

**Jammu & Kashmir
State Electricity Regulatory Commission**



**Order
on
Determination of Annual Revenue Requirement
and
Tariff for FY 2011-12
of
J&K State Power Development Corporation Limited**

Jammu & Kashmir State Electricity Regulatory Commission
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Before

Jammu & Kashmir State Electricity Regulatory Commission

Petition Number: JKSERC/27 of 2011

In the Matter of:

Application for Annual Revenue Requirement and Tariff Petition of Hydro Electric Stations, Gas Turbine and Transmission Line of Jammu & Kashmir State Power Development Corporation Limited for the Financial Year 2011-12 in terms of Regulation 45 of J&KSERC (Conduct of Business) Regulations and J&KSERC (Terms & Conditions of Determination of Hydro Generation Tariff) Regulations, 2005 and J&KSERC (Terms & Conditions of Determination of Hydro Generation Tariff) Regulations, 2011.

In the Matter of:

Jammu & Kashmir State Power Development Corporation Limited,
Hotel Shaw Inn Boulevard, Srinagar / Ashok Nagar, Satwari, Jammu

Order No.: JKSERC/ 11 of 2011

(Passed on this 16th Day of July, 2011)

- 1.1 This Order relates to ARR and tariff petition filed by the Jammu & Kashmir State Power Development Corporation Limited (hereinafter referred to as JKSPDC or the Petitioner) before the Jammu & Kashmir State Electricity Regulatory Commission (hereinafter referred to as JKSERC or the Commission) for approval of Annual Revenue Requirement (ARR) and tariff for the 19 Hydro Generating Stations, 400 kV double circuit transmission line from Baglihar to Kishenpur and two bays at 400 kV Kishenpur sub-station of PGCIL (Baglihar-Transmission System) for FY 2011-12. The petition also includes submissions made by the Petitioner for approval of reimbursement of actual expenses incurred on operation and maintenance of Gas Based Thermal Stations and Mohra HEP which has not been operational since 1992. The petition was filed as per the J&KSERC (Terms and Conditions for Determination of Hydro Generation Tariff) Regulations, 2005 (hereinafter referred to as the JKSERC Hydro Tariff Regulations, 2005/2011) which was subsequently replaced by J&KSERC (Terms and Conditions for Determination of Hydro Generation Tariff) Regulations, 2011.

- 1.2 The Commission in its order dated 30th April, 2010 had approved the ARR and determined generation tariffs for FY 2009-10 and FY 2010-11 for the 18 HEPs and had directed the Petitioner to file a separate petition for determination of tariff for Baglihar HEP in order to conduct a prudence check on the capital cost of the project. The Petitioner accordingly filed a petition on 27th December 2010 for approval of capital cost of the project and determination of ARR and tariff for FY 2009-10 and FY 2010-11 for Baglihar hydro generation station and the associated Baglihar transmission system for approval of the Commission.
- 1.3 The Commission conducted a detailed prudence check on the submissions made by the Petitioner as regards capital cost of the Baglihar Hydro Project and Baglihar Transmission System. The Commission has provisionally approved the capital cost of the project and determined tariff for FY 2009-10 and 2010-11 in its Tariff Order number JKSERC/6 of 2011 issued on 16th June 2011.
- 1.4 Meanwhile the Petitioner filed a separate tariff petition number JKSERC/27/2011 before the Commission on 28 February 2011 for determination of ARR and tariff for the year 2011-12 in respect of 19 HEPs and Baglihar transmission system and approval of reimbursement of actual expenses incurred towards operation and maintenance of gas based generating stations and Mohra HEP.
- 1.5 The Commission on initial review of the tariff petition for FY 2011-12 directed the Petitioner to submit further information/ clarifications on several issues through its letter no. JKSERC/11/49/1511-18 dated 16th March 2011.
- 1.6 The Commission held a technical validation session with the Petitioner on 22nd March 2011. The Commission took into consideration the supplementary information provided by the Petitioner in the technical validation session and admitted the petition on 22nd March 2011. The Petitioner consequently submitted additional data and clarifications through its letter no. PDC/CJ/8382 dated 25th March 2011.
- 1.7 The Commission vide letter number JKSERC/ 49/1612 dated 25th March 2011 directed the Petitioner to issue a summary of its petition and tariff proposals as Public Notice and invite comments/ objections/ suggestions from the stakeholders including consumers on the tariff petition filed. The summary of the petition and tariff proposal was published by the Petitioner in 5 newspapers on 29th and 30th March 2011 and the stakeholders were requested to submit their comments/ suggestions/ objections by 15th April 2011.

Gist of the petition

- 1.8 The Petitioner has filed the petition seeking approval of annual revenue requirement and tariff for FY 2011-12 for:
 - (a) Eight (8) Hydro Electric Projects including USHP II, Chenani III, Sewa III, Pahalgam, Igo – Marcellong, Baderwah, Marpochu, Haftal.

- (b) Ten (10) old Hydro Electric Projects including USHP I, Lower Jhelum, Ganderbal, Chenani I, Karnah, Iqbal Bridge, Bazgo, Sumoor, Hunder, Chenani II.
- (c) Baglihar Hydro Electric Project Stage I which includes Baglihar Hydro Electric Project [Baglihar-Hydro] and a 68km long 400 kV double circuit transmission line from Baglihar to Kishenpur and two bays at 400 kV Kishenpur sub-station of PGCIL [Baglihar-Transmission System].
- (d) Gas based thermal power station I and II situated at Pampore.
- 1.9 The petition submitted by the Petitioner addresses tariff and ARR proposed in Chapter 7 of the petition document. This chapter is further structured into different subsections to cover submissions regarding tariff and ARR proposed for 8 HEPs, 10 old HEPs, Baglihar HEP, Gas Turbines I & II and Mohra HEP.
- 1.10 The Petitioner has submitted the annual fixed charges (AFC) and indicative tariff for 8 HEPs in accordance with JKSERC Hydro Tariff Regulations, 2005/2011. The AFC and indicative tariff submitted for approval are given in the Table 1.

Table 1: Proposed Annual Fixed Charges and Indicative Tariff for 8 HEPs (Rs Cr) for FY 2011-12

| Name of HEP | Interest on Loan | Depn | AAD | Return on Equity | O&M Expenses | Interest on Working Capital | Consultancy Charges | Income tax | AFC | Design Energy (In MU) | Indicative Tariff (Rs per kWh) |
|----------------|------------------|-------|-------|------------------|--------------|-----------------------------|---------------------|------------|-------|-----------------------|--------------------------------|
| USHP-II | 2.21 | 10.21 | 20.24 | 18.27 | 9.29 | 2.08 | 0.303 | 0.00 | 62.60 | 447.37 | 1.42 |
| Chenani-III | 0.87 | 1.11 | 2.74 | 2.31 | 1.13 | 0.27 | 0.022 | 0.00 | 8.45 | 36.71 | 2.32 |
| Sewa-III | 1.05 | 1.38 | 3.29 | 2.81 | 1.37 | 0.32 | 0.026 | 0.00 | 10.27 | 33.06 | 3.14 |
| Pahalgam | 1.67 | 1.36 | 2.29 | 2.19 | 1.05 | 0.26 | 0.003 | 0.00 | 8.83 | 14.92 | 5.97 |
| Igo-Mercellong | 1.48 | 1.05 | 2.19 | 1.95 | 0.94 | 0.23 | 0.009 | 0.00 | 7.86 | 15.88 | 5.00 |
| Baderwah | 0.26 | 0.26 | 0.309 | 0.34 | 0.20 | 0.04 | 0.003 | 0.00 | 1.42 | 8.32 | 1.73 |
| Marpachoo | 0.46 | 0.29 | 0.49 | 0.47 | 0.23 | 0.06 | 0.002 | 0.00 | 2.00 | 3.79 | 5.32 |
| Haftal | 0.57 | 0.33 | 0.63 | 0.58 | 0.29 | 0.07 | 0.009 | 0.00 | 2.49 | 4.88 | 5.15 |

- 1.11 The Petitioner has submitted the annual fixed charges (AFC) and indicative tariff for 10 old HEPs in accordance with JKSERC Hydro Tariff Regulations, 2005/2011. The AFC and indicative tariff submitted for approval are given in Table 2.

Table 2: Proposed Annual Fixed Charges and Indicative Tariff for 10 old HEPs (Rs Cr) for FY 2011-12

| Name of HEP | Interest on Loan | Depn | AAD | Return on Equity | O&M Expenses | Interest on Working Capital | Consultancy Charges | Income tax | AFC | Design Energy (In MU) | Indicative Tariff (Rs per kWh) |
|--------------|------------------|------|------|------------------|--------------|-----------------------------|---------------------|------------|-------|-----------------------|--------------------------------|
| Upper Sind-I | 0.00 | 1.02 | 0.00 | 1.94 | 4.67 | 0.43 | 0.07 | 0.00 | 8.13 | 106.62 | 0.76 |
| Lower Jhelum | 0.00 | 9.34 | 0.00 | 17.76 | 11.55 | 2.35 | 0.30 | 0.00 | 41.32 | 609.43 | 0.58 |
| Ganderbal | 0.00 | 0.33 | 0.00 | 0.67 | 4.06 | 0.25 | 0.04 | 0.00 | 5.35 | 90.15 | 0.59 |
| Chenani-I | 0.00 | 1.54 | 0.00 | 3.30 | 3.14 | 0.51 | 0.07 | 0.00 | 8.56 | 110.02 | 0.78 |
| Karnah | 0.00 | 0.30 | 0.00 | 0.57 | 2.33 | 0.08 | 0.01 | 0.00 | 3.29 | 11.36 | 2.88 |
| Iqbal Bridge | 0.00 | 0.55 | 0.00 | 1.04 | 1.95 | 0.13 | 0.01 | 0.00 | 3.68 | 21.23 | 1.73 |
| Bazgo | 0.00 | 0.05 | 0.00 | 0.09 | 0.15 | 0.01 | 0.001 | 0.00 | 0.30 | 1.09 | 2.75 |
| Sumoor | 0.00 | 0.02 | 0.00 | 0.03 | 0.15 | 0.004 | 0.0003 | 0.00 | 0.20 | 0.45 | 4.43 |
| Hunder | 0.00 | 0.06 | 0.00 | 0.12 | 0.22 | 0.01 | 0.001 | 0.00 | 0.41 | 1.77 | 2.35 |
| Chenani-II | 0.00 | 0.25 | 0.00 | 0.49 | 0.38 | 0.06 | 0.01 | 0.00 | 1.19 | 12.00 | 0.99 |

- 1.12 The Petitioner has submitted the annual fixed charges (AFC) and indicative tariff for Baglihar hydro in accordance with JKSERC Hydro Tariff Regulations, 2005/2011. The Petitioner has submitted that the petition for approval of tariff for the Baglihar Transmission System has been filed in accordance with the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 as the JKSERC has not specified tariff regulation for the transmission business separately. The AFC and indicative tariff in respect of Baglihar hydro and Baglihar transmission system for FY 2011-12 that have been submitted for approval are given in Table 3.

Table 3: Proposed Annual Fixed Charges and Indicative Tariff for Baglihar Hydro and Baglihar Transmission System (Rs Cr) for FY 2011-12

| Description | Baglihar Hydro Project | Baglihar Transmission System |
|-----------------------------|------------------------|------------------------------|
| O&M Expenses | 89.45 | 1.65 |
| Interest on Loan | 262.28 | 7.87 |
| Depreciation | 119.15 | 4.32 |
| Additional Depreciation | 208.74 | 5.77 |
| Return on Equity | 229.09 | 7.06 |
| Interest on Working Capital | 32.30 | 0.95 |

| Description | Baglihar Hydro Project | Baglihar Transmission System |
|--------------------------------------|------------------------|------------------------------|
| Income Tax | 0.00 | 0.00 |
| Total Annual Fixed Cost | 941.00 | 27.62 |
| Net Saleable Energy (In MU) | 2498.03 | 2498.03 |
| Indicative Tariff (Rsper kWh) | 3.77 | 0.11 |

- 1.13 The Petitioner made an additional submission with the Commission as regards additional revenue requirement to be allowed on account of water usage charges imposed by State Water Resource Regulatory Authority, Government of Jammu and Kashmir.
- 1.14 The Petitioner made two submissions before the Commission as regards the levy of the water usage charges mentioned above and the consequent impact of such levy on the aggregate revenue requirement submitted by the Petitioner from November 2010 onwards. The Petitioner thereby submitted a review petition dated 9th July 2011 before the Commission requesting for approval of additional revenue requirement on account of water usage charges for the period November 2010 – March 2011. This review petition has been filed with respect to the ARR and tariff determined by the Commission for FY 2009-10 and 2010-11 in Tariff Order dated 30th April 2010 and review order dated 9th November 2010. Further, the Petitioner made a submission in addition to the Petition filed for determination of ARR and Tariff for FY 2011-12 for 19 HEPs. The Petitioner submitted the additional filing under case number 27 of 2011 dated 9th July 2011.
- 1.15 The Petitioner prayed to the Commission to approve the reimbursement of water usage charges on the basis of details submitted by them. Details regarding the water usage charges proposed by the Petitioner have been given in the relevant chapter of this order.

Meeting of the State Advisory Committee

- 1.16 The Commission convened a meeting with the Members of the State Advisory Committee (SAC) in Jammu on 20th April, 2011 for discussing the ARR and tariff petition filed by the Petitioner for determination of tariff of the 19 Hydro Generation Stations and the Baglihar Transmission System for FY 2011-12.
- 1.17 A presentation was made by the Petitioner highlighting the main components of the ARR & Tariff petition and covering major items of expenditure and revenue. The members provided several valuable suggestions which have been considered by the Commission in this Order. These comments have been summarized in the relevant chapter of the Tariff Order.

Public Hearing

- 1.18 The Public hearings on the ARR & tariff petition filed by the Petitioner were held at

Srinagar on 18th April, 2011 and Jammu on 21st April, 2011. The Commission invited some prominent persons and consumer bodies to take part in the process of tariff determination and represent the interests of consumers. The comments/ objections/ suggestions received during the hearings have been duly considered while finalizing this Order.

- 1.19 A summary of the issues or objections raised by the stakeholders during the course of this process of tariff determination has been provided in the relevant chapter of this Tariff Order along with the Petitioner's response and the Commission's views on the same.

Approved Annual Fixed Charges and Tariffs for FY 2011-12

- 1.20 The Commission has considered the submissions made by the Petitioner in the petition and has approved AFC and tariff for FY 2011-12 for the 19 HEPs and Baglihar Transmission System operated by the utility. Determination and approval of AFC and indicative tariff for the 19 HEPs and Baglihar Transmission System has been done in the ensuing chapters of this Tariff Order.
- 1.21 Determination and approval of tariff and ARR has been taken up individually for 8 HEPs, 10 HEPs and Baglihar HEP Stage I in separate chapters in this Tariff Order. This has been done since approval of cost and tariff pertaining to 8 HEPs and 10 old HEPs has been discussed separately in the tariff orders issued previously; also cost and tariff pertaining to Baglihar HEP Stage I has been addressed in a separate tariff order. Moreover, chapter 7 of the petition document pertaining to tariff and ARR proposal is structured into different sub-sections to cover submissions regarding tariff and ARR proposed for 8 HEPs, 10 old HEPs, Baglihar HEP, Gas Turbines I & II and Mohra HEP.
- 1.22 Whereas the Commission's detailed analysis regarding components of tariff and approval of tariff and ARR in respect of 8 HEPs, 10 old HEPs and Baglihar HEP has been discussed in the relevant chapters of the Tariff Order, the same has been summarized in the following sub-points.
- 1.23 Mohra HEP is not under operational condition since September, 1992. Initially, it was commissioned in the year 1905 for 4 MW capacity and thereafter it was commissioned for 9 MW capacity in the year 1962. The Commission is of the view that the plant has already outlived its useful life. Under the present regulations, there is no provision for allowance of cost against defunct/retired assets. Any associated transmission/distribution system which was constructed earlier and is now being solely used for transmission/distribution function only may be transferred to the JKPDD at appropriate consideration. Regarding elements of cost against operation and maintenance of gas based plant, the Commission has already clarified that so long as they are not made operational on commercial basis, the operation and maintenance cost on emergent or disaster management basis are to be borne by the state government.

1.24 The Commission has determined the annual fixed charges and tariff for 8 HEPs on the basis of the approved capital cost and the submissions made by the Petitioner in the petition and in accordance with provisions of the JKSERC Hydro Tariff Regulation, 2005/2011. The approved AFC and tariff for FY 2011-12 calculated at design energy is as given in Table 4.

Table 4: Approved AFC and tariff for 8 HEPs for FY 2011-12 (Rs Cr)

| Name of HEP | Interest on Loan | Depn | AAD | Return on Equity | O&M Expenses | Interest on Working Capital | Consultancy Charges | Income tax | AFC | Design Energy (In MU) | Indicative Tariff (Rs per kWh) |
|----------------|------------------|-------|-------|------------------|--------------|-----------------------------|---------------------|------------|-------|-----------------------|--------------------------------|
| USHP-II | 1.66 | 10.21 | 20.24 | 18.27 | 9.29 | 2.03 | 0.30 | 0.00 | 62.00 | 447.37 | 1.40 |
| Chennani-III | 0.22 | 1.11 | 2.74 | 2.31 | 1.13 | 0.25 | 0.02 | 0.00 | 7.77 | 36.71 | 2.14 |
| Sewa-III | 0.26 | 1.39 | 3.29 | 2.81 | 1.37 | 0.30 | 0.03 | 0.00 | 9.45 | 33.06 | 2.89 |
| Pahalgam | 1.54 | 1.36 | 2.29 | 2.19 | 1.05 | 0.26 | 0.01 | 0.00 | 8.70 | 14.92 | 5.89 |
| Igo-Mercellong | 1.44 | 1.06 | 2.19 | 1.95 | 0.94 | 0.23 | 0.01 | 0.00 | 7.82 | 15.88 | 4.97 |
| Baderwah | 0.24 | 0.26 | 0.31 | 0.34 | 0.20 | 0.04 | 0.0029 | 0.00 | 1.40 | 8.32 | 1.70 |
| Marpachoo | 0.43 | 0.29 | 0.49 | 0.47 | 0.23 | 0.06 | 0.0022 | 0.00 | 1.97 | 3.79 | 5.25 |
| Haftal | 0.54 | 0.34 | 0.63 | 0.58 | 0.29 | 0.07 | 0.0029 | 0.00 | 2.46 | 4.88 | 5.09 |

1.25 The Commission has determined the annual fixed charges and tariff for 10 old HEPs on the basis of the approved capital cost and the submissions made by the Petitioner in the petition and in accordance with provisions of the JKSERC Hydro Tariff Regulation, 2005/2011. The approved AFC and tariff for FY 2011-12 calculated at design energy is as given in Table 5.

Table 5: Approved AFC and tariff for 10 old HEPs for FY 2011-12 (Rs Cr)

| Name of HEP | Interest on Loan | Depn | AAD | Return on Equity | O&M Expenses | Interest on Working Capital | Consultancy Charges | Income tax | AFC | Design Energy (In MU) | Indicative Tariff (Rs per kWh) |
|--------------|------------------|------|------|------------------|--------------|-----------------------------|---------------------|------------|-------|-----------------------|--------------------------------|
| Upper Sind-I | 0.00 | 0.40 | 0.00 | 1.94 | 0.78 | 0.13 | 0.0653 | 0.00 | 3.32 | 106.62 | 0.32 |
| Lower Jhelum | 0.00 | 9.00 | 0.00 | 17.69 | 7.11 | 1.27 | 0.3032 | 0.00 | 35.37 | 609.43 | 0.59 |
| Ganderbal | 0.00 | 0.00 | 0.00 | 0.67 | 0.27 | 0.04 | 0.0433 | 0.00 | 1.02 | 90.15 | 0.11 |

| Name of HEP | Interest on Loan | Depn | AAD | Return on Equity | O&M Expenses | Interest on Working Capital | Consultancy Charges | Income tax | AFC | Design Energy (In MU) | Indicative Tariff (Rs per kWh) |
|--------------|------------------|------|------|------------------|--------------|-----------------------------|---------------------|------------|------|-----------------------|--------------------------------|
| Chenani-I | 0.00 | 1.15 | 0.00 | 3.30 | 1.32 | 0.23 | 0.0673 | 0.00 | 6.07 | 110.02 | 0.56 |
| Karnah | 0.00 | 0.29 | 0.00 | 0.57 | 0.23 | 0.04 | 0.0058 | 0.00 | 1.14 | 11.36 | 1.01 |
| Iqbal Bridge | 0.00 | 0.55 | 0.00 | 1.03 | 0.42 | 0.07 | 0.0108 | 0.00 | 2.09 | 21.23 | 0.99 |
| Bazgo | 0.00 | 0.05 | 0.00 | 0.09 | 0.04 | 0.01 | 0.0009 | 0.00 | 0.18 | 1.09 | 1.69 |
| Sumoor | 0.00 | 0.02 | 0.00 | 0.03 | 0.01 | 0.0021 | 0.0003 | 0.00 | 0.06 | 0.45 | 1.32 |
| Hunder | 0.00 | 0.06 | 0.00 | 0.12 | 0.05 | 0.01 | 0.0012 | 0.00 | 0.24 | 1.77 | 1.37 |
| Chenani-II | 0.00 | 0.25 | 0.00 | 0.49 | 0.20 | 0.04 | 0.0058 | 0.00 | 0.98 | 12.00 | 0.82 |

1.26 The Commission has determined the annual fixed charges and tariff for Baglihar Hydro Project for FY 2011-12 on the basis of the provisionally approved capital cost and the submissions made by the Petitioner in the petition and in accordance with provisions of the JKSERC Hydro Tariff Regulation, 2005/2011.

1.27 The Commission has determined the annual fixed charges and tariff for Baglihar Transmission System for FY 2011-12 on the basis of the provisionally approved capital cost and the submissions made by the Petitioner in the petition and in accordance with the provisions of the CERC (Terms and Conditions of Tariff) Regulations, 2009. The approved AFC and tariff for Baglihar HEP Stage I for FY 2011-12 calculated at design energy is as given in Table 6.

Table 6: Approved AFC and tariff for Baglihar Hydro and Baglihar Transmission system for FY 2011-12 (Rs Cr)

| Description | Baglihar Hydro Project | Baglihar Transmission System |
|--------------------------------------|------------------------|------------------------------|
| O&M Expenses | 88.76 | 1.65 |
| Interest on Loan | 229.90 | 6.86 |
| Depreciation | 109.67 | 7.64 |
| Advance against Depreciation | 219.62 | 0.00 |
| Return on Equity | 197.57 | 6.73 |
| Interest on Working Capital | 30.08 | 0.53 |
| Income Tax | 0.00 | 0.00 |
| Total Annual Fixed Cost | 875.60 | 23.42 |
| Net Saleable Energy in MU | 2498.03 | 2498.03 |
| Indicative Tariff Rs. per kWh | 3.51 | 0.09 |

Implementation of Order

- 1.28 The Commission has thus admitted the petition of the Petitioner, and has determined the AFC and tariffs recoverable by the Petitioner from JKPDD for the 19 Hydro Generating Stations and Baglihar Transmission System for FY 2011-12 as determined in this Order.
- 1.29 The AFC approved for 19 Hydro Generating Stations and Baglihar Transmission System for FY 2011-12 as determined by the Commission shall be applicable to the energy sold and billed during FY 2011-12.
- 1.30 The Commission approves the reimbursement of water usage charges payable by the Petitioner in light of the order passed by the State Water Resource Regulatory Authority, Government of Jammu & Kashmir. The Petitioner is hereby allowed to claim the water usage charges paid by them as a pass through from JKPDD.
- 1.31 The Commission directs that this Order be implemented along with directions given, if any, and conditions mentioned in the detailed Order.
- 1.32 In exercise of powers vested under the Jammu & Kashmir Electricity Act, 2010 (Act XIII of 2010), the Commission hereby passes this Order today, the 16th July 2011.

Ordered as above, read with attached detailed reasons, grounds and conditions.

Sd/-

G.M. Khan
(Member - Finance)

Sd/-

D.S. Pawar
(Member – Technical)

Sd/-

S.M. Desalphine
(Chairman)

Dated: 16th July 2011

Place: Jammu

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A1: INTRODUCTION

Jammu & Kashmir State Electricity Regulatory Commission

- 1.1 The Jammu & Kashmir State Electricity Regulatory Commission (hereinafter referred to as the Commission) is a statutory body setup under an Act of the State Legislature to regulate power sector in the State of Jammu & Kashmir.
- 1.2 Section 71 of the Jammu & Kashmir Electricity Act, 2010 has described the various functions required to be discharged by the Commission.
- 1.3 The Commission shall ensure transparency while exercising its powers and discharging its functions.
- 1.4 In discharge of its functions, the Commission shall be guided by the State Electricity Policy, State Electricity Plan, and Tariff Policy published under the provisions of the Act.

Jammu & Kashmir State Power Development Corporation Limited

- 1.5 The Jammu and Kashmir State Power Development Corporation Limited (JKSPDC hereinafter referred to as the Petitioner) is a State Government owned company which owns and operates various hydro-generation power projects in the State of Jammu & Kashmir.
- 1.6 The JKSPDC owns and operates a total of twenty (20) hydro generating stations and one (1) transmission line in the state out of which one generating station namely Mohra station has been defunct since the floods of September 1992.
- 1.7 The main objects of the Corporation on its incorporation were:-
 - (a) To take over, execute, complete and operate Power Stations and Power projects of the Jammu and Kashmir Government including all property rights and other rights and obligations including with respect to personnel that may be assigned by the Government of the State of Jammu and Kashmir, and to arrange for conveyancing loan or assignment in favour of the Company of all properties and rights that may be necessary for this purpose.
 - (b) To plan, promote and organize an integrated and efficient development of electric power in all aspects including planning, investigation, research, design and preparation of preliminary feasibility and detailed project reports, construction, generation, operation and maintenance of Power Stations and projects, transmission, distribution and sale of power generated at power stations in accordance with the policy of the State of Jammu and Kashmir and objectives laid down by the State Government from time to time.

