

**Jammu & Kashmir
State Electricity Regulatory Commission**



**Order
on
Determination of Capital Cost
and
Provisional Tariffs
for
450 MW Baglihar Stage I Hydro Electric Project
for
FY 2009-10 and FY 2010-11
of
J&K State Power Development Corporation**

Jammu & Kashmir State Electricity Regulatory Commission

Ambedkar (Panama) Chowk, Railway Road, Jammu, J&K – 180006

Ph: 0191-2470160, 2470183 Fax: 0191-2470163

Email: jkserc@gmail.com, jkserc@nic.in Website: www.jkserc.nic.in

THIS SPACE IS INTENTIONALLY LEFT BLANK

Before

Jammu & Kashmir State Electricity Regulatory Commission

Petition Number: JKSERC/26 of 2011

In the Matter of:

Application for Annual Revenue Requirement (ARR) and Tariff Petition for FY 2009-10 and FY 2010-11 for (i) Baglihar Hydro Electric Project Stage-I (Baglihar-Hydro) and (ii) 400 kV double circuit transmission line from Baglihar to Kishenpur and two bays at 400 kV Kishenpur sub-station of PGCIL (Baglihar-Transmission System) of Jammu & Kashmir State Electricity Power Development Corporation Limited

In the Matter of:

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

Order No.J&KSERC/06

(Passed on this 16th Day of June, 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 capital cost, ARR and tariff for 450 MW Baglihar Stage I Hydro Electric Project and 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 2009-10 and FY 2010-11. The petition was filed as per the JKSERC (Terms and conditions for Determination of Hydro Generation Tariff) Regulations, 2005 (hereinafter referred to as the JKSERC Hydro Tariff Regulations).
- 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 only 18 HEPs owned and operated by the Petitioner and had directed the Petitioner to file a separate petition for determination of tariff for Baglihar HEP. 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 on initial review of the tariff petition for FY 2009-10 and FY 2010-11 directed the Petitioner to submit further information/ clarifications on several issues through its letter no. JKSERC/1297-99 dated 31st January, 2011. The Petitioner consequently submitted additional data and clarifications through its letter no. PDC/P-

241/CJ/6217 dated 9th February, 2011.

- 1.4 The Commission held a technical validation session with the Petitioner on 17th February, 2011 on the petition filed and the deficiencies intimated to the Petitioner on 31st January 2011 and the reply filed by the Petitioner on the deficiency note on 9th February 2011. The Commission also took into consideration the supplementary information provided by the Petitioner and admitted the petition on 17th February, 2011.
- 1.5 The Commission vide letter number JKSERC/10/15/75 dated 4th 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 4 newspapers on 7th, 15th and 17th March 2011 and the stakeholders were requested to submit their comments/ suggestions/ objections by 28th March, 2011.

Gist of the petition

- 1.6 The Petitioner has filed the petition seeking approval of the Commission for the annual revenue requirement and tariff for FY 2009-10 and FY 2010-11 for
- (a) Baglihar Hydro Electric Project Stage-1 (Baglihar-Hydro) and
 - (b) 400 kV double circuit transmission line from Baglihar to Kishenpur and two bays at 400 kV Kishenpur sub-station of PGCIL (Baglihar-Transmission System).
- 1.7 The Baglihar project was declared commercially operational on 1st April 2009. The project consists of 3 units of 150 MW each and a 68 Km long 400 kV double circuit transmission line from the Baglihar station yard to 400 kV Kishenpur sub-station of PGCIL for evacuation of power.
- 1.8 The Petitioner has submitted that the Board of Directors of JKSPDC during the 58th Board meeting held on 15th October 2009 approved the final estimated completion cost of the project at Rs. 5827.17 Cr considering an IDC & FC of Rs. 757.30 Cr calculated upto October 2009, the month of commencement of debt repayments.
- 1.9 For the purpose of tariff determination, the Petitioner has considered an IDC & FC amount of Rs 640.36 Cr calculated upto the COD of the project and has deducted the revenue received against the infirm power sold to PTC. The project cost, net of revenue from infirm power and bifurcated into Baglihar Hydro and Baglihar Transmission System as submitted by the Petitioner is given in Table 1.

