Act 2003 is to be honoured 'No Licensee shall supply electricity after the expiry of 2 years from the appointed date, except through installation of a correct meter, in accordance with the regulations to be made in this behalf by CEA'. The Central Electricity Authority have already notified the regulation on installation and operation of meters on 17th March 2006. Though the period of two years is already over, the Board has not approached the Commission for extension of the period, notwithstanding the fact that large number of consumers in the power sector is still unmetered.

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

The Board has about 8.8 lakh unmetered consumers under BPL, Rural Domestic and Non-Domestic and Agricultural categories. The concept of unmetered consumers in

Bihar is quite alien to the mandate of the Electricity Act, 2003 after the cut off period has lapsed. Hence installation of meters for supply of electricity to consumers is essential for proper accounting of energy consumed by them and realizing energy dues and thereby reducing the distribution losses.

Hence BSEB shall take immediate action to provide meters to all such unmetered 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.** The funding available under APDRP and other sources to provide meters shall be availed on priority. While providing meters, action may also be taken to install static meters for accurate measurement of energy consumed.

8.2 Directive – 2

Replacement of Non-functional / Defective Meters

Commission has observed from the Tariff filing that information is not made available on number of non-functional/defective meters in position, though there must be quite a number of service connections with non-performing / defective meters in distribution system of the BSEB. As non-recording of the energy consumption made by such consumers contribute to non-technical (commercial) losses of the system, immediate action has to be taken to replace all such 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.**

8.3 Directive – 3

Setting up of Independent Third Party Meter Testing Arrangement

One must also be aware that in the matter of meter reading and billing of consumers by the utility, there exists considerable consumer dissatisfaction. As such there is imperative need to raise the level of consumer satisfaction. At the same time one cannot help feeling the need for periodical and random checking of electricity meters installed at the premises of various categories of consumers. In a Suo Motu proceeding initiated by the Commission when the Board was called upon to apprise Commission as to whether calibration of the meters are checked at specified regular intervals, the response of the Board on affidavit leaves much to be desired, as it

rather acknowledges that the calibration of meters are not checked at specified regular intervals, be it due to shortage of manpower and infrastructure.

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. However, for such meters owned by the consumers, no meter rent shall be levied by the Licensee.

To bring about improvement in the matter of satisfaction of the consumers it must be ensured:

- (i) that the meters are provided in accordance to the Central Electricity Authority (Installations and Operations & Meters) Regulations 2006.
- (ii) testing of meters is done at specified regular intervals.
- (iii) in case of complaints of over-billing there should be provision of 3rd party inspection and verification with the benefit of doubt being given to the consumers.
- (iv) consumer groups must be actively involved in the entire process and their suggestion regarding systematic improvement and modification of policies and procedure must be given due consideration.

Taking these factors into account it is essential to lay down specific norms for maintaining adequate facilities backed by trained manpower linkage to the area of coverage and number of consumers for the utility company. The 3rd Party arrangement for random checking of meters should comprise of three engineers representing the utility company, chief electrical inspector and also an engineer of consumer association. These initiatives would be relevant in finalizing a consumer friendly transparent policy in the power sector and would help minimize the grievance of the consumer in the sector. Now it need not be emphasized that proper system of metering for all 132 KV, 33KV and 11KV feeders as well as all power transformer and distribution transformers also is essential.

8.4 Directive – 4

Efficient Meter 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. The meters of HT and LT consumers shall be read on monthly basis. Introduction of spot billing will also avoid serving bill separately and help in early realization of revenue. The Board shall make arrangement to introduce MRI for all HT consumers and big non-domestic consumers as well as spot billing for all LT consumers immediately.

