

BIHAR ELECTRICITY REGULATORY COMMISSION



Case No. 41 of 2016

Tariff Order

Truing-up for FY 2015-16,
Annual Performance Review (APR) for FY 2016-17,
Annual Revenue Requirement (ARR) and Determination of
Tariff for FY 2017-18

For

**BIHAR STATE POWER GENERATION COMPANY LIMITED
(BSPGCL)**

Issued on 9th March, 2017
(With Effect from 1st April, 2017)

CONTENTS

| | |
|--|-----------|
| ORDER | 1 |
| 1. Introduction | 5 |
| 1.1 Bihar Electricity Regulatory Commission (BERC) | 5 |
| 1.2 Functions of BERB | 5 |
| 1.3 Bihar State Power Generation Company Limited (BSPGCL) | 6 |
| 1.4 Profile of BSPGCL | 7 |
| 1.5 Commission's Orders issued earlier to BSPGCL | 8 |
| 1.6 Admission of Current Petition and Public Hearing Process | 9 |
| 1.7 Approach of this order | 10 |
| 1.8 Contents of this order | 11 |
| 2. Summary of Petition filed by BSPGCL for Truing-up for FY 2015-16, Annual Performance Review for FY 2016-17 and Annual Revenue Requirement for FY 2017-18 | 12 |
| 2.1 Summary of the petition for Truing up for FY 2015-16, Annual Performance Review for FY 2016-17 and Annual Revenue Requirement (ARR) for FY 2017-18 | 12 |
| 2.2 Request to the Commission | 13 |
| 3. Stakeholder's Objections/Suggestions, BSPGCL's Response and Commission's Observations. | 15 |
| 3.1 Introduction | 15 |
| 4. Truing-up for FY 2015-16 | 16 |
| 4.1 Background | 16 |
| 4.2 Summary of Truing-up for FY 2015-16 proposed by Petitioner | 17 |
| 4.3 Capital Investment | 18 |
| 4.4 Gross Fixed Assets | 22 |
| 4.5 Depreciation | 24 |
| 4.6 Interest and Finance Charges | 28 |
| 4.7 Interest on working capital | 28 |
| 4.8 Return on Equity | 29 |
| 4.9 Operation and Maintenance Expenses | 29 |
| 4.9.1 Employee cost | 29 |
| 4.9.2 Repairs and Maintenance (R&M) Expenses | 30 |
| 4.9.3 Administration & General (A&G) Expenses | 31 |
| 4.9.4 Total O & M expenses | 33 |
| 4.10 Non-Tariff Income | 34 |
| 4.11 Annual Revenue Requirement | 35 |
| 5. Annual Performance Review for FY 2016-17 | 37 |
| 5.1 Background | 37 |
| 5.2 Status of BTPS R&M | 38 |
| 5.3 Status of BTPS Extension Project (2 x 250 MW) | 38 |
| 5.4 Generation from BTPS Unit 6 & 7 | 38 |
| 5.5 Performance and Cost parameters | 39 |
| 5.5.1 Plant Availability Factor (PAF) | 39 |
| 5.5.2 Plant Load Factor (PLF) | 39 |
| 5.5.3 Auxiliary Consumption | 40 |
| 5.5.4 Gross and Net Generation | 41 |
| 5.5.5 Station Heat Rate (SHR) | 41 |
| 5.5.6 Specific Oil Consumption | 42 |
| 5.5.7 Transit Loss of Coal | 42 |
| 5.5.8 Cost of Oil | 43 |
| 5.5.9 Cost of Coal | 43 |
| 5.5.10 GCV of Coal and Oil | 47 |

| | |
|---|-----------|
| 5.5.11 Fuel Cost/Variable cost..... | 47 |
| 5.6 Capital Investment..... | 49 |
| 5.7 Funding of Capital Expenditure | 52 |
| 5.8 Gross Fixed Assets | 52 |
| 5.9 Depreciation | 54 |
| 5.10 Interest and Finance Charges | 57 |
| 5.11 Return on Equity..... | 60 |
| 5.12 Operation and Maintenance (O&M) Expenses | 62 |
| 5.12.1 Employee Cost | 62 |
| 5.12.2 Repairs and Maintenance (R&M) Expenses | 64 |
| 5.12.3 Administration and General (A&G) Expenses | 65 |
| 5.12.4 Allocation of Holding Company Expenses | 67 |
| 5.12.5 Expenses Capitalised | 68 |
| 5.12.6 Summary of Operations and Maintenance (O&M) Expenses for FY 2016-17 (RE) | 68 |
| 5.13 Interest on working capital..... | 69 |
| 5.14 Non Tariff Income..... | 70 |
| 5.15 Sale of infirm power | 71 |
| 5.16 Annual Fixed charges..... | 72 |
| 5.17 Energy Charges | 73 |
| 5.18 Annual Revenue Requirement (ARR)..... | 73 |
| 6. Annual Revenue Requirement and Determination of Generation Tariff for FY 2017-18..... | 74 |
| 6.1 Background..... | 74 |
| 6.2 Generating Stations..... | 74 |
| 6.3 Generation from BTPS Units 6&7 | 74 |
| 6.4 Performance and Cost parameters | 75 |
| 6.4.1 Plant Availability Factor (PAF) | 75 |
| 6.4.2 Plant Load Factor (PLF) | 76 |
| 6.4.3 Auxiliary Consumption | 76 |
| 6.4.4 Gross and Net Generation of BTPS..... | 77 |
| 6.4.5 Station Heat Rate (SHR)..... | 78 |
| 6.4.6 Specific Oil Consumption..... | 78 |
| 6.4.7 Transit Loss of Coal | 79 |
| 6.4.8 Cost and GCV of Oil | 80 |
| 6.4.9 Cost and GCV of Coal..... | 81 |
| 6.4.10 Approved Performance and Cost Parameters for FY 2017-18 | 81 |
| 6.5 Fuel Costs..... | 82 |
| 6.6 Capital Expenditure | 83 |
| 6.7 Funding of Capital Expenditure | 84 |
| 6.8 Gross Fixed Assets | 85 |
| 6.9 Depreciation | 86 |
| 6.10 Interest and Finance Charges | 88 |
| 6.11 Return on Equity..... | 91 |
| 6.12 Operation and Maintenance (O&M) Expenses | 93 |
| 6.12.1 Employee Costs | 94 |
| 6.12.2 Repairs and Maintenance (R&M) Expenses | 96 |
| 6.12.3 Administration and General (A&G) Expenses | 97 |
| 6.12.4 Allocation of Holding Company Expenses | 98 |
| 6.12.5 Summary of Operations and Maintenance (O&M) Expenses | 98 |
| 6.13 Interest on working capital..... | 99 |
| 6.14 Non Tariff Income..... | 100 |
| 6.15 Annual Fixed charges for FY 2017-18 | 100 |
| 6.16 Annual Revenue Requirement (ARR) for FY 2017-18 | 101 |
| 6.17 Generation Cost..... | 102 |

| | |
|--|------------|
| 7. Directives | 103 |
| 7.1 Introduction | 103 |
| 7.2 Directives in Tariff Order dated 21 st March, 2016..... | 103 |
| 7.2.1 Directive 1: CISF personnel engaged for security purpose..... | 103 |
| 7.2.2 Directive 2: Date of Commercial operation of BTPS units 6&7 | 104 |
| 7.2.3 Directive 3: Providing meters to assess auxiliary consumption | 104 |
| 7.2.4 Directive 4: Operational performance parameters..... | 105 |
| 7.2.5 Directive 5: Status of commissioning of Unit-8 and Unit-9 of BTPS extension project..... | 105 |
| 7.2.6 Directive 6: Business Plan | 106 |
| 7.3 New Directives..... | 106 |
| 7.3.1 Unit 7 of BTPS availability and Generation..... | 106 |
| 7.3.2 Maintenance of asset/property Register | 107 |
| 7.3.3 Ratio of difference grades of coal used..... | 107 |
| Annexure-I | 113 |
| Annexure – II | 120 |

LIST OF TABLES

| | |
|--|----|
| Table 2.1: Annual Revenue Requirement proposed in Truing-up for FY 2015-16..... | 12 |
| Table 2.2: Revised ARR proposed in APR for FY 2016-17 | 12 |
| Table 2.3: Revised Generation Cost proposed in APR for FY 2016-17..... | 13 |
| Table 2.4: Annual Revenue Requirement projected for FY 2017-18 | 13 |
| Table 2.5: Generation Cost Projected for FY 2017-18 | 13 |
| Table 4.1: Annual Revenue Requirement proposed in Truing-up for FY 2015-16..... | 17 |
| Table 4.2: Break-up of Net opening CWIP proposed for FY 2015-16 | 18 |
| Table 4.3: Capital investment and CWIP proposed in truing up for FY 2015-16 | 18 |
| Table 4.4: Capital investment approved in truing up for FY 2015-16..... | 22 |
| Table 4.5: Gross Fixed Assets proposed in truing up for FY 2015-16 | 23 |
| Table 4.6: Gross Fixed Assets approved in truing up for FY 2015-16 | 24 |
| Table 4.7: Depreciation proposed in truing up for FY 2015-16 | 24 |
| Table 4.8: Depreciation approved in truing up for FY 2015-16 | 27 |
| Table 4.9: Employee Expenses proposed for FY 2015-16 | 29 |
| Table 4.10: Employee Expenses approved in truing-up FY 2015-16..... | 30 |
| Table 4.11: Repairs & Maintenance Expenses approved in truing-up FY 2015-16..... | 31 |
| Table 4.12: Administration and General Expenses proposed for FY 2015-16 | 31 |
| Table 4.13: Administration and General Expenses approved in truing up for FY 2015-16 | 32 |
| Table 4.14: Total O&M Expenses proposed in truing up for FY 2015-16..... | 33 |
| Table 4.15: Total O&M Expenses approved in truing-up for FY 2015-16 | 33 |
| Table 4.16: Annual Revenue Requirement proposed in true up for FY 2015-16..... | 35 |
| Table 4.17: ARR approved in truing up for FY 2015-16..... | 36 |
| Table 5.1: Revised Completion schedule of BTPS Unit – 6 and 7 | 38 |
| Table 5.2: Projected Availability Factor for FY 2016-17 | 39 |
| Table 5.3: Approved Plant Availability Factor for FY 2016-17 | 39 |
| Table 5.4: Projected Load Factor for FY 2016-17..... | 40 |
| Table 5.5: Approved Plant Load Factor for FY 2016-17 | 40 |
| Table 5.6: Projected Auxiliary Consumption for FY 2016-17 | 40 |
| Table 5.7: Auxiliary Consumption approved for FY 2016-17 | 40 |
| Table 5.8: Projected Gross and Net Generation for Unit-7 for FY 2016-17 | 41 |
| Table 5.9: Gross and Net Generation approved for Unit-7 for FY 2016-17 | 41 |
| Table 5.10: Gross and Net Generation considered for Unit-7 for FY 2016-17..... | 42 |
| Table 5.11: Specific Oil consumption approved for FY 2016-17 | 42 |
| Table 5.12: Transit Loss of Coal approved for FY 2016-17..... | 42 |
| Table 5.13 : Landed price of LDO projected by the Petitioner for FY 2016-17 | 43 |
| Table 5.14: Cost of LDO approved for FY 2016-17..... | 43 |
| Table 5.15: Cost of Coal projected by the Petitioner for FY 2016-17 | 44 |
| Table 5.16: Cost of coal projected by the Petitioner | 44 |
| Table 5.17: Weighted average cost of coal projected by the Petitioner | 45 |
| Table 5.18: Cost of coal considered by the Commission for FY 2016-17..... | 46 |
| Table 5.19: Weighted average cost of Coal approved for FY 2016-17 | 46 |
| Table 5.20: Weighted average GCV of Coal and LDO Oil approved for FY 2016-17 | 47 |
| Table 5.21: Projected Variable Cost of Generation for FY 2016-17..... | 47 |
| Table 5.22: Variable Cost of Generation approved for FY 2016-17 | 48 |
| Table 5.23: Cost allocation matrix for Ganga Water Scheme | 49 |
| Table 5.24: Capital expenditure for FY 2016-17 and FY 2017-18 | 50 |
| Table 5.25: Revised CWIP proposed by the Petitioner for FY 2016-17..... | 50 |
| Table 5.26: Capitalisation of capex considered for FY 2016-17..... | 51 |
| Table 5.27: Capex and capitalisation considered for FY 2016-17 | 51 |
| Table 5.28: Gross Fixed Assets Projected for FY 2016-17..... | 53 |
| Table 5.29: Gross Fixed Assets considered for FY 2016-17..... | 54 |

| | |
|---|----|
| Table 5.30: Depreciation Projected for FY 2016-17 | 54 |
| Table 5.31: Depreciation approved for FY 2016-17 | 57 |
| Table 5.32: Funding of Capitalisation for FY 2016-17 | 59 |
| Table 5.33: Interest on loans considered for FY 2016-17 | 60 |
| Table 5.34: Return on Equity projected for FY 2016-17 | 60 |
| Table 5.35: Funding of Capitalisation for FY 2016-17 | 61 |
| Table 5.36: Return on Equity approved for FY 2016-17..... | 62 |
| Table 5.37: Employee Cost projected for FY 2016-17..... | 63 |
| Table 5.38: Employee Cost considered for FY 2016-17 | 64 |
| Table 5.39: R&M expenses projected for FY 2016-17 | 64 |
| Table 5.40: R&M expenses considered for FY 2016-17 | 65 |
| Table 5.41: Administration and General Expenses projected for FY 2016-17 | 66 |
| Table 5.42: Administration & General Expenses considered for FY 2016-17 | 66 |
| Table 5.43: Holding Company Expenses projected for FY 2016-17 | 67 |
| Table 5.44: Holding Company expenses allocated to utilities | 67 |
| Table 5.45: O&M Expenses approved for FY 2016-17 | 68 |
| Table 5.46: Interest on working capital Projected for FY 2016-17 | 69 |
| Table 5.47: Interest on working capital approved FY 2016-17 | 70 |
| Table 5.48: Annual Fixed Charges projected for FY 2016-17..... | 72 |
| Table 5.49: Annual Fixed Charges approved for FY 2016-17 | 72 |
| Table 5.50: Summary of Revised ARR considered for FY 2016-17..... | 73 |
| Table 6.1: Present Status of Units of BTPS..... | 74 |
| Table 6.2: Revised Completion Schedule of BTPS 6 & 7 Units..... | 75 |
| Table 6.3: Projected Plant Availability Factor for FY 2017-18..... | 75 |
| Table 6.4: Approved Plant Availability Factor for FY 2017-18 | 76 |
| Table 6.5: Projected Plant Load Factor for FY 2017-18..... | 76 |
| Table 6.6: Approved Plant Load Factor for FY 2017-18 | 76 |
| Table 6.7: Projected Auxiliary Consumption for FY 2017-18 | 77 |
| Table 6.8: Auxiliary Consumption approved for FY 2017-18 | 77 |
| Table 6.9: Projected Gross & Net Generation for FY 2017-18..... | 77 |
| Table 6.10: Gross and Net Generation approved for FY 2017-18..... | 78 |
| Table 6.11: Projected Station Heat Rate (SHR) for the FY 2017-18 | 78 |
| Table 6.12: Approved Station Heat Rate for BTPS for the FY 2017-18..... | 78 |
| Table 6.13: Projected Specific Oil Consumption for FY 2017-18 | 79 |
| Table 6.14: Approved Specific Oil Consumption for FY 2017-18 | 79 |
| Table 6.15: Approved price and GCV of oil for FY 2017-18 | 81 |
| Table 6.16: Approved cost and GCV of coal for FY 2017-18 | 81 |
| Table 6.17: Approved Performance and Cost Parameters for the FY 2017-18 | 82 |
| Table 6.18: Variable Cost of Generation approved for FY 2017-18..... | 82 |
| Table 6.19: Revised Capital expenditure for FY 2017-18..... | 83 |
| Table 6.20: Revised CWIP Projected for FY 2017-18..... | 83 |
| Table 6.21: Capital investment considered by the Commission for FY 2017-18 | 84 |
| Table 6.22: Gross Fixed Assets projected for FY 2017-18..... | 85 |
| Table 6.23: Gross Fixed Assets approved for FY 2017-18 | 85 |
| Table 6.24: Depreciation projected for FY 2017-18..... | 86 |
| Table 6.25: Depreciation approved for FY 2017-18..... | 87 |
| Table 6.26: Interest on loans considered for FY 2017-18 | 90 |
| Table 6.27: Return on Equity projected for FY 2017-18 | 91 |
| Table 6.28: Return on Equity approved for FY 2017-18..... | 93 |
| Table 6.29: Computation of inflation index by the Petitioner for FY 2017-18 | 93 |
| Table 6.30: Inflation index considered by the Commission for FY 2017-18 | 94 |
| Table 6.31: Employee Cost projected for FY 2017-18..... | 94 |
| Table 6.32: Employee Cost approved for FY 2017-18..... | 95 |

| | |
|--|-----|
| Table 6.33: Repairs and Maintenance expenses projected for FY 2017-18 | 96 |
| Table 6.34: Repairs and Maintenance expenses approved for FY 2017-18..... | 96 |
| Table 6.35: Administration and General Expenses projected for FY 2017-18..... | 97 |
| Table 6.36: Administration & General Expenses approved for FY 2017-18 | 97 |
| Table 6.37: Holding Company Expenses projected for FY 2017-18 | 98 |
| Table 6.38: Total O&M cost approved by the Commission for FY 2017-18..... | 99 |
| Table 6.39: Interest on working capital projected for FY 2017-18 | 99 |
| Table 6.40: Interest on working capital approved FY 2017-18 | 100 |
| Table 6.41: Annual Fixed Charges projected for FY 2017-18 | 101 |
| Table 6.42: Annual Fixed Charges approved by the Commission for FY 2017-18 | 101 |
| Table 6.43: Annual Revenue Requirement approved for FY 2017-18 | 101 |
| Table 6.44: Fixed and Energy Charges approved for FY 2017-18 | 102 |

ABBREVIATIONS

| | |
|--------|--|
| A&G | Administration and General Expenses |
| ACT | Electricity Act. 2003 |
| ARR | Annual Revenue Requirement |
| BERC | Bihar Electricity Regulatory Commission |
| BGCL | Bihar Grid Company Limited |
| BSHPS | Bihar State Hydro Power Station |
| BSEB | Bihar State Electricity Board |
| BSPHCL | Bihar State Power (Holding) Company Limited |
| BSPTCL | Bihar State Power Transmission Company Limited |
| BTPS | Barauni Thermal Power Station |
| CAGR | Compounded Annual Growth Rate |
| CAPEX | Capital Expenditure |
| CEA | Central Electricity Authority |
| CERC | Central Electricity Regulatory Commission |
| CGS | Central Generating Station |
| CTU | Central Transmission Utility |
| CWIP | Capital Work in Progress |
| DISCOM | Distribution Company |
| FC | Fixed Charges |
| FPPCA | Fuel and Power Purchase Cost Adjustment |
| FY | Financial Year |
| GFA | Gross Fixed Asset |
| KBUNL | Kanti Bijlee Utpadan Nigam Limited |
| KVA | Kilo Volt Ampere |
| KVAH | Kilo Volt Ampere Hour |
| KWH | Kilo Watt Hour |
| MoP | Ministry of Power |
| MU | Million Unit |
| MVA | Mega Volt Ampere |
| MW | Mega Watt |
| MYT | Multi-Year Tariff |
| NBPDCL | North Bihar Power Distribution Company Limited |
| NFA | Net Fixed Asset |
| NHPC | National Hydro Power Corporation |
| NTPC | National Thermal Power Corporation |
| O&M | Operation and Maintenance |
| PLF | Plant Load Factor |
| R&M | Repair and Maintenance |
| RE | Revised Estimates |
| RoE | Return on Equity |
| SAC | State Advisory Committee |
| SBPDCL | South Bihar Power Distribution Company Limited |
| SERC | State Electricity Regulatory Commission |
| TPS | Thermal Power Station |



Bihar Electricity Regulatory Commission

Ground floor, Vidyut Bhawan –II
Jawahar Lal Nehru Marg,
Patna – 800021

Case No:-41 of 2016

In the matter of:

Truing up for Financial Year 2015-16, Annual Performance Review (APR) for FY 2016-17 and determination of Annual Revenue Requirement (ARR) and Generation Tariff for FY 2017-18 of Bihar State Power Generation Company Limited.

AND

Bihar State Power Generation Company LimitedPetitioner

Present:

| | | |
|-----------------------------|---|-----------------|
| Shri S. K. Negi | - | Chairman |
| Shri Rajeev Amit | - | Member |
| Shri R. K. Choudhary | - | Member |

ORDER

(Passed on 9th March, 2017)

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

1. Bihar State Power Holding Company Limited (BSPHCL)
2. Bihar State Power Generation Company Limited (BSPGCL)
3. Bihar State Power Transmission Company Limited (BSPTCL)
4. North Bihar Power Distribution Company Limited (NBPDC)
5. South Bihar Power Distribution Company Limited (SBPDCL)

BSPHCL had earlier filed the Multi Year Tariff (MYT) petition for control period of three years i.e. for FY 2013-14 to FY 2015-16 on behalf of the successor generation company on 14th November, 2012. The Commission approved the Multi Year ARR for the years FY 2013-14 to 2015-16 for BSPGCL, in the order dated 15th March, 2013.

BSPGCL has filed the petition on 12th November, 2014 for True up for FY 2013-14, Annual Performance Review (APR) for FY 2014-15 and re-determination of ARR and Generation Tariff for FY 2015-16. The Commission issued the order dated 12th March, 2015, truing up ARR for FY 2013-14, review of ARR for FY 2014-15, re-determining the ARR and Generation Tariff for FY 2015-16 for sale of electricity by BSPGCL in the State of Bihar.

BSPGCL has filed petition on 10th December, 2015 for True up for FY 2014-15, Annual Performance Review for FY 2015-16 and determination of Annual Revenue Requirement (ARR) and Generation Tariff for FY 2016-17. The Commission issued the order dated 21st March, 2016, truing up ARR for FY 2014-15, review of ARR for FY 2015-16 and determination of ARR and Generation tariff for FY 2016-17.

Tariff Regulations specify that the Generation Companies shall file Annual Revenue Requirement (ARR) and the Tariff Petition complete in all respects along- with requisite fee as specified in the BERC (Fees, Fines and charges) Regulations, 2005 on or before 15th November of the preceding year. Accordingly, the BSPGCL filed the petition on 18th November 2016 for true up of ARR for FY 2015-16, performance review of ARR of FY 2016-17 and determination of ARR and Generation tariff for FY 2017-18.

Regulation 22(1) of the Tariff Regulations, 2007 provides that the Commission shall undertake a review, along with next Tariff Order, of the expenses and revenue approved by the Commission in the current year's Tariff order. Regulation 22(2) of Tariff Regulations, 2007 also provides that the Commission shall undertake, after audited accounts of the year are made available, truing-up of the expenses and revenue approved in the review of previous year tariff order.

In exercise of the powers vested in Bihar Electricity Regulatory Commission under Section 62(1)(d) read with Section 64 (3) and Section 64(3)(a) of the Electricity Act, 2003 and Bihar Electricity Regulatory Commission (Terms and conditions for Determination of Tariff)

Regulations 2007 (hereinafter referred to as 'Tariff Regulations') and other enabling provisions in this behalf, the Commission has issued this order, truing up ARR for FY 2015-16, reviewing ARR for FY 2016-17, determining the ARR and Generation Tariff for FY 2017-18 for sale of electricity by Bihar State Power Generation Company Limited to NBPDC and SBPDCL.

As per Regulation 6(5) of the Tariff Regulations and for providing adequate opportunities to all stakeholders and general public for making suggestions/objections on the petitions as mandated under section 64(3) of the Electricity Act, 2003, the Commission directed BSPGCL to publish the petition in abridged form as public notice in newspapers having wide circulation in the State inviting suggestions/objections on the tariff petition. Accordingly BSPGCL published the tariff petition in the abridged form as public notice in various newspapers. The petition was also placed on the BSPGCL's website. The last date of submission of suggestions/objections was fixed as 20th January 2017.

The Commission, in order to ensure transparency in the process of dealing with the above petition and for providing proper opportunity to all stakeholders and general public for making suggestions/objections on the tariff petition, decided to hold the public hearing in its office at Patna and accordingly the Commission held public hearing in the Court Room of BERC office at Patna on 24th January 2017.

The above petition submitted by BSPGCL was also placed before the State Advisory Committee on 16th February 2017 and the various aspects were discussed by the Committee. The Commission took the advice of the State Advisory Committee on the petition of BSPGCL during the meeting of the Committee.

The Commission took into consideration the facts presented by the BSPGCL in its petition and subsequent various filings and suggestions of State Advisory Committee and response of the Bihar State Power Generation Company Limited.

The Commission taking into consideration all the facts which came up during the public hearing and meeting of the State Advisory Committee, has trued up ARR for FY 2015-16, reviewed the ARR for FY 2016-17 and determined the ARR and Generation tariff for FY 2017-18.

BSPGCL has only one thermal power station at Barauni namely Barauni Thermal Power Station (BTPS) having seven numbers of generating Units out of which five units (3x15 MW+ 2x50 MW) were retired and removed from service. Out of the two remaining units, Unit no. 6 of 110 MW is under Renovation and Modernisation (R&M) and Unit no.7 of 110 MW is generating power since 4th November 2016 after undergoing R&M.

BSPGCL has claimed net Annual Revenue Requirement of Rs.24.57 crore for FY 2015-16 in truing up. The Commission has not considered any annual revenue requirement (ARR) for FY 2015-16 as there was no generation during FY 2015-16, since both Units 6 & 7 of BTPS were under R&M.

BSPGCL has projected annual revenue requirement (ARR) of Rs. 118.74 Crore for FY 2016-17 stating that Unit 7 is generating power w.e.f 4th November, 2016 as against which the Commission has approved ARR of Rs. 126.43 Crore.

BSPGCL has estimated that after R&M, Unit-6 will generate power for nine months and Unit-7 will generate power for full year during FY 2017-18 and accordingly estimated the annual revenue requirement of Rs.515.88 Crore for FY 2017-18 against which the Commission has approved ARR of Rs. 426.09 Crore. The Commission has further approved net generation tariff of Rs 4.10 per kWh against Rs 4.96 per kWh projected by BSPGCL.

This order shall be effective from 1st April 2017 and shall remain in force till 31st March 2018 or till the next tariff order of the Commission.

This order will be placed on the website of the Commission and copies will be sent to BSPHCL, BSPGCL, BSPTCL, NBPDC, SBPDCL, Department of Energy of Government of Bihar, Central Electricity Regulatory Commission, Central Electricity Authority and all State /Joint Electricity Regulatory Commissions.

Pronounced in the open court on this day of 9th March, 2017

Sd/-
(R.K.Choudhary)
Member

Sd/-
(Rajeev Amit)
Member

Sd/-
(S.K.Negi)
Chairman

1. Introduction

1.1 Bihar Electricity Regulatory Commission (BERC)

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

1.2 Functions of BERC

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

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

- e) promote co-generation and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person, and also specify, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licensee;
- f) adjudicate upon the disputes between the licensees, and generating companies and to refer any dispute for arbitration;
- g) levy fee for the purposes of this Act;
- h) specify State Grid Code consistent with the Indian Electricity Grid Code specified with regard to grid standards;
- i) specify or enforce standards with respect to quality, continuity and reliability of service by licensees;
- j) fix the trading margin in the intra-state trading of electricity, if considered, necessary; and
- k) discharge such other functions as may be assigned to it under this Act.

1.3 Bihar State Power Generation Company Limited (BSPGCL)

The Government of Bihar under the provision of Bihar Electricity Reforms Transfer Scheme 2012 notified vide Notification No.17 dated 30.10.2012 of the Energy Department, Govt. of Bihar restructured the Bihar State Electricity Board with effect from 1st November, 2012. The Generation, Transmission and Distribution Businesses of the erstwhile Bihar State Electricity Board were transferred to four successor companies with one Holding Company as listed below:

- 1) Bihar State Power Holding Company Limited (BSPHCL)
- 2) Bihar State Power Generation Company Limited (BSPGCL)
- 3) Bihar State Power Transmission Company Limited (BSPTCL)
- 4) North Bihar Power Distribution Company Limited (NBPDC) and
- 5) South Bihar Power Distribution Company Limited (SBPDCL)

The Government of Bihar vide notification No. 17 dated 30th October 2012, notified the provisional opening assets and liabilities of the transferee companies based on the audited accounts of erstwhile BSEB as on 1st April 2011. The value of assets and liabilities stand transferred from the erstwhile Bihar State Electricity Board to the transferee companies, including the Bihar State Generation Company Limited.

Assets and liabilities (gross block, loans and equity), as on the date mentioned in the notification, have been considered by the Commission in line with the Financial Restructuring Plan (FRP) as approved by the Government of Bihar.

1.4 Profile of BSPGCL

BSPGCL is a subsidiary of Bihar State Power Holding Company Limited (BSPHCL), company registered under the Companies Act 1956 created under Bihar State Electricity Reforms Transfer Scheme, 2012 vide notification dated 30.10.2012 and is a fully owned subsidiary company of BSPHCL.

Barauni Thermal Power Station (BTPS) is the only power station under the aegis of BSPGCL. The Barauni Thermal Power Plant was constructed in the following three stages:

a) Stage –I: 2 X 15 MW (Unit- 1, 2 & 3):

These units are of L&C Steinmuller West Germany Make, one with Diesel and two with coal based plant. These units have been declared obsolete long back due to uneconomical operation and retired from assets.

b) Stage –II: 2 X 50 MW (Unit- 4 & 5):

These units are coal based and are of Polish make. The two units have been shut down due to high emission problem since April, 1996 and March, 1995, respectively. Subsequently, the State Pollution Control Board (SPCB) has instructed vide letter no. T-3882 dated 18.07.1996 to stop operation of these units since the emission levels were exceeding the permissible limits. The Central Electricity Authority vide its letter No. CEA/PLG/DMLF/St.Committee/545/510-549 dated March 20, 2012 had approved the retirement and deletion of installed capacity of unit – 4 & 5 w.e.f. 12.03.2012.

c) Stage –III: 2 X 110 MW (Unit- 6 & 7):

These thermal units are coal based and of BHEL make. The unit – 6 was commissioned on 1st May 1983 and the unit – 7 was commissioned on 31st March 1985. These units are presently under Renovation and Modernisation (R&M). In nutshell, the status of BTPS is as under:-

Present status of units of BTPS, Barauni

| Generating Unit | Capacity (MW) | CoD | Present Status |
|------------------------|----------------------|------------|---|
| Unit-1 | 15 MW | 26.10.1966 | Retired on 16.02.1983 |
| Unit-2 | 15 MW | 16.01.1963 | Retired on 26.11.1985 |
| Unit-3 | 15 MW | 20.10.1963 | Retired on 05.10.1985 |
| Unit-4 | 50 MW | 09.11.1969 | Retired on 12.03.2012 |
| Unit-5 | 50 MW | 01.12.1971 | Retired on 12.03.2012 |
| Unit-6 | 110 MW | 01.05.1983 | Schedule for commissioning in June'2017 |
| Unit-7 | 110 MW | 31.03.1985 | Commissioned on 04.11.2016 |
| Total | 220 MW | | |

1.5 Commission's Orders issued earlier to BSPGCL

BSPHCL had filed the Multi Year Tariff (MYT) petition on behalf of BSPGCL, BSPTCL and combinedly for SBPDCL & NBPDCCL for determination of Annual Revenue Requirement (ARR) for the first control period of three years of FY 2013-14 to FY 2015-16 on 12th November 2012. The Commission issued the Tariff Order on 15th March, 2013 approving Annual Revenue Requirement for the control period FY 2013-14 to FY 2015-16 for BSPGCL, BSPTCL and for SBPDCL & NBPDCCL together and also determined Generation, Transmission and Retail Supply Tariff for FY 2013-14 effective from 1st April, 2013.