- (c) To undertake, where necessary, the construction of transmission lines and ancillary works for timely and coordinated supply of Power.
 - (d) To co-ordinate the activities of its subsidiaries, to determine their economic and financial objectives / targets and to review, control, guide and direct their performance with a view to secure optimum utilization of all resources placed at their disposal.
 - (e) To act as an agent of the Government / Public Sector Institutions, to exercise all the rights and powers exercisable at any meeting of any Company engaged in the Planning, Investigation, Research, Design and Preparation of Preliminary Feasibility and Detailed Project Reports, Construction, Generation, Operation and Maintenance of Power Stations and Projects, Transmission, Distribution and Sale of Power, in respect of any shares held by the Government, Public Financial Institutions, National Banks, Nationalized Insurance Companies with a view to secure the most effective utilization of the financial investments and loans in such companies and the most efficient development of the concerned industries.
 - (f) To carry on the business of purchasing, selling, importing, exporting, producing, trading, manufacturing or otherwise dealing in power generation and transmission equipment and supplies for power development, ancillary and other allied industries and for that purpose to install, operate and manage all necessary plants, establishments and works.
- 1.8 The Petitioner has filed a petition before the Jammu & Kashmir State Electricity Regulatory Commission (hereinafter referred to as the Commission) for approval of Annual Revenue Requirement (ARR) and determination of tariff for FY 2011-12 in respect of the 19 HEPs operated by them.
- 1.9 The Petitioner has filed an application under Regulation 4 of the J&K State Electricity Regulatory Commission (Terms and Conditions for Determination of Hydro-Generation Tariff) Regulations, 2005 dated September 23, 2005 (hereinafter referred to as Hydro Generation Tariff Regulations, 2005) and J&K State Electricity Regulatory Commission (Conduct of Business) Regulations, 2005 framed by the Commission for approval of its ARR and tariff petition for FY 2011-12 in respect of 19 hydro generating stations operated by them.
- 1.10 The Petitioner has filed an application under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 dated April 1, 2009 for approval of its ARR and tariff petition for the year FY 2011-12 pertaining to the Baglihar Transmission System.

Scope of the present Order

- 1.11 The ambit of this present Order extends to approval of annual revenue requirement (ARR) and determination of tariff for 19 HEPs and Baglihar Transmission System owned and operated by the Petitioner. ARR and tariff for FY 2011-12 has been determined in this Tariff Order for the projects enumerated below:
- (a) Eight (8) Hydro Electric Projects including USHP II, Chenani III, Sewa III, Pahalgam, Igo – Marcellong, Baderwah, Marpochu, Haftal.
 - (b) Ten (10) old Hydro Electric Projects including USHP I, Lower Jhelum, Ganderbal, Chenani I, Karnah, Iqbal Bridge, Bazgo, Sumoor, Hunder, Chenani II.
 - (c) Baglihar Hydro Electric Project Stage I which includes Baglihar Hydro Electric Project [Baglihar-Hydro] and a 68km long 400 kV double circuit transmission line from Baglihar to Kishenpur and two bays at 400 kV Kishenpur sub-station of PGCIL [Baglihar-Transmission System].
- 1.12 The determination and approval of tariff and ARR has been taken up individually for 8 HEPs, 10 HEPs and Baglihar HEP Stage I in separate chapters in this Tariff Order. This has been done since approval of cost and tariff pertaining to 8 HEPs and 10 HEPs has been discussed separately in the tariff orders issued previously; also cost and tariff pertaining to Baglihar HEP Stage I has been addressed in a separate tariff order. Moreover, chapter 7 of the petition document pertaining to tariff and ARR proposal is structured into different sub-sections to cover submissions regarding tariff and ARR proposed for 8 HEPs, 10 HEPs, Baglihar HEP, Gas Turbines I & II and Mohra HEP
- 1.13 The Commission has considered the submissions made by the Petitioner in the petition and has approved AFC and tariff for FY 2011-12 for the 19 HEPs and Baglihar Transmission System operated by the utility. Determination and approval of AFC and indicative tariff for the 19 HEPs and Baglihar Transmission System has been done in the ensuing chapters of this Tariff Order.

Procedural History

- 1.14 The JKSPDC had on December 20, 2008 filed its first ARR & Tariff petition post framing of the J&K State Electricity Regulatory Commission (Terms and Conditions for Determination of Hydro-Generation Tariff) Regulations, 2005.
- 1.15 The Commission issued the first tariff order for JKSPDC on March 31, 2009, which was applicable for the period April 1, 2008 to March 31, 2009.
- 1.16 The Commission in its tariff order had directed the Petitioner that in case of the 10 old Hydro Electric Projects (HEPs) covered under the Power Purchase Agreement dated April 26, 2000, the next ARR and tariff proposal should be submitted either after

tracing the old records in support of capital cost or determination of the capital cost through appropriate valuation methodology by engaging a consultant/ certified valuers. The Petitioner has complied with the directive by engaging a consultant for valuation of assets for the 10 HEPs.

- 1.17 The Petitioner failed to file the ARR & Tariff Petition for the year 2009-10 and 2010-11 by the stipulated date of November 30, 2008 and November 30, 2009 respectively. The Petitioner filed a combined Petition for the year 2009-10 and 2010-11 on January 12, 2010.
- 1.18 The Commission vide order number JKSERC/04 of 2010 dated April 30, 2010 issued Tariff Order on ARR and determination of generation tariffs for FY 2009-10 and FY 2010-11 for 18 HEPs owned and operated by the JKSPDC excluding Baglihar HEP which had been commissioned on April 1, 2009. The Baglihar project consists of a Hydro Generating Station with an installed capacity 450 MW and a 400kV Transmission Line. The Commission directed the Petitioner to file a separate petition for the Baglihar HEP through the same Tariff Order dated April 30, 2010.
- 1.19 While passing tariff order dated April 30, 2010, tariff for sale of power generated by the Baglihar Hydro project was provisionally allowed at the rate of Rs.3.54 per unit for FY 2009-10 and 2010-11. This was in consonance with the rate allowed in the PPA executed between JKSPDC and JKPDD for the year 2009-10. However, the rate mentioned in the PPA for FY 2010-11 is Rs.3.71 per unit and the Commission through its Review Order Number JKSERC/25/2010 dated 9th November 2010 agreed to allow provisional charging of tariff in accordance with the PPA till such time as the tariff order for the Baglihar HEP Stage I was approved by the Commission. The provisional tariff shall be revised on approval of tariff by the Commission with retrospective effect from the date of commissioning of the plant.
- 1.20 The Commission had further reiterated that the Petitioner shall submit audited DPR and documents in support of the capital cost claimed for Baglihar HEP along with the tariff petition. Moreover, the Commission opined that the capital cost for the Baglihar HEP shall only be allowed after due prudence check by the Commission.
- 1.21 The Petitioner filed a combined Petition for determination of capital cost of the project and approval of ARR and tariff petition for the years 2009-10 and 2010-11 for both the hydro generation station and the transmission system on 27th December 2010.
- 1.22 The Commission conducted a detailed prudence check on the submissions made by the Petitioner as regards capital cost of the Baglihar Hydro Project and Baglihar Transmission System. The Commission has provisionally approved the capital cost of the project and determined tariff for FY 2009-10 and 2010-11 in its Tariff Order number JKSERC/6 of 2011 issued on 16th June 2011.

- 1.23 Meanwhile the Petitioner filed a separate tariff petition number JKSERC/27/2011 before the Commission on 28th February 2011 for determination of ARR and tariff for the year 2011-12 in respect of 19 HEPs and Baglihar transmission system and other incidental and related matters pertaining to generation of power in the state of Jammu and Kashmir.

Information Gaps in the Petition

- 1.24 The Commission carried out a scrutiny of the petition filed by the Petitioner and noticed several information gaps and data inconsistencies. A note listing out the deficiencies in the petition was prepared and the Petitioner was directed to submit suitable clarification, corrections and further information vide Commission's letter no. JKSERC/11/49/1511-18 dated 16th March 2011.
- 1.25 The Petitioner submitted the requisite additional data and clarifications through its letter no. PDC/CJ/8382 dated 25th March 2011. The Commission held a technical validation session with the Petitioner on 22nd March, 2011 on the above and on preliminary scrutiny of the supplementary data, admitted the petition for FY 2011-12 on 22nd March 2011.

Inviting Public Response

- 1.26 The Commission vide letter number JKSERC/ 49/1612 dated 25th March 2011 directed the Petitioner to issue a summary of its petition and tariff proposals as Public Notice in newspapers in English and local languages as per the requirement of Regulation 48(2), Chapter 5 of the JKSERC (Conduct of Business) Regulations 2005 and invite comments, objections and suggestions from consumers or stakeholders on the petitions.
- 1.27 As directed by the Commission, the Petitioner published a Public Notice in some of the widely read English, Hindi and Urdu newspapers indicating the salient features of its petition and inviting objections and suggestions from the consumers and other stakeholders. The public notice appeared in the following newspapers on the mentioned dates below:
- (a) Daily Excelsior, Jammu on 30th March 2011
 - (b) The Sree Times, Jammu on 29th March 2011
 - (c) Kattu Satya, Jammu on 30th March 2011
 - (d) Srinagar Times, Srinagar on 29th March 2011
 - (e) Greater Kashmir, Srinagar on 30th March 2011

- 1.28 Copies of the above Public Notice were also made available on the Petitioners website and at its office address mentioned in the notice. The last date for submitting the comments/ objections on ARR and tariff petition was 15th April 2011.
- 1.29 The public notice advised respondents to submit (in person or by post, fax or email) their objections, written either in English, Hindi or Urdu to the Commission with a copy to the Petitioner. Respondents were also given the option to be heard in person during the public hearings conducted by the Commission.
- 1.30 The Commission held public hearings in Srinagar on 18th April 2011 and in Jammu on 21st April 2011, to discuss the matters pertaining to the petition filed by the Petitioner for determination of ARR and generation tariff for 19 HEPs and Baglihar Transmission System for FY 2011-12.
- 1.31 A summary of the issues or objections raised by the stakeholders during the course of this process of tariff determination has been provided in the relevant chapter of this Tariff Order along with the Petitioner's response and the Commission's views on the same.

Meeting of the State Advisory Committee

- 1.32 The Commission has constituted a State Advisory Committee in accordance with provisions of Section 68 of the Jammu & Kashmir Electricity Act, 2010.
- 1.33 The Commission vide letter number JKSERC/63-82 dated 15th April 2011 invited members of the State Advisory Committee to put forth their comments, objections and suggestions of the petition filed by the Petitioner.
- 1.34 The Commission convened a meeting of the State Advisory Committee (SAC) on 20th April 2011 in Jammu to discuss the ARR and tariff petition submitted by the Petitioner for FY 2011-12.
- 1.35 The Petitioner explained the salient features of the petition, highlighting the methodology followed for determining the various cost components of tariff. The SAC members discussed the general condition of the power generation in the state and the operational performance of the HEPs owned by the Petitioner.
- 1.36 Members of the State Advisory Committee discussed various issues regarding the operational performance of the utilities. Some of these issues discussed are summarized below:
- (a) The value of the AMC undertaken with NHPC for maintenance of the Baglihar HEP Stage I was enquired. The Petitioner responded by informing the SAC members that they had undertaken an AMC with the value of Rs.74 Cr for the 1st year to be escalated at the rate of 1.5% for the following year. Further it was informed that NHPC would carry out the actual O&M work for the plant and the AMC was not merely advisory in nature.

- (b) The Petitioner also informed the members that the AMC includes deputation of 65 engineers and 19 contractual staff from NHPC.
 - (c) The SAC members also enquired from the Petitioner details regarding the total strength of staff on deputation from JKPDD and total expenditure incurred on such account. The Petitioner informed the members of the SAC that there are 419 engineers on deputation from JKPDD and a sum of Rs, 96.70 Cr per year is incurred on their pay and other emoluments.
 - (d) The SAC members also sought information regarding the total establishment (both technical and non technical) of the Petitioner and asked them if they plan to have a cadre of employees constituted wholly by their staff. The Petitioner responded by informing the members that they have a total of 3188 employees and 96 contractual employees. Further, they mentioned that they have started a restructuring exercise by engaging an independent consultant and they target to have a cadre of employees constituted wholly by their own staff by 2012-13.
 - (e) Other points pertaining to the tariff petition have been summarized in the chapter pertaining to the Public Consultation Process as these points were similar to those raised by other stakeholders.
- 1.37 The issues and concerns raised and the suggestions and recommendations offered by the SAC members have been considered by the Commission while preparing this order.

A2: SALIENT FEATURES OF THE PETITION

- 2.1 The Petitioner owns and operates twenty (20) hydro electric projects, one (1) transmission system and two (2) gas based thermal power stations in the state of Jammu and Kashmir. These hydro electric projects excluding Mohra have an installed capacity of 754.70 MW. Baglihar Hydro Electric Station and Baglihar Transmission System were declared commercially operational on 1st April 2009. Mohra HEP has not been functioning since it suffered severe damages in the floods of 1992.
- 2.2 In addition to the above mentioned hydro electric projects, the Petitioner also has two Gas based Thermal Power Stations which a total of seven units. These are operated only on call from the transmission and distribution utility because of the prohibitive cost of power generation. The state government only bears the cost of fuel whenever these units are operated.
- 2.3 The Petitioner filed a petition with the Commission on 28th February 2011 for approval of annual revenue requirement and tariff petition for FY 2011-12 for:
- (a) Eight (8) Hydro Electric Projects including USHP II, Chenani III, Sewa III, Pahalgam, Igo – Marcellong, Baderwah, Marpochu, Haftal.
 - (b) Ten (10) old Hydro Electric Projects including USHP I, Lower Jhelum, Ganderbal, Chenani I, Karnah, Iqbal Bridge, Bazgo, Sumoor, Hunder, Chenani II.
 - (c) Baglihar Hydro Electric Project Stage I which includes Baglihar Hydro Electric Project [Baglihar-Hydro] and a 68km long 400 kV double circuit transmission line from Baglihar to Kishenpur and two bays at 400 kV Kishenpur sub-station of PGCIL [Baglihar-Transmission System].
 - (d) Gas based thermal power station I and II situated at Pampore.
- 2.4 The petition submitted by the Petitioner addresses tariff and ARR proposed in Chapter 7 of the petition. This chapter is further structured into different sub-sections to cover submissions regarding tariff and ARR proposed for 8 HEPs, 10 HEPs, Baglihar HEP, Gas Turbines I & II and Mohra HEP.
- 2.5 The submissions made in the petition in respect of the annual revenue requirement and tariff pertaining to the hydro projects, transmission line and gas based thermal power station along with the additional information and clarifications provided by the Petitioner have been summarised in this chapter.

Particulars of power generating stations, transmission system and gas based generating stations

- 2.6 The Petitioner operates twenty (20) hydro electric power stations which have a total installed capacity of 754.70 MW excluding Mohra. Mohra hydro generating station has not been operational since the damage suffered in the floods of September 1992. Eight out of the total 19 hydro generating stations mentioned above have been commercially commissioned between the years 2002 and 2007; the Commission has approved the completion cost of these 8 hydro generating stations. Ten old hydro generating stations have been commercially commissioned at different times during the span of years 1961 to 1996.
- 2.7 The Commission in its Tariff Order for FY 2008 – 09 issued a directive to locate old records for gathering information on capital cost incurred on old projects and in case the same is not traceable, the Petitioner shall engage a consultant to carry out detailed assessment of the power plants for determination of the capital cost for these old projects. The Petitioner complied with this directive issued by the JKSERC Tariff Order dated 31st March 2009 directing the utility to engage an independent consultant for determination of capital cost of these stations and accordingly submitted the report issued by independent consultant detailing the capital cost determined for various generating stations. The nineteenth generating station is the Baglihar Hydro Project. The Commission had directed the Petitioner to submit a separate petition for determination of capital cost of the Baglihar project and approval of ARR and tariff applicable to the project. The Petitioner has complied with this directive and submitted a petition in this regard on 27th December 2010. The Commission has issued the Tariff Order pertaining to the Baglihar petition on 16th June 2011.
- 2.8 The Baglihar project consists of a 450 MW hydro generating station and a 68km 400kV double circuit transmission line from Kishenpur to Baglihar and two bays at Kishenpur sub-station of PGCIL. The tariff for this transmission system has been determined by the Commission through Tariff Order dated 16th June 2011 along with the Baglihar hydro generating station.
- 2.9 In addition to the above mentioned hydro electric projects, the Petitioner also has two Gas based Thermal Power Stations which have a total of seven units. These are operated only on call from the transmission and distribution utility because of the prohibitive cost of power generation. The state government only bears the cost of fuel whenever these units are operated.
- 2.10 Details regarding installed capacity and date of commissioning of various generating stations operated by the Petitioner have been summarized in Table 7 and Table 8 below.

Table 7: Details regarding Hydro Generating Stations

| Sl. No. | Name of Power House | Unit | Capacity of each unit (MW) | Installed Capacity (MW) | Year of Commissioning |
|------------------------------|---------------------|----------|----------------------------|-------------------------|-----------------------|
| A. Jhelum River Basin | | | | | |
| 1 | Lower Jhelum | Unit I | 35.00 | 105.00 | Feb, 1978 |
| | | Unit II | 35.00 | | Jan, 1979 |
| | | Unit III | 35.00 | | Nov, 1979 |
| 2 | Upper Sindh – I | Unit I | 11.30 | 22.60 | Dec, 1973 |
| | | Unit II | 11.30 | | July, 1974 |
| 3 | Ganderbal | Unit I | 3.00 | 15.00 | Feb, 1955 |
| | | Unit II | 3.00 | | Feb, 1955 |
| | | Unit III | 4.50 | | 1961 |
| | | Unit IV | 4.50 | | 1961 |
| 4 | Upper Sindh – II | Unit I | 35.00 | 105.00 | June, 2000 |
| | | Unit II | 35.00 | | Sept, 2001 |
| | | Unit III | 35.00 | | June, 2002 |
| 5 | Karnah | Unit I | 1.00 | 2.00 | 1991 |
| | | Unit II | 1.00 | | 1997 |
| 6 | Pahalgam | Unit I | 1.50 | 3.00 | June, 2005 |
| | | Unit II | 1.50 | | June, 2005 |
| B. Chenab Basin | | | | | |
| 7 | Chenani – I | Unit I | 4.66 | 23.30 | 1971 |
| | | Unit II | 4.66 | | 1971 |
| | | Unit III | 4.66 | | 1971 |
| | | Unit IV | 4.66 | | 1975 |
| | | Unit V | 4.66 | | 1975 |
| 8 | Chenani – II | Unit I | 1.00 | 2.00 | 1996 |
| | | Unit II | 1.00 | | 1996 |
| 9 | Chenani – III | Unit I | 2.50 | 7.50 | 2003 |
| | | Unit II | 2.50 | | 2003 |
| | | Unit III | 2.50 | | 2003 |
| 10 | Baderwah | Unit I | 0.50 | 1.00 | May, 2005 |
| | | Unit II | 0.50 | | May, 2005 |
| 11 | Baglihar | Unit I | 150 | 450 | 01/04/ 2009 |
| | | Unit II | 150 | | |
| | | Unit III | 150 | | |
| C. Ravi Basin | | | | | |
| 12 | Sewa – III | Unit I | 3.00 | 9.00 | June, 2002 |
| | | Unit II | 3.00 | | Oct, 2002 |
| | | Unit III | 3.00 | | June, 2003 |
| D. Indus Basin | | | | | |
| 13 | Iqbal Bridge | Unit I | 1.25 | 3.75 | Nov, 1995 |
| | | Unit II | 1.25 | | 1996 |

| Sl. No. | Name of Power House | Unit | Capacity of each unit (MW) | Installed Capacity (MW) | Year of Commissioning |
|-----------------------------|---------------------|----------|----------------------------|-------------------------|-----------------------|
| | | Unit III | 1.25 | | 1996 |
| 14 | Hunder | Unit I | 0.20 | 0.40 | 1995 |
| | | Unit II | 0.20 | | 1995 |
| 15 | Sumoor | Unit I | 0.05 | 0.10 | 1993 |
| | | Unit II | 0.05 | | 1993 |
| 16 | Bazgo | Unit I | 0.15 | 0.30 | 1994 |
| | | Unit II | 0.15 | | 1994 |
| 17 | Igo-Mercellong | Unit I | 1.50 | 3.00 | 1/6/2005 |
| | | Unit II | 1.50 | | 19/08/2005 |
| 18 | Marpachoo | Unit I | 0.25 | 0.75 | 2006 |
| | | Unit II | 0.25 | | 2006 |
| | | Unit III | 0.25 | | 2006 |
| 19 | Haftal | Unit I | 0.50 | 1.00 | 2006-2007 |
| | | Unit II | 0.50 | | 2006-2007 |
| Total capacity in MW | | | 754.70 | | |

Table 8: Details regarding Gas Based Generating Stations

| S. No. | Name of Power House | Unit | Capacity of Each unit (MW) | Installed Capacity (MW) | Year of Commissioning |
|-------------------------------|----------------------------------|----------|----------------------------|-------------------------|-----------------------|
| 1 | Gas Turbine Station - I Pampore | Unit I | 25.0 | 75.00 | 1989-90 |
| | | Unit II | 25.0 | | 1989-90 |
| | | Unit III | 25.0 | | 1989-90 |
| 2 | Gas Turbine Station - II Pampore | Unit I | 25.0 | 100.00 | 1993-94 |
| | | Unit II | 25.0 | | 1993-94 |
| | | Unit III | 25.0 | | 1993-94 |
| | | Unit IV | 25.0 | | 1993-94 |
| Total Thermal capacity | | | | 175.00 | |

Energy sales and status of billing of energy

2.11 The Petitioner has submitted that the electricity generated by the HEPs which have been commercially commissioned is being sold within the state to the Jammu and Kashmir Power Development Corporation (JKPDD). However, 50% of the power generated at the Baglihar HEP Stage I Project is sold through Power Trading Corporation (PTC) to meet the lenders requirement.

- 2.12 The Petitioner has further submitted that power generated by 18 HEPs is billed as per the tariff determined under the Commission's order dated 30th April 2010. Billing of power sold from Baglihar HEP has been done at the rate of Rs.3.71 per kWh for the year 2010-11 (as permitted by the Commission) and shall be done at the rate of Rs.3.62 per kWh for FY 2011-12 as per the PPA of 13th December 2000 which has been entered into with PDD.

Compliance to Directives

- 2.13 The Commission has issued various directives to the Petitioner in its Orders dated 31st March 2009 and 30th April 2010. The Petitioner had partially complied with the directives issued to them in March 2009. The Commission through its Order dated 30th April 2010, reiterated that the old directives should be complied with in entirety and further issued some fresh directives to the Petitioner.
- 2.14 The Petitioner has made submissions regarding the status of compliance of directives given to them. Table 9 provides a summary of the status of compliance of the old and new directives as provided by the Petitioner.

Table 9: Status of compliance with directives

| Sl. | Directive | Status of Compliance |
|-----------|---|---|
| A. | Compliance with directives issued in Tariff Order dated 31st March 2009 | |
| 1. | Regarding Manpower availability at JKSPDC | The Petitioner has submitted that the final report in this regard has been issued by Ernst & Young and the same stands executed. A sub-committee has been constituted by the Board. This sub-committee is headed by the Economic Advisor to the Government of Jammu & Kashmir and comprises of the Commissioner/Secretary to Government, PDD and Commissioner/Secretary, Planning and Development Department and Managing Director, JKSPDC. The Commission shall be apprised of the developments in the process of restructuring from time to time. |
| 2. | Regarding maintenance of records for gas stations | The Petitioner has submitted that details of the actual expenditure on O&M and expenditure incurred towards gas based generating stations has been submitted as part of the review petition filed in May 2010. |
| 3. | Regarding submission of next petition | The Petitioner has submitted that the petition for determination of tariff for Baglihar HEP Stage I for FY 2009-10 and 2010-11 has already been filed before the Commission in December 2010. |
| 4. | Regarding submission of information on actual O&M Expenses for HEPs | The Petitioner has submitted that they have enclosed information on O&M expenditure for the past 5 years as part of the petition filed before the Commission for determination of ARR and tariff for FY 2011-12. |
| 5. | Regarding submission of asset class wise details of capital | The Petitioner has submitted that they have already provided all pertinent information regarding asset class wise break-up of capital cost with regard to Baglihar HEP Stage I along with the petition filed in this regard in December 2010. They have further submitted that information regarding proper classification of assets of other HEPs has been enclosed along with the petition |

| Sl. | Directive | Status of Compliance |
|-----------|---|--|
| | cost for HEPs | submitted by them for approval of ARR and tariff for FY 2011-12. |
| B. | Compliance with directives issued in Tariff Order dated 30th April 2010 | |
| 6. | Regarding holding of quarterly review meetings for monitoring the progress/ status of directives previously issued and regarding submission of quarterly progress report to the Commission. | The Petitioner has submitted that they have been unable to comply with the directives issued by the Commission owing to the unstable law and order conditions that persisted in the state during the year. They have further submitted that efforts shall be made to abide with these directives from the next year onwards. |
| 7. | Regarding submission of day ahead schedule to SLDC | The Petitioner has submitted that day ahead schedules are being forwarded to SLDC in respect of power houses that have grid connectivity. Day ahead schedules in respect of power houses situated in Ladakh region or similar isolated regions are provided to local PDD offices. |
| 8. | Regarding Maintenance and shut down schedules | The Petitioner has submitted that necessary steps are being taken to comply with the directives and this directive shall be complied with from the next financial year onwards. |
| 9. | Regarding reporting of unscheduled outage to the Commission | The Petitioner has submitted that the Commission is informed from time to time in case of major outages. |
| 10. | Regarding installation of meters and metering protocol | The Petitioner has submitted that PDD being the transmission utility has been requested to install meters at all inter-connection points. |
| 11. | Regarding raising plant wise bills | The Petitioner has submitted that bills are being issued as directed by the Commission. |

Determination of Tariff for Eight HEPs

Project Cost and Design Energy of 8 HEPs

- 2.15 The project cost of 8 HEPs has been approved by the Commission. Also, the design energy for all these plants was validated by an independent consultant in accordance with a directive issued by the Commission. The report on design energy issued by the independent consultant was approved by the Commission.
- 2.16 Table 10 provides a summary of the total project cost, installed capacity and design energy for each of the 8 HEPs.

Table 10: Project Cost and Design Energy for 8 HEPs

| Name of HEP | Capacity in MW | Total Project Cost (Rs Cr) | Design Energy (In MU) |
|----------------|----------------|-------------------------------|--------------------------|
| USHP-II Kangan | 105.00 | 434.99 | 447.37 |
| Chennani-III | 7.50 | 54.96 | 36.71 |
| Sewa-III | 9.00 | 66.84 | 33.06 |
| Pahalgam | 3.00 | 55.20 | 14.92 |
| Igo-Mercellong | 3.00 | 49.42 | 15.88 |
| Baderwah | 1.00 | 10.60 | 8.32 |
| Marpachoo | 0.75 | 12.84 | 3.79 |
| Haftal | 1.00 | 16.13 | 4.88 |

Norms of Operation

2.17 The Petitioner has followed the norms as specified in Chapter 3 of JKSERC Hydro Tariff Regulations, 2005/2011 for filing the tariff for eight hydro generating stations. The norms considered are given in Table 11.

