



## **BIHAR ELECTRICITY REGULATORY COMMISSION**

Ground Floor, Vidyut Bhavan-II  
Jawahar Lal Nehru Marg  
Patna – 800 021

### **TARIFF ORDER**

**Passed in Case No. TP- I of 2008**

**on**  
**26<sup>th</sup> August, 2008**

**In the matter of :**

**Determination of Aggregate Revenue Requirement (ARR)  
and Retail Tariff for the FY 2008-09 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**

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## **Bihar Electricity Regulatory Commission**

**Ground Floor, Vidyut Bhawan – II  
Jawahar Lal Nehru Marg, Patna – 800 021**

**Case No. TP – 1 of 2008**

**In the matter of :**

Determination of Aggregate Revenue Requirement (ARR) and Retail Tariff for the Financial Year 2008-09 for supply of electricity to consumers in the State of Bihar by the Bihar State Electricity Board.

And

**In the matter of :**

Bihar State Electricity Board ..... Petitioner

Present :

**B.K. Halder, Chairman**

**S.K. Jayaswal, Member**

## **ORDER**

(passed on 26<sup>th</sup> Day of August, 2008)

The Commission in exercise of the powers vested in it under section 62(1)(d) read with Section 62(3) and Section 64(3)(a) of the Electricity Act, 2003 and Terms and Conditions for Determination of Tariff Regulation 2007 issued by Bihar Electricity Regulatory Commission and other enabling provisions in this behalf, issues this order, determining the Aggregate Revenue Requirement (ARR) and the Retail Tariff for the Financial Year 2008-09 for supply of electricity by the Bihar State Electricity Board to the consumers in the whole state of Bihar. The Regulations state that the Distribution Licensee shall file Aggregate Revenue Requirement (ARR) of the tariff petition complete in all respect along with requisite fee as prescribed in the Commission's Fees, Fines Regulations on or before 15<sup>th</sup> November of the preceding year. Accordingly the ARR tariff petition for the financial year 2008-09 should have been filed by the Licensee before 15<sup>th</sup> November, 2007.

Bihar State Electricity Board filed the petition before the Commission on 15<sup>th</sup> February, 2008 for acceptance of Aggregate Revenue Requirement (ARR). On scrutiny

it was observed that it does not contain necessary information. The Commission communicated its observance regarding deficiencies in the tariff petition to the Board. Board submitted information on 31<sup>st</sup> March, 2008 which was incomplete. However, the Commission took the tariff petition on record on 29<sup>th</sup> April, 2008 though certain information/data were still wanting in the tariff petition.

The Commission took into consideration the facts presented by the Board in its tariff petitions and subsequent various filings, the objections/suggestions received from consumer organizations, general public and State Advisory Committee and response of the Bihar State Electricity Board to these objections. The Commission, to ensure transparency in the process of tariff determination, conducted public hearing at Patna on 8<sup>th</sup> and 9<sup>th</sup> July, 2008 providing platform to the stakeholders and members of the public to discuss the issues raised by them and response of the Board thereon. The Commission had an occasion to peruse other relevant facts and materials placed on the record.

The order is in 8 (Eight) Chapters which include detailed analysis of the Aggregate Revenue Requirement (ARR) and approved retail tariff rates for the financial year 2008-09. The order is based on the revenue requirement and also the corresponding expenditure of the Board for the whole year 2008-09. Charges associated with the open access as defined under the BERC Open Access Regulations have also been specified in this order. Though usually tariff should have been made applicable from the beginning of the financial year but due to delay in submission of tariff application by Bihar State Electricity Board it could not be implemented in time. Hence this order would be effective w.e.f. 1<sup>st</sup> September, 2008. The Bihar State Electricity Board should ensure implementation of the order from effective date after issuance of a Public Notice on or before 31<sup>st</sup> August, 2008.

The Commission directs the Bihar State Electricity Board to take all necessary steps for implementation of this order, so that order is made applicable to all class of consumers and energy bills are prepared accordingly, strictly in terms of the approved tariff. The directions contained in the Chapter-7 should be strictly adhered to and compliance thereof, as desired by the Commission must be placed before it within the stipulated time.

This order shall remain in force till 31<sup>st</sup> March, 2009 or till the next tariff order of the Commission.

Sd/-

**(S.K. JAYASWAL)**  
**MEMBER**

Sd/-

**(B.K. HALDER)**  
**CHAIRMAN**

## Chapter – 1

# Background and Procedural History

---

### 1.1 Background

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

1.1.2 The functions of State Regulatory Commission have been specified under Section 86 in particular and section 181 and other sections in general of the Electricity Act, 2003. One of the major functions of the State Commission is determination of tariff of generation, supply, transmission and wheeling of electricity, wholesale, bulk or retail as the case may be in the State. Further Section 62 of the Act also stipulates that the Commission shall determine the tariff in accordance with the provisions of the Act for supply of electricity by a generating unit to a distribution licensee, transmission of electricity, wheeling of electricity and also retail sale of electricity.

1.1.3 The Bihar State Electricity Board (referred to as BSEB or Board hereinafter) was constituted under section 5 of Electricity (Supply) Act, 1948 on 1<sup>st</sup> April 1958. The BSEB is a deemed licensee in terms of section 14 of the Electricity Act, 2003 and is engaged in the business of generation, transmission and distribution of electricity in the State of Bihar. In terms of Section 172 of the Act, the Board constituted under the repealed laws shall be deemed to be the State Transmission Utility (STU) and a licensee under the provisions of the Act for a period of one year from 10<sup>th</sup> June, 2003

i.e. the appointed date. On the request of Government of Bihar from time to time Central Government has agreed to extend the time to continue the Board to function as a STU and Distribution licensee. Last extension granted to the Board is upto 30<sup>th</sup> September 2008. The erstwhile State of Bihar was bifurcated into two States of Bihar and Jharkhand and the Bihar State Electricity Board was bifurcated into two separate Boards w.e.f. 1<sup>st</sup> April 2001.

### **1.2 National Tariff Policy (NTP) and New Regulations**

The National Tariff Policy (NTP) has been notified by the Government of India on 06/01/2006. The Commission has, in pursuance of the Electricity Act 2003, notified the "Terms and Conditions for determination of Tariff" Regulations, 2007 on 27.04.2007 outlining the tariff setting principles and norms.

The Commission in dealing with this first tariff petition filed after issue of the Tariff Regulations on 27<sup>th</sup> April, 2007 has been guided by the norms and principles laid down in the NTP and the above regulations in scrutinizing the Annual Revenue Requirement (ARR) of BSEB and determining the retail tariff for FY 2008-09.

### **1.3 Procedural History**

1.3.1 BSEB is still now a vertically integrated power utility responsible for generation, transmission and distribution of power in the State of Bihar. This is the second tariff petition filed by BSEB before the Commission. BSEB submitted its first tariff petition for the year 2006-07 on 10<sup>th</sup> April, 2006 which was incomplete as much data was wanting. Subsequently BSEB filed the revised tariff petition on 4<sup>th</sup> August 2006 and the Commission passed the tariff order on 29<sup>th</sup> November, 2006.

BSEB was required to file application/petition to the Commission for approval of Annual Revenue Requirement (ARR) and determination of retail tariff for the year 2008-09 by 15<sup>th</sup> November 2007 as required under clause 6(8) of BERC (Terms and Conditions for determination of Tariff) Regulations, 2007. It stipulates that the distribution licensee shall file ARR along with data in prescribed formats for each financial year by 15<sup>th</sup> November of the preceding year.

BSEB submitted its tariff petition for FY 2007-08 before the Commission vide letter No.Com/Misc-1068/07-581 dated 18.12.2007 for approval of Annual Revenue Requirement (ARR) and determination of retail tariff. The Commission vide letter No.BERC.Tariff-9/07-03 dated 02.01.2008 directed BSEB to file the ARR before the

Commission for FY 2008-09 along with data as prescribed by the Commission in the Tariff Regulations, 2007 by 31<sup>st</sup> January 2008.

BSEB vide letter No. Com.Misc-1068/2007 dated 22.01.2008 requested the Commission for extension of time upto 15<sup>th</sup> February 2008 to submit the tariff petition for FY 2008-09. The Commission vide letter No.BERC.Tariff-9/07-18 dated 24.01.2008 granted extension of time upto 15<sup>th</sup> February 2008 to submit the tariff petition for 2008-09. BSEB submitted before the Commission the tariff petition for FY 2008-09 vide letter No.Com.Misc-1068/07 (part)/75 dated 14.02.2008, which was incomplete and audited annual accounts for FY2006-07 were not enclosed. The Commission vide letter No. BERC-Corr-4/07-77 dated 04.03.2008 issued deficiency note including information / data wanting in ARR and tariff petition filed by BSEB, asking them to remove the deficiencies and submit the required information within a fortnight for taking the petition on record.

BSEB requested the Commission for extension of time upto 28<sup>th</sup> March 2008 vide letter No.139/Com.Misc-1117/2008 dated 18.03.2008 for submitting the wanting information / data. The Commission granted extension of time upto 28<sup>th</sup> March 2008 for submitting the required information.

BSEB submitted vide letter No.161 Com.Misc-1117/08 dated 28.03.2008 on 31.03.2008 the wanting information/ data in volume-III along with annual accounts for FY 2006-07 approved by the Board but not audited. The Commission took the petition on record vide T.P.No. 1 of 2008 on 29.04.2008 though certain information / data were still wanting in the tariff petition.

Since determination of tariff affects all consumers, it is required to be done in a transparent manner providing adequate opportunity to all stake holders for making suggestions and comments as mandated under section 64 (3) of the Electricity Act, 2003. The Commission vide letter No.BERC.151 dated 29.04.2008 directed the BSEB to publish an abridged ARR and tariff petition for FY 2008-09 on or before 3<sup>rd</sup> May 2008 inviting written objections/suggestions/comments on the tariff petition upto 03.06.2008 in two daily newspapers (one in English and the other in Hindi) and to repeat the publication after four days in order to have wide publicity.

BSEB was also directed to post the complete tariff petition on their website and make available copies of the tariff petition in the offices of Chief Engineer (Commercial),

BSEB, Patna and offices of all General Managers-cum-Chief Engineers supply areas of the Board for sale and for reference to the members of the public.

Accordingly ARR and tariff petition was published in abridged form by the Board on 03/05/2008 and on 09.05.2008 in the following newspapers having wide circulation in the State.

| <b>Sl.No.</b> | <b>Name of the Newspaper</b> | <b>Language</b> | <b>Date of Publication</b> |
|---------------|------------------------------|-----------------|----------------------------|
| 1.            | Times of India               | English         | 03/05/2008                 |
| 2.            | Hindustan                    | Hindi           | 03/05/2008                 |
| 3.            | Times of India               | English         | 09/05/2008                 |
| 4.            | Hindustan                    | Hindi           | 09/05/2008                 |

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

Some of the Consumers / Consumer Associations informed the Commission that the ARR and tariff petition for FY 2008-09 was not kept on BSEB's website as published in the newspapers and also copies of the petition were not available at the BSEB's specified offices for sale upto 19.05.2008 and therefore, requested for extension of time for filing objections / suggestions on the petition.

The Commission directed BSEB to place the petition on their website immediately and report compliance. The requests of the stakeholders were considered and the time was extended upto 10.06.2008 by the Commission.

The Commission directed BSEB to publish before 29.05.2008 extending the time for filing objections / suggestions on the tariff petition for FY 2008-09 from stakeholders and the public upto 10.06.2008. Thus a period of 38 days was allowed to the public for filing objections / suggestions.

Twenty-three (23) objections / suggestions from consumers /consumers' organization were received upto 10.06.2008 the due date. The list of objectors are given in Annexure-1.1 of this chapter. Copies of the same were sent to BSEB on 11<sup>th</sup> June 2008 to send their response on the objections / suggestions by 20<sup>th</sup> June 2008. Subsequently BSEB requested for extension of time upto 30<sup>th</sup> June 2008, which was granted by the Commission. BSEB responded to the objections / suggestions of the public on 30<sup>th</sup> June 2008.

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

As the information furnished was incomplete and several inconsistencies were noticed in the data submitted by the Board, the Commission vide its letter No.BERC-Tariff-9/07-172 dated 12.05.2008 directed BSEB to furnish further information /clarifications / data by 20.05.2008 for analyzing the tariff petition. BSEB requested the Commission vide letter No.272 Com.Misc-1117/2008 dated 20.05.2008 for extension of time upto 23.05.2008, to submit the required information. The Commission subsequently granted the extension of time upto 23.05.2008. BSEB furnished the information / data vide its letter 282-Com.Misc-1117/2008 dated 23.05.2008.

The consultants and officers of the Commission held discussions with officers of BSEB from 20<sup>th</sup> May to 24<sup>th</sup> May 2008 for validation of data furnished by BSEB and handed over a list of additional information required to Chief Engineer (Commercial), BSEB, who agreed to furnish the same within a week i.e. before 2<sup>nd</sup> June 2008.

Since the additional required information was not received, the Commission vide letter No. BERC-Tariff-9/07-205 dated 05.06.2008 directed the BSEB to furnish the additional information without any further delay in order to avoid delay in determination of ARR. BSEB furnished the additional information in Annexure-I to VII vide their letter No.353 Com. Misc-1117/2008 dated 20.06.2008.

On perusal of additional information/data received from BSEB it is noticed that all the required information was not submitted and so the Commission called for some more additional information from BSEB vide letter Nos.453, 454 dated 9.7.2008 and 456 dated 10.07.2008.

BSEB submitted, the above required additional information vide their letter Nos. 458 dated 25.07.2008, 466 dated 28.07.2008, 467 dated 28.07.2008, 483 dated 01.08.2008 and 484 dated 01.08.2008. BSEB in their letter No.484 dated 01.08.2008 expressed their inability to give separately the details of monthly minimum charges (MMC) because the same is included in the total energy charges and not accounted separately.

The BSEB furnished the additional information/data in a piecemeal against the directions of the Commission. There has been inconsistency in the data furnished by the Board in the original petition submitted on 04.03.2008 and additional

information/data submitted later in their various letters especially in respect of number of consumers, connected load, revenue from existing tariff etc. BSEB also could not furnish sales and revenue under different slabs for each category/sub-category. The Commission had to analyse the ARR with the available data in the absence of consistent and adequate data made available by BSEB.

### **1.3.2 Public Hearing**

With a view to give adequate opportunity of personal hearing to the objectors, notice for public hearing to be held on 8<sup>th</sup> and 9<sup>th</sup> July 2008 was published in the following leading newspapers of the State on 01/07/2008 and 02/07/2008.

| <b>S.No.</b> | <b>Name of News Paper</b> | <b>Language</b> | <b>Date of publication</b> |
|--------------|---------------------------|-----------------|----------------------------|
| 1            | Dainik Jagaran            | Hindi           | 01/07/2008                 |
| 2            | Quami Tanzeem             | Urdu            | 01/07/2008                 |
| 3            | Hindustan Dainik          | Hindi           | 01/07/2008                 |
| 4            | Times of India            | English         | 02/07/2008                 |

Public hearings were held on 8<sup>th</sup> and 9<sup>th</sup> July 2008 at SK Memorial Hall, Patna. Not only hearing on the representations / suggestions received was held but an opportunity was given for open hearing to all participants irrespective of whether they had submitted written objections / suggestions on the tariff application or not. Thus the Commission made efforts to hold wider consultations for arriving at its conclusions / decisions on the ARR and tariff filing.

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

### **1.3.3 State Advisory Committee (SAC)**

A special meeting of the State Advisory Committee constituted under section 87 of the Act, was convened on 14<sup>th</sup> July 2008 to elicit their views and advise on the tariff petition / proposal. The observations and the valuable suggestions made in the meeting on the tariff petition have been kept in mind while finalizing this tariff order.

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

### LIST OF OBJECTORS

| <b>SI.No.</b> | <b>NAME AND ADDRESS OF THE PARTICIPANTS</b>                     |
|---------------|---|
| 1             | M/S Kalyanpur Cements, Fraser Road, Patna                       |
| 2             | M/S Balaji Ingot Pvt. Ltd , Lakhi Sarai                         |
| 3             | Balmukund Concast Ltd , Bihita, Patna                           |
| 4             | Chief Electrical Engineer, E.C.Railway, Hajipur                 |
| 5             | Sr.Divisional Electrical Engineer , E.C. Railway, Hajipur       |
| 6             | Smt. Krishna Devi, Patna  |
| 7             | Sri Arun Kumar Mishra (Advocate), Patna                         |
| 8             | Dina Metals Ltd, Didar Ganj, Patna ,                            |
| 9             | Patna City Vyapar Mandal, Patna                                 |
| 10            | Indian Oil Corporation Ltd, Begasarai                           |
| 11            | Bihar Industries Association, Patna                             |
| 12            | Arc Welding 440 Vidyut Upabhokta Sangh, Patna                   |
| 13            | Bihar Chamber Of Commerce, Patna                                |
| 14            | Prof.P.K.Sharma , Bidupur,Bazar                                 |
| 15            | Mc Agarwal, Advocate, Patna                                     |
| 16            | Hotel Association, Bodhgaya                                     |
| 17            | Balaji Ingot India (P) Ltd, Lakhi Sarai (Additional Objections) |
| 18 & 19       | Sri Digvijay (Lalloo) and Shashank Sharan Singh                 |
| 20            | Sri Sagar Bhattacharjee   |
| 21            | Bihar Steel Manufacturer's Association, Patna                   |
| 22            | Gangotri Iron & Steel Co. Ltd, Patna                            |
| 23            | Gangotri Iron & Steel Co. Patna (New)                           |

**LIST OF PARTICIPANTS IN PUBLIC HEARINGS HELD ON 8TH AND 9TH JULY 2008**

| <b>SI.No.</b> | <b>NAME AND ADDRESS OF PARTICIPANTS</b>   | <b>DATE</b> |
|---------------|---|-------------|
| 1.            | M/S Kalyanpur Cements, Fraser Road, Patna                                       | 09/07/2008  |
| 2.            | M/S Balaji Ingot Pvt. Ltd , Lakhi Sarai   | 09/07/2008  |
| 3.            | Balmukund Concast Ltd , Bihita, Patna   | 09/07/2008  |
| 4.            | Chief Electrical Engineer, E.C.Railway, Hajipur                                 | 09/07/2008  |
| 5.            | Sr.Divisional Electrical Engineer , E.C. Railway, Hajipur                       | 09/07/2008  |
| 6.            | Smt. Krishna Devi , Patna   | 08/07/2008  |
| 7.            | Sri Arun Kumar Mishra (Advocate), Patna.  | 08/07/2008  |
| 8.            | Dina Metals Ltd, Didar Ganj, Patna  | 09/07/2008  |
| 9.            | Patna City Vyopar Mandal, Patna   | 09/07/2008  |
| 10.           | Bihar Industries Association, Patna   | 08/07/2008  |
| 11.           | Arc Welding 440 Vidyut Upabhokta Sangh, Patna                                   | 09/07/2008  |
| 12.           | Bihar Chamber Of Commerce   | 08/07/2008  |
| 13.           | Prof.P.K.Sharma , Bidupur,Bazar   | 08/07/2008  |
| 14.           | M C Agarwal, Advocate, Patna  | 08/07/2008  |
| 15.           | Hotel Association, Bodhgaya   | 08/07/2008  |
| 16.           | Balaji Ingot India (P) Ltd, Lakhi Sarai (Additional Objections)                 | 09/07/2008  |
| 17.           | Sri Sagar Bhattacharjee   | 08/07/2008  |
| 18.           | Bihar Steel Manufacturer's Association, Patna                                   | 09/07/2008  |
| 19.           | Gangotri Iron & Steel Co. Ltd, Patna  | 09/07/2008  |
| 20.           | Gangotri Iron & Steel Co. Patna (New)   | 09/07/2008  |
| 21.           | Sri B R Singh (Not Filed Any Objection But Participated In Public Hearings      | 09/07/2008  |
| 22.           | Shri Suresh Singh, (Not Filed Any Objection But Participated In Public Hearings | 09/07/2008  |

## Chapter - 2

# Review of ARR for the Year 2006-07

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### 2.1 Background

2.1.1 The Commission had approved the ARR and Tariffs for the year 2006-07 in its Tariff Order dated 29.11.2006. The approval was based on the estimates presented by the Board for costs to be incurred and revenues likely to be generated by the Board during the year, after due scrutiny.

While furnishing data for the year 2008-09 in its letter No.167 dated 9.5.2008, the Board has furnished un-audited but adopted annual accounts for the year 2006-07, which vary in some parts as compared to the figures taken into account earlier by the Commission in the Tariff Order for the year 2006-07.

### 2.2 Energy Demand (Sales)

2.2.1 The Sales Projected by the Board in ARR for the year 2006-07 and sales approved by the Commission in the Tariff Order dt.29.11.2006 and actual sales now given by the Board as per Annual Accounts for the year 2006-07 are given in Table-2.1 below:

Table-2.1  
**Energy Sales (2006- 07)**

| S.No | Category            | Proposed by BSEB in ARR 2006-07 | Approved by the Commission in T.O. 2006-07 | Actuals as per annual accounts 2006-07 | Now Approved by the Commission |
|------|---------------------|---------------------------------|--|--|--------------------------------|
| 1    | Domestic            | 1465                            | 1469                                       | 1450.45                                | 1450.45                        |
| 2    | Commercial          | 346                             | 346  | 309.19                                 | 309.19                         |
| 3    | Public lighting     | 29                              | 29   | 25.18                                  | 25.18                          |
| 4    | Irrigation Pumpsets | 1493                            | 576  | 709.14                                 | 494.00                         |
| 5    | Public Water Works  | 200                             | 200  | 163.90                                 | 163.90                         |
| 6    | Industrial L.T      | 161                             | 161  | 111.17                                 | 111.17                         |
| 7    | Industrial H.T      | 772                             | 772  | 762.08                                 | 762.08                         |
| 8    | Railways            | 437                             | 420  | 383.92                                 | 383.92                         |
| 9    | Inter State         | 365                             | 365  | 626.65*                                | 626.65                         |
|      | <b>Total</b>        | <b>5268</b>                     | <b>4338</b>                                | <b>4541.68</b>                         | <b>4326.54</b>                 |

\*Inter state sales consist of 225.34 MU of sales to Nepal and 401.31 MU to common pool consumers under Unscheduled interchange (UI).

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

In the case of irrigation category the Commission has approved in its Tariff Order for the year 2006-07, sales of 576 MU against 1493 MU projected by the BSEB. The approval was based on effective number of 58600 installations and effective connected load of 205500 kW. The effective number of pumpsets and the corresponding connected load was, as projected by BSEB. 20% of the disconnected consumers was also taken into consideration by the Commission expecting them to avail the OTS facility and get the supply restored. Thus an effective connected load of 288232 kW was taken into consideration and considering a norm of 2000 kWh/kW/ annum, the sales of 576 MU for 2006-07 was approved for irrigation category. In the ARR and Tariff Petition for the year 2008-09, the actual number of installations and connected load of irrigation pumpsets for the year 2006-07 is furnished by BSEB as follows:

| Year    | No. of installations (effective) | Connected load (kW) |
|---------|----------------------------------|---------------------|
| 2006-07 | 57581                            | 247003              |

The norm of 2000 kWh/ kW / annum approved by the Commission, for the year 2006-07 is very liberal. With the above number of connections and corresponding connected load, and with the already approved norm of 2000 kWh/kW/ annum the consumption for irrigation pumpsets for the year 2006-07 would be 494 MU.

**Accordingly, the total energy sales to irrigation category is now approved at 494 MU for FY 2006-07 for review purpose.**

### **2.3 Transmission and Distribution Losses (T & D Losses)**

2.3.1 The Commission in its Tariff Order 2006-07 had fixed T&D losses at 41.4% for the year 2006-07. As per the annual accounts submitted by BSEB for the year 2006-07, the T&D losses for that year are 42.61 % with an assessed agriculture consumption of 709.14 MU. The Commission sees no reason for accepting T&D losses in excess to what approved earlier.

**The Commission therefore retains the T& D losses at 41.4 % as approved in Tariff Order for the year 2006-07.**

## 2.4 BSEB Own Generation

BSEB had two coal based thermal stations of its own namely Muzaffarpur TPS (MTPS) and Barauni TPS (BTPS) in FY 2006-07. The gross and net generation approved by the Commission in the Tariff Order 2006-07 and actual generation for the year 2006-07 as per Annual Accounts are furnished in Table-2.2 below.

Table-2.2  
Own Generation for 2006-07

| Sl.<br>No | Particulars             | Approved by<br>Commission |            | Actuals as per<br>Annual Accounts<br>2006-07 |              | Now approved by the<br>Commission |              | (MU) |
|-----------|-------------------------|---------------------------|------------|--|--------------|-----------------------------------|--------------|------|
|           |                         | Gross                     | Net        | Gross  | Net          | Gross                             | Net          |      |
| 1         | Barauni TPS<br>(Unit 6) | 165                       | 138        | 37.25  | 28.13        | 37.25                             | 28.13        |      |
| 2         | Barauni TPS<br>(Unit 7) | 90                        | 75         |  |              |                                   |              |      |
|           | <b>Total</b>            | <b>255</b>                | <b>213</b> | <b>37.25</b>                                 | <b>28.13</b> | <b>37.25</b>                      | <b>28.13</b> |      |

Actual thermal generation as per the information made available by BSEB through annual accounts for the year 2006-07 is 37.25 MU (Gross) and 28.13 MU (Net) with auxiliary consumption at 9.12 MU which works out to 24.48 % of gross generation. This is on very high side.

**The Commission now approves gross thermal generation for the year 2006-07 at 37.25 MU and net 28.13 MU as per actuals . The auxiliary consumption of 24.48% as per actuals is approved, as the generation is very meagre.**

## 2.5 Generation Cost

The Commission approved generation cost of Rs.51.17 crores for own generation of 255 MU as detailed in Table 2.3 below. The details of actual generation cost for FY 2006-07 are also given in the same table.

Table-2.3  
**Generation Cost for 2006-07**

| Sl.<br>No | States            | Approved by the Commission |                            |                           |                       | Actuals Submitted by BSEB |                             |                                   |                                |                          |
|-----------|-------------------|----------------------------|----------------------------|---------------------------|-----------------------|---------------------------|-----------------------------|-----------------------------------|--------------------------------|--------------------------|
|           |                   | Gen<br>(MU)                | Coal(MT) /<br>Cost (Rs.Cr) | Oil(KL) /<br>Cost (Rs.Cr) | Total Cost<br>(Rs.Cr) | Gen<br>(MU)               | Coal (MT) /<br>Cost (Rs.Cr) | Furnace Oil(KL) /<br>Cost (Rs.Cr) | L.D Oil (KL) /<br>Cost (Rs.Cr) | Total<br>Cost<br>(Rs.Cr) |
| 1         | Barauni<br>TPS- 6 | 165                        | 148500 / 23.76             | 1650 / 4.06               | 27.82                 |                           |                             |                                   |                                |                          |
| 2         | Barauni<br>TPS- 7 | 90                         | 99000 / 15.84              | 3051 / 7.51               | 23.35                 |                           |                             |                                   |                                |                          |
|           | <b>Total</b>      | <b>255</b>                 | <b>247500 / 39.60</b>      | <b>4701 / 11.57</b>       | <b>51.17</b>          | <b>37.25</b>              | <b>30786 / 4.65</b>         | <b>256 / 1.31</b>                 | <b>214 / 0.08</b>              | <b>9.32</b>              |
|           |                   |                            |                            |                           |                       |                           | Cost of Water 2.38          |                                   |                                |                          |
|           |                   |                            |                            |                           |                       |                           | Misc. 0.20                  |                                   |                                |                          |
|           |                   |                            |                            |                           |                       |                           | Misc. 0.60                  |                                   |                                |                          |
|           |                   |                            |                            |                           |                       |                           | Misc. 0.01                  |                                   |                                |                          |
|           |                   |                            |                            |                           |                       |                           | <b>3.19</b>                 |                                   |                                |                          |

2.5.1 The generation cost of Rs.9.32 crores include, cost of water and other miscellaneous expenses of Rs. 3.19 crores, which should be accounted under O&M expenses. Hence actual fuel costs are Rs. 6.13 crores (9.32-3.19).

**Accordingly, the Commission now approves the fuel cost of Rs.6.13 crores for gross generation of 37.25 M.U. for the year 2006-07.**

## 2.6 Power Purchase

2.6.1 The Commission in its Order for the year 2006-07 had approved net power purchase of 7188 MU. As per annual accounts for the year 2006-07, actual net purchases during 2006-07 are 7886.79 MU. The matter is further discussed in para 2.8.

## 2.7 Energy Balance

2.7.1 The details of energy requirement and availability approved by the Commission in Tariff Order of 2006-07, actuals now furnished by the BSEB and those approved by the Commission now are given in Table-2.4 below:

Table-2.4  
**Energy Balance – FY 2006-07**

| (MU)                         |   |  |  |                                |
|------------------------------|---|--|--|--------------------------------|
| S.No                         | Particulars                             | Approved by Commission in Tariff Order 2006-07 | Actuals as per annual accounts 2006-07 | Now approved by the Commission |
| 1                            | 2                                       | 3  | 4                                      | 5                              |
| <b>A. Energy requirement</b> |   |  |  |                                |
| 1                            | Energy sales other than irrigation & UI | 3762 (including UI)                            | 3431.23                                | 3431.23                        |
| 2                            | UI Sales                                |  | 401.31                                 | 401.31                         |
| 3                            | Sales for irrigation                    | 576  | 709.14                                 | 494                            |
| 3                            | Total sales                             | 4338   | 4541.68                                | 3925.23+401.31 (UI) = 4326.54  |
| 4                            | T&D Loss (%)                            | 41.40  | 42.61                                  | 41.40                          |
| 5                            | T&D losses                              | 3063   | 3373                                   | 2773*                          |
| 6                            | <b>Total requirement (net)</b>          | <b>7401</b>                                    | <b>7915</b>                            | <b>7100</b>                    |
| <b>B. Energy available</b>   |   |  |  |                                |
| 7                            | Own generation (Ex-bus)(MU)             | 213  | 28                                     | 28                             |
| 8                            | Purchase Net (MU)                       | 7188   | 7887                                   | 7072                           |
| 9                            | <b>Total</b>                            | <b>7401</b>                                    | <b>7915</b>                            | <b>7100</b>                    |

\* The approved T&D losses are reckoned on sales other than UI sales.

2.7.2 Total energy requirement now approved by the Commission is 7100 MU (Net) and the power purchase against the requirement is 7072 MU. The total power purchased by the Board owing to higher assessment of agricultural sales as discussed in para 2.2.1 and higher T&D loss above, the level approved by the Commission had resulted in increase in power purchase to an extent of 815 MU (7887 – 7072). The matter is further discussed in para 2.9.

**The Commission now approves the total energy requirement at 7100 MU for the year 2006-07.**

## 2.8 Power Purchase Cost

2.8.1 The Commission in its Tariff Order for the year 2006-07 had approved a cost of Rs.1354.15 crores for power purchase of 7460 MU (gross).

2.8.2 The actual gross power purchase for the year 2006-07 by the Board as per annual accounts is 8178.52 MU including Unscheduled Interchange(UI) of 167.38 MU and net power purchase of 7886.79 MU. The power purchase cost as per annual accounts for the year 2006-07 is Rs.1493.91 crores.

**Thus, the Board actually incurred an expense of Rs. 1493.91 crores for net power purchase of 7886.79 M.U.**

## **2.9 Expenses disapproved by the Commission**

2.9.1 As discussed in para 2.3 above, the Board has under achieved the T & D loss target approved by the Commission, in the tariff order for the year 2006-07 and over assessed the agricultural consumption. The Commission feels that the financial burden as measured by consequential additional power purchase on this account may not be passed on to the consumers but borne by the Board. As brought out in para 2.7 above, T&D loss level higher than that approved by the Commission and higher assessment of agricultural consumption has resulted in increased power purchase to an extent of 815 M.U. The cost of this 815 M.U. based on pro-rata cost of power purchase works out to Rs. 154.37 crores  $(1493.91 \text{ crore} \div 7887) \times 815$ .

**The Commission thus disapproves expenses to the extent of Rs.154.37 crores on account of higher T&D losses than that approved and higher assessment of agricultural consumption.**

## **2.10 Employee Cost**

The Commission in the Tariff Order for the year 2006-07 had approved employee cost of Rs.525.91 crores which was projected with an increase of 4.33 % over the previous year. Provision for terminal benefits of Rs.206.31 crores, which has to be met from pension fund through trust has been admitted, as a special case, as the trust has not been formed.

The details of employee costs approved by the Commission and actuals furnished by the BSEB in the annual accounts for 2006-07 are furnished in Table-2.5 below:

Table-2.5  
Employee Cost – FY 2006- 07

| S.<br>No | Particulars                             | Approved<br>by<br>Commission<br>for 2006-07 | Actuals as<br>per annual<br>accounts<br>furnished<br>by BSEB<br>for 2006-07 | Now approved by<br>the Commission | (Rs.crores) |
|----------|---|---|---|-----------------------------------|-------------|
| 1        | Salary                                  | 168.00                                      | 192.17  | 192.17                            |             |
| 2        | Overtime                                | 1.00  | 2.75  | 2.75                              |             |
| 3        | Dearness Allowance                      | 136.00                                      | 59.81   | 59.81                             |             |
| 4        | Other Allowance                         | 14.60                                       | 15.18   | 15.18                             |             |
| 5        | Bonus                                   |   |   |                                   |             |
| 6        | Medical Reimbursement                   |   |   |                                   |             |
| 7        | Leave Travel Assistance                 |   |   |                                   |             |
| 8        | E.L. encashment                         |   |   |                                   |             |
| 9        | Payment for workmen<br>Compensation Act |   |   |                                   |             |
| 10       | Staff Welfare Expenses                  |   | 0.83  | 0.83                              |             |
| 11       | Terminal Benefits                       | 206.31                                      | 276.46  | 276.46                            |             |
| 12       | Total                                   | 525.91                                      | 565.45  | 565.45                            |             |
| 13       | Less Capitalization                     |   | 13.60   | 13.60                             |             |
| 14       | <b>Total (12-13)</b>                    | <b>525.91</b>                               | <b>551.85</b>   | <b>551.85</b>                     |             |

**Accordingly the Commission now approves employee cost of Rs.551.85 crores as detailed supra for the year 2006-07.**

## 2.11 Administration and General Expenses

The Commission had approved Rs.21.26 crores towards Administration and General Expenses as projected by BSEB for the year 2006-07 with an increase of 4.42 % over the previous year. As per annual accounts for FY 2006-07, actual expenditure is Rs.22.36 crores net capitalization for the year 2006-07, a marginal increase over what was approved by the Commission. The details are furnished in Table-2.6 below.