Table 1: Net Project Cost Bifurcated into Baglihar Hydro and Transmission System (Rs Cr)

Description	Final estimated completion cost			FY 2009-10			FY 2010-11		
	Baglihar HEP Stage-I	Hydro	Trans System	Baglihar HEP Stage-I Exp as of 31-3-09	Baglihar Hydro	Baglihar Trans System	Baglihar HEP Stage-I Exp as of 31-3-10	Baglihar Hydro	Baglihar Trans System
Total cost excluding IDC +FC	5069.87	4917.54	152.33	4347.55	4197.98	149.57	4776.21	4626.64	149.57
IDC +FC	640.36	621.12	19.24	640.36	621.12	19.24	640.36	621.12	19.24
Total cost including IDC +FC	5710.23	5538.66	171.57	4987.91	4819.10	168.81	5416.57	5247.76	168.81
Less: Infirm power	25.97	25.19	0.78	25.97	25.19	0.78	25.97	25.19	0.78
Net Cost	5684.26	5513.47	170.79	4961.94	4793.91	168.03	5390.60	5222.57	168.03

1.10 The Petitioner has submitted the annual fixed charges (AFC) and indicative tariff for Baglihar Hydro in accordance with JKSERC Hydro Tariff Regulations. The AFC and indicative tariff submitted for approval are given in Table 2.

Table 2: Proposed Annual Fixed Charges and Indicative Tariff for Baglihar Hydro

Description	Unit	FY 2009-10	FY 2010-11
O&M Expenses	Rs Cr	82.70	86.01
Interest on Loan	Rs Cr	292.25	303.43
Depreciation	Rs Cr	110.26	114.99
Additional Depreciation	Rs Cr	171.38	196.66
Return on Equity	Rs Cr	201.34	219.35
Interest on Working Capital	Rs Cr	30.46	32.54
Income Tax	Rs Cr	0.00	0.00
Total Annual Fixed Cost	Rs Cr	888.41	952.98
Net Saleable Energy	MU	2498.03	2498.03
Indicative Tariff	Rs/ kWh	3.56	3.81

1.11 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 & Conditions of Tariff) Regulations, 2009 as the transmission tariff regulation for the Jammu & Kashmir have not been notified by the Commission. The AFC and indicative tariff submitted for approval are given in Table 3.

Table 3: Proposed Annual Fixed Charges and Indicative Tariff for Baglihar Transmission System

Description	Unit	FY 2009-10	FY 2010-11
O&M Expenses	Rs Cr	1.47	1.56
Interest on Loan	Rs Cr	10.10	9.83
Depreciation	Rs Cr	4.32	4.32

Description	Unit	FY 2009-10	FY 2010-11
Additional Depreciation	Rs Cr	5.77	5.77
Return on Equity	Rs Cr	7.06	7.06
Interest on Working Capital	Rs Cr	0.98	0.99
Income Tax	Rs Cr	0	0
Total Annual Fixed Cost	Rs Cr	29.71	29.53
Net Saleable Energy	MU	2498.03	2498.03
Indicative Tariff	Rs/ kWh	0.12	0.12

- 1.12 The total annual fixed charges including charges for hydro and transmission system as proposed by the Petitioner for FY 2009-10 and FY 2010-11 is given in Table 4.

Table 4: Proposed Total Annual Fixed Charges and Indicative tariffs for Baglihar HEP Stage I

Description	Unit	FY 2009-10	FY 2010-11
AFC for Baglihar Hydro	Rs Cr	888.41	952.98
AFC for Baglihar Transmission System	Rs Cr	29.71	29.53
Total AFC	Rs Cr	918.11	982.50
JKPDD Share @ 50%	Rs Cr	459.06	491.25
Net Saleable Energy	MU	2498.03	2498.03
Indicative Tariff - Baglihar Hydro	Rs/ kWh	3.56	3.81
Indicative Tariff - Baglihar Transmission System	Rs/ kWh	0.12	0.12
Indicative Tariff - Baglihar HEP Stage I	Rs/ kWh	3.68	3.93

Meeting of State Advisory Committee

- 1.13 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 Baglihar Hydro and the Baglihar Transmission System.
- 1.14 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.

Public Hearing

- 1.15 The Public hearings on the ARR & tariff petition filed by the Petitioner were held at Srinagar on 2nd April, 2011 and Jammu on 5th April, 2011. The Commission invited industrial organizations 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.

Provisionally Approved Capital Cost

- 1.16 In view of the details provided by the Petitioner, 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.
- 1.17 The provisionally approved capital cost net of revenue from infirm power and bifurcated for Baglihar Hydro and Baglihar Transmission System is given in Table 5 .