BSPGCL had independently filed the petition for the first time for Annual Performance Review (APR) for FY 2013-14, revised Annual Revenue Requirement for FY 2014-15 and determination of generation Tariff for FY 2014-15 on 14th November, 2013. The Commission issued the Order on 28th February, 2014 for approval of Annual Performance Review (APR) for FY 2013-14, determination of revised ARR for FY 2014-15 and Generation Tariff for FY 2014-15 effective from 1st April, 2014.

BSPGCL filed the petition for true up of FY 2013-14, APR for FY 2014-15, revised ARR for FY 2015-16 and determination of generation tariff for FY 2015-16 on 12th November, 2014. The Commission issued the Tariff Order on 12th March 2015 for approval of true up for FY 2013-14, review for FY 2014-15, revised ARR for FY 2015-16 and also determined generation tariff for FY 2015-16 effective from 1st April 2015.

BSPGCL filed the petition for true up of FY 2014-15, APR for FY 2015-16, revised ARR for FY 2016-17 and determination of generation tariff for FY 2016-17 on 10th December, 2015. The Commission issued the Tariff Order on 21st March 2016 for approval of true up for FY 2014-15, review for FY 2015-16, revised ARR for FY 2016-17 and also determined generation tariff for FY 2016-17 effective from 1st April 2016.

1.6 Admission of Current Petition and Public Hearing Process

BSPGCL has filed the present petition on 18th November 2016 for Truing-up for FY 2015-16, Annual Performance Review (APR) for FY 2016-17 and Annual Revenue Requirement (ARR) for FY 2017-18 and determination of generation charges for FY 2017-18 under Section 62 of Electricity Act 2003 read with Bihar Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff) Regulations, 2007.

After preliminary verification of the petition, the Commission has admitted the petition as Case No.41 of 2016. In accordance with section 64 of the Electricity Act, 2003 and sub clause 6(5) of BERC (Terms and Conditions of Determination of Tariff) Regulations, 2007, the Commission directed BSPGCL to publish the petition in an abridged form in at least two daily newspapers (one in English and the other in Hindi) having wide circulation in the State inviting objections and suggestions from its stakeholders on the ARR and Tariff Petition.

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

The public notices were published in the following newspapers as given below:

| Sl. No | Name of the Newspaper | Language | Date of Publication |
|--------|-----------------------|----------|---------------------|
| 1 | Times of India | English | 31.12.2016 |
| 2 | Hindustan | Hindi | 31.12.2016 |
| 3 | Prabhat khabar | Hindi | 04.01.2017 |
| 4 | News Next | English | 04.01.2017 |

The tariff petition was also placed on the website of BSPGCL and the Commission for inviting objections and suggestions on the petition and copies of the petition along with Annexure were also made available for sale in the office of the Deputy

General Manager (Finance), BSPGCL. The interested parties/stakeholders were asked to file their objections/ suggestions on the Petition on or before 20th January 2017. The Commission also uploaded the petition on its website.

The Commission has not received any written objections/suggestions.

The proposal of BSPGCL was also placed before the State Advisory Committee (SAC) in its meeting held on 16th February 2017 and various aspects of the petition were discussed by the Committee. The Commission took the advice of the SAC on the petition filed by BSPGCL during the meeting of the Committee. The minutes of the meeting are placed in **Annexure-I**.

The public hearing was conducted as scheduled in the Court Room of BERC on 24th January 2017.

A note on the main issues raised by the objectors in the public hearing in respect of the petitions, along with the response of BSPGCL and the Commission's views on the response are given in Chapter-3.

1.7 Approach of this order

The BERC (Terms and Conditions for Determination of Tariff) Regulations, 2007 provides for truing up of previous year (FY 2015-16), Review of current year (FY 2016-17) and determination of ARR and generation charges for the ensuing year i.e., FY 2017-18.

The BSPGCL has now approached the Commission with the present petition for Truing-up for FY 2015-16, Annual Performance Review for FY 2016-17, Annual Revenue Requirement for FY 2017-18 and determination of generation charges for FY 2017-18. As stated before, the petition has been listed as Case No. 41 of 2016.

The Commission has examined the petition and observed that certain additional data/information and clarifications are required for conducting detailed analysis of the petition. The Commission directed the petitioner to submit the additional data/information and clarifications vide the following references:

1. Lr.No.BERC Case No.41/2016/1565 dated 30.11.2016.
2. Lr.No.BERC Case No.41/2016/1684 dated 26.12.2016.

The Petitioner has submitted additional information/data/clarifications in the following Letter No's:

1. Lr.No.851 dated 07.12.2016
2. Lr.No.892 dated 27.12.2016

The Commission has undertaken Truing-up for FY 2015-16, Annual Performance Review (APR) for FY 2016-17, determination of Annual Revenue Requirement (ARR) for FY 2017-18 and Tariff for generation for FY 2017-18 based on the provisions under BERC (Terms and Conditions for Determination of Tariff) Regulations, 2007 and its amendments made from time to time.

1.8 Contents of this order

The order is divided into Seven (7) chapters as detailed below:

1. The **First Chapter** provides a background of BSPGCL, Commission's Orders in earlier years, admission of the Petition, details of public hearing process, and the approach adopted for this order.
2. The **Second Chapter** contains a summary of Tariff petition.
3. The **Third Chapter** provides a brief account of the public hearing process, objections raised by stakeholders, Petitioner's response and Commission's views on the same.
4. The **Fourth Chapter** deals with the Truing-up for FY 2015-16 filed by BSPGCL.
5. The **Fifth Chapter** deals with the Annual Performance Review for FY 2016-17 filed by BSPGCL.
6. The **Sixth Chapter** deals with the Annual Revenue Requirement and determination of Generation Charges for FY 2017-18.
7. The **Seventh Chapter** deals with the Directives.

2. Summary of Petition filed by BSPGCL for Truing-up for FY 2015-16, Annual Performance Review for FY 2016-17 and Annual Revenue Requirement for FY 2017-18

2.1 Summary of the petition for Truing up for FY 2015-16, Annual Performance Review for FY 2016-17 and Annual Revenue Requirement (ARR) for FY 2017-18

The summary of Truing up for FY 2015-16, Annual Performance Review (APR) for FY 2016-17 and Annual Revenue Requirement (ARR) projected for FY 2017-18 are as given in Tables below:

Table 2.1: Annual Revenue Requirement proposed in Truing-up for FY 2015-16

(Rs. Crore)

| Sl. No. | Particular | Approved in MYT Order for FY 2015-16 | Approved for FY 2015-16 in T.O. dated 12.03.2015 | Approved for FY 2015-16 in T.O. dated 21.03.2016 | As per Audited Accounts for FY 2015-16 |
|-----------|-----------------------------------|--------------------------------------|--|--|--|
| 1 | Fuel Cost | 315.15 | 293.38 | - | - |
| 2 | O&M expenses (Gross) | 170.23 | 48.51 | 35.76 | 28.59 |
| 3 | Interest and finance charges | 9.61 | - | - | - |
| 4 | Interest on working capital | 22.85 | 19.34 | - | - |
| 5 | Depreciation | 8.49 | - | - | - |
| 6 | Return on Equity | 48.16 | 48.16 | - | - |
| 7 | Less: Expenses Capitalized | 55.73 | - | - | - |
| 8 | Annual Revenue Requirement | 518.99 | 409.99 | 35.76 | 28.59 |
| 9 | Less: Non-tariff income | 0.73 | - | 0.10 | 0.10 |
| 10 | Net ARR | 518.16 | 409.99 | 35.66 | 28.49 |
| 11 | Surplus of FY 2014-15 adjusted | 0.00 | 0.00 | 3.92 | 3.92 |
| 12 | Net ARR Cost | 518.16 | 409.99 | 31.74 | 24.57 |

Table 2.2: Revised ARR proposed in APR for FY 2016-17

(Rs. Crore)

| Sl. No. | Particulars | Approved for FY 2016-17 in T.O. dated 21.03.2016 | Revised Estimate for FY 2016-17 |
|-----------|---------------------------------------|--|---------------------------------|
| 1 | Fuel Cost | 299.19 | 66.10 |
| 2 | O&M expenses (gross) | 51.29 | 51.67 |
| 3 | Interest and finance charges | - | - |
| 4 | Interest on working capital | 18.24 | 9.88 |
| 5 | Depreciation | 0.00 | 0.80 |
| 6 | Return on Equity | 44.41 | 13.96 |
| 7 | Less: O&M Expenses Capitalized | - | 23.18 |
| 8 | Total Fixed cost | 413.14 | 119.27 |
| 9 | Less: Non-tariff income | 0.20 | 0.50 |
| 10 | Net Fixed cost | 412.94 | 118.74 |
| 11 | Surplus of previous year | - | - |
| 12 | Net Annual Revenue Requirement | 412.94 | 118.74 |

Table 2.3: Revised Generation Cost proposed in APR for FY 2016-17

| Sr. No. | Particulars | Unit | Approved for FY 2016-17 in T.O. dated 21.03.2016 | Revised Estimate for FY 2016-17 |
|---------|----------------------------|-----------------|--|---------------------------------|
| 1 | Gross Generation | MU | 1180.41 | 270 |
| 2 | Auxiliary Consumption | MU | 141.65 | 32 |
| 3 | Net Generation | MU | 1038.76 | 237 |
| 4 | Energy Charges | Rs. crore | 299.19 | 66.10 |
| 5 | Annual Fixed Charges | Rs. crore | 113.74 | 52.64 |
| 6 | Revenue Recoverable | Rs. crore | 412.93 | 118.74 |
| 7 | Net Energy Charges | Rs / kWh | 2.88 | 2.78 |
| 8 | Net Fixed Charges | Rs / kWh | 1.09 | 2.22 |
| 9 | Net Generation Cost | Rs / kWh | 3.97 | 5.00 |

Table 2.4: Annual Revenue Requirement projected for FY 2017-18

(Rs. Crore)

| Sr. No. | Particular | FY 2017-18 (Projection) |
|---------|--------------------------------|-------------------------|
| 1 | Fuel cost | 316.39 |
| 2 | O&M expenses | 73.46 |
| 3 | Interest and finance charges | 27.10 |
| 4 | Interest on working capital | 26.15 |
| 5 | Depreciation | 19.67 |
| 6 | Return on Equity | 53.61 |
| 7 | Less: O&M Expenses Capitalised | - |
| 8 | Total ARR | 516.38 |
| 9 | Less: Non-tariff income | 0.50 |
| 10 | ARR | 515.88 |
| 11 | Previous Year surplus or gap | - |
| 12 | Net ARR | 515.88 |

Table 2.5: Generation Cost Projected for FY 2017-18

| Sl. No. | Particular | Unit | FY 2017-18 (Projection) |
|---------|----------------------------|-----------------|-------------------------|
| 1 | Gross Generation | MU | 1181 |
| 2 | Auxiliary Consumption | MU | 142 |
| 3 | Net Generation | MU | 1039.17 |
| 4 | Energy Charges | Rs. Crore | 316.39 |
| 5 | Annual Fixed Charges | Rs. Crore | 199.49 |
| 6 | Revenue Recoverable | Rs. Crore | 515.88 |
| 7 | Net Energy Charges | Rs / kWh | 3.04 |
| 8 | Net Fixed Charges | Rs / kWh | 1.92 |
| 9 | Net Generation Cost | Rs / kWh | 4.96 |

2.2 Request to the Commission

BSPGCL has requested the Commission to:

- Admit this petition;
- Examine the proposal submitted by the Petitioner in the enclosed petition for a favorable dispensation;

- c) Pass suitable orders with respect to the Truing up for FY 2015-16 as per actuals;
- d) Pass suitable orders with respect to Annual Performance Review (APR) for FY 2016-17 as per revised estimates;
- e) Pass suitable orders with respect to ARR for FY 2017-18 amounting to Rs.518.88 Crore to be recovered from Distribution Licensees towards supply of power from power plant;
- f) Pass separate tariff order for the Petitioner against the present petition;
- g) Condone any inadvertent omissions/errors/shortcomings and permit Petitioner to add/change/modify/alter this filing and make further submissions as may be required at a future date; and
- h) Pass such Order, as the Commission may deem fit and appropriate keeping in view the facts and circumstances of the case.

3. Stakeholder's Objections/Suggestions, BSPGCL's Response and Commission's Observations

3.1 Introduction

In response to the public notice inviting objections/suggestions of the stakeholders on the Tariff petition filed by BSPGCL, no written objections have been received.

3.2 Public Hearing

The Commission has published the 'Notice' on 17th January 2017 in two daily Newspapers i.e. Dainik Bhasker (Hindi) and Hindustan (Hindi) intimating that the Commission will hear the case on 24.01.2017 at 2.30 PM in its Court Room of BERC office at Patna, the suggestions/objections/comments of the general public/stakeholders on the petition filed by the BSPGCL (Case on 41 of 2016).

The public hearing, as scheduled was held in the Court Room of BERC office, Patna on 24th January 2017. The hearing was attended by the officials of the BSPGCL. Further, the representative of Bihar Industries Association, Patna has participated in the hearing, however, has not raised any objections on the tariff petition filed by the BSPGCL.

The list of participants in the public hearing is appended to this order as **Annexure-II**.

4. Truing-up for FY 2015-16

4.1 Background

The Commission issued the Multi Year Tariff Order on 15th March, 2013 determining the Multi Year Annual Revenue Requirement (ARR) for the three year control period FY 2013-14 to FY 2015-16 for Bihar State Power Generation Company Limited (BSPGCL), Bihar State Power Transmission Company Limited (BSPTCL) and combinedly for North Bihar Power Distribution Company Limited (NBPDC) and South Bihar Power Distribution Company Limited (SBPDCL) separately. The approval was based on the estimates projected by Bihar State Power Holding Company Limited (BSPHCL) on behalf of BSPGCL for costs to be incurred during the control period FY 2013-14 to FY 2015-16.

BSPGCL submitted the petition for true up of FY 2013-14, Annual Performance Review for FY 2014-15 and Annual Revenue Requirement (ARR) for FY 2015-16 on 12th November 2014. The Commission carried out the truing up of FY 2013-14, review of FY 2014-15 and determined ARR for FY 2015-16 in the Tariff Order dated 12th March 2015 based on the revised estimates submitted by the BSPGCL.

BSPGCL submitted the petition for true up of FY 2014-15, Annual Performance Review for FY 2015-16 and Annual Revenue Requirement (ARR) for FY 2016-17 on 10th December 2015. The Commission carried out the truing up of FY 2014-15, review of FY 2015-16 and determined ARR for FY 2016-17 in the Tariff Order dated 21st March 2016.

BSPGCL has submitted the present petition on 18th November 2016 which includes Truing-up of ARR for FY 2015-16 along with audited Annual Accounts for FY 2015-16.

Truing-up for FY 2015-16 is to be done according to the Regulation 22(1) & (2) of the BERC (Terms and Conditions for Determination of Tariff) Regulations, 2007 which is reproduced below:

“The Commission shall undertake a review along with next Tariff Order of the expenses and revenues approved by the Commission in the current year Tariff Order. While doing so, the Commission shall consider variations between approvals and revised estimates/pre-actual of the sale of electricity, income and expenditure for the relevant year and permit necessary adjustments/changes in case such variations are for adequate and justifiable reasons. Such an exercise shall be called ‘Review’.

“After audited accounts of the year are made available, the Commission shall undertake a similar exercise as in sub-clause (1) above based on the final actual figures as per the audited accounts. This exercise based on the audited accounts shall be called ‘Truing-up’. The Truing-up exercise for any year shall not ordinarily be considered after more than one year gap after ‘Review’.

Accordingly, the “Truing-up exercise for FY 2015-16 has been undertaken by the Commission on the basis of audited annual accounts for FY 2015-16 and BERC (Terms and Conditions for determination of Tariff) Regulations 2007. However, wherever deemed necessary, the Commission has considered expenses based on prudence check.

4.2 Summary of Truing-up for FY 2015-16 proposed by Petitioner

BSPGCL has submitted the revised Annual Revenue Requirement for FY 2015-16 as given in the Table below:

Table 4.1: Annual Revenue Requirement proposed in Truing-up for FY 2015-16

| | | | | | (Rs. Crore) |
|--------|------------------------------|--------------------------------------|--|---|---|
| Sl. No | Particular | Approved in MYT Order for FY 2015-16 | Approved for FY 2015-16 in Tariff Order dated 12.03.2015 | Approved for FY 2015-16 (RE) in Tariff Order dated 21.03.2016 | As per audited Annual Accounts for FY 2015-16 |
| 1 | Fuel Cost | 315.15 | 293.98 | - | - |
| 2 | O&M Expenses (Gross) | 170.23 | 48.51 | 35.77 | 28.59 |
| 3 | Interest and finance charges | 9.61 | - | - | - |
| 4 | Interest on working capital | 22.85 | 19.34 | - | - |
| 5 | Depreciation | 8.49 | - | - | - |
| 6 | Return on Equity | 48.16 | 48.16 | - | - |

| Sl. No | Particular | Approved in MYT Order for FY 2015-16 | Approved for FY 2015-16 in Tariff Order dated 12.03.2015 | Approved for FY 2015-16 (RE) in Tariff Order dated 21.03.2016 | As per audited Annual Accounts for FY 2015-16 |
|--------|--------------------------------|--------------------------------------|--|---|---|
| 7 | Less: Expenses Capitalized | 55.73 | - | - | - |
| 8 | Gross ARR | 518.89 | 409.99 | 35.77 | 28.59 |
| 9 | Less: Non-tariff income | 0.73 | - | 0.10 | 0.10 |
| 10 | Net ARR | 518.16 | 409.99 | 35.67 | 28.49 |
| 11 | Surplus of FY 2014-15 adjusted | - | - | 3.92 | 3.92 |
| 12 | Net ARR cost | 518.16 | 409.99 | 31.75 | 24.57 |

4.3 Capital Investment

Petitioner's submission

BSPGCL has submitted that the Commission in the Annual Performance Review order for FY 2015-16 had approved opening CWIP and closing CWIP as Rs.707.00 Crore and Rs.927.00 Crore respectively with new investment of Rs.220.00 Crore.

The Petitioner has furnished the breakup of the net opening CWIP for FY 2015-16 as detailed in the Table below:

Table 4.2: Break-up of Net opening CWIP proposed for FY 2015-16

| Sl. No. | Cost component | (Rs. Crore) Amount |
|---------|---|-----------------------|
| 1 | Cost associated with R&M of BTPS units | 534.39 |
| 2 | Cost allocated to Ganga Water Scheme | 33.52 |
| 3 | Cost allocated to BTPS Infrastructure Strengthening Scheme including Railway siding | 192.60 |
| | Grand Total | 760.51 |

BSPGCL has submitted the capital investment proposed for truing up for FY 2015-16 as shown in the Table below:

Table 4.3: Capital investment and CWIP proposed in truing up for FY 2015-16

| Sl. No. | Particulars | Approved in MYT Order for FY 2015-16 | Approved for FY 2015-16 in Tariff Order dated 12.03.2015 | Approved for FY 2015-16 (RE) in Tariff Order dated 21.03.2016 | (Rs. Crore) As per audited Annual Accounts for FY 2015-16 |
|---------|---|--------------------------------------|--|---|--|
| 1 | Opening CWIP | 2915.50 | 690.44 | 707.00 | 685.10 |
| 2 | Less: CWIP portion of extension project | -- | -- | -- | -- |
| 3 | Net opening CWIP (1-2) | 2915.50 | 690.44 | 707.00 | 685.10 |

| Sl. No. | Particulars | Approved in MYT Order for FY 2015-16 | Approved for FY 2015-16 in Tariff Order dated 12.03.2015 | Approved for FY 2015-16 (RE) in Tariff Order dated 21.03.2016 | As per audited Annual Accounts for FY 2015-16 |
|-----------|---|--------------------------------------|--|---|---|
| 4 | Add: New Investment | 908.91 | 244.04 | 220.00 | 75.40 |
| 5 | Add: O&M expenditure of Units 6 & 7 | -- | -- | -- | -- |
| 6 | Total Investment (3+4+5) | 3824.41 | 934.48 | 927.00 | 760.51 |
| 7 | Less: Capitalisation from CWIP | -- | 690.44 | -- | -- |
| 8 | Less: Capitalisation from New Investments | -- | 244.04 | -- | -- |
| 9 | Total capitalisation (7+8) | -- | 934.48 | -- | -- |
| 10 | Net closing CWIP (6-9) | 3824.41 | -- | 927.00 | 760.51 |

BSPGCL has submitted the reasons for the deviations as follows:

- The Opening CWIP has got revised due to finalisation of the annual accounts of March 2016.
- The new investment to the tune of Rs.75.40 crore was incurred against Rs.220.00 crore approved by the Commission.
- As a result of above changes, the closing CWIP has got revised to Rs.760.51 Crore.

BSPGCL requested the Commission to approve the revised capital investment and CWIP as proposed for FY 2015-16.

Commission's Analysis:

The Commission in MYT Order dated 15th March, 2013 had commented on the capital investment plan for the control period FY 2013-14 to FY 2015-16 as below:

“As per the practice followed by CERC, tariff for Thermal Power Plants of NTPC commissioned in different stages are determined stage-wise and not for the station as a whole. Here BSPHC Ltd. has submitted a combined proposal of ARR as well as tariff for stage-I (R&M 2x110 MW) and stage-II (addition of 2 x250 MW plants). This is not a correct approach. Therefore, BSPHC Ltd. and Bihar State Power Generation Company Ltd. are directed to submit separate proposals for R&M of 2x110 MW plants and 2x250 MW extension plants. Further the costs of strengthening of infrastructure at BTPS and Ganga River Water Scheme for BTPS are to be

apportioned as per use of these two projects in stage-I and stage-II. It appears that Units 6&7 are scheduled to be commissioned by December 2013 and May 2013 respectively. On the other hand the investments in strengthening of infrastructure and Ganga River Water Scheme are proposed to be completed in FY 2015-16 and beyond. It is not understandable how these investments will be used for stage-I project. Therefore capex, capitalisation, depreciation, and interest and finance charges for strengthening of infrastructure and Ganga River Water Schemes are not being considered in the ARR and tariff for stage-I R&M project.

BSPHC Ltd. and Bihar State Power Generation Co. Ltd. are directed to submit separate ARR for stage-I and stage-II indicating the apportionment of the costs of the projects of strengthening of infrastructure and Ganga River Water Scheme between two stages, at the time of filing the petition for review for FY 2013-14 and tariff proposal for FY 2014-15.”

However, despite above direction, BSPGCL did not submit separate ARR for Stage-I and Stage-II i.e. R&M of BTPS (Unit-6 & 7) and Extension of BTPS (Unit-8 & 9) projects. Therefore, the CWIP portion of extension project was reduced from the claimed CWIP for computations during truing up for FY 2013-14.

The Commission considered the opening CWIP at Rs. 1905.13 Crore as per audited annual accounts for FY 2013-14 and reduced Rs.1410.06 crore relating to extension project and arrived at opening CWIP at Rs.495.07 crore pertaining to R&M of Units 6 & 7 during truing up for FY 2013-14.

During FY 2013-14, the Petitioner had incurred additional capex of Rs.60.84 Crore on R&M of 6&7 units. Thus the closing CWIP pertaining to R&M units for FY 2013-14 was arrived at Rs.555.91 Crore (Rs.495.07 Crore + Rs.60.84 Crore) and approved in the truing up for FY 2013-14 in the Tariff Order dated 12th March 2015. The Commission has approved additional capex of Rs.151.09 crore and closing CWIP at Rs.707.00 crore (Rs.555.91 crore + Rs.151.09 crore) for FY 2014-15 in true up for FY 2014-15 in Tariff Order dated 21.03.2016.

As per the audited accounts for FY 2014-15, the closing CWIP is at Rs.755.73 crore pertaining to R&M units. However, in the audited accounts for FY 2015-16, Rs.685.10 crore is shown as opening CWIP and stated that it has been revised due to finalization of the annual accounts of March 2016. However, the Petitioner has not furnished the reasons for revision in CWIP and details of computations in the petition. The Commission had addressed the Petitioner vide letter No BERC Case No 41/2016-1565 dated 30.11.2016 to furnish the reasons for adopting different values as opening balance in the accounts for FY 2015-16. In response the Petitioner vide letter no 751 dated 07.12.2016 has informed that R&M of Unit-6 & 7 and Extension Project *“works are being undertaken simultaneously, where lot of capital is being invested having common assets. This has led to shifting of cost in some cases from one project to other however the total CWIP has remained same for the year. BSPGCL has requested the Commission to consider the latest audited accounts for any calculation towards petition filed”*.

The Commission observes that the Petitioner should consider closing balance of previous year as per audited accounts and adopt the same as opening balance of relevant account head in the subsequent year's accounts. Any change in the values to be adopted should be by proposing adjustment accounting entries in the books of accounts of the relevant financial year. The Commission opines that the Petitioner will be in a better position to project/allocate/segregate the actual project expenditure relating to R&M units and Extension Project. In view of the above, the Commission considers the opening CWIP at Rs.685.10 crore as on 1st April 2015 as proposed by the Petitioner.

The Commission directs the Petitioner to adopt the opening balances as on 1st April of relevant financial year based on the closing balances as on 31st March of the previous year accounts and follow the correct accounting principles/procedures for making adjustments in the accounts by proposing relevant entries in the year of accounts for rectification/representing correct values in the accounts.

The Commission relying upon the audited accounts of statutory auditor (i.e., Chartered Accountant) has considered the total investment of Rs.75.40 crore in

capital expenditure during the year 2015-16 as reported in the audited annual accounts of FY 2015-16 of the Petitioner.

The Commission has set off the expenses of Rs.28.60 crore (Employee cost, R&M and Administration and General expenses) relating to FY 2015-16 against the other income received of Rs.21.97 crore in FY 2015-16 and surplus of pervious year Rs.3.92 crore (Table 4.17 of Tariff Order dated 21.03.2016). After set off of the expenses against other income and surplus of previous year, an amount of Rs.2.71 crore (Rs.28.60 crore – (Rs.21.97 crore + Rs.3.92 crore) expenses have resulted which is capitalised as both the units 6&7 are still under R&M and not commissioned during FY 2015-16.

The Commission, accordingly, has considered the capital investment and net closing CWIP for FY 2015-16 as detailed in the Table below:

Table 4.4: Capital investment approved in truing up for FY 2015-16

| (Rs. Crore) | | | | | |
|-------------|---|--|--|---|--------------------------------------|
| Sl. No. | Particulars | Approved for FY 2015-16 in MYT order dated 15 th March 2013 | Approved for FY 2015-16 (RE) in T.O dated 21.03.2016 | Claimed by BSPGCL in True up for FY 2015-16 | Approved in Truing up for FY 2015-16 |
| 1 | Opening CWIP | 2915.50 | 707.00 | 685.10 | 685.10 |
| 2 | Less: CWIP portion of Extension Project | -- | -- | -- | -- |
| 3 | Add: New Investment | 908.91 | 220.00 | 75.40 | 75.40 |
| 4 | Add: O&M expenditure of Units 6 & 7 | -- | -- | -- | 2.71 |
| 5 | Total Investment (1-2+3+4) | 3824.41 | 927.00 | 760.51 | 763.21 |
| 6 | Less: Capitalisation (7+8) | -- | -- | -- | -- |
| 7 | CWIP capitalisation | -- | -- | -- | -- |
| 8 | New Investment capitalisation | -- | -- | -- | -- |
| 9 | Net Closing CWIP (5-6) | 3824.41 | 927.00 | 760.51 | 763.21 |

4.4 Gross Fixed Assets

Petitioner's submission:

BSPGCL has submitted that the Commission in the APR order for 2015-16 had approved the opening and closing GFA as Rs.264.11 Crore and Rs.69.28 Crore after considering asset revaluation and asset retirement.

The BSPGCL has submitted that during the finalization of accounts for the FY 2015-16, the process of asset retirement was ongoing and accordingly no reduction in the GFA was proposed during FY 2015-16. It is further submitted that asset retirement is expected to get finalized in FY 2016-17. Accordingly, the Petitioner has proposed the value of GFA for FY 2015-16 as detailed in the Table below:

Table 4.5: Gross Fixed Assets proposed in truing up for FY 2015-16

| (Rs. Crore) | | | | | |
|-------------|------------------------------------|---|--|---|---|
| Sl. No. | Particulars | Approved for FY 2015-16 in MYT Order dated 15.03.2013 | Approved for FY 2015-16 in Tariff Order dated 12.03.2015 | Approved for FY 2015-16 (RE) in Tariff Order dated 21.03.2016 | As per audited Annual Accounts for FY 2015-16 |
| 1 | Opening GFA | 915.67 | 99.11 | 264.11 | 394.74 |
| 2 | Less: Assets Revalued | -- | -- | -- | -- |
| 3 | Sub-total (1-2) | 915.67 | 99.11 | 264.11 | 394.74 |
| 4 | Less: Asset Retirements | -- | -- | 194.83 | -- |
| 5 | Original value of GFA (3-4) | 563.47 | 99.11 | 69.28 | 394.74 |
| 6 | Additions during the year | -- | 934.48 | -- | 0.37 |
| 7 | Closing GFA (5 - 6) | 915.67 | 1033.59 | 69.28 | 395.12 |

Commission's Analysis:

The Commission has examined the gross fixed assets proposed by the Petitioner with reference to the audited annual accounts for the year 2015-16 of the Petitioner. The audited annual accounts show asset addition of Rs.0.37 Crore towards other civil works (Rs.0.21 crore), furniture & fixtures (Rs.0.01 crore) and office equipment (Rs.0.15 crore) during the year 2015-16.

The Petitioner has projected the opening GFA at Rs.394.74 Crore for FY 2015-16 (inclusive of asset revalued of Rs.130.63 Crore). The Commission had approved closing GFA at Rs.264.11 Crore (after adjustment of value of asset revalued Rs.130.63 Crore) in truing up for FY 2014-15. The Commission has decided to depict the value of GFA inclusive of assets revalued of Rs 130.63 Crore in the tariff order on par with the audited accounts of the petitioner as it is not impacting the total GFA inclusive of asset revalued. Accordingly, the Commission has considered opening GFA at Rs.394.74 crore (Rs.264.11 crore + Rs.130.63 crore) for FY 2015-16.

Addition to GFA Rs.0.38 crore is considered as per the audited accounts for FY 2015-16.

Accordingly, the Commission approves the GFA as detailed in the Table below:

Table 4.6: Gross Fixed Assets approved in truing up for FY 2015-16

| (Rs. Crore) | | | | | |
|-------------|----------------------------|--|--|---|--------------------------------------|
| Sl. No. | Particulars | Approved for FY 2015-16 in MYT order dated 15 th March 2013 | Approved for FY 2015-16 (RE) in T.O dated 21.03.2016 | Claimed by BSPGCL in True up for FY 2015-16 | Approved in Truing up for FY 2015-16 |
| 1 | Opening GFA | 915.67 | 266.97 | 394.74 | 394.74 |
| 2 | Additions during the year | -- | 0.68 | 0.37 | 0.38 |
| 3 | Less: Asset Retirements | -- | 3.54 | -- | -- |
| 4 | Closing GFA (1+2-3) | 915.67 | 264.11 | 395.12 | 395.12 |

4.5 Depreciation

Petitioner's submission:

BSPGCL has submitted that the Commission had considered "Nil" depreciation in review for FY 2015-16 in the Tariff order dated 21.03.2016 based on the submission made by BSPGCL to claim the same in the true up process based on the actual GFA, additions to GFA vis-à-vis the Grants for FY 2015-16.