Table 11: Norms of operation for hydro generating stations

| No | Particulars | Value | |
|----|--|--|------------------------|
| 1. | Plant Availability Factor | | |
| | Normative Capacity Index | First Year | Afterwards |
| | Run of River | 85% | 90% |
| | Storage Type | 80% | 85% |
| 2. | Auxiliary Consumption | With Rotating Exciter | With Static Excitation |
| | Surface | 0.20% | 0.50% |
| | Underground | 0.40% | 0.70% |
| 3. | Transformer Losses | 0.50% | 0.50% |
| 4. | Transmission losses | 0.30% | 0.30% |
| 5. | O&M Expenses | | |
| | % of Cap Cost | 1.50% | |
| | Annual Escalation | 4.00% | |
| 6. | Depreciation | As per regulation | |
| | Advance Against Depreciation | Equivalent to difference of actual repayment of loan and normal depreciation | |
| 7. | Working Capital | | |
| | Receivable | 2 months of fixed charges | |
| | O & M Expenses | 1 month | |
| | Spares for Maintenance | 1% of historic cost | |
| | Escalation in Spares Inventory | 6% p.a. | |
| | Rate of Interest p.a. | 11% as per PLR of J&K Bank as on 1.4.2005 | |
| 8. | Return on Equity | 14% of normative equity | |
| 9. | Initial Spares as part of Capital | 1.50% of capital cost | |

| No | Particulars | Value |
|-----|--|-------------------------|
| | Cost | |
| 10. | Equity | 30% |
| | Loan | 70% |
| 11. | Interest | as per sanction |
| 12. | Moratorium | No moratorium after COD |
| 13. | Sale of Infirm Power | Primary Energy Rate |
| 14. | Foreign Exchange Rate Variation | Allowed, can be hedged |

Interest on Loan Capital

- 2.18 The Petitioner has provided details regarding loans availed and the interest rates applicable on these loans. The Petitioner has submitted that the total interest on loan has been worked out as per provisions of Regulation 22 of the JKSERC Hydro Tariff Regulations, 2005/2011.
- 2.19 The Petitioner has submitted details regarding loan liabilities, rate of interest thereon and moratorium period for these HEPs as part of this petition. The Petitioner has submitted that interest on loan should be calculated by considering the average amount of the loan outstanding during the year (arrived at by calculating the average of the liability at the beginning and the end of the year) and applying the weighted average rate of interest to this loan amount.
- 2.20 The Petitioner has further submitted that the Commission has approved interest on loan in the previous tariff orders by considering quarterly repayments made from the loan amount. Also, the Commission has computed interest on the closing balance of loan at the end of each quarter, whereas interest should be computed on the opening balance of loan. The Petitioner has requested that the Commission should compute and allow interest on loan on the basis of the methodology proposed in the Petition. Table 12 provides the computation of interest on loan proposed by the Petitioner.

Table 12: Proposed Interest on Loan for 8 HEPs (Rs Cr)

| Name of HEP | Total Cost of project | MNRE subsidy | Net cost of the project | Total normative Loan considering 70% of the net cost of project | Total normative Equity considering 30% of the net cost of the project | Rate of Interest | Interest Amount for the year 2011-12 |
|--------------|-----------------------|--------------|-------------------------|---|---|------------------|--------------------------------------|
| USHP-II | 434.99 | 0.00 | 434.99 | 304.49 | 130.50 | 14.50% | 2.21 |
| Chennani-III | 54.97 | 0.00 | 54.97 | 38.48 | 16.49 | 15.00% | 0.87 |
| Sewa-III | 66.84 | 0.00 | 66.84 | 46.79 | 20.05 | 15.00% | 1.05 |
| Pahalgam | 55.20 | 3.00 | 52.2 | 36.54 | 15.66 | 13.00% | 1.67 |

| Name of HEP | Total Cost of project | MNRE subsidy | Net cost of the project | Total normative Loan considering 70% of the net cost of project | Total normative Equity considering 30% of the net cost of the project | Rate of Interest | Interest Amount for the year 2011-12 |
|----------------|-----------------------|--------------|-------------------------|---|---|------------------|--------------------------------------|
| Igo-Mercellong | 49.42 | 3.00 | 46.42 | 32.50 | 13.93 | 13.00% | 1.48 |
| Baderwah | 10.60 | 2.44 | 8.16 | 5.72 | 2.45 | 13.00% | 0.26 |
| Marpachoo | 12.85 | 1.70 | 11.15 | 7.80 | 3.35 | 13.00% | 0.46 |
| Haftal | 16.13 | 2.25 | 13.88 | 9.72 | 4.16 | 13.00% | 0.57 |
| Total | 701.01 | 12.40 | 688.61 | 482.04 | 206.59 | -- | 8.55 |

Depreciation including Advance against Depreciation

- 2.21 The Petitioner has submitted that depreciation has been calculated annually using straight line method of calculation in accordance with provisions of Regulation 23 of JKSERC Hydro Tariff Regulations, 2005/2011.
- 2.22 The Petitioner has submitted a break-up of all assets into various classes of assets and their respective costs of completion. The rates of depreciation applied are as prescribed in the Appendix to the said regulations. Cost of land has been excluded while computing the cost of depreciable assets. In addition to this, the Petitioner has provided a break-up of common costs incurred on account of preliminary costs, plantation, maintenance, establishment etc that have been apportioned among the 8 HEPs. Table 13 provides the computation of depreciation proposed by the Petitioner.

Table 13: Proposed depreciation for 8 HEPs (Rs Cr)

| Name of HEP | Cost of project excluding Land Cost | Residual value | Total Depreciation to be claimed | Normal depreciation rate | Total depreciation for the year 2011-12 |
|----------------|-------------------------------------|----------------|----------------------------------|--------------------------|---|
| USHP-II | 427.49 | 10% | 384.74 | As per regulations | 10.21 |
| Chenani-III | 53.52 ** | 10% | 48.17 | | 1.11 |
| Sewa-III | 66.14 | 10% | 59.53 | | 1.39 |
| Pahalgam | 54.62 | 10% | 49.16 | | 1.36 |
| Igo-Mercellong | 49.35 | 10% | 44.41 | | 1.06 |
| Baderwah | 10.46 | 10% | 9.41 | | 0.26 |
| Marpachoo | 12.72 | 10% | 11.45 | | 0.29 |
| Haftal | 16.08 | 10% | 14.48 | | 0.34 |
| Total | 691.52 | | 621.35 | | 16.02 |

** the project cost excluding land for Chenani III has been incorrectly mentioned as Rs. 54.67 Cr in the petition. However, the approved project cost of Chenanni III generating station is Rs.54.97 Cr and the cost of land has been determined as Rs.1.45 Cr. Therefore the cost of project (excluding land) for determination of depreciation has been taken at Rs.53.52 Cr.

- 2.23 The Petitioner has submitted that advance against depreciation has been calculated in accordance with provisions of Regulation 24 of JKSERC Hydro Tariff Regulations, 2005/2011. The normal depreciation calculated as above in accordance with Regulation 23 has been reduced from the amount of loan repaid annually to arrive at the amount proposed as advance against depreciation. Table 14 provides the computation of advance against depreciation proposed by the Petitioner.

Table 14: Proposed Advance against Depreciation for 8 HEPs (Rs Cr)

| Name of HEP | Total Normative Loan | 1/10 th of Loan amount | Annual Repayment of Loan | Normal Depreciation for full year | Advance against Depreciation for the year 2011-12 |
|----------------|----------------------|-----------------------------------|--------------------------|-----------------------------------|---|
| USHP-II | 304.49 | 30.45 | 30.45 | 10.21 | 20.24 |
| Chennani-III | 38.48 | 3.85 | 3.85 | 1.11 | 2.74 |
| Sewa-III | 46.79 | 4.68 | 4.68 | 1.39 | 3.30 |
| Pahalgam | 36.54 | 3.65 | 3.65 | 1.36 | 2.30 |
| Igo-Mercellong | 32.50 | 3.25 | 3.25 | 1.06 | 2.20 |
| Baderwah | 5.72 | 0.57 | 0.57 | 0.26 | 0.31 |
| Marpachoo | 7.80 | 0.78 | 0.78 | 0.29 | 0.49 |
| Haftal | 9.72 | 0.97 | 0.97 | 0.34 | 0.63 |
| Total | 482.04 | 48.20 | 48.20 | 16.02 | 32.21 |

Return on Equity

- 2.24 The Petitioner has submitted that the return on equity (RoE) proposed for FY 2011-12 has been calculated as per provisions of Regulation 25 of the JKSERC Hydro Tariff Regulations, 2005/2011.

The amount of equity upon which the RoE has been calculated has been arrived at, by computing computing normative equity equivalent to 30% of the net cost submitted by the Petitioner. The return on Petitioner. The return on equity has been calculated at the rate of 14% on the normative equity normative equity calculated.

- 2.25 Table 15 provides the computation of return on equity proposed by the Petitioner.

Table 15: Proposed Return on Equity for 8 HEPs (Rs Cr)

| Name of HEP | Net Cost of the Project | Total normative Equity 30% of the Project Cost | Rate of Return on Equity | Return on Equity for 2011-12 |
|----------------|-------------------------|--|--------------------------|------------------------------|
| USHP-II | 434.99 | 130.50 | 14% | 18.27 |
| Chennani-III | 54.97 | 16.49 | 14% | 2.31 |
| Sewa-III | 66.84 | 20.05 | 14% | 2.81 |
| Pahalgam | 55.20 | 16.56 | 14% | 2.19 |
| Igo-Mercellong | 49.42 | 14.83 | 14% | 1.95 |
| Baderwah | 10.60 | 3.18 | 14% | 0.34 |
| Marpachoo | 12.85 | 3.86 | 14% | 0.47 |
| Haftal | 16.13 | 4.84 | 14% | 0.58 |
| Total | 701.00 | 210.31 | | 28.92 |

Operation & Maintenance Expenses

- 2.26 The Petitioner has submitted that O&M expenses for the FY 2011-12 proposed in the petition have been calculated in accordance with provisions of Regulation 26(2) (b) of JKSERC Hydro Tariff Regulations, 2005/2011.
- 2.27 The Petitioner has submitted that all the 8 HEPs were commercially commissioned after June 2002, thus, none of the 8 HEPs was in operation for 5 years in the base year Of 2004-05. Accordingly Regulation 26(2) (b) of JKSERC Hydro Tariff Regulations is applicable for computation of O&M expenses. The Table 16 provides the computation of O&M expenses proposed by the Petitioner.

Table 16: Proposed O&M expenses for 8 HEPs (Rs Cr)

| Name of HEP | Cost of the Project | O&M Expenses as per Regulation | Annual Escalation in O&M expenses | O&M expenses for FY 2011-12 |
|----------------|---------------------|--------------------------------|-----------------------------------|-----------------------------|
| USHP-II | 434.99 | 1.50% | 4% | 9.29 |
| Chennani-III | 54.97 | 1.50% | 4% | 1.13 |
| Sewa-III | 66.84 | 1.50% | 4% | 1.37 |
| Pahalgam | 55.20 | 1.50% | 4% | 1.05 |
| Igo-Mercellong | 49.42 | 1.50% | 4% | 0.94 |
| Baderwah | 10.60 | 1.50% | 4% | 0.20 |
| Marpachoo | 12.85 | 1.50% | 4% | 0.23 |

| Name of HEP | Cost of the Project | O&M Expenses as per Regulation | Annual Escalation in O&M expenses | O&M expenses for FY 2011-12 |
|--------------|---------------------|--------------------------------|-----------------------------------|-----------------------------|
| Haftal | 16.13 | 1.50% | 4% | 0.29 |
| Total | 701.00 | | | 14.50 |

Interest on Working Capital

- 2.28 The Petitioner has submitted that the interest on working capital proposed in the petition for FY 2011-12 has been calculated in accordance with Regulation 27 of JKSERC Hydro Tariff Regulations, 2005/2011.
- 2.29 The following components have been included in the computation of working capital:
- receivables equivalent to annual fixed charges for 2 months
 - O&M expenses for 1 month
 - maintenance spares at the rate of 1% of the historical cost escalated at the rate of 6% per annum from the date of commercial operation
- 2.30 The total working capital as computed above has been taken as base and interest on such working capital has been proposed at the rate of 11% which has been considered as the short term prime lending rate of the J&K Bank as on 1st April 2005. Table 17 provides the computation of interest on working capital proposed by the Petitioner.

Table 17: Proposed Interest on working capital for 8 HEPs (Rs Cr)

| Name of HEP | Total working capital requirement | Rate of Interest on Working Capital | Interest on Working Capital for FY 2011-12 |
|----------------|-----------------------------------|-------------------------------------|--|
| USHP-II | 18.89 | 11% | 2.08 |
| Chennani-III | 2.42 | 11% | 0.27 |
| Sewa-III | 2.93 | 11% | 0.32 |
| Pahalgam | 2.33 | 11% | 0.26 |
| Igo-Mercellong | 2.08 | 11% | 0.23 |
| Baderwah | 0.40 | 11% | 0.04 |
| Marpachoo | 0.52 | 11% | 0.06 |
| Haftal | 0.66 | 11% | 0.07 |
| Total | 30.23 | | 3.33 |

Other Expenses

- 2.31 The Commission vide Review Order dated 9th November 2011 had allowed the Petitioner to claim a pass through on account of reimbursement of consultancy charges to the tune of Rs.88 Lac.
- 2.32 The Petitioner has submitted that they have considered such consultancy charges previously allowed by including it in the annual fixed charges computed for various HEPs in proportion to their individual installed capacity. Table 18 provides the break-up of consultancy charges included in the AFC computed for various HEPs in proportion to their installed capacity.

Table 18: Proposed consultancy charges for 8 HEPs

| Name of HEP | Installed Capacity (In MW) | Consultancy Charges Proportioned (Rs Cr) |
|----------------|-------------------------------|---|
| USHP-II | 105.00 | 0.303 |
| Chennani-III | 7.50 | 0.022 |
| Sewa-III | 9.00 | 0.026 |
| Pahalgam | 3.00 | 0.003 |
| Igo-Mercellong | 3.00 | 0.009 |
| Baderwah | 1.00 | 0.003 |
| Marpachoo | 0.75 | 0.002 |
| Haftal | 1.00 | 0.009 |
| Total | | 0.38 |

Annual Fixed Charges and Indicative Tariff Proposed for 8 HEPs for FY 2011-12

- 2.33 The Petitioner has submitted that the annual fixed charges proposed for FY 2011-12 have been calculated by considering the various components of tariff as described above. The indicative tariff proposed for FY 2011-12 has been computed by taking into account saleable energy of various HEPs.
- 2.34 Table 19 provides the component wise break-up of total annual fixed charges and the indicative tariff submitted by the Petitioner for approval in respect of 8 HEPs for FY 2011-12.

Table 19: Proposed component wise break up of AFC and Indicative Tariff for 8 HEPs for FY 2011-12

| Name of HEP | Interest on Loan | Depn | AAD | Return on Equity | O&M Expenses | Interest on Working Capital | Consultancy Charges | Income tax | AFC | Design Energy (In MU) | Indicative Tariff (Rs per kWh) |
|-------------|------------------|-------|-------|------------------|--------------|-----------------------------|---------------------|------------|-------|-----------------------|--------------------------------|
| USHP-II | 2.21 | 10.21 | 20.24 | 18.27 | 9.29 | 2.08 | 0.303 | 0.00 | 62.60 | 447.37 | 1.42 |

| Name of HEP | Interest on Loan | Depn | AAD | Return on Equity | O&M Expenses | Interest on Working Capital | Consultancy Charges | Income tax | AFC | Design Energy (In MU) | Indicative Tariff (Rs per kWh) |
|----------------|------------------|------|------|------------------|--------------|-----------------------------|---------------------|------------|-------|-----------------------|--------------------------------|
| Chennani-III | 0.87 | 1.11 | 2.74 | 2.31 | 1.13 | 0.27 | 0.022 | 0.00 | 8.45 | 36.71 | 2.32 |
| Sewa-III | 1.05 | 1.39 | 3.30 | 2.81 | 1.37 | 0.32 | 0.026 | 0.00 | 10.27 | 33.06 | 3.14 |
| Pahalgam | 1.67 | 1.36 | 2.30 | 2.19 | 1.05 | 0.26 | 0.003 | 0.00 | 8.83 | 14.92 | 5.97 |
| Igo-Mercellong | 1.48 | 1.06 | 2.20 | 1.95 | 0.94 | 0.23 | 0.009 | 0.00 | 7.86 | 15.88 | 5.00 |
| Baderwah | 0.26 | 0.26 | 0.31 | 0.34 | 0.20 | 0.04 | 0.003 | 0.00 | 1.42 | 8.32 | 1.73 |
| Marpachoo | 0.46 | 0.29 | 0.49 | 0.47 | 0.23 | 0.06 | 0.002 | 0.00 | 2.00 | 3.79 | 5.32 |
| Haftal | 0.57 | 0.34 | 0.63 | 0.58 | 0.29 | 0.07 | 0.009 | 0.00 | 2.49 | 4.88 | 5.15 |

Determination of Tariff for 10 old HEPs

Project Cost and Design Energy

2.35 The cost of completion and design energy for each of the 10 HEPs was validated by an independent consultant in compliance with the directives issued by the Commission. The Commission has approved the cost of completion and design energy in the Tariff Order dated 30th April 2010. Table 20 provides a summary of the installed capacity, total project cost and design energy of each of the 10 HEPs.

Table 20: Project Cost and Design Energy for 10 HEPs

| Name of HEP | Capacity in MW | Total Project Cost (Rs Cr) | Design Energy (In MU) |
|--------------|----------------|----------------------------|-----------------------|
| Upper Sind-I | 22.6 | 46.27 | 106.62 |
| Lower Jhelum | 105 | 421.25 | 609.43 |
| Ganderbal | 15 | 15.95 | 90.15 |
| Chenani-I | 23.3 | 78.49 | 110.02 |
| Karnah | 2 | 13.54 | 11.36 |
| Iqbal Bridge | 3.75 | 24.63 | 21.23 |
| Bazgo | 0.30 | 2.16 | 1.09 |
| Sumoor | 0.10 | 0.70 | 0.45 |
| Hunder | 0.4 | 2.86 | 1.77 |
| Chenani-II | 2 | 11.73 | 12.00 |

Norms of Operation

2.36 The norms of operation upon which the Petitioner has based the computation of proposed annual fixed charges and proposed tariff have been summarised in Table 21.

Table 21: Norms of operation for 10 old HEPs

| No | Particulars | Value | |
|----|----------------------------------|-----------------------|---|
| 1. | Plant Availability Factor | | |
| | Normative Capacity Index | First Year | Afterwards |
| | Run of River | 85% | 90% |
| | Storage Type | 80% | 85% |
| 2. | Auxiliary Consumption | With Rotating Exciter | With Static Excitation |
| | Surface | 0.20% | 0.50% |
| | Underground | 0.40% | 0.70% |
| 3. | Transformer Losses | 0.50% | 0.50% |
| 4. | O&M Expenses | Rs. Cr/MW | As per actual expenses for the year 2009-10 |
| | Annual Escalation | | 4.00% |
| 5. | Depreciation | | |

| No | Particulars | Value |
|-----|--|---|
| | Plant Life | As per regulations |
| | Useful life | 10 years |
| | Advance Against Depreciation | Nil |
| 6. | Working Capital | |
| | Receivable | 2 months of fixed charges |
| | O & M Expenses | 1 month |
| | Spares for Maintenance | Nil |
| | Escalation in Spares Inventory | Nil |
| | Rate of Interest p.a. | 11% as per PLR of J&K Bank as on 1.4.2005 |
| 7. | Return on Equity | 14% of normative equity |
| 8. | Equity | 30% |
| | Loan | 70% |
| 9. | Interest on Loan | Nil |
| 10. | Moratorium | Nil |
| 11. | Sale of Infirm Power | Primary Energy Rate |
| 12. | Foreign Exchange Rate Variation | Allowed, can be hedged |

Interest on Loan Capital

2.37 Interest on loan has not been considered in case of the 10 HEPs. The Petitioner has not claimed interest on loan in respect of 10 old HEPs.

Depreciation including Advance against Depreciation

2.38 The Petitioner has submitted that depreciation has been calculated annually using straight line method of calculation in accordance with provisions of Regulation 23 of JKSERC Hydro Tariff Regulations, 2005/2011.

2.39 The Petitioner has submitted a break-up of all assets into various classes of assets and their respective costs of completion. The rates of depreciation applied are as prescribed in the Appendix to the said regulations. Cost of land has been excluded while computing the cost of depreciable assets. Table 22 provides the computation of depreciation proposed by the Petitioner.

2.40 The Petitioner has not claimed any amount on account of advance against depreciation for these 10 old HEPs.

Table 22: Proposed depreciation for 10 HEPs (Rs Cr)

| Name of HEP | Cost of project excluding Land Cost | Residual value | Total Depreciation to be claimed | Total depreciation for the year |
|--------------|-------------------------------------|----------------|----------------------------------|---------------------------------|
| Upper Sind-I | 46.26 | 10% | 41.64 | 1.02 |
| Lower Jhelum | 421.25 | 10% | 379.12 | 9.34 |

| Name of HEP | Cost of project excluding Land Cost | Residual value | Total Depreciation to be claimed | Total depreciation for the year |
|--------------|-------------------------------------|----------------|----------------------------------|---------------------------------|
| Ganderbal | 15.95 | 10% | 14.35 | 0.33 |
| Chenani-I | 78.51 | 10% | 70.66 | 1.54 |
| Karnah | 13.55 | 10% | 12.19 | 0.30 |
| Iqbal Bridge | 24.63 | 10% | 22.17 | 0.55 |
| Bazgo | 2.16 | 10% | 1.94 | 0.05 |
| Sumoor | 0.70 | 10% | 0.63 | 0.02 |
| Hunder | 2.86 | 10% | 2.58 | 0.06 |
| Chenani-II | 11.73 | 10% | 10.56 | 0.25 |
| Total | 617.59 | | 555.83 | 13.44 |

Return on Equity

2.41 The Petitioner has submitted that the return on equity (RoE) proposed for 10 old HEPs for FY 2011-12 has been calculated as per provisions of Regulation 25 of the JKSERC Hydro Tariff Regulations, 2005/2011.

The amount of equity upon which the RoE has been calculated has been arrived at, by computing normative equity equivalent to 30% of the net cost submitted by the Petitioner. The return on equity has been calculated at the rate of 14% on the normative equity calculated. Table 23 provides the computation of return on equity proposed by the Petitioner.

Table 23: Proposed Return on Equity for 10 HEPs (Rs Cr)

| Name of HEP | Net cost of the Project | Total normative equity 30% of the Project Cost | Rate of Return on Equity | Return on Equity for 2011-12 |
|--------------|-------------------------|--|--------------------------|------------------------------|
| Upper Sind-I | 46.27 | 0.14 | 14% | 1.94 |
| Lower Jhelum | 421.25 | 1.26 | 14% | 17.69* |
| Ganderbal | 15.95 | 0.05 | 14% | 0.67 |
| Chenani-I | 78.49 | 0.24 | 14% | 3.30 |
| Karnah | 13.54 | 0.04 | 14% | 0.57 |
| Iqbal Bridge | 24.63 | 0.07 | 14% | 1.04 |
| Bazgo | 2.16 | 0.01 | 14% | 0.09 |
| Sumoor | 0.70 | 0.00 | 14% | 0.03 |

| Name of HEP | Net cost of the Project | Total normative equity 30% of the Project Cost | Rate of Return on Equity | Return on Equity for 2011-12 |
|--------------|-------------------------|--|--------------------------|------------------------------|
| Hunder | 2.86 | 0.01 | 14% | 0.12 |
| Chenani-II | 11.73 | 0.04 | 14% | 0.49 |
| Total | 617.58 | 1.85 | | 25.94 |

* the Petitioner has inadvertently mentioned the Return on Equity claimed from Lower Jhelum plant as Rs.11.776 Cr instead of Rs.17.69 Cr, consequently the AFC claimed for the plant has reduced to Rs 35.31. This error has been ignored as a typographical error for the sake of approval of AFC and tariff.

Operation & Maintenance Expenses

- 2.42 The Petitioner has submitted that the Commission had directed them to submit details regarding actual O&M expenditure incurred by them for 5 years prior to the end of FY 2009-10. The Petitioner has further submitted that details of such expenditure have been provided by them and have requested the Commission to revise the O&M expenditure allowed for the FY 2009-10 and 2010-11. Details regarding the expenditure allowed for FY 2009-10 and 2010-11 and the actual expenditure incurred and the difference that the Commission has been requested to approve has been provided in Table 24.
- 2.43 Further, the O&M expenditure for these 10 old HEPs for FY 2011-12 has been calculated by taking into account the actual O&M expenses for the year 2009-10 as base and escalating the same by 4% year on year to arrive at the expenses for the year 2011-12. Table 25 provides a summary of the O&M expenditure proposed by the Petitioner for FY 2011-12.

Table 24: Difference in O&M expenses for FY 2009-10 and 2010-11 for 10 HEPs (Rs Cr)

| Year | O&M expenses allowed | Actual O&M expenses | Difference proposed to be recovered |
|---------|----------------------|---------------------|-------------------------------------|
| 2009-10 | 9.61 | 26.43 | 16.82 |
| 2010-11 | 10.02 | 27.49 | 17.47 |

Table 25: Proposed O&M expenses for 10 HEPs (Rs Cr)

| Name of HEP | Total cost of project | Actual O&M Expenses for 2009-10 | Annual Escalation in O&M expenses as per Regulation | O&M Expenses for 2010-11 | O&M Expenses for 2011-12 |
|--------------|-----------------------|---------------------------------|---|--------------------------|--------------------------|
| Upper Sind-I | 46.27 | 4.32 | 4% | 4.49 | 4.67 |
| Lower Jhelum | 421.25 | 10.68 | 4% | 11.11 | 11.55 |
| Ganderbal | 15.95 | 3.75 | 4% | 3.90 | 4.06 |
| Chenani-I | 78.49 | 2.90 | 4% | 3.02 | 3.14 |
| Karnah | 13.54 | 2.15 | 4% | 2.24 | 2.33 |
| Iqbal Bridge | 24.63 | 1.80 | 4% | 1.88 | 1.95 |
| Bazgo | 2.16 | 0.14 | 4% | 0.14 | 0.15 |
| Sumoor | 0.70 | 0.14 | 4% | 0.14 | 0.15 |
| Hunder | 2.86 | 0.20 | 4% | 0.21 | 0.22 |
| Chenani-II | 11.73 | 0.35 | 4% | 0.37 | 0.38 |
| Total | 617.58 | 26.44 | | 27.49 | 28.59 |

Interest on Working Capital

- 2.44 The Petitioner has submitted that the interest on working capital proposed in the petition for FY 2011-12 has been calculated in accordance with Regulation 27 of JKSERC Hydro Tariff Regulations, 2005/2011.
- 2.45 The following components have been included in the computation of working capital:
- receivables equivalent to annual fixed charges for 2 months
 - O&M expenses for 1 month
 - maintenance spares at the rate of 1% of the historical cost escalated at the rate of 6% per annum from the date of commercial operation

- 2.46 The total working capital as computed above has been taken as base and interest on such working capital has been proposed at the rate of 11% which has been considered as the short term prime lending rate of the J&K Bank as on 1st April 2005. Table 26 provides the computation of interest on working capital proposed by the Petitioner.