Table-2.6  
**Administration and General Expenses - FY 2006- 07**

| Sl.<br>No. | Particulars                   | Approved by<br>Commission<br>for 2006-07 | Actuals as per<br>annual accounts<br>for 2006-07 | Now<br>approved by<br>the<br>Commission<br>(Rs.crores) |
|------------|-------------------------------|--|--|--|
| 1          | Rent, Rates & Taxes           | 0.80                                     | 0.53   | 0.53   |
| 2          | Insurance                     | 0.01                                     | 0.01   | 0.01   |
| 3          | Telephone charges             | 1.80                                     | 1.51   | 1.51   |
| 4          | Legal Charges                 | 0.70                                     | 0.73   | 0.73   |
| 5          | Audit fee                     | 1.10                                     | 1.94   | 1.94   |
| 6          | Other fees                    | 0.03                                     | 0.02   | 0.02   |
| 7          | Other charges                 | 3.62                                     | 0.01   | 0.01   |
| 8          | Other Professional<br>charges |  | 0.26   | 0.26   |
| 9          | Conveyance & Travel           | 4.00                                     | 4.58   | 4.58   |
| 10         | Other Expenses                | 8.50                                     | 13.45  | 13.45  |
| 11         | Freight                       | 0.70                                     | 0.34   | 0.34   |
| 12         | Other purchase related        | -  | -  |  |
| <b>13</b>  | <b>Total</b>                  | <b>21.26</b>                             | <b>23.38</b>                                     | <b>23.38</b>   |
| 14         | Less Capitalization           | -  | 1.02   | 1.02   |
| 15         | Net Expenditure (13-14)       | 21.26                                    | 22.36  | 22.36  |

**Accordingly the Commission now approves Administration and General Expenses of Rs.22.36 crores for the year 2006-07.**

## 2.12 Repair and Maintenance

The Commission had approved Rs.25.20 crores towards Repair and Maintenance expenses for the year 2006-07 as claimed by the BSEB. According to the annual accounts for the year 2006-07, Rs.22.36 crores was actually incurred. The water cost and miscellaneous charges shown in fuel costs at Rs. 3.19 crores by BSEB are to be included in R&M costs. After adding these costs the R&M expenses work out to Rs.25.55 crores.

**Accordingly the Commission now approves R&M costs of Rs. 25.55 crores for the year 2006-07.**

## 2.13 Depreciation

2.13.1 The Commission had approved depreciation of Rs.83.75 crores in the tariff order for the year 2006-07 as claimed by BSEB as per CERC regulations. As per annual accounts for the year 2006-07 submitted by BSEB, the depreciation for FY 2006-07 is Rs.58.22 crores.

**Accordingly depreciation of Rs.58.22 crores is allowed for the year 2006-07.**

## 2.14 Interest and Finance Charges

The Commission approved interest and finance charges of Rs.192.72 crores for the year 2006-07 as against the Board claim of Rs.600.38 crores allowing the interest on loans utilized for addition of asset and not to meet revenue expenditure. As per the annual accounts for the year 2006-07, interest paid by the Board during the year 2006-07 is Rs.52.01 crores (net of capitalization) as detailed in the Table-2.7 below:

Table-2.7

**Interest on Capital loans paid – FY 2006-07**

| <b>(Rs.crores)</b> |                             |   |   |   |
|--------------------|-----------------------------|---|---|---|
| <b>S. No</b>       | <b>Institution</b>          | <b>Interest Approved by Commission for the year 2006-07</b> | <b>Actuals as per annual accounts furnished by BSEB for 2006-07</b> | <b>Now approved by the Commission for 2006-07</b> |
| 1                  | State Government            | 139.90  |   |   |
| 2                  | LIC                         | 4.34  |   |   |
| 3                  | REC                         | 12.62   | 27.96   | 27.96   |
| 4                  | Market Borrowing            | 10.67   |   |   |
| 5                  | PFC                         | 25.19   | 4.15  | 4.15  |
| 6                  | PFC                         | -   | 14.80   | 14.80   |
| 7                  | Centrally sponsored schemes | -   | 2.17  | 2.17  |
| 8                  | Public Bonds                | -   | 15.93   | 15.93   |
| <b>Total</b>       |                             |   | <b>65.01</b>  | <b>65.01</b>                                      |
| 9                  | Less Interest Capitalised   | -   | 13.00   | 13.00   |
| 10                 | Net Total                   | <b>192.72</b>   | <b>52.01</b>  | <b>52.01</b>                                      |

**The Commission therefore now approves Rs.52.01 crores as net amount of interest and finance charges for the year 2006-07.**

## **2.15 Other Income**

The Commission had approved other income of Rs.44.00 crores in Tariff Order for the year 2006-07. As per annual accounts of the year 2006-07, the other income including meter rent / service line rental and Misc. recoveries is Rs.141.57 crores.

**The Commission accordingly now approves other income of Rs.141.57 crores on actual basis for the year 2006-07.**

## **2.16 Grant / Revenue subsidy from Government of Bihar**

As per annual accounts for the year 2006-07, the Board had received Rs.720 crores from the Government towards revenue subsidy and grant.

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

## **2.17 Prior Period Expenses**

As per annual accounts for the year 2006-07 of the Board, the net expenses / losses is Rs.58.25 crores. But the Board fails to furnish details for this amount. Therefore, the Commission decides to disallow this amount.

**Accordingly the Commission disallows the prior period expenditure of Rs.58.25 crores for the year 2006-07.**

## **2.18 Provision of Fringe Benefit Tax (FBT)**

As per annual accounts for the year 2006-07, the amount of FBT is Rs.0.32 crores. This expenditure is statutory payment made by the Board.

**Accordingly the Commission approves expenditure of Rs.0.32 crores on account of Fringe Benefit Tax for the year 2006-07.**

## **2.19 Revenue from Sale of Power**

As per annual accounts for the year 2006-07, revenue from sale of power is Rs.1250.69 crores.

**Accordingly the Commission now approves the revenue from sale of power at Rs.1250.69 crores for the year 2006-07.**

## 2.20 Review of ARR for the year 2006- 07

The aggregate revenue requirement for the year 2006-07 based on the above discussion is detailed in Table-2.8 below:

Table-2.8  
**Aggregate Revenue Requirement – FY 2006- 07**

| S.No      | Particulars  | Approved by Commission in T.O. 2006-07 | Actuals as per Annual Accounts for 2006-07 | Approval by Commission based on annual accounts for 2006-07 |
|-----------|--|--|--|---|
| A         | Energy requirement (MU)                              | 7401                                   | 7886.79                                    | 7100  |
| B         | Energy Sales (MU)                                    | 4338                                   | 4541.92                                    | 4327  |
| C         | T & D loss (%)                                       | 41.40                                  | 42.41                                      | 41.40   |
| <b>D</b>  | <b>Gross Expenditure (Rs. crores)</b>                |  |  |   |
| 1         | Generation Cost                                      | 51.17                                  | 9.32                                       | 6.13  |
| 2         | Power Purchase Cost                                  | 1354.15                                | 1493.91                                    | 1493.91   |
| 3         | Employee Cost  | 525.91                                 | 551.85                                     | 551.85  |
| 4         | Administration & General Expenses                    | 21.26                                  | 22.36                                      | 22.36   |
| 5         | Repairs & Maintenance                                | 25.20                                  | 23.36                                      | 25.55   |
| 6         | Interest & Finance Charges                           | 192.72                                 | 65.01                                      | 65.01   |
| 7         | Depreciation   | 83.75                                  | 58.22                                      | 58.22   |
| 8         | Return on NFA  | -                                      | 20.24                                      | -   |
| 9         | Prior Period Expenses                                | -                                      | 58.25                                      | -   |
| 10        | Other debts & extraordinary items                    | -                                      | -  | -   |
| 11        | Fringe Benefit Tax etc                               | -                                      | 0.32                                       | 0.32  |
| 12        | Less Interest & Expenses Capitalised                 | (-) 40.00                              | (-) 13.00                                  | (-) 13.00   |
| <b>13</b> | <b>Total Revenue Requirement (Rs. crores)</b>        | <b>2214.16</b>                         | <b>2289.84</b>                             | <b>2210.35</b>  |
| 14        | Less Expenditure disallowed due to higher T & D loss | -                                      |  | 154.37  |
| 15        | Revenue Requirement (13-14)                          |  |  | 2055.98   |
| 16        | Less Non-Tariff Income                               | (-) 44.00                              | (-) 141.57                                 | (-) 141.57  |
| <b>17</b> | <b>Net Revenue Requirement (15-16) (Rs. crores)</b>  | <b>2170.16</b>                         | <b>2148.27</b>                             | <b>1914.41</b>  |
| 18        | Revenue from Tariff                                  | 1265.38                                | 1250.69                                    | 1250.69   |
| 19        | <b>Gap (17-18) (Rs. crores)</b>                      | <b>904.78</b>                          | <b>897.58</b>                              | <b>663.72</b>   |
| 20        | Government subsidy                                   | 720.00                                 | 720.00                                     | 720.00  |
| 21        | <b>Net gap 2006-07 (Rs. crores)</b>                  | <b>184.78</b>                          | <b>177.58</b>                              | <b>(-) 56.28</b>  |

Thus from the review of Revenue Requirement for FY 2006-07, based on annual accounts for FY 2006-07, it is noticed that there is a net surplus of Rs.56.28 crores. As a result even without the regulatory asset, there is a surplus of Rs. 56.28 crores for the year 2006-07.

This surplus is only indicative, as the annual accounts are only adopted by the Board and not yet audited by the Accountant General. Hence, this surplus is not being carried forward. Treatment of this surplus of Rs.56.28 crores will be considered by the Commission on receipt of audited accounts for FY 2006-07 and determination of ARR for FY 2009-10.

## **Chapter – 3**

### **Objections / Suggestions of Consumers / Stakeholders and State Advisory Committee on the Tariff Petition**

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#### **3.1 Inviting Objections / Comments on Tariff Petition**

The salient features of the Aggregate Revenue Requirement (ARR) and Tariff Petition for financial year 2008-09 filed by the BSEB were published in the leading newspapers of the state inviting objections / suggestions / comments on the tariff proposals from the public and stakeholders. The newspapers in which public notice was published are given in Chapter -1 and list of objectors who filed the written objections / suggestions on the tariff petition is given in the Annexure –1.1 of Chapter -1 of the tariff order. BSEB pursuant to receipt of these objections submitted their response to these objections / suggestions. It is noticed that in respect of several issues, the BSEB has replied with a peremptory “No Comments”. The Commission would like to caution the BSEB, that such curtness does not behove well for a public utility. Even in regard to well-settled cases it is better to provide a courteous reply with details.

#### **3.2 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 8<sup>th</sup> and 9<sup>th</sup> July 2008. The BSEB on the first day of hearing made an oral 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.

### **3.3 Objections/suggestions & BSEB Response:**

The objections filed, responses of BSEB and the observations of the Commission issue-wise are briefly discussed in the following paragraphs:

#### **1. REVENUE FROM SALE OF POWER / AND REVENUE GAP**

Balajee Ingot Pvt. Ltd. suggested that the Revenue shall be worked out on the basis of billed amount but not on the basis of collection. The collection efficiency is about 75 % of billed amount only.

Bihar Steel Manufacturer's Association and Dina Metals Limited, suggested that the small deficit of Rs.232.48 Crores can be bridged through productivity improvement instead of the proposed tariff hike.

Shri M C Agarwal, Advocate, pointed that;

- (a) Income is suppressed to increase gap.
- (b) The gap & tariff increase proposed are not rational.

Shri Sagar Bhattacharjee requested that the Tariff of NDS II category shall be retained and not increased. The gap shall be bridged by productivity improvement.

Shri Arun Kumar Mishra pointed that the earning mentioned in proposed tariff is much less for the reason that the No. of Consumers under LT, in the FY 2008-09 are 13430 where as in FY 2007-08 is 12879. The proportionate increase in connected load is not projected. If it is rightly projected the additional earning will be Rs.52 lakhs. Likewise other categories should also be re-calculated.

#### **Response of BSEB**

Projected revenue income is based on tariff rates and not on the basis of collection.

Assumptions of petitioner Shri MC Agarwal, in second para are not correct.

Revenue projection for FY 2008-09 is based on proposed tariff and the projected category wise number of consumers.

#### ***Commission's observation***

Commission agrees with the remarks of BSEB. The revenue is worked out based on billed energy and on approved sales for FY 2008-09.

The revenue gap has been decided after prudent scrutiny of all expenditure items and the tariff for NDS-II and other categories after consideration of all relevant aspects.

#### **2. POWER PURCHASE**

Balajee Ingot Pvt. Ltd and Sri Arun Kumar Mishra pointed that purchase of costly power under UI shall not be allowed. Costly power from Nepal at Rs.3.80 per unit shall also not be allowed.

Bihar Industries Association submitted that the weighted average unit rate of power from the three Central Sector generating stations (which contribute 70 % of Board's power purchase) works out to 158.04 Paise / Unit, while those of Nepal & UI are 380 Ps/unit and 400 Ps /unit. Board may be advised, to follow merit order, strictly for purchase of power.

#### **Response of BSEB**

Power purchase under UI takes place under emergency. If Board gets full power as per the share allocation from all the plants/units, there may not be any need to draw power under UI.

Purchase of power from Nepal is done under bilateral arrangement between Government of India and Nepal. The rates are also decided for the exchange of power by the power exchange committee set up by the two Governments.

Rates of power from all CPUs are fixed by CERC. The share in different plants is allocated by GOI. Therefore, rates & choices is not in Board's control. When due to any reason availability from plant is less, in such condition power under UI is purchased, which is generally higher than normal rate. Suggestion of the petitioner to purchase power strictly on the "merit order principle" is not possible.

#### ***Commission's observation***

The main objection appears to be purchase under UI at Rs.4.00/kWh. But in an integrated system, it may be difficult to avoid drawal under UI. However, the BSEB shall plan proper load management and restrict the drawl from the grid at low frequency under UI to the minimum. Purchase of power from Nepal under bilateral arrangement shall also be kept to minimum.

In view of deficit power scenario in the State, merit order in power purchase may not be practicable at present.

### **3. COST OF OWN GENERATION**

Balajee Ingot Pvt. Ltd, Bihar Chamber Of Commerce, Shri Sagar Bhattacharjee and Bihar Industries Association pointed that the BSEB's own generation is costly (about Rs.5/ Unit). Whereas power procurement cost is Rs.2.01 per unit and requested not to allow it. Inefficiency of BSEB's generation should not be passed on to consumers. Generation Charges of Rs.62.35 crores are not warranted as the BSEB is not generating any energy.

#### **Response of BSEB**

The petitioner has indicated cost of own generation as Rs. 5/- per unit. The cost works out to 223 paise per unit.

All the fixed costs of generating plant remains same whether the generation is low or high. The fuel cost is estimated to be 201 Ps/kWh (including auxiliary consumption). Due to limited availability of power, Board cannot close its own generating plant. The possible other source is through UI which is much more costlier.

The cost of own generation is projected on the basis of expected generation. The actual cost will depend on energy produced. For any major short fall, power from alternative sources will have to be purchased.

#### ***Commission's observation***

The Commission agrees with the comments of BSEB. The Board cannot close the power stations, but has to improve its operational efficiency to reduce the generation cost per unit. The performance of the plant shall be improved to reduce the generation cost. A directive to BSEB in this regard is issued separately.

#### **4. T & D LOSSES**

Kalyanpur Cements, Balmukund Concast Ltd, Bihar Industries Association, Bihar Steel Manufacturer's Association, Gangotri Iron & Steel Co. Ltd, Bihar Chamber of Commerce, Shri Digvijay & Shri Shashank Sharan Singh, Chief Engineer, E.C. Railway, Hazipur, Smt. Krishna Devi, Shri Arun Kumar Mishra, Dina Metals Limited, Prof. P K Sharma and Shri MC Aggarwal have pointed that the Hon'ble Commission in its tariff order dated 29.11.2006 vide Directive No. 7 directed the Board to reduce the T & D losses as follows:

| <b>Year</b> | <b>Commission's Order</b> | <b>BSEB Achievement / Proposal</b> |
|-------------|---------------------------|------------------------------------|
| 2006-07     | 41.4%                     | 42.61%                             |
| 2007-08     | 38 %                      | 41.40%                             |
| 2008-09     | 34 %                      | 40.50%                             |

If the losses are reduced to 34% by 2008-09, the additional revenue works out to be Rs.285 Cr. So the anticipated deficit of Rs.232.48 Cr would be bridged fully. The comparative position of AT&C losses for various states show that losses in Bihar are very high and are of the order of 60.61% to 74.09% as per Planning Commission data.

Balajee Ingot Pvt. Ltd requested to work out the tariff on the basis of 8 to 10 % T & D losses for supply at 33 KV and stated that the transmission & RLDC charges of Rs. 150 crores (i.e 30 Paise / Unit sold ) is very high. He requests to look into the matter on technical and legal grounds of natural justice. The transmission loss is 3.7%.

#### **Response of BSEB**

Steps taken and various measures under execution to reduce T&D losses have been given in the compliance of relevant directives.

The figures referred to T&D losses for previous 3-4 years were provisional because, Board's Annual Accounts at that time were not ready.

The transmission tariff for central sector transmission system (Power grid) is approved by the CERC. The 3.7% losses in central sector transmission system is based on computation of actual data.

#### ***Commission's observation***

*The comments of the stakeholders on T&D losses have been considered while working out the ARR for FY 2008-09.*

*The Board has no proper means of measuring voltage-wise losses till metering is provided on all the feeders and energy audit is done. The Board shall take all effective steps to reduce the T&D losses, particularly non-technical losses to the targeted level.*

*Commission agrees with the remarks of BSEB as the transmission and RLDC costs are determined by CERC which have to be paid.*

#### **5. FURNACE CAPACITY AS 600 KVA PER MT FOR RECKONING CONTRACTED MAXIMUM DEMAND**

Balajee Ingot Pvt. Ltd, Balmukund Concast Ltd, Bihar Steel Manufacturer's Association and Gangotri Iron & Steel Co. Ltd requested that :

- (a) The load of the furnace shall be reckoned on the basis of the manufacturer's rating & not at 600 KVA / ton
- (b) No harassment by way of measuring of the furnace volume if it was done earlier.
- (c) The KVA rating measured by the meter shall form basis for billing and not re-rated capacity.
- (d) There should not be any change in Contract Demand, unless furnace or machinery is changed.

#### **Response of BSEB**

After due consideration of the suggestion of the HTSS consumers, Board agrees that for only new connections the contract demand may be based on equipment manufacturer's technical specification. The contract demand of the existing connections shall remain unchanged. The Board has installed tamper proof "Secure meters to detect any theft of energy in all 33 KV HT/HTSS consumers. So the actual contract demand shall be recorded.

Regarding mixed load it is necessary to prevent use of HTSS tariff rates by such consumers who are basically rolling mills. In view of the practical difficulties indicated by the consumers, Board suggests that mixed load of any category may be allowed for HTSS (33 KV) where minimum contract demand should be 3000 KVA. For only HTSS, induction furnace the minimum contract demand shall remain 1000 KVA at 33 KV.

***Commission's observation***

In case of mixed load of induction furnace having loads of rolling/re-rolling mills in the same premises the existing practice of the Board shall continue for a contract demand of 3000 kVA and above at 33 kV supply only.

The prevailing practice will continue for determining the contract demand of induction furnace in the existing HTSS service connections.

However, as agreed by the Board, for new connections only contract demand shall be based on total capacity of the furnace and equipment as per manufacturers technical specifications and in case difference of opinion the provisions of clause 6.39 and 6.40 of Bihar Electricity Supply Code shall apply.

BSEB is directed to study the practice in other States and submit a note before the Commission by October 2008.

**6. TRANSFORMER CAPACITY FOR HT SERVICES**

Kalyanpur Cements, Balmukund Concast Ltd, Bihar Industries Association, Bihar Steel Manufacturer's Association, Gangotri Iron & Steel Co. requested to dispense the condition that;

The transformer capacity of H.T. Consumers shall not be more than 150 % of CMD and if higher capacity transformer is installed it falls under malpractice. It is suggested to allow the Industrial Consumers to keep a spare transformer (for emergency use). Also the stipulation of assessing the load as 2/3<sup>rd</sup> of the capacity of the transformer may be dispensed with.

**BSEB's Response**

The provision to allow the consumer to install transformer capacity upto 150% of the contracted load is already settled by the order of the Supreme Court in the various appeals filed against tariff of 1993. This may, therefore continue.

***Commission's observation***

*Commission agrees with the views of the BSEB, which is on the basis of Supreme Court orders as informed by BSEB.*

**7. PENALTY FOR EXCEEDING CONTRACT MAXIMUM DEMAND (CMD)**

Kalyanpur Cements, requested that no penalty shall be levied for exceeding load upto 110 % and if it exceeds 110 % the excess load shall not be billed at double the normal tariff. The penalty shall be limited to 110 % of the normal tariff.

Balajee Ingot Pvt. Ltd , requested that the limit of 10 % may be increased to 20 % in case of induction furnace consumers for charging excess demand at double the rate.

Balmukund Concast Ltd, Bihar Steel Manufacturer's Association and Gangotri Iron & Steel Co submitted that the proposal "in case the HT consumer exceeds 110 % of the Contract Demand in 3 consecutive months, the MD recorded shall be treated as Contract Demand for remaining nine months", which is unfair and requested that,

- (1) No penalty be levied for exceeding load upto 110 % of Contract Demand.
- (2) If it exceeds 110 % of Contract Demand, the excess load only shall be penalised at 110 % of normal demand charges.

Sr. Divisional Electrical Engineer, E.C. Railway, Hazipur - requested to exempt Railways from payment of penal charges for exceeding CMD and the demand charges shall be based on simultaneous M.D. of various Railway Traction SS for the reason that; sometimes various factors like public agitation, accidents, traction supply interruption, etc lead to bunching of trains in a feed zone of TSS. This causes demand shoot up, for short spell at a couple of TSS but with corresponding reduction at other TSS, thereby keeping overall load to be the same. But the BSEB levies demand charges and penalties based on the contract demand at individual Railway TSS.

#### **Response of BSEB**

The proposal given in tariff petition is to ensure that the contract load is realistic and exceeding it beyond 110% should be discouraged.

The penalties suggested in tariff petition for exceeding contract demand above 110%, and exceeds above 110% for three consecutive months, is meant to ensure drawal of power reasonably within the contract demand entered into agreement. If no penalty is imposed then there may be difficulty in maintaining demand/load management and the consumer may go on drawing upto 150% of contract demand without paying for the corresponding MMC for years.

In respect of Demand charges to be based on simultaneous Maximum demand of various traction loads, any exemption or relaxation will result in loss of some revenue. The losses will need to be recovered from other category of consumers which may not be correct to burden other consumers.

#### ***Commission's observation***

The Commission agrees with the BSEB as penal charges for exceeding CMD are necessary for effective load management. This is being followed by the utilities in most of the states.

However, the Commission agrees with the views of stakeholders not to treat the recorded MD, as CMD, if the CMD exceeds 110% consecutively for 3 months. The

Board may issue a notice and inform the consumer to get additional CMD sanctioned or to limit their drawal as per their contracted demand. Otherwise Board will take action as provisions of the Act/Rules/Regulations.

In respect of Demand charges to be based on simultaneous Maximum demand of various traction loads the prevailing practice may continue.

#### **8. POWER FACTOR SURCHARGE AND REBATE**

Kalyanpur Cements, Balmukund Concast Ltd, Bihar Industries Association and Gangotri Iron & Steel Co. Ltd. requested to revise the P.F. to be maintained to 0.85 and levy penalty, if P.F. falls below 0.85 and allow rebate if it exceeds 0.85.

Balajee Ingot Pvt. Ltd , requested to allow P.F rebate for P.F in excess of 0.90 and the baseline for surcharge as 0.9. and to make the rebate also 1% for each 0.01 increase in P.F.

Chief Electrical Engineer, E.C.Railway and Sr. Divisional Electrical Engineer, E.C. Railway, Hazipur – requested to revise the P.F. rebate as follows:

|  |                                  |
|--|----------------------------------|
| For each increase of 0.01 in P.F. above 90% upto 0.95% | 1/2 % on demand / energy charges |
| For each increase of 0.01 in P.F above 0.95            | 1% on demand / energy charges    |

#### **Response of BSEB**

The power factor rebate/penalty is a scheme to make all HT consumers achieve P.F. of 0.9 and above. When almost 100% HT consumers have improved the PF to 0.9 and above, then provision of only penalty is required to maintain the system/consumer's P.F. giving rebate as per existing rate/slab, therefore needs to be gradually reduced.

The power factor of 0.9 is adopted by the Board in 2001 and now to lower it to 0.85 is not logical. The reasons for modification in rebate has been given in the tariff petition.

#### ***Commission's observation***

It is necessary for the Board & Consumers to maintain a high power factor and PF of 0.9 is considered reasonable.

The present rebate for higher PF is adequate.

#### **9. FIXED CHARGES &**

#### **10. MONTHLY MINIMUM CHARGES (MMC)**

Bihar Industries Association and Shri Sagar Bhattacharjee requested that fixed charges shall be based on actual load and not on connected load. Of all the connected load only a part is used due to seasonal nature of the need for various equipments.

Bihar Chamber of Commerce and Smt. Krishna Devi pointed that the fixed charge used to be Rs.30 per month since a long time. It is proposed to be increased to Rs.50/- which is unbearable to the common man. The Per Unit Charge which used to vary from Rs.2 to Rs.3.70 is now increased to Rs.3/-. This hefty increase will encourage theft.

Fixed charges should be reduced or at least kept as it is now. For DS – I , II & III & NDS Consumers there is no justification for Fixed Charges.

Sri Digvijay (Lalloo), & Shashank Sharan Singh pointed that for domestic the fixed charge, Minimum Charge, flat rate is based on Rs.3/-. This is not correct. Unbearably high against State Policy. Domestic tariff should remain unchanged.

*Patna City Vyapar Mandal expressed that the imposition of fixed charges has no meaning, in the situation of severe shortage of power.*

*Prof.P.K.Sharma pointed that charging of fixed charge and minimum monthly charge simultaneously is not legal as per Supreme Court Judgment of 1991. Besides this charging a flat rate of Rs.3/- unit is not in the interest of poor consumers. (b) For DS – II fixed charges & energy charges may be reduced.*

Kalyanpur Cements, Balajee Ingot Pvt. Ltd, Balmukund Concast Ltd , Bihar, Bihar Industries Association, Bihar Steel Manufacturer's Association, Gangotri Iron & Steel Co. Ltd, Bihar Chamber Of Commerce, Shri Digvijay and Shri Shashank Sharan Singh, Chief Engineer, EC Railway, Hazipur and Smt. Krishna Devi submitted that most of the SEBs have abolished MMC and wherever it exists, it is lower than in Bihar.

#### **Response of BSEB**

The proposed increase in fixed charges has enabled Board to propose a much lower energy rate. Lower energy rates will encourage consumers to go for higher consumption/production.

The petitioner's suggestion to maintain existing tariff is not possible. The expenditure which is unavoidable and is increasing every year has to be met with some increase in tariff rates.

The present rates are highly subsidized. The consumption in domestic sector is over 30%. Therefore increase is unavoidable, otherwise the deficit will be still higher

The existing tariff structure is in operation for more than past 15 years. There is no reason to remove fixed charges because then energy rates will have to be raised and so, there will be no impact in over all cost payable by consumers.

This issue was raised by some consumers during previous tariff petition for FY07. The MMC fixed is in the range of actual level of consumption being achieved by different categories of consumers.

***Commission's observation***

The fixed charges cannot be removed, as the fixed costs are incurred by the BSEB. However, the Commission agrees with the suggestions of stakeholders that there should not be steep increase in fixed cost.

The views of both BSEB and Stakeholders have been kept in view in this tariff order.

In case of HT consumer where fixed charges are based on contracted demand connected load need not be considered.

**11. PROMPT PAYMENT REBATE**

Kalyanpur Cements, Balajee Ingot Pvt. Ltd, Balmukund Concast Ltd, Bihar Industries Association, Bihar Steel Manufacturer's Association, and Gangotri Iron & Steel Co. Ltd, requested that in order to encourage prompt payment, incentive for prompt payment well within the due date may be considered.

The prompt payment rebate of 5 Ps/unit which was agreed between BSEB and Bihar Steel Manufacturing Association was reduced unilaterally by BER to 1 paise/ unit in its order dated 29.11.2006. The OERC (Orissa) is allowing 10 Ps per unit for payment in 7 days and 1% of bill if payment is made in 3 days.

**BSEB's Response**

The rebate of 1 paise/unit is applicable to all HT consumers and so providing different rate of rebate for HTSS is not reasonable.

***Commission's observation***

Prompt payment rebate need to be uniform for all category of consumers.

**12. DELAYED PAYMENT SURCHARGE (DPS)**

Kalyanpur Cements, Balajee Ingot Pvt. Ltd, Balmukund Concast Ltd, Bihar, Bihar Industries Association, Bihar Steel Manufacturer's Association, Chief Engineer, E.C. Railway, Hazipur, Shri Sagar Bhattacharjee and Gangotri Iron & Steel Co. Ltd submitted that the Delayed Payment Surcharge at 1.5 % is being calculated on monthly basis irrespective of number of days delayed. Further the Delayed Payment Charge is being levied on Delayed Payment Charge which is not correct. They requested to consider and approve the following proposal.

- (i) Delayed Payment Surcharges shall be levied at 1.25 % PM on the amount unpaid on day to day basis.

- (ii) No Delayed Payment Charges be levied after the line is permanently disconnected.
- (iii) Separate Account shall be maintained for Delayed Payment Surcharge, E.D , Electricity Charges, arrears etc.

Bihar Chamber of Commerce and Shri Arun Kumar Mishra pointed that the Delayed Payment Surcharge arrear is depicted constantly as Rs.20 crore for 2007, 2008 & 2009 against much higher amounts for 2004, 2005 & 2006. Taking a 15 % annual increase from Rs.619 crores in 2006, Delayed Payment Surcharge arrear for FY 2008-09 shall be Rs.850 crores.

#### **Response of BSEB**

Consumers who do not pay full bill amount due to any reason and instead pay a part of the bill cannot have a choice of dictating to the Board as which element of the bill should be adjusted from part payment. The consumers making full payment have no such issue.

Reasons for low realization of DPS has been given in tariff petition.

#### ***Commission's observation***

*The view of both BSEB and stakeholder have been taken in view in this tariff order.*

*DPS need not be charged wherever service lines are permanently disconnected or on DPS arrears.*

The Board shall maintain separate account of electricity charges, delayed payment charges, E.D. arrears etc.

The Board shall take necessary action regarding the accumulated DPS amount in case of doubtful debts and also in case of Government arrears.

### **13. SECURITY DEPOSIT**

Kalyanpur Cements, Balajee Ingot Pvt. Ltd , Balmukund Concast Ltd , Bihar Steel Manufacturer's Association, Gangotri Iron & Steel Co. Ltd, (New) and Shri Sagar Bhattacharjee expressed that BSEB is allowing only 4 % interest on Security Deposit, which is quite meager. They requested to enhance the rate of interest to 18 % P.A which is being levied by the Board as Delayed Payment Surcharge. Further the Security Deposit may be accepted in the form of Bank Guarantee also and limit the Security Deposit for two months consumption only as provided in Supply Code instead of 3 months consumption.

#### **Response of BSEB**

As it is a matter of Supply Code, no comments are made.

***Commission's observation***

Initial security deposit and additional security deposit shall be collected as provided in the Bihar Electricity Supply Code 2007.

The distribution licensee shall pay interest on security deposit at the Bank rate notified by Reserve Bank of India from time to time as provided in the Bihar Electricity Supply Code. In this regard it shall be the responsibility of the licensee to keep a watch on the bank rate from time to time.

**14. LOAD FACTOR REBATE**

Kalyanpur Cements, Balmukund Concast Ltd, Bihar Steel Manufacturer's Association and Gangotri Iron & Steel Co. Ltd submitted that the rebate of 5 Ps./ unit on excess units consumed is not sufficient. It is suggested to allow a rebate of;

- (1) 15 % for Load factor between 50 & 60 %.
- (2) 25 % of Load factor between 60 & 70 % and
- (3) 40 % for Load factor of 80 %.

M/S Balajee Ingot Pvt. Ltd, requested that rebate may be considered starting from 45 % L.F as being allowed in neighboring states. The 60 % threshold L.F is difficult to achieve and so has no meaning.

**Response of BSEB**

Rebate has to be realistic otherwise the deficit will increase or alternatively the basic energy rates itself must be kept correspondingly higher.

The Load Factor rebate is proposed for the first time by the Board. After this scheme is made operative its impact on improvement in consumption, reduction in T&D losses and increased in revenue will need to be examined.

The range of rebate for higher consumption for different categories of consumers have been proposed for those category of consumers who can achieve higher consumption. There fore it is not for incidental higher consumption over MMC.

***Commission's observation***

Commission agrees with the views of BSEB. A higher Load Factor is helpful in flattening of the load curve and higher revenue realization.

**15. BILLING DEMAND**

Balajee Ingot Pvt. Ltd, Bihar Steel Manufacturer's Association and Gangotri Iron & Steel Co. Ltd requested that monthly demand charges shall be billed on the basis of actual recorded maximum demand or 85 % of the contract demand which ever is higher.

Treating of all connected load as CMD is not fair as all the equipment do not run simultaneously.

Sr. Divisional Electrical Engineer, E.C. Railway, Hazipur requested that billing demand in case of emergency feed extension from other SS due to of failure of supply the exceeded. MD recorded shall be ignored.

#### **Response of BSEB**

The provision of charging maximum demand as per contract demand or actual demand recorded whichever is higher is continuing since the date of introduction of this category. There does not appear any reason to modify this.

Since introduction of this new HTSS category, the mode of billing demand charges has not changed. It is maximum demand recorded during the month or the contract demand whichever is higher for HTSS category also.

Board may consider to ignore maximum demand recorded under feed extension under emergency. Railway must immediately report such cases to concerned field officer.

#### ***Commission's observation***

*Agrees with the response of BSEB for billing 100% CMD or actual demand recorded whichever is higher for HTSS category.*

### **16. DEMAND CHARGES**

Kalyanpur Cements submitted that revision of tariffs to HTS-III are as follows:

|                 | <u>Demand</u> | <u>Energy</u> | <u>M.M.C</u>             |
|-----------------|---------------|---------------|--------------------------|
| <b>Existing</b> | Rs.170/ KVA   | 415 P/ Unit   | At 50% LF                |
| <b>Proposed</b> | Rs.650/ KVA   | 300 P/ Unit   | Rs.1622 / KVA at 50% LF. |

The proposed demand charges are 3.8 times the existing tariff. The tariffs are very high compared to other states. The HTS-III consumers are subjected to huge burden of cross subsidization, which is in the order of 93%.

Balmukund Concast Ltd , pointed that the ratio of demand & energy charges is 57:33 in Bihar while in neighboring states it is of the order of 26:74. The Board realises hefty revenues without supplying commensurate energy. The Demand Charges need to be limited to the cost per KVA of the Interconnection Charges, Power Transformer Cost and HT distribution line cost which would come to Rs.18.80 / KVA / Month even if it is 100 % dedicated feeder. Mostly the feeders are shared or the cost is borne by Consumer.

Bihar Steel Manufacturer's Association submitted that though demand charges for HTSS are marginally reduced to Rs.700 / KVA but still they are very high compared to other states.

Gangotri Iron & Steel Co. Ltd requested that for HTS-II consumers, the demand charge shall not exceed Rs.62.5 / KVA/ Month against the proposed Rs.500 / KVA / Month.

Indian Oil Corporation Ltd, submitted that the MD charges for HTS-III are proposed to be increased to Rs.500 from existing Rs.175 / kVA/month. This is very high. The guaranteed energy consumption is proposed to be reckoned on the basis of 40% LF against the existing 35 % Load Factor. For Indian Oil Corporation Ltd which needs this power for only emergencies, fixing guaranteed minimum consumption is irrational. The M.D charges should not be changed. The guaranteed energy consumption may be abolished.

#### **Response of BSEB**

There was large cross subsidy. The same is being reduced. The first attempt is to bring the rates close to be average cost of power at consumer end.

The substantial increase in demand charge and lower energy charges was mutually agreed while introducing the new category of HTSS and is continuing since 1999.

Indian Oil Corporation has indicated that their power supply from Board is availed only during emergency. Tariff rates are formulated for general consumers, which cannot be modified to meet special situation of a particular consumer.