BSPGCL has submitted that based on the actual GFA and Grants for FY 2015-16, no depreciation is being claimed for FY 2015-16 as Grants value is higher than GFA as detailed in the Table below:

Table 4.7: Depreciation proposed in truing up for FY 2015-16

| (Rs. Crore) | | | | | |
|-------------|---------------------------------------|--------------------------------------|--|---|---|
| Sl. No. | Particulars | Approved in MYT Order for FY 2015-16 | Approved for FY 2015-16 in Tariff Order dated 12.03.2015 | Approved for FY 2015-16 (RE) in Tariff Order dated 21.03.2016 | As per audited Annual Accounts for FY 2015-16 |
| 1 | Opening GFA | 915.67 | 99.11 | 264.11 | 394.74 |
| 2 | Less: Asset retirements | -- | -- | 194.83 | -- |
| 3 | Additions during the year | -- | 934.48 | -- | 0.37 |
| 4 | Closing GFA (1-2+32) | 915.67 | 1033.59 | 69.28 | 395.12 |
| 5 | Average GFA (1+4)/2 | 915.67 | 566.35 | 166.70 | 394.93 |
| 6 | Weighted average rate of depreciation | 4.99% | 4.99% | 4.99% | 4.99% |
| 7 | Gross Depreciation (5*6) | 45.69 | 28.26 | 2.08 | 20 |
| 8 | Opening Grants | 745.40 | 398.01 | 2434.93 | 2434.93 |
| 9 | Add: Grants during the year | -- | 934.48 | 53.00 | 298.91 |

| Sl. No. | Particulars | Approved in MYT Order for FY 2015-16 | Approved for FY 2015-16 in Tariff Order dated 12.03.2015 | Approved for FY 2015-16 (RE) in Tariff Order dated 21.03.2016 | As per audited Annual Accounts for FY 2015-16 |
|---------|--|--------------------------------------|--|---|---|
| 10 | Closing Grants (8+9) | 745.40 | 1332.49 | 2487.93 | 901.05 |
| 11 | Average Grants (8+10)/2 | 745.40 | 865.25 | 2461.43 | 1667.99 |
| 12 | Weighted average rate of depreciation | 4.99% | 4.99% | 4.99% | 4.99% |
| 13 | Depreciation for GFA on Grants (11*12) | 37.20 | 43.18 | 122.83 | 82.23 |
| 14 | Depreciation for GFA on loans (7-13) | 8.50 | -- | -- | -- |

Commission's Analysis:

The Petitioner has claimed 'Nil' depreciation in truing up for FY 2015-16.

The Commission has examined the computation of the depreciation and observed that the closing grants value is projected at Rs.901.05 crore by the Petitioner. It is observed from the audited accounts for FY 2015-16, Rs.2082.45 crore which was considered as Capital Reserve (Grant for capital assets) in the audited accounts for FY 2014-15 was utilized for allotment of shares and net closing grants of Rs.901.05 crore is shown in the audited accounts for FY 2015-16 and the same is considered by the Petitioner for computation of depreciation.

The Commission has addressed the Petitioner vide letter No. BERC-Case No.41/2016-1684 dated 26.12.2016 that in Table 7 of the petition, the closing Grants are shown at Rs.901.05 crore (Sl.No.10) is not tallied with when opening grants (Sl.No.8) and grants during the year (Sl. No.10) are totaled/summed-up. The closing Grants for FY 2015-16 (Rs.901.05 crore) should be the opening Grants for FY 2016-17, whereas, Rs.534.39 crore (Table 49 of the petition) is adopted as opening Grants for FY 2016-17. It was directed to furnish the reasons for adopting different values along with computations. The Petitioner vide letter No.892 dated 27.12.2016 submitted the following details:

| Particulars | 31 st March 2016 | 31 st March 2015 |
|--|-----------------------------|-----------------------------|
| Capital reserve (Grant for capital assets) | | |
| Opening balance | 2684.59 | 355.01 |
| Add: Addition during the year | 298.91 | 2079.92 |
| Add: Fund from State Government | | 249.66 |

| Particulars | 31 st March 2016 | 31 st March 2015 |
|--|-----------------------------|-----------------------------|
| Less: Utilised for allotment of shares | (2082.45) | -- |
| Closing balance | 901.05 | 2684.59 |

Further it was submitted that the grant for the existing project is Rs.534.39 crore to end of FY 2015-16 and balance grant is for the extension project i.e. 2x250 MW.

The Commission in the earlier tariff orders has considered the total grants based on the audited accounts of the Petitioner year on year in the absence of details of the funding of the R&M units. The Petitioner has submitted that the project cost of R&M units is through Grants and Ganga River water scheme and BTPS infrastructure strengthening schemes are through Equity from State Government.

The Commission considers the submission of the Petitioner and accordingly, adopted the grants for computation of depreciation on the assets created through grants.

The Commission has approved closing grants at Rs.2434.93 crore in true up for FY 2014-15 based on the audited accounts for FY 2014-15. The closing grants reported in the accounts also include the grants relating to extension project and the grants relating to R&M project is at Rs.534.39 crore. Hence, the grants are realigned to represent the actual grants relating to R&M units 6&7 for determination of ARR relating to R&M units. The Commission accordingly, has considered the opening and closing grants at Rs.534.39 crore for FY 2015-16 relating to R&M units. Accordingly, the Commission has considered the opening grants and addition to grants for FY 2015-16 as detailed in the Table below for computation of Depreciation.

The Commission has considered opening GFA at Rs.394.74 crore, additions to GFA of Rs.0.38 crore and closing GFA at Rs.395.12 crore in Table 4.6 above.

Regulation 38 (2)(a) Depreciation specify, *for purpose of tariff, depreciation shall be computed in the following manner:*

1. The value base for the purpose of depreciation shall be the historical cost of the asset.

2. Depreciation shall be calculated annually based on the straight line method over the useful life of the asset and at rates prescribed by the CERC.

The residual value of the asset shall be considered as 10% and the depreciation shall be allowed up to a maximum of 90% of the historical cost of the asset. **The land is not a depreciable asset and its cost shall be excluded from the capital cost while computing 90% of the historical cost of the asset.**

The Commission, in view of the above has computed depreciation at “Nil” as detailed in the Table below:

Table 4.8: Depreciation approved in truing up for FY 2015-16

| (Rs. Crore) | | | | | |
|-------------|--|---|---|---|--------------------------------------|
| Sl. No. | Particulars | Approved for FY 2015-16 in MYT Order dated 15.03.2013 | Approved for FY 2015-16 (RE) in Tariff Order dated 21.03.2016 | Claimed by BSPGCL in True up for FY 2015-16 | Approved in Truing up for FY 2015-16 |
| 1 | Opening GFA | 915.67 | 264.11 | 394.74 | 394.74 |
| 2 | Less: Value of Land | -- | -- | -- | 135.66 |
| 3 | Net Opening GFA (1-2) | -- | -- | -- | 259.08 |
| 4 | Additions during the year | -- | -- | 0.37 | 0.38 |
| 5 | Less: Asset retirements | -- | 194.83 | -- | -- |
| 6 | Closing GFA (3+4-5) | 915.67 | 69.28 | 395.12 | 259.46 |
| 7 | Average GFA (3+6)/2 | 915.67 | 166.70 | 394.93 | 259.27 |
| 8 | Weighted average rate of depreciation | 4.99% | 4.99% | 4.99% | 4.99% |
| 9 | Gross Depreciation (7*8) | 45.69 | 2.08 | 20 | 12.94 |
| 10 | Opening Grants | 745.40 | 2434.93 | 2434.93 | 534.39 |
| 11 | Add: Grants during the year | -- | 53.00 | 298.91 | -- |
| 12 | Closing Grants (10+11) | 745.40 | 2487.93 | 901.05 | 534.39 |
| 13 | Average Grants (10+12)/2 | 745.40 | 2461.43 | 1667.99 | 534.39 |
| 14 | Weighted average rate of depreciation | 4.99% | 4.99% | 4.99% | 4.99% |
| 15 | Depreciation for GFA on Grants (13*14) | 37.20 | 122.83 | 82.23 | 26.67 |
| 16 | Depreciation for GFA on loans (9-15) | 8.50 | -- | -- | (13.73) |

As could be observed from the Table above, the proportionate depreciation on grants is higher than the depreciation on assets, and depreciation is resulted in negative for FY 2015-16.

Accordingly, the Commission has considered “Nil” depreciation in truing up for FY 2015-16.

4.6 Interest and Finance Charges

Petitioner’s submission:

BSPGCL has submitted that the Commission has not considered any interest expense in APR order for FY 2015-16 in Tariff Order dated 21st March 2016. It is submitted that the interest and finance charges actually incurred during FY 2015-16 pertains to Extension Project and accordingly no interest charges are claimed in the truing up for FY 2015-16.

Commission’s analysis:

The Petitioner has not claimed interest expense in the truing up for FY 2015-16, as no interest expense has been incurred during FY 2015-16 pertaining to Units 6 & 7 of BTPS which are under renovation.

Accordingly, the Commission has considered interest charges as “Nil” in truing-up for FY 2015-16.

4.7 Interest on working capital

Petitioner’s submission

BSPGCL has submitted that since no generation has taken place during FY 2015-16, no interest on working capital is being claimed in truing up for FY 2015-16.

Commission’s analysis:

The Petitioner has not claimed interest on working capital in the truing up for FY 2015-16 as the both the Units 6 & 7 of BTPS are under renovation.

Accordingly, the Commission has considered interest on working capital as “Nil” in truing-up for FY 2015-16.

4.8 Return on Equity

Petitioner's submission

BSPGCL has submitted that since no generation has taken place during FY 2015-16, no Return on Equity is being claimed in truing up for FY 2015-16.

Commission's Analysis:

The Petitioner has not claimed Return on Equity in true up for FY 2015-16, since no generation has taken place during FY 2015-16.

The Commission, accordingly, has considered Return on Equity as "Nil" in truing-up for FY 2015-16.

4.9 Operation and Maintenance Expenses

4.9.1 Employee cost

Petitioner's submission:

The Petitioner has submitted that the actual expenses to the tune of Rs.26.47 Crore has been incurred by BSPGCL during FY 2015-16. The Petitioner has reduced the cost of employee expenditure pertaining to Extension Project to the extent of 30%. The Petitioner has claimed the employee cost in the truing up for FY 2015-16 as detailed in the Table below:

Table 4.9: Employee Expenses proposed for FY 2015-16

| (Rs. Crore) | | | | | |
|-------------|---|--------------------------------------|--|---|---|
| Sl. No. | Particulars | Approved in MYT Order for FY 2015-16 | Approved for FY 2015-16 in Tariff Order dated 12.03.2015 | Approved for FY 2015-16 (RE) in Tariff Order dated 21.03.2016 | As per audited Annual Accounts for FY 2015-16 |
| 1 | Employee cost | 142.73 | 18.90 | 27.72 | 26.47 |
| 2 | Add: Indexation | -- | 1.56 | -- | -- |
| 3 | Less: Manpower cost for extension project (30% of cost (1+2)) | | 6.14 | 8.32 | 7.94 |
| 4 | Add: New Man power cost | 10.00 | 10.00 | -- | -- |
| 5 | Sub-Total cost (1+2-3+4) | 152.73 | 24.32 | 19.40 | 18.53 |
| 6 | Less: Support by State Government against terminal benefits | 55.73 | - | - | - |
| 7 | Less: Employee cost capitalised | -- | -- | -- | -- |
| 8 | Total Employee Cost (5-6-7) | 97.00 | 24.32 | 19.40 | 18.53 |

Commission's Analysis:

The Commission, in the review for FY 2015-16, has approved Rs.19.40 Crore in the Tariff Order dated 21st March 2016. As per the audited accounts of BSPGCL an amount of Rs.26.47 Crore has been incurred by the Petitioner towards employee cost during FY 2015-16. The Petitioner has apportioned 30% of the employee cost to Extension Project and claimed Rs.18.53 Crore in truing up for FY 2015-16.

The Commission approves net employee cost at Rs.18.53 Crore as claimed by BSPGCL for FY 2015-16 in the truing up based on audited annual accounts as indicated in the Table below:

Table 4.10: Employee Expenses approved in truing-up FY 2015-16

| (Rs. Crore) | | | | | |
|-------------|---|--|--|---|--------------------------------------|
| Sl. No. | Particulars | Approved for FY 2015-16 in MYT order dated 15 th March 2013 | Approved for FY 2015-16 (RE) in T.O dated 21.03.2016 | Claimed by BSPGCL in True up for FY 2015-16 | Approved in Truing up for FY 2015-16 |
| 1 | Employee cost | 142.73 | 27.72 | 26.47 | 26.47 |
| 2 | Less: Manpower cost for extension project (30% of cost) | -- | 8.32 | 7.94 | 7.94 |
| 3 | Add: New Manpower cost | 10.00 | -- | -- | -- |
| 4 | Total Employee cost (1-2+3) | 152.73 | 19.40 | 18.53 | 18.53 |
| 5 | Less: Support by State Government against terminal benefits | 55.73 | -- | -- | -- |
| 6 | Less: Employee cost capitalised | -- | -- | -- | -- |
| 7 | Net Employee cost (4-5-6) | 97.00 | 19.40 | 18.53 | 18.53 |

The Commission, accordingly, approves the employee cost at Rs.18.53 Crore for FY 2015-16 in the truing-up.

4.9.2 Repairs and Maintenance (R&M) Expenses**Petitioner's submission:**

BSPGCL has submitted that in APR order for FY 2015-16 dated 21st March, 2016, the Commission had considered Rs.2.00 crore towards R&M expenses for FY 2015-16.

The Petitioner has submitted that the actual R&M expenses of Rs.1.78 crore has been incurred during FY 2015-16.

Commission’s analysis:

The audited accounts (Income and Expenditure statement) of the Petitioner for FY 2015-16 depict Rs.13.62 crore towards other expenses which represent R&M expenses of Rs.1.78 crore and A&G expenses of Rs.11.84 crore. The Commission considers the R&M expenses of Rs.1.78 crore in truing up for FY 2015-16 based on audited accounts of the petitioner for FY 2015-16 as indicated in the Table below:

Table 4.11: Repairs & Maintenance Expenses approved in truing-up FY 2015-16

| Particulars | (Rs. Crore) | | | |
|--------------|--|---|---|--------------------------------------|
| | Approved for FY 2015-16 in MYT order dated 15 th March 2013 | Approved for FY 2015-16 (RE) in T.O dated 21 st March 2016 | Claimed by BSPGCL in True up for FY 2015-16 | Approved in Truing up for FY 2015-16 |
| R&M Expenses | 10.2 | 2.00 | 1.78 | 1.78 |

The Commission, accordingly, approves R&M expenses at Rs.1.78 crore for FY 2015-16 in the truing-up.

4.9.3 Administration & General (A&G) Expenses

Petitioner’s submission:

BSPGCL has submitted that in APR order for FY 2015-16 dated 21st March, 2016, the Commission had approved the A&G cost of Rs.5.61 Crore. The Petitioner submitted that the actual expenses incurred in FY 2015-16 is at Rs.8.29 Crore. The Petitioner has further submitted that A&G expenses pertaining to Extension Project to the extent of 30% has been reduced and net A&G expenses claimed in the truing up for FY 2015-16 as detailed in the Table below:

Table 4.12: Administration and General Expenses proposed for FY 2015-16

| Sl. No. | Particulars | (Rs. Crore) | | | |
|---------|--|--------------------------------------|--|---|---|
| | | Approved in MYT Order for FY 2015-16 | Approved for FY 2015-16 in Tariff Order dated 12.03.2015 | Approved for FY 2015-16 (RE) in Tariff Order dated 21.03.2016 | As per audited Annual Accounts for FY 2015-16 |
| 1 | A & G Expenses | 2.18 | 3.24 | 2.00 | 11.84 |
| 2 | Less: A&G cost for extension project (30% of cost) | -- | 1.05 | 0.60 | 3.55 |

| Sl. No. | Particulars | Approved in MYT Order for FY 2015-16 | Approved for FY 2015-16 in Tariff Order dated 12.03.2015 | Approved for FY 2015-16 (RE) in Tariff Order dated 21.03.2016 | As per audited Annual Accounts for FY 2015-16 |
|---------|-------------------------------------|--------------------------------------|--|---|---|
| 3 | Add: Indexation @8.24% | -- | 0.27 | -- | -- |
| 4 | Add: Payment to CISF | 5.00 | 5.00 | 4.21 | -- |
| 5 | Total A&G cost (1-2+3+4) | 7.18 | 7.46 | 5.61 | 8.29 |
| 6 | Less: A&G exp. Capitalised | -- | -- | -- | -- |
| 7 | Net A&G expenses(5-6) | 7.18 | 7.46 | 5.61 | 8.29 |

Commission's Analysis:

The audited accounts (Income and Expenditure statement) of the Petitioner for FY 2015-16 depict Rs.13.62 crore towards other expenses which represent R&M expenses of Rs.1.78 crore and A&G expenses of Rs.11.84 crore. The Commission has analysed the A&G expenses and observed that Holding Company expenses of Rs.5.79 crore were included in A&G expenses, which is separately depicted in the O&M expenses. The Petitioner has made allocation of 30% of A&G expenses to Extension Project. The Commission considers the A&G expenses as per the audited accounts for FY 2015-16 as detailed in the Table below:

Table 4.13: Administration and General Expenses approved in truing up for FY 2015-16 (Rs. Crore)

| Sl. No. | Particulars | Approved for FY 2015-16 in MYT order dated 15 th March 2013 | Approved for FY 2015-16 (RE) in T.O dated 21 st March 2016 | Claimed by BSPGCL in True up for FY 2015-16 | Approved in Truing up for FY 2015-16 |
|---------|--|--|---|---|--------------------------------------|
| 1 | A & G Expenses | 2.18 | 2.00 | 11.84 | 6.05 |
| 2 | Holding company expenses | -- | -- | -- | 5.79 |
| 3 | Add: Payment to CISF | 5.00 | 4.21 | -- | -- |
| 4 | Less: A&G cost for extension project (30% of cost) | -- | 0.60 | 3.55 | 3.55 |
| 5 | Total A&G cost (1+2+3-4) | 7.18 | 5.61 | 8.29 | 8.29 |

The Commission, accordingly, approves the Administration & General Expenses at Rs.8.29 Crore for FY 2015-16 in the truing-up.

4.9.4 Total O & M expenses**Petitioner's submission:**

The total O&M expenses for FY 2015-16 proposed by the Petitioner for truing up is summarised in the Table below:

Table 4.14: Total O&M Expenses proposed in truing up for FY 2015-16

| (Rs. Crore) | | | | | |
|-------------|------------------------------------|--------------------------------------|--|---|---|
| Sl. No. | Particulars | Approved in MYT Order for FY 2015-16 | Approved for FY 2015-16 in Tariff Order dated 12.03.2015 | Approved for FY 2015-16 (RE) in Tariff Order dated 21.03.2016 | As per audited Annual Accounts for FY 2015-16 |
| 1 | Employee cost | 152.73 | 24.32 | 19.40 | 18.53 |
| 2 | R&M expenses | 10.32 | 9.03 | 2.00 | 1.78 |
| 3 | A & G Expenses | 7.18 | 7.46 | 5.61 | 8.29 |
| 4 | Holding Company expenses allocated | | 7.70 | 8.75 | (Inclusive of Holding company expenses) |
| 5 | Total O&M cost | 170.23 | 48.51 | 35.77 | 28.59 |
| 6 | Less: Capitalisation | 55.73 | -- | -- | -- |
| 7 | Net O&M cost | 114.50 | 48.51 | 35.77 | 28.59 |

Commission's analysis:

The Commission has set off the expenses of Rs.28.60 crore towards Employee cost, R&M and Administration and General expenses (inclusive of Holding company expenses) against the other income received of Rs.21.97 crore and surplus of previous year Rs.3.92 crore. After set off of the expenses against other income and surplus of previous year, an amount of Rs.2.71 crore (Rs.28.60 crore – (Rs.21.97 crore + Rs.3.92 crore) expenses have resulted which is capitalised as both the units 6&7 are still under R&M and not commissioned during FY 2015-16.

The Commission, based on the analysis, has considered total O&M expenses for FY 2015-16 in the truing up as detailed in the Table below:

Table 4.15: Total O&M Expenses approved in truing-up for FY 2015-16

| (Rs. Crore) | | | | | |
|-------------|---------------|--|---|---|--------------------------------------|
| Sl. No. | Particulars | Approved for FY 2015-16 in MYT order dated 15 th March 2013 | Approved for FY 2015-16 (RE) in T.O dated 21 st March 2016 | Claimed by BSPGCL in True up for FY 2015-16 | Approved in Truing up for FY 2015-16 |
| 1 | Employee cost | 152.73 | 19.40 | 18.53 | 18.53 |

| Sl. No. | Particulars | Approved for FY 2015-16 in MYT order dated 15 th March 2013 | Approved for FY 2015-16 (RE) in T.O dated 21 st March 2016 | Claimed by BSPGCL in True up for FY 2015-16 | Approved in Truing up for FY 2015-16 |
|---------|---|--|---|---|--|
| 2 | R&M expenses | 10.32 | 2.00 | 1.78 | 1.78 |
| 3 | A & G Expenses | 7.18 | 5.61 | 8.29 | 8.29 |
| 4 | Holding Company expenses allocated | | 8.75 | -- | (Inclusive of Holding company expenses) - |
| 5 | Total O&M cost (1 to 4) | 170.23 | 35.77 | 28.59 | 28.60 |
| 6 | Less: Support by State Government against terminal benefits | 55.73 | -- | -- | -- |
| 7 | Less: Capitalisation | -- | -- | -- | 2.71 |
| 8 | Net O&M cost (5-6-7) | 114.50 | 35.77 | 28.59 | 25.89 |

The Commission approves the total O&M expenses at Rs.25.89 Crore for FY 2015-16 in truing-up.

4.10 Non-Tariff Income

Petitioner's submission

BSPGCL has submitted that the Commission had approved non tariff income of Rs.0.10 Crore in APR for FY 2015-16 in the Tariff Order dated 21.03.2016 and the same has been considered in true up for FY 2015-16.

Commission's analysis:

The Commission observed that the entire cash flow of R&M projects and Extension Projects is managed by the BSPGCL and the cash flows include non tariff income also and is available at the dispensation of the BSPGCL. As such, the entire amount of non tariff income, as per the annual accounts for FY 2015-16, has been considered and adjusted against the O&M cost of the R&M units for FY 2015-16 as the amount received towards interest is available to the credit/disposable of the Petitioner. The audited account for FY 2015-16 shows other income as Rs 21.97 Crore.

Thus the Commission has considered the total other income of Rs.21.97 Crore based on the annual accounts for FY 2015-16 and adjusted against the O&M cost

(Rs.28.29 crore) in the true up for FY 2015-16. The Commission has followed this procedure consistently from earlier tariff orders.

The Commission approves the non tariff income at Rs.21.97 Crore as per the audited accounts for FY 2015-16 in the truing-up.

4.11 Annual Revenue Requirement

Petitioner's submission

BSPGCL has proposed the annual revenue requirement recoverable from the distribution licensees for FY 2015-16 in truing up as detailed in the Table below:

Table 4.16: Annual Revenue Requirement proposed in true up for FY 2015-16

| (Rs. Crore) | | | | | |
|-------------|--------------------------------|--------------------------------------|--|---|---|
| Sl. No. | Particulars | Approved in MYT Order for FY 2015-16 | Approved for FY 2015-16 in Tariff Order dated 12.03.2015 | Approved for FY 2015-16 (RE) in Tariff Order dated 21.03.2016 | As per audited Annual Accounts for FY 2015-16 |
| 1 | Fuel Cost | 315.15 | 293.98 | -- | -- |
| 2 | O&M expenses | 170.23 | 48.51 | 35.77 | 28.59 |
| 3 | Interest and finance charges | 9.60 | -- | -- | -- |
| 4 | Interest on working capital | 22.85 | 19.34 | -- | -- |
| 5 | Depreciation | 8.49 | -- | -- | -- |
| 6 | Return on equity | 48.16 | 48.16 | -- | -- |
| 7 | Less: Expenses Capitalised | 55.73 | -- | -- | -- |
| 8 | Total | 518.75 | 409.99 | 35.77 | 28.59 |
| 9 | Less: Non-Tariff Income | 0.73 | -- | 0.10 | 0.10 |
| 10 | Gross ARR | 518.02 | 409.99 | 35.67 | 28.49 |
| 11 | Surplus of FY 2014-15 adjusted | -- | -- | 3.92 | 3.92 |
| 12 | Net ARR | 518.02 | 409.99 | 31.75 | 24.57 |

Commission's Analysis:

Based on the detailed analysis, the annual revenue requirement considered by the Commission in true up for FY 2015-16 are as detailed in the Table below:

Table 4.17: ARR approved in truing up for FY 2015-16

| (Rs. Crore) | | | | | |
|-------------|--|---|--|---|--------------------------------------|
| Sl. No. | Particulars | Approved for FY 2015-16 in MYT order dated 15.03.2013 | Approved for FY 2015-16 (RE) in T.O dated 21.03.2016 | Claimed by BSPGCL in True up for FY 2015-16 | Approved in Truing up for FY 2015-16 |
| 1 | Fuel Cost | 315.15 | -- | -- | -- |
| 2 | O&M expenses | 170.23 | 35.77 | 28.59 | 28.60 |
| 3 | Interest and finance charges | 9.60 | -- | -- | -- |
| 4 | Interest on working capital | 22.85 | -- | -- | -- |
| 5 | Depreciation | 8.49 | -- | -- | -- |
| 6 | Return on equity | 48.16 | -- | -- | -- |
| 7 | Less: Expenses Capitalised | 55.73 | -- | -- | 2.71 |
| 8 | Gross ARR | 518.75 | 35.77 | 28.59 | 25.89 |
| 9 | Less: Non-Tariff Income | 0.73 | 0.10 | 0.10 | 21.97 |
| 10 | Less: Surplus of FY 2014-15 adjusted (Table 4.17 of T.O. dt.21.3.2016) | -- | 3.92 | 3.92 | 3.92 |
| 11 | Net ARR | 518.02 | 31.75 | 24.57 | -- |

The Commission has not considered any annual fixed charges in true up for FY 2015-16 as there was no generation during FY 2015-16. The O&M expenditure incurred by BSPGCL during FY 2015-16 has been set off against the other income received and surplus of FY 2014-15 as detailed in the table above, as Unit 6 & 7 are still under R&M and not commissioned during FY 2015-16.

5. Annual Performance Review for FY 2016-17

5.1 Background

The Commission issued order for Annual Revenue Requirement and Generation Tariff for FY 2016-17 on 21.03.2016 for Bihar State Power Generation Company Limited (BSPGCL). The approval of ARR for FY 2016-17 was based on the estimates projected by BSPGCL for costs to be incurred in FY 2016-17.

BSPGCL has now submitted the present petition on 18th November, 2016 which includes Annual Performance Review (APR) for FY 2016-17. The Petitioner has submitted that the APR for FY 2016-17 is based on the actual expenses incurred in the last seven (7) months (April 2016 to October 2016) and further projections for entire year as applicable for various heads of expenditure.

Review for FY 2016-17 is to be done according to the Regulation 22 (1) of BERC (Terms and Conditions for Determination of Tariff Regulations), 2007 which is reproduced below:

“The Commission shall undertake a review along with next Tariff Order of the expenses and revenues approved by the Commission in the current year Tariff Order. While doing so, the Commission shall consider variations between approvals and revised estimates / pre-actuals of the sale of electricity, income and expenditure for the relevant year and permit necessary adjustments / changes in case such variations are for adequate and justifiable reasons. Such an exercise shall be called Review”.

Accordingly, the ‘Review’ exercise for FY 2016-17 has been undertaken by the Commission on the basis of annual accounts for FY 2015-16, revised estimates for FY 2016-17 submitted by the Petitioner and in accordance with the BERC (Terms and Conditions for Determination of Tariff) Regulations, 2007. However, wherever deemed necessary, the Commission has considered expenses based on prudence check

5.2 Status of BTPS R&M

The Units 6 and 7 are under Renovation and Modernisation (R&M) from 15th March, 2012 and 21st June, 2010 respectively. R&M is being executed by BHEL under supervision of M/s. NTPC. After completion of R&M, Unit-7 is working since 4th November, 2016. The R&M of Unit-6 scheduled to be completed by June 2017 and the Unit-6 may start generation from July, 2017.

5.3 Status of BTPS Extension Project (2 x 250 MW)

In order to cater to the growing energy demand of the State, the erstwhile BSEB had proposed to augment the generating capacity of BTPS by installing 2 x 250 MW units, known as BTPS Extension Project (Unit 8 & 9). The project is being executed by BHEL. The latest status of programme of works of the extension project furnished by BSPGCL is given in the Annexure-C appended to this order.

5.4 Generation from BTPS Unit 6 & 7

Petitioner's submission:

BSPGCL has submitted that the Commission in Tariff Order dated 21st March 2016 approved the Energy charges for FY 2016-17 based on the estimates proposed by BSPGCL. The Petitioner now seeks revision in the estimated expenses for the FY 2016-17 based on the actual expenses incurred.

In the present petition, as mentioned in Para 5.2 above, it is submitted that Unit-7 has been working since 4th November 2016 and it will be available for 5 months during FY 2016-17 and for Unit-6, R&M will be completed by July 2017. The revised completion schedule of R&M of units are as given in the Table below:

Table 5.1: Revised Completion schedule of BTPS Unit – 6 and 7

| BTPS Unit | R&M Completion Date (Previous) | R&M Completion Date (Revised) |
|-----------|--------------------------------|---|
| Unit – 6 | July – 2016 | July – 2017 (Generation w.e.f from July 2017) |
| Unit – 7 | April – 2016 | November – 2016 (Generation w.e.f from 4 th November 2016) |

Commission's analysis:

As per the additional information and clarification received from the Petitioner vide letter dated 8th December 2016, the Commercial Operation Date for Unit-7 is

confirmed as 4th November 2016, which has been considered and generation is projected from that date for FY 2016-17 (for 148 days including 4th November 2016).