As per information made available by the Board, the present level of collection efficiency is around 85%. With a view to improve the collection efficiency, BSEB is advised to explore the system of collection of electricity bills through banks, drop boxes, credit cards, and opening additional collection counters, wherever necessary. Collection counters may also be opened on the holidays. This will facilitate the consumer to pay the bill and minimize waiting in long queues for payment of electricity bills. **The collection efficiency shall be improved from the present level of 85% to cent percent as early as possible.**

The Board shall therefore review the present system of meter reading, billing and collection of revenues and initiate action to implement measures suggested above to improve meter reading system, billing and collection of revenues. **A report with action taken by the Board shall be reported to the Commission by 31st March, 2007.**

8.5 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 up to 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 checked 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.**

8.6 Directive – 6

Replacement of old Electromagnetic Meters with Static Meters

There might be old electromagnetic meters fixed years back at the premises of a number of consumers. As these meters might not be recording energy consumed accurately, it is necessary to replace all such meters with static meters, particularly in LT Commercial, Industrial and HT installations.

All HT installations & high value LT installations shall be provided with high accuracy static meters to record maximum demand and energy accurately. Other LT services where old electromagnetic meters are in service shall also be replaced with static meters in a phased programme.

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.

Metering of all unmetered services, replacement of all non-performing & defective meters and replacement of old electromagnetic meters with static meters shall be given priority. All available sources of funding shall be tapped for metering. The pay back period of providing such meters is generally short. Experience has shown that providing static meters has increased the metered consumption by 10 to 15%.

Since Electricity Act, 2003 provides for consumer providing a meter, if there are constraints for the Board, consumers may be requested to provide meters themselves at their own cost.

8.7 Directive – 7

Reduction of Transmission and Distribution (T&D) Losses

The Bihar State Electricity Board in the Tariff Petition worked out T&D losses to be 37% during FY 2005-06 and proposed to reduce it to 36% during FY 2006-07. The analysis of projected energy sales and energy available however shows that the losses are much higher and information available from other sources also establish that the losses are yet much higher in the BSEB system. As per Ministry of Power, Government of India the AT&C losses in Bihar for the FY 2004-05 stand at 74.09%. A lot of consumers/consumer organization during public hearing of the tariff proposal submitted by the Board, expressed their grave concern over such high losses in the system of the Board as such level of losses are unsustainable and imply to decline of power sector operations. The continuation of present level of losses not only poses a threat to the power sector operation but also jeopardize the growth prospect of the economy as a whole in the State. Further the power sector will remain unviable until T&D losses are brought down to reasonable level. The National Electricity Policy emphasizes the State to prepare a Five-Year Plan with annual milestones to bring down this loss expeditiously. In a Suo Motu proceeding initiated by the Commission, the Board in its affidavit acknowledges before the Commission that the statistics of T&D losses and AT&C losses are estimated figure as metering at appropriate levels are not being done at present. It further acknowledges that since there is no metering, at all level, losses cannot be segregated and hence one is constrained to feel that the reliability of these data remains open to question, true picture being not before the Commission about extent of losses suffered by the Board in transmission and distribution system.

Since transmission and distribution losses are exceedingly high, it requires efficient and coordinated action to develop an integrated power system in the State. High Voltage distribution system is an efficient method for reduction of technical loss and prevention of theft. Since distribution is the most critical segment of the electricity, this requires efficient management of the distribution sector to secure efficient and equitable supply of electricity to all. Measures need to be taken to ensure proper metering and meter reading and curbing pilferage of energy with strict vigil which will help reducing 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 projected the T&D losses at 36% for FY 2006-07, but after detailed analysis of the assessment of

agricultural consumption by the Commission, the losses for FY 2006-07 are set at 41.40%. **The Board should ensure reduction of the T&D losses to 38% during FY 2007-08 and 34% during FY 2008-09.**

Steps be taken to provide dedicated feeders to major HT services from the sub-station and provide meter at this sub-station also which will help in monitoring the energy consumption and KVA demand of such HT services.

8.8 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 transformer at 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.** It is known that the metering at distribution transformer level will provide the technical and commercial losses on the LT system by proper correlation of energy input from the distribution transformer to the LT system and the consumption by various consumers connected to the distribution transformer.

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.