Table 5: 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

Provisionally Approved Annual Fixed Charges and Provisional Tariffs for Baglihar Hydro

- 1.18 The Commission has determined the provisional annual fixed charges based on the JKSERC Hydro Tariff Regulation, the provisionally approved capital cost and the submissions made by the Petitioner. The provisionally approved AFC and provisional tariff calculated at design energy is as given in Table 6.

Table 6: Provisional AFC and provisional tariff for Baglihar Hydro

Particulars	Unit	FY10	FY11
O&M	Rs Cr	78.72	85.34
Interest on Loan	Rs Cr	299.51	256.19
Depreciation	Rs Cr	94.46	100.87
AAD	Rs Cr	75.39	228.41
Return on Equity	Rs Cr	188.28	197.57
Interest on Working Capital	Rs Cr	26.37	30.15
Reimbursement of filing fee	Rs Cr		0.02
Total AFC	Rs Cr	762.74	898.57
Saleable Design Energy	MU	2498.03	2498.03
Indicative Tariff	Rs/ kWh	3.05	3.60

Provisionally Approved Annual Fixed Charges and Provisional Tariffs for Baglihar Transmission

- 1.19 The Commission has determined the provisional annual fixed charges in accordance with the provisions of the CERC (Terms and Conditions of Tariff) Regulations, 2009,

the provisionally approved capital cost and the submissions made by the Petitioner.

- 1.20 The provisionally approved AFC and provisional tariff calculated at design energy is as given in Table 7.

Table 7: Provisional AFC and provisional tariff for Baglihar Transmission System

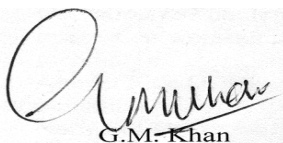
Particulars	Unit	FY 2009-10	FY 2010-11
Interest on Loan	Rs Cr	1.47	1.56
Depreciation	Rs Cr	9.70	7.89
Advance against Depreciation	Rs Cr	7.66	7.66
O&M expenses	Rs Cr	0.00	0.00
Return on Equity	Rs Cr	6.75	6.73
Interest on Working Capital	Rs Cr	0.58	0.54
Total AFC	Rs Cr	26.16	24.38
Net saleable energy	MU	2498.03	2498.03
Indicative Tariff	Rs/ kWh	0.10	0.10

Implementation of Order

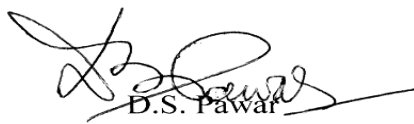
- 1.21 The Commission has thus accepted the petition of the Petitioner, and has determined the provisional AFC and provisional tariffs recoverable by the Petitioner from JKPDD for Baglihar Hydro and Baglihar Transmission System for FY 2009-10 and FY 2010-11 as determined in this Order.
- 1.22 The AFC provisionally approved for Baglihar Hydro and Baglihar Transmission System for FY 2009-10 and FY 2010-11 as determined by the Commission shall be applicable on the energy sold and billed during FY 2009-10 and FY 2010-11.
- 1.23 The Commission directs the Petitioner to implement this Order along with directions given, if any, and conditions mentioned in the detailed Order.
- 1.24 In exercise of powers vested under the Jammu & Kashmir Electricity Act, 2010 (Act XIII of 2010), the Commission hereby passes this Order today, the 16 June, 2011.

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

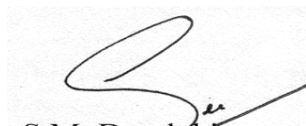
Ordered as above, read with attached detailed reasons, grounds and conditions.



G.M. Khan
(Member - Finance)



D.S. Pawar
(Member – Technical)



S.M. Desalprine
(Chairman)

Dated: 16 June, 2011

Place: Jammu

Contents

A1: INTRODUCTION	5
Jammu & Kashmir State Electricity Regulatory Commission	5
Jammu & Kashmir State Power Development Corporation Limited	5
Scope of the present Order	6
Procedural History	6
Information Gaps in the Petition.....	7
Inviting Public Response.....	8
Meeting of the State Advisory Committee.....	9
A2: SALIENT FEATURES OF THE PETITION	10
Features of the Project.....	10
Details of Date of Commissioning, Design Energy, Actual Generation.....	11
Date of Commissioning	11
Design Energy	11
Actual Generation.....	12
Infirm Power.....	12
Project Cost.....	13
Net Project Cost.....	13
Cost and Time over runs	14
Details of financing	15
Debt Component	15
Equity Component.....	16
Subsidy Component.....	16
Summary of financing from various sources	17
Interest during Construction and Financing Charges (IDC and FC)	17
Interest on Loans.....	18
Net Project Cost of Baglihar Hydro and Baglihar Transmission System	20
Determination of Tariff for Baglihar HEP and Baglihar Transmission System.....	20
Determination of Tariff for Baglihar Hydro.....	21
Norms of Operation.....	21
Interest on Loan.....	22
Depreciation including Advance against Depreciation	22
Return on Equity	23
Operation & Maintenance (O&M) expenses	23
Interest on working capital	24
Income Tax	25
Annual Fixed Charges	25
Determination of Tariff for Baglihar Transmission System	25
Norms of Operation.....	26
Interest on Loan.....	26
Depreciation including Advance against Depreciation	27
Return on Equity	27
Operation & Maintenance expenses.....	28
Interest on working capital	28