5.5 Performance and Cost parameters

5.5.1 Plant Availability Factor (PAF)

Petitioner's submission:

BSPGCL has requested for considering, the Plant Availability Factor at 70% in line with the last year's approval in view of the impact of R&M activity as given in the Table below:

Table 5.2: Projected Availability Factor for FY 2016-17

| Unit | PAF approved for FY 2016-17 in TO dated 21.03.2016 | Projected PAF for FY 2016-17 |
|------|--|------------------------------|
| 7 | 70% | 70% |

Commission's analysis:

The Commission considers the projection of PAF of 70% reasonable as it is in line with the one approved in the last tariff order. Hence, the Commission approves the PAF for Unit-7 for FY 2016-17 as projected by the Petitioner as given in the table below:

Table 5.3: Approved Plant Availability Factor for FY 2016-17

| Unit | PAF approved for FY 2016-17 in Tariff Order dated 21.03.2016 | Projected by BSPGCL for FY 2016-17 (RE) | Approved in review for FY 2016-17 (RE) |
|------|--|---|--|
| 7 | 70% | 70% | 70% |

5.5.2 Plant Load Factor (PLF)

Petitioner's submission:

BSPGCL has requested for considering the Plant Load Factor (PLF) of 70% for unit-7 for FY 2016-17 in view of the vintage of the unit and PLF achieved by similar size power plants that had undergone Renovation & Modernisation as given in the table below:

Table 5.4: Projected Load Factor for FY 2016-17

| Unit | PLF approved for FY 2016-17 in TO dated 21.03.2016 | Projected for FY 2016-17 | Operational days considered |
|------|--|--------------------------|-----------------------------|
| 7 | 70% | 70% | 147 days |

Commission's analysis:

The Commission considers the projection of PLF of 70% reasonable as it is in line with the one approved in the last Tariff Order. The Commission considers operational days as 148 days (i.e. from 04th November, 2016 to 31st March, 2017). Hence, the Commission approves the PLF for Unit-7 for FY 2016-17 as projected by the Petitioner as given in the table below:

Table 5.5: Approved Plant Load Factor for FY 2016-17

| Unit | PLF approved for FY 2016-17 in TO dated 21.03.2016 | Projected by BSPGCL for FY 2016-17 (RE) | Approved in review for FY 2016-17 (RE) |
|------|--|---|--|
| 7 | 70% | 70% | 70% |

5.5.3 Auxiliary Consumption**Petitioner's submission:**

BSPGCL has projected the auxiliary consumption of 12% for FY 2016-17 for Unit-7 as approved by the Commission for FY 2016-17 in Tariff order dated 21.03.2016 as given in the table below:

Table 5.6: Projected Auxiliary Consumption for FY 2016-17

| Unit | Approved for FY 2016-17 in TO dated 21.03.2016 | Projected for FY 2016-17 |
|------|--|--------------------------|
| 7 | 12% | 12% |

Commission's analysis:

The Commission considers the projection of auxiliary consumption at 12% is reasonable, as it is in line with that approved in the last Tariff Order. Hence, the Commission approves the auxiliary consumption for Unit-7 for FY 2016-17 as projected by the Petitioner as given in the Table below:

Table 5.7: Auxiliary Consumption approved for FY 2016-17

| Unit | Approved for FY 2016-17 in TO dated 21.03.2016 | Projected by BSPGCL for FY 2016-17 (RE) | Approved in review for FY 2016-17 (RE) |
|------|--|---|--|
| 7 | 12% | 12% | 12% |

5.5.4 Gross and Net Generation

Petitioner's submission:

BSPGCL has projected Gross and Net Generation for Unit-7 for FY 2016-17 as given in the Table below and also requested to allow the generation to be adjusted at the end of the year while truing up for FY 2016-17 based on actual generation:

Table 5.8: Projected Gross and Net Generation for Unit-7 for FY 2016-17

| Particulars | Projected Generation (MU) for FY 2016-17 |
|-----------------------|--|
| Gross Generation | 270.00 |
| Auxiliary consumption | 32.00 |
| Net generation | 237.00 |

Commission's analysis:

The Unit-7 commenced commercial operation since 4th November 2016. Thus the unit will be in operation for 148 days during FY 2016-17. The Petitioner vide letter No.39 dated 25.01.2017 has submitted that the capacity of the units 6&7 have been inadvertently mentioned as 105 MW in the petition, however the capacity of units have been restored to the original rated capacity of 110 MW after R&M. The Commission has considered the plant capacity as 110 MW. The Gross and Net Generation with the PLF and Auxiliary Consumption considered will be as follows:

Table 5.9: Gross and Net Generation approved for Unit-7 for FY 2016-17

| Particulars | Projected by BSPGCL for FY 2016-17 (MU) | Approved in review for FY 2016-17 (MU) |
|-----------------------------|---|--|
| Gross Generation | 270.00 | 273.50 |
| Auxiliary consumption (12%) | 32.00 | 32.82 |
| Net generation | 237.00 | 240.68 |

5.5.5 Station Heat Rate (SHR)

Petitioner's submission:

BSPGCL has projected Station Heat Rate of 3000 kcal/kWh for Unit-7 for FY 2016-17 as approved by the Commission in Tariff Order dated 21.03.2016.

Commission's analysis:

The Commission considers the Station Heat Rate for Unit-7 as projected by the Petitioner as given in the Table below:

Table 5.10: Gross and Net Generation considered for Unit-7 for FY 2016-17

| (Kcal/kWh) | | |
|------------|---|--|
| Unit | Projected by BSPGCL for FY 2016-17 (RE) | Approved in review for FY 2016-17 (RE) |
| 7 | 3000 | 3000 |

5.5.6 Specific Oil Consumption**Petitioner's submission:**

BSPGCL has projected Specific Oil consumption of 3.00 ml/kWh for Unit-7 for FY 2016-17 as approved by the Commission in Tariff Order dated 21.03.2016.

Commission's analysis:

The Commission considers the Specific Oil consumption, as projected by the Petitioner, since it is in accordance with that approved in the last tariff order dated 21.03.2016 as given in the Table below:

Table 5.11: Specific Oil consumption approved for FY 2016-17 (ml/kWh)

| Unit | Projected by BSPGCL for FY 2016-17 (RE) | Approved in review for FY 2016-17 (RE) |
|------|---|--|
| 7 | 3.00 | 3.00 |

5.5.7 Transit Loss of Coal**Petitioner's submission:**

BSPGCL has projected transit loss of coal at 0.80% for Unit-7 for FY 2016-17 as approved by the Commission in Tariff Order dated 21.03.2016.

Commission's analysis:

The Commission considers the Transit Loss of Coal as projected by the Petitioner since it is in line with that approved in the last tariff order as given in the Table below:

Table 5.12: Transit Loss of Coal approved for FY 2016-17

| Unit | Projected by BSPGCL for FY 2016-17 (RE) | Approved in review for FY 2016-17 (RE) |
|------|---|--|
| 7 | 0.80% | 0.80% |

5.5.8 Cost of Oil

Petitioner's submission:

BSPGCL based on Indian Oil Corporation Limited (IOCL) quotation has projected landed price of Light Diesel Oil (LDO) from IOCL's Budge Budge installation as given in the Table below:

Table 5.13 : Landed price of LDO projected by the Petitioner for FY 2016-17

| Sl. No. | Particulars | Rate | Quantity (KL) | Amount (in Rupees) |
|---------|-----------------------|------------|---------------|--------------------|
| 1 | Basic price | 34282.82 | 1 | 34283 |
| 2 | ED | 14% | | 4800 |
| 3 | Additional ED | | | 2500 |
| 4 | Adjustments | | | (133) |
| 5 | Ex-Depot price | | | 41499 |
| 6 | Freight @1.987/Kl/km | 1.987 | 1165 | 2315 |
| 7 | Other levies | 157 | | 157 |
| 8 | Sub-total | | | 43921 |
| 9 | CST | 2% | | 878 |
| 10 | Surcharge | 20% on CST | | 176 |
| 11 | Sub-total | | | 44975 |
| 12 | Entry Tax | 16% | | 7196 |
| 13 | Landed Cost | | | 52171 |

Commission's analysis:

The Commission has called for the actual of the Cost of Oil for Unit-7 as it has already started functioning. The Petitioner vide letter dated 8.12.2016 had communicated the copies of invoices for the supply of LDO, which works out to Rs.44976/KL. With Entry Tax of 16%, it works out to Rs.52171/KL. Hence, the Commission considers the price of LDO for FY 2016-17 as given in the Table below:

Table 5.14: Cost of LDO approved for FY 2016-17

| Unit | Projected by BSPGCL for FY 2016-17 (RE) | Approved in review for FY 2016-17 (RE) |
|------|---|--|
| 7 | Rs.52171/KL | Rs.52171/KL |

5.5.9 Cost of Coal

Petitioner's submission:

BSPGCL, based on the recent bills of M/s. Eastern Coalfields Limited (ECL) to M/s Barauni Thermal Power Plant, projected average price of coal at Rs.4346/MT

against Rs.4531/MT approved in the Tariff Order dated 21.3.2016. Summary of bills submitted by the Petitioner is as given in the Table below:

Table 5.15: Cost of Coal projected by the Petitioner for FY 2016-17

| Invoice Number | Invoice Date | Net Weight (mt) | GCV (kcal/kg) | Total landed cost (Rs) | Average Price (Rs/MT) |
|----------------|--------------|-----------------|---------------|------------------------|-----------------------|
| 916608160605 | 31-07-2016 | 553 | 5,950 | 27,97,172 | 5058 |
| 916508160606 | 31-07-2016 | 1,334.2 | 5,950 | 67,48,368 | 5058 |
| 922708160608 | 31-07-2016 | 1,007.2 | 5,350 | 37,03,079 | 3676 |
| 930608160609 | 31-07-2016 | 547.52 | 5350 | 20,12,956 | 3676 |
| 922508160621 | 04-08-2016 | 783.7 | 5,950 | 39,64,094 | 5058 |
| 922708160623 | 04-08-2016 | 1,383.4 | 5,350 | 50,86,067 | 3676 |
| 929408160619 | 04-08-2016 | 803.1 | 5,950 | 40,62,223 | 5058 |
| 929308160620 | 04-08-2016 | 758.6 | 5,650 | 27,88,991 | 3676 |
| | | 7,170.7 | 5,672 | 3,11,62,952 | 4346 |

Commission's analysis:

The Commission has called for the actual bills of the Cost of Coal for Unit-7 as it has already started functioning. The Petitioner vide letter dated 8.12.2016 communicated the invoices for the supply of Coal. The Petitioner has submitted coal bills/invoices but no bills relating to Railway freight were submitted. The Commission held hearings on 24.01.2017 and informed the Petitioner to submit the components included in computation of weighted average rate of cost of coal. The Petitioner vide letter No.39 dated 25.01.2017 had furnished the weighted average cost of coal arrived by the Petitioner as detailed hereunder:

Table 5.16: Cost of coal projected by the Petitioner

| Sl. No. | Particulars | For Grade G5 (5950 ROM) (Rs.) | For Grade G7 (5350 ROM) (Rs.) |
|---------|--|-------------------------------|-------------------------------|
| 1 | Coal Value/MT | 2829 | 1679 |
| 2 | Royalty | 385 | 385 |
| 3 | MMDR royalty central 2% on royalty | 8 | 8 |
| 4 | DMF trust 30% on royalty | 115.5 | 115.5 |
| 5 | Stowing Excise Duty | 10 | 10 |
| 6 | Transportation Charges | 57 | 57 |
| 7 | Assessable value | 3404 | 2254 |
| 8 | Clean Energy Cess | 400 | 400 |
| 9 | Bazar Tax (1% on ROM price) | 28 | 16 |
| 10 | E.D. & Ed. Cess @ 6% (on assessable value) | 204 | 135 |
| 11 | Deposit Surcharges @ 15% on CST | 31 | 20 |
| 12 | Sales tax (2%) | 81 | 57 |
| 13 | Ex-Works Sub Total | 4148 | 2826 |
| 14 | Railway Freight | 643 | 643 |
| 15 | Surcharge on Railway Freight @15% | 81 | 81 |

| Sl. No. | Particulars | For Grade G5 (5950 ROM) (Rs.) | For Grade G7 (5350 ROM) (Rs.) |
|---------|---|-------------------------------|-------------------------------|
| 16 | Entry Tax @ 4% | 166 | 113 |
| 17 | Other Charges (Stock Handling, unloading, siding, shunting charges, etc.) | 21 | 14 |
| 18 | Total | 5058 | 3676 |

Table 5.17: Weighted average cost of coal projected by the Petitioner

| Invoice No. | Net weight (MT) | GCV (kcal/kg) | Total GCV (kcal/kg) | Basic price (Rs/MT) | Landed Cost (Rs/MT) | Total landed cost (Rs) |
|--------------|-----------------|---------------|---------------------|---------------------|---------------------|------------------------|
| 916608160605 | 553 | 5950 | 3290350000 | 2829 | 5058 | 2797074000 |
| 916508160606 | 1334.20 | 5950 | 7938490000 | 2829 | 5058 | 6748383600 |
| 922708160608 | 1007.20 | 5350 | 5388520000 | 1679 | 3676 | 3702467200 |
| 930608160609 | 547.52 | 5350 | 2929232000 | 1679 | 3676 | 2012683520 |
| 922508160621 | 783.7 | 5950 | 4663015000 | 2829 | 5058 | 3963954600 |
| 922708160623 | 1383.40 | 5350 | 7401190000 | 1679 | 3676 | 5085378400 |
| 929408160619 | 803.10 | 5950 | 4778445000 | 2829 | 5058 | 4062079800 |
| 929308160620 | 758.60 | 5650 | 4286090000 | 1679 | 3676 | 2788613600 |
| | 7170.70 | | 40675332000 | | | 31160634720 |

- i) Average GCV of the coal = $40675332000 \text{ kcal} / 7170.70 \text{ MT} / 1000 = 5672 \text{ kCal/kg}$.
- ii) Average landed cost of coal = $\text{Rs.} 3116,06,34,720 / 7170.70 \text{ MT} / 1000 = \text{Rs.} 4346/\text{MT}$

The Petitioner has adopted the Railway freight at Rs.643/MT. The Commission observes that the Petitioner is getting coal from Mugma, Jharkand and Badam, Jharkand stations and the distance from the Loading station to Barauni is around 250 KMs. The Ministry of Railways (Railway Board), Government of India, vide circular No.TCR/1078/2015/07 dated 22.08.2016 (Corrigendum No.14 to Rates Circular No.8 of 2015) has notified the coal freight rates, as per which the slab rate for distance ranging from 201 KMs – 275 KMs is at Rs.421/tonne. The Commission accordingly, has adopted the Railway freight at Rs.421/tonne.

Further, the Petitioner has adopted basic price at Rs.1679/MT in respect of G7 5650 grade of coal. As per the bills provided by the Petitioner, the basic price for Grade G5 (5950 ROM) is at Rs.2829/MT, Grade G7 (5650 ROM) is at Rs.1979/MT and Grade G7 (5350 ROM) is at Rs.1679/MT. The Commission accordingly, has

considered the basic price of the respective grade of coal. The Commission has computed the cost of coal as detailed in the tables below:

Table 5.18: Cost of coal considered by the Commission for FY 2016-17

| Sl. No. | Particulars | For Grade G5 (5950 ROM) | For Grade G7 (5650 ROM) | For Grade G7 (5350 ROM) |
|---------|---|-------------------------|-------------------------|-------------------------|
| 1 | Coal Value/MT | 2829.00 | 1979.00 | 1679.00 |
| 2 | Royalty | 385.00 | 266.00 | 224.00 |
| 3 | MMDR royalty central 2% on royalty | 7.70 | 5.32 | 4.48 |
| 4 | DMF trust 30% on royalty | 115.50 | 79.80 | 67.20 |
| 5 | Stowing Excise Duty | 10.00 | 10.00 | 10.00 |
| 6 | Transportation Charges | 57.00 | 57.00 | 57.00 |
| 7 | Assessable value(1 to 6) | 3404.20 | 2397.12 | 2041.68 |
| 8 | Clean Energy Cess | 400.00 | 401.00 | 400.00 |
| 9 | Bazar Tax (1% on ROM price on 1) | 28.29 | 19.79 | 16.79 |
| 10 | E.D. & Ed. Cess @ 6% (on assessable value on 7) | 204.25 | 143.83 | 122.50 |
| 11 | Deposit Surcharges @ 15% on CST on 10 | 30.64 | 21.57 | 18.38 |
| 12 | Sub-total (7 to 11) | 4067.38 | 2983.31 | 2599.35 |
| 13 | Sales tax (2% on 12) | 81.35 | 59.67 | 51.99 |
| 14 | Ex-Works coal cost (12+13) | 4148.73 | 3042.98 | 2651.33 |
| 15 | Railway Freight | 421.00 | 422.00 | 421.00 |
| 16 | Surcharge on Railway Freight @15% on 15 | 63.15 | 63.30 | 63.15 |
| 17 | sub-total (14+15+16) | 4632.88 | 3528.28 | 3135.48 |
| 18 | Entry Tax @ 5% on 17 | 231.64 | 176.41 | 156.77 |
| 19 | Other Charges (Stock Handling, under loading, siding, shunting etc.) @0.5% on ex-works cost | 20.74 | 15.21 | 13.26 |
| 20 | Total (17+18+19) | 4885.26 | 3719.91 | 3305.51 |

Table 5.19: Weighted average cost of Coal approved for FY 2016-17

| Invoice No. | Net weight (MT) | GCV (kcal/kg) | Total GCV (kcal/kg) | Basic price (Rs/MT) | Landed Cost (Rs/MT) | Total landed cost (Rs) |
|--|-----------------|---------------|---------------------|---------------------|---------------------|------------------------|
| 916608160605 | 553.00 | 5950 | 3290350000 | 2829 | 4885.26 | 2701548780 |
| 916508160606 | 1334.20 | 5950 | 7938490000 | 2829 | 4885.26 | 6517913892 |
| 922708160608 | 1007.20 | 5350 | 5388520000 | 1679 | 3305.51 | 3329309672 |
| 930608160609 | 547.52 | 5350 | 2929232000 | 1679 | 3305.51 | 1809832835 |
| 922508160621 | 783.70 | 5950 | 4663015000 | 2829 | 4885.26 | 3828578262 |
| 922708160623 | 1383.40 | 5350 | 7401190000 | 1679 | 3305.51 | 4572842534 |
| 929408160619 | 803.10 | 5950 | 4778445000 | 2829 | 4885.26 | 3923352306 |
| 929308160620 | 758.60 | 5650 | 4286090000 | 1979 | 3719.91 | 2821923726 |
| | 7170.72 | | 40675332000 | | | 29505302007 |
| Weighted Average cost of coal (Total landed cost/total net weight)/1000 | | | | | | 4114.69 |
| Average GCV of coal (Total GCV/Total net weight MT)/1000 | | | | | | 5672 |

5.5.10 GCV of Coal and Oil

Petitioner's submission:

BSPGCL, in its petition projected the Gross Calorific Value (GCV) of Coal at 5672 kCal/kg against 5650 kCal/kg approved in Tariff Order dated 21.03.2016. The GCV of Oil is projected at 10153 kCal/L, same as that approved in the Tariff Order dated 21.3.2016.

Commission's analysis:

The Commission obtained the actual GCV of Coal as the Unit-7 has already started functioning. The Petitioner vide letter dated 8.12.2016 submitted the invoices from M/s. Eastern Coal Fields Ltd. From the invoices, the weighted average GCV of coal is derived at 5672 Kcal/kg (Table 5.19) and the Commission accordingly considers the GCV at 5672 kCal/kg for FY 2016-17. The GCV of LDO, is also considered as projected by BSPGCL as given in the Table below:

Table 5.20: Weighted average GCV of Coal and LDO Oil approved for FY 2016-17

| Unit | Projected by BSPGCL for FY 2016-17 (RE) | | Approved in review for FY 2016-17 (RE) | |
|------|---|---------------------|--|---------------------|
| | Wt. Avg. GCV of coal | Wt. Avg. GCV of Oil | Wt. Avg. GCV of coal | Wt. Avg. GCV of Oil |
| 7 | 5672 kCal/kg | 10153 kCal/l | 5672 kCal/kg | 10153 kCal/l |

5.5.11 Fuel Cost/Variable cost

Petitioner's submission:

BSPGCL has projected the variable cost in review for FY 2016-17 as given in the table below:

Table 5.21: Projected Variable Cost of Generation for FY 2016-17

| Sl. No. | Item | Derivation | UoM | Approved for FY 2016-17 in T.O. dated 21.03.2016 | Projected by BSPGCL for FY 2016-17 (RE) |
|---------|-------------------------------|----------------|----------|--|---|
| 1 | Gross Generation | A | MUs | 1,180.41 | 272 |
| 2 | Station Heat Rate | B | KCal/KWh | 3,000 | 3,000 |
| 3 | Sp. Oil Consumption | C | ml/kWh | 3 | 3 |
| 4 | Calorific value of Oil | D | kcal/l | 10,153 | 10,153 |
| 5 | Gross Calorific Value of coal | E | kcal/kg | 5,650 | 5,672 |
| 6 | Overall Heat | F= A*B | G Cal | 3,541,230 | 809,424 |
| 7 | Heat from Oil | G=(A*C*D)/1000 | G Cal | 35,954 | 13,698 |
| 8 | Heat from Coal | H = (F-G) | G Cal | 3,505,276 | 795,726 |

| Sl. No. | Item | Derivation | UoM | Approved for FY 2016-17 in T.O. dated 21.03.2016 | Projected by BSPGCL for FY 2016-17 (RE) |
|---------|---|------------------|---------|--|---|
| 9 | Actual Oil Consumption | $I=A*C$ | Kl | 3,541 | 809 |
| 10 | Actual Coal Consumption | $J=(H*1000)/E$ | MT | 620,403 | 140,290 |
| 11 | Coal Consumption including Transit Loss | $J1=J/(1-0.008)$ | MT | 625,406 | 141,422 |
| 12 | Cost of Oil per KL | K | Rs/kl | 44,761 | 52,171.00 |
| 13 | Cost of Coal per MT | L | Rs/MT | 4,531.00 | 4,346.00 |
| 14 | Cost of Oil | $M=I*K/100000$ | Rs Lakh | 1,585 | 422 |
| 15 | Cost of Coal | $N=J1*L/100000$ | Rs Lakh | 28,337 | 6,146 |
| 16 | Total Fuel Cost | $O= M+N$ | Rs Lakh | 29,922 | 6,568 |
| 17 | Other Fuel related cost | P | Rs Lakh | 0 | 0 |
| 18 | Total Fuel Cost | $Q= O+P$ | Rs Lakh | 29,922 | 6,568 |
| 19 | Fuel Cost/Unit Gross | $Q/(A*10)$ | Rs/kWh | 2.53 | 2.43 |
| 20 | Auxiliary Consumption | R | % | 12.00% | 12.00% |
| 21 | Auxiliary Consumption | $S=A*R$ | MUs | 141.65 | 33.00 |
| 22 | Net Generation | $T=A-S$ | MUs | 1,039 | 239 |
| 23 | Fuel Cost/Unit Net | $Q/(T*10)$ | Rs/kWh | 2.88 | 2.77 |

Commission's analysis:

Based on the parameters considered above, the Fuel cost for Unit-7 for FY 2016-17 for 273.50 MU of generation considered in paragraph 5.5.4 are as given in the Table below:

Table 5.22: Variable Cost of Generation approved for FY 2016-17

| Sl. No. | Item | Derivation | Unit | Projected by BSPGCL for FY 2016-17 (RE) | Approved in review for FY 2016-17 (RE) |
|---------|---|------------------|----------|---|--|
| 1 | Gross Generation | A | MUs | 270 | 273.50 |
| 2 | Station Heat Rate | B | kCal/kWh | 3,000 | 3,000 |
| 3 | Sp. Oil Consumption | C | ml/kWh | 3.00 | 3.00 |
| 4 | Calorific value of Oil | D | kcal/l | 10,153 | 10,153 |
| 5 | Gross Calorific Value of coal | E | kcal/kg | 5,672 | 5,672 |
| 6 | Overall Heat | $F= A*B$ | G Cal | 8,09,424 | 8,20,512 |
| 7 | Heat from Oil | $G=(A*C*D)/1000$ | G Cal | 13,697 | 8,331 |
| 8 | Heat from Coal | $H = (F-G)$ | G Cal | 7,95,727 | 8,12,181 |
| 9 | Actual Oil Consumption | $I=A*C$ | kl | 1,349 | 821 |
| 10 | Actual Coal Consumption | $J=(H*1000)/E$ | MT | 1,40,280 | 1,43,191 |
| 11 | Coal Consumption including Transit Loss | $J1=J/(1-0.008)$ | MT | 1,41,411 | 1,44,346 |
| 12 | Cost of Oil per KL | K | Rs/kl | 52,171 | 52,171 |
| 13 | Cost of Coal per MT | L | Rs/MT | 4,346 | 4,114.69 |
| 14 | Cost of Oil | $M=I*K/100000$ | Rs Lakh | 422 | 428 |
| 15 | Cost of Coal | $N=J1*L/100000$ | Rs Lakh | 6,188 | 5,939 |

| Sl. No. | Item | Derivation | Unit | Projected by BSPGCL for FY 2016-17 (RE) | Approved in review for FY 2016-17 (RE) |
|---------|-------------------------|----------------|---------|---|--|
| 16 | Total Fuel Cost | $O = M + N$ | Rs Lakh | 6,610 | 6,367 |
| 17 | Other Fuel related cost | P | Rs Lakh | 0 | 0 |
| 18 | Total Fuel Cost | $Q = O + P$ | Rs Lakh | 6,610 | 6,367 |
| 19 | Fuel Cost/Unit Gross | $Q / (A * 10)$ | Rs/kWh | 2.50 | 2.33 |
| 20 | Auxiliary Consumption | R | % | 12.00% | 12.00% |
| 21 | Auxiliary Consumption | $S = A * R$ | MUs | 32 | 32.82 |
| 22 | Net Generation | $T = A - S$ | MUs | 237.43 | 240.68 |
| 23 | Fuel Cost/Unit Net | $Q / (T * 10)$ | Rs/kWh | 2.78 | 2.65 |

5.6 Capital Investment

Petitioner's submission:

BSPGCL has submitted that Ganga water scheme is envisaged to provide water supply to both existing as well as Extension Project. Based on the cost apportionment, in the ratio of capacities of the units, proposed by the Petitioner, the Commission has approved the costs in the Tariff Order dated 12th March, 2015 as detailed in the Table below:

Table 5.23: Cost allocation matrix for Ganga Water Scheme

| Sl. No. | Description | Unit | Amount |
|---------|--|-----------|--------|
| 1 | Total project cost | Rs. Crore | 173.00 |
| 2 | Capacity of existing plant | MW | 220 |
| 3 | Capacity of proposed plant | MW | 500 |
| 4 | Total BTPS capacity | MW | 720 |
| 5 | Allocation Ratio for existing plant | % | 31% |
| 6 | Allocation Ratio for extension plant | % | 69% |
| 7 | Project cost allocation for existing plant | Rs. Crore | 52.86 |

BSPGCL has submitted that BTPS strengthening works majorly involves the enabling infrastructure that was left out of the scope of M/s. BHEL, but is required for the smooth operation of the plant. The costs that are totally attributable to existing plant are proposed to be fully allocated to existing plant. The costs associated with colony and common infrastructure is proposed to be apportioned in the ratio of capacities of the Units. Accordingly, the total project cost of Rs.253.69 Crore pertaining to BTPS Infrastructure Strengthening Scheme/works has been allocated to R&M units at Rs. 204.15 Crore and Rs.49.18 Crore for extension project.

BSPGCL has submitted that the completion dates of R&M of the units are considered as November 2016 for Unit-7 and July 2017 for Unit-6. BSPGCL has proposed 50% of the entire capital expenditure of these units (unit-6 & 7) for capitalisation in FY 2016-17 and FY 2017-18 equally as detailed in the Table below:

Table 5.24: Capital expenditure for FY 2016-17 and FY 2017-18

| Sl. No. | Particulars | Total Project Cost | Fund released till FY 2015-16 | Planned capex | | Total capex (FY 2016-17 & FY 2017-18) |
|---------|---|--------------------|-------------------------------|---------------|--------------|---------------------------------------|
| | | | | FY 2016-17 | FY 2017-18 | |
| 1 | R&M of BTPS (Unit-6 & 7) | 581.20 | 534.39 | 46.81 | -- | 46.81 |
| 2 | BTPS Infrastructure Strengthening Scheme – Allocated to exiting units | 204.15 | 192.60 | 5.77 | 5.77 | 11.55 |
| 3 | Ganga River Water Scheme for BTPS – Allocated to existing units | 52.86 | 33.52 | 9.67 | 9.67 | 19.34 |
| 4 | Total investment | 838.21 | 760.51 | 62.26 | 15.45 | 77.70 |

BSPGCL has submitted that opening CWIP as on 1st April 2016 is considered as per annual accounts of FY 2015-16 (Closing balance). The new investment is estimated for FY 2016-17 as given in the table above. 50% of the capex of R&M units is planned to be capitalised and 100% of the capex of BTPS Infrastructure strengthening scheme. It is also submitted that previous year deficit of Rs.24.57 crore has also been capitalised in FY 2016-17. BSPGCL has requested the Commission to approve the revised capex and capitalisation for FY 2016-17 as provided in the Table below:

Table 5.25: Revised CWIP proposed by the Petitioner for FY 2016-17

| Sl. No. | Particulars | (Rs. Crore) | |
|---------|--|--|---|
| | | Approved for FY 2016-17 in Tariff Order dated 21.03.2016 | Projected by BSPGCL for FY 2016-17 (RE) |
| 1 | Opening CWIP | 927.00 | 760.51 |
| 2 | Less: CWIP portion of extension project | -- | -- |
| 3 | Net opening CWIP (1-2) | 927.00 | 760.51 |
| 4 | Add: New investment | 61.00 | 62.26 |
| 5 | Add: O&M Expenditure of R&M of 6 & 7 units | -- | 24.57 |
| 6 | Total investment (3+4+5) | 988.00 | 847.34 |
| 7 | Less: Capitalisation from CWIP | 988.00 | 507.77 |
| 8 | Less: Capitalisation from new investment | -- | -- |
| 9 | Total capitalisation (7+8) | 988.00 | 507.77 |
| 10 | Net Closing CWIP (6-9) | -- | 339.56 |

Commission's analysis:

The Commission has examined the computations of capital expenditure furnished by BSPGCL. The Commission has considered the opening CWIP of Rs.763.21 Crore for FY 2016-17 based on the closing CWIP approved in Truing-up for FY 2015-16.

The Commission has considered the commissioning of Unit-7 with effect from 4.11.2016 as projected by the Petitioner. BSPGCL has submitted that Rs.62.26 crore (revised) capital investment/expenditure is proposed for the year 2016-17. The Commission has considered capitalisation at 50% of the capex of R&M units and 100% of the Infrastructure strengthening scheme. The Commission has also considered capitalisation of capex of Ganga Water scheme at 100% as the facility is common for both the units and water source is essentially required for running the generating station (Unit 7). Capitalisation of capex is considered, in review, as detailed below subject to true up based on the audited accounts for FY 2016-17, when made available.

Table 5.26: Capitalisation of capex considered for FY 2016-17

| Sl. No. | Particulars | To end of FY 2015-16 | during 2016-17 | Total | % of capitalisation | Capitalisation considered for FY 2016-17 (RE) |
|---------|---|----------------------|----------------|---------------|---------------------|---|
| 1 | R&M of BTPS (Unit-6 & 7) | 534.39 | 46.81 | 581.20 | 50% | 290.60 |
| 2 | BTPS Infrastructure Strengthening Scheme – Allocated to exiting units | 192.60 | 5.77 | 198.37 | 100% | 198.37 |
| 3 | Ganga River Water Scheme for BTPS – Allocated to existing units | 33.52 | 9.67 | 43.19 | 100% | 43.19 |
| 4 | Expenses capitalised in FY 2015-16 | 2.71 | -- | 2.71 | | -- |
| | Total | 763.22 | 62.26 | 825.47 | | 532.16 |

Accordingly, the Commission has considered capex and capitalisation for FY 2016-17 (RE) as detailed in the Table below:

Table 5.27: Capex and capitalisation considered for FY 2016-17

(Rs. Crore)

| Sl. No. | Particulars | Approved for FY 2016-17 in Tariff order dated 21.03.2016 | Projected by BSPGCL for FY 2016-17 (RE) | Approved in Review for FY 2016-17 (RE) |
|---------|---------------------|--|---|--|
| 1 | Opening CWIP | 927.00 | 760.51 | 763.21 |
| 2 | Add: New investment | 61.00 | 62.26 | 62.26 |

| Sl. No. | Particulars | Approved for FY 2016-17 in Tariff order dated 21.03.2016 | Projected by BSPGCL for FY 2016-17 (RE) | Approved in Review for FY 2016-17 (RE) |
|---------|----------------------|--|---|--|
| 3 | Expenses capitalised | -- | 24.57 | -- |
| 4 | Total capex (1+2+3) | 988.00 | 847.34 | 825.47 |
| 5 | Less: Capitalisation | 988.00 | 507.77 | 532.16 |
| 6 | Closing CWIP (4-5) | -- | 339.56 | 293.31 |

5.7 Funding of Capital Expenditure

Petitioner's submission:

BSPGCL has submitted that the Commission in Tariff Order dated 21.03.2016 had considered the funding of the project cost of R&M of Units-6 & 7 is by way of grants and funding of Ganga Water scheme and BTPS infrastructure strengthening schemes by way of equity infusion in the Company by the Government of Bihar.