#### ***Commission's observation***

The Commission though agrees to recover fixed costs through demand charges as justifiable, but BSEB's proposal to recover most of the fixed costs through demand charges is not justifiable. The Commission agrees with the stakeholders that the proposed increase in demand charges is steep because base level is very much low than warranted. The demand charges have to reflect fixed costs but cannot and should not be increased abnormally.

### **17. CAPACITY OF ARC WELDING TRANSFORMER**

Arc Welding 440 Vidyut Upabhokta Sangh requested to consider the minimum load of Arc welding transformer as 5 HP or as per the name plate or as per manufacturer's certificate but not at 7.5 HP.

#### **BSEB's Response**

BSEB has not responded.

#### ***Commission's observation***

*The guidelines provided vide clause Nos. 6.39 and 6.40 in Bihar Electricity Supply Code shall be followed in order to consider the capacity / load of any equipment of the consumer.*

## **18. CLAUSE 13 OF H.T. AGREEMENT**

Bihar Industries Association, Gangotri Iron & Steel Co., Ltd., and Gangotri Iron & Steel Co. Ltd.(New) submitted that when MMC is there, clause 13 of H.T Agreement provides a relief in favour of remission in proportion to the ability for the consumers to take supply or for the Board to supply. As long as MMC is there, clause 13 shall not be abolished.

### **BSEB's Response**

The clause 13 was in respect of annual minimum charges. After introduction of monthly minimum charges, clause 13 has become non-operative. Now there is provision for relief in monthly bill if duration of power supply is less than specified in the tariff.

### ***Commission's observation***

*The provision has already been modified from AMG mode to MMC mode in the tariff order dated 29-11-2006 which may continue.*

*Considering the conditions under which the industries of HTSS category operate and the demand charges payable per kVA by HTSS category, as a special case, a provision for relief if the duration of power supply by the Board is less than the specified hours is already provided. This facility shall be on year-to-year basis and on examination of the prevailing conditions.*

## **19. NON COMPLIANCE OF DIRECTIVES**

Dina Metals Limited, Bihar Industries Association and Shri Sagar Bhattacharjee submitted that the following directives issued by the Commission in Tariff Order FY 2006-07 are not complied in full.

Directive –1: Cent percent Metering

Directive –2 : Replacement of Non-functional / Defective meters

Directive –3 : Setting up of independent 3<sup>rd</sup> party meter testing arrangement

Directive –4 : Efficient Meter Reading, Billing & Collection

Directive –5 : Reduction of T & D losses

Directive -10 : Enumeration of Agriculture Pump sets and other service connections

Directive -11 : Assessment of Agricultural Consumption

Directive -15 : Annual Accounts of BSEB & Auditing

Directive -16 : Collection of Arrears

Directive-22: Adjustment of Payment of Current bills against Delayed Payment Surcharge(DPS)

Directive – 23: Organizing Operational Circles as Cost Centers

Directive – 24: Performance of BSEB own generating station and their parameters

Directive – 26: Reduction of Employee Cost

Directive – 31:Cost of Supply & Cross Subsidy

### **BSEB's response**

Action on various directives issued by the Commission is being taken. Status of compliance is given in Vol-II of the tariff petition. As per directive no new electric connection is being given without a meter.

### ***Commission's observation***

On review of the implementation of the directives issued to BSEB in tariff order dated 29.11.2006 it is observed that none of the directives have been implemented in toto. BSEB should note that the directives are issued to improve the operational and financial performance of the Board. BSEB shall implement all the directives on priority suitably setting the necessary targets for each activity to various departments. The implementation shall be monitored on regular basis at the highest level in the Board.

## **20. HOTEL BUSINESS**

Hotel Association, Bodhgaya submitted that Hotel Business in Bodhgaya is seasonal (only November to February). Electricity is essential for convenience of tourists who are customers of the Hotels. The need to make huge payment of electricity charges all through the year is crippling this seasonal industry. Facilities & incentives shall be provided for the Hotel Business. Off-seasonal tariff and other charge may be withdrawn, other charges on the basis of MMC may not be implemented for the off-seasonal period for hotel business.

### **Response of BSEB**

The petitioner has highlighted the problem faced by them on account of off-season having low tourist flow. Board is not in a position to suggest any solution for their problem.

### ***Commission's observation***

*While determining the tariff it is not possible to show undue preference to any particular consumer. However, provision of seasonal tariff for seasonal consumer has been provided in the tariff schedule.*

## **21. ANNUAL ACCOUNTS**

Kalyanpur Cements, Bihar Industries Association, Bihar Steel Manufactures Association and Dina Metals pointed that the BSEB's accounts are audited only upto 2002-03 and so the data in the petition is not reliable.

Bihar Chamber of Commerce states that the delay in finalization of accounts is financial irregularity on the part of BSEB.

### **BSEB's Response**

**Annual accounts of FY 04 and FY 05 have been audited by A.G., Bihar. and annual accounts of FY 06 and FY 07 have been adopted by the Board and submitted to A.G, Bihar for audit.**

### ***Commission's observation***

*The Commission agrees with the views of stakeholders that the annual accounts need to be finalized timely and regularly. Though the accounts for FY 06 and FY 07 are not audited, they are adopted by the Board. Directives in this regard are issued separately.*

*All the expenditure items are duly scrutinized before finalizing the ARR and revenue gap.*

## **22. INTEREST AND FINANCE CHARGES**

Balaji Ingot (P) limited suggested that the expenditure on account of interest and finance charges may be allowed on the basis of actual paid and to be paid.

Bihar Industries Association pointed that as per E.S.A. 1948, Interest on loans advanced by State Government become payable only if there is any surplus revenue. This will result in a saving of Rs. 150.57 crores.

Bihar Chamber of Commerce pointed that the money received from Government is indicated as grant, so any charge of interest on it is misleading.

Sri Arun Kumar Mishra submitted that Board has shown interest to be paid on GPF, GSS, Security Deposit. But Board is earning on this account because the interest to be paid to employee / consumers on this account is much less than that the Board is saving by avoiding borrowing to such extent.

Sri Sagar Bhattacharjee suggested that the interest charges and Government loans shall be set off against electricity charges due from Government Departments.

### **BSEB's Response**

Because the Board was unable to pay interest on Government loans, this amount is to be deleted as expenditure is not correct. All acceptable liability has to be included under ARR otherwise the actual deficit will reach to a level where the very system will collapse.

In the ARR for FY 2008-09, only such interest and finance charges have been included which were allowed by the Commission.

State Government interest on loans is limited to capital works only.

#### ***Commission's observation***

The interest and finance charges have been allowed after proper scrutiny. It should be the Board's aim, to generate more and more internal sources while keeping tariffs reasonable.

The provisions of Electricity (Supply) Act 1948 are no more applicable as it has been repealed by EA 2003.

*No interest is charged on the grant provided by State Government.*

### **23. EMPLOYEE COST**

Bihar Industries Association submitted that the number of employees in BSEB is much higher than all India figures, which are 2.53 employee per MU. So the costs of Board on this account should be disallowed proportionately.

Bihar Chamber of commerce submitted that all India average cost of employee per unit is Rs. 2.53 against BSEB's Rs. 3.56. Employee cost of Rs. 649.28 crores for a business of Rs. 2528.93 crores is unreasonably high.

Sri Arun Kumar Mishra pointed that the expenses shown in respect of GSS, GPF contribution & LSSS and GPF should not be shown as expenditure as this amount is deposited by employees.

#### **BSEB's response**

During 2008-09 the projected figures are 2.38 employees per MU and 6.21 employees per 1000 consumers which shown marked improvement in these parameters.

Average employee cost per unit is higher compared to other states due to low per capita consumption in Bihar which is only 150 units where as the average all India figure is about 600 units. The employee cost per unit decreases as more power becomes available to the state.

Un-settled liability of the employees are being cleared when they retire. Such expenditure is included in salary / pension.

#### ***Commission's observation***

*The Board shall take steps to reduce the cost. The employee productivity needs to be improved and costs reduced.*

*Since there is no separate fund at present, these expenses have to be met from revenue. However, a separate fund has to be created to meet these expenses. Directive in this regard is issued separately.*

## **24. REGULATORY ASSET**

Sri Arun Kumar Mishra pointed that it should be reduced to Rs.30 Crores Per Annum (Approximately).

### **Response of BSEB**

No Comments

#### ***Commission's observation***

*The amount borrowed under regulatory asset and interest thereon has to be passed on to the consumers over a period of 2 years, but BSEB has not indicated to have borrowed any amount under regulatory asset. Hence this has not been considered in ARR for FY 2008-09 as also discussed in chapter-2.*

## **25. STATE GOVERNMENT GRANT**

- 1) Bihar Steel Manufacture's Association submitted that the grant of Rs 720 crore payable by State Government is not allocated properly to the various categories of tariff rates. The Commission also did not do this in tariff order of 11/2006. Subsidized tariffs for DS, IAS, and streetlights etc are determined without notifying the rates on cost plus basis.
- 2) Bihar Chamber of Commerce suggested that as State Govt is giving subsidy to BSEB, consumers shall be relieved of cross subsidy burden.

### **BSEB's Response**

- 1) No Comment
- 2) At present, on the basis of average cost of power at consumer's end, it will be observed that no category is cross subsidizing other category.

#### ***Commission's observation***

*The subsidy/grant agreed by the State Government has been considered while working out revenue gap and tariffs.*

## **26. DEPRECIATION**

Balaji Ingot (P) Ltd. suggested that the depreciation amount may be allowed after prudent checks of assets on which depreciation has been claimed. The power plants are very old and their assets value is residual.

Bihar Chamber of Commerce objects that it is not correct to show depreciation when repair and maintenance head is fully accounted for as part of real expense.

Sri Arun Kumar Mishra submitted that the appreciated amount of land assets has not been taken into accounts. Similarly appreciated amount of obsolete, stores, scrap and unserviceable equipment etc., has not been taken into account.

### **BSEB's Response**

Assets and depreciation of MTPS has not been included in tariff petition. Increase in depreciation is on account of new assets being added.

### ***Commission's observation***

*The depreciation has been allowed after due scrutiny. Depreciation on land value is not considered. The claim for depreciation is worked out based on CERC norms /Regulations.*

## **27. REPAIR AND MAINTENANCE (R&M), ADMINISTRATION & GENERAL EXPENSES**

Sri Arun Kumar Mishra submitted that the expenditure on R&M and Adm & Gen is on high side. R&M expenditure is 40.1% higher than previous year. The increase should not be more than 10%.

Sri Sagar Bhattacharjee suggested that the bulk of R&M expenses proposed shall be booked under capital expenditure.

### **BSEB's Responses**

The increase in R&M head is still below the normative level. The increase in Administration and General expenses is reasonable considering the inflation.

No capital expenditure is booked under R&M expenses.

### ***Commission's observation***

*There is an increase in R&M costs compared to earlier year. The generating plant, transmission and distribution system being very old, it requires proper maintenance to improve quality of supply to consumers.*

*R&M is a revenue expense in general and is allowed on due scrutiny.*

## **28. CONCESSION FOR INDUSTRIES IN RURAL AREAS**

Balajee Ingot Pvt. Ltd requested for 15 % concession in the demand and energy charges for induction furnace located in rural areas and categorization of urban & rural supply separately. The quantity and reliability of power supply to rural areas is not as good as in urban areas. So separate tariff shall be put in place for HTSS consumers in other areas than near Patna.

Sri Digvijay (Lalloo) & Shashank Sharan Singh pointed that power supply is erratic in rural areas, year by year. Tariffs shall be fixed only on the condition that assured power supply will be available.

*Prof.P.K.Sharma suggested that there should be no hike for poor rural areas.*

### **Response of BSEB**

The argument for concession of 15% in tariff means that there should be two rates one for Patna and one for other than Patna. This logic is not sound because then for all consumer categories two rates of tariff will be demanded.

For 33 KV HTSS consumers no separate urban and rural rates are required. Provision exists for relief in monthly bills if the hours of supply is less than specified.

Petitioner has suggested to maintain the existing tariff for poor rural areas. The increase proposed by the Board is in line with National Tariff Policy which aims to bring all rates to within  $\pm$  20% of the average cost of power supply.

#### ***Commission's observation***

***Though the Commission is not fully in agreement with BSEB's view, but since fairly reliable supply is being maintained to industry whether in urban or rural, it is considered that there is no need for different tariffs for rural and urban areas under HTSS.***

*BSEB shall take steps to improve Supply Conditions in Rural areas.*

### **29. HEAVY IMPACT OF TARIFF REVISION OF FY 2006-07**

Mr. Balmukund Concast Ltd stated that the impact of the FY 2006-07 revision amounts to a heavy 18.45 % due to revision as well as due to determination of tariff on the basis of 600 KVA per ton. The impact of Tariff revision can be seen from the following statement.

|                    | Pre-revision |        | Post- revision |        |
|--------------------|--------------|--------|----------------|--------|
|                    | 7 / 06       | 8 / 06 | 3 / 07         | 4 / 07 |
| Demand ( Rs.Lakhs) | 75.23        | 75.23  | 80.60          | 80.60  |
| Energy ( Rs.Lakhs) | 33.66        | 32.09  | 46.65          | 48.28  |

### **Response of BSEB**

Though the tariff rates have been shown correctly but the impact of revised tariff is not based on same maximum demand and energy consumption. The Chart given is not correct. At the energy rate of 120 paise the bill is shown as Rs. 33.66 lakhs and at 135 paise it is shown as Rs. 46.65 lakhs. In other words for a increase of 12.5 % in energy rate, the bill has been increased by 38.59%. This does not need further comments.

Over all increase is 8.8% and not 18.46% as claimed by the petitioner.

The Commission has not modified the provisions and conditions of HTSS while revising the tariff w.e.f. 1.11.2006 . Hence existing provisions are continuing.

The mode of charging billing demand is same as was mutually agreed at the time of introducing the new category HTSS.

***Commission's observation***

*The revision of tariff during FY 2006-07 was made after prudent check of annual revenue requirement and revenue gap of BSEB for FY 2006-07.*

**30. KUTIR JYOTI**

Prof. P.K Sharma pointed that the charges consumption by Kutir Jyoti connection is shown as Rs 100/- per month which does not exceed Rs 35.00 per month. Kutir Jyoti should be allowed to have at least 3 to 4 electric points.

**BSEB's Response**

Petitioner has wrongly mentioned that charges for Kutir Jyoti is proposed as Rs 100/- per month. Board has proposed Rs 50/- per month.

***Commission's observation***

*The revenue gap is arrived at on due scrutiny of expenses and energy sales. The Commission has considered the provisions of National Tariff Policy while fixing the Kutir Jyoti tariff.*

**31. PRIVATE TUBE WELLS**

Prof. P.K. Sharma pointed that the electricity use of private tube wells is very less compared to Govt. tube wells. It is not justified to keep same tariff for both.

**BSEB's Response**

No comment

***Commission's observation***

*Though the ownership or quantum of energy used have little relevance for tariff fixation if the supply voltage is same, the view of the stakeholder has been kept in view while deciding the tariff.*

**32. OTHER ISSUES**

**(a) Steep increase in Tariffs**

Bihar Industries Association submitted that the tariffs of all categories are higher than those in neighboring States. Industries are especially hard-hit, affecting their competitiveness.

In view of the steep hike in 11 / 2006, the additional revenue in 2008-09 will amount to Rs.100 crore / month. The proposed 11% increase should not be allowed.

There is steep increase in amount payable by consumer in the proposed tariff. While even the existing rates are quite high compared to other states, the proposed increase makes it still worse for the industries.

The limitation of 75 % of Contract Demand for billing purposes is proposed to be increased to 85 % without reason. MMC which is obsolete being continued & the rate of MMC is high compared to other States.

**Response of BSEB**

No change has been proposed by the Board for charging of demand charge at 85% of contracted demand are actual demand recorded.

MMC charges in case of HTS-II category has been proposed to be raised of 35% to 40% LF to bring it at par with HTSS.

**(b) Energy Charges for NDS**

Bihar Chamber of Commerce submitted that the proposed 100 % increase in energy charges for NDS is not justified.

**Response of BSEB**

The petitioner has quoted wrongly that energy charges for NDS is proposed to be increased by 100%. The Board has proposed reduction in rate by about 35%.

**(c) Energy charges for LTIS**

207.69 % hike in charges is not justified as supply is not certain. MMC is not justified for the same reason. LTIS Consumers should be provided with Trivector meter, to prevent harassment on the plea of exceeding load.

**Response of BSEB**

No Comments.

**(d) Amount payable by Agricultural Consumers (5 HP)**

Sri Digvijay (Laloo), Patna & Shashank Sharan Singh submitted that as per the proposed tariff for Agricultural loads, a 5 HP pumpset consumer will incur Rs.12,000/- per year for Power alone. As power supply is erratic he has to stock diesel etc. If hike is made, he has to seek disconnection or resort to theft. Keeping the financial condition of the consumer and their poor capacity to pay they should be sympathetically viewed.

**Response of BSEB**

No Comments.

**(e) Extent of hike to HTSS**

Gangothri Iron & Steel Co. Patna submitted that the energy charge is proposed to be increased by massive 48 %. There is going to be a raise ranging from 11 % to 20 % (depending on L.F.) which is not justified as there is no rise in input costs.

### **Response of BSEB**

No Comments.

#### **(f) Tariff for Railway traction**

Sr. Divisional Electrical Engineer , E.C. Railway submitted that, BSEB revised Tariffs of Traction category 10 times since 1990 in upward trend as follows:

| <b>Month / Year</b> | <b>Demand</b> | <b>Energy</b> |
|---------------------|---------------|---------------|
| 4/ 90               | Rs.45 / KVA   | 74 P / KWH    |
| 11/ 06              | Rs.160 / KVA  | 438 P / 444 P |

Traction Tariff of BSEB is higher than other SEB's. Further the Article 287 of the constitution lays down that "States shall secure that price of electricity sold to the Govt. or to any such Railway Company as for consumption in the construction maintenance or operation of any railway shall be less by the amount of the tax than the price charged to other consumers of a substantial quantity of electricity". BSEB has proposed abnormal increase in Railway Traction category Tariff raising energy charges from 438 / 444 P to 450 P / KWH. Both for 132 Kv and 25 KV supply. The average cost / unit has risen from 4.91 Per Unit to 5.2 Per Unit. The rates are quite high compared to other SEB's.

### **Response of BSEB**

The dates of tariff revision indicated does not correspond to the factual positions. The Railway traction tariff has been revised in 1991, 1993 and 2006. In between fuel cost adjustment has been revised from time to time and realised in monthly energy bills.

The existing tariff and proposed tariff for RTS-I & II are given below:

|               | <b>Existing</b>              | <b>Proposed</b>             |
|---------------|------------------------------|-----------------------------|
| <b>RTS-I</b>  | MD 160 per KVA<br>EC 444 P/U | MD160 per KVA<br>EC 450 P/U |
| <b>RTS-II</b> | MD 160 per KVA<br>EC 438 P/U | MD160 per KVA<br>EC 450 P/U |

So, there is no proposal to increase maximum demand charges. The energy charges are proposed to be increased by 6 paise and 12 paise per unit for RTS-I & RTS-II respectively.

It is obvious the rate comparison given by petitioner is not correct.

The overall increase in rates for traction tariff comes to 1.2% and 2.5% for RTS-I and RTS-II respectively, which will take place after a gap of about 1 years and 9/10 months.

Even these average rates are below the average cost of power, which means even these rates are being subsidized.

**(g) Increase in tariff is not rational**

Shri Arun Kumar Mishra and Shri M C Agarwal pointed that percentage increase in tariffs is not rational. For example HT category increase is only 0.08 % while in LT-I it is more than 34%.

**Response of BSEB**

The increase in tariff rates proposed are not uniform because of existing level of subsidy. The increase proposed is more where the rates are highly subsidized compared to other category of consumers.

**(h) Interruption of Supply**

Smt. Krishna Devi and Prof. P.K. Sharma submitted that power failure during even peak hours is common. Power is needed during evening hours. 6PM to 10 PM for lighting purpose. BSEB is not able to supply this to the rural areas.

**BSEB's Response**

No comment.

**(i) Late delivery of bills**

Smt. Krishna Devi pointed that late delivery of bills is denying lead time to pay bills in time. Some times even when the house is open bill is not delivered; and Minimum Charge is charged under door lock plea.

**Response of BSEB**

Board will look into delay in distribution of energy bills. It takes lot of time & effort to get it corrected. Also when door is locked bill can be handed over to neighbor.

**(j) Payment of bills through cheque**

Bihar Steel Manufacturers Association requested to allow the facility of payment of bills through cheque. BERC Regulations in Supply Code provides for this.

**Response of BSEB**

Nil

**(k) Reduction or increase of Contracted Demand.**

Bihar Chamber of Commerce requested Reduction or increase of Contracted Demand on application shall be done automatically without need for running around the offices.

**Response of BSEB**

Nil

**(l) Power Cuts**

Smt. Krishna Devi, Prof. P K Sharma and Patna City Vyapar Mandal pointed that power cut during evening peak hours is common. Power is needed during evening

hours 6 pm to 10 pm for lighting purpose. BSEB is not able supply power to the rural areas.

**Response of BSEB**

Nil

**(m) Meter Rent**

Arc Welding 440 Vidyut Upabhokta Sangh submitted that meter rent shall not be collected or it shall be comparable to other States or meter cost shall be recovered in installments.

**Response of BSEB**

No change is proposed in tariff petition.

**(n) Protection of Consumer interest and quality standards**

Bihar Steel Manufacturer's Association pointed that the Board is not able to comply with the provisions of the performance and safety standards.

**Response of BSEB**

Nil

**(o) To prevent theft and misuse of service line capacity.**

Patna City Vyapar Mandal pointed that service lines of capacity higher than permitted load are installed by corrupt staff colluding with unscrupulous consumers. This is resulting in failure of transformers and breakdown of distribution lines causing failure of supply.

**Response of BSEB**

The suggestion to reduce the size/capacity of the service wire to prevent theft and misuse is not practical.

**(p) Providing alternative supply during breakdown of lines**

Patna City Vyapar Mandal pointed that recently when a tower collapsed due to accident and power supply is not there for large areas in Patna the officials could not inform when power supply will be restored. There is no alternative arrangement to feed the loads. There is need to improve the working of the Board.

**Response of BSEB**

At EHT/HT level system is being reorganized so as to have some alternative arrangement of power supply in case of emergency. However it is not possible at LT level due to very high cost of investment.

### ***Commission's observations***

*The Commission has decided the tariffs for FY 2008-09 after taking all the factors into consideration. Tariffs in different States depend on input costs, T&D losses and some of the other costs, which may make lot of difference in tariff determination. It is necessary for the BSEB to reduce the need for tariff increase by reducing costs and T&D losses.*

*The revenue gap has been arrived after due scrutiny of expenditure and revenue and the views of BSEB and stakeholders have been kept in view in deciding the tariff.*

*Charging of demand charges at 85% contracted demand (except for HTSS) is reasonable.*

*BSEB shall improve power supply position to the rural areas and assured hours of supply to agriculture. There is need for effective and equitable load management by the BSEB.*

*Board has to improve its system of delivery of bills. Spot billing will void this and Board should implement spot billing in phases to cover the entire State. Board needs to streamline meter reading, billing and delivery of bills etc.*

### **3.4 STATE ADVISORY COMMITTEE MEETING HELD ON 14TH JULY 2008**

The meeting of State Advisory Committee (SAC) was held at 11.30 Hours on 14.7.2008 in the office of the Commission. The members expressed their valuable suggestions / views on the tariff petition, which are briefly indicated below:

- Quantum of subsidy contributed by various consumer categories and the State Government to be known.
- Tariff and Monthly Minimum charges should be linked with quantity and quality of power supply.
- Proposal to reduce power factor rebate should not be agreed.
- Interruption in power supply causes Railways to purchase power from other states at high cost. BSEB should be penalized for this.
- Contract demand for Railway traction shall be simultaneous demand.
- Tariff should be on par with other neighbouring States.
- The employee cost is on high side.
- Better consumer metering and monitoring, needed.
- To reduce T&D losses, so that tariffs could be reduced.
- To appoint a Committee to evaluate legal provisions in Electricity Act, 2003.
- To bring down the cross subsidy to  $\pm 20\%$ .
- The earlier provision in clause-13 in the HT agreement to be retained.
- Compounding of delayed payment surcharge should not be allowed.

- Security deposit for new connections to be equivalent to two months consumption.
- Cheque facility for payment of electricity bill should be allowed to all consumers.
- As per tariff policy demand charges to be low and energy charges high.
- In the event of MD exceeding 10% above the contract demand, for three consecutive months, charging for higher demand for next nine months is not correct.
- Meters for high value L.T. consumers must have maximum demand recording facility.
- BSEB should not carry forward huge DPS which are not realizable. Whatever is not realizable should be converted as non performing assets and written off.

Monthly Minimum charges at high load factor this should be reduced.

#### **Statement of Secretary, Energy, Government of Bihar**

- (i) State Government provides Rs.720 crores as grant, but for this the ARR and consequently average cost of supply would have been higher.
- (ii) The national average of T&D loss is about 30%.
- (iii) unbundling of BSEB is under process and non-performing assets and arrears would be considered suitably.

#### **Response of BSEB**

- (i) The amount paid by consumers is first adjusted against DPS and balance against energy bill. If consumer pays full amount it is adjusted against the bill and adjusting against DPS does not arise.
- (ii) Security deposit for 3 months consumption as per tariff order 2006-07.
- (iii) Realization of payment through cheques would take two to three months time and in view of paucity of officers and staff it is not possible to quickly monitor the realization of cheques.
- (iv) Rs.20.00 crores shown as DPS realization during 2008-09 is only an estimates. Total DPS shown in books is being claimed over 30-40 years, which cannot be realized.

## Chapter - 4

# Analysis of Aggregate Revenue Requirement for 2008-09

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### 4.1 Background

BSEB is a vertically integrated utility and is responsible for generation, transmission and distribution of electricity in the state of Bihar. BSEB in its Aggregate Revenue Requirement (ARR) and Tariff Petition for the FY 2008-09 has furnished data for the Board as a whole. On insistence from the Commission, the Board has furnished the function wise break up of Budget estimate expenses for FY 2008-09 for generation, transmission and distribution. The proposal has been analyzed for the integrated utility based on the available data / information and the ARR arrived at. The function wise ARR and costs are also arrived at based on the data furnished by the Board.

### 4.2 Energy Sales for the year 2008-09

4.2.1 BSEB has projected energy sales for the year 2008-09 at 5129.78 MU in its tariff petition. Later vide its letter No. Com./Misc-1117/2008-484 dated 1<sup>st</sup> August 2008 it has submitted a revised consumption pattern with total sales at 5475.38 MU keeping in view the growth in number of consumers / load as on 31<sup>st</sup> March 2008. The consumption projections of un-metered services is increased in the revised estimates, the number of services and the connected load for each category being the same. Hence, the energy sales projections for FY 2008-09 as submitted in the original petition are taken into consideration for discussing the sales projections for FY 2008-09 by the Commission.

The basis on which the projected energy sales are arrived at is not furnished. The Board has also furnished the actual energy sales for FY 2005-06 and FY 2006-07 and estimated sales for FY 2007-08 in its Tariff Petition at 4341.94 MU, 4238.68 MU, 4483.76 MU respectively. But, later, BSEB revised the actual sales for FY 2006-07 after the Annual Accounts for the year 2006-07 were finalised. The category and sub category wise sales (wherever available) for the years FY 2003-04 to FY 2006-07, 2007-08 (estimated) and the projected sales for FY 2008-09 as furnished by the Board are given in Table 4.1 below:

Table-4.1

**Category wise, Energy sales for the years 2003-04 to 2007-08 and projections for 2008-09 as submitted by BSEB**

| S.N      | Category   | FY 03-04<br>(Actuals) | FY 04-05<br>(Actuals) | FY 05-06<br>(Actuals) | FY 06-07<br>(Actuals) | CAGR * for<br>years FY 03<br>04 to FY 06<br>07(%) | FY 07-08<br>(Estimated) | FY 08-09<br>(Projected) | Growth o<br>2008-09<br>over 2007<br>08 (%) |
|----------|--|-----------------------|-----------------------|-----------------------|-----------------------|---|-------------------------|-------------------------|--|
| <b>1</b> | <b>Domestic</b>  |                       |                       |                       |                       |   |                         |                         |  |
| i        | Kutir Jyoti<br>(Rural)                                     |                       |                       | 84.73                 | 85.75                 |   | 90.00                   | 60.48                   |  |
| ii       | Kutir Jyoti<br>(Urban)                                     |                       |                       | -                     | 0.77                  |   | 2.16                    | 3.60                    |  |
| iii      | Domestic-I   |                       |                       | 234.92                | 515.80                |   | 562.56                  | 305.28                  |  |
| iv       | Domestic- II   |                       |                       | 984.24                | 848.13                |   | 927.40                  | 1260.00                 |  |
|          | <b>Sub Total</b>   | <b>1131.44</b>        | <b>1161.68</b>        | <b>1303.89</b>        | <b>1450.45</b>        | <b>8.54</b>                                       | <b>1582.42</b>          | <b>1629.36</b>          | <b>2.97</b>                                |
| <b>2</b> | <b>Non<br/>domestic</b>                                    |                       |                       |                       |                       |   |                         |                         |  |
| i        | Non<br>domestic-I  |                       |                       | 9.16                  | 10.50                 |   | 9.26                    | 12.18                   |  |
| ii       | Non<br>domestic-II   |                       |                       | 298.96                | 293.99                |   | 312.15                  | 340.00                  |  |
| iii      | Non<br>domestic-III  |                       |                       | 5.21                  | 4.70                  |   | 6.7                     | 7.00                    |  |
|          | <b>Sub Total</b>   | <b>281.07</b>         | <b>285.11</b>         | <b>313.33</b>         | <b>309.19</b>         | <b>3.20</b>                                       | <b>328.11</b>           | <b>359.18</b>           | <b>9.47</b>                                |
| <b>3</b> | <b>Public<br/>lighting</b>                                 |                       |                       |                       |                       |   |                         |                         |  |
| i        | SS - I   |                       |                       | 1.81                  | 2.16                  |   |                         | 5.40                    |  |
| ii       | SS - II  |                       |                       | 16.89                 | 20.50                 |   |                         | 18.36                   |  |
| iii      | SS - III   |                       |                       | 1.26                  | 2.52                  |   |                         | 2.88                    |  |
|          | <b>Sub Total</b>   | <b>22.14</b>          | <b>23.94</b>          | <b>19.86</b>          | <b>25.18</b>          | <b>4.34</b>                                       | <b>25.19</b>            | <b>26.64</b>            | <b>5.75</b>                                |
| <b>4</b> | <b>Industrial</b>  |                       |                       |                       |                       |   |                         |                         |  |
| i        | LTIS - I   |                       |                       | 112.55                | 111.17                |   | 133.80                  | 185.10                  |  |
| ii       | LTIS - II  | 118.11                | 110.10                |                       |                       | (-) 1.98  |                         |                         |  |
| iii      | LTIS - III<br>(Public<br>water<br>works)                   | 172.45                | 176.08                | 178.24                | 163.90                | (-) 1.66  | 170.00                  | 170.00                  |  |
|          | <b>Sub Total</b>   | <b>290.56</b>         | <b>286.18</b>         | <b>290.79</b>         | <b>275.07</b>         |   | <b>303.80</b>           | <b>355.10</b>           | <b>16.89</b>                               |
| <b>5</b> | <b>Irrigation</b>  |                       |                       |                       |                       |   |                         |                         |  |
| i        | IAS - I  |                       |                       | 543.56                |                       |   |                         | 431.90                  |  |
| ii       | IAS - II   |                       |                       | 343.92                |                       |   |                         | 182.00                  |  |
|          | <b>Sub total</b>   | <b>1116.96</b>        | <b>1129.32</b>        | <b>887.48</b>         | <b>709.14</b>         | <b>(-) 13.92</b>                                  | <b>578.10</b>           | <b>613.90</b>           | <b>6.19</b>                                |
| <b>6</b> | <b>Indus. HT</b>   |                       |                       |                       |                       |   |                         |                         |  |
| i        | HTS - I  |                       |                       | 282.10                | 339.48                |   | 395.00                  | 390.00                  |  |
| ii       | HTS - II   |                       |                       | 112.13                | 126.50                |   | 137.00                  | 128.00                  |  |
| iii      | HTS - III  |                       |                       | 59.40                 | 58.60                 |   | 65.00                   | 137.60                  |  |
| iv       | HTSS   |                       |                       | 219.88                | 237.50                |   | 256.00                  | 280.00                  |  |
|          | <b>Sub Total</b>   | <b>586.87</b>         | <b>614.36</b>         | <b>673.51</b>         | <b>762.08</b>         | <b>9.00</b>                                       | <b>853.00</b>           | <b>935.60</b>           | <b>9.68</b>                                |
| <b>7</b> | <b>Railways</b>  |                       |                       |                       |                       |   |                         |                         |  |
| i        | RTS - I  |                       |                       | 309.48                | 341.75                | 358.76  | 383.92                  | 7.37                    | 440.00                                     |
| ii       | RTS - II   |                       |                       |                       |                       |   |                         |                         | 460.00                                     |
|          |  |                       |                       |                       |                       |   |                         |                         | 4.45                                       |
| <b>8</b> | <b>Inter State<br/>(Nepal)</b>                             | <b>194.97</b>         | <b>259.51</b>         | <b>242.93</b>         | <b>225.34</b>         |   | <b>250.00</b>           | <b>250.00</b>           | <b>0</b>                                   |
| <b>9</b> | <b>Sales to<br/>common<br/>pool<br/>consumers<br/>(UI)</b> |                       |                       | 251.39                | 401.31                |   | 300                     | 500                     |  |
|          | <b>Total</b>   | <b>3932.99</b>        | <b>4101.85</b>        | <b>4341.94</b>        | <b>4541.68</b>        |   | <b>4660.32</b>          | <b>5129.78</b>          |  |

\* Cumulative Annual Growth Rate

The category-wise sales indicated above are with restricted hours of supply, as the State is power deficit. The sales projections are discussed in the following paragraphs, keeping in view the power restrictions, as in earlier years.

#### 4.2.2 Consumption by Unmetered Categories

BSEB has assessed the projected consumption of unmetered categories as follows:

|   |  |
|---|--|
| Kutir Jyoti (Rural)   | 18 units per connection per month  |
| Kutir Jyoti (Urban)   | 30 units per connection per month  |
| Domestic – DS – I<br>(Connected load upto 2 kW) and<br>Non domestic – NDS – I<br>(connected load upto 2 kW) | 80 units per consumer per month<br>(Increased from 73 units per consumer<br>during 2005-06 as transmission and<br>distribution system is strengthened now) |
| Irrigation<br>IAS-I and<br>IAS-II   | As per the norm considered by the<br>Commission in the tariff order 2006-07<br>2000 kWh / kW / year  |

The energy sales from FYs 2003-04 to 2006-07 are actuals and the sales for FY 2007-08 are estimated as the final sales figures for FY 2007-08 are yet to be compiled. These figures could be treated as actuals as FY 2007-08 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 FYs 2003-04 to 2006-07 are based on assessed consumption for unmetered categories. About 25% of the total sales is not metered but only assessed. The assessment is also not based on any scientific method. Hence the sales particularly for domestic, commercial and irrigation pumpsets furnished for different years, cannot be considered as actuals.

4.3 The category wise sales of the earlier years and the projections for the year 2008-09 are discussed below:

#### 4.3.1 Kutir Jyoti – Rural and Urban (Domestic)

For Kutir Jyoti services, BSEB has taken 30 kWh/month/service, as norm for the years FY 2005-06 to 2007-08, but for FY 2008-09, the Kutir Jyoti consumption is projected at a norm of 18 kWh/month only, which was the norm approved by the Commission, in the last tariff order.