Income Tax	29
Annual Fixed Charges	29
Taxes and Duties.....	30
Reimbursement Fee.....	30
Prayer of the Petitioner.....	30
A3: PUBLIC CONSULTATION PROCESS	31
Non availability of all documents pertaining to the petition filed by the Petitioner.....	32
Retrospective increase in tariff should not be permitted.....	33
Determination of tariff over and above the PPA	33
Exclusion of Plan Assistance and Subsidy from the cost of the project and depreciation.....	34
Pre-operative expenses.....	35
Free power	35
Interest on working capital	36
Provisional capital cost.....	36
Sale of Infirm Power	37
Operational efficiency and financial health of the Petitioner.....	38
A4: DETERMINATION OF CAPITAL COST	39
Introduction	39
Determination Capital cost of the project.....	41
Review by Central Electricity Authority.....	41
Time and Cost Over-run.....	42
Break up of Project Cost	44
Total Base Cost Approved.....	45
Means of finance.....	47
Interest during construction and financing charges	50
Capital cost of project	50
Capital Cost Net of Infirm Power	51
A5: DETERMINATION OF ARR & TARIFF FOR BAGLIHAR HYDRO PROJECT	53
Introduction	53
Date of Commissioning.....	53
Design Energy	54
Debt Equity Ratio	54
Interest on Loan Capital	56
Depreciation.....	57
Advance against depreciation.....	58
Return on Equity.....	59
Operations & Maintenance Expenses	60
Interest on Working Capital	60
Reimbursement of Fee	61
Annual Fixed Charges for Baglihar HEP	61
Primary and Secondary Energy Charge	62
A6: DETERMINATION OF ARR & TARIFF FOR BAGLIHAR TRANSMISSION SYSTEM.....	64

Introduction	64
Date of Commissioning.....	64
Debt Equity Ratio	64
Interest on Loan Capital	66
Depreciation.....	67
O&M Expenses.....	68
Return on Equity.....	69
Interest on working capital	69
Annual Fixed Charges for Baglihar Transmission System	71
A7: DIRECTIVES	72
A8: ANNEXURE	73
Annexure 1: List of participants in Public Hearings.....	73
Annexure 2: List of participants in State Advisory Committee Meeting.....	75

THIS SPACE IS INTENTIONALLY LEFT BLANK

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 established under an Act of the State Legislature to regulate power sector in the State of Jammu & Kashmir.
- 1.2 The Commission shall ensure transparency while exercising its powers and discharging its functions.

Jammu & Kashmir State Power Development Corporation Limited

- 1.3 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 20 hydro generating stations in the state of which one generating station, namely Mohra station has been defunct since the floods of September 1992.
- 1.4 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 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.
- 1.5 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 23rd September 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 2009-10 and 2010-11 pertaining to the Baglihar Hydro generating station.
- 1.6 The Petitioner has filed an application under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 for approval of its ARR and tariff petition for FY 2009-10 and FY 2010-11 pertaining to the Baglihar Transmission System.

Scope of the present Order

- 1.7 This Order relates to the approval of provisional capital cost of Baglihar hydro electric project, determination of ARR and tariff for FY 2009-10 and FY 2010-11 of the Baglihar hydro station and determination of ARR and tariff for FY 2009-10 and FY 2010-11 of the Baglihar Transmission System, based on the petition filed by the Petitioner and admitted by the Commission in this regard.

Procedural History

- 1.8 The Petitioner had on 20th December 2008 filed its first ARR & Tariff petition post notification of the J&K State Electricity Regulatory Commission (Terms and Conditions for Determination of Hydro-Generation Tariff) Regulations, 2005. The Commission issued the first tariff order for Petitioner on 31st March 2009, which was applicable for the period 1st April 2008 to 31st March 2009.
- 1.9 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 26th April 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 complied with the directive by engaging a consultant for valuation of assets for the 10 HEPs.