Commission's analysis

The Petitioner has submitted that the entire project cost of R&M Units 6 & 7 through Grants and Ganga Water Scheme and BTPS Infrastructure strengthening schemes through Equity. The Commission accordingly, considers the project cost as submitted by the Petitioner, subject to true up based on audited accounts for FY 2016-17.

5.8 Gross Fixed Assets

Petitioner's submission:

BSPGCL has submitted that the Commission, in Tariff order dated 21st March 2016 had considered opening GFA at Rs.69.28 Crore for FY 2016-17 after considering asset retirement and asset revaluation.

BSPGCL has submitted that asset retirement process has not been able to successfully conclude in FY 2015-16 and is expected to complete in FY 2016-17. Accordingly, the Petitioner has considered the closing GFA as per annual accounts for FY 2015-16 for computation of GFA base for FY 2016-17 as detailed in the Table below:

Table 5.28: Gross Fixed Assets Projected for FY 2016-17
(Rs. Crore)

| Sl. No. | Particulars | Approved for FY 2016-17 in Tariff order dated 21.03.2016 | Projected by BSPGCL for FY 2015-16 (RE) |
|---------|--------------------------------|--|---|
| 1 | Opening Gross Fixed Assets | 69.28 | 395.11 |
| 2 | Less: Asset Retirements | -- | 105.00 |
| 3 | Original value of GFA | 69.28 | 290.11 |
| 4 | Add: Additions during the year | 988.00 | 507.77 |
| 5 | Closing GFA | 1057.28 | 797.88 |

The Petitioner has further submitted that it is in the process of selling the scrap of retired units and expects to complete in FY 2016-17. The value of assets to be retired during FY 2016-17 has been estimated at Rs.105.00 Crore and accordingly reduced the value from GFA for the purpose of computation of depreciation.

Commission's analysis

The Commission has examined the Gross Fixed Assets proposed by BSPGCL.

The Commission has considered closing GFA at Rs.395.12 Crore in true up for FY 2015-16 and the same is considered as opening GFA for FY 2016-17. The Commission has considered capitalisation at Rs.532.16 crore in Table 5.26 above. The Commission observes that the Petitioner had proposed for Asset retirement of Rs.105.00 Crore for consideration in FY 2016-17, although the process of asset retirement is still ongoing and was expected to be finalized in FY 2016-17. The Commission considers Asset Retirement for FY 2016-17 at Rs.105.00 Crore in review as projected by the Petitioner subject to true up based on audited accounts for FY 2016-17.

Accordingly, the Commission has considered the GFA as detailed in the following Table below:

Table 5.29: Gross Fixed Assets considered for FY 2016-17**(Rs. Crore)**

| Sl. No. | Particulars | Approved for FY 2016-17 in Tariff order dated 21.03.2016 | Projected by BSPGCL for FY 2016-17 (RE) | Approved in Review for FY 2016-17 (RE) |
|---------|------------------------------------|--|---|--|
| 1 | Original value of GFA | 69.28 | 395.11 | 395.12 |
| 2 | Less: Asset Retirements | | 105.00 | 105.00 |
| 3 | Original value of GFA (1-2) | 69.28 | 290.11 | 290.12 |
| 4 | Additions during the year | 988.00 | 507.77 | 532.16 |
| 5 | Closing GFA (3+4) | 1057.28 | 797.88 | 822.28 |

5.9 Depreciation

Petitioner's submission:

BSPGCL has submitted that the Commission in the Tariff Order dated 21st March 2016 had not considered any depreciation for FY 2016-17 based on the submissions made by the Petitioner to claim depreciation in true up process based on actual GFA, actual additions to GFA vis-à-vis Grants for FY 2016-17.

BSPGCL has submitted that depreciation rate has been assumed as per MYT order dated 15.03.2013. The computation of depreciation by BSPGCL is as detailed in the Table below:

Table 5.30: Depreciation Projected for FY 2016-17**(Rs. Crore)**

| Sl. No. | Particulars | Approved for FY 2016-17 in Tariff Order dated 21.03.2016 | Projected by BSPGCL for FY 2016-17 (RE) |
|---------|---|--|---|
| 1 | Opening GFA | 69.28 | 395.11 |
| 2 | Additions during the year | 988.00 | 507.77 |
| 3 | Less: Asset Retirements | -- | 105.00 |
| 4 | Closing GFA (1+2-3) | 1057.28 | 797.88 |
| 5 | Average GFA {(1+4)/2} | 563.28 | 596.50 |
| 6 | Weighted average rate of depreciation | 4.99% | 4.99% |
| 7 | Gross Depreciation (5*6) (for 5 months) | 28.11 | 12.40 |
| 8 | Opening Grants | 2487.93 | 534.39 |
| 9 | Add: Grants during the year | 988.00 | 46.81 |
| 10 | Closing Grants (8+9) | 3473.93 | 581.20 |
| 11 | Average Grants {(8+10)/2} | 2981.93 | 557.80 |
| 12 | Weighted average rate of depreciation | 4.99% | 4.99% |
| 13 | Depreciation for GFA on Grants (11*12) (for 5 months) | 148.8 | 11.60 |
| 14 | Depreciation for GFA on loans (7-13) | -- | 0.80 |

Commission's analysis:

The Commission has approved opening GFA, additions to GFA, retirements of assets and closing GFA for FY 2016-17 in Table 5.29.

The Petitioner has considered closing grants at Rs.901.05 crore in true up for FY 2015-16, however has adopted opening grants at Rs.534.39 crore for FY 2016-17. The Commission has addressed the Petitioner to furnish the reasons for adopting different opening grants value for FY 2016-17. The Petitioner vide letter No.892 dated 27.12.2016 has furnished the following excerpts of note 3 of the audited accounts for FY 2015-16 as given below:

| Particulars | 31 st March 2016 | 31 st March 2015 |
|--|-----------------------------|-----------------------------|
| Capital Reserve (Grant for capital assets) | | |
| Opening balance | 2684.59 | 355.01 |
| Add: addition during the year | 298.91 | 2079.92 |
| Add: Fund from the State Government | -- | 249.66 |
| Less: Utilised for allotment of share | (2082.45) | -- |
| Closing balance | 901.05 | 2684.59 |

Further, the Petitioner has informed that the grant portion towards the existing project (R&M units) is only Rs.534.39 crore and balance grants relate to extension project.

The Commission in truing up has approved closing grants at Rs.534.39 crore in truing up for FY 2015-16 relating to R&M units. The petitioner has intimated that funding of the R&M units is through grants and accordingly, the Commission has considered the entire project cost of R&M units through grants. The Commission has considered the grants of Rs.534.39 crore in the earlier tariff orders based on the grants reported through audited accounts relating R&M units on actual receipt basis irrespective of capitalisation. The total project cost of R&M units is at Rs.581.20 crore upto end of FY 2016-17 as given in Table 5.26. The R&M unit 7 is operationalized with effect from 4th November 2016 and capital expenditure relating to Unit 7 is capitalised in FY 2016-17. However, for the purpose of computation of depreciation, addition to grants is considered at Rs.46.81 crore based on the capex incurred in FY 2016-17. Thus the entire project cost of R&M units of Rs.581.20 crore is considered fully to the end of FY 2016-17.

The Ganga river water scheme and BTPS infrastructure strengthening schemes are considered through equity as submitted by the Petitioner. The Commission has regulated the opening grants for FY 2016-17 based on the capitalisation of the R&M units. Addition to grants is considered at Rs.46.81 crore as proposed by the Petitioner for FY 2016-17, subject to true up based on audited accounts for FY 2016-17.

Regulation 38 (2)(a) Depreciation specify, *for purpose of tariff, depreciation shall be computed in the following manner:*

- (i) *The value base for the purpose of depreciation shall be the historical cost of the asset.*
- (ii) *Depreciation shall be calculated annually based on the straight line method over the useful life of the asset and at rates prescribed by the CERC.*

*The residual value of the asset shall be considered as 10% and the depreciation shall be allowed upto a maximum of 90% of the historical cost of the asset. **The land is not a depreciable asset and its cost shall be excluded from the capital cost while computing 90% of the historical cost of the asset.***

The Commission, in view of above regulation, has reduced the value of land (as shown in the audited accounts of FY 2015-16) for computation of depreciation for FY 2016-17.

The regulation provides for calculation depreciation based on the straight line method over the useful life of the asset and at the rates prescribed by the CERC. The Petitioner has submitted that the R&M/LE of the old thermal power units is carried out with an aim to extend their useful life of 15 to 20 years beyond the original design economical life. The units were first installed in year 1983 and completed its original design life of 25 years in year 2008. The present age of the units is almost 33 years. Thus the useful life of the units may be considered as 15 years after R&M/LE for computation of depreciation.

The Commission considers the request of the Petitioner and the estimated life of the R&M units is considered as 15 years for calculation of depreciation. The rate of depreciation on steam-electric NHRB & waste heat recovery boilers/plants, cooling towers, switchgear, etc. is to be depreciated over the life of the asset of 25 year at

3.60%. These rates are considered as the units are old and R&M units. The life of the Units are considered at 15 years and the rate of depreciation works out to 6% $[(3.6\% \times 25 \text{ years})/15 \text{ years}]$ on straight line method for 15 years. The Commission accordingly, considers rate of depreciation at 6% and life of the R&M units as 15 years and accordingly computes depreciation as given in the table below:

Table 5.31: Depreciation approved for FY 2016-17

| (Rs. Crore) | | | | |
|-------------|---|--|---|--|
| Sl. No. | Particulars | Approved for FY 2016-17 in Tariff Order dated 21.03.2016 | Projected by BSPGCL for FY 2016-17 (RE) | Approved in Review for FY 2016-17 (RE) |
| 1 | Opening GFA | 69.28 | 395.11 | 395.12 |
| 2 | Less: Value of land | - | -- | 135.66 |
| 3 | Net GFA (1-2) | 69.28 | 395.11 | 259.46 |
| 4 | Less: Asset retirements | - | 105.00 | 105.00 |
| 5 | Additions during the year | 988.00 | 507.77 | 532.16 |
| 6 | Closing GFA (3-4+5) | 1057.28 | 797.88 | 686.62 |
| 7 | Average GFA $\{(3+6)/2\}$ | 563.28 | 596.50 | 473.04 |
| 8 | Weighted average rate of depreciation | 4.99% | 4.99% | 6.00% |
| 9 | Gross Depreciation (7*8) | 28.11 | 12.40 | 28.38 |
| 10 | Opening Grants | 2487.93 | 534.39 | 534.39 |
| 11 | Add: Grants during the year | 988.00 | 46.81 | 46.81 |
| 12 | Closing Grants (10+11) | 3475.93 | 581.20 | 581.20 |
| 13 | Average Grants $\{(10+12)/2\}$ | 2981.93 | 557.80 | 557.80 |
| 14 | Weighted average rate of depreciation | 4.99% | 4.99% | 6.00% |
| 15 | Depreciation for GFA on Grants (13*14) | 148.80 | 11.60 | 33.47 |
| 16 | Depreciation for GFA on loans (9-15) | -- | 0.80 | (2.12) (for 5 months) |

The proportionate depreciation on grants is higher than the depreciation on GFA and is resulting in negative. The Commission, accordingly, considers Depreciation as 'Nil' for FY 2016-17 (RE).

5.10 Interest and Finance Charges

Petitioner's submission:

BSPGCL has submitted that interest and finance charges incurred/to be incurred during FY 2016-17 pertain to extension project and accordingly no interest and finance charges are claimed for FY 2016-17.

Commission's analysis

The Petitioner has not claimed any interest and finance charges for FY 2016-17 as there are no loans attributable to R&M units 6 & 7.

The Commission has considered capitalisation at Rs.532.16 crore in Table 5.26 above as given below:

| Sl. No. | Particulars | Capitalisation (Rs. Crore) |
|---------|--|----------------------------|
| 1 | R&M of BTPS (Unit-6 & 7) | 290.60 |
| 2 | BTPS Infrastructure Strengthening Scheme | 198.37 |
| 3 | Ganga River Water Scheme for BTPS | 43.19 |
| 4 | Total | 532.16 |

The Regulation 37 of BERC (Terms and Conditions for Determination of Tariff) Regulations, 2007 specify as below;

“(1) in case of all generating stations, the debt - equity ratio as on the date of commercial operation shall be 70:30 for determination of tariff. The Commission may in appropriate cases consider equity higher than 30% for purpose of determination of tariff, where the integrated utility / generating company is able to establish to the satisfaction of the Commission that deployment of equity more than 30% is in the interest of general public.

Provided that

- (i) in case of a generating station, the actual equity employed is less than 30%, the actual debt and equity shall be considered for determination of tariff*
 - (ii) in case of existing projects the actual debt : equity ratio shall be used for tariff determination. However, any expansion shall be governed by clause (1) above.*
- (2) the debt and equity amount arrived at in accordance with clause (1) shall be used for calculation of interest on loan, return on equity, advance against depreciation and foreign exchange rate variation”.*

The Regulation emphasizes that debt : equity in respect of the generating station shall be considered at 70:30 of the project cost.

The Commission has considered capitalisation of the entire project cost of R&M units 6 & 7 through grants and Ganga River Water scheme and BTPS infrastructure strengthening scheme through equity.

The Commission, in view of the above Regulations, for the purpose of computation of interest, has considered the normative loan of FY 2016-17 (RE) as shown hereunder.

Table 5.32: Funding of Capitalisation for FY 2016-17

| Sl. No. | Particulars | FY 2016-17 (Rs. Crore) |
|---------|--|------------------------|
| 1 | Capitalisation during the year (incl. IDC) | 532.16 |
| 2 | Less: Grants | 290.60 |
| 3 | Net capitalisation | 241.56 |
| 4 | Equity considered (@30% of 3) | 72.47 |
| 5 | Debt considered (@70% of 3) | 169.09 |

The Commission, for the purpose of computation of interest, has considered the normative loan at Rs.169.09 Crore at 70% of the capitalisation (net of grants) for FY 2016-17 in terms of Regulation 37 (1) of the BERC Regulations, 2007. Repayment of loan is considered equivalent to depreciation allowed for the year in terms of regulation 38.

The Commission has considered rate of interest equivalent to SBI Base Rate @ 9.30% as on 1st April 2016 as normative rate of interest for the purpose of computation of interest on loans. The interest on loans is considered for 5 months as the unit 7 is in operation from November 2016 onwards.

Accordingly, the Commission has considered interest on normative loan in review for FY 2016-17 as detailed in the Table below:

Table 5.33: Interest on loans considered for FY 2016-17

| (Rs. Crore) | | |
|-------------|--|--|
| Sl. No. | Particulars | Approved in review for FY 2016-17 (RE) |
| 1 | Opening loan | -- |
| 2 | Additions during the year | 169.09 |
| 3 | Normative Repayment | -- |
| 4 | Closing Loan (1+2-3) | 169.09 |
| 5 | Average Loan $\{(1+4)/2\}$ | 84.55 |
| 6 | Interest rate | 9.30% |
| 7 | Interest & Finance Charges (5*6) | 3.28 (for 5 months) |

The Commission, accordingly, considers interest on loans at Rs.3.28 crore in review for FY 2016-17 (RE).

5.11 Return on Equity

Petitioner's submission:

BSPGCL has submitted that since generation is expected for 5 months from Unit 7 during FY 2016-17, Return on Equity (RoE) is claimed for 5 months of FY 2016-17 in review as detailed in the Table below:

Table 5.34: Return on Equity projected for FY 2016-17

| (Rs. Crore) | | | |
|-------------|---|---|---|
| Sl. No. | Particulars | Approved for 2016-17 in Tariff Order dated 21.03.2016 | Projected by BSPGCL for FY 2016-17 (RE) |
| 1 | Closing GFA | 1057.28 | 797.88 |
| 2 | Equity to be considered for RoE (@30% of GFA) | 317.18 | 239.37 |
| | Rate of Return per annum % | 14.00% | 14.00% |
| 3 | Return on equity | 44.41 | 13.96 (for 5 months) |

Commission's analysis:

The Regulation 37 of BERC (Terms and Conditions for Determination of Tariff) Regulations, 2007 specify as below;

“(1) in case of all generating stations, the debt - equity ratio as on the date of commercial operation shall be 70:30 for determination of tariff. The Commission may in appropriate cases consider equity higher than 30% for

purpose of determination of tariff, where the integrated utility / generating company is able to establish to the satisfaction of the Commission that deployment of equity more than 30% is in the interest of general public.

Provided that

- (i) in case of a generating station, the actual equity employed is less than 30%, the actual debt and equity shall be considered for determination of tariff*
- (ii) in case of existing projects the actual debt : equity ratio shall be used for tariff determination. However, any expansion shall be governed by clause (1) above.*
- (2) the debt and equity amount arrived at in accordance with clause (1) shall be used for calculation of interest on loan, return on equity, advance against depreciation and foreign exchange rate variation”.*

The Regulation emphasizes that debt : equity in respect of the generating station shall be considered at 70:30 of the project cost.

The Commission has considered capitalisation of the entire project cost of R&M units 6 & 7 through grants and Ganga River Water scheme and BTPS infrastructure strengthening scheme through equity.

The Commission, in view of the above Regulations, for the purpose of computation of Return on equity has considered the Equity @30% of the capitalisation (net of grants) for FY 2016-17 (RE) as shown hereunder.

Table 5.35: Funding of Capitalisation for FY 2016-17

| Sl. No. | Particulars | FY 2016-17 (Rs. Crore) |
|----------------|--|-------------------------------|
| 1 | Capitalisation during the year (incl. IDC) | 532.16 |
| 2 | Less: Grants | 290.60 |
| 3 | Net capitalisation | 241.56 |
| 4 | Equity considered (@30% of 3) | 72.47 |
| 5 | Debt considered (@70% of 3) | 169.09 |

The Commission, for the purpose of computation of Return on Equity, has considered the equity at Rs.72.47 Crore at 30% of the capitalisation (net of grants) for FY 2016-17 in terms of Regulation 37 (1) of the BERC Regulations, 2007.

The Regulation 38 (3) (a) of BERC Terms and Conditions for Determination of Tariff Regulations, 2007 specify as below:

“the return on equity shall be computed on the base determined in accordance with Regulation 37 @ 14% per annum”.

The Commission has considered net GFA at Rs.290.12 crore (gross GFA Rs.395.12 crore less asset retirements at Rs.105.00 crore) for FY 2016-17 in review in the foregone paragraph (Para 5.8 Table 5.29). Based on the net GFA the opening equity of Rs.87.04 crore is considered at 30% of the net GFA. The Commission, accordingly, has computed the return on equity as detailed in the Table below:

Table 5.36: Return on Equity approved for FY 2016-17

| (Rs. Crore) | | | | |
|-------------|---|---|---|--|
| Sl. No. | Particulars | Approved for 2016-17 in Tariff Order dated 21.03.2016 | Projected by BSPGCL for FY 2016-17 (RE) | Approved in review for FY 2016-17 (RE) |
| 1 | Net opening GFA | -- | -- | 290.12 |
| 2 | Equity @30% (on 1) | -- | -- | 87.04 |
| 3 | Equity addition during the year | -- | -- | 72.47 |
| 4 | Closing equity (2+3) | -- | -- | 159.51 |
| 5 | Average equity (2+4)/2 | | | 123.27 |
| 6 | Closing GFA | 1057.28 | 797.88 | -- |
| 7 | Equity to be considered for RoE (@30% of average GFA) | 317.18 | 239.37 | -- |
| 8 | Rate of Return % | 14.00% | 14.00% | 14.00% |
| 9 | Return on Equity (5 x 6) | 44.41 | 13.96 (for 5 months) | 7.19 (for 5 months) |

The Commission, accordingly, approves Return on Equity at Rs.7.19 Crore for FY 2016-17 in the review.

5.12 Operation and Maintenance (O&M) Expenses

5.12.1 Employee Cost

Petitioner's submission:

BSPGCL has submitted that in the Tariff Order dated 21.03.2016, the Commission had approved employee cost of Rs.26.30 Crore for FY 2016-17 based on the estimates projected by the Petitioner after application of inflationary index.

BSPGCL has submitted that based on the actual expenses incurring in the last seven months (April 2016 to October 2016) the employee cost is revised to Rs.25.62 Crore for FY 2016-17. BSPGCL has further submitted that it has deducted 30% employee expenses pertaining to Extension Project. BSPGCL has claimed additional manpower cost at Rs.5.00 crore in review for FY 2016-17.

The Petitioner has projected the employee expenses for FY 2016-17 (RE) as detailed in the table below:

Table 5.37: Employee Cost projected for FY 2016-17
(Rs. Crore)

| Sl. No. | Particulars | Approved for FY 2016-17 in Tariff Order dated 21.03.2016 | Projected by BSPGCL for FY 2016-17 (RE) |
|----------|---|--|---|
| 1 | Employee cost | 27.72 | 29.46 |
| 2 | Add: Indexation | 1.29 | -- |
| 3 | Less: Manpower cost for extension project (30% cost) (on 1+2) | 8.71 | 8.84 |
| 4 | Add: New Manpower cost | 6.00 | 5.00 |
| 5 | Total employee cost (1+2-3+4) | 26.30 | 25.62 |

The Petitioner requested the Commission to approve the revised employee expenses for FY 2016-17 as proposed in the table above.

Commission's analysis:

The Commission has examined the employee cost projected by the Petitioner based on 7 months (April 2016 to Oct' 2016) of actual expenditure of FY 2016-17. The Petitioner has projected the employee cost at Rs.29.46 crore for full year of FY 2016-17.

The Petitioner vide letter No.39 dated 25.01.2017 has informed that a total of 79 number of employees have been appointed by the Company till date during FY 2016-17 in various cadres. Further, BSPGCL is in the process of appointment of an agency for providing a total of 66 Nos. of Highly Skilled, Semi Skilled and Skilled manpower through outsourcing. The Commission, in view of the above, has provisionally considers the additional man power cost of Rs.5.00 crore as projected by the Petitioner for FY 2016-17.

The Commission considers 30% of the employee cost apportioned to extension project as was considered in earlier tariff orders on the total employee cost including new manpower cost.

The Commission has accordingly approved the employee cost, subject to true up based on audited accounts for FY 2016-17, as detailed in the table below:

Table 5.38: Employee Cost considered for FY 2016-17

(Rs. Crore)

| Sl. No. | Particulars | Approved for FY 2016-17 in Tariff Order dated 21.03.2016 | Projected by BSPGCL for FY 2016-17 (RE) | Approved in Review for FY 2016-17 (RE) |
|---------|---|--|---|--|
| 1 | Employee cost | 27.72 | 29.46 | 29.46 |
| 2 | Add: Indexation | 1.29 | -- | -- |
| 3 | Add: New Manpower cost | 6.00 | 5.00 | 5.00 |
| 4 | Gross employee cost (1+2+3) | 35.01 | 34.46 | 34.46 |
| 5 | Less: Manpower cost for extension project (30% cost) | 8.71 | 8.84 | 10.34 |
| 6 | Net Employee cost (4-5) | 26.30 | 25.62 | 24.12 |

The Commission, accordingly, considers the employee cost at Rs.24.12 Crore in review for FY 2015-16 (RE).

5.12.2 Repairs and Maintenance (R&M) Expenses

Petitioner's submission:

The Petitioner has submitted that considering 5 months operation of Unit 7 during FY 2016-17, the R&M expenses including water charges are proposed at Rs.8.89 crore for FY 2016-17 as detailed in the Table below:

Table 5.39: R&M expenses projected for FY 2016-17

(Rs. Crore)

| Sl. No. | Particulars | Approved for FY 2016-17 in Tariff Order dated 21.03.2016 | Actual April'16 to Oct'16 (7 months) | Projection for Nov'16 to March'17 (5 months) | Projected by BSPGCL for FY 2016-17 (RE) |
|---------|---------------------------|--|--------------------------------------|--|---|
| 1 | R&M Cost | 5.00 | 2.98 | 6.00 | 8.89 |
| 2 | Water charges | 2.00 | -- | -- | -- |
| 3 | Total R&M Cost | 7.00 | 2.98 | 6.00 | 8.89 |

Commission's analysis:

The Commission has examined the R&M expenses proposed by the Petitioner for FY2015-16. The Petitioner has projected Rs.6.00 crore for 5 months i.e. Nov'16 to March'17 which is almost twice the 7 months (April'16 to Oct'16) actual expenses (Rs.2.98 crore) of FY 2016-17. The Commission, taking into account the 7 months (April'16 to Oct'16) actual expenses has projected and considered full year total R&M expenses at Rs.5.00 crore for FY 2016-17. The Commission has also considered water charges at Rs.1.00 crore as was approved in Tariff Order dated 21.03.2016.

The Commission has, accordingly, considered the R&M expenses in review for FY 2016-17 subject to true up based on audited accounts for FY 2016-17 as detailed in the Table below:

Table 5.40: R&M expenses considered for FY 2016-17

| (Rs. Crore) | | | | |
|-------------|---------------------------|--|---|--|
| Sl. No. | Particulars | Approved for FY 2016-17 in Tariff Order dated 21.03.2016 | Projected by BSPGCL for FY 2016-17 (RE) | Approved in Review for FY 2016-17 (RE) |
| 1 | R&M Cost | 5.00 | 8.89 | 5.00 |
| 2 | Water charges | 2.00 | -- | 1.00 |
| 3 | Total R&M Cost | 7.00 | 8.89 | 6.00 |

The Commission, accordingly, considers the R&M expenses at Rs.6.00 Crore in review for FY 2016-17 (RE).

5.12.3 Administration and General (A&G) Expenses**Petitioner's submission**

BSPGCL has submitted that the Commission in Tariff Order dated 21.03.2016 had approved the A&G expenses of Rs.8.83 Crore for FY 2016-17 based on the estimates projected after application of inflation index.

BSPGCL has submitted that based on the 7 months (April 2016 to October 2016) actual expenses incurred during FY 2016-17, the A&G expenses for full year of FY 2016-17 has been projected at Rs.11.02 Crore. BSPGCL has further submitted that it has deducted 30% expenses pertaining to Extension Project.

Further, the Petitioner has submitted that CISF has been deployed at existing units to safe guard the materials/equipment and considered Rs.8.50 crore towards CISF cost for FY 2016-17.

BSPGCL requested the Commission to approve the A&G expenses for FY 2016-17 (RE) as furnished in Table below:

Table 5.41: Administration and General Expenses projected for FY 2016-17
(Rs. Crore)

| Sl. No. | Particulars | Approved for FY 2016-17 in Tariff Order dated 21.03.2016 | Projected by BSPGCL for FY 2016-17 (RE) |
|---------|--|--|---|
| 1 | A&G Expenses | 2.50 | 3.60 |
| 2 | Add: indexation @ 4.65% (on 1) | 0.12 | -- |
| 3 | Sub-total (1+2) | 2.62 | 3.60 |
| 4 | Less: A&G cost for extension project (30%) | 0.79 | 1.08 |
| 5 | Add: Payment to CISF | 7.00 | 8.50 |
| 6 | A&G Expenses | 8.83 | 11.02 |

Commission's analysis:

The Commission has examined the A&G expenses projected by BSPGCL for FY 2016-17 (RE) based on 7 months (April'16 to Oct'16) actual expenditure projected for full year of FY 2016-17 and the same are considered subject to true up based on audited accounts for FY 2016-17 as detailed in the table below:

Table 5.42: Administration & General Expenses considered for FY 2016-17

| Sl. No | Particulars | Approved for FY 2016-17 in Tariff Order dated 21.03.2016 | Projected by BSPGCL for FY 2016-17 (RE) | Approved in Review for FY 2016-17 (RE) |
|--------|--|--|---|--|
| 1 | A&G Expenses | 2.50 | 3.60 | 3.60 |
| 2 | Add: indexation @ 4.65% (on 1) | 0.12 | -- | -- |
| 3 | Sub-total (1+2) | 2.62 | 3.60 | 3.60 |
| 4 | Less: A&G cost for extension project (30%) | 0.79 | 1.08 | 1.08 |
| 5 | Add: Payment to CISF | 7.00 | 8.50 | 8.50 |
| 6 | A&G Expenses (3-4+5) | 8.83 | 11.02 | 11.02 |

The Commission, accordingly, considers the A&G expenses at Rs.11.02 Crore in review for FY 2016-17 (RE).

5.12.4 Allocation of Holding Company Expenses

Petitioner's submission

BSPGCL has submitted that based on the 1st Half year (April 2016 to September 2016) actual expenses incurred towards Employee cost, Administration and General expenses and O&M expenses, the total Holding company expenses are estimated at Rs. 33.02 Crore. The Petitioner has submitted that reorganization process has been finalised and accordingly, BSPHCL has decided to allocate all net expenses on the basis of equity deployed ratio among the four companies. The BSPGCL has estimated the Holding Company expenses for FY 2016-17 (RE) as detailed in Table below:

Table 5.43: Holding Company Expenses projected for FY 2016-17

| (Rs. Crore) | | | | | |
|--|---------|--------|--------|--------|--------|
| Holding Company expenses allocated on the basis of equity deployed ratio | | | | | |
| | BSPHCL | BSPGCL | BSPTCL | NBPDCL | SBPDCL |
| Equity Deployed Ratio | 100.00% | 18.32% | 26.11% | 28.47% | 27.10% |
| Allocation of net expenses for FY 2016-17 | 33.02 | 6.05 | 16.44 | 17.93 | 17.07 |

BSPGCL has requested the Commission to approve the allocation of holding company expenses as part of overall O&M expenditure for FY 2016-17 (RE).

Commission's analysis:

The Petitioner has wrongly allocated the expenses among the four entities i.e. BSPGCL, BSPTCL and two Discoms. The total holding company expenses are shown at Rs.33.02 crore, whereas, the allocation is made among the entities is Rs.57.49 crore when summed up. The Commission has reallocated the holding company expenses as given hereunder:

Table 5.44: Holding Company expenses allocated to utilities

| Particulars | BSPHCL | BSPGCL | BSPTCL | NBPDCL | SBPDCL |
|---|---------|--------|--------|--------|--------|
| Equity Deployed Ratio | 100.00% | 18.32% | 26.11% | 28.47% | 27.10% |
| Allocation of net expenses for FY 2016-17 | 33.02 | 6.05 | 8.62 | 9.40 | 8.95 |

The Commission, in the Tariff Order dated 21st March 2016 has considered Rs.9.16 Crore towards holding company expenses for FY 2016-17.

BSPGCL has estimated Rs.6.05 Crore towards holding company expenses for FY 2016-17, hence the same is considered subject to true up based on audited accounts for FY 2016-17.