Thirty (30) units / month/service is the maximum consumption allowed for Kutir Jyoti services for purpose of supply at subsidized rates as per National Tariff Policy. As the connected load of Kutir Jyoti services is only one light of 40W or 60W in rural areas and upto 100 W in urban areas and the supply conditions being mostly what they are, the norm of 18 kWh/month/service, for Kutir Jyoti services (Rural) as allowed in FY 2006-07 and 30 kWh/month/service for urban connections are considered reasonable.

Accordingly, the Kutir Jyoti consumption for the FY 2008-09 is approved as follows:

|                                    |                 |
|------------------------------------|-----------------|
| Kutir Jyoti (Rural)                |                 |
| 280000 connections at 18 kWh/month | 60.48 MU        |
| Kutir Jyoti (Urban)                |                 |
| 10000 connections at 30 kWh/month  | 3.60 MU         |
| <b>Total Kutir Jyoti</b>           | <b>64.08 MU</b> |

**The Commission assesses energy consumption of 64.08 MU for Kutir Jyoti connections for the year 2008-09 with the present pattern of restricted hours of supply.**

#### 4.3.2 Domestic – Metered and Unmetered

The Board has projected energy consumption of domestic consumers excluding Kutir Jyoti – metered and unmetered at 1565.28 MU for the year 2008-09. The number of consumers and energy consumption under this category for the years 2005-06, 2006-07, 2007-08 and projected for 2008-09 are as below:

| Year                   | No. of consumers | Energy consumption (MU) | KWh/Connection/Month (Specific consumption) |
|------------------------|------------------|-------------------------|---|
| 2005-06                | 1279007          | 1219.16                 | 79.43                                       |
| 2006-07                | 1386639          | 1363.97                 | 81.97                                       |
| 2007-08                | 1492000          | 1489.96                 | 83.22                                       |
| 2008-09<br>(Projected) | 1596000          | 1565.28                 | 81.73                                       |

BSEB has added 104361 consumers during FY 2007-08 and proposes to add 105000 consumers during FY 2008-09 which is achievable. The specific energy consumption per month per service during 2006-07 was 81.93 kWh and during FY 2007-08, it was 83.22 kWh. BSEB has projected a specific consumption of 81.73 kWh/Month/connection for the year 2008-09. There is no reason to reduce the specific consumption during 2008-09 when supply conditions have improved and more energy is available for sale comparative to earlier years. The increase during the earlier years FY 2004-05 to FY 2006-07 is over 9%/annum and the sales during 2007-08 have increased by 9% over the sales during FY 2006-07. It is considered

reasonable to apply 9% increase over FY 2007-08 to arrive at the sales for FY 2008-09 as against 5% projected by BSEB. This is justified based on past trend and also likely electrification of additional villages and households during FY 2008-09 under Rajeev Gandhi Grameen Vidyuthikaran Yojna (RGGVY). The projected sales during FY 2008-09 for domestic category would be 1624 MU based on 9% growth.

**The Commission therefore assesses, with the present pattern of restricted hours of supply, energy consumption of 1624 MU for domestic consumers both metered and unmetered (other than Kutir Jyoti) for the FY 2008-09 against 1565.28 MU projected by BSEB.**

#### 4.3.3 Non-Domestic – Metered and Unmetered

The Board has projected energy consumption for non-domestic consumers – metered and unmetered at 359.18 MU for the year 2008-09. The number of consumers and energy consumption for the last 3 years - 2005-06, 2006-07, 2007-08 and projection for 2008-09 are as given below:

| Year                | No. of consumers | Consumption (MU) |
|---------------------|------------------|------------------|
| 2005-06             | 138166           | 313.33           |
| 2006-07             | 146847           | 309.19           |
| 2007-08 (Estimated) | 150058           | 328.11           |
| 2008-09 (Projected) | 161058           | 359.18           |

It is seen from Table 4.1 that the CAGR for 3 years (i.e) 2003-04 to 2006-07 is about 3.20%, where as the growth for projected consumption of FY 2008-09 over FY 2007-08 is about 9.47%. The growth during earlier years has not been consistent and appears to be either suppressed or not properly recorded.

The specific energy consumption of non domestic consumers during the FYs 2005-06, 2006-07, 2007-08 and projected 2008-09 is as given below:

| Year                | Specific consumption / year (Units) |
|---------------------|-------------------------------------|
| 2005-06             | 2268                                |
| 2006-07             | 2106                                |
| 2007-08 (Estimated) | 2187                                |
| 2008-09 (Projected) | 2230                                |

Considering the average consumption of 2268 units the highest during the above three years, the projected energy consumption for FY 2008-09 works out to 365 MU. This is nearer to the projected consumption of 359.18 MU projected by BSEB. As the commercial activity in the State of Bihar is picking up, in general, the projected

consumption of 365.00 MU for the year 2008-09 is considered reasonable in view of improved supply conditions.

**Accordingly, the Commission assesses, with the present pattern of restricted hours of supply, energy consumption of 365.00 MU for non domestic consumers for the year 2008-09, against 359.18 MU projected by BSEB.**

#### **4.3.4 Public Lighting**

The Board has projected energy consumption for public lighting at 26.64 MU for the year 2008-09 i.e. an increase of 5.75% over 2007-08.

The number of installations and energy consumption for three years 2005-06, 2006-07, 2007-08 and projection for 2008-09 are as given below:

| <b>Year</b>         | <b>No. of installations</b> | <b>Consumption (MU)</b> |
|---------------------|-----------------------------|-------------------------|
| 2005-06             | 342                         | 19.86                   |
| 2006-07             | 379                         | 25.18                   |
| 2007-08 (Estimated) | 397                         | 25.19                   |
| 2008-09 (Projected) | 480                         | 26.64                   |

It is seen from the Table 4.1 above that CAGR is 4.34% for the years 2003-04 to 2006-07. Based on this CAGR, the projected energy consumption for FY 2008-09 works out to 26.28 MU. The projected increase in number of connections from 2007-08 to 2008-09 is 20.9%. The same percentage of increase in consumption over 2007-08 which works out to 30.45 MU for the year 2008-09, is considered reasonable.

**Accordingly, the Commission assesses, with the present pattern of restricted hours of supply, energy consumption of 30.45 MU for public lighting for the FY 2008-09.**

#### **4.3.5 Irrigation / Agricultural Services**

BSEB has projected energy sales for irrigation pumpsets at 613.90 MU for the FY 2008-09, which shows, an increase of 5.83% over 2007-08, compared to a CAGR of (-) 13.92% for the years 2003-04 to 2006-07. This negative growth is due to reduced consumption during FY 2006-07 based on norm fixed by the Commission.

The Commission approved energy consumption of 576 MU for the year 2006-07 based on an effective number of installations of 58600 and effective connected load of 288232 kW at a norm of 2000 kWh/kW/annum.

The actual number of installations and the corresponding connected load of irrigation pumpsets for the years FY 2006-07, FY 2007-08 and projection for FY 2008-09 as furnished by the BSEB are as follows.

| <b>Year</b> | <b>No. of installations (effective)</b> | <b>Connected load (kW)</b> |
|-------------|---|----------------------------|
| 2006-07     | 57581                                   | 247003                     |
| 2007-08     | 58500                                   | 249050                     |
| 2008-09     | 62600                                   | 271800                     |

The norm of 2000 kWh/ kW/annum approved by the Commission, for the year 2006-07 is very liberal. The agricultural energy consumption norm being adopted for some of the other States is as follows:

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

The norm of 2000 / kWh/kW/annum means, all the agricultural pumpsets run on full load for about 5.5 hours per day on an average for all the 365 days in a year.

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

With the above number of connections and corresponding connected loads, and with the already approved norm of 2000 kWh / kW / annum, the assessed consumption for irrigation pumpsets for the years 2006-07, 2007-08 and projection for 2008-09 would be as follows:

| <b>Year</b> | <b>Assessed Agriculture Consumption (MU)</b> |
|-------------|--|
| 2006-07     | 494  |
| 2007-08     | 498  |
| 2008-09     | 544  |

**Accordingly, the Commission approves energy sales for irrigation category at 544 MU for the year 2008-09 against 613.90 MU projected by BSEB.**

#### **4.3.6 Public Water Works**

The Board has projected the demand for public water works at 170 MU for the year 2008-09. The number of installations and energy consumption for the last three years - 2005-06, 2006-07 and 2007-08 and projected for 2008-09 are given below:

| <b>Year</b>         | <b>No. of consumers</b> | <b>Energy Consumption (MU)</b> |
|---------------------|-------------------------|--------------------------------|
| 2005-06             | 647                     | 178.24                         |
| 2006-07             | 689                     | 163.90                         |
| 2007-08 (Estimated) | 689                     | 170.00                         |
| 2008-09 (Projected) | 700                     | 170.00                         |

It is seen from Table 4.1 above that the CAGR is (-) 1.66% for the years 2003-04 to 2006-07. The growth in this category has been erratic, may be due to unpredictable supply conditions. The projected increase in number of connections for 2008-09 is 1.6% over 2007-08. The energy consumption during 2005-06 was 178.24 MU highest during the above years. The same level of consumption is considered more appropriate for FY 2008-09.

**Accordingly, with the restricted hours of supply, the Commission assesses 178 MU for public water works for the year 2008-09, against 170 MU projected by BSEB.**

#### **4.3.7 Low Tension (LT) Supply**

The Board has projected energy consumption for low tension industry category at 185.10 MU for the year 2008-09. The number of consumers and energy consumption for the last three years - 2005-06, 2006-07, 2007-08 and projected consumption for 2008-09 are given below:

| <b>Year</b>         | <b>No. of consumers</b> | <b>Energy Consumption (MU)</b> |
|---------------------|-------------------------|--------------------------------|
| 2005-06             | 10718                   | 112.55                         |
| 2006-07             | 11647                   | 111.17                         |
| 2007-08 (Estimated) | 12190                   | 133.80                         |
| 2008-09 (Projected) | 13430                   | 185.10                         |

It is seen from Table 4.1 above that the CAGR for 3 years from 2003-04 to 2006-07 is (-) 1.98%. But the increase in energy consumption in 2007-08 over 2006-07 is 20.36% and increase projected for 2008-09 over 2007-08 is 38.34%. As there is an increase of 10.17% in the projected number of consumers during 2008-09 over 2007-08, and with the industrial activity picking up in the state, the projected demand of

185.10 MU is considered reasonable, particularly with increase in number of consumers and improved power supply conditions and additional energy being available for sale.

**The Commission, therefore assesses with the restricted hours of supply, energy consumption at 185.10 MU for the year 2008-09 for LT industry as projected by the Board.**

#### **4.3.8 High Tension (HT) Supply**

The Board has projected the energy sales for HT category (HTS –I, HTS – II, HTS – III & HTSS) at 935.60 MU for the year 2008-09.

The number of consumers and the energy consumption for the years 2005-06, 2006-07, 2007-08 and the projections for 2008-09 are given below:

| <b>Year</b>         | <b>No. of consumers</b> | <b>Energy Consumption (MU)</b> |
|---------------------|-------------------------|--------------------------------|
| 2005-06             | 667                     | 673.51                         |
| 2006-07             | 699                     | 762.08                         |
| 2007-08 (Estimated) | 699                     | 853.00                         |
| 2008-09 (Projected) | 708                     | 935.60                         |

It could be seen from the above table that there is steep increase in energy consumption of over 10% every year though there is no significant increase in number of consumers. It could also be seen from Table 4.1, that the CAGR from FYs 2003-04 to 2006-07 was about 9%. BSEB has projected an increase of 9.68% for the year 2008-09, over the year 2007-08, which is considered reasonable.

**The Commission, therefore, assesses with the restricted hours of supply, energy consumption for HT supply (HTS-I, II, III & HTSS) at 935.60 MU for the year 2008-09 as projected by the Board.**

#### **4.3.9 Railway Traction**

The Board has projected energy consumption for Railway traction at 460 MU for the year 2008-09.

The demand of railway traction load for the last three years and projection for FY 2008-09 is given below:

| <b>Year</b>           | <b>Energy consumption (MU)</b> |
|-----------------------|--------------------------------|
| 2005-06               | 358.76                         |
| 2006-07               | 383.92                         |
| 2007-08 (Estimated)   | 440.00                         |
| 2008-09 (Projections) | 460.00                         |

It is seen from Table 4.1 above that the CAGR of energy consumption from FY 2003-04 to 2006-07 for the Railway Traction is 7.37%. The Board has projected a growth of 4.35% only for the year 2008-09 over 2007-08, which is on lower side. Adopting the growth of 7.37% (CAGR of 2003-04 to 2006-07), which is considered reasonable, the projected energy consumption for Railway traction for FY 2008-09, would be 472 MU. There are no restrictions on power supply for this category.

**The Commission therefore approves a demand for railway traction at 472 MU for the year 2008-09 against 460 MU projected by BSEB.**

#### **4.3.10 Sales outside the State including Nepal**

The Board has projected energy sales of 750 MU under inter state sales - 250 MU to Nepal and 500 MU unscheduled interchange (UI). Since regional power system is under Availability Based Tariff (ABT) frame work, any UI exchange from one utility to another is charged based on system frequency prevailing at that point of time.

BSEB is not able to provide satisfactory power supply to its consumers under power shortage conditions. In such a situation, the unscheduled supply to other states could be during off peak hours particularly night hours and also that the Board may not be able to meet the demand of consumers due to transmission and distribution constraints in some areas or the Board might be restricting supply of power to its consumers to supply power to other states under UI and earn more revenue. The BSEB has supplied energy to other states under UI during the last three years as given below.

| <b>Year</b>         | <b>Inter-state sales to Nepal (MU)</b> | <b>Sales under UI (MI)</b> |
|---------------------|--|----------------------------|
| 2003-04             | 195.00                                 | -                          |
| 2004-05             | 260.00                                 | -                          |
| 2005-06             | 242.93                                 | 494.32                     |
| 2006-07             | 225.34                                 | 399.88                     |
| 2007-08 (Estimated) | 250.00                                 | 300.00                     |
| 2008-09 (Projected) | 250.00                                 | 500.00                     |

BSEB has projected sale of 250 MU to Nepal and 500 MU as UI sales to common pool (to other states). The sales to Nepal take place under a bilateral agreement between India and Nepal. The projected sales of 250 MU for FY 2008-09 is considered reasonable against the estimated sales of 250 MU for FY 2007-08 and actual sales of 225.34 MU for FY 2006-07. For a deficit state like Bihar a sale of 500 MU under UI is not desirable starving its own consumers, this energy could as well be supplied to its own consumers. This sale of 500 MU outside the State has been

raised by some consumers during the public hearing, they demanded that this energy could as well be sold to the consumers in the state.

It is, informed by the Board that surplus power is available during off peak hours or if there is any system breakdown or due to local condition especially in northern Bihar where more than 50% area is flooded during monsoon affecting all normal life, the energy is sold under these conditions to other States under UI.

This is discussed further later in this chapter on examining the availability of power to the state from various sources.

#### 4.3.11 Total Energy Demand (Sales)

The Commission assesses, with restricted hours of supply, energy sales at 4648 MU for FY 2008-09, including inter state sales to Nepal against 5129.78 MU, projected by BSEB in the ARR filing. The consumer category wise energy sales as projected by BSEB and those assessed by the Commission are given in Table-4.2 below:

Table-4.2

**Energy Sales for FY 2008-09**

| S.N | Category                           | Projected by BSEB (MU) | Assessed by the Commission with the restricted hours of supply (MU) |
|-----|------------------------------------|------------------------|---|
| 1   | Kutir Jyoti (Rural & Urban)        | 64.08                  | 64.08   |
| 2   | Domestic                           | 1565.28                | 1624.00   |
| 3   | Non domestic                       | 359.18                 | 365.00  |
| 4   | Public lighting                    | 26.64                  | 30.45   |
| 5   | Irrigation & Agriculture           | 613.90                 | 544   |
| 6   | Public water works                 | 170.00                 | 178   |
| 7   | Industrial LT                      | 185.10                 | 185.10  |
| 8   | Industrial HT                      | 935.60                 | 935.60  |
| 9   | Railway Traction                   | 460.00                 | 472.00  |
| 10  | Sales outside state (Nepal)        | 250.00                 | 250.00  |
| 11  | Sales to common pool consumer (UI) | 500.00                 | -*  |
|     | <b>Total</b>                       | <b>5129.78</b>         | <b>4648.23</b>  |

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

**As already discussed above, the sales projected by the Board and assessed by the Commission are based mostly on the past energy consumption trends which are severely restricted due to power shortages in the state.**

#### 4.4 Transmission and Distribution (T&D) losses

The BSEB has initially indicated in the ARR and Tariff Petition for the year 2008-09, the T&D losses for the years 2005-06, 2006-07, 2007-08 and projection for 2008-09 as follows:

| Year                | T&D loss (%) |
|---------------------|--------------|
| 2005-06             | 38.56        |
| 2006-07             | 46.44        |
| 2007-08 (Estimated) | 43.13        |
| 2008-09 (Projected) | 41.50        |

As informed, the Board has arrived at the losses by deducting the metered energy sales and assessed energy sales of the unmetered categories from the total energy available (i.e own generation + purchase).

Later, after finalisation of Annual Accounts for FY 2006-07, while furnishing the additional information and data, the Board indicated the T&D losses as follows:

| Year                | T&D loss (%) |
|---------------------|--------------|
| 2005-06             | 38.56        |
| 2006-07             | 42.61        |
| 2007-08 (Estimated) | 41.40        |
| 2008-09 (Projected) | 40.50        |

The Board has projected 0.9% reduction in T&D losses during the FY 2008-09 over the losses during FY 2007-08. No break up of technical and commercial losses has been furnished by the Board. In any case, the T&D losses indicated by BSEB are predetermined and are not either properly measured or assessed.

As already mentioned in the Tariff Order 2006-07, in a scenario where supply to agriculture pumpsets (about 13%, 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.

The Commission in the Tariff Order 2006-07, approved the T&D losses for the year 2006-07 at 41.4% and set the targets for FYs 2007-08 and 2008-09 at 38.00% and 34.00% respectively.

BSEB has not taken any concrete steps for reduction in T&D losses in spite of specific directive in tariff order 2006-07 and T&D reduction trajectory. This is not appreciated. BSEB has now indicated T&D losses of 42.61% for FY 2006-07, 41.40% for FY 2007-08 and 40.5% for FY 2008-09. In view of higher T&D losses indicated by BSEB for FY 2007-08 the Commission feels that it may not be practicable to achieve the targeted level of 34% (a reduction of 7.4%) in the year 2008-09. Hence T&D losses of 38%, a reduction of 3.4% against 0.9% projected by BSEB, is considered more reasonable to be achieved during FY 2008-09.

**Accordingly, the Commission approves the T&D losses at 38% for the FY 2008-09.**

While approving the T&D losses at 38% for the year 2008-09 Commission fixes the following targets for the next three years as below:

|         |     |
|---------|-----|
| 2008-09 | 38% |
| 2009-10 | 35% |
| 2010-11 | 32% |
| 2011-12 | 29% |

This is in line with the recommendations of Abraham Committee in its report on “Restructuring of APDRP”.

#### **4.5 Energy Requirement and Availability**

##### **4.5.1 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 with power restrictions for the year 2008-09, T&D losses and the energy requirement projected by BSEB and assessed by the Commission are given in Table-4.3 below:

Table-4.3

**Energy Requirement FY 2008-09**

| S.N | Particulars  | As projected by BSEB in ARR | As assessed by the Commission with restricted hours of supply |
|-----|--|-----------------------------|---|
| 1   | Total energy sales (including sales to Nepal) (MU) | 5130                        | 4648  |
| 2   | T&D losses (%)                                     | 40.5                        | 38  |
| 3   | T & D losses (MU)                                  | 3492                        | 2849  |
| 4   | Total energy requirement (1+3) (MU)                | 8622                        | 7497  |

**With the assessed sales and T&D losses, the total energy requirement will be 7497 MU against 8622 MU projected by the Board.**

#### 4.5.2 Own Generation

At present, BSEB has only one thermal generating plant located at Barauni, whose total installed capacity is 320 MW. The Muzaffarpur TPS, hether to with BSEB was, transferred to a J.V. Company of NTPC and BSEB viz Vaishali Power Generating Company during FY 2007-08.

The details of (Barauni Thermal Plant) - its capacity and vintage are given in the table below:

| Sl. No. | 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 shutdown since 24.4.1996  |
|         |                    | Unit-5        | 50 MW  | 01.12.1971            | Under shutdown since 15.03.1995                                       |
|         |                    | Unit-6        | 110 MW | 01.12.1984            | Running intermittently under deteriorated condition after restoration |
|         |                    | Unit-7        | 110 MW | 31.03.1985            | Under shutdown at present   |

BSEB has stated, that unit No. 6 of 110 MW has started intermittent generation from 24/11/07. BSEB projected a gross generation of 310 MU and a net generation of 279 MU from this station during FY 2009, on estimated basis, which works out to a PLF of 32.17%. As the unit is not fully stabilized, the PLF of 32.17% is considered as availability from this station. It could be more if the performance of the unit improves. No generation is expected from Unit 7 during FY 2008-09.

**The Commission approves the gross generation of 310 MU and net generation of 279 MU from BTPS, with an auxiliary consumption of 10% as projected by BSEB for the FY 2008-09.**

#### 4.5.3 Power Purchase

The power purchase projected by BSEB, from different sources for the year 2008-09 is given below:

Table-4.4  
Power Purchase FY 2008-09

| S.N       | Source  | Energy (MU) |
|-----------|---|-------------|
| 1         | Farakka                                       | 2400        |
| 2         | Kahalgaon                                     |             |
|           | 1 <sup>st</sup> Phase                         | 650         |
|           | 2 <sup>nd</sup> Phase                         | 700         |
| 3         | Talchar                                       | 2400        |
| 4         | Chukha HE                                     | 550         |
| 5         | Tala HE                                       | 1100        |
| 6         | Rangeet HE                                    | 80          |
| 7         | Teesta HE                                     | 200         |
| 8         | BSHPC   | 50          |
| 9         | Vaishali Power Gen. Company                   | 500         |
| 10        | Nepal   | 60          |
| <b>11</b> | <b>Total</b>                                  | <b>8690</b> |
| 12        | Transmission loss in regional system (3.7%) * | 300         |
| <b>13</b> | <b>Net purchase (11-12)</b>                   | <b>8390</b> |
| 14        | UI purchase                                   | 100         |
| <b>15</b> | <b>Total (13+14)</b>                          | <b>8490</b> |

\* The loss is estimated on purchases from central generating stations and other stations out side the state.

4.5.4 Total energy available (excluding losses in regional system) for BSEB for sale in the state and to Nepal will thus be 8769 (8490+ 279). MU including own net generation of 279 MU.

The energy requirement including sales to Nepal as worked out in para 4.5.1 above is 7497 MU which thus leaves a surplus of 1272 MU.

The Board shall draw its entire share from central generating stations and other sources and meet the unrestricted consumption fully of its own consumers taking into consideration the constraints, if any, in transmission & distribution system and may sell balance to other states to earn additional revenue. The first priority shall be to meet the requirement of its consumers fully. As mentioned earlier the energy sales projection for FY 2008-09 is based on severely restricted consumption during earlier years. If the base of earlier years had been unrestricted the sales projection for FY 2008-09 would have been much higher.

The energy sales including sales to Nepal as assessed by the Commission as per Table 4.2 above are 4648 MU. The energy requirement with 38% T&D losses is 7497 MU against energy availability of 8769 MU from central sector stations, other sources and own generation leaving a surplus of 1272 MU. In normal course a state in deficit

should be able to absorb this power, this however depends on the load mix, consumption pattern of its consumers, load factor of the system etc and constraints if any in the transmission and distribution system. With the available power from its own generation, central generating stations and other sources, the Board would be able to meet its unrestricted demand to a large extent with some peak load restrictions.

In Bihar about 45% of the energy is consumed by domestic, commercial and public lighting, about 30% by industry and railway traction and the balance by irrigation pumpsets, public water works and supply to Nepal. The load factor of industry would be high and the consumption by other categories i.e. domestic, non-domestic, small industries, street lighting would be mostly during peak hours. In view of this the Board may not be able to absorb the entire surplus energy of 1272 MU.

Even if 500 MU of energy is sold outside the state either by contract or under unscheduled interchange (UI) as proposed, about 479 MU energy (net of T&D losses of 38%) will be available to meet the demand of its consumers, which can be easily absorbed.

Under the circumstance, it is considered that Board would be able to consume about 772 MU out of the surplus of 1272 MU to meet the demand of its consumers and the balance 500 MU may be sold outside state either by contract or under unscheduled inter change (UI) as proposed after meeting the demand of its consumers fully.

On a reference to BSEB, it is informed that the unrestricted energy consumption by rural unmetered categories would be 40 to 50% higher, HT industry would be 5 to 10% higher and urban domestic, non-domestic and LT industry would 10 to 20% higher and would be consumed if adequate power is available.

Accordingly, the assessed energy sales for HT categories is increased by 10%, urban domestic, non-domestic and LT industry is increased by 15% and balance (about 25%) to unmetered categories. The additional 479 MU available for sale is distributed as above to HT, urban domestic, non-domestic consumers etc., and unmetered rural consumers as above. The consumption to other categories is retained as it is. The approved revised sales are as below:

Table-4.5  
**Approved Sales – Category-wise FY 2008-09**

| S.N | Category                           | Assessed sales by the Commission with power restrictions as given in Table 4.2 (MU) | Sales approved by the Commission based on power availability (MU) |
|-----|------------------------------------|---|---|
| 1   | Kutir Jyoti                        |   |   |
|     | (a) Rural                          | 60.48   | 76.40   |
|     | (b) Urban                          | 3.60  | 3.60  |
| 2   | Domestic                           | 1624.00   | 1904.00   |
| 3   | Non domestic                       | 365.00  | 421.00  |
| 4   | Public lighting                    | 30.45   | 35.00   |
| 5   | Irrigation                         | 544.00  | 544.00  |
| 6   | Public water works                 | 178.00  | 178.00  |
| 7   | Industrial LT                      | 185.10  | 213.00  |
| 8   | Industrial HT                      | 935.60  | 1030.00   |
| 9   | Railways                           | 472.00  | 472.00  |
| 10  | Nepal                              | 250.00  | 250.00  |
| 11  | <b>Total sales including Nepal</b> | <b>4648.23</b>  | <b>5127.00</b>  |
| 12  | Sales to other states              | -   | 500   |
| 13  | <b>Total sales (11+12)</b>         | <b>4648.23</b>  | <b>5627</b>   |

**The Commission therefore, approves energy sales of 5627 MU including sales to Nepal and other states for FY 2008-09 against 5130 MU projected by the Board.**

#### 4.5.5 Energy Balance

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

Table-4.6  
**Energy Balance – FY 2008-09**

| S.N      | Particulars   | Energy (MU) |
|----------|---|-------------|
| <b>A</b> | <b>Energy requirement</b>                           |             |
| 1        | Total projected energy sales (metered and assessed) | 5127        |
| 2        | T&D losses (38%)                                    | 3142        |
| 3        | Net energy requirement (within the state and Nepal) | 8269        |
| 4        | UI sales  | 500         |
| <b>5</b> | <b>Total energy requirement</b>                     | <b>8769</b> |
| <b>B</b> | <b>Energy available</b>                             |             |
| 1        | Own generation (Net)                                | 279         |
| 2        | Energy purchase from other sources + UI             | 8490        |
|          | <b>Total</b>  | <b>8769</b> |

## 4.6 Expenditure

### 4.6.1 Generation Cost (BSEB's own generation)

BSEB has projected the fuel cost at Rs. 62.35 crores for a gross generation of 310 MU from BTPS unit No. 6 for the FY 2008-09. The parameters and costs adopted by BSEB, for arriving at this cost are as follows:

|                   |                                  |
|-------------------|----------------------------------|
| Station Heat Rate | 2600 Kcal / kWh                  |
| Coal consumption  | 1 Kg / kWh (total 310000 tonnes) |
| Oil consumption   | 10 ml / kWh (total 3100 KL)      |
| Cost of coal      | Rs. 1765 / MT (Rs.54.72 crores)  |
| Cost of oil       | Rs. 24609 / KL (Rs.7.63 crores)  |
| Total fuel cost   | Rs.62.35 crores.                 |

As the unit is a very old one, and as there is no stabilized generation after restoration, the parameters and costs mentioned above, are considered and agreed to. With the above parameters and costs, the fuel cost works out to Rs. 62.35 crores for a gross generation of 310 MU.

**Accordingly, the Commission approves the fuel cost of BTPS, at Rs. 62.35 crores for a gross generation of 310 MU, as projected by the BSEB.**

### 4.6.2 Power Purchase Cost

BSEB has to meet its energy requirement through purchases mostly from central generating stations of NTPC & NHPC, Tala & Chukka projects in Bhutan, BSHPC, Vaishali TPS and Nepal. The quantum of energy available from thermal power stations is based on BSEB's share in each of the these stations. The energy availability from thermal stations is worked out at 80% Plant Load Factor (PLF) which is a norm fixed by the CERC and the availability from the hydel stations is based on the allocation to the state and the drawals during earlier years. The quantum of energy proposed to be purchased from each station is reasonable. Any excess or short drawal based on the performance of these stations will be considered in the review during the year 2009-10. The fixed and energy charges for central generating stations are determined by CERC and the energy charges for power from Tala and Chukka hydel stations are as approved by Government of India.

The cost of power from Vaishali thermal power station, a joint venture company of NTPC & BSEB has to be determined by CERC, since it is yet to be determined by CERC, BSEB has proposed the cost at Rs.2.50 / kWh, this is agreed to. The tariff for the hydel stations of BSHPC has to be determined by the Commission, pending

determination of tariff for BSHPC power stations the Commission considered the existing tariff of Rs. 2.00 kWh. The BSEB has proposed the average energy charges (fixed and variable cost) for the purchase from central generating stations and other stations based on the bills paid during April 2007 to December 2007 to be considered for the purchases during FY 2008-09. This is agreed to. The source wise energy, the average cost / unit and the cost of purchase from each source is given in Table-4.7 below:

Table-4.7

**Power Purchase Cost as projected by BSEB for FY 2008-09**

| S.N       | Source  | Energy purchase (MU) | Average cost Paise / kWh | Total cost (Rs. crore) |
|-----------|---|----------------------|--------------------------|------------------------|
| 1         | Farakka (T)   | 2400                 | 176                      | 422.40                 |
| 2         | Kahalgaon (T)<br>1 <sup>st</sup> phase<br>2 <sup>nd</sup> phase | 650<br>700           | 183                      | 247.05                 |
| 3         | Talchar (T)   | 2400                 | 126                      | 302.40                 |
| 4         | Chukka (HE)   | 550                  | 155                      | 85.25                  |
| 5         | Tala (HE)   | 1100                 | 179                      | 196.90                 |
| 6         | Rangeet (HE)  | 80                   | 183                      | 14.64                  |
| 7         | Teesta HE)  | 200                  | 200                      | 40.00                  |
| 8         | BSHPC   | 50                   | 200                      | 10.00                  |
| 9         | Vaishali Power Gen. Co.   | 500                  | 250                      | 125.00                 |
| 10        | Nepal   | 60                   | 380                      | 22.80                  |
| 11        | Unscheduled Inter change (UI)                                   | 100                  | 400                      | 40.00                  |
| <b>12</b> | <b>Total</b>  | <b>8790</b>          |                          | <b>1506.44</b>         |
| 13        | Transmission & RLDC charges                                     |                      |                          | 150.00                 |
| 14        | Total (12+13)   |                      |                          | 1656.44                |

The purchase of 100 MU under unscheduled interchange (UI) is approved as drawal during exigencies it may be inevitable in the integrated operation, particularly under shortage conditions unless there is perfect load management. This drawal to some extent will be compensated by sale under UI approval.

If there is variation in the average energy charges approved, the Board may claim the costs under price adjustment formula.

**The Commission thus approves the energy purchase of 8790 MU including losses in the regional system from Central Generating Stations and other sources in regional system at a cost of Rs. 1656.44 crores for FY 2008-09.**

#### 4.6.3 Employee Cost

The employee cost comprises of salaries and wages, dearness allowance, pension, gratuity and staff welfare expenses. The BSEB has projected the employee cost at Rs. 616.15 crores after capitalization of Rs. 15.94 crores for the year 2008-09. The

details of employee cost for the years 2005-06, 2006-07, 2007-08 and cost projected for 2008-09 are given in Table-4.8 below:

Table-4.8

**Employee Cost projected by the Board for FY 2008-09**

(Rs. crores)

| S.N       | Employee cost                  | 2005-06<br>(Actuals) | 2006-07<br>(Actuals) | 2007-08<br>(Estimated) | 2008-09<br>(Projected) |
|-----------|--------------------------------|----------------------|----------------------|------------------------|------------------------|
|           | Salaries and allowances        |                      |                      |                        |                        |
| 1         | Basic pay + Special Pay        | 194.98               | 192.17               | 194.07                 | 191.24                 |
| 2         | Dearness allowance             | 47.30                | 59.81                | 77.99                  | 99.14                  |
| 3         | House rent allowance           | -                    | -                    | 11.31                  | 11.18                  |
| 4         | Overtime payment               | 3.99                 | 2.75                 | 4.58                   | 6.00                   |
| 5         | Other allowances *             | 15.14                | 15.18                | 3.43                   | 3.50                   |
| <b>6</b>  | <b>Total salaries</b>          | <b>261.41</b>        | <b>269.91</b>        | <b>291.38</b>          | <b>311.06</b>          |
|           | <b>Other staff costs</b>       |                      |                      |                        |                        |
| 7         | Medical reimbursement charges  | 0.86                 | 1.03                 | 2.03                   | 2.09                   |
| 8         | Fixed medical allowance        | -                    | -                    | 1.50                   | 1.63                   |
| 9         | Leave encashment LTC           | 7.91<br>0.01         | 17.02<br>-           | 20.26<br>-             | 23.23<br>-             |
| 10        | Workmen compensation           | 0.24                 | 0.20                 | 0.99                   | 1.19                   |
| 11        | Other expenses **              | 0.76                 | 0.83                 | 22.28                  | 23.60                  |
| <b>12</b> | <b>Total other staff costs</b> | <b>9.78</b>          | <b>19.08</b>         | <b>47.06</b>           | <b>51.74</b>           |
|           | <b>Pension &amp; Gratuity</b>  |                      |                      |                        |                        |
| 13        | Gratuity                       | -                    | -                    | 59.94                  | 66.34                  |
| 14        | Pension                        | -                    | -                    | 186.98                 | 202.95                 |
| 15        | Terminal benefits              | 90.94                | 276.46               |                        |                        |
| <b>16</b> | <b>Total of pension etc</b>    | <b>90.94</b>         | <b>276.45</b>        | <b>246.92</b>          | <b>269.29</b>          |
| <b>17</b> | <b>Total (6+12+16)</b>         |                      | <b>565.44</b>        | <b>585.36</b>          | <b>632.09</b>          |
| 18        | Less amount capitalized        | -                    | 13.70                | 14.99                  | 15.94                  |
| 19        | Net employee cost              | 362.14               | 551.74               | 570.37                 | 616.15                 |

\* The other allowances mainly cover conveyance allowance, compensatory allowance and other miscellaneous allowances.

\*\* other expenses include GSS, GPF etc.

The Commission had approved the employee cost at Rs. 525.91 crores for the year 2006-07 in the tariff order for 2006-07. As per the annual accounts for the year 2006-07 the actuals for the year are Rs. 565.44 crore which is in excess by about Rs. 50 crores.