8.9 Directive-9

Pilferage of Electricity

Since the pilferage of electricity by various category of consumers by illegal tapings from electric lines, tampering of meter etc., also causes enormous loss of revenue to the BSEB, the Commission feels that there is urgent need to launch an extensive drive to remove illegal connections, check meter tampering and also to keep constant vigil on them. The Commission with a view to take stock of the situation sought

following information in a *suo motu* proceeding that was conducted by the Commission:-

- (i) Whether random periodical raids are being conducted in rural and urban areas and also what had been the result.
- (ii) Whether there is any plan chalked out by the B.S.E.B. to curb pilferage of power in the rural and urban areas.

Though the Board in its affidavit states that regular raid operation is conducted for detection of power theft and also that there has been random load verification in the consumer premises, here too the query made by the Commission about its impact on the revenue of the Board remained unanswered.

It need not be emphasized that no reform can succeed in the midst of large pilferage on continuing basis. Success in revamping power distribution will be a key factor in determining the pace of growth in the power sector and specifically the pace of addition of new generation capacity. It is a matter of common knowledge that the energy loss including pilferage of power is to the extent of about 1/3rd of total power either generated and / or procured from other sources. **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.**

The Supreme Court, the Apex court of the land too in a recent case has sent a shock treatment for those involved in pilferage of power. The extract of the observations of the Apex court can be profitably reproduced below

“The most effective step to curb this tendency perhaps could be to discontinue supply of electricity, temporarily or permanently to those consumers who have been caught abstracting electricity in a clandestine manner on more than one occasion”. Though this may need amendment of the Electricity Act, as indicated above other options are yet available to the licensee to curb the menace of pilferage.

8.10 Directive – 10

Enumeration of Agriculture Pumpsets & Other Service Connections

It is understood that there are a number of unauthorised 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 unauthorised connections and get them regularised 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.**

8.11 Directive – 11

Assessment of Agricultural Consumption

Though energy consumed by agriculture sector constitutes a significant part of total energy consumed 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.**

8.12 Directive – 12

Regulation of Power Supply to Rural Areas

A number of consumer organizations expressed their deep concern about poor quality of supply to rural areas particularly to agricultural pumpsets. The villages are stated to have supply only for 2 to 3 hours a day. It is understood that a number of states which have power shortage regulate power supply and make power supply available during specified hours in a day to each area. Similarly the State can regulate the hours of supply to rural areas particularly to agricultural pumpsets.

It is understood that all 11 kV feeders at 33/11 kV sub stations are kept in service. Whenever supply is made available to 33/11 kV sub stations, all the feeders will have supply, it might be for 2 or 3 hours. **Instead the supply could be regulated, each 11 kV feeder or a group of feeders can have the supply for a specified hours in a day by rotation. The hours during which power supply would be available shall be notified to the consumers under each feeder.**

The Board may study the practices being followed in other States and drawout 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.

8.13 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.**

The Board shall also establish service centres in all the towns to attend to consumer complaints on interruptions to power supply, billing etc in order to improve service to consumers in all major towns to start with. The measures taken by the Board in this regard shall be reported to the Commission by 31st March 2007.

8.14 Directive – 14

Management Information System

It is observed from the Tariff Petition that the data provided therein is either not available nor consistent. When certain information was sought by the Commission, the BSEB informed the Commission to obtain the same from the field offices of the BSEB which clearly indicates that all required information / data on operational and financial matters are not available with the BSEB. The details of units actually

consumed, units billed, amount billed under different heads are not compiled sub category-wise as per tariff which is essential for analysing the revenue income of the Board. **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.**

8.15 Directive – 15

Annual Accounts of the BSEB

As per information made available by the Board, annual accounts for the financial year 2001-02 only have been audited while annual accounts for the FYs 2002-03, 2003-04 and 2004-05 are at various stages of compilation and approval and will be audited by March, 2007. A number of consumer organizations during the public hearing have raised issue of filing of Tariff Petition without the latest audited accounts. **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.**

8.16 Directive – 16

Arrears

As per information furnished by the BSEB, as on 31.03.2005, the outstanding dues from the consumers stood at a staggering figure of Rs. 5101.15 crores which is inclusive of Delayed Payment Surcharge (DPS). Out of outstanding of Rs. 5101.15 crores, the arrears outstanding on the government departments is Rs. 2367.50 crores. Although the Commission had asked for consumer-wise details, the details in this regard have not been furnished. **The Board should prepare area-wise list of consumers having huge arrears and furnish to the Commission in the format given below.** The Board shall take up with the State Government at the level of Chief Secretary for getting the outstandings of government departments and its undertakings, local bodies and private bodies cleared.