The Commission, accordingly, considers Rs. 6.05 Crore towards holding company expenses in review for FY 2016-17 (RE).

5.12.5 Expenses Capitalised

Petitioner's submission:

The Petitioner has projected Rs.23.18 crore towards expenses capitalised for FY 2016-17, however, no details were furnished in the petition.

Commission's analysis:

The Commission observes that unit 7 has been working since November 2016 and unit 6 is planned to be put in service from July 2017. As per the capital investment plan, Rs.46.81 crore capex is planned in respect of R&M of BTPS during FY 2016-17 and no capital expenditure is envisaged during FY 2017-18. It is construed that all the works of R&M of BTPS have been completed. Hence, the Commission has not considered capitalisation O&M expenditure as projected by the Petitioner. However, the same will be trued up as per actual expenditure capitalised based on audited accounts for FY 2016-17.

5.12.6 Summary of Operations and Maintenance (O&M) Expenses for FY 2016-17 (RE)

The Summary of the O&M Expenses for FY 2016-17 RE) is tabulated below:

Table 5.45: O&M Expenses approved for FY 2016-17

| (Rs. Crore) | | | | |
|-------------|--------------------------------------|--|---|--|
| Sl. No. | Particulars | Approved for FY 2016-17 in Tariff Order dated 21.03.2016 | Projected by BSPGCL for FY 2016-17 (RE) | Approved in Review for FY 2016-17 (RE) |
| 1 | Employee cost | 26.30 | 25.62 | 24.12 |
| 2 | A&G Expenses | 8.83 | 11.02 | 11.02 |
| 3 | R&M expenses | 7.00 | 8.89 | 6.00 |
| 4 | Holding Company Expenses allocated | 9.16 | 6.05 | 6.05 |
| 5 | Total O& M cost (1+2+3+4) | 51.29 | 51.58 | 47.20 |
| 6 | Less: Expenses capitalised | -- | 23.18 | -- |
| 7 | Net O&M expenses (5-6) | 51.29 | 28.40 | 47.20 |

The Commission considers O&M costs at Rs.47.20 Crore for FY 2016-17 (RE).

5.13 Interest on working capital

Petitioner's submission:

BSPGCL has submitted that since generation for 5 months is expected from Unit 7 during FY 2016-17, interest on working capital is claimed at Rs.9.88 crore for FY 2016-17 (RE) as detailed in the Table below:

Table 5.46: Interest on working capital Projected for FY 2016-17

| (Rs. Crore) | | | |
|-------------|--|--|---|
| Sl. No. | Particulars | Approved for FY 2016-17 in Tariff Order dated 21.03.2016 | Projected by BSPGCL for FY 2016-17 (RE) |
| 1 | Cost of coal & secondary fuel Oil for 2 months | 49.87 | 11.02 |
| 2 | O&M expenses (1 month) | 4.27 | 4.31 |
| 3 | Maintenance spares @1% of opening GFA with 6% escalation | 0.73 | 4.19 |
| 4 | Receivables - 2 months | 68.82 | 47.50 |
| 5 | Total working capital | 123.69 | 67.01 |
| 6 | Rate of interest | 14.75% | 14.75% |
| 7 | Interest on working capital | 18.24 | 9.88 |

Commission's analysis:

The Commission has examined the working capital computations projected by the Petitioner for FY 2016-17.

The Regulation 38 (5)(a) Working capital for purposes of calculation of interest shall be:

(I) For Coal based / Lignite fired generating stations:

- “(i) Cost of coal or lignite for one and half months for pit-head generating stations and two months for non pit-head generating stations, corresponding to the target availability;*
- (ii) Cost of secondary fuel oil for two months corresponding to target availability;*
- (iii) Operation and maintenance expenses for one month;*
- (iv) Maintenance spares at 1% of the historical cost escalated at 6% per annum from the date of commercial operation; and*
- (v) Receivables equivalent to two months of fixed and variable charges for sale of electricity calculated on the target availability”.*

Regulation 38(5)(b) specify “the rate of interest on working capital shall be equal to the short term Prime Lending Rate of State Bank of India on 1st April of the year in which the generating station or a unit there of is declared under commercial operation. Interest on working capital shall be payable on normative basis not withstanding that the integrated utility or generating company has not taken working capital loan from any outside agency”.

The Commission, in terms of regulation 38(5)(b), has adopted the interest rate of 14.05% as per SBI PLR rate prevailing as on 1st April 2016 and interest on working capital allowed as detailed in the Table below:

Table 5.47: Interest on working capital approved FY 2016-17

| (Rs. Crore) | | | | |
|-------------|--|--|---|--|
| Sl. No. | Particulars | Approved for FY 2016-17 in Tariff Order dated 21.03.2016 | Projected by BSPGCL for FY 2016-17 (RE) | Approved in review for FY 2016-17 (RE) |
| 1 | Cost of coal & secondary fuel Oil - 2 months | 49.87 | 11.02 | 10.61 |
| 2 | O&M expenses (1 month) | 4.27 | 4.31 | 3.93 |
| 3 | Maintenance spares @1% of opening GFA with 6% escalation | 0.73 | 4.19 | 4.19 |
| 4 | Receivables - 2 months | 68.82 | 47.50 | 21.07 |
| 5 | Total working capital (1+2+3+ 4) | 123.69 | 67.01 | 39.81 |
| 6 | Rate of interest | 14.75% | 14.75% | 14.05% |
| 7 | Interest on working capital (5*6) | 18.24 | 9.88 | 5.59 |

The Commission approves Rs.5.59 Crore towards Interest on working capital in review for FY 2016-17 (RE).

5.14 Non Tariff Income

Petitioner’s submission:

BSPGCL has submitted that in audited accounts of FY 2015-16 the non-tariff income is at Rs.21.97 crore. However, the actual non-tariff income during 1st half of FY 2016-17 is at Rs.0.25 crore, therefore, has considered Rs.0.50 crore for FY 2016-17 for the purpose of ARR.

Commission’s analysis:

The Commission in its Tariff order dated 21st March 2016 has approved Non-tariff income at Rs.0.20 crore for FY 2016-17.

The Petitioner has projected the non-tariff income at Rs.0.50 crore for FY 2016-17. The Commission considers the non-tariff income at Rs.0.50 crore in review for FY 2016-17 as projected by the Petitioner subject to true up based on actuals as per audited annual accounts of BSPGCL for FY 2016-17.

5.15 Sale of infirm power

Petitioner's submission:

The Petitioner has submitted that the Unit-7 is generating power since 4th November, 2016. The Petitioner has not furnished details of sale of infirm power in the petition.

Commission's analysis:

The Commission has noted from BSPGCL letter No.13/EM/BTPS dated 20.01.2017 that;

- Unit 7 of BTPS was synchronised with oil firing on 28th February 2016 and its CoD was achieved on 4th November, 2016.
- The unit remained in operation on different dates prior to CoD and as per instructions of MD/BSPGCL who is also MD of SBPDCL, the infirm power was billed on the same rate as applicable under tariff orders of BERC for FY 2016-17.
- The monthly energy bills for the period from 28th February to 31st October 2016 were raised.

The Regulation 36 of the BERC (Terms and Conditions for Determination of Tariff) Regulations 2007 regarding "Sale of infirm power" is reproduced below:

"any revenue (other than the recovery of fuel cost) earned by the integrated utility/generation of company from sale of infirm power, shall be taken as a reduction in capital cost and shall not be treated as revenue".

BSPGCL has not mentioned anything about rate of such infirm power and associated revenue earned in the tariff petition.

The Commission directs BSPGCL to submit in the next tariff petition, the details such as the infirm power supplied by unit-7 during FY 2016-17 and by unit-6 during FY 2017-18 to the grid, the monthly details of invoices raised towards sale of infirm

power, the details of fuel cost incurred for generating infirm power etc., for addressing the same in True up for FY 2016-17 and Review for FY 2017-18 in the next tariff order for FY 2018-19.

5.16 Annual Fixed charges

Petitioner's submission

BSPGCL has submitted the total annual fixed charges for FY 2016-17 as detailed in the Table below:

Table 5.48: Annual Fixed Charges projected for FY 2016-17

(Rs. Crore)

| Sl. No. | Particulars | Approved for FY 2016-17 in Tariff Order dated 21 st March 2016 | Projected by BSPGCL for FY 2016-17 (RE) |
|---------|------------------------------|---|---|
| 1 | O&M expenses (Gross) | 51.29 | 51.67 |
| 2 | Interest and finance charges | -- | -- |
| 3 | Interest on working capital | 18.24 | 9.88 |
| 4 | Depreciation | -- | 0.80 |
| 5 | Return on Equity | 44.41 | 13.96 |
| 6 | Less: Expenses capitalised | -- | 23.18 |
| 6 | Total Fixed cost | 113.94 | 53.14 |
| 7 | Less: Non-tariff income | 0.20 | 0.50 |
| 8 | Net Fixed cost | 113.74 | 52.64 |

Commission's analysis:

Based on the detailed analysis, the fixed charges considered by the Commission for FY 2016-17 (RE) are as detailed in the Table below:

Table 5.49: Annual Fixed Charges approved for FY 2016-17

(Rs. Crore)

| Sl. No. | Particulars | Approved for FY 2016-17 in Tariff Order dated 21.03.2016 | Projected by BSPGCL for FY 2016-17 (RE) | Approved in Review for FY 2016-17 (RE) |
|---------|---------------------------------------|--|---|--|
| 1 | O&M expenses | 51.29 | 51.67 | 47.20 |
| 2 | Interest and finance charges | -- | -- | 3.28 |
| 3 | Interest on working capital | 18.24 | 9.88 | 5.59 |
| 4 | Depreciation | -- | 0.80 | -- |
| 5 | Return on Equity | 44.41 | 13.96 | 7.19 |
| 6 | Less: Expenses capitalised | -- | 23.18 | -- |
| 7 | Total Fixed cost (1+2+3+4+5-6) | 113.94 | 53.14 | 63.26 |
| 8 | Less: Non-tariff income | 0.20 | 0.50 | 0.50 |
| 9 | Net Fixed cost (7-8) | 113.74 | 52.64 | 62.76 |

5.17 Energy Charges

Petitioner's submission

BSPGCL has submitted that in the Tariff Order dated 21st March 2016, the Commission has approved total fuel cost at Rs.299.19 Crore for FY 2016-17. Since, generation is expected to take place for 5 months from Unit 7 during FY 2016-17, the fuel cost of Rs.66.10 crore is claimed for FY 2016-17.

Commission's analysis

The Commission has considered the energy charges at Rs.63.67 crore (Table 5.22) and accordingly, the same is considered in ARR for FY 2016-17 in review.

5.18 Annual Revenue Requirement (ARR)

Commission's analysis:

Based on the above analysis, the Commission considers the revised ARR for FY 2016-17 in review as summarized in the Table below:

Table 5.50: Summary of Revised ARR considered for FY 2016-17

| (Rs. Crore) | | | | |
|-------------|----------------------------------|--|---|--|
| Sl. No. | Particulars | Approved for FY 2016-17 in Tariff Order dated 21.03.2016 | Projected by BSPGCL for FY 2016-17 (RE) | Approved in Review for FY 2016-17 (RE) |
| 1 | Fuel cost | 299.19 | 66.10 | 63.67 |
| 2 | O & M expenses | 51.29 | 51.67 | 47.20 |
| 3 | Interest and finance charges | -- | -- | 3.28 |
| 4 | Interest on working capital | 18.24 | 9.88 | 5.59 |
| 5 | Depreciation | -- | 0.80 | -- |
| 6 | Return on Equity | 44.41 | 13.96 | 7.19 |
| 7 | Less: Expenses Capitalized | -- | 23.18 | -- |
| 8 | Gross ARR (1+2+3+4+5+6-7) | 413.14 | 119.24 | 126.93 |
| 9 | Less: Non-tariff income | 0.20 | 0.50 | 0.50 |
| 10 | Net ARR (8-9) | 412.94 | 118.74 | 126.43 |

The Commission considers the ARR of Rs.126.43 Crore in review for FY 2016-17 (RE) subject to truing up based on audited accounts for FY 2016-17, when submitted by BSPGCL. The ARR estimated by the Commission is based on the revised estimates submitted by BSPGCL as modified by the Commission and may differ from the actual costs based on the audited accounts for FY 2016-17.

As such, the Commission does not consider the above cost to be carried forward in the ARR for FY 2017-18.

6. Annual Revenue Requirement and Determination of Generation Tariff for FY 2017-18

6.1 Background

BSPGCL has submitted the present petition on 18th December, 2016 for approval of Annual Revenue Requirement (ARR) for FY 2017-18 and determination of Generation Tariff for FY 2017-18. The Petitioner has submitted that the estimated expenses for FY 2017-18 are based on the revised commissioning schedule of BTPS Units 6 and 7, after R&M and revised projections of the estimated expenses to be incurred as applicable for various heads of expenditure.

6.2 Generating Stations

Barauni Thermal Power Station, Barauni (BTPS)

The BSPGCL owns and operates only one thermal generating plant (i.e.) Barauni Thermal Power Station (BTPS) located at Barauni. The details and status of the Units of BTPS are given in Table 6.1 below:

Table 6.1: Present Status of Units of BTPS

| Unit | Capacity | CoD | Present Status |
|------|----------|------------|--|
| 1 | 15 MW | 26.01.1966 | Retired on 16/02/1983 |
| 2 | 15 MW | 16.01.1963 | Retired on 26/11/1985 |
| 3 | 15 MW | 20.10.1963 | Retired on 05/10/1985 |
| 4 | 50 MW | 09.11.1969 | Retired on 12/03/2012 |
| 5 | 50 MW | 01.12.1971 | Retired on 12/03/2012 |
| 6 | 110 MW | 01.05.1983 | Scheduled for commissioning in June 2017 |
| 7 | 110 MW | 31.03.1985 | In operation w.e.f. 4.11.2016 |

BSPGCL has submitted that Unit 6 is currently under R&M and is expected to be completed by June, 2017. The Unit-6 is expected to start operation/generation from July 2017.

As BTPS is the only generating station under BSPGCL, the performance and cost parameters of this station are discussed in the following paragraphs.

6.3 Generation from BTPS Units 6&7

Petitioner's submission

BSPGCL has submitted that, the R&M activity of Unit-7 was completed and is in operation since 4th November 2016 and R&M of Unit-6 will be completed by July 2017. Revised completion schedule of R&M of Units 6 and 7 are as given in the

Table below:

Table 6.2: Revised Completion Schedule of BTPS 6 & 7 Units

| Units | R&M completion Date (Previous) | R&M Completion Date (Revised) |
|-------|--------------------------------|-------------------------------|
| 6 | June 2016 | July 2017 |
| 7 | December 2015 | November 2016 |

BSPGCL has submitted that after completion of R&M, the generating Unit-7 will be available for full year, as it has come into operation during November 2016 itself. Unit-6 will work for 273 days from July 2017.

Commission's Analysis

As the generation for Unit-6 would be from July 2017, the same is considered from 1st July 2017 for 274 days. For Unit-7, however, the generation is considered for the whole year.

6.4 Performance and Cost parameters

6.4.1 Plant Availability Factor (PAF)

Petitioner's submission

BSPGCL has submitted that considering the vintage of the Units and performance parameters in terms of PLF achieved by similar sized power plants that had undergone R&M, the Commission had approved the Plant Availability Factor as 70% for FY 2016-17 in Tariff Order dated 21.03.2016. BSPGCL has requested to approve the Plant Availability Factor for FY 2017-18 at 70% considering the impact of R&M activity, in line with the last year's approved PAF as given below:

Table 6.3: Projected Plant Availability Factor for FY 2017-18

| Unit | PAF approved for FY 2016-17 in Tariff Order dated 21.03.2016 | Projected for FY 2017-18 |
|------|--|--------------------------|
| 6 | 70% | 70% |
| 7 | 70% | 70% |

Commission's Analysis

The Commission considers that the Unit-wise availability projection is reasonable for Units 6 and 7 for the year 2017-18, as the Units will be Commissioned after R&M during FY 2016-17 and FY 2017-18. Hence, the Commission approves the

Plant Availability Factor for FY 2017-18 as projected by the Petitioner as given in the Table below:

Table 6.4: Approved Plant Availability Factor for FY 2017-18

| Unit No. | Projected by BSPGCL for FY 2017-18 | Approved for FY 2017-18 |
|----------|------------------------------------|-------------------------|
| 6 | 70% | 70% |
| 7 | 70% | 70% |

6.4.2 Plant Load Factor (PLF)

Petitioner's submission

Based on the Plant Availability Factor and considering the revised Commissioning schedule for each Unit, BSPGCL requested the Commission to approve the revised Plant Load factor as given below:

Table 6.5: Projected Plant Load Factor for FY 2017-18

| Unit No | Projected Operational Days | Projected PLF for FY 2017-18 |
|---------|----------------------------|------------------------------|
| 6 | 274 | 53% |
| 7 | 365 | 70% |

Commission analysis

The Commission considers projected PLF of 70% as reasonable for both the units for FY 2017-18. Therefore, the Commission approves PLF for FY 2017-18 as given in the Table below:

Table 6.6: Approved Plant Load Factor for FY 2017-18

| Unit No | Operational Days | Projected by BSPGCL for FY 2017-18 | Approved for FY 2017-18 |
|---------|------------------|------------------------------------|-------------------------|
| 6 | 274 | 53% | 70% |
| 7 | 365 | 70% | 70% |

6.4.3 Auxiliary Consumption

Petitioner's submission

BSPGCL has submitted that the Commission had approved Auxiliary Consumption of 12% for FY 2016-17 in its order dated 21st March, 2016 considering that the Units were expected to come into commercial operation during FY 2016-17. The Petitioner has requested the Commission to approve the Auxiliary Consumption for FY 2017-18 in line with its earlier order as given below as the units will come into full commercial operation during FY 2017-18:

Table 6.7: Projected Auxiliary Consumption for FY 2017-18

| Unit | Approved for FY 2016-17 in Tariff Order dated 21.03.2016 | Projected for FY 2017-18 |
|------|--|--------------------------|
| 6 | 12% | 12% |
| 7 | 12% | 12% |

Commission analysis

As discussed in foregone paragraphs, Units 6 and 7 will be in operation during FY 2017-18. In the earlier Order the Commission had approved Auxiliary Consumption at 12% for FY 2016-17, considering that the Units would come into operation during FY 2016-17 and that there will be some Auxiliary Consumption as a result of trial run of Units during FY 2016-17.

As the Unit-7 has come into operation during November 2016 and Unit-6 is expected to come into operation during July 2017, the Commission approves the Auxiliary Consumption at 12% for FY 2017-18 as projected by the Petitioner as given in the Table below:

Table 6.8: Auxiliary Consumption approved for FY 2017-18

| Particulars | Projected by BSPGCL for FY 2017-18 | Approved for FY 2017-18 |
|-----------------------|------------------------------------|-------------------------|
| Auxiliary Consumption | 12% | 12% |

6.4.4 Gross and Net Generation of BTPS**Petitioner's submission**

BSPGCL has projected Gross and Net Generation from BTPS Units 6 & 7 as given below:

Table 6.9: Projected Gross & Net Generation for FY 2017-18

| Particulars | Units | Projected by BSPGCL FY 2017-18 |
|------------------------|-------|--------------------------------|
| Gross Generation | 6 | 506 |
| Gross Generation | 7 | 675 |
| Total Gross Generation | | 1181 |
| Auxiliary Consumption | 6 & 7 | 142 |
| Net Generation | 6 & 7 | 1039 |

Commission's analysis

Based on the aforesaid approvals, the Commission approves the Unit wise Gross and Net Generation for FY 2017-18 as summarized in the Table below:

Table 6.10: Gross and Net Generation approved for FY 2017-18

| Particulars | Units | Capacity (MW) | FY 2017-18 | | |
|------------------------|------------------|---------------|---------------------------|--------------|-------------------------|
| | | | Projected in the Petition | Now Approved | No. of Operational Days |
| Gross Generation | 6 | 110 | 506 | 506 | 274 |
| | 7 | 110 | 675 | 675 | 365 |
| Total Gross Generation | 6 & 7 | 220 | 1181 | 1181 | - |
| Auxiliary Consumption | 6 & 7 | - | 142 | 142 | - |
| Net Generation | 6 & 7 | - | 1039 | 1039 | - |

6.4.5 Station Heat Rate (SHR)

Petitioner's submission

BSPGCL has projected the Station Heat Rate for the generating station for the FY 2017-18 as given in the Table below:

Table 6.11: Projected Station Heat Rate (SHR) for the FY 2017-18

| Particulars | (Kcal/kWh) | |
|-------------------------|------------------------------------|--|
| | Projected by BSPGCL for FY 2017-18 | |
| Station Heat Rate (SHR) | 3000 | |

BSPGCL has submitted that the Commission has approved SHR of 3000 Kcal/kWh for FY 2016-17. The same value is projected for FY 2017-18.

Commission's analysis

The Commission agrees with the reasoning of BSPGCL and accordingly approves SHR for FY 2017-18 as projected by the Petitioner as given in the Table below:

Table 6.12: Approved Station Heat Rate for BTPS for the FY 2017-18

| Particulars | (Kcal/kWh) | |
|-------------------------|------------------------------------|-------------------------|
| | Projected by BSPGCL for FY 2017-18 | Approved for FY 2017-18 |
| Station Heat Rate (SHR) | 3000 | 3000 |

The SHR norm approved above is subject to review by the Commission after a study of the performance of the Units 6 & 7 after R&M.

6.4.6 Specific Oil Consumption

Petitioner's submission

BSPGCL has projected the specific oil consumption at 3.0 ml/kWh for the FY 2017-18 as given in the table below:

Table 6.13: Projected Specific Oil Consumption for FY 2017-18

| Particulars | Projected by BSPGCL for FY 2017-18 |
|-------------------------------------|------------------------------------|
| Specific Oil Consumption (ml / kWh) | 3.00 |

BSPGCL has submitted that the Commission has considered the specific oil consumption of 3.00 ml/kWh for the FY 2015-16 treating it as first year of operation, in the Tariff Order dated 12th March, 2015. The same value is projected for FY 2016-17, taking it as the first year of operation, according to the revised schedule of Commissioning.

Commission's analysis

The Commission has approved the Specific Oil consumption at 3.00 ml/kWh for FY 2016-17 in the Tariff Order dated 21.03.2016 treating it as the first year of operation,

The Unit-7 has come into operation during November 2016 and Unit-6 is expected to come into operation during FY 2017-18. Accordingly, the Commission approves Specific Oil Consumption at 3.00 ml/kWh for FY 2017-18, as projected by the Petitioner as given in the Table below:

Table 6.14: Approved Specific Oil Consumption for FY 2017-18

| Particulars | Projected by BSPGCL for FY 2017-18 | Approved for FY 2017-18 |
|-----------------------------------|------------------------------------|-------------------------|
| Specific Oil Consumption (ml/kWh) | 3.00 | 3.00 |

The specific oil consumption approved is subject to review by the Commission after study of the performance of the Units after R & M.

6.4.7 Transit Loss of Coal

Petitioner's submission

BSPGCL has projected the Transit loss of coal for the FY 2017-18 at 0.80%.

Commission's Analysis

BSPGCL has projected the Transit Loss of coal for FY 2017-18 at 0.80%. It is considered reasonable, as it is as per CERC Regulations and as approved in the Tariff Order dated 21st March 2016. Hence, the Commission approves the same for FY 2017-18.

Cost Parameters

6.4.8 Cost and GCV of Oil

Petitioner's Submission

BSPGCL submitted that based on the prevalent practice followed in recent years by various coal based thermal power plants to utilize only LDO as secondary fuel to bring back unit in shortest possible time and to prevent hazards in handling HFO, it is proposed to use LDO as secondary fuel.

BSPGCL has submitted that to assess present price of oil, the Petitioner obtained offer from M/s. Indian Oil Corporation Limited (IOCL) for supply of Light Diesel Oil (LDO) to BTPS.

Based on IOCL's offer, the Petitioner has estimated the total landed price for supply of LDO Rs.52,171 per Kilo Litre (KL) as given in the Table below:

Table 6.15: Landed price of Light Diesel Oil Projected for FY 2017-18

| Sl. No. | Particulars | Rate | Quantity (KL) | Amount (Rs.) |
|---------|-----------------------|------------|---------------|--------------|
| 1 | Basic price | 34282.82 | 1 | 34283 |
| 2 | ED | 14% | | 4800 |
| 3 | Additional ED | | | 2500 |
| 4 | Adjustments | | | -133 |
| 5 | Ex-Depot price | | | 41499 |
| 6 | Freight @1.987/Kl/km | 1.987 | 1165 | 2315 |
| 7 | Other levies | 157 | | 157 |
| 8 | Sub-total | | | 43921 |
| 9 | CST | 2% | | 878 |
| 10 | Surcharge | 20% on CST | | 176 |
| 11 | Sub-total | | | 44975 |
| 12 | Entry Tax | 16% | | 7196 |
| 13 | Landed Cost | | | 52171 |

BSPGCL has considered the Gross Calorific Value (GCV) of oil at 10153 Kcal/Litre as approved by the Commission in the Tariff Order dated 21.03.2016.

Commission's Analysis

The Commission considers the GCV and price of oil as considered for FY 2016-17 in Chapter 5, of this order as mentioned in the table below:

Table 6.15: Approved price and GCV of oil for FY 2017-18

| Fuel | Projected by BSPGCL for FY 2017-18 | | Approved for FY 2017-18 | |
|------------------------|------------------------------------|-------|-------------------------|-------|
| | Price | GCV | Price | GCV |
| Light Diesel Oil (LDO) | 52171 | 10153 | 52171 | 10153 |

However, any variation in the fuel oil cost due to variation in the cost parameters approved above is to be passed on to the consumers as per the approved FPPPA formula.

6.4.9 Cost and GCV of Coal

Petitioner's submission

BSPGCL has requested for approval of cost of coal at Rs.4780/MT, considering a 10% increase on the projection for FY 2016-17 and the GCV at 5672 Kcal/kg.

Commission's Analysis

The Commission considered the GCV of coal for FY 2017-18 at the same level as considered in review for FY 2016-17 (Paragraph 5.5.10) of this order. The price of coal is considered at Rs.4114.69/MT in review for FY 2016-17 (RE) and the same is considered as base price of coal and further escalated @5% and accordingly Rs.4320.43/MT $[4114.69+(4114.69*5\%)]$ is considered for FY 2017-18. The Commission has considered the GCV and price of the coal for FY 2017-18 as given in the table below:

Table 6.16: Approved cost and GCV of coal for FY 2017-18

| Item | Projected by BSPGCL for FY 2017-18 | Approved for FY 2017-18 |
|--------------|------------------------------------|-------------------------|
| GCV of coal | 5672 Kcal/Kg | 5672 Kcal/Kg |
| Cost of coal | Rs.4780/MT | Rs.4320.43/MT |

Any variations in the cost of coal due to variation of parameters approved above shall be passed on the consumers as per the approved FPPPA formula.

6.4.10 Approved Performance and Cost Parameters for FY 2017-18

Based on the analysis and decisions of the Commission in the earlier paragraphs, the performance and cost parameters approved for arriving at the fuel cost for FY 2017-18 for BTPS station are as given in the Table below:

Table 6.17: Approved Performance and Cost Parameters for the FY 2017-18

| PLF (%) | Auxiliary Consumption (%) | SHR (Kcal/kWh) | Specific Oil Consumption (MI/kWh) | Transit Loss of Coal (%) | Wt. Av GCV of Coal (Kcal/kWh) | Wt. Av GCV of Oil (Kcal/L) | Price of Coal (Rs./MT) | Price of Oil (Rs./KL) |
|---------|---------------------------|----------------|-----------------------------------|--------------------------|-------------------------------|----------------------------|------------------------|-----------------------|
| 70 | 12 | 3000 | 3.00 | 0.8 | 5672 | 10153 | 4320.43 | 52171 |

6.5 Fuel Costs

Based on the parameters approved above, the Fuel costs are arrived at for the Gross and Net Generation approved in Para 6.4.4 are given the Table below:

Table 6.18: Variable Cost of Generation approved for FY 2017-18

| Sl. No. | Item | Derivation | UoM | Projected by BSPGCL for FY 2017-18 | Approved for FY 2017-18 |
|---------|---|--------------------------|----------|------------------------------------|-------------------------|
| 1 | Gross Generation | A | MUs | 1,181 | 1180.87 |
| 2 | Station Heat Rate | B | KCal/KWh | 3,000 | 3,000 |
| 3 | Sp. Oil Consumption | C | ml/kWh | 3.00 | 3.00 |
| 4 | Calorific value of Oil | D | kcal/l | 10,153 | 10,153 |
| 5 | Gross Calorific Value of coal | E | kcal/kg | 5,672 | 5,672 |
| 6 | Overall Heat | $F = A * B$ | G Cal | 3,542,620 | 35,42,616 |
| 7 | Heat from Oil | $G = (A * C * D) / 1000$ | G Cal | 35,972 | 35,968 |
| 8 | Heat from Coal | $H = (F - G)$ | G Cal | 3,506,648 | 35,06,648 |
| 9 | Actual Oil Consumption | $I = A * C$ | Kl | 3,543 | 3,543 |
| 10 | Actual Coal Consumption | $J = (H * 1000) / E$ | MT | 618,193 | 6,18,238 |
| 11 | Coal Consumption including Transit Loss | $J1 = J / (1 - 0.008)$ | MT | 623,178 | 6,23,224 |
| 12 | Cost of Oil per KL | K | Rs/kl | 52,171 | 52,171 |
| 13 | Cost of Coal per MT | L | Rs/MT | 4,780 | 4,320.43 |
| 14 | Cost of Oil | $M = I * K / 100000$ | Rs Lakh | 1,848 | 1,848 |
| 15 | Cost of Coal | $N = J1 * L / 100000$ | Rs Lakh | 29,791 | 26,926 |
| 16 | Total Fuel Cost | $O = M + N$ | Rs Lakh | 31,639 | 28,774 |
| 17 | Other Fuel related cost | P | Rs Lakh | 0 | 0 |
| 18 | Total Fuel Cost | $Q = O + P$ | Rs Lakh | 31,639 | 28,774 |
| 19 | Fuel Cost/Unit Gross | $Q / (A * 10)$ | Rs/kWh | 2.68 | 2.44 |
| 20 | Auxiliary Consumption | R | % | 12.00% | 12.00% |
| 21 | Auxiliary Consumption | $S = A * R$ | MUs | 142 | 141.70 |
| 22 | Net Generation | $T = A - S$ | MUs | 1,039.17 | 1,039.17 |
| 23 | Fuel Cost/Unit Net | $Q / (T * 10)$ | Rs/kWh | 3.04 | 2.77 |

6.6 Capital Expenditure

Petitioner's submission:

BSPGCL has submitted that out of total project cost of Rs.581.20 Crore for R&M, cumulative fund amounting to Rs.534.39 Crore has been released till FY 2015-16 to various agencies and balance funds are expected to be spent in FY 2016-17 (Rs.46.81 Crore) and there is no capex envisaged on R&M units in FY 2017-18.