The increase in expenditure is more than what was approved by the Commission is mainly in terminal benefits (pension, gratuity etc) to the employees.

The Commission has observed in the tariff order for FY 2006-07 that the pension liabilities etc. shall be paid through pension fund operated by a trust and also directed BSEB to make arrangements to pay the pension, gratuity etc from the interest earnings from the pension fund. As it may take some time by the State Government /

Board to create the pension fund, the payment towards pension, gratuity etc is approved as projected by the Board to be paid from revenues for the year 2008-09.

The Commission had also observed that the employee cost of the Board is high compared to other Electricity Boards / Utilities and directed the Board to take measures to rationalize the manpower and utilize the existing manpower by training and redeployment. The Board has submitted that they have reduced the man power from 16314 during FY 2005-06 to 13723 during FY 2007-08 (i.e. reduction of 2591). On the other hand, in order to meet the shortage of manpower in certain areas they have engaged some engineers and workmen on contract basis. They also propose to recruit some more engineers and diploma holders during FY 2008-09. Efforts are being made to rationalize the manpower, but still the costs are high and requires to take further measures to reduce the costs.

The Board has claimed overtime payment of Rs. 6.00 crore during FY 2008-09, the Commission in its tariff order for 2006-07 had observed that there is no case to pay overtime to employees as the Board has adequate number of employees and overtime will not be allowed in future. The amount of Rs. 6.00 crores projected towards overtime payment for the year 2008-09 is therefore disallowed.

There is an increase of 6.75% in salaries and allowances, 7.8% in other staff costs and 9.0% in pension and gratuity during FY 2008-09 over the corresponding expenses during FY 2007-08. The increase is considered reasonable considering the prevailing inflation rates.

**The Commission approves the employee cost of Rs. 610.15 crores (excluding capitalization of Rs.15.94 crores) for the year 2008-09 against Rs. 616.15 crores projected by BSEB.**

#### **4.6.4 Administration and General (A&G) Expenses**

The Board has projected the administration and general expenses at Rs. 33.13 crores for the year 2008-09, an increase of 11% over the expenses during the year 2007-08. The expenses during 2005-06 & 2006-07 (Actuals) 2007-08 (Estimated) and 2008-09 (projected) are given in Table-4.9 below:

Table-4.9  
**Administrative and General Expenses**

| S.N | Particulars                          | 2005-06<br>(Actuals) | 2006-07<br>(Actuals) | 2007-08<br>(Estimated) | 2008-09<br>(Projected) |
|-----|--------------------------------------|----------------------|----------------------|------------------------|------------------------|
| 1   | Rents, rates and taxes               | 72.50                | 52.47                | 117.17                 | 126.84                 |
| 2   | Insurance                            | 29.39                | 0.62                 | 11.66                  | 15.95                  |
| 3   | Telephone, postage and telegraph etc | 164.91               | 151.88               | 235.46                 | 261.85                 |
| 4   | Legal charges                        | 79.46                | 73.22                | 177.75                 | 188.50                 |
| 5   | Audit fee                            | 184.46               | 193.96               | 150.00                 | 150.00                 |
| 6   | Consultancy charges                  | 1.18                 | 2.48                 | 36.00                  | 36.00                  |
| 7   | Technical fees                       | 0.25                 | 0.58                 | -                      | -                      |
| 8   | Other professional charges           | 0.19                 | 26.46                | -                      | -                      |
| 9   | Conveyance and travel                | 412.26               | 457.68               | 493.52                 | 538.03                 |
| 10  | Other expenses *                     | 1069.49              | 1344.71              | 1711.59                | 1995.86                |
|     | Total                                | 2014.09              | 2304.06              | 2983.15                | 3313.03                |

\* Other expenses include advertisement, computer billing, home guards / security guards and miscellaneous expenses

The Commission approved the expenses at Rs. 21.26 crores for FY 2006-07 in the tariff order for that year and actual expenses for the year based on annual accounts is Rs. 23.38 crores, but the increase in FY 2007-08 (estimated) is high at 27.6% over the actuals for FY 2006-07. There is considerable increase in rents, communication, legal, advertisement, conveyance, security and other miscellaneous expenses. The increase in telephone, postage and telegraph etc works out to about 54.6%, and that in the case of legal charges to about 143%. Though the increase appears high, these expenses do increase with increased activities of the Board. Hence, the increase in A&G expenses is agreed.

**The Commission approves the Administration and General expenses at Rs. 33.13 crores for the year 2008-09 as projected by the Board.**

#### **4.6.5 Repair and Maintenance (R&M) Expenses**

The Board has projected the R&M expenses at Rs. 42.27 crores for the year 2008-09 an increase of 35% over the expenses for the year 2007-08. The expenses under this head for the financial years 2005-06, 2006-07 (Actual), 2007-08 (Estimated) and 2008-09 (Projected) are given in Table-4.10 below:

Table-4.10  
**Repair and Maintenance Expenses**

| S.N | Particulars                   | 2005-06<br>(Actuals) | 2006-07<br>(Actuals) | 2007-08<br>(Estimated) | 2008-09<br>(Projected) |
|-----|-------------------------------|----------------------|----------------------|------------------------|------------------------|
| 1   | Plant & Machinery             | 795.91               | 1136.20              | 1438.22                | 2130.08                |
| 2   | Buildings                     | 78.92                | 113.25               | 448.33                 | 506.86                 |
| 3   | Hydraulic works & civil works | 100.20               | 145.09               | 249.05                 | 474.89                 |
| 4   | Line, cable network etc.      | 674.16               | 888.23               | 597.08                 | 653.80                 |
| 5   | Vehicles                      | 13.94                | 34.38                | 41.17                  | 49.45                  |
| 6   | Furniture & Fixtures          | 1.72                 | 2.08                 | 6.16                   | 6.47                   |
| 7   | Office equipment              | 10.30                | 16.34                | 16.38                  | 23.11                  |
| 8   | Operating expenses            | -                    | -                    | 332.49                 | 382.36                 |
|     | Total expenses                | 1675.15              | 2335.55              | 3128.88                | 4227.02                |

The Commission has approved an amount of Rs. 25.20 crores for FY 2006-07 in the tariff order for that year. As per annual accounts for FY 2006-07, the actual expenditure is Rs. 23.25 crores which is well within the approved cost. The R&M costs have gone upto Rs. 31.29 crores during FY 2007-08, an increase of about 34%. The R&M expenses projected for FY 2008-09 are at Rs. 42.27 crores, an increase of 35% over the expenditure of FY 2007-08 which itself is high. The expenditure has gone up during FY 2007-08 mainly under two heads - plant and machinery, hydraulic and civil works and operating expenses. The R&M expenses projected for FY 2008-09 under plant and machinery shows an increase of about Rs. 692 lakhs i.e. 48% and operating expenses by about Rs. 50 lakhs over the corresponding expenses for the year 2007-08. The item operating expenses is added during 2007-08 which did not find place during earlier years. The expenses relate to generating station such as water supply royalty etc., now being projected under R&M.

It is submitted by the Board that the Commission has notified the Standards of Performance and the standards notified have to be achieved.

As the generation plant, transmission and distribution system in Bihar is quite old and considerable expenditure is involved for proper maintenance of the system in order to achieve the standards of performance notified by the Commission. The norm for the R&M expenses is about 2% of the gross fixed asset which works out to Rs. 57.55 crores (on the asset value of Rs. 2877.33 crores as on 01/04/2008).

**The Commission therefore approves an amount of Rs. 42.27 crores towards R&M expenses for the year 2008-09 as projected by the Board.**

#### 4.6.6 Investments

The Board has proposed an investment of Rs. 2225.34 crores for the year 2008-09 as per the details furnished in Format 21 of ARR petition. Details of investments for the year 2007-08 (RE) and 2008-09 (Projected) are given in the Table-4.11 below:

Table-4.11  
**Investment Proposed for FYs 2007-08 & 2008-09**  
(Rs. crore)

| <b>Particulars</b> | <b>2007-08<br/>(Estimated)</b> | <b>2008-09<br/>(Projected)</b> |
|--------------------|--------------------------------|--------------------------------|
| Generation         | 334.76                         | 1206.85                        |
| Transmission       | 278.50                         | 854.86                         |
| Distribution       | 174.53                         | 163.63                         |
| <b>Total</b>       | <b>787.79</b>                  | <b>2225.34</b>                 |

These details of investment do not tally with the investments and capitalization given in Format-26 of the ARR.

The details of works in progress, new investments and capitalization for the years 2006-07, 2007-08 and 2008-09 as per Format-26 of ARR petition are given in the Table-4.12 below:

Table-4.12  
**Works in progress**  
(Rs. crore)

| <b>S.N</b> | <b>Particulars</b>            | <b>2006-07<br/>(Actual)</b> | <b>2007-08<br/>(RE)</b> | <b>2008- 09<br/>(Projection)</b> |
|------------|-------------------------------|-----------------------------|-------------------------|----------------------------------|
| 1          | Opening balance               | 606.27                      | 876.30                  | 903.00                           |
| 2          | Add. New investments          | 293.73                      | 661.60                  | 950.00                           |
| 3          | Less: Investments capitalized | 23.70                       | 634.90                  | 753.50                           |
| 4          | Closing balance               | 876.30                      | 903.00                  | 1099.50                          |

The capital expenditure given in Table-4.10 above is much higher than what is proposed in the Table-4.11. The Board cannot achieve this level of investment taking into consideration the past achievement and resources. In view of this the new investment proposed at Rs. 950 crores for the year 2008-09 is considered reasonable and the depreciation charges and the borrowings and interest charges there on are being allowed as per investment proposed in Format-26 of the ARR / Tariff petition.

#### 4.6.7 Depreciation

The Board has claimed Rs 109.60 crores towards depreciation for the year 2008-09. The details of assets and depreciation as furnished by the Board for the year 2007-08 (estimated) and 2008-09 (Projection) are given in the Table-4.13 below:

Table-4.13  
**Depreciation charges for the year 2007-08(estimate) and 2008-09(projection)**

| Sl.<br>No    | Particulars  | Assets as<br>on 1.4.2007 | Depreciation<br>for 2007-08 | Assets as on<br>1.4.2008 | Depreciation<br>for 2008-09 | (Rs. crores) |
|--------------|--------------|--------------------------|-----------------------------|--------------------------|-----------------------------|--------------|
| 1            | Thermal      | 595.57                   | 6.66                        | 617.38                   | 8.29                        |              |
| 2            | Hydro        | 7.80                     | -                           | 7.80                     | -                           |              |
| 3            | Transmission | 824.65                   | 26.01                       | 1359.06                  | 43.15                       |              |
| 4            | Distribution | 1765.96                  | 55.58                       | 1844.04                  | 58.17                       |              |
| <b>Total</b> |              | <b>3193.98</b>           | <b>88.25</b>                | <b>3828.28</b>           | <b>109.61</b>               |              |

The Board has mentioned that depreciation charges have been worked out as per CERC (Terms and Conditions of Tariff) Regulations.

The Commission notes that the Board has claimed the depreciation charges as per the investment proposed at Rs.2225.34 crores for the year 2008-09. This level of investment is not achievable keeping in view the past performance of the Board. The Commission has therefore considered the investment of Rs.950 crores for the year 2008-09 as mentioned above and the capitalization at Rs.753.50 crores. The depreciation has been worked out accordingly at Rs 90.99 crores for the year 2008-09. The depreciation charges as per the statement of annual accounts for 2006-07 were Rs. 58.21 crores on the assets of Rs. 2242.43 crores as at the end of March 2007. The depreciation charges on the assets existing as on 1.4.2007 are taken into consideration and the depreciation charges on the proposed addition of new assets is worked out at 3.6 % on 90% of the asset value on straight line method as per CERC Regulations. The depreciation charges are detailed in the Table 4.14 below:

Table-4.14  
**Depreciation Charges (approved by the Commission) for FY 2008-08**

| Particulars             | Assets<br>Value | 2006- 07<br>(Actual) | 2007-08      | 2008-09      | (Rs. crores) |
|-------------------------|-----------------|----------------------|--------------|--------------|--------------|
| As on 1.4.2007          | 2242.43         | 58.21                | 58.21        | 58.21        |              |
| Addition during 2007-08 | 634.90          | -                    | 10.29        | 20.57        |              |
| Addition during 2008-09 | 753.50          | -                    | -            | 12.21        |              |
| <b>Total</b>            | <b>3630.83</b>  | <b>58.21</b>         | <b>68.50</b> | <b>90.99</b> |              |

Depreciation for the assets capitalized during the year is computed for 6 months as details of actual dates of capitalization are not available, to arrive at the depreciation on pro-rata basis as per CERC Regulations.

**The Commission, therefore, approves the depreciation charges at Rs 90.99 crores for the year 2008-09 against Rs 109.61 crores claimed by the Board.**

#### 4.6.8 Interest and Finance Charges

The Board has claimed an amount of Rs.241.46 crores towards interest and finance charges for the year 2008-09. The details of interest on loans source wise for the years 2007-08(estimated) and 2008-09 (projected) are given in the Table-4.15 below:

Table-4.15  
**Interest and Finance Charges**

| Sl.<br>No | Source of Loan  | 2007-08<br>(estimated) | 2008-09<br>(Projected) | (Rs. crores) |
|-----------|---|------------------------|------------------------|--------------|
| 1         | SLR Bonds   | 10.21                  | 10.21                  |              |
| 2         | LIC   | 11.53                  | 7.41                   |              |
| 3         | REC   | 16.48                  | 17.93                  |              |
| 4         | Bill Discounting (Prompt payment rebate allowed to consumers) | 9.48                   | 11.85                  |              |
| 5         | PFC   | 24.54                  | 27.16                  |              |
| 6         | GPF   | 37.50                  | 41.00                  |              |
| 7         | Consumers Security Deposit                                    | 0.61                   | 0.65                   |              |
| 8         | Working Capital   | 35.97                  | 15.88                  |              |
| 9         | G.S.S   | 4.12                   | 1.50                   |              |
| 10        | State Govt. Loans   | 114.73                 | 150.57                 |              |
|           | <b>Total</b>  | <b>265.17</b>          | <b>284.16</b>          |              |
|           | Less Capitalization   | 31.89                  | 42.70                  |              |
|           | <b>Net Interest</b>   | <b>233.28</b>          | <b>241.46</b>          |              |

The loans outstanding at the beginning of the year 2007-08, drawal of new loans and repayment during the year 2007-08 and proposed to be drawn and repaid during the year 2008-09 are given in Table-4.16 below:

Table-4.16

**Loans – Drawal, Repayments and Balance Outstanding for the years  
2007-08(estimated) and 2008-09 (Projected)**

| Sl.<br>No. |  | 2007-08 (Estimated) |               |                |                | 2008-09 (Projection) |                |                |
|------------|--|---------------------|---------------|----------------|----------------|----------------------|----------------|----------------|
|            |  | Opening<br>Balance  | Drawal        | Re-<br>payment | Balance        | Drawal               | Re-<br>payment | Balance        |
| <b>A</b>   | <b>State Government</b>                        |                     |               |                |                |                      |                |                |
| (i)        | Loans  | 2833.46             | 251.38        | -              | 3084.84        | 300.00               | -              | 3384.84        |
| (ii)       | Loans<br>against<br>bonds<br>issued by<br>CPSU | 2143.33             | -             | -              | 2143.33        | -                    | -              | 2143.33        |
| (iii)      | <b>Total</b>                                   | <b>4976.79</b>      | <b>251.38</b> | -              | <b>5228.17</b> | <b>300.00</b>        | -              | <b>5528.17</b> |
| <b>B</b>   | Institutional<br>Credit                        |                     |               |                |                |                      |                |                |
| (i)        | REC  |                     |               |                |                |                      |                |                |
|            | (a) RMNP                                       | 162.94              | -             | -              | 162.94         | -                    | -              | 162.94         |
|            | (b) Spl.<br>Project<br>Agriculture             | -                   | -             | -              | -              | -                    | -              | -              |
| (ii)       | LIC  | 26.87               | -             | 26.87          | -              | -                    | -              | -              |
| (iii)      | IDBI   | 0.06                | -             | -              | 0.06           | -                    | -              | 0.06           |
| (iv)       | PFC  | 243.55              | 58.31         | 18.71          | 283.15         | 56.34                | 37.82          | 301.67         |
| (v)        | Public<br>Bonds                                | 92.81               | -             | -              | 92.81          | -                    | -              | 92.81          |
|            |  | <b>5503.02</b>      | <b>309.69</b> | <b>45.58</b>   | <b>5767.13</b> | <b>356.34</b>        | <b>37.82</b>   | <b>6085.65</b> |

It could be seen from the Table-4.15 above that the new loans drawls are Rs.309.69 crores during the year 2007-08(RE) and Rs 356.34 crores projected during the year 2008-09 against the investment of Rs 661.60 crores for the year 2007-08 (RE) and Rs 950.00 crores projected for the year 2008-09. The sources of funds required for the proposed investments are not given by the Board. The gap in the proposed borrowings and the new investment is supposed to be filled by internal resources. The interest charges for the year 2008-09 are considered on the existing loans and the new borrowings as proposed by the Board including working capital loans.

**The Commission, accordingly approves Rs 241.46 crores towards interest and finance charges for the year 2008-09 as projected by the Board.**

#### 4.6.9 Non-Tariff Income

The Board has projected the non-tariff income at Rs. 129.61 crores. The non-tariff income includes meter rent, late payment surcharge, miscellaneous receipts, miscellaneous charges, trading and bank interest etc. The details of non-tariff income

during the years 2006-07 (A), 2007-08 (RE) and 2008-09 (Projected) are given in Table-4.17 below:

Table-4.17

**Non-Tariff Income**

| S.N | Particulars  | 2006-07(A)    | 2007-08 (E)   | 2008-09 (P)   | (Rs. crores) |
|-----|--|---------------|---------------|---------------|--------------|
| 1   | Meter service rent                                       | 16.13         | 12.80         | 14.00         |              |
| 2   | Late payment surcharge (DPS)<br>(on basis of collection) | 20.67         | 20.00         | 20.00         |              |
| 3   | Theft / pilferage of energy                              |               |               |               |              |
| 4   | Misc. receipts   | 74.08         | 32.47         | 26.69         |              |
| 5   | Misc. charges (except PLFC)                              | 15.12         | 28.28         | 29.87         |              |
| 6   | Wheeling charges   |               |               |               |              |
| 7   | Interest on staff loans & advances                       | 0.03          |               |               |              |
| 8   | Income from trading                                      | 0.71          | 2.04          | 5.85          |              |
| 9   | Income from welfare activities                           |               |               |               |              |
| 10  | Excess on verification                                   |               |               |               |              |
| 11  | Interest on bank deposit                                 | 20.83         | 31.64         | 33.20         |              |
| 12  | <b>Total income</b>                                      | <b>141.57</b> | <b>127.23</b> | <b>129.61</b> |              |

Delayed payment surcharge (DPS) also termed, as late payment surcharge exhibited above by BSEB is disputable. The delayed payment surcharge as per annual accounts for FY 2006-07 was Rs.641.20 crores. Many objectors raised this issue during public hearings and objected to reducing the DPS to only about Rs.20 crores from 2006-07 onwards. BSEB explained in their letter dated 23<sup>rd</sup> May 2008, that the late payment surcharge is not separately available and mingled in the total collection of the Board and the Board has accounted 5% of the total assessed DPS as income to the extent of certainty of its realization in its annual accounts for the year 2006-07 and projected for 2008-09 accordingly. In the same letter, the Board has furnished the assessed DPS amount as per budget estimates for the year 2008-09 as Rs.536.52 crores. 5% of this amount works out to Rs.26.83 crores. In view of the above DPS of Rs.26.83 corers is approved in which case the total non-tariff income works out to Rs.136.44 crores.

**The Commission accordingly approves the non-tariff income at Rs. 136.44 crores for the year 2008-09 against Rs.129.61 crores projected by the Board..**

#### 4.6.10 Regulatory Asset

The Commission in its tariff order for the year 2006-07, has kept Rs.60 crores, as regulatory asset, recoverable at the rate of Rs.30 crores for each year during FY 2007-08 and 2008-09. BSEB claimed Rs.70.35 crores for FY 2008-09, towards regulatory asset (Rs.60 crores and Rs.10.35 crores, being interest for one and half years @11.5% on Rs.60 crores). On a query from the Commission, the Board in its

letter No.282 dated 23.5.2008, mentioned that it has availed short-term loans, to the extent of Rs.76 crores during FY 2006-07 and Rs.258.29 crores during FY 2007-08 from various Banks to meet the deficit between revenue receipt and expenditure. The BSEB has not submitted any supporting evidence for taking any loan under regulatory asset specifically. It is also observed after review of the ARR for 2006-07 (as given in chapter-2), there is a surplus of Rs.56.28 crores for the year 2006-07, even without considering the regulatory asset. In the light of these facts, the Commission disallows the expenses of Rs.70.35 crores for the year 2008-09, projected by BSEB under this head.

#### 4.7. Aggregate Revenue Requirement (ARR)

The Board has sought approval for a net revenue requirement of Rs.2702.19 crores for the year 2008-09. Based on the discussion in the preceding paras, the Commission approves ARR at Rs.2600.35 crores as given in Table 4.18 below:

Table-4.18

**Annual Revenue Requirement (ARR) projected by BSEB and Approved by the Commission for the year 2008-09**

| S.No      | Item of expenditure              | Projected by BSEB | Approved by the Commission | (Rs. crore) |
|-----------|----------------------------------|-------------------|----------------------------|-------------|
| 1         | Cost of Fuel                     | 62.35             | 62.35                      |             |
| 2         | Cost of power purchase           | 1656.44           | 1656.44                    |             |
| 3         | Employee cost (net)              | 616.15            | 610.15                     |             |
| 4         | Adm. & Gen. expenses             | 33.13             | 33.13                      |             |
| 5         | R&M costs                        | 42.27             | 42.27                      |             |
| 6         | Depreciation                     | 109.61            | 90.99                      |             |
| 7         | Interest charges                 | 241.46            | 241.46                     |             |
| 8         | Regulatory Asset (Recoverable)   | 70.35             | -                          |             |
| 9         | Return on NFA                    | -                 | -                          |             |
| <b>10</b> | <b>Total revenue requirement</b> | <b>2831.76</b>    | <b>2736.79</b>             |             |
| 11        | Less Non tariff income           | 129.61            | 136.44                     |             |
| <b>12</b> | <b>Net revenue requirement</b>   | <b>2702.15</b>    | <b>2600.35</b>             |             |
| 13        | Energy sales (MU)                | 5129.78           | 5627.00                    |             |
| 14        | Average cost of supply Rs./kWh   | 5.52              | 4.86                       |             |

#### 4.8 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 quantum of electricity sold to them as approved by the Commission.

BSEB has projected the revenue from existing tariffs at Rs.1679.32 crores based on consumer category-wise energy sales projected for 2008-09. The revenue estimated by the Board and the Commission on existing tariff is given in Table 4.19 below:

Table-4.19  
Revenue from Existing Tariff for FY 2008-09

| Sl.<br>No. | Category of Consumers                        | Estimated by the Board |                                  | Estimated by the Commission |                                  |
|------------|--|------------------------|----------------------------------|-----------------------------|----------------------------------|
|            |  | Energy Sales<br>(MU)   | Total<br>Revenue<br>(Rs. crores) | Energy<br>Sales (MU)        | Total<br>Revenue<br>(Rs. crores) |
| 1          | <b>Domestic</b>                              |                        |                                  |                             |                                  |
|            | i) Kutir Jyoti (KJ)                          |                        |                                  |                             |                                  |
|            | (a) KJ (Rural)                               | 60.48                  | 11.76                            | 76.40                       | 11.76                            |
|            | (b) KJ (Urban)                               | 3.60                   | 0.54                             | 3.60                        | 0.54                             |
|            | ii) DS-I                                     | 305.28                 | 57.24                            | 397.00                      | 68.69                            |
|            | iii) DS-II                                   | 1260.00                | 311.76                           | 1507.00                     | 377.62                           |
|            | iv) DS-III                                   | 0.00                   | 0.00                             | 0.00                        | 0.00                             |
|            | <b>Sub Total</b>                             | <b>1629.36</b>         | <b>381.3</b>                     | <b>1984</b>                 | <b>458.61</b>                    |
| 2          | <b>Non-Domestic</b>                          |                        |                                  |                             |                                  |
|            | NDS-I  | 12.18                  | 2.92                             | 15.00                       | 2.92                             |
|            | NDS-II                                       | 340.00                 | 183.18                           | 398.00                      | 220.93                           |
|            | NDS-III                                      | 7.00                   | 1.88                             | 8.00                        | 2.09                             |
|            | <b>Sub Total</b>                             | <b>359.18</b>          | <b>187.98</b>                    | <b>421.00</b>               | <b>225.94</b>                    |
| 3          | <b>Agricultural Services (IAS)</b>           |                        |                                  |                             |                                  |
|            | Unmetered supply                             |                        |                                  |                             |                                  |
|            | i) IAS-I                                     | 431.90                 | 34.55                            | 382.00                      | 34.54                            |
|            | ii) IAS-II                                   | 182.00                 | 33.97                            | 162.00                      | 33.97                            |
|            | Metered supply                               |                        |                                  |                             |                                  |
|            | i) IAS-I                                     | 0.00                   | 0.00                             | 0.00                        | 0.00                             |
|            | ii) IAS-II                                   | 0.00                   | 0.00                             | 0.00                        | 0.00                             |
|            | <b>Sub Total</b>                             | <b>613.90</b>          | <b>68.52</b>                     | <b>544.00</b>               | <b>68.51</b>                     |
| 4          | <b>Low Tension Industrial Service (LTIS)</b> |                        |                                  |                             |                                  |
|            | I) LTIS-I                                    | 120.10                 | 59.82                            | 138.00                      | 67.36                            |
|            | ii) LTIS-II                                  | 65.00                  | 33.19                            | 75.00                       | 37.50                            |
|            | iii) LTIS-III                                | 170.00                 | 53.60                            | 178.00                      | 56.00                            |
|            | <b>Sub Total</b>                             | <b>355.10</b>          | <b>146.61</b>                    | <b>391.00</b>               | <b>160.86</b>                    |
| 5          | <b>Street Light Services (SS)</b>            |                        |                                  |                             |                                  |
|            | i) SS-I (Metered supply)                     | 5.40                   | 1.62                             | 8.00                        | 2.40                             |
|            | ii) SS-II (Unmetered supply)                 | 18.36                  | 3.22                             | 23.00                       | 3.98                             |
|            | iii) SS-III (Unmetered supply)               | 2.88                   | 1.36                             | 4.00                        | 1.36                             |
|            | <b>Sub Total</b>                             | <b>26.64</b>           | <b>6.20</b>                      | <b>35.00</b>                | <b>7.74</b>                      |
| 6          | <b>High Tension (Voltage) Supply</b>         |                        |                                  |                             |                                  |
|            | i) 11 kV HTS-I                               | 390.00                 | 196.39                           | 430.00                      | 213.43                           |
|            | ii) 33 kV HTS-II                             | 128.00                 | 61.98                            | 141.00                      | 67.43                            |
|            | iii) 132 kV HTS-III                          | 60.00                  | 27.96                            | 66.00                       | 30.45                            |
|            | iv) HTSS                                     | 357.60                 | 140.46                           | 393.00                      | 145.21                           |
|            | <b>Sub Total</b>                             | <b>935.60</b>          | <b>426.69</b>                    | <b>1030.00</b>              | <b>456.52</b>                    |
| 7          | <b>Railway Traction Service (RTS)</b>        |                        |                                  |                             |                                  |
|            | I) RTS-I (25 kV)                             | 150.20                 | 72.34                            | 154.00                      | 74.04                            |
|            | ii) RTS-II (132 kV)                          | 309.80                 | 152.30                           | 318.00                      | 155.89                           |
|            | <b>Sub Total</b>                             | <b>460.00</b>          | <b>224.64</b>                    | <b>472.00</b>               | <b>229.93</b>                    |
| 8          | <b>Common pool (UI)</b>                      | <b>500.00</b>          | <b>150.00</b>                    | <b>500.00</b>               | <b>150.00</b>                    |
|            | <b>Sales to Nepal</b>                        | <b>250.00</b>          | <b>88.75</b>                     | <b>250.00</b>               | <b>88.75</b>                     |
|            | <b>Total</b>                                 | <b>5129.78</b>         | <b>*1680.79</b>                  | <b>5627.00</b>              | <b>1846.88</b>                   |

\*BSEB in its ARR has mentioned the revenue with existing tariff as Rs.1679.28 crores.

#### **4.9    Grant from State Government**

BSEB mentioned in its tariff petition that the Government of Bihar issued orders for release of Rs.60 crores per month for payment of energy bills of NTPC during FY 2007-08 and that the same level of grant from State Government i.e. an amount of Rs.720 crores will be available during FY 2008-09. The Energy Secretary, Government of Bihar, also stated during the State Advisory Committee meeting held on 14<sup>th</sup> July 2008 that Rs.720 crores per annum provided by the State Government to BSEB is a resource gap in the form of grant.

Industrial Incentive Policy 2006 notified by Government of Bihar stipulates that no AMG/MMG is to be paid by industries for 5 (five) years from the date of notification (dt. 15.07.2006). BSEB in its petition has not projected any revenue requirement under this head and hence not considered in the ARR. However, the provisions of the industrial policy have to be adhered to.

#### **4.10    Revenue Gap**

Based on the analysis and scrutiny of various items of expenses and Annual Revenue Requirement of BSEB for the year 2008-09 as approved by the Commission, the revenue gap is worked out. The State Government has approved a grant (subsidy) of Rs.720 crores during the FY 2008-09 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 is given in Table 4.20 below:

Table-4.20

**Revenue Gap**

(Rs. crores)

| <b>Sl. No.</b> | <b>Item</b>                                 | <b>Claimed by BSEB</b> | <b>Approved by the Commission</b> |
|----------------|---|------------------------|-----------------------------------|
| 1.             | Aggregate Revenue Requirement               | 2831.76                | 2736.79                           |
| 2.             | Less non-tariff income                      | 129.61                 | 136.44                            |
| 3.             | Net Revenue Requirement                     | 2702.15                | 2600.35                           |
| 4.             | Revenue at existing tariff                  | 1679.28                | 1846.88                           |
| 5.             | Grant from State Government as Resource Gap | 720.00                 | 720.00                            |
| 6.             | Surplus (deficit) (4-3-5)                   | (302.83)               | (33.47)                           |

#### **4.11    Revenue Gap and Recovery thereof**

The Commission has arrived at revenue gap of Rs.33.47 crores for the year 2008-09 and proposes to meet this gap through revision of existing tariff, as detailed in the tariff schedule.

#### 4.12 Revenue from Approved Tariff

The expected revenue at approved tariffs as given in the tariff schedule and average approved tariff for the year 2008-09 for various categories of consumers is given in Table-4.21 below:

Table-4.21

**Estimated Revenue from Approved Tariff in FY2008-09**

| Sl. No. | Category of Consumers                        | Approved sales (MU) | Revenue estimation at approved tariff (Rs. crores) | Average tariff (Paise/Unit) |
|---------|--|---------------------|--|-----------------------------|
| 1       | <b>Domestic</b>                              |                     |  |                             |
|         | i) Kutir Jyoti (KJ)                          |                     |  |                             |
|         | (a) KJ (Rural)                               | 76.4                | 11.76  | 153.93                      |
|         | (b) KJ (Urban)                               | 3.6                 | 0.54   | 150.00                      |
|         | ii) DS-I                                     | 397                 | 72.5   | 182.62                      |
|         | iii) DS-II                                   | 1507                | 392.69   | 260.58                      |
|         | iv) DS-III                                   |                     |  |                             |
|         | <b>Sub Total</b>                             | <b>1984</b>         | <b>477.49</b>                                      | <b>240.67</b>               |
| 2       | <b>Non-Domestic</b>                          |                     |  |                             |
|         | NDS-I  | 15                  | 3.05   | 203.33                      |
|         | NDS-II                                       | 398                 | 220.93   | 555.10                      |
|         | NDS-III                                      | 8                   | 2.09   | 261.25                      |
|         | <b>Sub Total</b>                             | <b>421</b>          | <b>226.07</b>                                      | <b>536.98</b>               |
| 3       | <b>Agricultural Services (IAS)</b>           |                     |  |                             |
|         | i) IAS-I                                     | 382                 | 34.54  | 90.42                       |
|         | ii) IAS-II                                   | 162                 | 33.97  | 209.69                      |
|         | <b>Sub Total</b>                             | <b>544</b>          | <b>68.51</b>                                       | <b>125.94</b>               |
| 4       | <b>Low Tension Industrial Service (LTIS)</b> |                     |  |                             |
|         | i) LTIS-I                                    | 138                 | 67.36  | 488.12                      |
|         | ii) LTIS-II                                  | 75                  | 37.50  | 500.00                      |
|         | <b>Sub-Total</b>                             | <b>213</b>          | <b>104.86</b>                                      | <b>492.30</b>               |
| 5       | <b>Public Water Works</b>                    | <b>178</b>          | <b>60.02</b>                                       | <b>337.19</b>               |
| 6       | <b>Street Light Services (SS)</b>            |                     |  |                             |
|         | i) SS-I (Metered supply)                     | 8                   | 2.72   | 340.00                      |
|         | ii) SS-II (Unmetered supply)                 | 27                  | 6.98   | 258.52                      |
|         | <b>Sub Total</b>                             | <b>35</b>           | <b>9.70</b>  | <b>277.14</b>               |
| 7       | <b>High Tension (Voltage) Supply</b>         |                     |  |                             |
|         | i) 11 kV HTS-I                               | 430                 | 217.18   | 505.07                      |
|         | ii) 33 kV HTS-II                             | 141                 | 67.84  | 481.13                      |
|         | iii) 132 kV HTS-III                          | 66                  | 30.69  | 465.00                      |
|         | iv) HTSS                                     | 393                 | 164.69   | 419.06                      |
|         | <b>Sub Total</b>                             | <b>1030</b>         | <b>480.4</b>                                       | <b>466.41</b>               |
| 8       | <b>Railway Traction Service (RTS)</b>        | <b>472</b>          | <b>230.97</b>                                      | <b>489.34</b>               |
| 9       | <b>Common pool (UI)</b>                      | <b>500</b>          | <b>150.00</b>                                      | <b>300.00</b>               |
| 10      | <b>Sales to Nepal</b>                        | <b>250</b>          | <b>88.75</b>                                       | <b>355.00</b>               |
|         | <b>Total</b>                                 | <b>5627</b>         | <b>1896.77</b>                                     | <b>337.08</b>               |

The estimated revenue with approved tariffs leaves a surplus of Rs. 16.42 crores for the year 2008-09. It is relevant to mention here that the revenue from different categories of consumers as estimated above, is not very accurate going by the data furnished by the Board. This surplus has been kept to meet any contingency, which

may arise because of variation in sales estimated, sales mix etc. In case there is a surplus at end of the year it will be taken care of during the truing up exercise.