Table 26: Proposed Interest on working capital for 10 HEPs (Rs Cr)

| Name of HEP | Total working capital required | Rate of Interest | Interest on Working Capital |
|--------------|--------------------------------|------------------|-----------------------------|
| Upper Sind-I | 3.88 | 11% | 0.43 |
| Lower Jhelum | 21.37 | 11% | 2.35 |
| Ganderbal | 2.31 | 11% | 0.25 |
| Chenani-I | 4.64 | 11% | 0.51 |
| Karnah | 0.72 | 11% | 0.08 |
| Iqbal Bridge | 1.16 | 11% | 0.13 |
| Bazgo | 0.10 | 11% | 0.01 |
| Sumoor | 0.04 | 11% | 0.004 |
| Hunder | 0.13 | 11% | 0.01 |
| Chenani-II | 0.55 | | 0.06 |
| Total | 34.88 | | 3.84 |

Other Expenses

- 2.47 The Commission vide Review Order dated 9th November 2011 had allowed the Petitioner to claim a pass through on account of reimbursement of consultancy charges to the tune of Rs.88 Lac.
- 2.48 The Petitioner has submitted that they have considered such consultancy charges previously allowed by including it in the annual fixed charges computed for various HEPs in proportion to their individual installed capacity. Table 27 provides the break-up of consultancy charges included in the AFC computed for various HEPs in proportion to their installed capacity.

Table 27: Proposed consultancy charges for 10 HEPs

| Name of HEP | Installed Capacity (In MW) | Consultancy Charges Proportioned (Rs Cr) |
|--------------|----------------------------|--|
| Upper Sind-I | 22.6 | 0.07 |
| Lower Jhelum | 105 | 0.30 |
| Ganderbal | 15 | 0.04 |
| Chenani-I | 23.3 | 0.07 |

| Name of HEP | Installed Capacity (In MW) | Consultancy Charges Proportioned (Rs Cr) |
|--------------|-------------------------------|---|
| Karnah | 2 | 0.01 |
| Iqbal Bridge | 3.75 | 0.01 |
| Bazgo | 0.30 | 0.001 |
| Sumoor | 0.10 | 0.0003 |
| Hunder | 0.4 | 0.001 |
| Chenani-II | 2 | 0.01 |
| Total | 174.45 | 0.50 |

Annual Fixed Charges and Indicative Tariff Proposed for 10 HEPs for FY 2011-12

- 2.49 The Petitioner has submitted that the annual fixed charges proposed for FY 2011-12 have been calculated by considering the various components of tariff as described above. The indicative tariff proposed for FY 2011-12 has been computed by taking into account saleable energy of various HEPs.
- 2.50 Table 28 provides the component wise break-up of total annual fixed charges and the indicative tariff submitted by the Petitioner for approval in respect of 10 old HEPs for FY 2011-12.

Table 28: Proposed component wise break up of AFC for 10 HEPs for FY 2011-12

| Name of HEP | Interest on Loan | Depn | AAD | Return on Equity | O&M Expenses | Interest on Working Capital | Consultancy Charges | Income tax | AFC | Design Energy (In MU) | Indicative Tariff (Rs per kWh) |
|--------------|------------------|------|------|------------------|--------------|-----------------------------|---------------------|------------|-------|-----------------------|--------------------------------|
| Upper Sind-I | 0.00 | 1.02 | 0.00 | 1.94 | 4.67 | 0.43 | 0.07 | 0.00 | 8.13 | 106.62 | 0.76 |
| Lower Jhelum | 0.00 | 9.34 | 0.00 | 17.78 | 11.55 | 2.35 | 0.30 | 0.00 | 41.32 | 609.43 | 0.58 |
| Ganderbal | 0.00 | 0.33 | 0.00 | 0.67 | 4.06 | 0.25 | 0.04 | 0.00 | 5.35 | 90.15 | 0.59 |
| Chenani-I | 0.00 | 1.54 | 0.00 | 3.30 | 3.14 | 0.51 | 0.07 | 0.00 | 8.56 | 110.02 | 0.78 |
| Karnah | 0.00 | 0.30 | 0.00 | 0.57 | 2.33 | 0.08 | 0.01 | 0.00 | 3.29 | 11.36 | 2.88 |
| Iqbal Bridge | 0.00 | 0.55 | 0.00 | 1.04 | 1.95 | 0.13 | 0.01 | 0.00 | 3.68 | 21.23 | 1.73 |
| Bazgo | 0.00 | 0.05 | 0.00 | 0.09 | 0.15 | 0.01 | 0.001 | 0.00 | 0.30 | 1.09 | 2.75 |
| Sumoor | 0.00 | 0.02 | 0.00 | 0.03 | 0.15 | 0.004 | 0.0003 | 0.00 | 0.20 | 0.45 | 4.43 |
| Hunder | 0.00 | 0.06 | 0.00 | 0.12 | 0.22 | 0.01 | 0.001 | 0.00 | 0.41 | 1.77 | 2.35 |
| Chenani-II | 0.00 | 0.25 | 0.00 | 0.49 | 0.38 | 0.06 | 0.01 | 0.00 | 1.19 | 12.00 | 0.99 |

Determination of Tariff for Baglihar HEP Stage I

Project Cost and Design Energy of Baglihar HEPs

- 2.51 The Petitioner has submitted that the Baglihar HEP Stage I project comprising of the 450 MW Baglihar hydro generating station [Baglihar Hydro] and the 68 km 400kV double circuit transmission line from Baglihar to Kishenpur [Baglihar Transmission System]. This transmission line has been built for evacuation of power generated at the Baglihar hydro generating station and has 2 bays at Kishenpur sub-station of PGCIL. The Baglihar HEP Stage I project was commercially commissioned on 1st April 2009.
- 2.52 The Petitioner has further submitted that as per the direction of the Commission, they have to submit a separate tariff petition for approval of capital cost and determination of tariff with regard to the project. The Petitioner accordingly filed a petition for approval of capital cost and determination of tariff for FY 2009-10 and 2010-11 on 27th December 2010.
- 2.53 The Petitioner has provided a break-up of the cost incurred on the project in this petition. This has been summarised in Table 29 and Table 30 below.

Table 29: Break up of net project cost

| Particulars | Amount (Rs Cr) |
|---------------------------------|-------------------|
| Project Cost | 5827.17 |
| Less: Revenue from Infirm Power | (25.97) |
| Net Project Cost | 5801.20 |
| IDC | 757.30 |
| Basic Cost of Project | 5043.90 |

Table 30: Bifurcation of cost of hydro project and transmission system

| Particulars | Baglihar Hydro Amount (Rs Cr) | Baglihar Transmission System Amount (Rs Cr) |
|---------------------------|-------------------------------------|---|
| Basic Cost of the Project | 4891.60 | 152.30 |
| IDC | 734.30 | 23.00 |
| Total Project Cost | 5625.90 | 175.30 |

- 2.54 The Petitioner has filed the petition for approval of tariff for the Baglihar hydro in accordance with provisions of the JKSERC (Terms and Conditions for Determination of Hydro-Generation Tariff) Regulations, 2005 dated 23rd September 2005.

- 2.55 The Petitioner has submitted that as the Commission has not issued tariff regulations for transmission system, the tariff petition for Baglihar transmission system has been prepared based on the tariff regulations of Central Electricity Regulatory Commission dated 19 January 2009 and applicable for the years 2009-14.
- 2.56 The Petitioner has submitted the final cost of the Baglihar HEP Stage I project as on 31st March 2011 and the bifurcation of the final cost into the cost allocable to Baglihar hydro and Baglihar transmission system. Further the design energy of the project has been validated by an independent consultant and the same has been considered for calculation of gross generation. These details are mentioned Table 31 below.

Table 31: Final Cost of Baglihar HEP Stage I and Design Energy

| Particulars | Final cost as on 31 st March 2011 Amount (Rs Cr) | Design Energy (In MUs) |
|------------------------------|---|------------------------|
| Baglihar Hydro Project | 5454.45 | 2536.07 |
| Baglihar Transmission System | 168.03 | 2536.07 |

Norms of Operation

- 2.57 The norms of operation upon which the Petitioner has based the computation of proposed annual fixed charges and proposed tariff for Baglihar hydro and Baglihar transmission system have been summarised in Table 32 and Table 33 given below.

Table 32: Norms of operation for Baglihar Hydro Project

| No | Particulars | Value | |
|----|----------------------------------|--|------------------------|
| 1. | Plant Availability Factor | | |
| | Normative Capacity Index | First Year | Afterwards |
| | Run of River | 85% | 90% |
| | Storage Type | 80% | 85% |
| 2. | Auxiliary Consumption | With Rotating Exciter | With Static Excitation |
| | Surface | 0.20% | 0.50% |
| | Underground | 0.40% | 0.70% |
| 3. | Transformer Losses | 0.50% | 0.50% |
| 4. | Transmission Losses | 0.30% | 0.30% |
| 5. | O&M Expenses | Rs. Cr/MW | 1.50% of capital cost |
| | Annual Escalation | | 4.00% |
| 6. | Depreciation | | |
| | Plant Life | As per regulations | |
| | Useful life | 10 years | |
| | Advance Against Depreciation | Equivalent to difference of actual repayment of loan and normal depreciation | |
| 7. | Working Capital | | |

| No | Particulars | Value |
|-----|---|--|
| | Receivable | 2 months of fixed charges |
| | O & M Expenses | 1 month |
| | Spares for Maintenance | 1% of historic cost |
| | Escalation in Spares Inventory | 6% |
| | Rate of Interest p.a. | 14.50% as per PLR of J&K Bank as on 1.4.2009 |
| 8. | Initial spares as part of capital cost | 1.5% |
| 9. | Return on Equity | 14% of normative equity |
| 10. | Equity | 30% |
| | Loan | 70% |
| 11. | Interest on Loan | As per terms and conditions of loan sanctioned |
| 12. | Moratorium | No moratorium after COD |
| 13. | Sale of Infirm Power | Primary Energy Rate |
| 14. | Foreign Exchange Rate Variation | Allowed, can be hedged |

Table 33: Norms of Operation for Baglihar Transmission System

| S No | Particulars | Value |
|------|---|--|
| 1 | O&M Expenses | |
| | Annual O&M Cost of Line per KM | Rs. 0.0627 Mn |
| | Annual O&M Cost per Bay | Rs. 5.24 Mn |
| | Annual Escalation | 5.72% |
| 2 | Depreciation | |
| | Plant Life 35 Yrs, Residual life 10% | 2.57 % |
| | Advance Against Depreciation | Equivalent to difference of actual repayment of loan and normal depreciation |
| 3 | Working Capital | |
| | Receivable | 2 Month receivables |
| | O & M Expenses | 1 month |
| | Spares for Maintenance | 1% of historical cost |
| | Escalation in Spares Inventory | 6 % |
| | Rate of Interest | 14.50 % PLR of J&K Bank as on 1.4.2009 |
| 4 | Return on Equity | 14% |
| 5 | Initial Spares as part of Capital Cost | 1.50% |
| 6 | Equity | 30% |
| | Loan | 70% |
| 7 | Interest | Weighted Average |
| 8 | Moratorium | No moratorium after COD |

Interest on Loan Capital

2.58 In respect of the Baglihar Hydro Project, the Petitioner has provided details regarding loans availed and the interest rates applicable on these loans. The Petitioner has

submitted that the total interest on loan has been worked out as per provisions of Regulation 22 of the JKSERC Hydro Tariff Regulations, 2005/2011.

- 2.59 The amount of debt upon which the interest has been calculated has been arrived at, by calculating 70% of the net cost submitted by the Petitioner as on 1st April 2011. The amount of subsidy and loan repaid during earlier years has been reduced from this amount to compute the debt amount. Interest on loan has been calculated by applying the weighted average rate of interest on the loan outstanding to the average amount of debt outstanding during the year.
- 2.60 In respect of the Baglihar Transmission System, the Petitioner has provided details regarding loans availed and the interest rates applicable on these loans. The Petitioner has submitted that the total interest on loan has been worked out as per provisions of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 dated 19th January 2009.
- 2.61 The amount of debt upon which the interest has been calculated has been arrived at by calculating 70% of the net project cost submitted by the Petitioner. The amount of subsidy and loan amount repaid during earlier years has been reduced from this amount to compute the debt amount. Interest on loan has been calculated by applying the weighted average rate of interest on the loan outstanding to the average amount of debt outstanding during the year.
- 2.62 Table 34 provides the computation of interest on loan proposed by the Petitioner in respect of Baglihar Hydro Project and Baglihar Transmission System.

Table 34: Proposed Interest on Loan for Baglihar Hydro and Baglihar Transmission System (Rs Cr)

| Particulars | Baglihar Hydro | Baglihar Transmission System |
|---|----------------|------------------------------|
| Net Cost | 5454.45 | 168.03 |
| Equity 30% for tariff purpose | 1636.33 | 50.41 |
| Debt + Subsidy (70% of the net cost) | 3818.11 | 117.62 |
| Subsidy | 539.29 | 16.71 |
| Debt for Tariff purpose | 3278.82 | 100.92 |
| Loan re-paid during earlier years | 593.29 | 20.18 |
| Loan at the beginning of the year | 2685.53 | 80.73 |
| Repayment of loan (Normal depreciation + AAD) | 327.88 | 10.09 |
| Loan at the end of the year | 2357.64 | 70.64 |
| Average of the loan | 2521.58 | 75.68 |
| Rate of Interest on loan | 10.40% | 10.40% |
| Interest on the loan | 262.28 | 7.87 |

Depreciation including Advance against Depreciation

- 2.63 The Petitioner has submitted that depreciation has been calculated annually using straight line method of calculation in accordance with provisions of Regulation 23 of JKSERC Hydro Tariff Regulations, 2005/2011.
- 2.64 The Petitioner has submitted a detailed break-up of all assets into various classes of assets and the rates of depreciation applied are as prescribed in the Appendix to the said regulations. Cost of land has been excluded while computing the cost of depreciable assets.
- 2.65 The Petitioner has submitted that depreciation proposed for the Baglihar Transmission System for FY 2011-12 has been computed annually by using the straight line method of depreciation. The useful life of assets has been considered to be 35 years and depreciation has been provided at the rate of 2.57% per annum. Table 32 provides the computation of depreciation proposed by the Petitioner.
- 2.66 Table 35 provides the computation of depreciation attributable to Baglihar hydro and Baglihar transmission system as proposed by the Petitioner for FY 2011-12.

Table 35: Proposed Depreciation for Baglihar Hydro and Baglihar Transmission System (Rs Cr)

| Particulars | Baglihar Hydro Project | Baglihar Transmission System |
|-----------------------------|------------------------|------------------------------|
| Depreciation for FY 2011-12 | 119.15 | 4.32 |

- 2.67 The Petitioner has submitted that they are entitled to advance against depreciation for FY 2011-12 in respect of both the Baglihar hydro project and Baglihar Transmission System. It has been further submitted that the amount of advance against depreciation has been calculated in accordance with the provisions of Regulation 24 of JKSERC Hydro Tariff Regulations, 2005/2011. The normal depreciation calculated as above in accordance with Regulation 23 has been reduced from the amount of loan repaid annually to arrive at the amount proposed as advance against depreciation. Table 36 provides the computation of advance against depreciation attributable to Baglihar hydro and Baglihar transmission system as proposed by the Petitioner for FY 2011-12.

Table 36: Proposed Advance against Depreciation for Baglihar Hydro Project and Baglihar Transmission System (Rs Cr)

| Particulars | Baglihar Hydro Project | Baglihar Transmission System |
|-----------------------------------|------------------------|------------------------------|
| Total Normative Loan Amount | 3278.82 | 100.92 |
| Annual Repayment of Loan 1/10th | 327.88 | 10.09 |
| Normal Depreciation for full year | 119.15 | 4.32 |
| Advance Against Depreciation | 208.74 | 5.77 |

Return on Equity

- 2.68 The Petitioner has submitted that the return on equity (RoE) proposed for the year 2011-12 for both the Baglihar hydro project as well as the Baglihar transmission system, has been calculated as per the provisions of Regulation 25 of the JKSERC Hydro Tariff Regulations, 2005/2011.
- 2.69 The amount of equity upon which the RoE has been calculated has been arrived at, by computing normative equity equivalent to 30% of the net cost submitted by the Petitioner. The return on equity has been calculated at the rate of 14% on the normative equity calculated. Table 37 provides the computation of advance against depreciation attributable to Baglihar hydro and Baglihar transmission system as proposed by the Petitioner for FY 2011-12

Table 37: Proposed Return on Equity for Baglihar Hydro Project and Baglihar Transmission System (Rs Cr)

| Particulars | Baglihar Hydro Project | Baglihar Transmission System |
|--|------------------------|------------------------------|
| Net cost of the Project | 5454.45 | 168.03 |
| Total normative Equity 30% of the Project Cost | 1636.33 | 50.41 |
| Rate of Return on Equity | 14.00% | 14.00% |
| Return on Equity | 229.09 | 7.06 |

Operation & Maintenance Expenses

- 2.70 The Petitioner has submitted that the O&M expenses for the FY 2009-10 and FY 2010-11 proposed in the petition have been calculated in accordance with provisions of Regulation 26(2) (b) of JKSERC Hydro Tariff Regulations, 2005/2011.
- 2.71 The Petitioner has taken the estimated cost of completion of the project as on the date of commissioning, i.e. 1st April 2009 as base and proposed that O&M expenses be allowed at the rate of 1.5% of such cost for the FY 2009-10 and escalated @4% per annum year on year to arrive at the O&M expenses for FY 2011-12. Table 38 provides the computation of operation & maintenance expenses proposed by the Petitioner.

Table 38: Proposed Operation & Maintenance for Baglihar Hydro (Rs Cr)

| Particulars | Amount |
|-------------------------------------|--------------|
| Final estimated completion cost | 5513.47 |
| O & M Expenses | 1.50% |
| Annual Escalation in O & M expenses | 4% |
| O & M Expenses | 89.45 |

- 2.72 The Petitioner has submitted that the operation and maintenance expenses proposed for Baglihar transmission system for FY 2010-11 have been calculated in accordance with the provisions of Regulation 19 of Central Electricity Regulatory Commission (CERC) (Terms and Conditions of Tariff) Regulations, 2009. Table 39 provides the computation of operation & maintenance expenses proposed by the Petitioner.

Table 39: Proposed O&M expenses for Baglihar Transmission System (Rs Cr)

| Particulars | Amount |
|---|-------------|
| Final estimated completion cost taken as base | 170.79 |
| O & M Expenses for the year | 1.65 |
| Annual O&M Cost of Line (Rs Mn/ km) | 0.0627 |
| Annual O&M Cost per Bay (Rs Mn/ Bay) | 5.24 |
| Length of Line (In Km) | 68 km |
| No of Bays (In numbers) | 2 Nos |
| Annual escalation in O&M expenses | 5.72% |

Interest on Working Capital

- 2.73 The Petitioner has submitted that the interest on working capital proposed for Baglihar hydro project and Baglihar transmission system in the petition for FY 2011-12 has been calculated in accordance with Regulation 27 of JKSERC Hydro Tariff Regulations, 2005/2011.

- 2.74 The following components have been included in the computation of working capital:

- receivables equivalent to annual fixed charges for 2 months
- O&M expenses for 1 month
- maintenance spares at the rate of 1 % of the historical cost escalated at the rate of 6% per annum from the date of commercial operation

- 2.75 The total working capital as computed above has been taken as base and interest on such working capital has been proposed at the rate of 14.5% which has been considered as the short term prime lending rate of the J&K Bank as on 1st April 2009. Table 40 provides the computation of interest on working capital proposed by the Petitioner.

Table 40: Proposed Interest on working capital for Baglihar Hydro Project and Baglihar Transmission System (Rs Cr)

| Description | Months | Baglihar Hydro | Baglihar Transmission System |
|----------------|--------|----------------|------------------------------|
| Receivable | 2 | 156.83 | 4.60 |
| O & M Expenses | 1 | 7.45 | 0.14 |
| Spares | 1.00% | 58.44 | 1.81 |

| Description | Months | Baglihar Hydro | Baglihar Transmission System |
|------------------------------------|--------|----------------|------------------------------|
| Escalation in spares | 6.00% | | |
| Total Working Capital | | 222.7 | 6.6 |
| Working Capital Loan | | 222.7 | 6.6 |
| Rate of Interest | 14.50% | | |
| Interest On working capital | | 32.30 | 0.95 |

Annual Fixed Charges and Indicative Tariff Proposed for Baglihar Hydro and Baglihar Transmission System for FY 2011-12

2.76 The Petitioner has submitted that the annual fixed charges proposed for FY 2011-12 has been calculated by considering the various components of tariff as described above. The indicative tariff proposed for FY 2011-12 has been computed by taking into account net saleable energy of 2498.03 MU.

2.77 Table 41 summarises the AFC and indicative tariff proposed by the Petitioner for FY 2011-12.

Table 41: Proposed AFC and Indicative Tariff for Baglihar Hydro Project and Baglihar Transmission System (Rs Cr)

| Description | Baglihar Hydro Project | Baglihar Transmission System |
|--------------------------------------|------------------------|------------------------------|
| O&M Expenses | 89.45 | 1.65 |
| Interest on Loan | 262.28 | 7.87 |
| Depreciation | 119.15 | 4.32 |
| Additional Depreciation | 208.74 | 5.77 |
| Return on Equity | 229.09 | 7.06 |
| Interest on Working Capital | 32.30 | 0.95 |
| Income Tax | 0.00 | 0.00 |
| Total Annual Fixed Cost | 941.00 | 27.62 |
| Net Saleable Energy in MU | 2498.03 | 2498.03 |
| Indicative Tariff Rs. per kWh | 3.77 | 0.11 |

2.78 Table 42 provides a summary of the total annual fixed charges and indicative tariff that the Petitioner has proposed on account of the Baglihar HEP Stage I for the FY 2011-12.

Table 42: Annual Fixed Charges and Indicative Tariff for FY 2011-12

| Description | Baglihar Hydro Project | Baglihar Transmission System | Total |
|---------------------------------|------------------------|------------------------------|--------|
| Annual Fixed Charges (Rs In Cr) | 941.00 | 27.62 | 968.62 |
| Indicative Tariff (Rs. per kWh) | 3.77 | 0.11 | 3.88 |

Determination of Tariff for Gas Based Thermal Generating Stations

- 2.79 The Petitioner has submitted that it operates two gas based thermal generating stations with a total installed capacity of 175 MW. These gas turbines are operated only in situations of acute emergency on the request of the JKPDD because the cost of generation of such power tends to be very high.
- 2.80 The Petitioner has submitted that in order to maintain the gas turbines in running condition, staff has to be deployed and expenses on account of operation and maintenance are also incurred. The Petitioner has requested the Commission to allow reimbursement of such O&M expenses incurred on account of maintenance of gas turbines.

Determination of Tariff for Mohra HEP

- 2.81 The Petitioner has submitted that the Mohra HEP has not been operational since the floods of September 1992. However, the switch yard is being used by JKPDD for distribution of power.
- 2.82 In connection with the use of such switch yard, the Petitioner has requested the Commission to allow reimbursement of Rs.3.50 Crs on account of salary, wages and O&M expenses incurred for maintenance of switch yards at Mohra HEP.
- 2.83 Further, the Petitioner has submitted that as per the directives of the Commission, the assets of the sub-station etc should be transferred to the PDD. To this end, the Petitioner has requested PDD vide letter number JKPDC/Accts/4463-65 dated 19th January 2011 to take over these assets. However, the Petitioner has stated that the expenses incurred till the date of transfer of these assets to PDD should be reimbursed to the Petitioner by the distribution utility.

Optimisation of Generation – Additional Capitalisation

- 2.84 The Petitioner has made submissions regarding requirement of renovation and modernization, stabilization, major repair works and additional capitalisation of HEPs.
- 2.85 The submissions made in this regard have been discussed broadly in the following sub-sections.

Renovation, Modernisation and Up gradation (RM&U) of projects

- 2.86 Hydro projects set up in India are designed to operate over a useful life of 35 years. Plant equipment is prone to deterioration and degradation from the time of commencement of operations. RM&U activities may be undertaken to improve the performance of the plant and bring it to a reasonable level.

- 2.87 The Board of Directors of JKSPDC have approved a program for undertaking RM&U activities for 7 HEPs at a cost of Rs.208.96 Cr. The Government of Jammu & Kashmir vide its letter dated 14th January 2008 has approved these RM&U activities proposed for 7 HEPs. Loan assistance of Rs.133.95 Cr has been sanctioned by the Power Finance Corporation out of which a sum of Rs.32.93 Cr has already been availed. Further, the Ministry of New & Renewable Energy (MNRE) has also approved a subsidy amounting to Rs.32.94 Cr out of which a sum of Rs.0.55 Cr has been disbursed.
- 2.88 Table 43 gives a summary of the sources of financing of the proposed RM&U activities.

Table 43: Source of financing of RM&U activities

| Name of the HEP | Envisaged completion cost | Debt from PFC | Subsidy from MNES | Equity from State Govt. |
|-------------------|---------------------------|---------------|-------------------|-------------------------|
| 105 MW LJHP | 101.3 | 71 | - | 30.3 |
| 22.6 MW USHP-I | 25 | 14.65 | 10.35 | 0 |
| 23.3 MW Chenani-I | 39.14 | 24.3 | 10.61 | 4.23 |
| 15 MW Ganderbal | 39.3 | 24 | 10 | 5.3 |
| 300 kW Bazgo | 1.32 | - | 0.74 | 0.58 |
| 400 kW Hunder | 1.77 | - | 0.94 | 0.83 |
| 100 kW Sumoor | 1.13 | - | 0.3 | 0.83 |
| Total | 208.96 | 133.95 | 32.94 | 42.07 |

- 2.89 RM&U activities pertaining to these projects have already started since 2009-10. Details of approved (budgeted) expenditure and actual expenditure incurred has been summarised in Table 44. Most of these activities are scheduled to be completed by the end of the year 2011-12.

Table 44: Approved and actual expenditure incurred on activities

| Name of HEP | Approved Cost | Cumulative Expenditure up to March 2010 | 2010-11 | | During 2011-12* |
|-------------|---------------|---|-----------------------|---------------------------------------|-----------------|
| | | | Actual up to Dec 2010 | Projected from Jan 2011 to March 2011 | |
| LJHP | 101.3 | 56.43 | 12.02 | 22.9 | 9.95 |
| Chenani-I | 25.6 | 1.43 | 2.06 | 5.01 | 17.1 |
| USHP-I | 39.14 | 7.53 | 5.57 | 8.6 | 17.44 |
| Ganderbal | 39.3 | 1.16 | 5.08 | 6.17 | 26.88 |
| Sumoor | 1.32 | 0.43 | 0.14 | 0.19 | 0.56 |

| Name of HEP | Approved Cost | Cumulative Expenditure up to March 2010 | 2010-11 | | During 2011-12* |
|--------------|---------------|---|-----------------------|---------------------------------------|-----------------|
| | | | Actual up to Dec 2010 | Projected from Jan 2011 to March 2011 | |
| Hunder | 1.77 | 0.62 | 0.6 | 0.9 | 0 |
| Bazgo | 1.13 | 0.47 | 0.56 | 0.54 | 0 |
| Total | 209.56 | 68.07 | 26.02 | 44.31 | 71.94 |

2.90 The annual generation from these HEPs is likely to increase after completion of these activities. Table 45 provides a summary of the estimated increase in annual energy generation as worked out by CEA during its appraisal report after RM&U activities of 4 main HEPs namely LJHP, Chenani I, USHP I and Ganderbal are completed. The impact of increased revenue owing to higher energy sales is likely to be to the tune of Rs.33 Cr.