BSPGCL has considered the capital expenditure plan, the capex incurred for FY 2017-18 is as detailed in the Table below:

Table 6.19: Revised Capital expenditure for FY 2017-18

| Sl. No. | Particulars | Total Project Cost | Fund released till FY 2015-16 | Planned capex (Rs. Crore) | |
|---------|--|--------------------|-------------------------------|---------------------------|--------------|
| | | | | FY 2016-17 | FY 2017-18 |
| 1 | R&M of BTPS (Unit-6 & 7) | 581.20 | 534.39 | 46.81 | -- |
| 2 | Ganga River Water Scheme for BTPS – Allocated to existing units | 52.86 | 33.52 | 9.67 | 9.67 |
| 3 | Strengthening of Infrastructure at BTPS – Allocated to exiting units | 204.15 | 192.60 | 15.77 | 5.77 |
| 4 | Total investment | 838.21 | 760.51 | 62.26 | 15.45 |

The Petitioner submitted that closing CWIP estimated in the APR for FY 2016-17 (RE) is considered as opening CWIP for FY 2017-18. It is further submitted that capital investment of Rs.15.45 Crore would be incurred in FY 2017-18. The Petitioner has submitted that when the audited accounts would be available after COD, the capitalization would be claimed on actual basis.

BSPGCL has proposed to capitalize the total investment on the project in FY 2017-18 as detailed in the Table below:

Table 6.20: Revised CWIP Projected for FY 2017-18

| Sl. No. | Particulars | Projected by BSPGCL for FY 2017-18 (Rs. Crore) |
|---------|-----------------------------------|--|
| | | |
| 1 | Opening CWIP | 339.56 |
| 2 | Add: New Investment | 15.45 |
| 3 | Total | 355.01 |
| 4 | Less: Total Capitalisation | 355.01 |
| 5 | Opening CWIP capitalisation | 355.01 |
| 6 | New Investment capitalisation | -- |
| 7 | Closing CWIP | -- |

Commission’s analysis:

The Commission has examined the computations of capital expenditure and investment proposed for transfer to assets, etc. furnished by BSPGCL.

The Commission has approved the closing CWIP of Rs.293.31 Crore for FY 2016-17 in “Review” and the same is considered as opening CWIP for FY 2017-18.

The Commission has considered that the Unit 6 of R&M project shall be commissioning during FY 2017-18 (July 2017) and reckoned the balance capital investment of R&M of Units-6 & 7 for capitalisation in FY 2017-18. The Commission has considered the capital investment during FY 2017-18 as projected by the Petitioner. The Capital investment, capitalisation and closing CWIP for FY 2017-18 considered by the Commission is as detailed in the Table below:

Table 6.21: Capital investment considered by the Commission for FY 2017-18

| (Rs. Crore) | | | |
|-------------|-----------------------------------|------------------------------------|-------------------------|
| Sl. No. | Particulars | Projected by BSPGCL for FY 2017-18 | Approved for FY 2017-18 |
| 1 | Opening CWIP | 339.56 | 293.31 |
| 2 | Add: New Investment | 15.45 | 15.45 |
| 3 | Total | 355.01 | 308.76 |
| 4 | Less: Total Capitalisation | 355.01 | 308.76 |
| 5 | Closing CWIP | -- | -- |

6.7 Funding of Capital Expenditure

Petitioner’s submission:

BSPGCL has submitted that it has considered the entire funding of the project cost Ganga Water scheme and BTPS infrastructure strengthening scheme is considered by way of equity infusion in the Company from Government of Bihar.

Commission’s Analysis

The Commission has considered entire project cost of R&M of Units 6 & 7 (Rs.290.60 crore) through Grants and Ganga Water Scheme and BTPS Infrastructure

strengthening schemes (Rs.18.16 crore) through Equity. The funding of capitalisation considered for FY 2017-18 is given hereunder:

| Particulars | Amount (Rs. Crore) |
|---|-----------------------|
| Capitalisation during the year FY 2017-18 | 308.76 |
| Less: Grants | 290.60 |
| Capitalisation net of grants | 18.16 |
| Equity @30% | 5.45 |
| Debt @70% | 12.71 |

6.8 Gross Fixed Assets

Petitioner's submission:

BSPGCL has submitted that it has considered the closing GFA as on 31st March 2017 at Rs.797.88 Crore and the same is considered as opening GFA for FY 2017-18. Based on the revised capitalization schedule of R&M Units-6 & 7, the Petitioner has projected the additions to GFA as furnished in the table below:

Table 6.22: Gross Fixed Assets projected for FY 2017-18

| (Rs. Crore) | | |
|-------------|---|------------------------------------|
| SI. No. | Particulars | Projected by BSPGCL for FY 2017-18 |
| 1 | Opening GFA | 797.88 |
| 2 | Additions during the year | 355.01 |
| 3 | Closing GFA (Depreciable Assets) | 1152.89 |

Commission's analysis:

The Commission has approved the closing GFA at Rs.822.28 crore in review for FY 2016-17 and the same is considered as opening GFA for FY 2017-18. The Commission in the preceding paragraph (Para 6.6) has considered capitalisation at Rs.308.76 Crore for FY 2017-18. Accordingly, the Commission has considered the GFA as detailed in the following Table below:

Table 6.23: Gross Fixed Assets approved for FY 2017-18

| (Rs. Crore) | | | |
|-------------|---------------------------|------------------------------------|-------------------------|
| SI. No. | Particulars | Projected by BSPGCL for FY 2017-18 | Approved for FY 2017-18 |
| 1 | Opening GFA | 797.88 | 822.28 |
| 2 | Additions during the year | 355.01 | 308.76 |
| 3 | Closing GFA | 1152.89 | 1131.04 |

6.9 Depreciation

Petitioner's submission

BSPGCL has submitted that based on revised commissioning schedule of R&M of Units 6 & 7, estimated GFA and Grants for FY 2017-18 has projected depreciation at Rs.19.67 Crore. The computation of depreciation by BSPGCL is as detailed in the Table below:

Table 6.24: Depreciation projected for FY 2017-18

| Sl. No. | Particulars | Projected by BSPGCL for FY 2017-18 (Rs. Crore) |
|---------|---|--|
| 1 | Opening GFA | 797.88 |
| 2 | Add: Additions during the year | 355.01 |
| 3 | Closing GFA (1.+ 2) | 1152.89 |
| 4 | Average GFA $\{(1+3)/2\}$ | 975.39 |
| 5 | Weighted average rate of depreciation | 4.99% |
| 6 | Gross Depreciation (4*5) | 48.67 |
| 7 | Opening Grants | 581.20 |
| 8 | Add: Grants during the year | -- |
| 9 | Closing Grants (7+8) | 581.20 |
| 10 | Average Grants $\{(7+9)/2\}$ | 581.20 |
| 11 | Weighted average rate of depreciation | 4.99% |
| 12 | Depreciation for GFA on Grants (10*11) | 29.00 |
| 13 | Depreciation for GFA on loans (6-12) | 19.67 |

BSPGCL has also submitted that actual depreciation shall be claimed in the true up process, based on actual GFA, additions to GFA and value of grants for R&M Units.

Commission's analysis

The Commission has considered Units 6 and 7 to be commissioned in July 2017 and November 2016 respectively and depreciation shall be charged on completion of trial stage synchronization and CoD.

The Commission has considered the value of GFA for FY 2017-18 in Table 6.23 above and opening grants based on the closing grants approved in review for FY 2016-17 (RE). The Commission has considered entire project cost of R&M units through grants and Ganga Water Scheme and BTPS infrastructure strengthening schemes through equity and accordingly has considered additions to the assets during FY 2017-18.

The Commission, in review for FY 2016-17 (RE), has considered the life of the R&M units as 15 years and rate of depreciation at 6% for accelerated rate of depreciation to provide depreciation on the R&M units over the life of the assets. The Commission has considered the same for FY 2017-18.

Regulation 38 (2)(a) (ii) specify, “.....***The land is not a depreciable asset and its cost shall be excluded from the capital cost while computing 90% of the historical cost of the asset.***”

The Commission, in view of above regulation, has reduced the value of land (as shown in the audited accounts of FY 2015-16) for computation of depreciation for FY 2017-18.

The Commission has considered closing GFA at Rs.822.28 crore and closing grants at Rs.581.20 crore in review for FY 2016-17 (RE) and the same is considered as opening GFA and opening Grants for FY 2017-18. The addition to GFA is considered at Rs.308.76 crore as approved in the Table 6.23. The addition to grants is considered as nil since, the entire R&M project cost is considered through grants to the end of FY 2016-17 as deliberated in paragraph 5.9.

The Commission, accordingly, has computed the depreciation for FY 2017-18 as detailed in the Table below:

Table 6.25: Depreciation approved for FY 2017-18

| (Rs. Crore) | | | |
|-------------|---|------------------------------------|-------------------------|
| Sl. No | Particulars | Projected by BSPGCL for FY 2017-18 | Approved for FY 2017-18 |
| 1 | Opening GFA | 797.88 | 822.28 |
| 2 | Less: Value of land | -- | 135.66 |
| 3 | Net opening GFA (1-2) | 797.88 | 686.62 |
| 4 | Additions during the year | 355.01 | 308.76 |
| 5 | Closing GFA (3+4) | 1152.89 | 995.38 |
| 6 | Average GFA $\{(3+5)/2\}$ | 975.39 | 841.00 |
| 7 | Weighted average rate of depreciation | 4.99% | 6.00% |
| 8 | Gross Depreciation (6*7) | 48.67 | 50.46 |
| 9 | Opening Grants | 581.20 | 581.20 |
| 10 | Add: Grants during the year | -- | -- |
| 11 | Closing Grants (9+10) | 581.20 | 581.20 |
| 12 | Average Grants $\{(9+11)/2\}$ | 581.20 | 581.20 |
| 13 | Weighted average rate of depreciation | 4.99% | 6.00% |

| Sl. No | Particulars | Projected by BSPGCL for FY 2017-18 | Approved for FY 2017-18 |
|--------|--|------------------------------------|-------------------------|
| 14 | Depreciation for GFA on Grants (12*13) | 29.00 | 34.87 |
| 15 | Depreciation for GFA on loans (8-14) | 19.67 | 15.59 |

The Commission, accordingly, has considered Depreciation at Rs.15.59 crore for FY 2017-18.

6.10 Interest and Finance Charges

Petitioner's submission:

BSPGCL has submitted that the Commission had not considered interest and finance charges for FY 2017-18 in the Tariff Order dated 21.03.2016. It is submitted that interest and finance charges claimed on normative loan towards R&M units for FY 2017-18.

It is submitted that as per CERC (Terms and Conditions of Tariff) Regulations, 2014 under Section 9 (Capital Cost) and Section 19 "*(Debt-Equity Ratio) (b) Interest during construction and financing charges, on the loans (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed*".

Further, it is stated that since funding of capex is done through equity infusion and only 30% of the equity is being considered at 15.5%, the remaining equity can be treated as normative loan and interest on normative loan at 12% is claimed for FY 2017-18. Therefore, normative loan of Rs.225.83 crore has been considered for calculating normative interest of Rs.27.10 crore for FY 2017-18. BSPGCL has requested the Commission to approve normative loan and interest for FY 2017-18.

Commission's Analysis

The Commission has considered capitalisation at Rs.308.76 crore in paragraph 6.6. The scheme-wise details are as given below:

| Sl. No. | Particulars | Capitalisation (Rs. Crore) |
|----------|---|----------------------------|
| 1 | R&M of BTPS (Unit-6 & 7) | 290.60 |
| 2 | BTPS Infrastructure Strengthening Scheme & Ganga River water scheme | 18.16 |
| 3 | Total | 308.76 |

The Regulation 37 of BERC (Terms and Conditions for Determination of Tariff) Regulations, 2007 specify as below;

“(1) in case of all generating stations, the debt - equity ratio as on the date of commercial operation shall be 70:30 for determination of tariff. The Commission may in appropriate cases consider equity higher than 30% for purpose of determination of tariff, where the integrated utility / generating company is able to establish to the satisfaction of the Commission that deployment of equity more than 30% is in the interest of general public.

Provided that

- (iii) in case of a generating station, the actual equity employed is less than 30%, the actual debt and equity shall be considered for determination of tariff*
- (iv) in case of existing projects the actual debt : equity ratio shall be used for tariff determination. However, any expansion shall be governed by clause (1) above.*
- (2) the debt and equity amount arrived at in accordance with clause (1) shall be used for calculation of interest on loan, return on equity, advance against depreciation and foreign exchange rate variation”.*

The Regulation emphasizes that debt : equity in respect of the generating station shall be considered at 70:30 of the project cost.

The Commission has considered capitalisation of the entire project cost of R&M units 6 & 7 through grants and Ganga River Water scheme and BTPS infrastructure strengthening scheme through equity.

The Commission, in view of the above Regulations, for the purpose of computation of interest, has considered the normative loan of FY 2016-17 (RE) as shown hereunder.

Funding of Capitalisation for FY 2017-18

| Sl. No. | Particulars | FY 2017-18 (Rs. Crore) |
|---------|--------------------------------|------------------------|
| 1 | Capitalisation during the year | 308.76 |
| 2 | Less: Grants | 290.60 |
| 3 | Net capitalisation | 18.16 |
| 4 | Equity considered (@30% of 3) | 5.45 |
| 5 | Debt considered (@70% of 3) | 12.71 |

The Commission, for the purpose of computation of interest, has considered the opening normative loan at Rs.160.90 Crore and addition during FY 2017-18 is considered at 70% of the capitalisation (net of grants) for FY 2017-18 in terms of Regulation 37 (1) of the BERC Regulations, 2007. Repayment of loans is considered equivalent to depreciation allowed for the year in terms of regulation 38.

The Commission has considered rate of interest equivalent to SBI Base Rate @ 9.30% as on 1st April 2016 as normative rate of interest for the purpose of computation of interest on loans.

The Commission, accordingly, considers interest on normative loan for FY 2017-18 as detailed in the Table below:

Table 6.26: Interest on loans considered for FY 2017-18

| (Rs. Crore) | | |
|-------------|--|-----------------------------|
| Sl. No. | Particulars | Now approved for FY 2017-18 |
| 1 | Opening loan | 169.09 |
| 2 | Additions during the year | 12.72 |
| 3 | Normative Repayment | 15.59 |
| 4 | Closing Loan (1+2-3) | 166.22 |
| 5 | Average Loan $\{(1+4)/2\}$ | 167.66 |
| 6 | Interest rate | 9.30% |
| 7 | Interest & Finance Charges (5*6) | 15.59 |

The Commission, accordingly, considers interest on loans at Rs.15.59 crore for FY 2017-18.

6.11 Return on Equity

Petitioner's submission:

BSPGCL has submitted that since the entire investment of the R&M of the existing units has been funded through either grants or equity and no loan financing has been considered. The entire investment after deducting the grant portion may be considered as the equity contribution of the Petitioner.

BSPGCL has further submitted that BTPS shall be the only operational power plant of the Petitioner from which revenue generation and the cash flow generation for the entire company will take place.

In order to achieve self sufficiency in development of new projects and to encourage further participation from the potential investors, the Petitioner has requested the Commission to revise the RoE rate of Generation projects from the present 14% to 15.5% as already approved for the Transmission projects to be established in the State.

BSPGCL has computed the RoE considering the revised rate of RoE of 15.50% for FY 2017-18 as detailed in the Table below:

Table 6.27: Return on Equity projected for FY 2017-18

| | | (Rs. Crore) |
|---------|----------------------------|---------------------|
| SI. No. | Particulars | Projected by BSPGCL |
| 1 | Closing GFA | 1152.89 |
| 2 | 30% Equity | 345.87 |
| 3 | Rate of Return per annum % | 15.50% |
| 4 | Return on Equity | 53.61 |

Commission's analysis:

The Regulation 38 (3) (a) of BERC Terms and Conditions for Determination of Tariff Regulations, 2007 specify as below:

“the return on equity shall be computed on the base determined in accordance with Regulation 37 @ 14% per annum”.

Further, Regulation 37 of BERC (Terms and Conditions for Determination of Tariff) Regulations, 2007 specify as below;

“(1) in case of all generating stations, the debt - equity ratio as on the date of commercial operation shall be 70:30 for determination of tariffs. The Commission may in appropriate cases consider equity higher than 30% for purpose of determination of tariff, where the integrated utility / generating company is able to establish to the satisfaction of the Commission that deployment of equity more than 30% is in the interest of general public.

Provided that

- (i) in case of a generating station, where actual equity employed is less than 30%, the actual debt and equity employed shall be considered for determination of tariff*
- (ii) in case of existing projects the actual debt : equity ratio shall be used for tariff determination. However, any expansion shall be governed by clause (1) above.*

(2) The debt and equity amount arrived at in accordance with clause (1) shall be used for calculation of interest on loan, return on equity, advance against depreciation and foreign exchange rate variation”.

A conjoint reading of the above Regulations emphasize that debt : equity in respect of the generating station shall be considered at 70:30 of the project cost and return @ 14% on the equity shall be allowed / considered for tariff purpose.

Regulation 37 (1) also specify that the Commission may in appropriate cases consider equity higher than 30% of the project cost for purpose of determination of tariff provided the generating company is able to establish to the satisfaction of the Commission that the deployment of equity more than 30% was in the interest of general public.

The Regulation 38 (3)(a) explicitly specify the rate of return on equity shall be at 14% and accordingly, the Commission has considered RoE at 14%.

The Commission has considered closing equity at Rs.159.50 crore in review for FY 2016-17 (RE) and the same is adopted as opening equity for FY 2017-18. Addition to equity is considered based on the capitalisation net of grants at Rs.5.45 crore for

FY 2017-18 (paragraph 6.7 above). The Commission, accordingly, has computed the return on equity as detailed in the Table below:

Table 6.28: Return on Equity approved for FY 2017-18

| (Rs. Crore) | | | |
|-------------|---|------------------------------------|-------------------------|
| Sl. No. | Particulars | Projected by BSPGCL for FY 2017-18 | Approved for FY 2017-18 |
| 1 | Opening equity | -- | 159.50 |
| 2 | Additions to equity | -- | 5.45 |
| 3 | Closing equity (1+2) | -- | 164.95 |
| 4 | Average equity (1+3)/2 | -- | 162.23 |
| 5 | Closing GFA | 1152.89 | -- |
| 6 | Equity to be considered for RoE (@30% of GFA) | 345.87 | -- |
| 7 | Rate of Return % | 15.50% | 14.00% |
| 8 | Return on Equity | 53.61 | 22.71 |

The Commission, accordingly, approves Return on Equity at Rs.22.71 Crore for FY 2017-18 as given in the Table above.

6.12 Operation and Maintenance (O&M) Expenses

Petitioner's submission:

BSPGCL has submitted that it has adopted a weighted average method of WPI: CPI in the ratio of 45: 55 and computed inflation factors for O&M expenses. It is submitted that the Commission had approved the methodology and accordingly computed Employee expenses and A&G expenses after considering inflation rates calculated based on said methodology.

BSPGCL has proposed following inflation index for FY 2017-18 based on the average WPI and CPI of FY 2014-15 and FY 2015-16 for allocation of holding company expenses;

$$\text{INDX}_n = 0.55 * \text{CPI}_n + 0.45 * \text{WPI}_n$$

Table 6.29: Computation of inflation index by the Petitioner for FY 2017-18

| Sl. No. | Particulars | WPI | CPI | Total |
|---------|--|------------|------------|--------------|
| 1 | Weightage % | 45.00% | 55.00% | 100.00% |
| 2 | Average Index points for FY 2014-15 | 181 | 251 | |
| 3 | Indexation n-1 (index point * weightage) | 81.51 | 137.96 | 219.47 |
| 4 | Average Index points for FY 2015-16 | 177 | 265 | |
| 5 | Indexation n (index point * weightage) | 79.50 | 145.75 | 225.25 |
| 6 | Combined inflation {(5-3) / 3} | | | 2.64% |

Commission's analysis:

The Commission has computed the inflation index for FY 2017-18 considering the available index points of WPI and CPI for FY 2014-15 and FY 2015-16 as given in the table below:

Table 6.30: Inflation index considered by the Commission for FY 2017-18

| Sl. No. | Particulars | WPI | CPI | Total |
|---------|--|---------------|---------------|--------------|
| 1 | Weightage % | 45.00% | 55.00% | 100.00% |
| 2 | Average Index points for FY 2014-15 | 181.19 | 250.83 | |
| 3 | Indexation n-1 (index point * weightage) | 81.54 | 137.96 | 219.50 |
| 4 | Average Index points for FY 2015-16 | 176.51 | 265.01 | |
| 5 | Indexation n (index point * weightage) | 79.43 | 145.76 | 225.19 |
| 6 | Combined inflation {(5-3) / 3} | | | 2.59% |

6.12.1 Employee Costs**Petitioner's submission:**

BSPGCL has submitted that in the absence of any operational project, about 25% employees have been temporarily transferred to the other subsidiary companies of BSPHCL. It is further submitted that as the generation projects will approach commissioning, the employee would be rolled back into the Petitioner's company. The Petitioner has furnished the present as well as deputed staff of the BSPGCL as on date as given below:

Man power details of BSPGCL

| Sl. No. | Description | Officers | Workers | Total |
|---------|--------------|----------|---------|-------|
| 1 | Headquarters | 46 | 53 | 99 |
| 2 | BTPS | 90 | 195 | 285 |
| 3 | Deputation | -- | 56 | 56 |
| | Total | 136 | 304 | 440 |

BSPGCL has further submitted that with the induction of its entire deputed staff as well as addition of new manpower for operation of R&M units, it has projected the employee expenses for FY 2017-18 as detailed in the table below:

Table 6.31: Employee Cost projected for FY 2017-18

| Sl. No. | Particulars | (Rs. Crore) Projected by BSPGCL for FY 2017-18 |
|---------|---|--|
| 1 | Employee cost with indexation of 2.64% | 30.23 |
| 2 | Add: Impact of pay commission | 12.96 |
| 3 | Sub-total (1+2) | 43.19 |
| 4 | Less: Manpower cost for extension project (30% cost) (on 3) | 12.96 |

| Sl. No. | Particulars | Projected by BSPGCL for FY 2017-18 |
|---------|--|------------------------------------|
| 5 | Add: New Manpower cost with indexation | 5.13 |
| 6 | Total Employee Cost (3-4+5) | 35.36 |

Commission's analysis:

The Commission has considered the employee cost of Rs.34.46 Crore (Rs.29.46 crore + Rs.5.00 crore for new manpower) in review for FY 2016-17 (RE). The Commission has considered the Employee cost of FY 2016-17 (RE) as base employee cost for FY 2017-18 and projected the Employee cost for FY 2017-18 with inflationary increase at 2.59% (inflation index). Further, the Commission has considered the new manpower cost of Rs.5.00 Crore with escalation as projected by BSPGCL.

The Commission has observed that the Petitioner has considered pay commission impact at Rs.12.96 crore for FY 2017-18. The Commission has not considered the pay commission impact/increase in employee cost as there are no orders of the State Government and opines that the same may be claimed separately on actual basis in truing up process.

The Commission has considered apportionment of 30% of the total employee cost to extension project in line with earlier tariff orders and as proposed by the Petitioner.

The employee cost considered by the Commission for FY 2017-18 is as detailed in the Table below:

Table 6.32: Employee Cost approved for FY 2017-18

| (Rs. Crore) | | | |
|-------------|---|------------------------------------|-------------------------|
| Sl. No. | Particulars | Projected by BSPGCL for FY 2017-18 | Approved for FY 2017-18 |
| 1 | Employee cost with indexation | 30.23 | 34.46 |
| 2 | Inflationary increase @2.59% | | 0.89 |
| 3 | Add: Impact of pay commission | 12.96 | -- |
| 4 | Add: New Manpower cost with indexation | 5.13 | 5.13 |
| 5 | Sub-total (1+3+4) | 48.32 | 40.48 |
| 6 | Less: Manpower cost for extension project (30% cost) (on 5) | 12.96 | 12.14 |
| 7 | Total Employee Cost (5-6) | 35.36 | 28.35 |

The Commission, accordingly, approves employee cost of Rs.28.35 Crore for FY 2017-18

6.12.2 Repairs and Maintenance (R&M) Expenses

Petitioner's submission:

BSPGCL has projected the R&M expenses, considering operationalisation of Unit-6 & 7 for FY 2017-18 as detailed in the Table below:

Table 6.33: Repairs and Maintenance expenses projected for FY 2017-18

| (Rs. Crore) | | |
|-------------|---------------------------|------------------------------------|
| SI. No. | Particulars | Projected by BSPGCL for FY 2017-18 |
| 1 | R&M Cost | 20.00 |
| 2 | Add: Water charges | -- |
| 4 | Total R&M Cost | 20.00 |

Commission's analysis:

The Commission has examined the R&M expenses projected by the Petitioner. The Commission observes that there may not be any repairs expenses as the refurbished units are in the 1st year of operation. However, the petitioner may incur expenditure towards maintenance and upkeep of the facilities/units. Further, the Petitioner has informed that maintenance and upkeep of the facilities are being outsourced and contracts are being awarded to the outsourcing agencies. The Commission, in view of the above, provisionally considers the R&M expenses as projected by the Petitioner for FY 2017-18.

Accordingly, the Commission approved the R&M expenses for FY 2017-18, subject to true up as per actuals based on the audited annual accounts for FY 2017-18, as detailed in the Table below:

Table 6.34: Repairs and Maintenance expenses approved for FY 2017-18

| (Rs. Crore) | | |
|----------------------------------|------------------------------------|-------------------------|
| Particulars | Projected by BSPGCL for FY 2017-18 | Approved for FY 2017-18 |
| Repairs and Maintenance expenses | 20.00 | 20.00 |

The Commission approves Rs. 20.00 Crore towards R&M costs for FY 2017-18.

6.12.3 Administration and General (A&G) Expenses

Petitioner's submission

BSPGCL has submitted that A&G expenses are computed considering base year of FY 2016-17 and applying escalation of 2.64%. It is also submitted that A&G expenses are expected to increase by at least 10% in FY 2017-18 since both the units are expected to be in operation.

Further, BSPGCL has submitted that an amount of Rs.9.00 Crore shall be payable towards deployment of CISF for R&M units for FY 2017-18.

BSPGCL projected the A&G expenses for FY 2017-18 as furnished in Table below:

Table 6.35: Administration and General Expenses projected for FY 2017-18

| (Rs. Crore) | | |
|-------------|---|------------------------------------|
| Sl. No. | Particulars | Projected by BSPGCL for FY 2017-18 |
| 1 | A&G Expenses | 3.96 |
| 2 | Less: A&G cost for extension project (30%) (on 1) | 1.19 |
| 3 | Add: Payment to CISF | 9.00 |
| 4 | Total A&G expenses (1-2+3) | 11.77 |

Commission's analysis:

The Commission has examined the A&G expenses projected by the Petitioner for FY 2017-18.

The Commission has considered Rs.3.60 crore towards A&G expenses in review for FY 2016-17 accordingly, the same is considered as base A&G expenses and escalated for inflationary increase by 2.59% and projected the A&G expenses for FY 2017-18. The CISF expenditure is considered for FY 2017-18 as projected by the Petitioner. Accordingly, the Commission has considered the A&G expenses for FY 2017-18 subject to true up based on the audited accounts of FY 2017-18 as detailed in the Table below:

Table 6.36: Administration & General Expenses approved for FY 2017-18

| (Rs. Crore) | | | |
|-------------|------------------------|------------------------------------|-------------------------|
| Sl. No. | Particulars | Projected by BSPGCL for FY 2017-18 | Approved for FY 2017-18 |
| 1 | A&G Expenses | 3.96 | 3.60 |
| 2 | Add: indexation @2.59% | -- | 0.09 |

| Sl. No. | Particulars | Projected by BSPGCL for FY 2017-18 | Approved for FY 2017-18 |
|---------|---|------------------------------------|-------------------------|
| 3 | Sub-total (1+2) | 3.96 | 3.69 |
| 4 | Less: A&G cost for extension project (30%) (on 3) | 1.19 | 1.11 |
| 5 | Add: Payment to CISF | 9.00 | 9.00 |
| 6 | Total A&G expenses (3-4+5) | 11.77 | 11.58 |

The Commission, accordingly, approves A&G expenses of Rs.11.58 Crore for FY 2017-18.

6.12.4 Allocation of Holding Company Expenses

Petitioner's submission

BSPGCL has submitted that Holding Company expenses for FY 2017-18 are projected based on expenses considered for FY 2016-17 (RE) with escalation for inflation indexation at 2.64% and estimated the amount at Rs.34.50 Crore for FY 2017-18. The BSPGCL has estimated the Holding Company expenses for FY 2017-18 as detailed in Table below:

Table 6.37: Holding Company Expenses projected for FY 2017-18

(Rs. Crore)

| Holding Company expenses allocated on the basis of equity deployed ratio | | | | | |
|---|---------|--------|--------|--------|--------|
| | BSPHCL | BSPGCL | BSPTCL | NBPDCL | SBPDCL |
| Equity Deployed Ratio | 100.00% | 18.32% | 26.11% | 28.47% | 27.10% |
| Allocation of expenses | 34.50 | 6.32 | 9.01 | 9.82 | 9.35 |

BSPGCL has requested the Commission to approve the holding company expenses as part of overall O&M expenditure for FY 2017-18.

Commission's analysis:

BSPGCL has estimated Rs.6.32 Crore towards Holding Company Expenses for FY 2017-18.

The Commission, accordingly, considers Rs.6.32 Crore as share of BSPGCL towards holding company expenses for FY 2017-18.

6.12.5 Summary of Operations and Maintenance (O&M) Expenses

The summary of O&M expenses approved for FY 2016-17 are tabulated below:

Table 6.38: Total O&M cost approved by the Commission for FY 2017-18

| Particulars | (Rs. Crore) | |
|------------------------------------|------------------------------------|-------------------------|
| | Projected by BSPGCL for FY 2017-18 | Approved for FY 2017-18 |
| Employee cost | 35.36 | 28.35 |
| A&G Expenses | 11.77 | 11.58 |
| R&M expenses | 20.00 | 20.00 |
| Holding Company Expenses Allocated | 6.32 | 6.32 |
| Total O&M cost | 73.46 | 66.25 |

The Commission approves the O&M expenses at Rs.66.25 Crore for FY 2017-18.

6.13 Interest on working capital

Petitioner's submission:

BSPGCL has submitted that following the methodology approved by the Commission in tariff order, interest on working capital has been computed as detailed in the Table below:

Table 6.39: Interest on working capital projected for FY 2017-18

| Sl. No. | Particulars | (Rs. Crore) |
|---------|--|---------------------|
| | | Projected by BSPGCL |
| 1 | Cost of coal & secondary fuel Oil for 2 months | 52.73 |
| 2 | O&M expenses (1 month) | 6.12 |
| 3 | Maintenance spares @1% of opening GFA with 6% escalation | 8.46 |
| 4 | Receivables for 2 months | 110.00 |
| 5 | Total working capital | 177.31 |
| 6 | Rate of interest | 14.75% |
| 7 | Interest on working capital | 26.15 |

BSPGCL has requested the Commission to approve the computation of working capital and the interest charges thereon for FY 2017-18.

Commission's analysis:

The Commission has examined the working capital computations projected by the Petitioner for FY 2017-18.

The Regulation 38 (5)(a) Working capital for purposes of calculation of interest shall..... ;

"(iv) Maintenance spares at 1% of the historical cost escalated at 6% per annum from the date of commercial operation".

The Commission has considered the maintenance spares at 1% on opening GFA with escalation @6% in terms of Regulation 38(5)(a) for computation of working capital requirement and interest on working capital for FY 2017-18.