#### 4.13 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 4.22 below:

Table-4.22  
Cross subsidy with approved tariff for FY 2008-09

| Sl.<br>No. | Category of Consumers                        | Average Unit<br>rate<br>(Ps./Unit) | Average cost<br>of Supply<br>(Ps./Unit) | Cross<br>subsidy<br>(Ps./unit) | Percentage<br>(%) |
|------------|--|------------------------------------|---|--------------------------------|-------------------|
|            |  |                                    |   |                                |                   |
| 1          | <b>Domestic</b>                              |                                    |   |                                |                   |
|            | i) Kutir Jyoti (KJ)                          |                                    |   |                                |                   |
|            | (a) KJ (Rural)                               | 153.93                             | 486                                     | 332.07                         | 68.33             |
|            | (b) KJ (Urban)                               | 150.00                             | 486                                     | 336.00                         | 69.14             |
|            | ii) DS-I                                     | 182.62                             | 486                                     | 303.38                         | 62.42             |
|            | iii) DS-II                                   | 260.58                             | 486                                     | 225.42                         | 46.38             |
|            | iv) DS-III                                   | 0.00                               | 0                                       | 0.00                           |                   |
|            | <b>Sub Total</b>                             | <b>240.67</b>                      | <b>486</b>                              | <b>245.33</b>                  | <b>50.48</b>      |
| 2          | <b>Non-Domestic</b>                          |                                    |   |                                |                   |
|            | NDS-I  | 203.33                             | 486                                     | 282.67                         | 58.16             |
|            | NDS-II                                       | 555.10                             | 486                                     | -69.10                         | -14.22            |
|            | NDS-III                                      | 261.25                             | 486                                     | 224.75                         | 46.24             |
|            | <b>Sub Total</b>                             | <b>527.53</b>                      | <b>486</b>                              | <b>-41.53</b>                  | <b>-8.55</b>      |
| 3          | <b>Agricultural Services (IAS)</b>           |                                    |   |                                |                   |
|            | i) IAS-I                                     | 90.42                              | 486                                     | 395.58                         | 81.40             |
|            | ii) IAS-II                                   | 209.69                             | 486                                     | 276.31                         | 56.85             |
|            | <b>Sub Total</b>                             | <b>125.94</b>                      | <b>486</b>                              | <b>360.06</b>                  | <b>74.09</b>      |
| 4          | <b>Low Tension Industrial Service (LTIS)</b> |                                    |   |                                |                   |
|            | i) LTIS-I                                    | 488.12                             | 486                                     | -2.12                          | -0.44             |
|            | ii) LTIS-II                                  | 500.00                             | 486                                     | -14.00                         | -2.88             |
|            | <b>Sub-Total</b>                             | <b>492.30</b>                      | <b>486</b>                              | <b>-6.30</b>                   | <b>-1.30</b>      |
| 5          | <b>Public Water Works</b>                    | <b>337.19</b>                      | <b>486</b>                              | <b>148.81</b>                  | <b>30.62</b>      |
| 6          | <b>Street Light Services (SS)</b>            |                                    |   |                                |                   |
|            | i) SS-I (Metered supply)                     | 340.00                             | 486                                     | 146.00                         | 30.04             |
|            | ii) SS-II (Unmetered supply)                 | 258.52                             | 486                                     | 227.48                         | 46.81             |
|            | <b>Sub Total</b>                             | <b>327.71</b>                      | <b>486</b>                              | <b>158.29</b>                  | <b>32.57</b>      |
| 7          | <b>High Tension (Voltage) Supply</b>         |                                    |   |                                |                   |
|            | i) 11 kV HTS-I                               | 505.07                             | 486                                     | -19.07                         | -3.92             |
|            | ii) 33 kV HTS-II                             | 481.13                             | 486                                     | 4.87                           | 1.00              |
|            | iii) 132 kV HTS-III                          | 465.00                             | 486                                     | 21.00                          | 4.32              |
|            | iv) HTSS                                     | 419.06                             | 486                                     | 66.94                          | 13.77             |
|            | <b>Sub Total</b>                             | <b>465.16</b>                      | <b>486</b>                              | <b>20.84</b>                   | <b>4.29</b>       |
| 8          | <b>Railway Traction Service (RTS)</b>        | <b>489.34</b>                      | <b>486</b>                              | <b>-3.34</b>                   | <b>-0.69</b>      |
| 9          | <b>Common pool (UI)</b>                      | <b>300.00</b>                      | <b>486</b>                              | <b>186.00</b>                  | <b>38.27</b>      |
| 10         | <b>Sales to Nepal</b>                        | <b>355.00</b>                      | <b>486</b>                              | <b>131.00</b>                  | <b>26.95</b>      |
|            | <b>Total</b>                                 | <b>336.46</b>                      | <b>486</b>                              | <b>149.54</b>                  | <b>30.77</b>      |

#### 4.14 ARR for Generation, Transmission and Distribution

Though, BSEB is a vertically integrated utility, separate tariffs have been determined for generation, transmission and distribution by segregating the ARR of FY 2008-09, based on the information furnished by the Board, according to budget estimate furnished in its letter No.282 dated 23<sup>rd</sup> May 2008.

The expenses for generation, transmission and distribution, according to the above information furnished are given in Table-4.23 below:

Table-4.23

**Expenses for generation, transmission and distribution for the year 2008-09 as furnished by BSEB**

(Rs. crores)

| Sl. No. | Item                                | Generation       | Transmission       | Distribution       | Total            |
|---------|-------------------------------------|------------------|--------------------|--------------------|------------------|
| 1.      | Power purchase                      | -                | -                  | 1921.63            | 1921.63          |
| 2.      | Generation of power (Fuel Cost)     | 62.35            | -                  | -                  | 62.35            |
| 3.      | Repairs and Maintenance             | 5.20<br>(12.30%) | 6.06<br>(14.34%)   | 31.01<br>(73.36%)  | 42.27<br>(100%)  |
| 4.      | Employee cost                       | 43.34<br>(7.03%) | 68.28<br>(11.08)   | 504.53<br>(81.88)  | 616.15<br>(100%) |
| 5.      | Administration and General Expenses | 2.32<br>(7.00%)  | 9.69<br>(29.25%)   | 21.12<br>(63.75%)  | 33.13<br>(100%)  |
| 6.      | Depreciation                        | 8.16<br>(7.45%)  | 40.90<br>(37.31%)  | 60.55<br>(55.24%)  | 109.61           |
| 7.      | Interest and Finance charges        | 23.01<br>(9.53%) | 114.95<br>(47.61%) | 103.50<br>(42.86%) | 241.46<br>(100%) |

The expenditure approved in the Aggregate Revenue Requirement (ARR) for the year 2008-09, is apportioned in the above percentage, to arrive at the generation, transmission and distribution ARR, which are detailed in Table-4.24 below:

Table – 4.24

**ARR for generation, transmission and distribution for the year 2008-09**

(Rs. crores)

| S.N | Item                           | Total   | Generation | Transmission | Distribution |
|-----|--------------------------------|---------|------------|--------------|--------------|
| 1   | Fuel costs                     | 62.35   | 62.35      | -            | -            |
| 2   | R&M costs                      | 42.27   | 5.20       | 6.06         | 31.01        |
| 3   | Employee cost                  | 610.15  | 42.96      | 67.60        | 499.59       |
| 4   | A&G expenses                   | 33.13   | 2.32       | 9.69         | 21.12        |
| 5   | Depreciation                   | 90.99   | 6.78       | 33.95        | 50.26        |
| 6   | Interest and finance charges   | 241.46  | 23.01      | 114.95       | 103.50       |
| 7   | (i) Total fixed costs (2 to 6) | 1018.00 | 80.27      | 232.25       | 705.48       |
|     | (ii) Variable costs            | 62.35   | 62.35      | -            | -            |

The power purchase cost of Rs.1656.44 crores is not taken into account in the above, as it pertains to retail tariff.

Thus, the ARR for generation, transmission and distribution for the year 2008-09 approved by the Commission is given in Table-4.25 below:

Table-4.25

**ARR for Generation, Transmission and Distribution for FY 2008-09 as approved by the Commission**

| Item         | Fixed charges | Variable charges | Total  | (Rs. crores) |
|--------------|---------------|------------------|--------|--------------|
| Generation   | 80.27         | 62.35            | 142.62 |              |
| Transmission | 232.25        | -                | 232.25 |              |
| Distribution | 705.48        | -                | 705.48 |              |

## Chapter – 5

# Tariff Principles, Design and Tariff Schedule

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### 5.1 Background

5.1.1 As mentioned earlier the Commission in determining the revenue requirement of BSEB for the year 2008-09 and the retail tariff has been guided by the provisions of the Electricity Act, 2003, the National Tariff Policy (NTP), Regulations on Terms and Conditions of Tariff issued by the Central Electricity Regulatory Commission (CERC) and Regulations on Terms and Conditions of Tariff notified by the BERC in April 2007. Section 61 of the Act lay down the broad principles, which shall guide determination of retail tariff. As per these principles the tariff should “Progressively reflect cost of supply” and also reduce cross subsidies “within the period to be specified by the Commission”. The Act lays special emphasis on safeguarding consumer interests and also requires that the costs should be recovered in a reasonable manner. The Act mandates that tariff determination should be guided by the factors, which encourage competition, efficiency, economical use of resources, good performance and optimum investment.

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

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

long-term action plan for reduction of T&D losses for both technical and non-technical with relevant load flow studies and submit to the Commission by March 2007. But so far there is no concrete action from the Board. Under these conditions it would not be practicable to implement the MYT framework this year. The Commission taking into account all factors, has decided to introduce MYT from the year 2010-11.

The mandate of the NTP that tariff should be within plus / minus 20% of the average cost of supply by 2010-11 has not been possible for the Commission to lay down the road map for reduction of cross subsidy, mainly because of lack of data regarding cost of supply at various voltage levels. The BSEB furnished the voltage-wise cost of supply, based on annual accounts, assuming certain percentage of voltage-wise losses without proper load flow studies, which cannot be taken into consideration. Hence, in working out the cost of supply, the Commission has gone on the basis of average cost of supply in the absence of relevant data for working out consumer category wise cost of supply. With regard to method of price regulation the Commission has broadly followed the rate of return regulation (ROR) method. However in this tariff order an element of performance target has been indicated by setting target for T&D loss reduction for the years 2008-09 to 2011-12. This better performance by reduction of loss level will result in substantial reduction in average cost of supply.

## **5.2 Tariff Proposed by the Board and Approved by the Commission**

5.2.1 BSEB in its tariff petition for FY 2008-09 has proposed for revision of retail tariffs to various categories of consumers to earn an additional revenue of Rs.189.39 crore leaving gap of Rs. 113.44 crore. However on detailed and prudent scrutiny of the aggregate revenue requirement filed by the Board, the Commission has arrived at a more realistic revenue requirement which requires only an additional revenue of Rs. 33.47 crores. The Commission has therefore regulated the tariff accordingly with a marginal increase of 2.70% against 11.27% proposed by the Board. The average cost of supply has been worked out at Rs. 4.86/kWh against Rs. 5.52 / kWh projected by the Board.

It is submitted that BSEB had constituted a high level Committee to review and give suggestions for simplification of tariff. The Committee had examined the issues and submitted its report suggesting to reduce the number of categories / sub-categories from 22 to 14. Committee recommended to do away with the slab systems of rates of energy charges and also proposed to increase the fixed charges / demand charges in all categories and to reduce the energy charges.

The Board has proposed tariff revision based on the recommendations of the Committee. In the tariff proposal, the Board dispensed with the consumption slabs in Domestic and Non-domestic categories and the number of categories in non-domestic, industry, agriculture and railway traction have been reduced. The other categories particularly HT categories are left untouched.

The proposed increase in tariff by the Board would result in an overall increase of about 11% in tariffs, the increase for different categories varying from (-)12% to 100%, still leaving a gap of about Rs.113 crores even after a grant of Rs.720 cores from State Government.

### 5.2.2 Tariff Categories

The existing and proposed categories by the Board are briefly given below:

| Sl. No.    | Existing  | Proposed  |
|------------|---|---|
| <b>A</b>   | <b>LOW TENSION SUPPLY</b>   |   |
| <b>1.0</b> | <b>DOMESTIC SERVICES</b>  |   |
|            | <b>(i) Kutir Jyoti</b>  | <b>(i) Kutir Jyoti</b>  |
|            | a) Kutir Jyoti<br>Unmetered<br>KJ (Rural) upto 60 W   | a) Kutir Jyoti<br>Unmetered<br>KJ (Rural) upto 60W  |
|            | b) Kutir Jyoti<br>Metered<br>KJ (Rural) upto 60 W<br>KJ (Urban) upto 100 W                  | b) Kutir Jyoti<br>Metered<br>KJ (Rural) upto 60W<br>KJ (Urban) upto 100W                              |
|            | <b>(ii) DS-I Domestic - I (Rural)</b><br>(connected load upto 2 kW)                         | <b>(ii) DS - I</b> Domestic – I (Rural)<br>(Connected load upto 2 kW)                                 |
|            | (a) Unmetered   | (a) Unmetered   |
|            | (b) Metered   | (b) Metered   |
|            | <b>(iii) DS – II Domestic (Metered)</b>   | <b>(iii) DS-II</b> Domestic (Metered)   |
|            | <b>(iv) DS – III (Metered)</b>  | <b>(iv) DS – III</b> (Metered)  |
| <b>2.0</b> | <b>NON DOMESTIC (NDS)</b>   |   |
|            | (i) NDS-I - Load upto 2 kW in Rural areas<br>(Unmetered)                                    | (i) Merged with DS-I  |
|            | (ii) NDS – II (Metered)<br>Load above 2 kW in rural areas<br>Load upto 60 kW in urban areas | NDS<br>NDS-II, NDS-III and LTIS-III<br>(Public Water works) are<br>merged into single category<br>NDS |
|            | (iii) NDS – III (Metered)<br>Temples etc.   |   |
| <b>3.0</b> | <b>IRRIGATION AND AGRICULTURAL PUMPSETS</b>   |   |
|            | (a) IAS – I Private Tube wells  |   |
|            | (i) Unmetered<br>- Rural feeder<br>- Urban feeder   | <b>IAS</b><br>(i) Unmetered supply  |
|            | (ii) Metered<br>- Rural feeder<br>- Urban feeder  | (ii) Metered supply   |

|            |  |  |
|------------|--|--|
|            | (b) IAS – II State Tube wells / state Lift Irrigation Pumps / State Irrigation pumps   | Private tube wells IAS-I and State tube wells – IAS-II merged as IAS.  |
|            | (i) Unmetered <ul style="list-style-type: none"> <li>- Rural feeder</li> <li>- Urban feeder</li> </ul>   |  |
|            | (ii) Metered <ul style="list-style-type: none"> <li>- Rural feeder</li> <li>- Urban feeder</li> </ul>  |  |
| <b>4.0</b> | <b>LOW TENSION SUPPLY</b>  |  |
|            | (a) LTIS – I Connected load upto 25 HP   | <b>LTIS</b> (connected load upto 99 HP)<br>LTIS-I and LTIS-II are merged as LTIS.  |
|            | (b) LTIS – II Connected load 26-99 HP  |  |
|            | (c) LTIS – III Public water works connected load upto 99 HP  |  |
| <b>5.0</b> | <b>STREET LIGHT SERVICES</b>   |  |
|            | (a) SS – I - Metered <ul style="list-style-type: none"> <li>- Grampanchayats</li> <li>- Nagar Palika / NAC / Municipality</li> <li>- Municipal Corporation</li> </ul>    | <b>SS – I (Rural)</b><br>Street light services, Mast light & Traffic light / Blinker<br>(i) Metered supply<br>(ii) Unmetered supply                            |
|            | (b) SS – II – Unmetered <ul style="list-style-type: none"> <li>- Grampanchayats</li> <li>- Nagar Palika / NAC / Municipality</li> <li>- Municipal Corporation</li> </ul> | <b>SS – II (Urban)</b><br>Street light services, Mast light & Traffic light / Blinker<br>(i) Metered supply<br>(ii) Unmetered supply<br>SS-III merged to SS-II |
| <b>B</b>   | <b>HIGH TENSION SUPPLY</b>   |  |
| 6.1        | HTS – I (11 kV /6.6 kV) supply<br>Installations having contracted demand of 75-1500 KVA  | <b>(a) HTS-I</b> (11kV/ 6.6kV) supply<br>Installations having contracted demand of 75-1500 KVA   |
| 6.2        | HTS – II (33 kV supply)<br>Installations having contracted demand of 1000 - 10000 KVA  | <b>(b) HTS-II</b> (33 kV supply)<br>Installations having contracted demand of 1000 - 10000 KVA   |
| 6.3        | HTS – III (132 kV supply)<br>Installations having contracted demand of 7.5 MVA and above   | <b>(c) HTS-III</b> (132 kV supply)<br>Installations having contracted demand of 7.5 MVA and above  |
| 6.4        | HT SS – Specified service – Induction furnace (11 kV & 33 kV)  | <b>(d) HTSS</b> Specified service – Induction furnace (11 kV & 33 kV)  |
| <b>7.0</b> | <b>RAILWAY TRACTION</b>  |  |
|            | (a) RTS – I – 25 kV supply   | <b>RTS</b>   |
|            | (b) RTS – II – 132 kV supply   | RTS-I and RTS-II are merged into single category.  |

TOD Tariff (Optional) proposed for all HT consumers by BSEB.

It is seen that the Board in its proposal has dispensed with the consumption slabs in the Domestic and Non-Domestic categories, reduced the categories in non domestic, LT industry, street lights and irrigation pumpsets under LT and railway traction under HT as below:

- Domestic four categories retained, but dispensed with consumption slabs in Domestic-II.
- Non domestic from three categories to one.
- Low tension industry from three categories to one.
- Street light from three categories to two.
- Irrigation pumpsets from two categories to one.
- Railway traction from two categories to one.

The Commission decides to continue the consumption slabs in Domestic and Non-domestic categories.

The Commission does not feel it proper to merge the non-domestic (Rural) category in Domestic-I (Rural), as both Domestic and Commercial activities cannot be equated. The Commission also feels that the places of worship, deserve a lower tariff than the premises of commercial activities. Hence, it is decided to retain the present three sub-categories under NDS.

The Commission does not agree for the merger of LTIS-I and LTIS-II as both are the industrial and works at different load factors on different load pattern.

It is decided to consider the Public Water Works Supply (PWS) as a separate category as it is neither a commercial activity nor an industrial activity.

The Commission decides to retain the two sub-categories namely IAS-I and IAS-II under irrigation and pumpsets, as it is not fair to equate private tube wells of smaller horse power of small farmers with state tube wells and state irrigation pumpsets. It is also decided to include hatcheries, poultries with minimum of 1000 birds and fisheries in the IAS-I metered category.

The Commission agrees for the proposal of BSEB for converting three sub-categories of street lights into two i.e. metered and unmetered, but the tariff rates for

Gram Panchayat, Nagar Palika / NAC / Municipality and Municipal Corporation area shall continue to be different as the availability of supply in Gram Panchayat are lower than the Nagar Palika /NAC / Municipality and that of Nagar Palika /NAC/Municipality are lower than the Municipal Corporation.

Railway traction could be one category at 132 kV, with rebate and surcharge provided in the tariffs for higher and lower voltage levels.

### 5.3 Tariff Categories

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

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

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

##### 1.1 Kutir Jyoti

###### i) Kutir Jyoti – BPL (Rural)

###### Unmetered

Connected load: upto 60 Watt

###### Metered

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

###### ii) Kutir Jyoti – BPL (Urban)

###### Metered only

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

##### 1.2 Domestic-I – Rural

###### Unmetered

Connected load: Upto 2 kW

###### Metered

Connected load: upto 2 kW

### **1.3 Domestic-II – Urban – Metered only**

Connected load:

Single phase – upto 5 kW

Three phase – 5 kW and above }      Urban connections

Rural connection above 2 kW

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

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

### **2.1 Non- Domestic-I : Rural**

#### **Unmetered**

Connected load: Upto 2 kW

#### **Metered**

Connected load: Upto 2 kW

### **2.2 Non- Domestic-II: Urban**

#### **Metered**

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

Rural consumers

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

Connected Load: Upto 30 kW

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

### **3.1 IAS-I: Private Tube wells**

#### **(i) Unmetered – Private tube wells only**

- Rural feeder

- Urban feeder

#### **(ii) Metered – Private tube wells, hatcheries, poultries and fisheries (Fish ponds)**

- Rural feeder

- Urban feeder

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

Connected Load: Upto 100 HP

#### **(i) Unmetered**

- Rural feeder
- Urban feeder

#### **(ii) Metered**

- Rural feeder
- Urban feeder

## **4. Low Tension Industry**

### **Metered**

#### **4.1 LTIS-I: Upto 25 HP**

#### **4.2 LTIS-II: Above 25 HP upto 99 HP**

## **5. Public Waterworks**

### **PWS – Upto 99 HP**

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

### **6.1 SS-I Metered Supply**

### **6.2 SS-II Unmetered Supply**

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

## **7.0 High Tension Supply**

### **7.1 HTS-I – 11 /6.6 kV supply**

For installations having contract demand of 75 to 1500 kVA.

- Demand charges
- Energy charges

### **7.2 HTS-II – 33 kV supply**

For installations having contract demand of 1000 to 10000 kVA

- Demand charges
- Energy charges

### **7.3 HTS –III - 132 kV supply – Industrial consumers**

For installations having contract demand of 7.5 mVA and above

- Demand charges
- Energy charges

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

- Demand charges
- Energy charges

## **8. Railway Traction**

### **RTS: 132/25 kV supply**

- Demand charges
- Energy charges

## **9. Temporary Supply**

- LT
- HT

## **10. Seasonal Supply**

**The approved Tariff Schedule which shall be effective from 1st September, 2008 is annexed as Annexure-5.1.**

**SCHEDULE  
FOR  
RETAIL TARIFF RATES  
AND  
TERMS AND CONDITION OF SUPPLY FOR FY 2008-09  
(Effective from 01-09-2008)**

## **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) and for public water works (PWS) category and upto 100 HP for irrigation category.

Single Phase supply upto 5.0 kW  
Three Phase supply 5.0 kW and above

## CATEGORY OF SERVICE AND TARIFF RATES

## 1.0 DOMESTIC SERVICE

## Applicability

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

## 1.1 Kutir Jyoti 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 point upto 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 areas getting power from Urban / Town feeders for single phase supply for load upto 5 kW and three phase supply for load of 5 kW and above. Rural consumers having sanctioned load above 2 kW will come under this category.

#### **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.)   |
|-----|--|------------------------|--|
| 1.0 | <b>DOMESTIC SERVICE</b>  |                        |  |
| 1.1 | <b>Kutir Jyoti - BPL Consumers</b>                                   |                        |  |
|     | i. K.J. (Rural) upto 60 watt (Consumption upto 30 units per month)   |                        |  |
|     | i. <b>Unmetered</b>  | Rs.35 / connection/ PM | x  |
|     | ii. <b>Metered</b>   | x                      | 120 Ps/unit subject to Monthly Minimum Charge of Rs.25/- per month per connection. |
|     | ii. K.J. (Urban) upto 100 watt (consumption upto 30 units per month) |                        |  |
|     | <b>Metered only</b>  | x                      | 150 Ps/unit subject to Monthly Minimum Charge of Rs.35/- per connection per month. |

|     | Category of consumer  | Fixed charge (Rs.)  | Energy charges   |             |
|-----|---|---|--|-------------|
| 1.2 | DS – I<br><br>Connected load:<br>Upto 2 kW  |   | Consumption in a month (Units)   | Rate P/unit |
|     | <u>Unmetered</u><br>Connected load:<br>upto 1kW<br><br>Connected load:<br>above 1kW upto 2 kW | Rs.80/connection/<br>per month<br><br>Rs.120/connection<br>/per month | x  | x           |
|     | <u>Metered</u>  | x   | First 50 units   | 130         |
|     |   | x   | 51-100 units   | 155         |
|     |   |   | Above 100 units  | 175         |
|     |   | x   | Subject to monthly minimum charge of<br>1 <sup>st</sup> kW – 40 units per month<br>2 <sup>nd</sup> kW – 20 units per month |             |

|            | <b>Category of consumer</b> | <b>Fixed charge (Rs.)</b>   | <b>Energy charges</b>  |                          |
|------------|-----------------------------|---|--|--------------------------|
| <b>1.3</b> | <b>DS – II (Metered)</b>    |   | <b>Consumption in a month (Units)</b>  | <b>Rate Ps/unit</b>      |
|            | Single phase                | First kW- Rs.25/ month/connection<br>Addl. kW - Rs.10/ kW or part thereof per month   | 1-100 units<br>101-200 units<br>201-300 units<br>Above 300 units   | 215<br>265<br>320<br>400 |
|            | Three Phase                 | 5 kW – Rs.180 / month/ connection<br>Addl. kW-Rs.10/ per kW or part thereof per month |  |                          |
|            |                             |   | Subject to monthly minimum charge of 1 <sup>st</sup> kW - 40 units per month<br>Additional kW or part thereof - 20 units per month |                          |

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

|            | <b>Category of consumer</b> | <b>Fixed charge (Rs.)</b> | <b>Energy charges</b>   |                       |
|------------|-----------------------------|---------------------------|---|-----------------------|
| <b>1.4</b> | <b>DS – III (Metered)</b>   |                           | <b>Consumption in a month (Units)</b>   | <b>Rate (Ps/unit)</b> |
|            |                             | Rs. 30/- kW/ month        | All units   | 275                   |
|            |                             |                           | Subject to monthly minimum charge 1 <sup>st</sup> kW – 40 units / flat per month<br>Additional kW – 20 units/flat per month |                       |

FPPCA as applicable will be charged extra.

## **2.0 NON-DOMESTIC SERVICE (NDS)**

### **Applicability**

Applicable for supply of electrical energy for non domestic consumers having sanctioned load Upto 60 kW, using electrical energy for light, fan and power loads for non – domestic purposes like shops, hospitals, nursing homes, clinics, dispensaries, restaurants, hotels, clubs, guest houses, marriage houses, public halls, show rooms, centrally air-conditioning units, offices, commercial establishments, cinemas, X-ray plants, Non – Government schools, colleges, libraries and research institutes,

boarding / lodging houses, libraries, railway stations, fuel – oil stations, service stations, All India Radio / T.V. installations, printing presses, commercial trusts, societies, banks, theatres, circus, coaching institutes, common facilities in multistoried commercial office / buildings Government and Semi – Government Offices, Public Museums and other installations not covered under any other tariff schedule.

Government educational institutions, their hostels and libraries, 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 – NDS-I

|  | <b>Category of consumer</b>       | <b>Fixed charge (Rs.)</b>    | <b>Energy charges</b>  |                    |
|--|-----------------------------------|------------------------------|--|--------------------|
|  |                                   |                              | <b>Consumption in a month (Units)</b>  | <b>Rate P/unit</b> |
|  | <b><u>Unmetered</u></b>           |                              |  |                    |
|  | Connected Load Upto 500 W (0.5kW) | Rs.105/connection/ per month | x  | x                  |
|  | Above 0.5 kW upto1 kW             | Rs.125/connection per month  | x  | x                  |
|  | Above 1 kW upto 2 kW              | Rs.160/connection/ per month | x  | x                  |
|  | <b><u>Metered</u></b>             | 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<br>Above 0.5 kW and upto 1 kW – 50 units<br>Above 1 kW – 70 units |                    |

FPPCA charges as applicable will be charged extra.

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

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

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

### Tariff Rates – NDS-II

| Fixed charge (Rs.)<br>Per month      | Energy charges   |             |
|--------------------------------------|--|-------------|
|                                      | Consumption in a month<br>(Units)                                  | Rate P/unit |
| Rs.140 /kW or part thereof upto 5 kW | 1-100 units  | 420         |
|                                      | 101-200 units  | 450         |
|                                      | Above 200 units  | 480         |
|                                      | Subject to a monthly minimum charge of 50 units/kW or part thereof |             |

FPPCA charges as applicable will be charged extra.

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

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

### Tariff Rates-NDS-III

| Fixed charge (Rs.)                                      | Energy charges  |             |
|---|---|-------------|
|   | Consumption in a month<br>(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. |             |

FPPCA charges as applicable will be charged extra.

### **3.0 IRRIGATION & AGRICULTURAL SERVCIE (IAS)**

#### **Applicability**

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

#### **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

Hatcheries, poutries and fisheries are not covered under unmetered supply.

##### **Metered supply**

###### **All units**

Rural feeder – 80 Ps/unit  
Urban feeder – 130 Ps/unit  
Subject to monthly minimum energy charges of –  
Rural feeder - Rs. 75/HP per month  
Urban feeder - Rs.120/HP per month

#### **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 Ps/unit
- Urban feeder – 200 Ps/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 upto 25 HP)**

##### **Tariff Rates**

| <b>Fixed charge (Rs.)</b>            | <b>Energy charges</b>   |                     |
|--------------------------------------|---|---------------------|
|                                      | <b>Consumption in a month (Units)</b>                             | <b>Rate Ps/unit</b> |
| 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 upto 99 HP).**

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

FPPCA charges as applicable will be charged extra.

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

#### **5.0 Public Water Works (Connected load upto 99 HP)**

##### **Applicability**

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

| <b>Fixed charge (Rs.)</b>            | <b>Energy charges</b>  |                     |
|--------------------------------------|--|---------------------|
|                                      | <b>Consumption in a month (Units)</b>                                | <b>Rate Ps/unit</b> |
| Rs. 100/HP or part thereof per month | All units  | 320                 |
|                                      | Subject to monthly minimum charge of 165 units / HP or part thereof. |                     |

FPPCA charges as applicable will be charged extra.

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

## 6.0 STREET LIGHT SERVICES

### Applicability

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

### 6.1 SS-I Metered Supply

#### Tariff Rates

All units - 340 Ps./unit

Subject to monthly minimum charge of –

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

### 6.2 SS-II Unmetered Supply

#### Tariff Rates

#### Fixed Charges

| SI. No. | Light Point Wattage              | Gram Panchayat | Nagar Palika / NAC / Municipality | Municipal Corporation |
|---------|----------------------------------|----------------|-----------------------------------|-----------------------|
| (i)     | Upto 100 W                       | Rs.60/month    | Rs.80/month                       | Rs.90/month           |
| (ii)    | Upto 101-250 W                   | Rs.150/month   | Rs.170/month                      | Rs.200/month          |
| (iii)   | 251-500 W                        | Rs.300/month   | Rs.330/month                      | Rs.370/month          |
|         | Monthly Minimum Charges per Mast | Rs.1500/month  | Rs.1700/month                     | Rs.1800/month         |

Above 500 watts the rates shall be pro-rata basis

FPPCA as applicable will be charged extra.

## **TERMS AND CONDITIONS OF LOW TENSION TARIFF**

The foregoing tariffs are subject to the following conditions.

### **1. Rebate for prompt payment**

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

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

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

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

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

### **3. Duties and Taxes**

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

### **4. Defective / Damaged / Burnt meters supply**

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

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

## **5. Shunt Capacitor Installation**

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

## PART - B: HIGH TENSION SUPPLY

### 7.1 HTS – I (11 kV/6.6 kV)

Applicable for supply 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<br>Rs./ kVA / Month of billing demand | Energy charges<br>Paise / kWh<br>All units - 418 |
|---|--|
| 220   |  |

- (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 418 Ps/unit, monthly.
- (iii) Surcharge of 7.5% will be levied on the demand and energy charges for supply at 6.6 kV.
- (iv) If in any month the recorded maximum demand exceeds 110% of contract demand, that portion of the demand in excess of the contract demand will be billed at twice the normal charges.

FPPCA charges as applicable shall be charged extra.

### 7.2 HTS – II (33 kV)

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

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

#### Tariff rates

| Demand charge<br>Rs. / kVA / Month of billing demand | Energy charges<br>Paise / unit<br>All units - 410 |
|--|---|
| 220  |   |

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

FPPCA charges as applicable shall be charged extra.

### 7.3 HTS – III (132 kV)

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

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

#### Tariff rates

| Demand charge<br>Rs. / kVA / Month of billing demand | Energy charges<br>Paise / unit |
|--|--------------------------------|
| 220  | All units - 405                |

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

FPPCA charges as applicable shall be charged extra.

### 7.4 HTSS (33 kV/11 kV)

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

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

Those consumers who are having rolling/re-rolling mill in the same premises will take additional contract demand for the rolling/re-rolling mill over and above the contract demand required for induction furnace. The consumer will have the option to segregate the rolling/re-rolling mill and take separate new connection following all prescribed formalities with a separate transformer. This new connection, if taken by the consumer will be allowed to be billed in appropriate tariff schedule. Such rolling/re-rolling mill will be allowed to avail power at 33 kV.

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

#### Tariff rates

| Demand charge<br>Rs. / kVA / Month of billing demand | Energy charges<br>Paise / unit |
|--|--------------------------------|
| 700  | All units 200                  |

- (i) Minimum monthly charges at Rs.1220 per kVA of contract demand per month shall be payable on monthly basis. Minimum hours of supply will be 630 hours per month. If for any particular month the hours of supply are less than the

minimum assured hours of supply as shown above then the minimum monthly charges for the month will be –

$$\left( \text{Rs. 700} + \frac{520 \times \text{Actual hours of supply}}{630 \text{ (Assured hours of supply)}} \right)$$

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

FPPCA charges as applicable shall be charged extra.

#### **Time of Day tariff (TOD)**

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

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

| <b>Demand Charges</b>                                    | <b>Normal rate of Demand Charge</b>  |
|--|--------------------------------------|
| <b>Energy Charges</b>                                    | <b>Rate</b>                          |
| <b>Time of use</b>                                       |                                      |
| (i) Normal period<br>(5:00 a.m. to 5:00 p.m.)            | Normal rate of energy charge         |
| (ii) Evening peak load period<br>(5:00 p.m to 11:00 p.m) | 120% of normal rate of energy charge |
| (iii) Off-peak load period<br>(11:00 p.m to 5:00 a.m)    | 90% of normal rate of energy charge  |

#### **Applicability and Terms and Conditions of TOD tariff:**

- (i) TOD tariff will be optional for all HT industries.
- (ii) The facility of aforesaid TOD tariff shall not be available to HT consumers having captive power plants and/or availing supply from other source through wheeling of power.

- (iii) The HT industrial consumers who have installed standby generating plants shall also be eligible for the aforesaid TOD tariff.
- (iv) After electing TOD tariff, if any industrial HT consumer on account of some reasons wants to go back to the earlier tariff according to the agreement, this facility shall be available to him only once in two years.
- (v) If the actual monthly consumption of such HT consumer, whose monthly minimum charges are based on units, is less than minimum consumption, then the difference (deficit) of units between the minimum consumption and actual consumption shall be billed at normal rate of energy charge prescribed for "Normal Period".
- (vi) In the event of applicability of TOD tariff to a consumer, the terms and conditions of the applicable tariff (such as monthly tariff minimum charge, etc.) shall continue to apply.
- (vii) In case, the consumer exceeds 110% of the contract demand, the demand in excess of contract demand shall be billed at twice the normal tariff applicable for the day time i.e. 5:00 a.m. to 5.00 p.m. irrespective of the time of use.

#### **Load Factor Rebate for all HT services**

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

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

## 8.0 Railway Traction Service (RTS)

Applicable to Railway Traction loads only.

### Tariff rates at 132 kV

| Demand charge<br>Rs. / kVA / Month of billing demand | Energy charges<br>Paise / unit<br>All units 433 |
|--|---|
| 180  |   |

- (i) 10 Ps/unit of surcharge, is to be billed for availing supply at lower voltages than 132 kV.
- (ii) The billing demand shall be the maximum demand recorded during the month or 85% of the contract demand whichever is higher.
- (iii) The minimum base energy charge will be billed on the basis of energy consumption at a load factor of 25% and PF of 90% on contract demand payable at 433 / 443 Ps/unit as applicable.

FPPCA charges as applicable shall be charged extra.

## TERMS AND CONDITIONS OF HT TARIFF

The foregoing tariffs are subject to the following conditions.