Table 45: Impact of increase in generation

| Name of HEP | Installed Capacity | Annual Generation (in MUs) | Annual Increase in Generation (in MUs) | Expected Generation after RM&U activities |
|-------------|--------------------|----------------------------|--|---|
| LJHP | 105 | 412.1 | 81.60 | 493.7 |
| USHP-I | 22.6 | 89.36 | 13.24 | 102.6 |
| Ganderbal | 15 | 22.33 | 63.64 | 85.97 |
| Chenani I | 23 | 71.32 | 33.85 | 105.17 |

2.91 RM&U activities pertaining to three other projects, namely, Sumoor, Hunder and Bazgo are also expected to have a positive impact and result in increase in generation and revenue from energy sales. RM&U activities are being planned for two more projects, namely, Karnah and Iqbal Bridge. Further, the Petitioner has also submitted that works are being undertaken for restoration of Mohra which is among the oldest HEP set up in the country. Haftal project which has an installed capacity of 1 MW and has not been operating to its optimum capacity has been proposed to be taken up for RM&U activities and also for augmentation of its capacity by additional 1 MW (2 units x500 MW). DPRs for these activities are being prepared after which finance shall be sought from financial institutions and subsidy from MNRE. RM&U activities for these projects are expected to commence from the FY 2011-12.

Stabilization

- 2.92 The Petitioner has submitted that a number of the hydro generating stations in the state have not been operating at an optimal level taking into consideration their design capacity and are plagued by frequent situations of breakdown. These plants are located in remote, far flung areas and operate under harsh climatic conditions.
- 2.93 Capital expenditure is required to be incurred to stabilize these power houses and keep them operational. Table 46 gives details of capital expenditure incurred towards stabilization activities undertaken for these projects.

Table 46: Impact of increase in generation

| Name of HEP | Expenditure incurred in 2009-10 (Rs Cr) | Expenditure incurred during current FY (Rs Cr) | |
|-------------|--|---|--------------------------|
| | | Civil Works | Electro-Mechanical Works |
| Iqbal | 0.41 | 0.45 | 0.60 |
| Chenani II | 0.32 | 0.82 | 0.23 |
| Chenani III | 1.54 | 1.48 | 1.90 |
| Sewa III | 2.90 | 4.79 | 2.76 |
| Marpachoo | 0.20 | 0.73 | 0.44 |
| Haftal | 0.18 | 0.53 | 0.33 |

Force Majeure

- 2.94 The Petitioner has submitted that a breach had occurred in Wangath Link Canal of 105 MW Upper Sindh Hydro Electric Project, Kangan. As a result of this breach, the water conductor and spill way channel was damaged. Expert advice was sought from the Central Water Commission (CWC) regarding the restoration of the damaged Wangath Link and resumption of generation.
- 2.95 Generation of electricity was proposed to be resumed through the Sumbal Link for which restoration of the spillway was necessary. An amount of Rs.4.32 Cr has been incurred on the restoration of the power generated from the project from the Sumbal Link. Funds required for the restoration of Wangath Link shall be worked out on finalisation of design and award of contracts.

Flood Damages

- 2.96 The Petitioner has submitted that some hydro generating stations suffered massive damages during the heavy rainfall and flash floods that occurred in the year 2010. Karnah in district Kupwara, Leh and Kargil districts saw incessant rains during the year 2010. Plants situated in these areas witnessed extensive damages and there was a need for incurring additional capital expenditure for restoration of civil works and electro-mechanical equipments for enabling these power houses to operate again.
- 2.97 The Board of Directors of JKSPDC have approved the expenditure proposed to be incurred for restoration of these plants. Provision for such expenditure has been made in the works programme drawn for the FY 2010-11 and 2011-12. Table 47 provides a summary of project wise financial implication of restoration work.

Table 47: Project wise financial implication of restoration works

| Name of HEP | Installed Capacity | Expenditure proposed to be incurred (Rs Cr) |
|----------------|--------------------|---|
| Karnah | 2 X 1 MW | 28.87 |
| Igo-Mercellong | 3 X 1 MW | 22.30 |
| Bazgo | 2 X 0.150 MW | 15.14 |
| Hunder | 2 X 0.20 MW | 0.31 |
| Iqbal | 3 X 1.25 MW | 0.27 |
| Sumoor | 2 X 0.05 MW | 0.01 |

Taxes and Duties

- 2.98 The Petitioner has submitted that the tariff petition filed by them is exclusive of any statutory levies, taxes, duties, cess or any other charge imposed by any central or state government and any other local bodies or authorities including auxiliary consumption etc. The amount of such levies, taxes, duties, cess or other charges shall be borne by the beneficiary additionally, that is, JKPDD.
- 2.99 The Petitioner has further submitted that in accordance with Regulation 7(1) of JKSERC Hydro Tariff Regulations, 2005/2011, the incidence of tax liability and other charges shall also be payable by JKPDD. The Petitioner has submitted that they have paid income tax to the tune of Rs.7.16 Cr during the year 2009-10. Details of the payment made have been mentioned in Table 48.

Table 48: Details of payment of Income Tax

| Period | | Amount |
|------------------------|-------------------------|-------------------|
| Financial Year 2007-08 | Assessment Year 2008-09 | Rs. 1,46,16,000/- |
| Financial Year 2008-09 | Assessment Year 2009-10 | Rs.5,69,92,860/- |
| Total | | Rs.7,16,08,860/- |

2.100 The Petitioner has requested that the amount of income tax paid by them should be approved as a pass through by the Commission and accordingly recovered from JKPDD.

Additional Submissions

2.101 The Petitioner has submitted that the actual expenditure incurred by the Petitioner towards operation and maintenance of the gas turbines should be reimbursed to the Petitioner because only the cost of fuel is being borne by the state government.

2.102 Further, the Petitioner has also requested that the actual O&M expenses incurred for operation of the 5MVA 33/11 kV sub-station utilized for the wheeling of the power for JKPDD should be reimbursed because the power house is non-operational at present.

Prayer of the Petition

2.103 The Petitioner has prayed to the Commission to:

- (a) Approve annual fixed charges proposed in the Petition in respect of 19 HEPs and Baglihar Transmission System.
- (b) Approve the additional O&M charges in respect of 10 HEPs for the financial years 2008-09, 2009-10 and 2010-11.
- (c) Approve the reimbursement of income tax for Rs.7.16 Cr actually paid to the income tax department.
- (d) Approve the reimbursement fee of Rs.2 Lac.
- (e) Pass necessary orders in the light of additional submissions made in the petition.
- (f) Pass such other and further order(s) as are deemed fit and proper in the facts and circumstances of the case.

A3: PUBLIC CONSULTATION PROCESS

- 3.1 After the admittance of the petition filed by the Petitioner pertaining to determination of ARR and tariff for FY 2011-12, the Commission directed the Petitioner to make available copies of the petition to the general public and invite comments or objections from them on the subject matter of the petition.
- 3.2 The Commission, vide letter number JKSERC/ 49/1612 dated 25th March 2011, directed the Petitioner to issue a summary of its petition and tariff proposals as Public Notice in newspapers in English and local languages as per the requirement of Regulation 48(2), Chapter 5 of the JKSERC (Conduct of Business) Regulations 2005 and invite comments, objections and suggestions from consumers and stakeholders on the petition.
- 3.3 As directed by the Commission, the Petitioner published a Public Notice in some of the widely read English, Hindi and Urdu newspapers indicating the salient features of its petition and inviting objections and suggestions from the consumers and other stakeholders. The public notice appeared in the following newspapers on the dates mentioned below:
- (a) Daily Excelsior, Jammu on 30th March 2011
 - (b) The Sree Times, Jammu on 29th March 2011
 - (c) Kattu Satya, Jammu on 30th March 2011
 - (d) Srinagar Times, Srinagar on 29th March 2011
 - (e) Greater Kashmir, Srinagar on 30th March 2011
- 3.4 The Copies of the above public notice and the petition were made available on the Petitioner's website and at its office address mentioned in the public notice. The last date for submitting the comments/ objections on ARR and tariff petition was 15th April 2011.
- 3.5 The public notice advised the respondents to submit (in person or by post, fax or email) their objections, written either in English, Hindi or Urdu to the Commission with a copy to the Petitioner. Respondents were also given the option to be heard in person during the public hearings conducted by the Commission. Table 49 provides the names of stake holders who submitted their comments on the petition in writing.

Table 49: List of stake holders who have made written submissions

| No | Name of Respondent |
|----|---|
| 1. | Anil Suri, President Bari Brahmana Industries Association |

- 3.6 The Commission held public hearings in Srinagar on 18th April 2011 and in Jammu on 21st April 2011, to discuss the matters pertaining to the petition filed by the Petitioner for determination of ARR and tariff for FY 2011-12.
- 3.7 The public hearings enabled the stakeholders to voice their concerns and put forth their objections to the submissions made by the Petitioner. Further, it provided the Petitioner with an opportunity to present its case and to respond to the objections raised by various respondents. The Commission allowed stakeholders who had not submitted written objections to present their views, objections and suggestions during the public hearing. The list of stakeholders who attended the public hearings held in Srinagar and in Jammu is provided in Annexure 1.
- 3.8 The issues, concerns and objections raised by various stakeholders through their written or verbal representations have been taken into consideration by the Commission. The matters raised and discussed have accordingly been summarized in this chapter and the Petitioner's response upon such matters and the view taken by the Commission are detailed below.

Filing of tariff petition in accordance with provisions of the regulations

- 3.9 The stakeholders have submitted that the petition filed by the Petitioner should adhere strictly to the provisions of the tariff regulations prescribed by the Commission in this regard. Deviations from these regulations should not be permitted.

Petitioner's Response

- 3.10 The Petitioner has responded by clarifying that the tariff petition has been filed in accordance with provisions of the JKSERC Hydro Generation Tariff Regulations, 2005.

Commission's View

- 3.11 The Commission affirms that determination and approval of ARR and applicable tariff shall be done in accordance with provisions of the Regulations prescribed in this regard.
- 3.12 Accordingly, the Commission has stated that the petition filed by the Petitioner has been examined in the light of the applicable regulations which are JKSERC Hydro Generation Tariff Regulations, 2005 in respect of generation tariff and CERC (Terms and Conditions of Tariff) Regulations, 2009 in respect of transmission tariff. The CERC Regulations have been adopted because the Commission is yet to notify regulations pertaining to transmission utilities. However, the Commission would direct the Petitioner to henceforth, file ARR/tariff petition by 30th November of each year positively as stipulated in the Jammu & Kashmir State Electricity Regulatory Commission (Conduct of Business) Regulations, 2005.

Approval of capital cost after carrying out prudence check

- 3.13 The stakeholders have opined that the approval of capital cost of a project is of critical importance. Various components of tariff are based on the capital cost approved for a project. The utility setting up a power project is expected to incur such cost in a prudent and reasonable manner. The stakeholders have also stated that prudence check must be carried out before approving the capital cost submitted by the utility to ensure that costs being claimed are not excessive.

Petitioner's Response

- 3.14 The Petitioner has responded by stating that the capital costs submitted in the petition for all projects apart from Baglihar have been approved by the Commission and a separate petition has been filed for the approval of capital costs incurred in respect of Baglihar HEP Stage I.

Commission's View

- 3.15 The Commission affirms that capital costs of all projects have been approved only after duly conducting a prudence check on the submissions of cost and related matters.
- 3.16 The Commission has previously approved capital costs submitted by the Petitioner in respect of old HEPs after validating reports issued by independent consultants in this regard. Independent consultants/valuers were engaged by the Petitioner in compliance with a directive issued by the Commission in previous tariff orders.
- 3.17 The Commission conducted a thorough prudence check on the submissions made by the Petitioner in respect of Baglihar HEP Stage I and after seeking requisite clarifications from them, provisionally approved the capital cost vide Tariff Order dated 16th June 2011. The Commission has provisionally approved the net project cost and shall finally approve the base cost, capital cost (including IDC) and net project cost (net of infirm power) based on the approval/ report from CEA on review of cost escalation and final approval of capital cost of Baglihar HEP Stage I.

High capital cost of projects

- 3.18 The stakeholders have stated that the capital cost of hydro projects operated by the Petitioner is very high as compared to similar projects in other parts of the country. The capital cost claimed is in the range of 7 to 12 crores per MW. The Commission has been requested to verify the capital cost of the projects and allow only that which is prudent in nature and not on account of inefficiencies on the part of the Petitioner.
- 3.19 Such high cost is also reflected in the indicative tariff claimed by the Petitioner, which, in the case of some generating stations works out to be more than Rs. 5 per kWh which is unreasonably high.

Petitioner's Response

- 3.20 The Petitioner has responded stating that each hydro project is unique and cannot be generalised, therefore, the capital cost is project specific and depends on various factors such as location, geology, size, length and type of water conductor system and type of other structures.
- 3.21 It is also subject to variations on any geological surprises and conditions beyond the control of the developer. The capital costs are however, subject to prudence check and approval of the Commission.
- 3.22 Indicative tariff of above Rs.5 per unit is in respect of smaller HEPs including Igo-Mercellong, Marpachoo, Pahalgam and Haftal. Three of these projects are located in the Ladakh region and are subject to freezing which does not allow their operation in winter months. In respect of Pahalgam, the project was languishing for many years because of the disturbed conditions during the period of construction. It may however, be appreciated that the overall indicative tariff for all projects works out to only around Rs.1.23 per kWh.

Commission's View

- 3.23 The Commission states that capital cost submitted in respect of a particular project is approved only after a detailed prudence check has been carried out. Any cost that is considered unreasonable or excessive is excluded in the cost approved towards the project.

Treatment of Grants and Aid and Advance against Depreciation

- 3.24 The stakeholders have submitted that the Petitioner gets substantial grants or aid from the State Government as well as the Central Government and these grants or aid should be deducted from the total project cost of the Petitioner and only such expenditure that forms the internal resources and debt upon which interest is actually paid by the Petitioner, should be allowed to be serviced through tariff.
- 3.25 The stakeholders have contested the premise of providing advance against depreciation to the Petitioner as it causes a substantial increase in the servicing of capital cost. This becomes more pronounced in the case of substantial grants and aid given to the Petitioner.
- 3.26 They have further stated that elements of tariff such as interest on loan, depreciation and advance against depreciation should be reconsidered keeping in view that most of these projects were set up prior to the reorganisation of the government department and vesting of utilities in the Petitioner. Therefore, it may not be appropriate to pass on the loans to the Petitioner to be serviced through tariff and shall be allowed only if the capital cost has been incurred properly and not due to any grants or aid.

- 3.27 JKSPDC has not provided information regarding repayment of debt up to FY 2011-12. Therefore, advance against depreciation cannot be computed in accordance with Regulation 24 of the JKSERC Hydro Generation Tariff, 2005.

Petitioner's Response

- 3.28 The Petitioner has submitted that the subsidy availed from the State Government has not been considered as loan and no interest has been claimed on the same. However, these form part of the capital cost as per provisions of the regulations. Similarly, return on equity is not claimed on the subsidy amount. JKSPDC is a fully owned State Government utility and funds provided by the government are its equity towards the projects. The RoE, however, has been restricted to 30% of the cost as per regulations.
- 3.29 Advance against Depreciation is claimed only in respect of 8 new projects and not against 10 old HEPs commissioned prior to incorporation of JKSPDC.
- 3.30 The Petitioner has further submitted that all information as per requirement of the Commission with respect to computation of advance against depreciation has been provided in Form F7 (i), (ii) and F7A (i) and F7 (ii) in part B of the Petition.

Commission's View

- 3.31 Components of tariff such as interest on loan and return on equity are allowed on the capital cost. The Commission affirms that subsidy or grant given by the Government to the Petitioner towards any project is deducted from the capital cost of the project and such cost in turn forms the basis for computation of other components such as interest on loan, return on equity etc.

Consultancy Charges

- 3.32 The stakeholders have submitted that the Petitioner has claimed a substantial amount on account of consultancy charges to be recovered through tariff. The Petitioner should provide dull details of such expenditure, the rationale behind it and justification of the expenditure. Such expenditure should be allowed only after prudence check.

Petitioner's Response

- 3.33 The Petitioner has submitted that consultancy charges are as approved by the Commission in its previous order.

Commission's View

- 3.34 The Commission states that consultancy charges on account of fee paid to independent consultants/valuers engaged by the Petitioner for auditing completion costs of projects and validation of design energy of plants have been approved in the Review Order Number JKSERC/25/2010 dated 9th November 2010.

- 3.35 These activities were carried out in compliance with directives issued by the Commission in the previous orders to this effect.

Income Tax

- 3.36 The stakeholders have submitted that the income tax reimbursement claimed by the Petitioner is not as per Regulation 7(2) of the JKSERC Hydro Tariff Regulations, 2005/2011. The Petitioner has been requested to clarify if the tax computed relates to its core business and also submit the computation sheet of the income tax along with a copy of the original as well as the revised return. The Petitioner has also been asked to clarify if any tax holiday is available to them under provisions of the Income Tax Act, 1961.
- 3.37 Further, the stakeholders have submitted that the Petitioner has not estimated station wise profit before tax for a year in advance, as required by Regulations 7(2).
- 3.38 The income tax return filed by JKSPDC for assessment year 2008-09 shows Gross Total Income as nil but also mentions a tax liability which is contradictory as no tax liability can arise in respect of nil income. Stakeholders have requested the Commission to apply prudence check in determining tax reimbursement and ensuring that no payment is made on account of interest on late payment of tax or non compliance with provisions of the Income Tax Act, 1961.

Petitioner's Response

- 3.39 The Petitioner has submitted that they were preparing consolidated accounts till FY 2008-09, however, from FY 2009-10, the utility is in transition phase for conversion of single entry system of accounting to accrual basis of accounting after which it shall be possible to compute generating station wise profit or loss in accordance with provisions of Regulation 7(2). The Petitioner has further informed the stakeholders that they have engaged the services of M/S Grewal & Singh for the conversion of cash based accounting to accrual based accounting. Besides ERP system has been implemented initially for pilot sites. ERP system will be fully functional by June 2011.
- 3.40 The Petitioner has clarified that Gross Total Income shown as nil in form ITR V submitted along with the Petition does not signify that the gross total income is actually a nil figure as this is in the form of acknowledgement generated by e-filing software and does not calculate the tax liability as per Section 115JB.
- 3.41 The Petitioner has further submitted that Rs.1.46 Cr was paid on account of Minimum Alternate Tax (MAT) under Section 115 JB of the Income Tax Act, 1961. The case was also assessed under Section 143(3) and the returned income was duly accepted. The assessment order along with the return and computation sheet is available for reference. The Petitioner has also clarified that the tax paid pertains to its core business. JKSPDC was not eligible to pay tax under normal provisions of the Income Tax Act. The computation sheet attached with the assessment order for AY 2008-09 clarifies this position.

- 3.42 Further, the Petitioner has mentioned that all projects are eligible for a ten year tax holiday as per the provisions of the Income Tax Act.

Commission's View

- 3.43 The Commission states that the Petitioner has not claimed a pass through for income tax in the ARR submitted in the petition filed by them for FY 2011-12.
- 3.44 The Commission further states that as and when the utility claims a pass through on account of income tax, the Commission shall allow such amount to be recovered through ARR in accordance with provisions of Regulation 7 of JKSERC Hydro Tariff Regulations, 2005/2011.

Return on Equity

- 3.45 The stakeholders have objected to the computation of return on equity submitted by the Petitioner. They have stated that the Government of Jammu & Kashmir had transferred 10 old HEPs to the JKSPDC vide order number PDD/AC/11/99 dated 29th October 1999. JKSPDC has not made any capital investment in these projects; therefore they should not be allowed to charge RoE at the rate of 14% on the normative equity base (which is equivalent to 30% of capital cost).
- 3.46 The stakeholders have requested the Commission to allow the utility to charge RoE only on actual equity investment by JKSPDC where such investment is less than 30% and allow normative equity of 30% only in cases where the equity portion is equal to or more than 30%. The plan assistance, grant or subsidy provided by the government should not be included in equity.

Petitioner's Response

- 3.47 The Petitioner has submitted that debt – equity ratio has been taken as per the regulations and that the actual equity deployed is more than 30% in all projects. However, JKSPDC has considered normative equity to the extent of 30% of capital cost and RoE thereon in accordance with provisions of the regulations. The subsidy provided by the government has not been considered as part of equity.
- 3.48 Further, it has been submitted that JKSPDC is fully owned utility of the state government. Capital cost of 10 old projects has been evaluated in compliance with the directions of the Commission. The Regulation provides for RoE at the rate of 14% and for 30% of capital cost of the project and the petition has been filed on this basis.

Commission's View

- 3.49 The Commission states that return on equity has been allowed to the Petitioner in accordance with provisions of Regulation 18 and Regulation 25 of the JKSERC Hydro Tariff Regulations, 2005/2011.

- 3.50 Subsidy and grants provided by the Government have been excluded from the project cost to arrive at the net cost. Normative equity to the tune of 30% of such net cost is considered for allowing return on equity to the Petitioner.

Interest on Loan

- 3.51 The stakeholders have opined that Petitioner has computed interest on loan in contravention with provisions of the regulations.
- 3.52 The Petitioner has not clarified that the loan for financing of the particular project as on date of commencement of commercial operation was above 70% of the project cost. Normative provisions apply only if the loan taken for project was 70% or more than the project cost on the COD. The Commission has been requested to allow interest on loan in accordance with provisions of regulations.

Petitioner's Response

- 3.53 The Petitioner has submitted that interest on loan has been computed in accordance with provisions of Regulations 18 and 22. Further, where debt equity ratio has been capped as 70:30, there is no mention that the loan should be more than 30%. On the contrary as per the regulation, in case equity is more than 30% then the same should be capped at 30% and if it is less than 30%, the actual debt and equity shall be considered for determination of tariff.

Commission's View

- 3.54 The Commission states that interest on loan has been allowed to the Petitioner in accordance with provisions of Regulation 18 and Regulation 22 of the JKSERC Hydro Tariff Regulations, 2005/2011.

Swapping of Loans

- 3.55 Regulation 22(3) provides that utilities shall make efforts to swap loans as long as it results in net benefit to the utility. The stakeholders have requested the Commission to direct the Petitioner to provide details of steps taken to swap loan and provide details regarding benefits resulting from swapping of loans.

Petitioner's Response

- 3.56 The Petitioner has submitted that swapping of loans is not economically feasible for JKSPDC at this point owing to the unfavourable interest rate situation. The inflationary trend and consequent upward revision of basic interest rates by the RBI has been reflected by the lending institutions raising their prime lending rates.
- 3.57 For Baglihar HEP Stage I the total debt amounts to Rs 2253 Cr which accounts for more than 95% of the total debt of JKSPDC. The interest rate on this consortium lending that has been availed by JKSPDC is lower than the base PLR of various banks including J&K Bank and UBI.

- 3.58 Also the provisions of the common loan agreement allow imposition of 1% penalty to the borrower for foreclosure which adds to the cost of raising a new loan.

Commission's View

- 3.59 The Commission directs that the Petitioner should conduct a cost benefit analysis to ascertain if they would gain from swapping loans currently taken by them with loans that may have more favourable interest rates. The Petitioner should conduct this analysis taking into consideration any penal clause or cost that maybe levied on account of foreclosure of current loans.
- 3.60 The Petitioner should submit results of this analysis to the Commission and take adequate measures to swap current loans with loans with more favourable cost and terms of lending, if it is appropriate and beneficial to do so.

Computation of Depreciation

- 3.61 Stakeholders have stated that Regulation 23(1) of the JKSERC Hydro Generation Tariff, 2005 provides that utilities shall be allowed to charge depreciation on the historical cost of the asset. Regulation 23(1) provides that:

“The value for the purpose of depreciation shall be the historical cost of the asset.”

- 3.62 The stakeholders have further stated that historical cost of the asset is the net purchase cost of the asset. The state government had transferred all assets comprising the 10 old HEPs to JKSPDC vide order number PDD/AC/11/99 dated 29th October 1999. JKSPDC has not made any capital investment in these projects and the historical cost to the utility in respect of these HEPs is nil. Also, some projects for instance, USHP I, Ganderbal and Chenani-I have already exceeded their useful life of 35 years, thus no depreciation should be allowed to the Petitioner in respect of these 10 old HEPs.
- 3.63 Stakeholders have also pointed out that the Petitioner was directed by the Commission to provide an asset class-wise break-up of cost attributed to each of the projects for allowing depreciation. However, the Petitioner has not complied with this directive and has not submitted asset class-wise break-up for claiming depreciation for various projects.

Petitioner's Response

- 3.64 The Petitioner has submitted that the historical cost of a project is the cost incurred at the time of commissioning of the plant plus the additional capital cost incurred during the operation of the said HEP for maintaining the power house in working condition at the required efficiency. The utility has been incurring cost for overhauling, augmentation and modernization of the plants in the past few years since the date of commissioning. Such costs have not been capitalised. Owing to such expenses incurred, the life of the plant has already been extended but no depreciation benefit has been taken for such expenses. The effect of capitalization of this cost is reflected in the net replacement cost. These costs have been evaluated by an independent consultant and approved by the Commission. Therefore, the utility has claimed depreciation as per Regulations on this cost.
- 3.65 The Petitioner has further submitted that depreciation has been claimed as per Regulations and information about class wise break up of assets has been provided to the Commission in the petition submitted previously at the time of finalising the capital cost of projects. The depreciation at different applicable rates has been calculated and annexed with the petition.

Commission's View

- 3.66 The Commission states that depreciation and advance against depreciation have been allowed to the Petitioner in accordance with provisions of Regulation 23 and 24 of the JKSERC Hydro Generation Tariff, 2005.
- 3.67 The Commission further states that the Petitioner has submitted the class wise break up of assets duly certified by a Chartered Accountant and the same has been considered for the computation of depreciation.

Computation of Working Capital

- 3.68 Stakeholders have submitted that the Petitioner has not computed working capital as per Regulation 27 of the JKSERC Hydro Generation Tariff, 2005. As per generally accepted accounting principles, working capital equals current assets less current liabilities. Receivables and maintenance spares as constituents of working capital represents current assets while operation and management expenses as a constituent of working capital represents current liability for the purpose of calculation of working capital. O&M expenses are not incurred in advance but incurred first and paid over a period of time. The utility has, instead of reducing the amount of O&M expenses from the amount of current assets has added to it. The Commission is requested to apply prudence check and direct the utility to clarify and admit only the net amount of working capital.

Petitioner's Response

- 3.69 The Petitioner has submitted that working capital has been calculated strictly as per the norms specified in Regulation 27.

Commission's View

- 3.70 The Commission states that interest on working capital has been allowed in accordance with Regulation 27 of JKSERC Hydro Tariff Regulations, 2005/2011, the rate of interest on working capital has been taken as be the short-term Prime Lending Rate of Jammu and Kashmir Bank as on 1st April 2005 or on 1st April of the year in which the generating unit/ station is declared under commercial operation, whichever is later.