The Board is directed to issue final notices to all the defaulters including government departments with arrears of more than three months to pay or face disconnection of electricity supply and supply must be disconnected after the expiry of the notice period.

The outstandings from the State Government Departments, Government Undertakings, local bodies and private parties shall also be furnished separately by 31st January, 2007.

(Rs. in lakh)

S.N	Name of consumer / organisation	Month & year the amount due	Energy charges billed	Delayed payment surcharge	Total

Action taken shall be reported to the Commission by 31st March 2007.

8.17 Directive – 17

Collection of Arrears

The Board had announced One Time Settlement Scheme (OTS) in the month of April 2006 for recovery of outstanding energy dues from the consumers by waiver of delayed payment surcharge for which neither approval of the Commission was sought by the Board, much less the Commission had no information about this scheme having been launched by the Board. Pursuant to this in a matter of waiver of delayed payment surcharge to defaulters of powerloom weavers of Nathnagar, Bhagalpur and other places, the BSEB sought permission from the Commission vide its letter No. 874 dt. 30th August, 2006 to permit its remission by the Board as there was no such provision in the Board's Tariff clothing the Board with the power of remission of part of tariff, in response to which the Commission sought information from the Board as to whether the loss suffered by the Board by waiver of DPS had been compensated by the State Govt. when One Time Settlement Scheme was introduced by the Board in the month of April, 2006. Now the response received from the Board in response to query made by the Commission was more puzzling as now on being asked by the Commission on 05.09.06 the Board informed the Commission that in accordance with the provisions made in the Electricity Act, 2003 under section 65, the Government on 11.9.2006 has been requested to compensate Rs. 71.24 crores on account of waiver of DPS under OTS scheme. While the matter was being

examined by the Commission and certain information were further sought from the Board, the Board again announced OTS scheme on 2nd October, 2006 which is to be put in force till March, 2007. Least said is better about all these happenings as what was utility for seeking permission of the Commission for waiver of DPS of defaulters of powerloom weavers, if the Board is harping on the same tune caring little for directives of the Commission.

Though provision of section 108 of the Electricity Act 2003 requires that the State Commission shall be guided by the direction in matters of policy involving public interests as the State Government may give it in writing, the Commission was never informed by anybody / authority about this major decision having been taken. The Commission is quite unaware as to at which level the decision to waive the delayed payment surcharge was taken, though the Board has itself acknowledged in its letter No. 194 dated 7th February 2006 addressed to the Department of Energy, Government of Bihar, Patna that the delayed payment surcharge was part of tariff. Though it appears from the xerox copy of the letter sent to Energy Department by the Board on 11.09.06 that the Govt. of Bihar has been moved to compensate the loss of revenue suffered by the Board to the tune of Rs. 71.24 crores due to waiver of delayed payment surcharge in respect of OTS scheme launched in April, 2006, taking recourse to provisions of section 65 of the Electricity Act, 2003, one should not lose sight of the fact that if this be the subsidy then it would not be operative unless the Government pays in advance to compensate the consumer affected by grant of subsidy. Even if there be direction of the Government (for which Commission has no information) that shall not be operative notwithstanding any direction which will be given under section 108, if the payment is not made in advance in accordance with provision contained in the section. The question yet remains unanswered by the Board. **The Board should submit the details of recovery of arrears under the first OTS announced in April '06 and also the recovery under the second OTS scheme in force from October '06 onwards in format given below. The first report shall be submitted by 31st January '07 and the second report after the scheme is over in March 07.**

(Rs. in lakh)

S.N.	Name of the consumer / organisation	Amount of arrears due	Amount of DPS due	Arrears collected	DPS waived	Total collection

8.18 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.**

8.19 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.**

8.20 Directive – 20

Recovery of Fuel Price Adjustment from Consumers Paying Monthly Minimum Charges

An issue has been raised by a number of consumers/consumer organisations 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.