### 1. Rebate for Prompt Payment

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

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

### 2. Delayed Payment Surcharge (DPS)

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

### 3. Duties and Taxes

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

### 4. Power Factor Surcharge

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

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

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

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

#### **5. Power Factor Rebate**

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

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

#### **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 replacement**

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

8. If the actual recorded demand of a consumer exceeds 110% consecutively for three months Board may issue a notice and inform the consumer to get additional contract demand sanctioned or to limit their drawal as per their contract. Otherwise Board will take action as per provisions of the Act/Rules/Regulations.
9. The prevailing practice will continue for determining the contract demand of induction furnaces in the existing services connections. However, for new connections only, contract demand shall be based on the total capacity of the furnace and equipment as per manufacturer technical specifications and in case of difference of opinion, the provisions of clause No.6.39 and 6.40 of Bihar Electricity Supply Code shall apply.

## **9.0    Temporary Supply (LT & HT)**

### **9.1    Applicability**

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

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

### **9.2    Tariff**

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

### **9.3    Terms of Supply**

- (a)    Temporary supply under any category of service may be given for a period not exceeding 30 days in the first instance. The duration of which, however may be extended on month-to-month basis subject to maximum of one year.
- (b)    In addition to the charges mentioned above, the consumer shall have to deposit the following charges before commencement of the temporary supply:
  - (i)    Estimated cost of erection of temporary service line & 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.

#### **10.0 Seasonal Supply (LT & HT)**

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

|    | <b>Period of Supply</b>  | <b>Tariff Rate</b>                  |
|----|--|-------------------------------------|
| 1. | Upto 3 consecutive months in a year                                    | Appropriate tariff plus 35 percent  |
| 2. | More than 3 consecutive months and upto 6 consecutive months in a year | Appropriate tariff plus 25 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

The formula for fuel and power purchase cost adjustment is given below:

### Formula

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

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

Where,

Qc = Quantity of coal consumed during the adjustment period (in M.T)  
= (SHR x QPg) (1+TSL)x1000 / GCV

RC1 = Weighted average rate of coal supplied ex-power station coal yard as approved by the Commission for the adjustment period in Rs. / M.T

RC2 = Weighted average rate of the coal supplied ex-power station coal yard as per actual for the adjustment period in Rs. / M.T

Qo = Quantity of oil (in KL) consumed during the adjustment period  
= Generation (in MU) X Specific oil consumption approved by the Commission (ml. / kWh)

RO1 = Weighted average rate of oil ex-power station (in Rs./KL) approved by the Commission for the adjustment period

RO2 = Weighted average actual rate of oil ex-power station supplied (in Rs. / KL) during the adjustment period

QPg = Board's own power generation (in MUs) at generator terminal – approved auxiliary consumption

QPp = Power purchased from different sources and fed into Board's system (in MUs)

Rpp1 = Average rate of power purchase as approved by the Commission (in Rs. / kWh)

Rpp2 = Average rate of power purchased during the adjustment period (in Rs. / kWh)

VZ = Amount of variable charges on account of change of cost of unknown factors like water charges, taxes or any other unpredictable and unknown factors not envisaged at the time of tariff fixation (subject to prior approval of the Commission)

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.

## **PART-C: MISCELLANEOUS AND GENERAL CHARGES**

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

**11.1 Meter Rent**

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

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

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

**11.3 Testing / Inspection of consumer's installation:**

| <b>No.</b> | <b>Category / class</b>  | <b>Rate</b>   |
|------------|--|---|
| (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<br>Rs. 100.00 for three phase LT connection<br>Rs.300.00 for HT connection. |

**11.4 Meter Testing Fee:**

| No.   | Category / class                  | Rate        |
|-------|-----------------------------------|-------------|
| (i)   | Single Phase meter                | Rs. 50.00   |
| (ii)  | Three Phase meter                 | Rs. 100.00  |
| (iii) | Three Phase meter with CT         | Rs. 150.00  |
| (iv)  | Trivector & 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 |

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

| No.   | Category / class                | Rate       |  |
|-------|---------------------------------|------------|--|
| (i)   | Single Phase meter              | Rs. 50.00  | Cost of material, as required, will be borne by the consumer |
| (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 |  |

**11.6. Reconnection charge:**

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

**11.7 Supervision, Labour and Establishment charge for service connection:**

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

**11.8 Security Deposit:**

- (a) The consumer (except Kutir Jyoti rural and Kutir Jyoti urban) shall pay initial security deposit equivalent to the estimated energy charges including fixed / demand charges for a period of two months or as per the provisions of Bihar Electricity Supply Code notified by the Commission.
- (b) All Central Government and State Government departments are exempted from payment of security deposit. However all public sector undertakings & local bodies shall pay security deposit, as applicable.
- (c) The amount of security deposit is liable to be enhanced every year, in April-May of next year on the basis of average bills for previous years. In default of

payment of additional security deposit, wherever payable after review, the service line may be disconnected on serving thirty days notice and connection thereafter can be restored only if the deposit is made in full along with the prescribed reconnection charges and surcharge @1.5% per month or part thereof on the amount of outstanding.

#### **11.9 Interest on Security Deposit**

Security deposit made by a consumer shall bear interest as specified in Bihar Electricity Supply Code, payable at Bank rate notified by RBI from time to time. The interest will be calculated for full calendar months only and fraction of a month in which the deposit is received or refunded, shall be ignored. The interest for the period ending 31<sup>st</sup> 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.

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

## Chapter – 6

# Generation, Transmission, Wheeling charges and Open Access charges

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### 6.1 Generation Tariff

The generation tariffs are worked out based on the generation ARR approved by the Commission in para 4.13 and the net generation approved in para 4.5.2 of the chapter 4 of this order. The approved generation tariff is given in Table-6.1 below:

Table-6.1  
**Generation Tariff**

| Net generation (MU) | Fuel (Variable) costs (Rs.Cr.) | Fixed costs (Rs. crores) | Variable cost Paise/kWh | Fixed cost / kWh Paise/kWh | Total cost / KWh Paise/kWh |
|---------------------|--------------------------------|--------------------------|-------------------------|----------------------------|----------------------------|
| 279                 | 62.35                          | 80.27                    | 223                     | 288                        | 511                        |

### 6.2 Transmission Tariff

The transmission ARR, as approved in para 4.13 of chapter 4 is Rs.232.25 cores.

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

Table-6.2  
**Transmission Tariff**

| S.No. | Particulars                              | Approved by the Commission |
|-------|--|----------------------------|
| 1     | Total costs of transmission (Rs. crores) | 232.25                     |
| 2     | Energy available for transmission (MU)   | 8269                       |
| 3     | Transmission losses assumed (%)          | 4%                         |
| 4     | Energy delivered to distribution (MU)    | 7938                       |
| 5     | Transmission tariff (Ps./kWh) (1/4)      | 29.26                      |

**Accordingly, the Commission approves transmission charges at 29.26 paise/kWh for the year 2008-09.**

### 6.3 Wheeling Charges

The distribution ARR as approved in para 4.13 of chapter 4 is Rs.705.48 crores.

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

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

Table – 6.3

#### Wheeling charges at 33 kV Voltage Level

| S.No. | Details  | Approved by the Commission |
|-------|--|----------------------------|
| 1     | Energy input into transmission system (MU)                                       | 8269                       |
| 2     | Losses in transmission system (4%)   | 331                        |
| 3     | EHV sales (as approved by the Commission) MU                                     | 761 (at 132 kV)            |
| 4     | Energy input into 33 kV system [1-(2+3)] MU                                      | 7177                       |
| 5     | Total distribution cost (Rs. crores)   | 705.48                     |
| 6     | Distribution cost for 33 kV voltage levels (assuming 35% of item 5) (Rs. crores) | 246.92                     |
| 7     | Wheeling charges for 33 kV voltage level (item 6÷4) (Paise / Unit)               | 34.40                      |

**Accordingly, the Commission approves wheeling charges at 34.40 paise/kWh at 33 kV voltage level for the year 2008-09.**

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

Table-6.4

#### Wheeling charges for 11 kV Voltage Level

| S.No. | Details  | Approved by the Commission |
|-------|--|----------------------------|
| 1     | Energy input into 33 kV system (MU)  | 7177                       |
| 2     | Losses in 33 kV (6%)   | 431                        |
| 3     | Energy sales in 33 kV system as approved by the Commission (MU)                  | 455                        |
| 4     | Energy input into 11 kV system [1-(2+3)] MU                                      | 6291                       |
| 5     | Total distribution cost (Rs. crores)   | 705.48                     |
| 6     | Distribution cost for 11 kV voltage levels (assuming 30% of item 5) (Rs. crores) | 211.64                     |
| 7     | Wheeling charges for 11 kV level (item 6÷4) (Paise / Unit)                       | 33.64                      |

**Accordingly, the Commission approves wheeling charges at 33.64 Ps./unit at 11 kV voltage level for the year 2008-09.**

#### **6.4 Open Access Charges**

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

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

##### **6.4.1 Transmission Charges**

Based on the transmission costs worked out earlier, the approved transmission charges for open access consumers for the year 2008-09 are worked out as shown in Table-6.5 below:

Table-6.5

|  |   |
|--|---|
| Transmission ARR (Rs. crores)  | 232.25  |
| Average transmission capacity (MW)                                       | 1300  |
| Transmission charges for long term open access customers (Rs. /MW/Month) | Transmission ARR $\div$ (Average transmission capacity X 12) = 1,48,878     |
| Transmission charges for short term open access customers (Rs./MW/Day)   | Transmission ARR x 0.25) $\div$ (Average transmission capacity X365) = 1224 |

The Commission decides that the transmission charges in cash will be Rs.1,48,878/MW/month or part thereof for long term open access consumers and Rs.1224/MW/day or part thereof for short term consumers. In addition transmission losses of 4% will be reduced in kind from the energy input (i.e. energy injected at the point of injection) at the point of delivery.

### **Wheeling Charges**

For the energy input at 33 kV the wheeling charge shall be at 34.40 paise/kWh. In addition 6% of energy in kind will be deducted from the energy input, towards assumed losses in 33 kV network.

For energy input at 11 kV the wheeling charges shall be 33.64 Ps./kWh. In addition, 8% of energy in kind will be deducted from the energy input towards assumed losses in 11 kV network.

### **SLDC Charges**

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

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

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

### **Cross Subsidy Surcharge**

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

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

Where,

S = Surcharge

T = Tariff payable by the relevant category of consumers

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

D = Wheeling charges (Transmission and Distribution)

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

The cross subsidy surcharge approved based on the above formula is as follows:

|                                       |   |                 |
|---------------------------------------|---|-----------------|
| For 132 kV consumers                  | = | 175.74 Ps./kWh. |
| For 33 kV consumers (other than HTSS) | = | 142.34 Ps./kWh. |
| For 11 kV consumers (other than HTSS) | = | 112.77 Ps./kWh  |
| For HTSS consumers 33 kV              | = | 80.34 Ps./kWh   |
| 11 kV                                 | = | 26.70 Ps./kWh   |

### **Additional Surcharge**

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

### **Reactive Energy charges**

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

## Chapter-7

# Directives to BSEB

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### 7.1 General

In the last tariff order the Commission had observed that while there was ample scope for reducing costs and increasing efficiency in the operations of BSEB, serious efforts appear to be lacking. It is in the above context that certain directives were given for compliance by the Board. The Commission expected that Board would take prompt action on the directives and monitor their implementation. Unfortunately, action is yet to be taken on most of the important directives, which could make significant difference to operational efficiency and cost. In some cases action has no doubt been initiated, but overall the seriousness with which the directives were issued by the Commission does not appear to have gone home. BSEB does not appear to be as purposive in the pursuit of efficiency as its obligation to its consumers. Commission vide letter no. BERC-Tariff-2/07-154 dated 30.04.2008 communicated the observations on the status of implementation of the directives. **Implementation of these will be monitored by the Commission every quarter and their non-compliance shall invite action under provisions of the Act.**

In the above background, the Commission is constrained to repeat most of the directives which were given in the last tariff order and which have not been fully complied with, but also gives specific new directions.

### 7.2 Directives issued in Tariff Order for the year 2006-07: Compliance

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

#### **Directive-1: Cent Percent Metering**

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

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

BSEB shall take immediate action to provide meters to all such un-metered consumers and shall submit road map for providing meters to all these consumers and priority shall be given in providing meters to domestic and commercial consumers. Metering plan hence should be submitted to the Commission by 31<sup>st</sup> March 2007 so as to enable the Commission to review the progress and issue further directions in the matter as may be considered necessary.

### **Compliance by BSEB**

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

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

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

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

### **Commission's observations:**

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

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

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

*APDRP provides funds for metering. Board may also approach PFC and REC for funds to provide meters and see that total metering is done in the next two years 2008-09 and 2009-10. Action taken and status to be reported to the Commission by December 2008.*

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

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

**Compliance by BSEB**

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

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

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

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

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

**Commissions' observations:**

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

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

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

**Compliance by BSEB**

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

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

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

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

**Commission's observations:**

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

*The Board shall establish more number of testing laboratories in each circle to test more number of meters either new or defective. Setting up of a meter testing lab*

*may not cost much but the persons have to be trained in testing. The progress on upgrading the existing labs and setting up of new labs may be reported to the Commission quarterly. The first such report shall be submitted by December, 2008.*

**Directive-4: Efficient meters reading billing and collection**

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

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

**Compliance by BSEB**

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

**Commission's observations:**

*Action taken is noted. Spot billing with palm top computer may be extended to other towns also. It is understood the cost of the computers have come down to Rs.10,000/each and should be possible to provide more number on priority as introduction of spot billing with handheld computers have several advantages.*

*The present status of MRI for the HT consumers in all the circles shall be reported by October 2008.*

**Directive-5: Meter Reading of HT services**

The monthly meter reading of HT services shall be entrusted to a committee of high level officers of the Board. All the HT services below 500KVA contracted maximum demand, meter reading may be done by the concerned Assistant Engineer and those above 500KVA by the concerned Executive Engineer. Further certain percentage of meter readings in each category of consumers shall be done by senior officers of the Board upto the level of Chief Engineer to control pilferage of electricity. BSEB shall

issue suitable instructions in this regard immediately and the Board shall also review the percentage of check readings and take action in case of variation between normal meter reading read by meter reader and the check meter reading taken by the officers of the Board.

#### **Compliance by BSEB**

The Board has issued directives related to meter reading of HT consumers and inspection of industrial connections vide letter no. Com / Misc- 1059/06-795 dt. 14.12.2006 to all its officers for compliance.

#### **Commission's observations:**

*It shall be ensured that these instructions are being implemented by the field officers for which a suitable monitoring mechanism shall be established in the Board. Condition of the meter and meter seals shall also be mentioned in the report / meter reading statement. Board shall also submit a report whether there is any improvement in consumption levels etc., after issue of these instructions by October, 2008.*

#### **Directive-6: Replacement of old electromagnetic meters with static meters**

A report on the status of metering, type of meters provided in HT and other high value LT installations along with a programme for replacement of such meters with static meters shall be submitted to the Commission by 31<sup>st</sup> January 2007.

#### **Compliance by BSEB**

In compliance to the directive, the Board has furnished the details of H.T meters and high value L.T. meters vide letter No 100 dt 2-3-07. The status reported earlier is given below:

There were 303 defective H.T. meters, and 64 electromagnetic meters. In the metering package for 4 circles being done by BSEB, provision of 295 HT meters has been made. Out of this, 123 H.T. meters have been installed. In other 8 circles being done by PGCIL, there is a provision of 166 H.T meters. The stock of LT three phase meters available with the Board is adequate to meet 100% requirement of existing 3 phase consumers.

#### **Commission's observations:**

*The current status of replacement of old electro magnetic meters in HT services and high value LT services may be reported by 31<sup>st</sup> December 2008.*

#### **Directive-7: Reduction of Transmission and Distribution (T&D)**

A long term action plan for reduction of T&D losses for both technical and non-technical with relevant load flow studies be chalked out and submitted to the

Commission by March, 2007. The Board should ensure reduction of the T&D losses to 38% during FY 2007-08 and 34% during FY 2008-09.

### **Compliance by BSEB**

It has been planned to install systems with high accuracy class (0.2) ABT energy meters at grid sub stations to take all feeders under surveillance and close monitoring of power in flow and out flow from the grid sub stations with feeder wise metering. In turn, this will identify the most loss making feeders. This will be done by installing new generation electronic energy meters, which shall have communication facility to transmit data related to power flow, which shall also indicate load pattern as well as tampering details. It can be programmed that any tampering done at any place would be instantly intimated to area offices and / or head office wherever the associated equipments for surveillance will be installed and programmed. This project is planned for feeders of 220 KV, 132 KV and 33 KV voltage level.

This will be done in phases and for first phase, proposals amounting to Rs. 10 crores has been sent for approval to the Govt.

Once the fund is received the work of first phase is likely to be completed in one year.

### **Commission's observations:**

*The directive is that the Board shall chalk out a long-term action plan for reduction of technical and non-technical losses. The reply is that the Board proposes to install high accuracy (0.2) meters ABT meters on 220 KV, 132 KV and 33 KV feeders at cost of Rs.10.00 crores. These do not require such high accuracy meters for energy accounting on feeders. The ABT meter may be required at generating stations and at input points. What is required is to draw an action plan for reduction of technical and non-technical losses. Whereas certain investments are required for reduction of technical losses for augmentation system etc., the reduction of non-technical losses requires better metering, proper billing, etc., and better management of the system. The Board appears to be not serious on reduction of T&D losses, other-wise they would have paid attention for preparation of action plan, rather than giving a general reply.*

*The Board is directed to pay serious attention and prepare an action plan for reduction of losses and submit the action plan **by October, 2008**. The Board may also furnish the details of high accuracy meters proposed to be provided and obtain approval of the Commission for investment of Rs.10.00 crores on the metering.*

### **Directive-8: Energy Audit and Demand Side Management**

Energy audit is an important and essential tool to identify the high loss (technical and commercial) areas in the system. For carrying out the energy audit, meters are required to be provided at all the feeders from 220KV to 11KV level and also distribution transformers on LT side.

Though it is stated by the Board that meters are provided on a number of feeders, many of them are defective or non-functional. BSEB is directed to replace all such meters and provide correct meters on all feeders from 220KV to 11KV level as well as LT side of the distribution transformer on highest priority.

The energy audit should be taken up first in all the towns with a population of fifty thousand and above. The first status report on the action taken for energy audit in all the towns should be reported to the Commission by 31<sup>st</sup> March, 2007 to issue further directives in this regard, if required.

#### **Compliance by BSEB**

To have effective Energy accounting, the Board has to provide feeder meters from 220 KV to 11 KV. Under APDRP schemes, being executed by Power Grid in 8 circles and by Board in 4 circles following provision has been made.

|                     |   |            |
|---------------------|---|------------|
| 33 KV feeder        | - | 444 nos.   |
| 11 KV feeder meters | - | 1000 nos.  |
| DT meters           | - | 11613 nos. |

So far 201 nos. of 33 KV meters and 620 nos. of 11KV meters and 4187 no of D/T meters have been installed.

Action for remaining 4 circles is being processed by the Board and for execution of the same, the State Govt. has been requested to release fund.

Regarding consumer meters, the action plan has been given in compliance of directive No.1 for meter less category of consumers and for the replacement of defective meters; action plan has been indicated in compliance of Directive No.2.

#### **Commission's observations:**

*BSEB shall submit a single line diagram showing feeders from 220 kV to 11 kV clearly indicating where functional meters exist, where meters are to be replaced and where new meters are to be installed. A tabular chart indicating the status – feeders and DT-wise of the meters shall also be submitted **by October, 2008.***

*Providing of meters on balance feeders and distribution transformers may be expedited. The reply is silent on providing meters on 132 kV and 220 kV feeders and these feeders also are to be metered if not done already. The meters have to be read periodically and the energy loss to be arrived at. This is an important task, to conduct*

*energy audit. A report may be submitted **by December, 2008** on the energy audit conducted so far and the loss levels arrived at.*

*The Board has not indicated as to what action has been taken for energy audit in towns with a population of fifty thousand and above as required under this directive . Action taken report in this regard shall be submitted **by October, 2008**.*

#### **Directive-9: Pilferage of Electricity**

The need of the hour is to activate the organization to curb the pilferage of power within the premises of provisions of Indian Electricity Act 2003 and also the Indian Penal Code. A task force is to be constituted in different zones to which the entire licensee area is to be divided to carry out massive raid to arrest pilferage. In case of detection of such theft/pilferage, the concerned authority of the area and personnel attached to them, who have duties to supervise the work, have to be made answerable for punitive action. Those found committing mischief of pilferage should be booked and penal action should visit them.

#### **Compliance by BSEB**

To prevent theft of energy and to catch the culprits engaged in theft of energy, Board has created one Anti Power Theft (APT) cell at Patna. All supply circles have also a cell for APT. Regular raids are being conducted in different areas.

Board at times has difficulty in getting force and magistrate for conducting raids. Recently on Board's request DGP, Bihar has sent instructions to field offices to provide required force to Board for carrying out raids. In addition, Board is installing meters of Secure Meters make which are tamper proof and can detect pilferage and can send message to computers and mobile phones.

Recently Board has created a Special Task Force (STF) with selected engineers to organize raids to detect theft and to curb the power theft.

#### **Commission's observations:**

*Action taken by the Board in organizing the raids to detect pilferage etc., of energy is noted. This has to be intensified further and the work of Taskforce is to be monitored at higher level. Wherever, if it is observed that malpractice or pilferage of energy took place due to negligence of the departmental personnel, suitable disciplinary action shall be initiated against such person. Energy audit will help in identifying high loss areas so as to concentrate on such areas.*

*The Board shall also check the energy supplied to HT and high value LT consumers on the basis of load flow from the power sub-stations.*

#### **Directive-10: Enumeration of Agriculture Pumpsets & Other Service Connections**

It is understood that there are a number of unauthorized agricultural pumpsets and other service connections connected to the system particularly in the rural areas. The Board shall get all agricultural pumpsets and other service connections enumerated to identify the unauthorized connections and get them regularized by providing meters. A report on the action taken to get agricultural and other connections enumerated to identify the unauthorized connection and to regularize them shall be placed before the Commission by 30<sup>th</sup> June, 2007.

#### **Compliance by BSEB**

From the statistics given for growth of numbers of consumers, it is found that there is practically no new demand of electricity for agriculture pumpsets. This trend is continuing for over past 10 years. In view of this, most of the lines and infrastructure of old disconnected pumpsets are in damaged conditions and in many places conductors from lines have been stolen. APT, which conducts raids, has no reports of any regular use of disconnected old pumpsets. Even after OTS scheme no demand has come from old disconnected pumpsets for regularization / reconnection. Due to shortage of manpower it is difficult to identify unauthorized agricultural and other connections and therefore it is difficult to regularize the connections.

#### **Commission's observations:**

*A large percentage of electricity is being consumed by the agriculture sector. There might be unauthorized connections. Thus it would be necessary that the agriculture pumpsets and other service connections are get enumerated to identify such unauthorized connections. The consumption by such unauthorized connections come under non-technical losses. It is essential to identify them and then either regularize or remove them. A special task force shall be constituted for this work within a month and the work completed within a time frame of 6 months.*

*Compliance of constitution of a taskforce along with its terms of reference to identify such connections shall be reported by September, 2008.*

#### **Directive-11: Assessment of Agricultural Consumption:**

Though energy consumed by agriculture sector constitutes a significant part of total energy consumption in the State, all the irrigation pumpsets in the State are unmetered and billed at flat rate basis. The BSEB for realistic assessment of energy consumption by agriculture sector, shall take steps to correctly assess consumption / load factor of agriculture consumers based on connected load, area, region, cropping pattern, number of crops, water sources, etc. by arranging proper metering for all

irrigation pumpsets in the State wherever it is not done. Since it may take time, meanwhile meters shall be installed on LT side of Distribution Transformer exclusively connected to agriculture consumers/ pumpsets. This would give fairly reasonable assessment about consumption of electricity by pumpsets. **The BSEB shall come out with an action plan for this job by 31<sup>st</sup> 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 31<sup>st</sup> July, 2007.**

#### **Compliance by BSEB**

As explained in status of directive No.1 the Board has planned to provide meters to all the meter less consumers in phases. The agricultural pump sets having flat rate tariff will be covered by providing meters. Therefore, assessment of consumption in an area, region and water sources basis can be undertaken after meters are installed.

#### **Commission's observations:**

*Providing of meters for pumpsets may be expedited. Meters may be provided at few distribution transformers exclusively feeding pumpsets and arrive at the consumption of pumpsets connected to the transformers. This gives fairly realistic consumption of pumpsets. Action taken shall be reported by March, 2009.*

#### **Directive-12: Regulation of Power Supply to Rural Areas**

The Board may study the practices being followed in other States and draw out a scheme to regulate power supply to rural areas, particularly, to agricultural pumpsets, and submit such a scheme to the Commission for consideration and approval by 31<sup>st</sup> March 2007.

#### **Compliance by BSEB**

In Bihar most of the feeders are mixed in both urban and rural. So in the present situation, practically it is not possible to make distinction between rural and urban supply.

The Board sent a team of officers to study the arrangement in Gujarat for power supply to rural areas. In Gujarat rural feeders provide power for 8 hours a day.

The rural feeders are required to be separated so that any policy with regard to rural supply can be formulated and implemented. In this connection a special task force was constituted under Dr. Satish C. Jha, Chairman, Special Taskforce on Bihar of the Planning Commission to prepare a road map for development of power sector. A sum of Rs. 6710 crores has been estimated towards strengthening of distribution network in the state.

Presently, with large number of PSS coming up in rural areas under Rajeev Gandhi Gramin Vidyutikaran Yojna (RGGVY), Board will be able to separate large number

of rural feeders. We also intend to strengthen network specially for agricultural pumpsets. With the available resources it will take some time.

#### **Commission's observations:**

*In Gujarat all villages get 24 hours 3 phase supply. Only irrigation pumpsets get 8 hours supply. 11 KV Feeders feeding pumpsets are separated from the village feeders.*

*At least 3 hours of power supply to agricultural consumers shall be ensured during lean period between 00-00 hours to 06-00 hours every day. The timings of this arrangement in various areas has to be announced in advance.*

*A report on the status of implementation of RGGVY and how it would improve the quality of supply to the villages and agricultural pumpsets shall be submitted to the Commission by December, 2008.*

#### **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 31<sup>st</sup> March 2007.

#### **Compliance by BSEB**

The Board has formulated schemes under APDRP which covers restoration of damaged lines, construction of new 33/11 KV PSS, 11KV lines and PSS as well as augmentation of existing 33/11 KVPSS and 11KV line and DSS. Strengthening of sub-transmission system is also under execution under RSVY.

In addition to this, the Board has also formulated following schemes under state plan for execution during 2007-08.

| <b>S. N</b> | <b>Name of scheme</b>   | <b>Total Value in Crore</b> | <b>Required for (07-08) in Crore</b> |
|-------------|---|-----------------------------|--------------------------------------|
| 1           | Installation of L.T. capacitor in DT in selected areas of Patna and divisional towns. (Gujarat Pattern) | 5.00                        | 2.00                                 |
| 2           | Capacitor Bank in P/S/S for Patna (10 nos.)   | 4.80                        | 2.00                                 |
| 3           | Distribution system strengthening (not covered in any scheme)   | 75.00                       | 2.42                                 |
| 4           | Additional RE work on the pattern of Gujarat system.(for separation of 11 KV feeders)                   | 2358.68                     | 33.90                                |
|             | <b>Total</b>  | <b>2831.59</b>              | <b>109.07</b>                        |

**Commission's observations:**

*A report on the implementation of the schemes under APDRP and State Plan along with, start/completion/target dates and how many villages are getting quality supply on implementation of the schemes shall be submitted by October, 2008.*

**Directive-14: Management Information System**

The Board is directed to take urgent steps to build a credible and accurate database and management information system with unbundled costs and expenditure of the three businesses of the Board viz. Generation, Transmission and Distribution to make information available on operational and financial issues and get such data updated on monthly basis. Advantage of IT must be taken to institute the MIS. Action must be taken urgently on this and the action taken shall be reported to the Commission by 31<sup>st</sup> March, 2007. Care must be taken to see that the next tariff petition is supported by an accurate and credible database.

**Compliance by BSEB**

The Board has already-initiated steps for developing IT infrastructure so as to introduce an effective management Information System in the Board. In fact, Bihar State Electricity Development Corporation Ltd. (a Govt. of Bihar Undertaking) have also been approached for providing Consultancy services and send a technocommercial proposal to study BSEB's core business functions, analyze the IT related requirement and formulate an IT strategy and road map of the Board. Bihar State Electricity Development Corporation Ltd. has also sent their techno – commercial proposal recently, which is under examination. Once the IT infrastructure including adequate software application is developed, the Board will be in a position to build a credible and accurate database and management information system with unbundle costs and expenditure of the three business of the Board viz., Generation, Transmission and Distribution to make information available on operational and financial issues and get such data updated on monthly basis.

As regards availability of information / data required on operational and financial matters with the BSEB, it is to mention that the Board is maintaining most of the financial data as required under the provision of Electricity (Supply) (Annual Accounts) Rule, 1985 and preparing annual accounts of every year accordingly. So far as the details of units actually consumer units billed, amount billed for consumers under various sub – categories as per tariff, are concerned, it is relevant to mention the Revenue Statement No- I have been revised so as to generate all the information as per the approved tariff of BERC, However, in view of acute shortage of manpower in the Board, the compilation of data in the revised format could not start so far.

Efforts are being made to avail the help of computer to get the Revenue Statement No –I complied in revised format.

**Commission's observations:**

*The current status of implementation of IT shall be submitted to the Commission by September, 2008. It is observed that whenever some data is called for, it is stated that information has to be obtained from field. A system has to be developed so that entire data is available at headquarters and one agency for providing data / information to the Commission notified.*

*Compilation of data for Revenue statement No.1 in the revised format to generate all data / information as per the approved tariffs for the BERC shall be implemented without any further delay and the compliance reported to the Commission by October, 2008.*

**Directive-15: Annual Accounts of the BSEB**

The Board is directed to accord highest priority and ensure that the accounts of these years are duly audited by Accountant General, Bihar by March, 2007. BSEB should file the ARR and Tariff Petition for the next year supported with audited accounts.

**Compliance by BSEB**

The Board has been according highest priority to update its pending annual accounts. As on date, the annual accounts for the year 2002-03 has already been certified by the Accountant General. Annual Accounts for the year 2003-04 and 2004-05 have also been audited by the Account General, Bihar and are in the process of certification. Annual accounts for the year 2005-06 has been approved by the Board and submitted to A.G. Bihar for audit. Further annual accounts of 2006-07 is process of being finalized.

**Commission's observations:**

*Action taken is noted. Certification of Accountant General for FYs 2004-05 and 2005-06 shall be obtained by October, 2008. Annual Accounts for FYs 2006-07 and 2007-08 shall be get audited by Accountant General, Bihar by October, 2008 and December, 2008 respectively.*

**Directive-16: Arrears:**

The Board should prepare area-wise list of consumers having huge arrears and furnish to the Commission in the format given below.

The outstanding from the State Government Departments, Government Undertakings, local bodies and private parties shall also be furnished separately by 31<sup>st</sup> January, 2007 in the following format given below:

| <b>Format</b> |  |  |                              |                                  |              |
|---------------|--|--|------------------------------|----------------------------------|--------------|
| (Rs. lakhs)   |  |  |                              |                                  |              |
| <b>S. N</b>   | <b>Name of consumer / organization</b> | <b>Month &amp; year the amount due</b> | <b>Energy Charges billed</b> | <b>Delayed payment surcharge</b> | <b>Total</b> |
|               |  |  |                              |                                  |              |
|               |  |  |                              |                                  |              |

Action taken shall be reported to the Commission **by 31<sup>st</sup> March, 2007**.

**Compliance by BSEB:**

Electricity supply division wise, Electricity Supply Circle Wise and electric Supply Area wise details of outstanding dues (provisional) as on 31.03.2007 are enclosed. Electric Supply Circle wise and Government Department wise details of outstanding dues (provisional) as on 31.3.2007 are also enclosed Annexure – XIV

As regard furnishing consumer wise details of outstanding dues, all concerned field officers have been instructed to furnish the consumer wise details to the Chief Engineer (Commercial) for submission to the Commission. However, it is to be mentioned in this connection that consumer wise details are available in the consumer ledger maintained in respective Division / Sub Division and Circle level, which may be verified on the spot, if required.

So far as the question of taking steps with the State government at the level of Chief Secretary for collecting the outstanding dues against Government Departments and its undertaking etc., as suggested by the Commission is concerned it is to be mentioned that as per decision taken in the meeting held under the Chairmanship of the Chief Secretary Bihar a committee consisting of the following officers has been constituted vide office order no. 30 dt. 9.5.2007 of Energy Department, Govt. of Bihar:

|                                |                 |
|--------------------------------|-----------------|
| 1. Finance Commissioner, Bihar | Chairman        |
| 2. Secretary, Energy Deptt.    | Member          |
| 3. Chairman, BSEB,             | Member          |
| 4. Secretary, BSEB,            | Convener Member |

The aforesaid committee has taken decision on the following points in its first meeting held on 11.7.2007:

- i. Joint verified amount of arrear energy bill outstanding against various State Government Department (Except Urban Development) to be paid to the Bihar State Electricity Board in installment during the current financial year after making additional budget provision.

- ii. Joint verified DPS amount outstanding against different State Government Departments be adjusted out of loans and interest thereon paid to the Bihar State Electricity Board from the State Government.
- iii. Payment of regular monthly energy bills raised against State Government Department after making budget provision.

As per decision of the aforesaid committee the Secretary Department of Energy, Bihar Patna has been requested vide Board's letter no. 1831 dt. 13.8.2007 for taking action for adjustment of Joint Verified DPS amount against the loan received from the State Govt. and interest thereon.

**Commission's observations:**

*Huge arrears of DPS raised against very old arrears – in many cases where the consumer/institutions cannot even be located – which may not be realizable is lying in the Boards accounts. Suitable action on this has to be initiated. The DPS raised shall be collected promptly at least in future.*

*Action taken is noted. A report on the progress made so far on joint verification of amount of arrear energy bill, DPS amount on regular monthly energy bills outstanding against various Government department shall be submitted before the Commission **by October,2008**. The current status of arrears of Government Departments after due adjustment etc., and from consumers shall also be submitted to the Commission by December 2008 along with a soft copy.*

**Directive-17: Collection of Arrears**

The Board should submit the details of recovery of arrears under the first OTS announced in April 2006 and also the recovery under the second OTS scheme in force from October 2006 onwards in format given below. The first report shall be submitted by 31<sup>st</sup> January 2007 and the second report after the scheme is over in March 2007.

**Format**

(Rs. Lakhs)

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

**Compliance by BSEB**

All concerned field offices have been instructed to furnish the details of recovery of arrears under One Time Settlement Scheme in the prescribed format.

Electricity Supply Circle wise and Electricity Supply Area wise details of outstanding dues, collection under OTS, DPS waived etc in 1<sup>st</sup> phase i.e. from 12.4.2006 to 30.04.2006 and 2<sup>nd</sup> phase i.e. from 2.10.2006 to 31.03.2007 are enclosed.

As regards submission of consumer wise details it is to mention that consumer wise detail are voluminous. The consumer wise details are available in the consumer ledger maintained at respective Division / Sub division and Circle level, which may be verified on the spot if required. Annexure-XV.