A4: DETERMINATION OF ARR AND TARIFF FOR 8 HEPS FOR FY 2011-12

- 4.1 The Petitioner filed a petition before the Commission for approval of annual revenue requirement and tariff petition for FY 2011-12 for Eight (8) Hydro Electric Projects including USHP II, Chenani III, Sewa III, Pahalgam, Igo – Marcellong, Baderwah, Marpochu, Haftal which together have a total installed capacity of 130.25 MW.
- 4.2 The Commission has approved the capital cost of these 8 HEP stations on the basis of the audited cost completion report submitted by the Petitioner. This has been considered in accordance with the Notification dated May 10, 2006 pursuant to the J&K State Electricity Regulatory Commission (Terms and Conditions for Determining Hydro Generation Tariff), 2005.
- 4.3 In compliance with the Directive 6 issued by the Commission in the Tariff Order for the year 2008-09, an independent consultant was appointed by the Petitioner for revalidation of design energy based upon the norms specified in the Hydro Generation Tariff Regulations, 2005. The report on validation of the design energy issued by the consultant was submitted to the Commission by the Petitioner.
- 4.4 The assessment of design energy for various plants was done in accordance with the Regulation 14 of Chapter – 1 of the J&K SERC (Terms and Conditions for Determining Hydro Generation Tariff) Regulations, 2005. Design Energy has been defined as the quantum of energy, which could be generated in a 90% dependable year with 95% installed capacity of the generating station in the above mentioned regulations. The Commission had approved such revalidation of design energy in the Tariff Order dated 30th April 2010.
- 4.5 The petition for approval of ARR and tariff for FY 2011-12 in respect of these HEPS has been filed in accordance with the JKSERC Hydro Generation Tariff Regulations, 2005. The components of tariff and the Commission's view on those assumptions have been detailed in this chapter.

Particulars of 8 HEPS

- 4.6 Table 50 provides particulars regarding the 8 HEPS in respect of which ARR and tariff for FY 2011-12 is being approved in this chapter. Particulars such as approved capital cost, installed capacity, design energy and date of commissioning of the 8 HEPS are summarised in the table below.

Table 50: Particulars regarding 8 HEPS

| Name of HEP | Capacity in MW | Total Project Cost (Rs Cr) | Design Energy (In MU) | Date of Commissioning |
|--------------|----------------|-------------------------------|--------------------------|--------------------------|
| USHP-II | 105.00 | 434.99 | 447.37 | June, 2002 |
| Chennani-III | 7.50 | 54.96 | 36.71 | June, 2003 |
| Sewa-III | 9.00 | 66.84 | 33.06 | June, 2003 |

| Name of HEP | Capacity in MW | Total Project Cost (Rs Cr) | Design Energy (In MU) | Date of Commissioning |
|----------------|----------------|-------------------------------|--------------------------|--------------------------|
| Pahalgam | 3.00 | 55.20 | 14.92 | June, 2005 |
| Igo-Mercellong | 3.00 | 49.42 | 15.88 | Aug; 2005 |
| Baderwah | 1.00 | 10.60 | 8.32 | May, 2005 |
| Marpachoo | 0.75 | 12.84 | 3.79 | 2006 |
| Haftal | 1.00 | 16.13 | 4.88 | 2006-07 |
| Total | 130.25 | 701.01 | | |

Interest on Loan

- 4.7 The Regulation 18(1) of the Hydro Generation Tariff Regulations, 2005 mandates that for the purpose of tariff determination the amount of equity shall be limited to 30% of the capital cost and the balance shall be considered as normative loan. Further the Regulation 18(2) mandates that the amount of debt and equity computed in accordance with provisions of Regulation 18(1) shall be used for calculating interest on loan, return on equity, advance against depreciation and foreign exchange rate variation.
- 4.8 In accordance with the above mentioned principle, the amount of normative loan to be considered for provision of interest shall be equal to 70% of the capital cost net off subsidy.
- 4.9 Under the provisions of the Regulation 22 of the J&K SERC (Terms & Conditions for determining of Hydro Generation Tariff) Regulations, 2005 dated September 23, 2005 for the purpose of calculation of interest on loan, the outstanding loan amount shall be worked out as the gross loan as per Regulation 18 (1) minus cumulative repayment as admitted by the Commission. Future repayments shall be worked out on normative basis.
- 4.10 The interest rate, term of loan, moratorium period and repayment schedule etc for the normative loans have been considered the same as those pertaining to the loans actually obtained for each project.
- 4.11 Details of interest allowed to the Petitioner are given in Table 51.

Table 51: Approved Interest on Loan for 8 HEPs for FY 2011-12

| Name of HEP | Amount (Rs in Cr) |
|----------------|----------------------|
| USHP-II | 1.66 |
| Chennani-III | 0.22 |
| Sewa-III | 0.26 |
| Pahalgam | 1.54 |
| Igo-Mercellong | 1.44 |
| Baderwah | 0.24 |

| Name of HEP | Amount (Rs in Cr) |
|--------------|----------------------|
| Marpachoo | 0.43 |
| Haftal | 0.54 |
| Total | 6.33 |

Depreciation including Advance against Depreciation

- 4.12 The Commission had issued Directive 8 in the Tariff Order for the year 2008-09, whereby, the Petitioner was required to submit a class wise break up of assets for the purpose of computing depreciation. The Petitioner has complied with this directive in the petition submitted for FY 2011-12 and has accordingly provided an asset class wise break-up of total amount capitalised.
- 4.13 Further, the Petitioner has also provided details regarding common costs that have been incurred on account of each of the 8 HEPs owing to preliminary costs, development of establishment, plantation and maintenance expenses among others. These expenses have been apportioned over the various classes of assets that comprise the gross block for each of the 8 HEPs and have been accordingly included in the total capitalised value of each class of assets.
- 4.14 Table 52 summarises the particulars regarding various class of assets, rate of depreciation and useful life provided by the Petitioner. Cost of land has been excluded from the total capitalisation value for each HEP for the purpose of computation of depreciation.

Table 52: Particulars regarding classification of assets for depreciation calculation

| Class of Assets | Useful Life (In Years) | Rate of Depreciation |
|-----------------|---------------------------|-------------------------|
| Land | Perpetual | 0% |
| Civil Works | 50 | 1.80% |
| Building | 50 | 1.80% |
| Power Plant | 35 | 2.57% |
| Switch Gears | 25 | 3.60% |
| Communication | 15 | 6% |

- 4.15 The Commission has considered the asset class wise break-up of total cost as submitted by the Petitioner. Further the class wise allocation of common costs incurred on account of each HEP has been included in arriving at the completion cost of each separate class of assets. The Commission has determined the depreciation and AAD in accordance with Regulation 23 of JKSERC Hydro Tariff Regulations, 2005/2011 and at the rates prescribed in appendix to the regulations. The Regulation 23 has been reproduced below:

- (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 straight-line method over the useful life of the asset and at the rates prescribed in Appendix to these regulations. The residual life of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the historical capital cost of the asset. 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 historical capital cost of the asset shall include additional capitalization on account of Foreign Exchange Rate Variation up to 31.3.2005 already allowed by the State Government/ Commission.*
- (3) *On repayment of entire loan, the remaining depreciable value shall be spread over the balance useful life of the asset.*
- 4.16 (4) *Depreciation shall be chargeable from the first year of operation. In case of operation of the asset for part of the year, depreciation shall be charged on pro-rata basis.”*
- 4.17 The land cost for the Chenani III HEP has been considered at Rs.0.30 Cr by the Petitioner in the Petition whereas the same in the Audited Completion Report for the 8 HEPs is shown as Rs.1.45 Cr for the project. However, the depreciation computed by the Petitioner for Chennani III has been done after considering the value of land at 1.45 Cr itself. The Commission has considered the cost of land as per the Audited Completion Report while arriving at the capital cost excluding land cost for the purpose of calculation of depreciation.
- 4.18 The Commission has determined Advance Against Depreciation (AAD) in accordance with the Regulation 24 of JKSERC Hydro Tariff Regulations, 2005/2011 and has been reproduced below:

“In addition to allowable depreciation, utility shall be entitled to an advance against depreciation, computed in the manner given hereunder:

AAD = Loan repayment amount as per Regulation 22 subject to a ceiling of 1/10th of loan amount as per regulation 18 minus depreciation as per schedule.

Provided that Advance Against Depreciation shall be permitted only if the cumulative repayment up to a particular year exceeds the cumulative depreciation up to that year:

Provided further that Advance Against Depreciation in a year shall be restricted to the extent of difference between cumulative repayment and cumulative depreciation up to that year.”

4.19 The amount of depreciation and AAD as approved by the Commission for FY 2011-12 is given in Table 53.

Table 53: Approved Depreciation and Advance against Depreciation for 8 HEPs for FY 2011-12

| Name of HEP | Depreciation Amount (Rs in Cr) | Advance against Depreciation (Rs in Cr) |
|----------------|--------------------------------|---|
| USHP-II | 10.21 | 20.24 |
| Chennani-III | 1.11 | 2.74 |
| Sewa-III | 1.39 | 3.29 |
| Pahalgam | 1.36 | 2.29 |
| Igo-Mercellong | 1.06 | 2.19 |
| Baderwah | 0.26 | 0.31 |
| Marpachoo | 0.29 | 0.49 |
| Haftal | 0.34 | 0.63 |
| Total | 16.01 | 32.19 |

Return on Equity

4.20 The Commission has determined return on equity at 14% as per Regulation 25 of JKSERC Hydro Tariff Regulations, 2005/2011. The return on equity has been determined at the equity base as determined in accordance with Regulation 18 of the above mentioned regulations.

4.21 Regulation 18 provides:

“(1) In case of all generating stations, debt-equity ratio as on the date of commercial operation shall be 70:30 for determination of tariff. Where equity employed is more than 30%, the amount of equity for determination of tariff shall be limited to 30% and the balance amount shall be considered as the normative loan

Provided that in case actual equity employed is less than 30%, the actual debt and equity shall be considered for determination of tariff.

(2) The debt and equity amounts arrived at in accordance with (1) above shall be used for calculating interest on loan, return on equity, Advance Against Depreciation and foreign Exchange Rate Variation.”

4.22 Regulation 25 provides:

“Return on equity shall be computed on the equity base determined in accordance with regulation 18 and shall be @ 14% per annum”

4.23 The return on equity as approved by Commission for 8 HEPs for FY 2011-12 is as

given in Table 54.

Table 54: Approved Return on Equity for 8 HEPs for FY 2011-12

| Name of HEP | Amount of Equity (Rs In Cr) | Return on Equity (Rs In Cr) |
|----------------|-----------------------------|-----------------------------|
| USHP-II | 130.50 | 18.27 |
| Chennani-III | 16.49 | 2.31 |
| Sewa-III | 20.05 | 2.81 |
| Pahalgam | 15.66 | 2.19 |
| Igo-Mercellong | 13.93 | 1.95 |
| Baderwah | 2.45 | 0.34 |
| Marpachoo | 3.34 | 0.47 |
| Haftal | 4.16 | 0.58 |
| Total | 206.58 | 28.92 |

Operation & Maintenance Expenses

- 4.24 The Commission has computed the O&M expenses as per Regulation 26(2) (b) of the Hydro Generation Tariff Regulations 2005 which is 1.5% of the completion cost of the 8 HEPs as provided in the Audited Completion Report.
- 4.25 This principle has been used to compute O&M costs of the plant in the year of commissioning. Thereafter, the same has been escalated @4% per annum to arrive at the O&M costs applicable for FY 2011-12.
- 4.26 The sub-clause (b) of Clause (2) of Regulation 26 is reproduced below:
- “(b) In case of the hydro electric generating stations declared under commercial operation on or after 1.4.2005, the base operation and maintenance expenses shall be fixed at 1.5% of the actual capital cost as admitted by the Commission, in the year of commissioning and shall be subject to an annual escalation of 4% per annum for the subsequent years.”*
- 4.27 The O&M expense approved by Commission for 8 HEPs for FY 2011-12 is given in Table 55.

Table 55: Approved Amount for O&M expenses for FY 2011-12 (Rs. Cr)

| Name of HEP | O&M Expenses (Rs In Cr) |
|--------------|-------------------------|
| USHP-II | 9.29 |
| Chennani-III | 1.13 |
| Sewa-III | 1.37 |

| Name of HEP | O&M Expenses (Rs In Cr) |
|----------------|----------------------------|
| Pahalgam | 1.05 |
| Igo-Mercellong | 0.94 |
| Baderwah | 0.20 |
| Marpachoo | 0.23 |
| Haftal | 0.29 |
| Total | 14.50 |

Interest on Working Capital

4.28 The Commission has determined the interest on working capital as per Regulation 27 of JKSERC Hydro Tariff Regulations, 2005/2011 which has been reproduced below.

“(1) Working Capital shall cover:

(a) Operation and Maintenance expenses for one month;

(b) Maintenance spares @1 % of the historical cost escalated @ 6% per annum from the date of commercial operation and

(c) Receivables equivalent to two months of fixed charges for sale of electricity calculated on normative capacity index.

(2) Rate of interest on working capital shall be the short-term Prime Lending Rate of Jammu and Kashmir Bank as on 1.4.2005 or on 1st April of the year in which the generating unit/station is declared under commercial operation, whichever is later. The interest on working capital shall be payable on normative basis notwithstanding that the utility has not taken working capital loan from any outside agency.”

4.29 The interest on working capital has been taken as 11% which is the PLR of J&K bank as on 1st April 2005. The working capital approved by the Commission for 8 HEPs and interest thereon is given in Table 56.

Table 56: Approved Amount for interest on working capital for FY 2011-12 (Rs. Cr)

| Name of HEP | Working Capital approved (Rs In Cr) | Interest on Working Capital (Rs In Cr) |
|----------------|--|---|
| USHP-II | 18.46 | 2.03 |
| Chennani-III | 2.27 | 0.25 |
| Sewa-III | 2.75 | 0.30 |
| Pahalgam | 2.32 | 0.26 |
| Igo-Mercellong | 2.08 | 0.23 |

| Name of HEP | Working Capital approved (Rs In Cr) | Interest on Working Capital (Rs In Cr) |
|--------------|-------------------------------------|--|
| Baderwah | 0.40 | 0.04 |
| Marpachoo | 0.52 | 0.06 |
| Haftal | 0.65 | 0.07 |
| Total | 29.45 | 3.24 |

Other Expenses/Charges

- 4.30 The Petitioner had made a submission to the Commission through Review Petition filed in May 2010 requesting the Commission to allow reimbursement and pass through of expenses amounting to Rs.88 Lac incurred on account of consultancy charges paid by the Petitioner. The Commission in its Review Order dated 9th November 2010 allowed the Petitioner to claim such consultancy charges and recover it through the annual revenue requirement claimed for FY 2011-12.
- 4.31 The Petitioner has accordingly included the sum of Rs.88 Lac approved by the Commission on account of consultancy charges. The Petitioner has allocated the total of this sum of Rs.88 Lac over 18 HEPs that were covered in the Tariff Order dated 30th April 2010. The total amount has been apportioned over these HEPs in proportion of their installed capacity; the allocated share in consultancy charges has then been included in determining the value of annual fixed charges approved for these plants.
- 4.32 The consultancy charge approved by the Commission for inclusion in annual fixed charge for each of the 8 HEPs is given in Table 57.

Table 57: Approved Amount for Consultancy Charges for FY 2011-12 (Rs. Cr)

| Name of HEP | Share in Consultancy Charges (Rs In Cr) |
|----------------|---|
| USHP-II | 0.30 |
| Chennani-III | 0.02 |
| Sewa-III | 0.03 |
| Pahalgam | 0.01 |
| Igo-Mercellong | 0.01 |
| Baderwah | 0.0029 |
| Marpachoo | 0.0022 |
| Haftal | 0.0029 |
| Total | 0.38 |

Annual Fixed Charges and Indicative Tariff for FY 2011-12

- 4.33 The Commission has approved the annual fixed charges proposed for 8 HEPs for FY 2011-12. The AFC has been calculated by considering the various components of tariff as described above. The indicative tariff approved for FY 2011-12 has been computed by taking into account saleable energy of various HEPs.
- 4.34 Table 58 provides the approved component wise break-up of total annual fixed charges and indicative tariff approved for 8 HEPs for FY 2011-12.

Table 58: Approved component wise break up of AFC for 8 HEPs for FY 2011-12 (Rs Cr)

| Name of HEP | Interest on Loan | Depn | AAD | Return on Equity | O&M Expenses | Interest on Working Capital | Consultancy Charges | Income tax | AFC | Design Energy (In MU) | Indicative Tariff (Rs per kWh) |
|----------------|------------------|-------|-------|------------------|--------------|-----------------------------|---------------------|------------|-------|--------------------------|-----------------------------------|
| USHP-II | 1.66 | 10.21 | 20.24 | 18.27 | 9.29 | 2.03 | 0.30 | 0.00 | 62.00 | 447.37 | 1.40 |
| Chennani-III | 0.22 | 1.11 | 2.74 | 2.31 | 1.13 | 0.25 | 0.02 | 0.00 | 7.77 | 36.71 | 2.14 |
| Sewa-III | 0.26 | 1.39 | 3.29 | 2.81 | 1.37 | 0.30 | 0.03 | 0.00 | 9.45 | 33.06 | 2.89 |
| Pahalgam | 1.54 | 1.36 | 2.29 | 2.19 | 1.05 | 0.26 | 0.01 | 0.00 | 8.70 | 14.92 | 5.89 |
| Igo-Mercellong | 1.44 | 1.06 | 2.19 | 1.95 | 0.94 | 0.23 | 0.01 | 0.00 | 7.82 | 15.88 | 4.97 |
| Baderwah | 0.24 | 0.26 | 0.31 | 0.34 | 0.20 | 0.04 | 0.0029 | 0.00 | 1.40 | 8.32 | 1.70 |
| Marpachoo | 0.43 | 0.29 | 0.49 | 0.47 | 0.23 | 0.06 | 0.0022 | 0.00 | 1.97 | 3.79 | 5.25 |
| Haftal | 0.54 | 0.34 | 0.63 | 0.58 | 0.29 | 0.07 | 0.0029 | 0.00 | 2.46 | 4.88 | 5.09 |

A5: DETERMINATION OF ARR AND TARIFF FOR 10 HEPS FOR FY 2011-12

- 5.1 The Petitioner filed a petition before the Commission for approval of annual revenue requirement and tariff petition for FY 2011-12 for Ten (10) old Hydro Electric Projects including USHP I, Lower Jhelum, Ganderbal, Chenani I, Karnah, Iqbal Bridge, Bazgo, Sumoor, Hunder, Chenani II which together have a total installed capacity of 174.45 MW.
- 5.2 The Commission in the Tariff Order for FY 2008-09 had directed the Petitioner to apply for approval of tariff for these 10 old HEPS as per the Hydro Generation Tariff Regulations, 2005.
- 5.3 Based on the Directive issued by the Commission in the previous Order, the Petitioner JKSPDC had engaged an independent consultant / registered valuers to carry out a Physical Verification and Revaluation of Fixed Assets of the 10 HEPS. The consultants engaged by the Petitioner submitted a report on the Physical Verification and Revaluation of Fixed Assets as on March 31, 2009 with respect to the 10 HEP projects.
- 5.4 The Commission considered the project cost for the 10 HEPS as given in the Physical Verification and Revaluation of Fixed Assets report issued by the consultants of the JKSPDC. Tariff determination for the 10 HEPS for FY 2009-10 and FY 2010-11 was done by taking into account the project costs detailed in the said report.
- 5.5 In compliance with the Directive 6 issued by the Commission in the Tariff Order for the year 2008-09, an independent consultant was appointed by the Petitioner for revalidation of design energy for each of the 10 old HEPS based upon the norms specified in the Hydro Generation Tariff Regulations, 2005. The report on validation of the design energy issued by the consultant was submitted to the Commission by the Petitioner.
- 5.6 The assessment of design energy for various plants was done in accordance with the Regulation 14 of Chapter – 1 of the J&K SERC (Terms and Conditions for Determining Hydro Generation Tariff) Regulations, 2005. Design Energy has been defined as the quantum of energy, which could be generated in a 90% dependable year with 95% installed capacity of the generating station in the above mentioned regulations. The Commission had approved such revalidation of design energy in the Tariff Order dated 30th April 2010.
- 5.7 The petition for approval of ARR and tariff for FY 2011-12 in respect of these 10 old HEPS has been filed in accordance with the JKSERC Hydro Generation Tariff Regulations, 2005. The components of tariff and the Commission's view on those assumptions have been detailed in this chapter.

Particulars of 10 old HEPs

5.8 Table 59 provides particulars regarding the 10 old HEPs in respect of which ARR and tariff for FY 2011-12 is being approved in this chapter. Particulars such as approved capital cost, installed capacity, design energy and date of commissioning of the 10 HEPs are summarised in the table below.

Table 59: Particulars regarding 10 old HEPs

| Name of HEP | Capacity (In MW) | Total Project Cost (Rs Cr) | Design Energy (In MU) | Date of Commissioning |
|--------------|---------------------|-------------------------------|--------------------------|---------------------------------|
| Upper Sind-I | 22.6 | 46.27 | 106.62 | Dec, 1973, July 1974 |
| Lower Jhelum | 105 | 421.25 | 609.43 | Feb, 1978, Jan. 1979, Nov. 1979 |
| Ganderbal | 15 | 15.95 | 90.15 | Feb, 1955,1961 |
| Chenani-I | 23.3 | 78.49 | 110.02 | 1971,1975 |
| Karnah | 2 | 13.54 | 11.36 | 1991, 1997 |
| Iqbal Bridge | 3.75 | 24.63 | 21.23 | Oct, 1995, 1996 & 1996 |
| Bazgo | 0.30 | 2.16 | 1.09 | 1994 |
| Sumoor | 0.10 | 0.70 | 0.45 | 1993 |
| Hunder | 0.4 | 2.86 | 1.77 | 1995 |
| Chenani-II | 2 | 11.73 | 12.00 | 1996 |

Interest on Loan

5.9 Interest on Loan has not been claimed by the Petitioner.

Depreciation including Advance against Depreciation

5.10 The Commission had issued Directive 8 in the Tariff Order for the year 2008-09, whereby, the Petitioner was required to submit a class wise break up of assets for the purpose of computing depreciation. The Petitioner has complied with this directive in the petition submitted for FY 2011-12 and has accordingly provided an asset class wise break-up of total amount capitalised.

- 5.11 Table 60 summarises the particulars regarding various class of assets, rate of depreciation and useful life provided by the Petitioner. Cost of land has been excluded from the total capitalisation value for each HEP for the purpose of computation of depreciation.

Table 60: Particulars regarding classification of assets for depreciation calculation

| Class of Assets | Useful Life (In Years) | Rate of Depreciation |
|----------------------------|------------------------|----------------------|
| Land | Perpetual | 0% |
| Civil Works | 50 | 1.80% |
| Electrical & Mechanical | 35 | 2.57% |
| Power Plant & Transmission | 35 | 2.57% |
| Switch Yard | 25 | 3.60% |

- 5.12 The Commission has considered the asset class wise break-up of total cost as submitted by the Petitioner. The Commission has determined the depreciation in accordance with Regulation 23 of JKSERC Hydro Tariff Regulations, 2005/2011 and at the rates prescribed in appendix to the regulations. The Regulation 23 has been reproduced below:

- “(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 straight-line method over the useful life of the asset and at the rates prescribed in Appendix to these regulations. The residual life of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the historical capital cost of the asset. 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 historical capital cost of the asset shall include additional capitalization on account of Foreign Exchange Rate Variation up to 31.3.2005 already allowed by the State Government/ Commission.*
- (3) *On repayment of entire loan, the remaining depreciable value shall be spread over the balance useful life of the asset.*
- 5.13 (4) *Depreciation shall be chargeable from the first year of operation. In case of operation of the asset for part of the year, depreciation shall be charged on pro-rata basis.”*

- 5.14 The Petitioner has claimed depreciation for all classes of assets without taking into consideration the useful life of some of these assets. These HEPs are very old plants and some assets deployed at these HEPs have exceeded their useful life. The Commission has computed depreciation to be allowed for the 10 old HEPs after taking into consideration only those assets which remain depreciable in the current FY 2011-12. This useful life and test of whether or not a particular class of assets deployed at particular HEP remains depreciable or not has been determined with reference to the date of commissioning of the HEP.
- 5.15 Advance against depreciation has not been claimed by the Petitioner.
- 5.16 The amount of depreciation approved by the Commission for FY 2011-12 is given in Table 61.

Table 61: Approved Depreciation for 10 old HEPs for FY 2011-12

| Name of HEP | Depreciation Amount (Rs Cr) |
|--------------|-----------------------------|
| Upper Sind-I | 0.40 |
| Lower Jhelum | 9.00 |
| Ganderbal | 0.00 |
| Chenani-I | 1.15 |
| Karnah | 0.29 |
| Iqbal Bridge | 0.55 |
| Bazgo | 0.05 |
| Sumoor | 0.02 |
| Hunder | 0.06 |
| Chenani-II | 0.25 |
| Total | 11.77 |

Return on Equity

- 5.17 The Commission has determined return on equity at 14% as per Regulation 25 of JKSERC Hydro Tariff Regulations, 2005/2011. The return on equity has been determined at the equity base as determined in accordance with Regulation 18 of the above mentioned regulations.
- 5.18 Regulation 18 provides:

“(1) In case of all generating stations, debt-equity ratio as on the date of commercial operation shall be 70:30 for determination of tariff. Where equity employed is more than 30%, the amount of equity for determination of tariff shall be limited to 30% and the balance amount shall be considered as the normative loan

Provided that in case actual equity employed is less than 30%, the actual debt and equity shall be considered for determination of tariff.

(2) The debt and equity amounts arrived at in accordance with (1) above shall be used for calculating interest on loan, return on equity, Advance Against Depreciation and foreign Exchange Rate Variation.”

5.19 Regulation 25 provides:

“Return on equity shall be computed on the equity base determined in accordance with regulation 18 and shall be @ 14% per annum”

5.20 The return on equity as approved by Commission for 10 old HEPs for FY 2011-12 is as given in Table 62.

Table 62: Approved Return on Equity for 10 HEPs for FY 2011-12

| Name of HEP | Amount of Equity (Rs Cr) | Return on Equity (Rs Cr) |
|--------------|-----------------------------|-----------------------------|
| Upper Sind-I | 13.88 | 1.94 |
| Lower Jhelum | 126.37 | 17.69 |
| Ganderbal | 4.78 | 0.67 |
| Chenani-I | 23.55 | 3.30 |
| Karnah | 4.06 | 0.57 |
| Iqbal Bridge | 7.39 | 1.03 |
| Bazgo | 0.65 | 0.09 |
| Sumoor | 0.21 | 0.03 |
| Hunder | 0.86 | 0.12 |
| Chenani-II | 3.52 | 0.49 |
| Total | 185.27 | 25.94 |

Operation & Maintenance Expenses

5.21 In its Tariff Order dated 30th April, 2010, the Commission had opined that since these 10 HEPs are very old plants and have been in operation for more than 5 years, the Petitioner should claim O&M expenses based on actual expenses incurred under the provisions of the Regulation 26(1) of the J&K SERC (Terms & Conditions for determining of Hydro Generation Tariff) Regulations, 2005. However, upto then the Petitioner had not claimed O&M expenses on the basis of actual expenses due to absence of proper records evidencing the same.