- 1.10 For FY 2009-10 and FY 2010-11, the Petitioner failed to file the ARR & Tariff Petition by the stipulated date of 30th November 2008 and 30th November 2009 respectively. The Petitioner, however, filed a combined Petition for FY 2009-10 and FY 2010-11 on 12th January 2010.
- 1.11 The Commission vide order number JKSERC/04 of 2010 dated 30th April 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 Petitioner excluding Baglihar HEP which was commissioned on 1st April 2009.
- 1.12 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 the Petitioner. Accordingly the Commission directed the Petitioner to file a separate petition for the Baglihar HEP, in order to conduct a prudence check of the capital cost.
- 1.13 Subsequently, the Petitioner filed a Review Petition No. 22 of 2010 in respect of Tariff Order dated 30th April 2010, passed by the Commission, with one of the grounds being that the provisional tariff for Baglihar HEP Stage I was not mentioned for FY 2010-11 in the said tariff order. The Petitioner submitted that tariff at the rate of Rs 3.54 per kWh in respect of the cost of purchase of power from Baglihar HEP Stage-I for FY 2009-10 and FY 2010-11 has been allowed in the retail tariff order passed by the Commission. However, the PPA signed by the Petitioner and JKPDD provides a tariff of Rs 3.71 per kWh to be charged for FY 2010-11.
- 1.14 The Commission in its Order No JKSERC/25 of 2010 dated 9th November 2010 on the review petition, allowed the Petitioner to provisionally charge tariff in accordance with the PPA for FY 2010-11 till such time as the tariff order for the Baglihar HEP Stage I was approved by the Commission and the provisional tariff shall be revised on approval of tariff by the Commission with retrospective effect from the date of commissioning of the plant.
- 1.15 The Petitioner has filed the instant 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.

Information Gaps in the Petition

- 1.16 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/1297-99 dated 31st January 2011.

- 1.17 The Petitioner accordingly submitted the requisite additional data and clarifications through its letter no. PDC/P-241/CJ/6217 dated 9th February 2011.
- 1.18 Subsequently, the Commission held a technical validation session with the Petitioner on 17th February, 2011 on the petition filed and the deficiencies intimated to the Petitioner on 31st January 2011 and the reply filed by the Petitioner, The Commission took into consideration the supplementary information provided by the Petitioner and admitted the petition on 17th February, 2011.
- 1.19 The Commission through its letter no JKSERC/116 dated 28th April 2011, JKSERC/114/142 dated 4th May 2011 and JKSERC/Secy/114/142 dated 6th May 2011 sought additional information from the Petitioner. The Petitioner through its letter no PDC/P-241/1507 dated 2nd May 2011, submitted the additional information and clarifications sought by the Commission for finalization of this Order.

Inviting Public Response

- 1.20 The Commission vide letter number JKSERC/10/15/75 dated 4th March 2011 directed the Petitioner to issue a Public Notice with a summary of the petition and tariff proposals 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.
- 1.21 The Petitioner published a Public Notice indicating the salient features of the petition filed 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) State Times on 7th March 2011
 - (b) Dainik Jagran, Jammu on 7th March 2011
 - (c) Rising Kashmir on 15th March 2011
 - (d) Daily Aftab, Srinagar on 17th March 2011
- 1.22 The copies of the public notice and the petition filed were made available on the Petitioner's website and at its office addresses mentioned in the public notice. The last date for submitting comments/ objections on ARR and tariff petition was 28th March 2011.
- 1.23 The public notice advised respondents to submit (in person or by post, fax or email) their objections, written 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.

- 1.24 The Commission held public hearings in Srinagar on 2nd April 2011 and in Jammu on 5th April 2011, to discuss the matters pertaining to the petition filed by the Petitioner for approval of capital cost, determination of ARR and generation tariff for FY 2009-10 and FY 2010-11.

Meeting of the State Advisory Committee

- 1.25 The Commission vide letter number JKSERC/114/07-20 dated 6th April 2011 invited members of the State Advisory Committee to put forth their comments, objections and suggestions of the petition filed by the Petitioner. 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.
- 1.26 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 Baglihar HEP and the impact its commissioning has had on the overall power generation scenario in the state.
- 1.27 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 filed a petition with the Commission on 27th December 2010 for approval of annual revenue requirement and tariff petition for FY 2009-10 and FY 2010-11 for
- (a) Baglihar Hydro Electric Project Stage-I (hydro) [Baglihar-Hydro] and
 - (b) 400 kV double circuit transmission line from Baglihar to Kishenpur and two bays at 400 kV Kishenpur sub-station of PGCIL [Baglihar-Transmission System.
- 2.2 Baglihar project includes a 450 MW hydro generating station and a 68 km long 400 kV transmission line from Baglihar to Kishenpur.
- 2.3 The submissions made in the petition in respect of the project cost and the tariff pertaining to the hydro project and transmission line along with the additional information and clarifications provided by the Petitioner have been summarised in this chapter.