**Commission's observations:**

*The information furnished on amounts collected under OTS 1 and 2 are noted. However, reply given with regard to submission of consumer-wise details is not acceptable. The information called for on the subject may be submitted in the proforma already furnished by the Commission by December, 2008.*

**Directive-18: Asset Register**

The Board shall maintain separate asset registers for the 3 businesses viz. Generation, Transmission and Distribution. If such registers are already available, the same may be submitted to the Commission for perusal. In case such registers are not available the same may be got prepared by July, 2007

**Compliance by BSEB**

Assets register showing the details of individual assets related to Board's different activities viz., Generation, Transmission and Distribution have not been prepared since inception. The Board has issued direction to its field officers for preparation of asset register in the proforma designed and evolved for the purpose and circulated in the year 2000. However, in view of acute shortage of accounts personnel in the Board, most of the accounting of assets (sub- head wise) showing opening value, additions during the year, subtraction during the year, depreciation charged during the year and closing value of assets namely, land and land rights, building, Hydraulic works other civil works plant and machinery, lines and cable network, vehicles, furniture and fixtures, office equipments in each of the accounting units. The said details are complied and exhibited in schedule – 19 to the annual accounts as per the provision of Electricity (Supply) (Annual Accounts) Rule, 1985.

**Commission's observations:**

*The reply given by BSEB for delay in preparing the asset register is not acceptable. Preparation of the asset register is being prolonged since the year 2000. BSEB, seems to have circulated the instructions to prepare the asset register in the proforma designed, but has not pursued properly.*

*It is essential to maintain the asset register function-wise. Asset Register for three business i.e. Generation, Transmission and Distribution, as required, should be prepared so that there is smooth transfer of assets when the Board is unbundled into Generation, Transmission and Distribution Companies. Without Asset Register it is also difficult to identify those assets which have fully depreciated. Accordingly, a group of officers need to be constituted and made responsible for preparation of the Asset Register within a time frame. If it is difficult to get it done with the existing manpower, outsourcing this job may be examined. Asset register have to be got prepared and compliance reported by **March, 2009**.*

**Directive-19: Time of Day (ToD) Tariff**

Some consumer organizations have suggested to introduce TOD tariff which will help flattening of load curve and reduce peak demand. The National Electricity Policy also stipulates for introduction of TOD tariff. BSEB shall come up with a plan for introduction of TOD tariff and metering for HT consumers in the first phase followed by LT industries and Non -Domestic consumers. Such plan shall be submitted to the Commission along with next tariff petition.

**Compliance by BSEB**

In the tariff petition, for the revision of tariff for FY 2008-09, contains proposal of TOD rates for all the H.T. category of consumers except railway traction.

**Commission's observations:**

*The Commission has considered the proposal and taken appropriate decision in the tariff order.*

**Directive-20: Recovery of Fuel Price Adjustment from Consumers Paying Monthly Minimum Charges**

An issue has been raised by a number of consumers/consumer organizations that the Board is recovering the fuel adjustment charges on monthly minimum consumption and not on the actual energy consumption by the consumer. Thus the consumer has to pay fuel adjustment charges for the energy actually not consumed. The Commission is of the opinion that the fuel adjustment charges shall be charged only on energy actually consumed and not on monthly minimum consumption.

The BSEB shall submit a factual report in the matter to the Commission by 31st January 2007.

### **Compliance by BSEB**

As per Board's circular No. Misc –2424/98/ED/3 dated 4.9.1999 the fuel surcharge was being recovered from all categories of the consumers except HT consumer on the basis of Minimum Monthly Units fixed by the Board as per Tariff. However as per Tariff order issued by the Bihar Electricity Regulatory Commission date 29.10.2006 effective from 1.11.2006 no fuel surcharge is being recovered from the consumer.

### **Commission's observations:**

*The issue is recovery of fuel price adjustment on energy not consumed. Relevant reply is not furnished by the Board. Is the Board recovering fuel surcharge on the energy not consumed or on total energy consumed? This shall be clarified by September, 2008.*

### **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.

### **Compliance of Directives by BSEB:**

The Board has not submitted any proposal to the Hon'ble Commission for the fixation of fuel and power purchase adjustment.

### **Commission's observations:**

*The Board is advised to submit suitable proposal for power purchase adjustment costs, if any, half yearly with all relevant details and data for approval by the Commission.*

### **Directive-22: Adjustment of Payment of Current Bills against Delayed Payment Surcharge (DPS)**

The issue shall be examined in detail and a report on the procedure followed shall be submitted to the Commission by 31<sup>st</sup> January 2007 in order to enable the Commission to make a study of the issue and issue necessary directions in the matter.

### **Compliance by BSEB**

As per notification no. 477 dated 29.10.2002 of the Board any payment made by a consumer shall first be adjusted towards the interest / surcharge, if any, and then against arrears / dues, if any and thereafter against the current dues which is absolutely in order.

It is also to mention in this connection that in all financial Instructions like Banks, LIC, PFC etc. the amount deposited by the defaulter customers is first adjusted against the outstanding amount of interest and after liquidating the amount of interest, the principal amount is adjusted. Board feels that this procedure should continue for its survival.

**Commission's observations:**

*Though the system of adjusting the amount first for surcharge etc., is followed, account is to be maintained separately that how much is adjusted towards surcharge etc., and how much towards current bills due. Such information should be available to the consumer.*

**Directive-23: Organizing Operational Circles as Cost Centres**

The Board was directed to draw out a action plan to organize the cost centres upto division level to make them accountable for their performance on profit and loss account and submit reports to Commission by 31<sup>st</sup> March 2007.

**Compliance by BSEB:**

The Board has already decided to book all its expenditure including cost of power and generation as also expenses on transmission attributable to operating circle with effect from April 2007 so as to make them independent profit centre accountable for their performance by setting targets in the area of (I) energy accounting, i.e., energy drawn ands billed in the circle, Distribution loss, (ii) Metering, (iii) Meter reading, billing & revenue collection.

**Commission's observations:**

*Action taken making circles as cost / profit centers is noted and appreciated. The same concept may be extended to division level also to make the divisions more accountable.*

*The Board shall submit the targets set and performance of the operation as independent profit centres for the year 2007-08 as reported in the above compliance to the directive **before December, 2008.***

**Directive-24: Performance of BSEB's own generating stations and their parameters**

The Board shall submit a detailed report on the current status of R&M and restoration of generating units at both the power stations along with report on action taken about performance parameters of its generating stations by 31<sup>st</sup> January, 2007.

**Compliance by BSEB**

Muzaffarpur TPS has been transferred to joint venture company i.e., Vaishali Power Generating Company. Its performance parameters will be fixed by CERC while approving the tariff, of MTPS.

Barauni TPS under Board's control has 2 units of 50 MW and 2 Units of 110 MW each. All the units were under shutdown. Work of R&M of one 110 MW unit has been given to BHEL. For which Rs. 257.10 crores has been sanctioned under RSVY scheme.

This unit of 110 MW after renovation and modernization (R&M) work was put on operation, in July 2007 but due to some technical snag the unit tripped after sometime. The unit has again started generation from 24-11-2007. After the unit becomes stable then the realistic performance parameters will be furnished. The BHEL has assured 80% availability of units after successful completion of R&M work.

**Commission's observations:**

*The operational performance of the unit shall be reported, as the performance of Barauni TPS unit is very erratic even after R&M. Action taken on R&M of the other 110 MW shall be reported. The programme for R&M of units shall be reported to the Commission by October, 2008.*

**Directive-25: New Generation Projects**

The BSEB is directed to expedite the process of setting up of new generation projects in the State and submit quarterly progress report on the same to the Commission. The first such report shall be submitted in April 2007.

**Compliance by BSEB**

1. Action has already been initiated for setting up extension of 2X250 MW units at BTPS on turn key basis at an estimated cost of Rs. 2250 Cr under state plan, for which BHEL has submitted technical offer which is under examination.
2. Extension units of 2X250MW have been sanctioned at an estimated cost of Rs.2250 Cr at MTPS and will be carried out by VPGCL, a joint venture company of NTPC and BSEB.
3. BSEB has cleared 8 coal based power projects under Merchant Power plant for which MoU has been signed with M/s Vikash Metal & Power, Kolkata for setting up 2X250 MW units at Begusarai. MoU has also been signed with M/s JAS Infrastructure Capital Pvt. Ltd. for setting up 9X135 MW units at Pirpainti.
4. There is also a proposal to set up (3X660 MW) TPP at Nabinagar which will be carried out by Joint Venture Company of NTPC and Govt. of Bihar. After the units become operational 75% of power (1485 MW) will be available to BSEB. MoU has already been signed.

**Commission's observations:**

*The current status on setting up of 2x250 MW units at BTPS and its likely Commissioning schedule and also the current status of other projects mentioned may be reported to the Commission by October, 2008.*

**Directive –26: Employee cost**

As per information made available by the BSEB, the employee cost of BSEB is high which stands at about 40% of the total revenue income from sale of power at existing tariff. It works out to be around 120 paise per kWh of energy sold, whereas, in other states, even where the State Electricity Board has not been restructured, it is of the order of 60 paise per kWh of energy sold. There is no infrastructure in some crucial and important activities whereas there is excess staff in some departments, which are not so significant. The BSEB is directed to enforce economy and austerity measures in their operations and take urgent steps to reduce establishment cost by utilizing the existing man-power optimally imposing restrictions on creation of posts, introducing revised work load norms and also reducing posts which are not significant BSEB shall set up a committee to suggest and recommend deployment of existing man-power to achieve optimum utilization of available work force.

BSEB is also directed to identify the surplus staff and deploy them, after proper training, in the areas of customer service, such as meter reading, billing and revenue realization, so as to provide better service to the consumers.

A report on the action taken may be sent to the Commission by 30th June 2007.

**Compliance by BSEB**

Bihar Electricity Regulatory Commission contains that the employee cost of BSEB is high which stands at about 40% of the total revenue income from sale of power of existing tariff. It works out be around 120 paise per KWH of energy sale. Wherever 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. BSEB has been directed to enforce economy and austerity measures in their operations and to take urgent steps to reduce establishment cost by utilizing the exiting man-power optimally imposing restrictions on creation of posts introducing revised work load norms and also reducing posts which are not significant. It has been further directed to set up a committee to suggest and recommend employment of exiting man-power to achieve optimum utilization of available work force. It has also been directed to identify the surplus staff deploy them after proper training, in the areas of consumer service, such as meter

reading, billing and revenue realization, so as to provide better services to consumers.

1. Accordingly a committee was constituted vide Board's office order no. 473 dt. 12.2.2007 read with office order no. 909 dt. 26.3.2007 under the chairmanship of Sri B P Ambastha, Chief Engineer (Project & Design) to suggest and recommend deployment of existing man-power to achieve optimum utilization of available work force and to identify the surplus staff and their deployment after proper training in the areas of customer service, such as meter reading, billing and revenue realization.
2. The Committee in its meeting held on different dates discussed the issue in detail and observed that some of the posts should be abolished and the employee if any on that post be utilized in suitable required job.

As per report of the committee all-together in 14 categories of officers, a total of 109 posts are to be abolished. Similarly in 103 categories of workmen, 1302 posts are to be abolished. The services of 148 workmen working on the above posts has been recommended for utilization in areas of meter reading, billing, revenue accounts technical and other posts keeping in view their pay-scale status and suitability. The matter is being placed before the board for approval of the recommendation of the Committee.

**Commission's observations:**

*Action taken is noted. A detailed study report shall be submitted to the Commission on norms of workload and manpower required to rationalize the manpower and reduce the costs. Unless action is taken to get the costs reduced, Commission may not approve this level of high costs in future. Likely cost savings by implementation of the recommendation of the Committee may be submitted to the Commission by October, 2008.*

**Directive-27: Energy conservation**

A well-known proverb is that energy conserved is energy generated and to conserve energy, the consumers are required to be well educated by way of demonstrations, holding meetings at various levels and through print media so that energy consumption can be reduced considerably by adopting economy measures such as use of energy efficiency lighting, high efficiency and standard make household appliances, high efficiency pumpsets preferably with labels of Bureau of Energy Efficiency (BEE) and other energy conservation devices. All categories of consumers should be well apprised of the newly developed latest energy conservation devices so that the energy conserved can be utilized for more productive purposes and in

consonance with direction issued by the Ministry of Power, Government of India, it shall be made mandatory to use ISI mark motor pumpsets, power capacitor, foot / reflex valves in all new connections in agriculture sector.

#### **Compliance by BSEB**

Board is adopting different measures from time to time for creating awareness among consumers regarding conservation of energy.

#### **Commission's observations:**

*The action taken is evasive. More thrust is required to be given on energy conservation. This will be possible by creating awareness among consumers for conservation of energy and by educating the ways and means to be taken by the consumers to conserve energy. In this regard a campaign programme through electronic and print media has to be developed and implemented.*

*The Board shall report on the concrete steps taken by the Board in educating the consumers on the need for energy conservation etc., and the initiatives taken by the Board in its own organization to implement energy conservation **by December, 2008**. BSEB shall also initiate a programme to encourage the consumers including Kutir Jyoti to use compact florescent lamps (CFL) to help in conservation of energy.*

#### **Directive-28: Investment Programme**

It is observed that the Board has neither submitted any future investment programme nor the details of capital works in progress (CWIP) with the Tariff Petition. The BSEB is directed to submit within next three months their investment programme for the next 5 years and details of CWIP. **A quarterly progress report on major investment works should also be furnished regularly to the Commission and the first such report for quarter ending March, 2007 be submitted in April 2007.**

#### **Compliance by BSEB:**

#### **Major Capital Works in progress:**

##### **Generation**

- ❖ R&M of Barauni Thermal Power Station Unit No. 6&7 and Muzaffarpur Unit No. 1&2 sanctioned under RSVY.
- ❖ Estimated cost – Rs.506 crores
- ❖ Rs. 193 crores released to BHEL and NTPC.
- ❖ Barauni Unit No. 6 and Muzaffarpur Unit No.2 being restored to start generation 60-70 MW in November 2007.
- ❖ Complete R&M of units to be completed by 2009.

##### **Transmission**

- ❖ **Sub- transmission scheme Phase –I:**
  - The revised sanctioned scheme amounting to Rs. 552.40 crores under RSVY.

- Work executed by PGCIL.

❖ **Physical progress**

- Construction of Grid S/S - 17 Nos.
- Construction of Power S/S - 01 Nos.
- Transmission Line - 876 KM

❖ **Sub – Transmission Scheme, Phase – II, Part – I:**

- Approved cost - Rs. 629 crores
- Fund released to Powergrid - Rs. 409.66 crores
- The revised estimated cost - Rs. 1023.13 crores under RSVY.
- Work is under progress
- Land for the construction of 9 (Nine) Nos. Grid Sub- station identified and acquisition of land is under progress. Orders placed by PGCIL. Progress is going on.

❖ **Sub – Transmission Scheme, Phase – II, Part – II:**

- The scheme approved under RSVY - Rs. 1240.80 crores
- Execution of scheme is likely to start shortly.
- Rs. 271.00 crores also posed to ADB for funding.

❖ **Transmission (State Plan)**

- 132/33 KV Grid Sub- station at Belaganj is operating with one power transformer. 2<sup>nd</sup> transformer installation under progress.
- Grid Sub- station at Masaурhi and Kishanganj (2X20 MVA) under construction to be operational by end of December 2007;
- Emergency Restoration System at the cost of Rs. 9.40 crores being procured to be available by March'08.
- Thermo Vision Camera, Distance Fault Locator and other important testing equipments have been procured.
- Construction of 132 KV Fatuha – Gaighat transmission lines is to be taken up shortly.
- Construction of transmission system for evacuation of surplus power of 3 Nos. Sugar Mills already taken up.

**Distribution**

- ❖ Construction of 16 Nos. new Power S/S at different places being taken up.
- ❖ Procurement of distribution transformers of capacity 200 KVA, 100 KVA & 63 KVA - 300 Nos. (approx.) to augment the distribution system.
- ❖ Re- conductoring of 438 KM of overloaded 33 KV, 11KV, LT line.
- ❖ Temporary LT line on Bansh Balla - 800 KM being converted in regular manner.
- ❖ Construction of new TRW (3Nos)
- ❖ Construction of High Tech fully computerized Lab at Patna for expeditious meter testing.
- ❖ Procurement of Mobile Vehicle with hydraulic telescopic equipments--14 nos. to ease maintenance work.
- ❖ Provision of capacitor Bank at Power S/S and Distribution S/S
- ❖ Underground cabling at Patna for drinking water pumpsets.
- ❖ Establishment of training center for both officers and staff at Patna.
- ❖ Regular progress report on major capital works shall be quarterly submitted.

**Commission's observations:**

*The R&M works of Muzaffarpur Power Station would not come now under BSEB as it has been handed over to a joint venture company. For transmission and distribution projects the following details may be furnished.*

- *Works already completed with costs and sources of funds.*

- *Works under execution with costs sources of funds and completion schedule.*
- *Works programmed for future with costs and completion schedule and sources of funds.*

*A report may be furnished by December, 2008.*

*It is also directed to furnish whether the works are planned based on any study and if, so a copy of the study may be submitted to the Commission along with the above report.*

### **Directive-29: APDRP Schemes**

The status of implementation of these schemes, amount utilized upto 31st December, 2006, the benefits accrued by way of increase in metered sales, reduction of distribution loss, improvement in quality of supply, revenue etc. shall be reported to the Commission by 31<sup>st</sup> March 2007.

#### **Compliance by BSEB**

##### **APDRP**

|                                       |   |                    |
|---------------------------------------|---|--------------------|
| Approved cost                         | - | Rs. 854 crores     |
| Revised sanctioned cost of the scheme | - | Rs. 1066.58 crores |
| Amount paid to PGCIL & others         | - | Rs. 599.62 crores  |

##### **Physical Progress:**

- New 33/11 KV Power S/S - 29 Nos.
- R&M of Power S/S - 198 Nos.
- New 33KV Line - 289 KM
- New 11 KV Line - 585 KM
- Re – conductoring of 33 KN Line- 634 KM
- Re – conductoring of 11 KN Line- 3400 KM
- Consumer Meter - 283325 Nos.
- System Meter - 2190 Nos.
- New DT - 1806 Nos.
- R&M of DT - 5275 Nos.
- The scheme is being executed by PGCIL under 12 circles of the State.
- Action is being taken to start the work under rest of 4 (four) circles.

##### **Rural Electrification:**

- The RE work of 24 districts are being executed by PGCIL at the sanctioned cost of Rs. 1384.53 crores.
- The RE work of 6 districts are being executed by NHPC at the sanctioned cost of Rs. 233.50 crores.
- The RE work of 8 districts is to be taken up by Bihar State Electricity Board at the proposed cost of Rs. 635.23 crores under RGGVY.
- Present status of RE works

Total Villages - 39015

Total Electrified Villages - 28941

Details are given in Annexure – XVI & XVII.

##### **Commission's observations:**

*The progress is noted. The Board is directed to furnish total works programmed under APDRP and works already completed and the programme for completion of balance works, if any. Is the benefit of these works evaluated either by PGCIL or BSEB, if so, the report may be furnished to the Commission. A report containing the above details shall be submitted to the Commission **by December, 2008**.*

### **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 31<sup>st</sup> March, 2007.

#### **Compliance by BSEB**

Details of Registered and Effective consumers as on 31.3.2006 is enclosed.

As desired by the BERC all concerned field officers have been instructed to submit the action taken report to the Chief Engineer (Commercial).

#### **Commission's observations:**

*The current status of registered and effective consumers shall be furnished invariably to the Commission **by December, 2008.***

#### **Directive-31: Cost of supply and cross subsidy**

As per Clause (g) of section 61 of the Electricity Act, 2003, the Commission is to ensure that the tariff progressively reflects the cost of supply and cross subsidy is reduced within a specified period. In this context, the Commission directs the Board to carry out a study to ascertain voltage-wise and consumer category-wise cost of supply. This is necessary for the purpose of better tariff design as also to find out the nature and extent of cross subsidy. The BSEB shall carry out the study and submit the study report to the Commission within a period of six months.

#### **Compliance by BSEB**

The Board has been calculating the cost of supply Voltage wise and consumer category – wise in the proforma of Central Electricity Authority, New Delhi every year based on its annual accounts.

#### **Commission's observations:**

*What is being done is the cost arrived at based on the revenue realized dividing energy consumed for each category. The study required is how much it costs to the Board to serve each category of consumers. This study shall be got done and report submitted to the Commission **by December, 2008.***

### **Directive-32: Restrictions on consumption of Energy**

Since generation of energy is quite insignificant in the State and the power available including that purchased from other agencies is not adequate, the Board has been resorting to unscheduled load shedding. Though some part of the urban areas are privileged in this matter for getting supply of electricity, rural area is the worst casualty. The view of the Commission is that if one does not have adequate resources to cater to the requirement of the vast masses who are needy, rationing is the only option in a welfare state where everyone has equal right for use of a scarce commodity. It is high time in the State that people should be conscious in the matter of energy consumption and should put restriction on use of electricity voluntarily which would be self regulating, though it cannot be ruled out that exigency may arise when it could be regulatory compulsion for mandatory restriction on consumption of electricity. **The Commission directs the Board to educate the consumers to cooperate with the Board in restricting the use of electricity by voluntary effort.**

#### **Compliance by BSEB**

In view of the limited power availability in the State, Board has to meet all the essential loads, which results in other town and rural areas to suffer load shedding. The question of putting restriction in consumption appears to be difficult. Moreover the per capita consumption in Bihar is the lowest and the same is required to be improved over a period of time set under National tariff policy.

#### **Commission's observations:**

*Since the energy available to the States from Central generating stations has considerably improved, power available to both urban and rural areas might have been improved. The current status of power supply available to both urban and rural areas may be furnished to the Commission. Action may be taken to educate or prevail consumers to conserve energy in view of shortage conditions prevailing in the State. This is a part of energy conservation measure.*

### **Directive-33: SCADA and Data management**

The Commission feels that for effective working of distribution system a time bound programme for implementation of SCADA and data management is essential. **A report on implementation of such a scheme should be submitted by the Board for approval by the Commission by March, 2007.**

#### **Compliance by BSEB:**

With a view to provide integrated management of all aspect of distribution system, Capital Town of Patna has been identified and work has already been taken up under

SCADA, which is being implemented by Powergrid. The major areas of work to be implemented under SCADA /DMS project for efficient & effective operation, maintenance of distribution network as follows:-

- (i) Computerized Billing and Collection System
- (ii) Computerized customer Care System
- (iii) SCADA /DMS System
- (iv) Communication System
- (v) A Common Master Billing Centre, Customer Care & SCADA /DMS Center at Patelnagar, Board Colony, Patna
- (vi) 30 Billing Collection Centres
- (vii) 45 Remote Terminal Unit / Data Concentrators
- (viii) a Mix of FO/ MAR Network for data / voice communication.

The work is in the final stage of its completion and expected completion schedule as submitted by Power grid is 31/12/2007. However with all constrains, the work is most likely to be completed by 31/03/2008.

As far its implementation for entire distribution system of Bihar is concerned, it will be taken up after arranging necessary fund aid creating infrastructure along with considering the experience of SCADA project presently under progress of Patna town.

#### **Commission's observations:**

*The commissioning of the SCADA has been delayed. Concerted efforts have to be made for immediate commissioning. The current status of implementation of SCADA and the area covered by the system shall be reported to the Commission by October, 2008.*

#### **Directives brought forward for continued compliance**

The Commission feels that all the directives in the tariff order FY 2006-07 needs to be repeated in the present tariff order for FY 2008-09 also. The Board is directed to communicate the targets for implementation of the directives to all the concerned officers of the BSEB. A quarterly progress report shall be furnished to the Commission.

### **7.3 NEW DIRECTIVES**

#### **Directive-1: HT Consumer cells in BSEB**

HT industrial consumption accounts for 34% of the total energy sales and the contribution to the revenue of the Board is substantial. The industrial consumers are cross subsidizing the domestic and agricultural consumers who are supplied power below the average cost of supply. it is therefore expected that the Board provides them quality power and service to them. Their complaints regarding electricity supply

should be attended promptly. Keeping this in view, it is desirable that the Board establishes a HT cell in the head office at Patna and at important Urban Industrial Centres in the state. The cell at the headquarters should be headed by an Executive Engineer with supporting staff. The cell shall be a single window contact for attending to all their problems. The Board shall prepare a scheme for establishment of such cells and ensure that these are functional within a period of three months. Compliance may be reported by 31<sup>st</sup> December 2008.

#### **Directive-2: Issues relating to high value consumers**

The number of HT consumers, LT high value consumers (both L.T industrial and commercial) and the estimated revenue for the year 2007-08 as given in Tariff Petition – Format-1 and Format-27 are indicated as follows:

| S.No | Category                 | No. of Consumers | Revenue (Rs Lacks) | % of Total Revenue |
|------|--------------------------|------------------|--------------------|--------------------|
| 1    | H.T (other than Railway) | 708              | 36568              | 25.3               |
| 2    | H.T Railway              | 15               | 21364              | 14.7               |
| 3    | L.T Industry             | 14130            | 12086              | 8.3                |
| 4    | L.T Commercial -II       | 140000           | 16575              | 11.5               |

723 HT consumers are contributing 40% of the total revenue.

14130 L.T industrial consumers are contributing 8.3% of total revenue.

1,40,000 L.T Commercial consumers are contributing 11.5% of total revenue.

Similarly High value domestic consumers contribute large portion of revenue.

If meter reading, billing and collection of these consumers are tackled on priority basis 60% of revenue is ensured.

#### **Priority is to be given on following operational aspects in case of above consumers.**

- Replacement of electromagnetic meters by static meters
- Replacement of stopped / defective meters.
- Checking of all H.T services by the Special Task Force officers atleast once in 3 months.
- Checking of Nil consumption & Bill stopped services which were earlier recording about 1000 units per month.
- High value LT industrial commercial services and domestic consumers (monthly bill exceeding Rs 1000) to be inspected by Special Task Force atleast once in six months.

### **Directive-3: Monitoring of H.T and High Value L.T consumer meter readings**

Meter readings of different consumers are taken by BSEB officers/staff at different levels.

At the time of taking meter readings, the meter reading staff shall observe the followings aspects.

- Condition of seals of terminal box and meter cover
- Condition of meter box
- Condition of meter glass, C.T connections etc.
- External condition of the service
- Proportionate consumption with reference to existing load usage.

The meter reader shall record the condition of above aspects for every service, where the meters are read and submit the recorded observation to the next immediate officer. The officers concerned shall go through these observations and initiate action for rectification of any defects/ deficiencies immediately. This will help in arresting revenue leakage.

BSEB shall cause necessary instructions to the concerned officers and staff and monitor the compliance. Action taken may be reported to the Commission by 31<sup>st</sup> December 2008.

### **Directive-4: Prompt release of supply to new consumers**

New applicants approaching Board for new connections are to be dealt with promptly and action taken avoiding delays at every level.

Required number of meters shall be procured and kept in stock. Providing connections to new consumers shall not be delayed for want of meters. It is brought to the notice of the Commission that in certain cases release of new connections is being delayed for want of meters. In such cases, Board shall allow consumers to purchase their own meters of specified quality, capacity and make. Such meters may be tested at Board's testing labs and provide new connections avoiding all possible delays.

### **Directive-5: Reduction of AT & C Losses**

The AT&C losses for FY 2006, FY2007 and FY 2008 which are indicated in the tariff petition for FY 2008-09 are very high. The segregation of technical and commercial

losses through proper loss study shall be done and report on this shall be submitted before the Commission **by December, 2008.**

The BSEB shall collect 100% of the monthly bills amount and another minimum 10% of the arrears outstanding every month.

**Directive-6: Furnishing information and data**

The BSEB is not able to furnish the necessary information and data whenever required by the Commission and many times, the information or data furnished was inadequate and or contradictory. BSEB shall update regularly and keep the necessary information and data readily available. BSEB shall ensure that whenever required by the Commission, the correct and complete information or data shall be furnished promptly.

**Directive-7: Peak Load Restriction**

In view of shortage of power in the State, the BSEB may resort to load restrictions during peak hours between 6 PM to 10 PM to industries except continuous process industry depending on availability of power.

**Directive-8: Strengthening / Maintenance of Distribution Network**

The Commission has observed in the past that there had been frequent interruptions in power supply to consumers due to faults in distribution system. In order to provide quality supply to these consumers it is essential that regular maintenance works are carried out for this purpose. BSEB is directed to chalk out a programme short-term as well as long-term for strengthening / maintenance of the distribution network and submit to the Commission **by December 2008.**

## Chapter-8

# Power sector in Bihar – A way forward

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### 8.1 A brief overview of BSEB

The BSEB, as mentioned earlier is an integrated power utility responsible for generation, transmission and distribution of electricity in the State of Bihar. The BSEB is a State Transmission Utility (STU) and a deemed licensee in the State for electricity distribution under the transitional provision contained in section 172 (a) of the Electricity Act, 2003. The Government of Bihar is required to functionally restructure the BSEB under sections 131 and 132 of the Act.

BSEB operates one thermal generating station at Barauni with an installed capacity of 320 MW (2X110+2x50). The other thermal station at Muzaffarpur with an installed capacity of 220 MW (2X110) was handed over to a joint venture company of BSEB and NTPC.

The BSEB has a transmission network as given below:

| Voltage | Transmission (Ckt. Km.) | Substation (Nos) |
|---------|-------------------------|------------------|
| 220 KV  | 1127                    | 7                |
| 132 KV  | 4350                    | 61               |

The Board serves about twenty lakh consumers through 391 Nos, 33/11 kV Substations, 33 kV and 11 KV distribution network of 50150 (Ckt.Km.) and fifty thousand distribution transformers. About 88% of the consumers served are domestic and industry is hardly 0.7%.

### 8.2 Need for augmenting own generating capacity

It is painful to note that the State has hardly any generation of its own and practically entire power requirement is dependent upon share given to Bihar in Central generating plants located in eastern region. Any power utility cannot run efficiently without a reasonable generating capacity of its own. In the interest of the energy security of the State, BSEB needs to take very urgent steps to augment its own generating capacity. This item has to be given top priority by the BSEB and the Government of Bihar.

### **8.3 Performance of BSEB**

There is considerable scope for improvement of the performance of BSEB. A number of directives were issued by the Commission to the BSEB in the tariff order for 2006-07, but the compliance of these directives to improve the performance is casual. It is essential for BSEB to improve its performance, in all its activities, particularly commercial and operational performance to reduce the costs and sustain itself as an independent entity without budgetary support or grant from the State Government. Some of the issues are discussed and measures suggested to improve performance of BSEB during the period ahead.

#### **8.3.1 Transmission and Distribution Losses (T&D Losses)**

The high level of T&D losses in BSEB is of considerable concern to the consumers, State Government and the Commission. The level of loss for the size of distribution system as it exists are quite high. The level of losses in its own statement is about 41.4% during the year 2007-08 and proposed to be reduced to 40.5% during FY 2008-09 against the target levels of 38 % and 34 % fixed by the Commission for FYs 2007-08 and FY 2008-09 respectively in the tariff order for the year 2006-07. The loss is only an estimated figure as a substantial number of consumers are not metered and their consumption is only assessed, the losses could be even higher than estimated. There is an urgent need to reduce the loss level, which is well within the control of the Board. Necessary directives have already been given. However, we are reiterating them for strict compliance.

1. Metering of all consumers – particularly domestic and commercial in Rural and Urban areas (Directive-1).
2. Replacement of stopped / defective meters on priority.
3. Replacement of old electro magnetic meters with static meters commencing with urban areas giving priority for replacement in high value services.
4. Spot billing, preferably with hand held instruments initially in all urban areas; this will, to a large extent, eliminate human errors in billing.
5. Installation of high accuracy meters as per CEA guidelines in all HT and other high value consumers and reading them with MRI.
6. Simultaneous with the above measures of metering and meter reading, action to be taken for intensive energy audit by providing meters to all 220 kV, 132 kV, 33 kV and 11 kV feeders and Distribution transformers.

As is known, periodical recording of energy input and energy sent out will provide the data / information on high loss areas so that efforts could be made to effectively handle both technical and commercial losses under the respective feeders / distribution transformers.

Though some efforts are being made by the Board in metering and conducting energy audit etc. these measures taken by the Board are inadequate. More serious and concerted efforts are required.

Simultaneous to the above, vigilance activity shall be stepped up to curb pilferage of energy by enforcing the provisions of the Electricity Act.

The above measures shall be implemented by fixing targets at the division and circle levels, and shall be closely monitored by the Board at the highest level, to reduce the loss to the targeted levels fixed by the Commission in this order.

### **8.3.2 Metering**

Metering of all consumers is a prerequisite for energy audit and reduction of T&D losses. Directives are already given for cent percent metering and replacement of non-functioning / defective meters. But the implementation is tardy.

Under Section 55 of the Act, no licensee shall supply electricity after expiry of two years of appointed date except through installation of a correct meter. The period of two years is already over. As stated the Board requires about 5.08 lakh single phase and 26,207 three phase meters to replace the defective / functional electro magnetic meters. Out of this, about 3.48 lakh single phase and 14,402 three-phase meters are stated to have been replaced. The balance have to be replaced during 2008-09.

As mentioned above, a large number (8.8 lakh) of meters have to be provided for unmetered services. Top priority has to be given for this. What is required is funding and procurement of meters. Top priority is being given by the Government of India for providing meters for the unmetered services as required under the Act. The Board shall approach the Government of India and the financial institutions such as PFC & REC to provide funding. This should be done on a priority and complete the job of providing meters to all the unmetered services by the year 2009-10.

The Commission need not stress the importance of providing meters to all unmetered services and replacement of defective / old electromagnetic meters and also

metering of all feeders etc as it will greatly help in energy accounting by proper energy audit and reducing the losses particularly commercial losses.

BSEB shall develop a scheme for introduction of prepaid metering and initiate a pilot scheme for its application.

#### **8.4 Management Information System (MIS)**

The Board is lacking in credible and accurate database management information system. It is the need of the hour, the Board initiate steps for developing IT infrastructure so as to introduce an effective management information system. The Board also has to take steps to build accurate database and MIS with unbundled cost and expenditure of the three businesses of the Board namely Generation, Transmission and Distribution to make information available on operational and financial issues and get such data updated on monthly basis. The Board also needs to update the MIS to receive and monitor the billing, revenue collections, T&D losses of different regions, interruptions, equipment failures, breakdowns of lines etc., as and when required.

#### **8.5 Distribution Sector Reforms**

The Board shall organize the supply divisions and circles as cost / profit centers to account for energy, distribution loss management, billing and revenue realization and other activities.

The supply division and circles shall be made accountable for their performance by fixing targets for -

- distribution loss reduction
- sales promotion and sales revenue
- revenue realization
- distribution transformer failures
- supply interruptions etc

The achievements against targets fixed shall be closely monitored by the Board and the Chief Engineers and remedial action taken to achieve the targets. An incentive scheme may be introduced to incentivise for better performance.

#### **8.6 Implementation of RGGVY**

Bihar is one of the states where electrification of villages and households is the lowest. The Government of India has launched the RGGVY to electrify all the villages

and extend infrastructure to electrify all the households by the year 2011-12. Though the public sector undertakings such as NTPC, PGCIL, NHPC are entrusted with the electrification of villages and providing infrastructure to extend supply to the households, BSEB shall take over the system after completion of work from the PSUs who have been entrusted with the job of electrified villages etc and manage the distribution system. BSEB shall develop institutions such as franchisee etc to manage the distribution and where franchisees are not coming forward, the Board shall organize its own staff to manage the distribution system and serve the consumers so that the infrastructure developed could be put into beneficial use, account for the energy supplied and realize resources.

#### **8.7    Restructuring of the BSEB**

The State Government has already taken a decision to restructure BSEB and the process is in progress. Functional restructuring, has given positive results in some of the states, particularly in the distribution sector. In the absence of any final decision on restructuring, the Board has not yet prepared its long term business plan and lacks long term focus in its functioning.