5.22 The Commission through the Tariff Order dated 30th April 2010 directed the Petitioner to maintain records of actual O&M expenses being incurred on each of the HEPs and submit the same in its ARR & Tariff Petitions going forward.

5.23 Meanwhile the Commission had decided to allow O&M costs to the Petitioner for the

FY 2009-10 and 2010-11 as per the provisions under Regulation 26(2) of the J&K SERC (Terms & Conditions for determining of Hydro Generation Tariff) Regulations, 2005 for the plants which have installed capacity of above 25 MW. As regards plants that had installed capacity lower than 25 MW, the below mentioned principal was adopted:

O&M cost based on the minimum of the following two parameters was allowed for plants whose installed capacity is below 25 MW:

- (a) O&M costs computed at 1.5% of capital cost as per Regulation 26(2) of the J&K SERC (Terms & Conditions for determining of Hydro Generation Tariff) Regulations, 2005.

Or

- (b) 3% of the capital cost computed at a capital cost of Rs.5.5 Crs per MW under the Clause 2(i) of the Notification dated December 7, 2005 pursuant to Regulation 2(4) of the Regulations titled (Terms & Conditions for Determining of Hydro Generation Tariff) Regulations 2005.

5.24 Out of the 10 old HEPs, all the plants with the exception of Lower Jhelum have a capacity lower than 25 MW. Lower Jhelum HEP has an installed capacity of 105 MW.

5.25 The Petitioner has submitted actual O&M expenses incurred for the FY 2009-10 and has requested that the O&M expenses should be approved as per actual for the FY 2009-10 and should be approved after escalating at the rate of 4% year on year for FY 2010-11 and FY 2011-12. The Petitioner has further submitted that the difference between:

- (a) the actual O&M expenses incurred for FY 2009-10 and that subsequently escalated for FY 2010-11 as per the submission made in the petition filed for FY 2011-12

And

- (b) O&M expenses previously approved for FY 2009-10 and FY 2010-11 as per normative calculations on the basis of capital cost

should be allowed to the Petitioner.

5.26 The Commission has approved O&M expenses to the Petitioner for FY 2011-12 in line with principal adopted for the 10 old HEPs in the previous Tariff Orders of FY 2009-10 and 2010-11. The principal followed in this regard has been described in para 5.23.

- 5.27 The O&M expense approved by Commission for 10 HEPs for FY 2011-12 is given in Table 63.

Table 63: Approved Amount for O&M expenses for FY 2011-12

| Name of HEP | O&M Expenses (Rs Cr) |
|--------------|-------------------------|
| Upper Sind-I | 0.78 |
| Lower Jhelum | 7.11 |
| Ganderbal | 0.27 |
| Chenani-I | 1.32 |
| Karnah | 0.23 |
| Iqbal Bridge | 0.42 |
| Bazgo | 0.04 |
| Sumoor | 0.01 |
| Hunder | 0.05 |
| Chenani-II | 0.20 |
| Total | 10.42 |

Interest on Working Capital

- 5.28 The Commission has determined the interest on working capital as per Regulation 27 of JKSERC Hydro Tariff Regulations, 2005/2011 which has been reproduced below.

“(1) *Working Capital shall cover:*

(a) *Operation and Maintenance expenses for one month;*

(b) *Maintenance spares @1 % of the historical cost escalated @ 6% per annum from the date of commercial operation and*

(c) *Receivables equivalent to two months of fixed charges for sale of electricity calculated on normative capacity index.*

(2) *Rate of interest on working capital shall be the short-term Prime Lending Rate of Jammu and Kashmir Bank as on 1.4.2005 or on 1st April of the year in which the generating unit/station is declared under commercial operation, whichever is later. The interest on working capital shall be payable on normative basis notwithstanding that the utility has not taken working capital loan from any outside agency.”*

- 5.29 The interest on working capital has been taken as 11% which is the PLR of J&K bank as on 1st April 2005. The working capital approved by the Commission for 10 HEPs and interest thereon is given in Table 64.

Table 64: Approved Amount for Interest on Working Capital for FY 2011-12

| Name of HEP | Working Capital (Rs Cr) | Interest on Working Capital (Rs Cr) |
|--------------|----------------------------|---|
| Upper Sind-I | 1.17 | 0.13 |
| Lower Jhelum | 11.50 | 1.27 |
| Ganderbal | 0.38 | 0.04 |
| Chenani-I | 2.06 | 0.23 |
| Karnah | 0.37 | 0.04 |
| Iqbal Bridge | 0.68 | 0.07 |
| Bazgo | 0.06 | 0.01 |
| Sumoor | 0.02 | 0.0021 |
| Hunder | 0.08 | 0.01 |
| Chenani-II | 0.32 | 0.04 |
| Total | 16.64 | 1.83 |

Other Expenses/Charges

- 5.30 The Petitioner had made a submission to the Commission through Review Petition filed in May 2010 requesting the Commission to allow reimbursement and pass through of expenses amounting to Rs.88 Lac incurred on account of consultancy charges paid by the Petitioner. The Commission in its Review Order dated 9th November 2010 allowed the Petitioner to claim such consultancy charges and recover it through the annual revenue requirement claimed for FY 2011-12.
- 5.31 The Petitioner has accordingly included the sum of Rs.88 Lac approved by the Commission on account of consultancy charges. The Petitioner has allocated the total of this sum of Rs.88 Lac over 18 HEPs that were covered in the Tariff Order dated 30th April 2010. The total amount has been apportioned over these HEPs in proportion of their installed capacity; the allocated share in consultancy charges has then been included in determining the value of annual fixed charges approved for these plants.
- 5.32 The consultancy charge approved by the Commission for inclusion in annual fixed charge for each of the 10 old HEPs is given in Table 65.

Table 65: Approved Amount for Consultancy Charges for FY 2011-12

| Name of HEP | Consultancy Charges Proportioned (Rs Cr) |
|--------------|--|
| Upper Sind-I | 0.0653 |
| Lower Jhelum | 0.3032 |
| Ganderbal | 0.0433 |
| Chenani-I | 0.0673 |
| Karnah | 0.0058 |

| Name of HEP | Consultancy Charges Proportioned (Rs Cr) |
|--------------|--|
| Iqbal Bridge | 0.0108 |
| Bazgo | 0.0009 |
| Sumoor | 0.0003 |
| Hunder | 0.0012 |
| Chenani-II | 0.0058 |
| Total | 0.5039 |

Annual Fixed Charges and Indicative Tariff for 10 HEPs for FY 2011-12

5.33 The Commission has approved the annual fixed charges for 10 old HEPs for FY 2011-12. The AFC has been calculated by considering the various components of tariff as described above. The indicative tariff approved in respect of these HEPs for FY 2011-12 has been computed by taking into account saleable energy of various HEPs.

5.34 Table 66 provides the component wise break-up of total annual fixed charges approved and indicative tariff approved by the Commission for 10 old HEPs.

Table 66: Approved component wise break up of AFC for FY 2011-12 (Rs Cr)

| Name of HEP | Interest on Loan | Depn | AAD | Return on Equity | O&M Expenses | Interest on Working Capital | Consultancy Charges | Income tax | AFC | Design Energy (In MU) | Indicative Tariff (Rs per kWh) |
|--------------|------------------|------|------|------------------|--------------|-----------------------------|---------------------|------------|-------|-----------------------|--------------------------------|
| Upper Sind-I | 0.00 | 0.40 | 0.00 | 1.94 | 0.78 | 0.13 | 0.0653 | 0.00 | 3.32 | 106.62 | 0.32 |
| Lower Jhelum | 0.00 | 9.00 | 0.00 | 17.69 | 7.11 | 1.27 | 0.3032 | 0.00 | 35.37 | 609.43 | 0.59 |
| Ganderbal | 0.00 | 0.00 | 0.00 | 0.67 | 0.27 | 0.04 | 0.0433 | 0.00 | 1.02 | 90.15 | 0.11 |
| Chenani-I | 0.00 | 1.15 | 0.00 | 3.30 | 1.32 | 0.23 | 0.0673 | 0.00 | 6.07 | 110.02 | 0.56 |
| Karnah | 0.00 | 0.29 | 0.00 | 0.57 | 0.23 | 0.04 | 0.0058 | 0.00 | 1.14 | 11.36 | 1.01 |
| Iqbal Bridge | 0.00 | 0.55 | 0.00 | 1.03 | 0.42 | 0.07 | 0.0108 | 0.00 | 2.09 | 21.23 | 0.99 |
| Bazgo | 0.00 | 0.05 | 0.00 | 0.09 | 0.04 | 0.01 | 0.0009 | 0.00 | 0.18 | 1.09 | 1.69 |
| Sumoor | 0.00 | 0.02 | 0.00 | 0.03 | 0.01 | 0.0021 | 0.0003 | 0.00 | 0.06 | 0.45 | 1.32 |
| Hunder | 0.00 | 0.06 | 0.00 | 0.12 | 0.05 | 0.01 | 0.0012 | 0.00 | 0.24 | 1.77 | 1.37 |
| Chenani-II | 0.00 | 0.25 | 0.00 | 0.49 | 0.20 | 0.04 | 0.0058 | 0.00 | 0.98 | 12.00 | 0.82 |

A6: DETERMINATION OF ARR AND TARIFF FOR BAGLIHAR HEP STAGE I FOR FY 2011-12

- 6.1 The Petitioner has filed a petition before the Commission for approval of annual revenue requirement and tariff petition for FY 2011-12 for Baglihar HEP Stage I project which includes Baglihar Hydro Electric Project [Baglihar-Hydro] and a 68km long 400 kV double circuit transmission line from Baglihar to Kishenpur and two bays at 400 kV Kishenpur sub-station of PGCIL [Baglihar-Transmission System] on 28th February 2011.
- 6.2 The Commission, vide order number JKSERC/04 of 2010 dated April 30, 2010 issued Tariff Order on ARR and determination of generation tariffs for FY 2009-10 and FY 2010-11 for 18 HEPs owned and operated by the JKSPDC excluding Baglihar HEP which had been commissioned on April 1, 2009. The Baglihar project consists of a Hydro Generating Station with an installed capacity 450 MW and a 400kV Transmission Line.
- 6.3 The Commission had taken a decision to determine the generation tariff for Baglihar HEP separately and not include it in the tariff determination process for other 18 generating stations owned and operated by JKSPDC. The Commission had directed the Petitioner to file a separate petition for the Baglihar HEP through Tariff Order number JKSERC/04 of 2010 dated April 30, 2010.
- 6.4 While passing tariff order dated April 30, 2010, tariff for sale of power generated by the Baglihar Hydro project was provisionally allowed at the rate of Rs.3.54 per unit for FY 2009-10 and 2010-11. This was in consonance with the rate allowed in the PPA executed between JKSPDC and JKPPD for the year 2009-10. However, the rate mentioned in the PPA for FY 2010-11 is Rs.3.71 per unit and the Commission through its Review Order Number JKSERC/25/2010 9th November 2010 agreed to allow provisional charging of tariff in accordance with the PPA till such time the tariff order for the Baglihar HEP Stage I is approved by the Commission. The provisional tariff shall be revised on approval of tariff by the Commission with retrospective effect from the date of commissioning of the plan.
- 6.5 The Commission had further reiterated that the Petitioner shall submit audited DPR for Baglihar HEP along with the tariff petition, the capital cost for the Baglihar HEP shall only be allowed after due prudence check by the Commission.
- 6.6 The Petitioner was also directed to submit details and other documents in support of the capital cost claimed by them for conducting a detailed prudence check of the capital cost for the Baglihar HEP before allowing the same in the tariff.
- 6.7 The Petitioner filed a combined Petition for the year determination of capital cost of the project and approval of ARR and tariff petition for the years 2009-10 and 2010-11 for both the hydro generation station and the transmission system on December 27, 2010.

- 6.8 The Commission conducted a detailed prudence check on the submissions made by the Petitioner as regards capital cost of the Baglihar Hydro Project and Baglihar Transmission System. The Commission has provisionally approved the capital cost of the project and determined tariff for FY 2009-10 and 2010-11 in its Tariff Order number JKSERC/6 of 2011 issued on 16th June 2011. The provisionally approved capital cost net of revenue from infirm power and bifurcated for Baglihar Hydro and Baglihar Transmission System is given in the below Table 67.

Table 67: Provisionally Approved Capital Cost (Rs Cr)

| Description | FY 2009-10 | | | FY 2010-11 | | |
|--------------------------------|----------------|----------------|---------------|----------------|----------------|---------------|
| | HEP Stage-I | Hydro | Trans System | HEP Stage-I | Hydro | Trans System |
| Total cost excl IDC +FC | 4776.21 | 4626.64 | 149.57 | 5008.09 | 4858.52 | 149.57 |
| IDC +FC | 640.36 | 621.12 | 19.24 | 640.36 | 621.12 | 19.24 |
| Total cost incl IDC +FC | 5416.57 | 5247.76 | 168.81 | 5648.45 | 5479.64 | 168.81 |
| Less: Infirm power | 232.57 | 225.58 | 6.99 | 232.57 | 225.58 | 6.99 |
| Net Project Cost | 5184.00 | 5022.18 | 161.82 | 5415.88 | 5254.06 | 161.82 |

- 6.9 Meanwhile the Petitioner filed a separate tariff petition number JKSERC/27/2011 before the Commission on 28th February 2011 for determination of ARR and tariff for the year 2011-12 in respect of 19 HEPs and Baglihar transmission system.
- 6.10 The petition for approval of ARR and tariff for FY 2011-12 in respect of these Baglihar HEP Project Stage I has been filed in accordance with the JKSERC Hydro Generation Tariff Regulations, 2005. The components of tariff and the Commission's view on those assumptions have been detailed in this chapter.
- 6.11 The Petitioner has submitted that the petition for approval of tariff for the Baglihar Transmission System has been filed in accordance with the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 as the transmission tariff regulation for the Jammu & Kashmir have not be notified by the Commission. The components of tariff and the Commission's view on those assumptions have been detailed in this chapter

Particulars of Baglihar HEP Stage I

- 6.12 Table 68 provides particulars regarding the Baglihar HEP Stage I in respect of which ARR and tariff for FY 2011-12 is being approved in this chapter. Particulars such as approved capital cost, installed capacity, design energy and date of commissioning of the project are summarised in Table 68.

Table 68: Particulars regarding Baglihar HEP Stage I

| Name of HEP | Particulars | Total Project Cost Including IDC and FC (Rs Cr) | Design Energy (In MU) | Date of Commissioning |
|-------------|-------------|---|-----------------------|-----------------------|
|-------------|-------------|---|-----------------------|-----------------------|

| Name of HEP | Particulars | Total Project Cost Including IDC and FC (Rs Cr) | Design Energy (In MU) | Date of Commissioning |
|------------------------------|------------------------------------|---|-----------------------|----------------------------|
| Baglihar Hydro | 450 MW Installed Capacity | 5479.64 | 2536.07 | 1 st April 2009 |
| Baglihar Transmission System | 68 km 400kV Double Circuit Line | 168.81 | 2536.07 | 1 st April 2009 |

Interest on Loan

Baglihar Hydro Project

- 6.13 As per Regulation 22 clause (1) of JKSERC Hydro Tariff Regulations, 2005/2011, the interest on loan capital shall be computed loan-wise including normative loans as determined as per Regulation 18.
- 6.14 The Commission has calculated the interest on loans by considering the interest rates as charged by respective banks on respective tranches of loan drawdown taking in to account the interest resets, if any, as submitted by the Petitioner.
- 6.15 The Commission has considered the actual repayment done by the Petitioner for calculation of interest on loans and advance against depreciation. The Petitioner has submitted that they have made a repayment of Rs.327.88 Cr during the year including depreciation and advance against depreciation.
- 6.16 The interest rate applied on the normative loan is the weighted interest rate applicable for FY 2011-12 considering all loans except state plan assistance which is an interest free loan. The weighted rate of interest for normative loan is 11.03% for FY 2011-12.

Baglihar Transmission System

- 6.17 The Commission has approved interest on loan in accordance with Regulation 16 of CERC (Terms and Conditions of Tariff) Regulations, 2009. Regulation 16 states that:

“(1) The loans arrived at in the manner indicated in regulation 12 shall be considered as gross normative loan for calculation of interest on loan.

(2) The normative loan outstanding as on 1.4.2009 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2009 from the gross normative loan.

(3) The repayment for the year of the tariff period 2009-14 shall be deemed to be equal to the depreciation allowed for that year:

(4) Notwithstanding any moratorium period availed by the generating company or the transmission licensee, as the case may be the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the annual depreciation allowed,

(5) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio at the beginning of each year applicable to the project.

Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered.

(6) The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.

- 6.18 The Commission has considered the actual repayment done by the Petitioner for calculation of interest on loans and advance against depreciation. The Petitioner has submitted that they have made a repayment of Rs.10.09 Cr during the year including depreciation and advance against depreciation.
- 6.19 The interest rate applied on the normative loan is the weighted interest rate applicable for FY 2011-12 considering all loans except state plan assistance which is an interest free loan. The weighted rate of interest for normative loan is 11.03% for FY 2011-12.
- 6.20 Table 69 provides the amount of interest on loan approved by the Commission for FY 2011-12 allocated proportionately between Baglihar Hydro and Baglihar Transmission Line.

Table 69: Approved Interest on Loan for FY 2011-12

| Banks/ FIs | FY 2011-12 | | | |
|-------------|------------|---------------|----------------|-------|
| | Open | Repay ment | Closing Bal | Int |
| PFC | 718.25 | 84.50 | 633.75 | 72.00 |
| REC | 452.00 | 56.50 | 395.50 | 49.32 |
| HUDCO | 255.00 | 30.00 | 225.00 | 25.53 |
| CBI | 31.45 | 3.70 | 27.75 | 3.08 |
| UBI | 63.88 | 7.30 | 56.58 | 8.05 |
| Canara Bank | 62.05 | 7.30 | 54.75 | 7.80 |
| J&K Bank | 306.00 | 36.00 | 270.00 | 30.95 |

| Banks/ FIs | FY 2011-12 | | | |
|--|------------|-----------|-------------|--------|
| | Open | Repayment | Closing Bal | Int |
| ACA Loan | 42.00 | 0.00 | 42.00 | 3.78 |
| SPA | 167.50 | 167.50 | 0.00 | 0.00 |
| Normative Loan | 353.64 | 39.29 | 314.35 | 36.47 |
| Total | 2451.77 | 432.09 | 2019.67 | 236.98 |
| Allocation to Baglihar Hydro | 97.01% | | | |
| Interest on Loan – proportionate for Baglihar Hydro | 2378.56 | 419.19 | 1959.37 | 229.90 |
| Allocation to Baglihar Transmission System | 2.99% | | | |
| Interest on Loan – proportionate for Baglihar Transmission System | 73.21 | 12.52 | 58.51 | 6.86 |

Depreciation including Advance against Depreciation

Baglihar Hydro Project

6.21 The Commission has determined the depreciation and AAD in accordance with Regulation 23 of JKSERC Hydro Tariff Regulations, 2005/2011 and at the rates prescribed in appendix to the regulations. The Regulation 23 has been reproduced below:

- “(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 straight-line method over the useful life of the asset and at the rates prescribed in Appendix to these regulations. The residual life of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the historical capital cost of the asset. 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 historical capital cost of the asset shall include additional capitalization on account of Foreign Exchange Rate Variation up to 31.3.2005 already allowed by the State Government/ Commission.*
- “(3) *On repayment of entire loan, the remaining depreciable value shall be spread over the balance useful life of the asset.*
- “(4) *Depreciation shall be chargeable from the first year of operation. In case of operation of the asset for part of the year, depreciation shall be charged on*

pro-rata basis.”

- 6.22 The Commission has allowed depreciation at the specified rates on the average value of gross fixed assets (GFA) for each class of assets. For this purpose, the Commission has considered the opening value of each individual class of assets as that approved in the Tariff Order dated XX June 2011 for FY 2009-10 and 2010-11. The closing balance of GFA of assets as on 31st March 2011 has been taken as the opening balance of GFA for the FY 2011-12. The submissions made by the Petitioner as regards additional capitalisation have been considered for the year 2011-12 and have been used to arrive at the closing GFA of FY 2011-12. The specified rates of depreciation have been applied to the average of such opening and closing GFA to arrive at the depreciation allowable for the FY 2011-12.
- 6.23 The Petitioner has however claimed depreciation on the closing GFA for FY 2011-12. The Commission has allowed depreciation on the average of opening and closing GFA balance for FY 2011-12.
- 6.24 The Commission has allowed AAD to the Petitioner in accordance with Regulation 24 of JKSERC Hydro Tariff Regulations, 2005/2011 by taking in to account the loan repayment and the depreciation allowed to the Petitioner during the year.

Baglihar Transmission System

- 6.25 The Commission has allowed depreciation to the Petitioner for FY 2011-12 in accordance with Regulation 17 of CERC (Terms and Conditions of Tariff) Regulations, 2009. Regulation 17 states that:

“(1) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission.

(2) The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset.

(4) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in Appendix-III to these regulations for the assets of the generating station and transmission system:

Provided that, the remaining depreciable value as on 31st March of the year closing after a period of 12 years from date of commercial operation shall be spread over the balance useful life of the assets.

(5) In case of the existing projects, the balance depreciable value as on 1.4.2009 shall be worked out by deducting 3[the cumulative depreciation including Advance against Depreciation] as admitted by the Commission upto 31.3.2009 from the gross depreciable value of the assets.

(6) Depreciation shall be chargeable from the first year of commercial operation. In case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis.”

- 6.26 The Commission has determined the depreciation for FY 2011-12 on the base cost approved which is Rs. 144.13 Cr. This cost has been determined after reducing from the project cost, the value of grants received and revenue generated from sale of infirm power.
- 6.27 The Commission has allowed depreciation at the specified rates on the average value of gross fixed assets (GFA) of transmission assets. For this purpose, the Commission has considered the opening value of transmission assets as that approved in the Tariff Order dated 16th June 2011 for FY 2009-10 and 2010-11. The closing balance of GFA of assets as on 31st March 2011 has been taken as the opening balance of GFA for the FY 2011-12. There is no additional capitalisation as regards the transmission assets as per the submissions made by the Petitioner. The specified rates of depreciation have been applied to the average of such opening and closing GFA (which is the same in this case) to arrive at the depreciation allowable for the FY 2011-12.
- 6.28 Depreciation has been calculated on a straight line basis at the rate of 5.28% per annum. 5.28% per annum is the rate specified in Appendix III to the CERC Tariff Regulations, 2009, for charging depreciation on transmission system assets.
- 6.29 CERC Tariff Regulations, 2009, do not allow for advance against depreciation; hence the Commission has not approved any advance against depreciation for the transmission system.
- 6.30 Table 70 summarises the computation of depreciation allowed to the Petitioner for FY 2011-12 in respect of Baglihar Hydro and Baglihar Transmission System. Table 71 summarises the computation of advance against depreciation allowed to the Petitioner for FY 2011-12 in respect of Baglihar Hydro.

Table 70: Approved Depreciation for FY 2011-12

| Name | Depreciation Amount (Rs Cr) |
|-----------------------|-----------------------------|
| Baglihar Hydro | 109.67 |
| Baglihar Transmission | 7.64 |
| Total | 117.31 |

Table 71: Approved Advance against Depreciation for FY 2011-12

| Name | Depreciation Amount (Rs Cr) |
|----------------|-----------------------------|
| Baglihar Hydro | 219.62 |

Return on Equity

Baglihar Hydro Project

6.31 The Commission has allowed rate for return on equity at 14% as per Regulation 25 of JKSERC Hydro Tariff Regulations, 2005/2011. The return on equity has been determined at the equity base as determined in accordance with Regulation 18 of the above mentioned regulations. The equity base had been determined at the time of provisional approval of capital cost.

6.32 Regulation 18 provides:

“(1) In case of all generating stations, debt-equity ratio as on the date of commercial operation shall be 70:30 for determination of tariff. Where equity employed is more than 30%, the amount of equity for determination of tariff shall be limited to 30% and the balance amount shall be considered as the normative loan

Provided that in case actual equity employed is less than 30%, the actual debt and equity shall be considered for determination of tariff.

(2) The debt and equity amounts arrived at in accordance with (1) above shall be used for calculating interest on loan, return on equity, Advance Against Depreciation and foreign Exchange Rate Variation.”

6.33 Regulation 25 provides:

“Return on equity shall be computed on the equity base determined in accordance with regulation 18 and shall be @ 14% per annum”

Baglihar Transmission System

6.34 The Commission has allowed return on equity to the Petitioner for FY 2011-12 in accordance with Regulation 15 of CERC (Terms and Conditions of Tariff) Regulations, 2009. Regulation 15 states that:

“(1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 12.

6.35 *(2) Return on equity shall be computed on pre-tax basis at the base rate of 15.5% to be grossed up as per clause (3) of this regulation.”*

6.36 The Petitioner had computed return on equity for FY 2011-12 in accordance with Regulation 25 of the JKSERC (Terms and Conditions for Determination of Hydro-Generation Tariff) Regulations, 2005. The return of equity was proposed at the rate of 14% per annum on the normative equity base calculated as 30% of the project cost.

6.37 The Commission has adopted CERC Tariff Regulations, 2009 in entirety for

determination of tariff for the transmission system and approve return on equity to the Petitioner in accordance with CERC Tariff Regulations, 2009. The Commission has allowed return on equity for Baglihar Transmission System for FY 2011-12 at the rate of 15.50% upon the equity base determined at the time of provisional approval of capital cost.

- 6.38 The return on equity as approved by Commission for Baglihar Hydro Project and Baglihar Transmission System for FY 2011-12 is as given in Table 72.

Table 72: Approved Return on Equity for FY 2011-12

| Name | Amount of Equity (Rs Cr) | Return on Equity (Rs Cr) |
|-----------------------|-----------------------------|-----------------------------|
| Baglihar Hydro | 1411.23 | 197.57 |
| Baglihar Transmission | 43.44 | 6.73 |
| Total | 1454.67 | 204.30 |

Operation & Maintenance Expenses

Baglihar Hydro Project

- 6.39 The Commission has determined the Operations and Maintenance expenses (O&M) as per Regulation 26 clause (2) of JKSERC Hydro Tariff Regulations, 2005/2011. Clause (2) sub-clause (b) states that for plants commissioned after 1st April 2005, the base O&M expenses shall be fixed at 1.5% of the approved capital cost and shall be escalated at 4% annually for the subsequent years. The sub-clause (b) of Clause (2) of Regulation 26 is reproduced below:

“(b) In case of the hydro electric generating stations declared under commercial operation on or after 1.4.2005, the base operation and maintenance expenses shall be fixed at 1.5% of the actual capital cost as admitted by the Commission, in the year of commissioning and shall be subject to an annual escalation of 4% per annum for the subsequent years.”