8.21 Directive - 21

Fuel & 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.

8.22 Directive – 22

Adjustment of Payment of Current Bills against Delayed Payment Surcharge (DPS)

Some of the consumer organisations have pointed out in the public hearings that the payments made by the consumers towards the current bills are adjusted first against the DPS and the balance against arrears and that is not taken as payment against current bills, thereby showing the current bill amounts as arrears.

Though the officers of the Board had refuted this at the public hearings, the contention of the consumers seems to be correct as could be seen from the Annual Accounts of 2002 – 03, which shows that the amount collected against DPS during 2002 - 03 was Rs.388.94 crore and it was Rs.393.77 crore during 2001-02. This indicates that the amount collected is being adjusted against the DPS, but not against current bills or arrears. Consumers expressed their concern that when they proposed to settle the dues under One Time Settlement Scheme, the DPS against outstanding appears to be NIL showing consumers as continuous defaulters. Consumers are aghast at this situation.

This procedure is wrong. When a consumer is in default, the service has to be disconnected after due notice. If it is not disconnected and continued to be live for some reason or other, the arrears including DPS shall be dealt separately and any payments made against current bills shall be adjusted against the current bills only. This is the normal practice followed in most of the utilities. In regard to the arrears, which generally cover DPS also, it is normally collected in instalments.

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.

8.23 Directive – 23

Organizing Operational Circles as Cost Centres

Each of the operation circles in the distribution wing shall be organized as cost centers to be accountable for (i) energy accounting i.e energy drawn and billed in the circles, Distribution loss, (ii) Metering, (iii) Meter reading, billing & revenue collection. Targets could be set for various parameters and monitored. Ministry of Power also has suggested under APDRP to organize operation circles as cost / profit centres. The Board should direct all the operation circles in distribution to organize cost centres to make them accountable for their performance by setting targets for performance. Organizing cost centres would also create competitive environment among them to improve the performance.

The Board is directed to drawout an action plan to organize the cost centers upto division level to make them accountable for their performance and submit it to the Commission by 31st March 2007.

8.24 Directive - 24

Performance of BSEB own Generating Stations and their Parameters

The BSEB has a total generating capacity of 540MW and the generation level is of the order of 30-50MW. Both the generating units at Muzaffarpur TPS are under shut down since October, 2003 and two units at Barauni TPS are also under shut down since 1995-1996. These generating units must be put back in service on war footing in view of energy security reasons. BSEB has informed that the renovation and modernization of two units at Barauni has been taken up and Muzaffarpur power plant is being taken over by a joint venture company of NTPC and BSEB.

In the present Tariff filing, the performance parameters for the units are not clearly spelt out and no steps seem to have been taken or promised to be taken to improve them. The fuel cost projected is abnormally high. After the R&M work is completed for both the 110 MW units of Barauni TPS, the BSEB should come out with performance parameters for these units, such as Heat Rate, Auxiliary Consumption, Specific Oil Consumption, Plant load factor, transit loss of coal etc., which shall be comparable with CERC norms. A reliable arrangement shall be made to measure the calorific value of coal received.

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.

8.25 Directive – 25

New Generation Projects

The State is experiencing power shortage of varying degrees from month to month. There has been no capacity addition in the State for more than two decades. Though BSEB has indicated in their Tariff Petition about setting up new power plants in the State, the required approval / clearances are yet to be obtained from the concerned agencies. **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.**

8.26 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 realisation, 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.

8.27 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 utilised 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 bulbs in all new connections in agriculture sector.

8.28 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.**

8.29 Directive – 29

APDRP Schemes

The Ministry of Power, Government of India is providing assistance for augmentation of sub transmission and distribution networks including metering under APDRP. 25% of project cost is provided as grant and the balance as soft loan by REC. Schemes costing about Rs. 866.76 crores have been sanctioned for BSEB by Ministry of Power, Government of India under APDRP. **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.**

8.30 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.**

8.31 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 and eliminated 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.**

8.32 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.**

8.33 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.**