The Commission, in terms of regulation 38(5)(b), has adopted the interest rate of 14.05% as per SBI PLR rate as on 1st April 2016 and interest on working capital allowed as detailed in the Table below:

Table 6.40: Interest on working capital approved FY 2017-18

| (Rs. Crore) | | | |
|-------------|--|------------------------------------|-------------------------|
| Sl. No. | Particulars | Projected by BSPGCL for FY 2017-18 | Approved for FY 2017-18 |
| 1 | Cost of coal & secondary fuel Oil - 2 months | 52.73 | 47.96 |
| 2 | O&M expenses (1 month) | 6.12 | 5.52 |
| 3 | Maintenance spares @1% of opening GFA with 6% escalation | 8.46 | 8.72 |
| 4 | Receivables - 2 months | 110.00 | 71.02 |
| 5 | Total working capital (1+2+3+4) | 177.31 | 133.21 |
| 6 | Rate of interest | 14.75% | 14.05% |
| 7 | Interest on working capital (5*6) | 26.15 | 18.72 |

The Commission approved Rs.18.72 Crore towards Interest on working capital for FY 2017-18.

6.14 Non Tariff Income

Petitioner's submission:

BSPGCL has projected Rs.0.50 crore towards non-tariff income at the same level as was considered in review for FY 2016-17 (RE).

Commission's analysis:

The Commission considers the submission of the Petitioner and the non-tariff income is considered at Rs.0.50 crore for FY 2017-18 subject to true up.

6.15 Annual Fixed charges for FY 2017-18

Petitioner's submission

BSPGCL has submitted the total annual fixed charges recoverable from the Distribution licensees for FY 2017-18 are as detailed in the Table below:

Table 6.41: Annual Fixed Charges projected for FY 2017-18**(Rs. Crore)**

| Sl. No. | Particulars | Projected by BSPGCL for FY 2017-18 |
|----------|-------------------------------------|------------------------------------|
| 1 | O&M expenses | 73.46 |
| 2 | Interest and finance charges | 27.10 |
| 3 | Interest on working capital | 26.15 |
| 4 | Depreciation | 19.67 |
| 5 | Return on Equity | 53.61 |
| 6 | Total Fixed cost (1+2+3+4+5) | 199.99 |
| 7 | Less: Non-tariff income | 0.50 |
| 8 | Net Fixed cost (6-7) | 199.49 |

Commission's analysis:

Based on the detailed analysis, the fixed charges considered by the Commission for FY 2017-18 are as detailed in the Table below:

Table 6.42: Annual Fixed Charges approved by the Commission for FY 2017-18**(Rs. Crore)**

| Sl. No. | Particulars | Projected by BSPGCL for FY 2017-18 | Approved for FY 2017-18 |
|----------|-------------------------------------|------------------------------------|-------------------------|
| 1 | O&M expenses | 73.46 | 66.25 |
| 2 | Interest and finance charges | 27.10 | 15.59 |
| 3 | Interest on working capital | 26.15 | 18.72 |
| 4 | Depreciation | 19.67 | 15.59 |
| 5 | Return on Equity | 53.61 | 22.71 |
| 6 | Total Fixed cost (1+2+3+4+5) | 199.99 | 138.86 |
| 7 | Less: Non-tariff income | 0.50 | 0.50 |
| 8 | Net Fixed cost (6-7) | 199.49 | 138.36 |

6.16 Annual Revenue Requirement (ARR) for FY 2017-18

Based on the detailed analysis, the fixed and energy charges approved by the Commission for FY 2017-18 are summarized in the Table below:

Table 6.43: Annual Revenue Requirement approved for FY 2017-18**(Rs. Crore)**

| Sl. No. | Particulars | Projected by BSPGCL for FY 2017-18 | Approved for FY 2017-18 |
|----------|------------------------------|------------------------------------|-------------------------|
| 1 | Fuel cost | 316.39 | 287.74 |
| 2 | O&M expenses | 73.46 | 66.25 |
| 3 | Interest and finance charges | 27.10 | 15.59 |
| 4 | Interest on working capital | 26.15 | 18.72 |
| 5 | Depreciation | 19.67 | 15.59 |
| 6 | Return on Equity | 53.61 | 22.71 |
| 7 | Gross ARR (1 to 6) | 516.38 | 426.59 |
| 8 | Less: Non-tariff income | 0.50 | 0.50 |
| 9 | Net ARR (7-8) | 515.88 | 426.09 |

6.17 Generation Cost

The Fixed and energy charges projected by BSPGCL and approved by the Commission for FY 2017-18 are detailed in the Table below:

Table 6.44: Fixed and Energy Charges approved for FY 2017-18**(Rs. Crore)**

| Sl. No. | Particulars | Unit | Projected by BSPGCL for FY 2017-18 | Approved for FY 2017-18 |
|----------------|----------------------------------|-------------|---|--------------------------------|
| 1 | Gross Generation | MU | 1181 | 1180.87 |
| 2 | Auxiliary Consumption | MU | 141.83 | 141.70 |
| 3 | Net Generation (1-2) | MU | 1039.17 | 1039.17 |
| 4 | Energy Charges | Rs. Crore | 316.39 | 287.74 |
| 5 | Annual Fixed Charges | Rs. Crore | 199.49 | 138.35 |
| 6 | Total Charges Recoverable (4+5) | Rs. Crore | 515.88 | 426.09 |
| 7 | Net Energy Charges (4/3)*10 | Rs / kWh | 3.04 | 2.77 |
| 8 | Net Fixed Charges (5/3)*10 | Rs / kWh | 1.92 | 1.33 |
| 9 | Net Generation Cost (7+8) | Rs / kWh | 4.96 | 4.10 |

7. Directives

7.1 Introduction

This chapter deals with the directives given by the Commission for compliance in the Tariff Order dated 21.03.2016, status of implementation by Bihar State Power Generation Company Limited (BSPGCL) and the Commission's observations/directions thereon.

7.2 Directives in Tariff Order dated 21st March, 2016

7.2.1 Directive 1: CISF personnel engaged for security purpose

The Commission has noted that a number of CISF personnel are being utilised by BSPGCL for the security purpose. The Commission opined that CISF personnel services have to be used for security at important and vulnerable locations but at the same time cost benefit analysis should also be carried out to ascertain optimum utilisation of CISF personnel. The Commission directs the BSPGCL to furnish the month-wise details of CISF personnel utilised during FY 2015-16 such as location where CISF personnel are utilised, number of persons utilised per day, total expenses incurred during each month etc. by 30th September 2016.

Status of Compliance by BSPGCL

There was frequent theft of materials as well as unauthorized entrance/tress passing into the plant premises in the past. As a result loss of material was occurring quite often and also there was frequent law and order problem in plant premises. All these had caused financial loss as well as hindrance in progress of work. After development of CISF situation has improved considerably and working atmosphere is now available where anyone can work without fear of loss of property and / or life. Despite heavy expenditure being incurred in deployment of CISF the overall benefit outweighs the expenses and difficulties that were faced prior to CISF deployment. Hence it can be said that now that entry within power house premises has been regulated, chances of theft and law and order problem has minimized which is over all beneficial. The list of total no. of CISF personnel is enclosed in Annexure 2A and expenditure incurred month wise for FY 2015-16 and upto Sep-2016 in Annexure 2B.

Commission's comments

Reply by BSPGCL is noted. The Commission has noted that further to the existing CISF personnel approval from competent authority is received for release of 121 additional temporary posts of different cadres for augmentation of strength of CISF security wing at BTPS, Barauni. Though the security of the men and material is a paramount importance yet the deployment requirement of CISF be worked out by the BSPGCL and CISF officers in order to optimise the cost based on industry norms.

During FY 2017-18, Rs.9.00 crore is projected towards payment to CISF which is about 6.30% of total fixed cost projected for FY 2017-18. Use of modern technology for security at comparable cost may be explored for cost reduction.

7.2.2 Directive 2: Date of Commercial operation of BTPS units 6&7

The Commission directs BSPGCL to intimate the date of final CoD for Unit-7 and Unit-6 of BTPS as soon as they are achieved.

Status of Compliance by BSPGCL

Commercial operation of Unit no 7: expected in November – 2016

Commercial operation of Unit no 6: expected in March – 2017

Commission's comments

It is noted from the petition that unit-7 is in operation w.e.f. 4th November, 2016 and unit-6 is expected to generate power from July 2017. The Commission directs BSPGCL to intimate the dates of commercial operation of unit 6 & 7 after they are differently announced.

7.2.3 Directive 3: Providing meters to assess auxiliary consumption

The Commission directs BSPGCL to provide individual appropriate energy meters at all the required locations and compute the auxiliary consumption month-wise separately for Unit-7 and Unit-6 and submit with next tariff petition.

Status of Compliance by BSPGCL

Individual energy meters at all the required location has been provided but the meters are under commissioning. Computation of exact quantity of power consumed towards auxiliary consumption will be possible thereafter.

Commission's comments

Unit-7 is already in operation w.e.f. 4th November, 2016. The Commission directs BSPGCL to expedite commissioning of energy meters to access the auxiliary consumption. Similar action may be taken for unit-6 which is expected to come into operation by July 2017. The compliance and the monthly auxiliary consumption of Unit- 6&7 may be provided in the next tariff petition.

7.2.4 Directive 4: Operational performance parameters

The Commission directs BSPGCL to submit a report on month wise actual achievement of all operational performance parameters viz. PAF, PLF, SHR, SFC, Auxiliary Consumption, Transit loss of Coal for Unit-7 and Unit-6 separately along with next tariff petition.

Status of Compliance by BSPGCL

Since the units are not running so the operational parameter will be given after COD of units.

Commission's comments

The Commission directs BSPGCL to submit the operational performance parameters like PLF, SHR, SFC and Auxiliary consumption of unit-7 for the period November, 2016 to March, 2017.

7.2.5 Directive 5: Status of commissioning of Unit-8 and Unit-9 of BTPS extension project

The Commission directs BSPGCL to submit monthly status report on the progress of commissioning of Unit-8 and Unit-9 of BTPS extension project. BSPGCL is also directed to take action in advance to file the application for the regulated tariff pertaining to BTPS extension project Units- 8&9 as soon as CoD is finalised.

Status of Compliance by BSPGCL

Status is attached in Annexure-C.

Commission's comments

The Commission directs BSPGCL to submit the following milestone completion dates for Unit 8 and Unit 9 as per following format by 31st May 2017.

| Milestone date for completion | Unit 8 | | Unit 9 | |
|-------------------------------|-----------------|--------|-----------------|--------|
| | As per contract | Actual | As per contract | Actual |
| Condenser erection | | | | |
| Boiler hydro test | | | | |
| Turbine Boxup | | | | |
| Boiler light up (BLU) | | | | |
| TG oil flushing | | | | |
| Steam blowing | | | | |
| Date of unit synchronisation | | | | |
| Full load | | | | |

7.2.6 Directive 6: Business Plan

The Commission directs BSPGCL to submit the Business Plan for the remaining years (FY 2017-18 and FY 2018-19) of the second control period FY 2016-17 to FY 2018-19 by September 2016 and to file the next tariff petition for the remaining years (FY 2017-18 and FY 2018-19) of the second control period FY 2016-17 to FY 2018-19 by November, 2016.

Status of Compliance by BSPGCL

Petitioner would like to request Hon'ble Commission that once the plant is in operating condition, business plan shall be submitted based on the actual operating conditions.

Commission's comments

The reply of BSPGCL is noted.

7.3 New Directives**7.3.1 Unit 7 of BTPS availability and Generation**

The Commission directs BSPGCL to furnish the month-wise details from November 2016 to March 2017 of number of days and number of hours the Unit 7 has generated power during FY 2016-17 and month-wise details of maximum power (MW) and energy (MU) generated by Unit 7 of BTPS during FY 2016-17.

7.3.2 Maintenance of asset/property Register

The directs the BSPGCL to maintain asset/property register showing details of nature of equipment, value of equipment, details of land, extent of land, buildings (office, generation plant, residential, etc.) and other civil works, etc. and shall submit the details along with tariff petition to be filed every year from FY 2018-19.

7.3.3 Ratio of different grades of coal used

The Commission directs BSPGCL to ensure that different grades of coal shall be used in optimal ratio, so that maximum heat can be generated at less cost of coal.

Annexure -2B

Annexure-2B

Details of Expenditure against CISF.

| Sl.No. | Discription/Period | 2015-16 | Up to Sep-16 |
|--------|--------------------|-----------------------|----------------------|
| 1 | Salary | 122,014,712.00 | 78,848,125.00 |
| 2 | Permament Imprest | 277,280.00 | 232,753.00 |
| 3 | Telephone | 14,928.00 | 6,575.00 |
| 4 | Vechicle Bill | 892,494.00 | 403,154.00 |
| 5 | Petrol | 691,160.00 | 379,689.00 |
| | Total | 123,890,574.00 | 79,870,296.00 |

Lal
26/11/16
Accounts Officer

Annexure -C

| Sl. No. | Area/Equipment | Work in Progress | Work to be taken up |
|---|----------------|---|--|
| 1 | Boiler | i. PRDS work is under progress. | (Erection of 1520 MT done out of 2900 MT) |
| | | ii. BFD line work is under progress | i. Erection of hanger support yet to be started. |
| | | iii. Erection of supporting work of pipe lines & ducts are u/p | ii. Refractory work yet to be Completed |
| | | | iii. Damper/ expansion joint/ gate erection work yet to be started |
| | | | iv. Connecting actuators for different dampers yet to be started |
| | | | v. Dismantling of old bottom ash hopper and erection of new bottom ash hopper yet to be started. |
| | | | vi. Cooling fan for pent house erection yet to be started |
| | | | vii. Soot blower piping work yet to be started |
| | | | viii. Platen super heater work yet to be completed |
| | | | ix. Insulation and sheeting work yet to be started. |
| x. Air, Fuel, etc. piping work yet to be completed. Etc. | | | |
| | FD fan | Dismantling of FD | Dismantling, revisioning of different components, replacement of worn out & damaged components including HT & LT power supply system and cooling water system & cooling water system, replacement of all ducts & commissioning of FD fan is to be done. |
| | ID Fan | Civil foundation work of ID fan-B is u/p. Erection of ID fan A is u/p | i. Foundation is to be made. Erection of new ID fan with motor and hydraulic coupling is to be done after completion of civil work. ii. HT & LT power supply system & cooling water system, replacement of all ducts & commissioning of ID fan is to be done after completion of civil work |
| | PA fan | | i. Civil foundation of PA fans yet to be started. |
| ii. Foundation is to be made. Erection of new PA fan with motor and hydraulic coupling is to be done after completion of civil work. | | | |
| iii. HT & LT power supply system and cooling water system and cooling system, replacement of all ducts & commissioning of PA fan is to be done after completion of civil work | | | |
| | Milling system | Presently work is in stop position | i. Erection of Milling system with motor and coupling, seal air fan is to be done. ii. HT & LT power supply system & cooling water systems & commissioning of milling system is to be done. |
| | APH system | Erection of new APH system | HT & LT power supply system, replacement of all |

| Sl. No. | Area/Equipment | Work in Progress | Work to be taken up |
|---------|-----------------------------|---|--|
| | | started and is under progress. Presently work is in stop position | ducts & commissioning is to be done |
| | ESP system | Erection of insulator plate & supporting beam are u/p | (Erection of 650 MT done out of 1400 MT) |
| | Chemical Dosing system | i. Chemical Dosing system skids placed at 19 mtr. | i. Associated piping connection yet to be completed. ii. HT & LT power supply system commissioning of Chemical Dosing system is to be done. |
| 2 | Turbine & Auxiliaries | | Work is in stop position since one year. |
| | Turbine (LP, IP & HP) | HP, IP & LP Rotor received at site | Spares awaited. |
| | Turbine Governing System | Over hauling work is yet to be start | Spares awaited. |
| | Turning Gear | Over hauling work is yet to be start | Spares awaited. |
| | Main Stream stop valve | Over hauling work is yet to be start | Spares awaited. |
| | HRH vent valve | Over hauling work is yet to be start | Spares awaited. |
| | Boiler Feed Pump | Erection Work is u/p | |
| | jacking Oil Pump | Erection Work is yet to be started | Spares awaited. |
| | Condensate Extraction Pumps | Erection Work is yet to be started | Spares awaited. |
| | Condenser | Condenser tubes take out work is completed. Cleaning of vapor zone of condenser is completed Re-tubing work completed | |
| | Centrifuge System | Cooling pipe to be completed | |
| | De-aerator | Work is in stop position | |
| | Condensate Booster Pump | Erection Work is yet to be start | |
| | TG piping | Replacement Work is yet to be start | Spares awaited. |
| | Turbine Drain System | Work is yet to be start | |
| | Hydrogen gas system | Erection Work is yet to be start | Spares awaited. |
| | Starting Oil pump | Erection Work is yet to be start | Spares awaited. |
| | Emergency oil Pump (AC& DC) | Erection Work is yet to be start | Spares awaited. |
| | Seal oil System | Erection Work is yet to be start | Spares awaited. |
| | Aux. Oil Pump | Erection Work is yet to be start | |
| 3 | Cooling Tower 6 | Presently work is in stop position | i. Power supply made to be available ii. Testing & trail of fans is not started yet iii. Erection of 07 no's cell (splash bar blocks) not started yet |

| Sl. No. | Area/Equipment | Work in Progress | Work to be taken up |
|---------|------------------------|------------------------|--|
| 4 | Bottom Ash Hopper | | Dismantling & erection of Bottom Ash Hopper not started yet |
| 5 | Generator | R-phase winding failed | One no stator conductor to be sent |
| 6 | Power Transformers | GT6 | GT6- Earthling through NGT & NGR to done. Marshalling box refurbishment pen OTI, WTI erection GRP panel commissioning pending Station-6 Problem of bulging of coil for earthling through NGT & NGR to be done. |
| 7 | 11 kV Bus duct | | 11 kV bus duct CT/PT, insulator, flex jumper erection pending. UAT tab of duct modification & erection pending. |
| 8 | Generator | | Generator stator core to be rectified M/ BHEL PSER. Erection, cabling and commissioning of excitation system. |
| 9 | ESP | | ESP transformers two no. to be change panel to be commissioned |
| 10 | CW, Misc, Ash Handling | | Panels and feeders to be charged and commissioned |
| 11 | Lighting | | Lighting inside HT/LT switchgear room 6 pending |
| 12 | HT/LT switchgear 6 | | Relays, facia, copper strips, handle to be fitted in HT/LT switchgear to be supplied & erected. LT transformers erection and commissioning pending |
| 13 | C&I | | Panels in control Room-c are installed. |

Bihar Electricity Regulatory Commission (BERC)

Vidyut Bhawan-II, Bailey Road, Patna

Time: 11.00 AM Dated: 16.02.2017

Minutes of the meeting of the State Advisory Committee (SAC) constituted under section 87 of the Electricity Act, 2003 held on 16th February 2017 in the Conference Room of the Commission to discuss on the Tariff petition of NBPDC, SBPDCL, BSPGCL and BSPTCL for FY 2017-18.

The list of participants present in the meeting is annexed with the minutes.

The Chairman welcomed all the members and participants of the meeting and explained that the State Advisory Committee has been constituted under Section 87 of the Electricity Act 2003. He also stated that the objectives of this committee is to advise the Commission on measures questions of policy relating to electricity supply, matters related to quality, continuity and extent of services provided by the licensees, protection of consumers interest, overall standard of performance by utilities etc. He said that ideally this meeting should take place every four months, which could not be done. It shall be the endeavor of the Commission to conduct meetings at regular intervals in future. **Chairman, BERC expressed his concern on continued absence of designated members in SAC meeting and once again urged all the members to attend to such meeting personally in future.** He explained that although the agenda of this meeting as circulated is related to the tariff petition for FY 2017-18 submitted by BSPGCL, BSPTCL, SLDC, BGCL, NBPDC and SBPDCL, the members are free to place any policy matter for discussion which comes under the purview of the State Advisory Committee.

1. Confirmation of the minutes of last State Advisory Committee meeting :-

With the aforesaid opening remarks, the agenda of the meeting were taken up for discussion as under :-

As no modification was received, the minutes of last State Advisory Committee meeting was confirmed by the members.

It was stated by the Hon'ble Chairman that the NBPDC and SBPDCL have proposed new tariff structure for retail sale of electricity during FY 2017-18. The Chairman also informed the SAC members that the Commission would conduct public hearings at Muzaffarpur, Bhagalpur, Purnea, Gaya and Patna and objections/suggestions on the

petitions shall be considered before finalizing the tariff. It was further stated that the suggestions of SAC shall also be taken into consideration.

2. The chairman requested the Petitioners to present their petitions before the SAC.

Presentation was made by BPSTCL & SLDC jointly. Both the companies highlighted the various parameters for True up for FY 2015-16, APR for FY 2016-17 and ARR for FY 2017-18.

After the presentation Shri. Sanjay Bhatia of BIA raised the following issues

- a. Norms of Depreciation and Interest on working capital base rate in the Tariff petition.
- b. High Transmission loss and suggested to achieve the percentage as envisaged in UDAY Scheme.
- c. Transmission charges in Rs./kWh.
 - Shri. Rakesh ESE BSPTCL explained that the transmission charges are calculated based on per MW only. Transmission charges per kWh is only for illustration.
 - Director BSPTCL explained that with the addition of new lines & substations at Darbhanga & Mothihari by end march 2017 the losses shall reduce.
 - Member, BEREC Shri. Rajeev Amit draw attention of the Transco that the expenditure likely to be incurred in FY 2017-18 due to 7th pay Commission have not been taken care of by BSPTCL.
 - Shri. Nitin IEX has said that SLDC has not shown open access charges. In the absence of that CERC rate may be applicable for open access charges.

3. Presentation of Bihar Grid Co. Ltd.

After the presentation BIA representative & BCC representative again raised their concern for high Transmission Loss and said that the consumers are compelled to bear the cost of inefficiency of Transo & DISCOMs. They should make some concrete plan & road map to minimize the losses.

BGCL officials explained that as the new assets have been added to existing infrastructures to ensure uninterrupted power supply, the losses will initially be high due to non-utilisation of full capacity. However, as the load increases in coming years the transmission loss will gradually come down. Similar for the cost per unit transmission cost will come from.

Member, BEREC Shri. Rajeev Amit asked methodology of billing as per the agreement for collection of ARR of BGCL.

BSPHCL official explained that the bills will be raised by BGCL and the bill be sent to BSPHCL which in turn will forward it to STU/BSPTCL for recovery. The STU/BSPTCL will raise the bills to both the Discoms in the approved ratio. The collection done by STU/BSPTCL will be given to BGCL.

Chairman, BEREC opined that this proposal is not in consonance with the Agreement between the BGCL and BSPHCL. He requested that a letter be submitted to the Commission duly approved by board of directors to this aspect.

4. Presentation of NBPDCCL and SBPDCL:

Members of Bihar Chamber of Commerce and Bihar Industrial Association suggested the following points during the SAC meeting:

- a. Transmission and Distribution Loss;
- b. Renewable Power Obligation;
- c. Power Purchase from IEX;
- d. Vision for reducing the Transmission and Distribution loss for 4 to 5 further years;
- e. Implementation of open access; and
- f. Hold quarterly SAC meetings.

(i) Distribution Loss Trajectory

The member of Bihar Industries Association queried that the distribution loss trajectory set by the Commission is not achieved by the DISCOMs.

BCC Representative said that the Transmission and Distribution loss should be borne by Government and not by consumers and government subsidy should come before fixing tariff.

Managing Director, NBPDCCL, replied that the steps taken to control distribution loss has started only from FY 2013-14. After taking several steps, there has been a significant reduction in it. He also mentioned that it would further reduce to 15% as per UDAY scheme by FY 2019-20, as the spot billing in rural areas have been initiated, and transmission lines and other infrastructure facilities have been augmented.

Chairman, BEREC Shri. S.K. Negi appreciated the initiatives regarding reduction in distribution loss trajectory and digital collection. However he showed his concern that there are still many consumers who are unmetered and it was emphasized in the meeting that all efforts should be taken to install meters to all consumers,

replace defective meters and spot billing in order to bring down the distribution losses.

(ii) **Power Purchase Cost**

The Chairman, BERC, opined that although the price of coal might have reduced but this benefit have been nullified to great extent by the implementation of Green Cess and increase in Railway Freight charges. The Chairman hoped that the DISCOM shave taken into account this fact into their tariff petition.

(iii) **Purchase of power from IEX**

Shri. Nitin IEX mentioned that the power is available at the exchange at cheaper rates, and the DISCOMs are purchasing power from IEX but there is still room to increase its purchase from IEX and reduce power purchase cost.

In response, the representative of DISCOMs mentioned that purchasing power from exchange depends upon availability and it is not a reliable source. The Discoms cannot depend on such power on long term perspective. Nevertheless, they are purchasing above 500MW power from the exchange.

The Chairman, BERC welcomed the suggestions given by Director, IEX and advised the DISCOMs to make all efforts to buy cheaper power in the interest of consumers.

(iv) Managing Director, NBPDC explained the following points during the SAC meeting:

- a. Rationalisation of Tariff structure as per guidelines of Ministry of Power, Govt. of India;
- b. As regards subsidy he said that State Govt. may decide this after determination of tariff;
- c. Improvement in infrastructure from 2013;
- d. Rural Electrification and spot billing within 2-3 years and all rural consumers will be metered;
- e. Rebate of 1% for online payment;
- f. Subsidy in bills of consumers;
- g. Tender for Non-Solar for FY 2017-18 have been opened;
- h. Tariff in Bihar is the lowest as compared to other states;
- i. Introduction of prepaid meters;
- j. Demand based tariff;

- k. UDAY based loss trajectory are realistic and the discom will able to achieve this trajectories;
- l. As regards the surplus from BSEB, he requested the Commission to give a direction to GoB for directly settle the claim or adjust from ARR in installments; and
- m. Target of RPO will be met.

5. Shri R.K. Choudhary, Member B.E.R.C suggested the following:-

- Optimisation of Power Purchase Cost is necessary in today's competitive era. Power purchase cost can be optimised after studying the load pattern in the state as being done elsewhere. Based on prediction of load pattern, Discoms are in a better position to tie-up power purchase on long term basis, short term basis and through exchange. Agencies who can carry out such prediction of load pattern should be explored.
- During discussion, it was stated that the T&D losses of NBPDCCL is less than 10% over SBPDCL. During deliberation, it is revealed that the loss difference was due to subsidy on NBPDCCL. It was opined that improving of T&D losses should be achieved in real term so that power is not wasted due to inefficiency of system.
- He explained that Renewable Purchase Obligation (RPO) are not being met by majority of states including Bihar and no one is buying Renewable energy certificates (RECS). This is perhaps the majority of states are including Bihar not being able to produce adequate Solar Power because of their respective states geographical consideration i.e. due to less capacity utilization factor (cuf) and high land cost.
However, MD, SBPDCL explained that they have already contacted SECI and in process of getting 250 MW from REWA (MP) and hopeful that they would meet RPO in future.
- It was also expressed concern over unsatisfactory response of open access as it is not very successful across country due to various constraints of respective states. Railways are vigorously pursuing for open access power in order to get cheaper power than supplied by most of discoms. Railway is good paying consumer and is likely to go out from the consumer base of Discoms which would have an adverse impact on the financial health of Discoms. Therefore Discoms should have clear road map to bridge this gap by adopting time bound suitable strategies.

6. Presentation of BSPGCL:

BSPGCL has shown various parameters for True up for FY 2015-16, APR for FY 2016-17 and ARR for FY 2017-18 and explained that they have consider the 7th Pay Commission.

7. The Commission also asked for the suggestions in the following points during the meeting:**a. 7th Pay Commission**

Member, BERC mentioned that regarding 7th Pay Commission BSPGCL has claimed for 43% hike for FY 2017-18 which is unrealistic.

b. Paying the Generators bills in time to avail rebate

Members, BERC mentioned that the timely payment of bills should be ensured to avail 2% rebate and for this tie-up with banks should be done to take low interest soft loan to make timely payment of bills.

c. Losses on Rural connections

Member, BERC mentioned that with vast expansion of network and non-utilisation such network optimally in rural areas, the T&D losses have increased. It should be ensured that the losses should be reduced

Finally, the Chairman thanked all the Members and officials present in the meeting for attending the meeting and giving their valuable suggestions. It was further stated that the Commission would consider these suggestion while passing the tariff orders of the Generation, Transmission and Distribution companies.

List of participants of the meeting of the STATE ADVISORY COMMITTEE (SAC) held on 16/02/2017 at 11.00 AM.

| Sl. No. | Name | Designation | Organisation |
|---------------------------------|-------------------------|------------------------------|-----------------------------|
| Member of the Committee | | | |
| 1. | Shri S.K. Negi | Chairman | BERC |
| 2. | Shri Rajeev Amit | Member | BERC |
| 3. | Shri R.K. Choudhary | Member | BERC |
| 4. | Shri Sandeep Kumar R.P. | Managing Director | NBPDCL & BSPTCL |
| 5. | Shri R. Lakshmanan | Managing Director | SBPDCL |
| 6. | Shri Sanjay Bhartiya | Vice President | BIA |
| 7. | Shri S.K. Patwari | Convenor, Industry Committee | B.C.C.I. |
| 8. | Shri NitinSabikhi | Sr. Manager | Indian Energy Exchange Ltd. |
| 9. | Shri MurariNandan | Under Secretary | Food &Consu. Prot. Deptt. |
| 10. | Shri Manish Jadhav | Project Director (PMU) | BREDA |
| Officer of the Utilities | | | |
| 11. | Shri T.Pandey | Director (Proj.) | Bihar Grid Co. Ltd. |
| 12. | Shri D.N. Tiwari | Chief Engineer (Com.) | NBPDCL |
| 13. | Shri Narendra Kumar | Chief Engineer (Com.) | SBPDCL |
| 14. | Shri N.K.P. Sinha | Director (Ope.) | SBPDCL |
| 15. | Shri B.Sharma | Director (Project) | BSPTCL |
| 16. | Shri Arvind Kumar | G.M. (Fin.) | BSPGCL |
| 17. | Shri N.K. Jha | G.M. (P&A) | SBPDCL |
| 18. | Shri Vijay Kumar | G.M. (Rev.) | NBPDCL & SBPDCL |
| 19. | Shri Rakesh Prasad | G.M. (Comml.) | PGCIL |
| 20. | Shri Raman Kumar | Dy. Manager | Power Grid |
| 21. | Shri C.C. Prasad | Addl. G.M. | BGCL |
| 22. | ShriRakesh | ESE/Trg. | BSPTCL |
| 23. | Shri Binod Kumar | AEE/Comm. | SBPDCL |
| 24. | Shri Mukesh Kumar | AEE/Tel+Interstate cell | BSPTCL |
| Officer of the BERC | | | |
| 25. | Shri Parmanand Singh | Secretary | BERC |
| 26. | Shri Lakshman Bhakta | Dy. Dir. (Per.) | BERC |
| 27. | Shri Nadeem Ahmad | Dy. Dir.(Dist. Tariff) | BERC |

Annexure – II

List of participant who attended the public hearing at Patna on 24.01.2017**Case No. 41 of 2016****Appearance on behalf BSPGCL**

| | | |
|----|------------------------|---------------------|
| 1. | Sri Aravind Kumar | GM(F&A), BSPGCL |
| 2. | Sri Deepak Kumar Jha | ESE, BSPGCL |
| 3. | Sri Rajeev Kumar Singh | EEE(P&D), BSPGCL |
| 4. | Sri Rajeev Ranjan | EEE, BSPGCL |
| 5. | Ms Sweta | EEE(P&D), BSPGCL |
| 6. | Sri Rakesh V | Consultant , BSPGCL |
| 7. | Sri Rajen Prasad | CE(P&D), BSP(H)CL |

Appearance on behalf of Stakeholders

| | | |
|----|---------------------|---|
| 1. | Sri Sanjay Bhartiya | Vice President, Bihar Industries Association, Patna |
|----|---------------------|---|