Baglihar Transmission System

- 6.40 The Commission has allowed O&M expenses to the Petitioner for FY 2011-12 in accordance with provisions of Regulation 19(g) of CERC (Terms and Conditions of Tariff) Regulations, 2009.
- 6.41 Regulation 19(g) (i) prescribes norms for calculation of O&M expenses. The regulation lays down the amount of expenditure allowable per sub-station for a transmission line of a certain voltage in the forthcoming years. The CERC Tariff Regulations, 2009 allow Rs.0.59 Cr per bay per sub-station for FY 2011-12. For AC and HVDC lines the CERC Tariff Regulations, 2009 provides Rs.0.007 Cr per km FY 2011-12 in respect of a double circuit transmission line (twin and triple conductor).

6.42 Regulation 19(g) (ii) of CERC Tariff Regulations, 2009 states:

“(ii) The total allowable operation and maintenance expenses for the transmission system shall be calculated by multiplying the number of bays and kms of line length with the applicable norms for the operation and maintenance expenses per bay and per km respectively.”

6.43 The Commission has allowed O&M expenses to the Petitioner by computing O&M expenses for FY 2011-12 in accordance with the provisions of the CERC Tariff Regulations, 2009 as described above. O&M expenses of Rs. 0.59 Cr per bay for FY 2011-12 have been allowed for 2 bays set up as part of the transmission system. Further, O&M expenses have been computed for the 68 km double circuit transmission line at the rate of Rs.0.007 Cr per km for FY 2011-12.

6.44 The Commission has considered the Total Project Cost (incl IDC and FC) approved for determination of O&M expenses for Baglihar Hydro and Baglihar Transmission System for FY 2009-10 and 2010-11. The same base total cost has been taken for determination of the O&M expenses for FY 2011-12. The O&M expenses approved by the Commission are given in Table 73.

Table 73: Approved Amount for O&M expenses for FY 2011-12

| Name | O&M Expenses (Rs Cr) |
|-----------------------|-------------------------|
| Baglihar Hydro | 88.76 |
| Baglihar Transmission | 1.65 |
| Total | 90.41 |

Interest on Working Capital

Baglihar Hydro Project

6.45 The Commission has determined the interest on working capital as per Regulation 27 of JKSERC Hydro Tariff Regulations, 2005/2011 which has been reproduced below.

“(1) Working Capital shall cover:

(a) Operation and Maintenance expenses for one month;

(b) Maintenance spares @1 % of the historical cost escalated @ 6% per annum from the date of commercial operation and

(c) Receivables equivalent to two months of fixed charges for sale of electricity calculated on normative capacity index.

(2) Rate of interest on working capital shall be the short-term Prime Lending Rate of Jammu and Kashmir Bank as on 1.4.2005 or on 1st April of the year in

which the generating unit/station is declared under commercial operation, whichever is later. The interest on working capital shall be payable on normative basis notwithstanding that the utility has not taken working capital loan from any outside agency.”

- 6.46 The interest on working capital has been taken as 14.50% which is the PLR of J&K bank as on 1 April 2009 the COD of the station.

Baglihar Transmission System

- 6.47 The Petitioner has submitted that interest on working capital should be allowed in accordance with the provisions of JKSERC (Terms and Conditions for Determination of Hydro-Generation Tariff) Regulations, 2005 dated 23rd September 2005. The Petitioner has further proposed that interest on working capital should be calculated using the prime lending rate of J&K Bank as on 1st April 2009.

- 6.48 The Commission has allowed Interest on Working Capital to the Petitioner in accordance with provisions of Regulation 18(1) (c) of the CERC (Terms and Conditions of Tariff) Regulations, 2009. Regulation 18 states that:

“(1) The working capital shall cover:

(c) in case of hydro generating station and transmission system.

(i) Receivables equivalent to two months of fixed cost.

(ii) Maintenance spares @ 15% of operation and maintenance expenses specified in regulation 19;

(iii) Operation and maintenance expenses for one month.”

(3) Rate of interest on working capital shall be on normative basis and shall be equal to the short-term Prime Lending Rate of State Bank of India as on 1.4.2009 or on 1st April of the year in which the generating station or a unit thereof or the transmission system, as the case may be, is declared under commercial operation, whichever is later.”

- 6.49 The Commission has computed working capital for FY 2011-12 after considering receivables equivalent to two months annual fixed charges, maintenance spares equivalent to 15% of the O&M expenses calculated in accordance with Regulation 19 and O&M expenses for one month. The interest on working capital has been computed considering rate of interest of 12.25% per annum which is the short term prime lending rate of the SBI as on 1st April, 2009.
- 6.50 The working capital approved by the Commission for Baglihar Hydro and Baglihar Transmission System and interest thereon is given in Table 74.

Table 74: Approved Amount for Interest on Working Capital for FY 2011-12

| Name | Working Capital (Rs Cr) | Interest on Working Capital (Rs Cr) |
|-----------------------|----------------------------|---|
| Baglihar Hydro | 207.48 | 30.08 |
| Baglihar Transmission | 4.29 | 0.53 |
| Total | 211.76 | 30.61 |

Annual Fixed Charges and Indicative Tariff for Baglihar Hydro and Baglihar Transmission System for FY 2011-12

- 6.51 The Commission has approved the annual fixed charges for Baglihar Hydro and Baglihar Transmission System for FY 2011-12. The AFC in both cases has been calculated by considering the various components of tariff as described above. The indicative tariff approved for the hydro project and transmission system for FY 2011-12 has been computed by taking into account saleable energy of various HEPs.
- 6.52 Table 75 provides the component wise break-up of total annual fixed charges approved and indicative tariff approved by the Commission for Baglihar Hydro and Baglihar Transmission System.

Table 75: Approved AFC and Indicative Tariff for FY 2011-12 (Rs Cr)

| Name | Interest on Loan | Depn | AAD | Return on Equity | O&M Expenses | Interest on Working Capital | Income tax | AFC | Design Energy (In MU) | Indicative Tariff (Rs per kWh) |
|-----------------------|------------------|--------|--------|------------------|--------------|-----------------------------|------------|--------|-----------------------|--------------------------------|
| Baglihar Hydro | 229.90 | 109.67 | 219.62 | 197.57 | 88.76 | 30.08 | 0.00 | 875.60 | 2498.03 | 3.51 |
| Baglihar Transmission | 6.86 | 7.64 | 0.00 | 6.73 | 1.65 | 0.53 | 0.00 | 23.42 | 2498.03 | 0.09 |

A7: SUMMARY OF APPROVED ARR AND INDICATIVE TARIFF AND AVERAGE TARIFF FOR FY 2011-12

- 7.1 Table 76 given below provides a summary of the ARR and tariff approved by the Commission in respect of 8 HEPs, 10 HEPs, Baglihar Hydro Project and Baglihar Transmission Line for FY 2011-12.
- 7.2 This table also provides the average tariff applicable to the generating stations computed on the basis of the total ARR approved and the total design energy of all the generating stations taken together. However, this average tariff does not include the approved ARR and the design energy applicable to the Baglihar Transmission System.

Table 76: Approved AFC and Indicative Tariff for all generating stations and Baglihar Transmission Line for FY 2011-12 (Rs Cr)

| Name of HEP | Interest on Loan | Depn | AAD | Return on Equity | O&M Expenses | Interest on Working Capital | Consultancy Charges | Income tax | AFC | Design Energy (In MU) | Indicative Tariff (Rs per kWh) |
|----------------|------------------|-------|-------|------------------|--------------|-----------------------------|---------------------|------------|-------|-----------------------|--------------------------------|
| USHP-II | 1.66 | 10.21 | 20.24 | 18.27 | 9.29 | 2.03 | 0.30 | 0.00 | 62.00 | 447.37 | 1.40 |
| Chennani-III | 0.22 | 1.11 | 2.74 | 2.31 | 1.13 | 0.25 | 0.02 | 0.00 | 7.77 | 36.71 | 2.14 |
| Sewa-III | 0.26 | 1.39 | 3.29 | 2.81 | 1.37 | 0.30 | 0.03 | 0.00 | 9.45 | 33.06 | 2.89 |
| Pahalgam | 1.54 | 1.36 | 2.29 | 2.19 | 1.05 | 0.26 | 0.01 | 0.00 | 8.70 | 14.92 | 5.89 |
| Igo-Mercellong | 1.44 | 1.06 | 2.19 | 1.95 | 0.94 | 0.23 | 0.01 | 0.00 | 7.82 | 15.88 | 4.97 |
| Baderwah | 0.24 | 0.26 | 0.31 | 0.34 | 0.20 | 0.04 | 0.0029 | 0.00 | 1.40 | 8.32 | 1.70 |
| Marpachoo | 0.43 | 0.29 | 0.49 | 0.47 | 0.23 | 0.06 | 0.0022 | 0.00 | 1.97 | 3.79 | 5.25 |
| Haftal | 0.54 | 0.34 | 0.63 | 0.58 | 0.29 | 0.07 | 0.0029 | 0.00 | 2.46 | 4.88 | 5.09 |
| Upper Sind-I | 0.00 | 0.40 | 0.00 | 1.94 | 0.78 | 0.13 | 0.0653 | 0.00 | 3.32 | 106.62 | 0.32 |
| Lower Jhelum | 0.00 | 9.00 | 0.00 | 17.69 | 7.11 | 1.27 | 0.3032 | 0.00 | 35.37 | 609.43 | 0.59 |
| Ganderbal | 0.00 | 0.00 | 0.00 | 0.67 | 0.27 | 0.04 | 0.0433 | 0.00 | 1.02 | 90.15 | 0.11 |
| Chenani-I | 0.00 | 1.15 | 0.00 | 3.30 | 1.32 | 0.23 | 0.0673 | 0.00 | 6.07 | 110.02 | 0.56 |
| Karnah | 0.00 | 0.29 | 0.00 | 0.57 | 0.23 | 0.04 | 0.0058 | 0.00 | 1.14 | 11.36 | 1.01 |

| Name of HEP | Interest on Loan | Depn | AAD | Return on Equity | O&M Expenses | Interest on Working Capital | Consultancy Charges | Income tax | AFC | Design Energy (In MU) | Indicative Tariff (Rs per kWh) |
|--|------------------|--------|--------|------------------|--------------|-----------------------------|---------------------|------------|-----------|-----------------------|--------------------------------|
| Iqbal Bridge | 0.00 | 0.55 | 0.00 | 1.03 | 0.42 | 0.07 | 0.0108 | 0.00 | 2.09 | 21.23 | 0.99 |
| Bazgo | 0.00 | 0.05 | 0.00 | 0.09 | 0.04 | 0.01 | 0.0009 | 0.00 | 0.18 | 1.09 | 1.69 |
| Sumoor | 0.00 | 0.02 | 0.00 | 0.03 | 0.01 | 0.0021 | 0.0003 | 0.00 | 0.06 | 0.45 | 1.32 |
| Hunder | 0.00 | 0.06 | 0.00 | 0.12 | 0.05 | 0.01 | 0.0012 | 0.00 | 0.24 | 1.77 | 1.37 |
| Chenani-II | 0.00 | 0.25 | 0.00 | 0.49 | 0.20 | 0.04 | 0.0058 | 0.00 | 0.98 | 12.00 | 0.82 |
| Baglihar Hydro | 229.90 | 109.67 | 219.62 | 197.57 | 88.76 | 30.08 | 0.00 | 0.00 | 875.60 | 2498.03 | 3.51 |
| Baglihar Transmission ** | 6.86 | 7.64 | 0.00 | 6.73 | 1.65 | 0.53 | 0.00 | 0.00 | 23.42 | 2498.03 | 0.09 |
| Average Tariff for FY 2011-12 for all generating stations | | | | | | | | | 1027.64** | 4009.56** | 2.56** |
| ** Does not include AFC and design energy applicable to Baglihar Transmission System | | | | | | | | | | | |

A8: WATER USAGE CHARGES**Petitioner's Submission**

- 8.1 The Petitioner made an additional submission with the Commission as regards additional revenue requirement to be allowed on account of water usage charges imposed by State Water Resource Regulatory Authority, Government of Jammu and Kashmir.
- 8.2 The Petitioner submitted that the State Water Resource Regulatory Authority, Government of Jammu & Kashmir has fixed Water Usage Charges at the rate of 25 paise per cubic metre of water used for generation of hydro-electric power with effect from 10th November, 2010 for a period of 2 years. Such water usage charges have been imposed by the State Water Resource Regulatory Authority in exercise of powers conferred under Clause (d) of Sub Section (1) of Section 145 read with provision to Sub-Section (1) of Section 139 of the Jammu & Kashmir Water Resources (Regulation & Management) Act 2010 vide Order No. WRRRA/01/2011 dated 1st February 2011
- 8.3 The Petitioner made two submissions before the Commission as regards the levy of the water usage charges mentioned above and the consequent impact of such levy on the aggregate revenue requirement submitted by the Petitioner from November 2010 onwards. The Petitioner thereby submitted a review petition dated 9th July 2011 before the Commission requesting for approval of additional revenue requirement on account of water usage charges for the period November 2010 – March 2011. This review petition has been filed with respect to the ARR and tariff determined by the Commission for FY 2009-10 and 2010-11 in Tariff Order dated 30th April 2010 and review order dated 9th November 2010.
- 8.4 Further, the Petitioner made a submission in addition to the Petition filed for determination of ARR and Tariff for FY 2011-12 for 19 HEPs. The Petitioner submitted the additional filing dated 9th July 2011 and prayed to the Commission to approve reimbursement of water usage charges from PDD on account of water usage charges levied by the State Water Resource Regulatory Authority, Government of Jammu & Kashmir.
- 8.5 The applicant submitted their calculation as regards the water requirement for all the eighteen (18) Hydro Electric Projects of the Corporation based on Capacity, Head & Efficiency for the Design Energy of the project for the period November 2010 to March 2011 in the review petition dated 9th July 2011 submitted by them.
- 8.6 The Petitioner calculated the water requirement for all the nineteen (19) Hydro Electric Projects owned and operated by them based on Capacity, Head & Efficiency for the Design Energy of the project for the year 2011-12 in the additional submission made by them with regard to the Tariff Petition for FY 2011-12 vide additional filing dated 9th July 2011.

- 8.7 The Petitioner computed the water usage charges which are reimbursable by JKPDD for the period November 2010 – March 2011 and for FY 2011 – 12 based on the water utilization of the period.
- 8.8 Total amount of water usage charges for all the 18 HEPs for the year November 2010 – March 2011 proposed by the Petitioner amounts to Rs. 61.57 Cr. Total amount of water usage charges for all the 19 HEPs (including Baglihar) for FY 11-12 proposed by the Petitioner amounts to Rs. 298.61 Cr.
- 8.9 Following Table 77 and Table 78 provide a summary of the water usage charges proposed by the Petitioner in the submissions made by them for the period November 2010 – March 2011 and FY 2011-12.

Table 77: Proposed water usage charges for November 2010 to March 2011 for 18 HEPs

| Name of HEP | Design Energy Nov 2010 – Mar 2011 (MU) | Water used per MU | Total water used (Million Cum) | Water Usage Charges (Rs Cr) |
|------------------|---|-------------------|-----------------------------------|--------------------------------|
| Igo Mercellong | 2.92 | 15.98596 | 46.68 | 1.167 |
| Marpachoo HEP | 0.88 | 10.80307 | 9.51 | 0.238 |
| Haftal | 0.68 | 3.64702 | 2.48 | 0.062 |
| Chenani-III | 10.39 | 5.77994 | 60.05 | 1.501 |
| Baderwah | 3.44 | 1.89325 | 6.51 | 0.163 |
| Sewa-III. | 13.27 | 11.36045 | 150.75 | 3.769 |
| USHP-II | 62.53 | 1.74602 | 109.18 | 2.730 |
| Pahalgam | 2.85 | 16.28263 | 46.41 | 1.160 |
| Iqbal | 6.40 | 28.78558 | 184.23 | 4.606 |
| Hunder | 0.40 | 14.30285 | 5.72 | 0.143 |
| Sumoor | 0.06 | 8.20552 | 0.49 | 0.012 |
| Bazgo | 0.46 | 6.52580 | 3.00 | 0.075 |
| Chenani-I | 45.44 | 1.18011 | 53.62 | 1.341 |
| Chenani-II | 4.94 | 14.38667 | 71.07 | 1.777 |
| L.J.H.P | 203.82 | 6.98542 | 1423.77 | 35.594 |

| Name of HEP | Design Energy Nov 2010 – Mar 2011 (MU) | Water used per MU | Total water used (Million Cum) | Water Usage Charges (Rs Cr) |
|--------------|---|-------------------|-----------------------------------|--------------------------------|
| USHP-I | 38.71 | 2.86089 | 110.75 | 2.769 |
| Ganderbal | 40.91 | 3.15124 | 128.92 | 3.223 |
| Karnah MHP | 3.91 | 12.73899 | 49.81 | 1.245 |
| Total | 345.88 | | 2462.94 | 61.574 |

Table 78: Proposed water usage charges for FY 11-12 for 19 HEPs (Including Baglihar)

| Name of HEP | Annual Design Energy (MU) | Water used per MU | Total water used (Million Cum) | Water Usage Charges (Rs Cr) |
|------------------|------------------------------|-------------------|-----------------------------------|--------------------------------|
| Igo Mercellong | 15.88 | 15.98596 | 253.857 | 6.346 |
| Marpachoo HEP | 3.79 | 10.80307 | 40.944 | 1.024 |
| Haftal | 4.88 | 3.64702 | 17.797 | 0.445 |
| Chenani-III | 36.71 | 5.77994 | 212.182 | 5.305 |
| Baderwah | 8.32 | 1.89325 | 15.752 | 0.394 |
| Sewa-III. | 33.06 | 11.36045 | 375.576 | 9.389 |
| USHP-II | 447.37 | 1.74602 | 781.118 | 19.528 |
| Pahalgam | 14.92 | 16.28263 | 242.937 | 6.073 |
| Iqbal | 21.23 | 28.78558 | 611.118 | 15.278 |
| Hunder | 1.77 | 14.30285 | 25.316 | 0.633 |
| Sumoor | 0.45 | 8.20552 | 3.692 | 0.092 |
| Bazgo | 1.09 | 6.52580 | 7.113 | 0.178 |
| Chenani-I | 110.02 | 1.18011 | 129.836 | 3.246 |
| Chenani-II | 12.00 | 14.38667 | 172.640 | 4.316 |
| L.J.H.P | 609.43 | 6.98542 | 4257.126 | 106.428 |
| USHP-I | 106.62 | 2.86089 | 305.028 | 7.626 |
| Ganderbal | 90.15 | 3.15124 | 284.084 | 7.102 |

| Name of HEP | Annual Design Energy (MU) | Water used per MU | Total water used (Million Cum) | Water Usage Charges (Rs Cr) |
|----------------|---------------------------|-------------------|--------------------------------|-----------------------------|
| Karnah MHP | 11.36 | 12.73899 | 144.715 | 3.618 |
| Baglihar Hydro | 1268.04 | 3.2046407 | 4063.597 | 101.590 |
| Total | 2797.09 | | 11944.428 | 298.611 |

- 8.10 The Petitioner submitted that the liability of water usage charges is an additional cost to them. Further, they have mentioned that the tariff regulations are based on the principle of 'cost plus basis' and therefore such additional cost should be passed through on actual basis.
- 8.11 The Petitioner prayed to the Commission to approve the reimbursement of water usage charges on the basis of details submitted by the Petitioner in the Review Petition dated 9th July 2011 and the additional submission made in respect of the Tariff Petition for FY 11-12 submitted vide additional filing dated 9th July 2011.

Commission's View

- 8.12 The Commission has taken into view Order No. WRRRA/01/2011 dated 1st February 2011 passed by the State Water Resource Regulatory Authority, Government of Jammu & Kashmir. The Commission has also considered the submission made by the Petitioner in such regard.
- 8.13 The Commission approves the reimbursement of water usage charges payable by the Petitioner in light of the order passed by the State Water Resource Regulatory Authority, Government of Jammu & Kashmir. The Petitioner is hereby allowed to claim the water usage charges paid by them as a pass through from JKPDD.
- 8.14 Further, the Commission directs the Petitioner to compute the impact of the levy of such water usage charges on the per unit cost of generation in respect of each power house and also the average impact of such levy on the total energy sold to JKPDD. The Petitioner is hereby directed to make this information available to the Commission with 30 days from the date of passing this order.

A9: DIRECTIVES

- 9.1 The Commission, based on its analysis of the ARR & Tariff petition and the compliance to previous directives submitted by the Petitioner and information and suggestions received during the public hearing process on the functioning of the Petitioner, directs the Petitioner to comply with the following directives given in this order.
- 9.2 The Commission shall hold quarterly review meetings for monitoring the progress/status on each of the directives given in this order. The Petitioner shall submit quarterly progress report prior to the review meetings to be held by the Commission.

Table 79: Directives for FY 2011-12

| New Directives | |
|----------------|---|
| Directive 1 | Submission of ARR/tariff petition by 30th November of each year |
| | . The utility is directed to henceforth, file ARR/tariff petition by 30th November of each year positively as stipulated in the Jammu & Kashmir State Electricity Regulatory Commission (Conduct of Business) Regulations, 2005 |
| Directive 2 | Energy Audit of Power Stations |
| | . The utility is directed to prepare a time bound program for energy audit of all its power stations and submit the same to the Commission. |
| Directive 3 | Financial figures to be in units of Rupees Crores |
| | . The utility is directed to submit its financial figures in its future ARR/Tariff Petition in units of Rupees Crores. |
| Directive 4 | Evaluation of power houses |
| | . For the power houses which have been taken up for RM&U works, the impact of such works in terms of improvement in generation/PLF maybe got evaluated by an independent agency and submit the evaluation report to the Commission within one year. |
| Directive 5 | Revised capital cost of Baglihar HEP Stage I |
| | . In order to seek approval of the final capital cost of the Baglihar HEP Stage I from the Commission, the utility is directed to obtain the approval on revised project cost from the Central Electricity Authority. |

A10: ANNEXURE**Annexure 1: List of participants in Public Hearings****Table 80: Participants at Public Hearing held in Srinagar on 18th April 2011**

| S.No | Name | Department/Organization |
|------|----------------------|------------------------------------|
| 1. | S.M.Desalphine | Chairman, JKSERC |
| 2. | D.S.Pawar | Member (T), JKSERC |
| 3. | G.M.Khan | Member (F), JKSERC |
| 4. | R.K.Seli | Technical Consultant, JKSERC |
| 5. | R.K.Verma | Secretary, JKSERC |
| 6. | Miftah Alam Buchh | AGM(C) , JKSPDC |
| 7. | Ravi Chanyal | SGM, JKSPDC |
| 8. | C.M.Jain | Consultant to JKSPDC |
| 9. | A.R.Tak | Advisor-cum-Consultant, JKSPDC |
| 10. | Manzoor Salroo | CE, M&RE, Kashmir |
| 11. | B.A.Khan | SE, JKSPDC, Circle-II, Srinagar |
| 12. | Haji Gh. Mohd. | President RMO Union Bla. |
| 13. | Mohd. Hatam | Secretary, RMO Union Bla |
| 14. | Gh. Hassan Bhat | Secretary Mill Owners Union, Magam |
| 15. | Gh. Rassol Dar | |
| 16. | Mohiuddin Pall | |
| 17. | Ab. Rashid Dar | Chadoora, Budgam |
| 18. | Haji Gulum Nabi Wani | Beerwa |
| 19. | Aakanksha Srivastava | Consultant to the Commission, PwC |

Table 81: Participants at Public Hearing held in Jammu on 21st April 2011

| S.No | Name | Department/Organization |
|------|----------------------|-----------------------------------|
| 1. | S.M.Desalphine | Chairman, JKSERC |
| 2. | D.S.Pawar | Member (T), JKSERC |
| 3. | G.M.Khan | Member (F), JKSERC |
| 4. | R.K.Seli | Technical Consultant, JKSERC |
| 5. | R.K.Verma | Secretary, JKSERC |
| 6. | Girja Jalali | SE, JKSERC |
| 7. | Renu Mahajan | Dy. Secretary Law, JKSERC |
| 8. | A.M.M.Jehangir | Director, Finance, JKSPDC |
| 9. | A.R.Tak | Advisor-cum-Consultant, JKSPDC |
| 10. | I.A.Kakroo | DGM, JKSPDC |
| 11. | Ravi Chanyal | SGM, JKSPDC |
| 12. | C.M.Jain | Consultant to JKSPDC |
| 13. | Mohd. Hussain Teli | DGM, JKSPDC |
| 14. | Miftah Alam Buchh | AGM, JKSPDC |
| 15. | Rajdev Sharma | Consultant, SCOPE |
| 16. | Chander Vadan | Company Secretary |
| 17. | D.S.Tara | Ex-Secretary, JKSERC |
| 18. | J.S.Sudan | SE, (PDD) Retd. |
| 19. | H.S.Gupta | DCP (Retd.) |
| 20. | Aakanksha Srivastava | Consultant to the Commission, PwC |

Annexure 2: List of participants in State Advisory Committee Meeting**Table 82 : Participants at State Advisory Committee Meeting held in Jammu on 20th April 2011**

| S.No | Name | Department/ Organization |
|------|----------------|---------------------------------------|
| 1. | S.M.Desalpine | Chairman, JKSERC |
| 2. | D.S.Pawar | Member (T), JKSERC |
| 3. | G.M.Khan | Member (F), JKSERC |
| 4. | R.K.Seli | Technical Consultant, JKSERC |
| 5. | R.K.Verma | Secretary, JKSERC |
| 6. | Girja Jalali | SE, JKSERC |
| 7. | Renu Mahajan | Dy. Secretary Law, JKSERC |
| 8. | M.Javed Khan | Special Secretary to Government, CAPD |
| 9. | Shahnaz Goni | Chief Engineer (C&S) PDD |
| 10. | Vinod Khajuria | SE, (C&S) PDD |
| 11. | H.S.Gupta | Expert |
| 12. | D.S.Tara | Ex-Secretary, JKSERC |
| 13. | C.M.Jain | Consultant to JKSPDC |
| 14. | I.A.Kakroo | DGM, JKSPDC |
| 15. | I.A.Wani | FA&CAO, PDD |
| 16. | A.M.M.Jehangir | Director, Finance, JKSPDC |
| 17. | Ravi Chanyal | SGM, JKSPDC |
| 18. | Devinder Verma | Vikrant Industries, Kathua |
| 19. | T.S.Reen | ASSI, Gangyal |
| 20. | Annil Suri | President BBIA |
| 21. | Y.K.Sharma | President CCI, Jammu |
| 22. | Vikram Gour | President AWSC/SCPR |

| | | |
|-----|----------------------|-----------------------------------|
| 23. | D.R.Danish | President CPO |
| 24. | Miftah Alam Buchh | AGM, JKSPDC |
| 25. | Rajdev Sharma | Consultant, SCOPE |
| 26. | Aakanksha Srivastava | Consultant to the Commission, PwC |