Features of the Project

- 2.4 Baglihar hydro project is a run of the river project on River Chenab at village Baglihar, Ramban district of Jammu and Kashmir. The hydro generating station comprises of three units of 150 MW each with a total installed capacity of 450 MW. Technical specifications of the project have been summarised in Table 8.

Table 8: Technical specifications of Baglihar HEP Stage I

No	Description	Feature
1.	Name of the river	Chenab (Chandrabhaga)
2.	Village	Baglihar
3.	District	Ramban
4.	State	Jammu & Kashmir
5.	Installed Capacity	450 MW
6.	Number of units	3
7.	Design Energy	2536.07 MU in 90% dependable year with 95% installed capacity
8.	Catchment area upto the project site	17325 Sq. Km.
9.	Location of the power intake	Right Bank
10.	Number of intake	2 (one for Stage –I and other for Stage –II)
11.	Surge Shaft	
	Type	Restricted orifice
	Size	25 meter dia.
	Area of the orifice	33 Sq m (in form of an opening of 6.5 m dia.)
	Height	96 Meter

No	Description	Feature
12.	Pen Stock	
	Nos	3
	Diameter of steel liners	5.5 Meter each
	Material of steel liner	Steel liner of ASTM 537 Grad "A"
	Length	189.68 meter & 197.846 meter
	Type	Underground
13.	Power House	
	Type	Underground
	Number of Turbines	3 nos. Frances turbines
	Transformer hall cum GIS cavern	10 nos. – 16.5/400 kV, 60 MVA single phase transformers and 400 kV gas insulators switchgears
	Excitation	Static
	Transmission system	400 kV, D/C Transmission line 68 km long from Baglihar to Kishenpur with two nos. 400 kV line terminating bays at Grid substation Kishenpur of PGCIL.

Details of Date of Commissioning, Design Energy, Actual Generation

Date of Commissioning

2.5 Work on the Baglihar project commenced on 1st January 2000 and the project was to be completed in 60 months and commissioned on 31st December 2004. However, as the project encountered various delays, the contractor requested for and was granted extensions in time for completing the works. The three units of the generating station were finally commissioned on 8th October 2008, 28th October 2008 and 25th November 2008 with the Baglihar station being declared commercially operational on 1st April 2009.

Table 9: Date of Commissioning of Baglihar HEP Stage I

Unit	Capacity	Date of Commissioning
Unit I	150 MW	8 th October 2008
Unit II	150 MW	28 th October 2008
Unit III	150 MW	25 th November 2008
Baglihar HEP Project	450 MW	1 st April 2009

Design Energy

2.6 The Petitioner has submitted that the design energy of the project has been calculated in accordance with Regulation 3(17) of JKSERC Hydro Tariff Regulations. Accordingly, design energy has been calculated for a 90% dependable year with 95% installed capacity of 450 MW of Baglihar HEP.

2.7 Design energy, as per the original DPR using the base year of 1974 and hydrological data for the years 1963 to 1996 was calculated as 2643 MU. However, design energy was revised to 2536.07 MU based on the revised Power Potential Studies conducted

by M/s Jaypee Ventures Pvt Ltd after hydrological data for the years 1997 to 2007 was made available. In compliance with the directive issued by the Commission in the Tariff Order for FY 2008-09, the Design energy was also validated by an independent consultant and considered as 2536.07 MU for calculation of gross generation. The Petitioner has submitted the reports on validation of Design energy of all hydro electric projects including Baglihar and the validation of Design Energy by an independent consultant to the Commission.

Actual Generation

- 2.8 The Petitioner in its petition and subsequent submissions had submitted the actual generation achieved and energy sold to PTC and JKPDD in FY 2009-10 and FY 2010-11. The Commission vide letter no JKSERC/114/142 dated 6th May 2011 sought information on the actual generation achieved in FY 2010-11 and sold to PTC and JKPDD. The Petitioner has made the following submission given in Table 10 with regard to actual generation achieved in FY 2009-10 and FY 2010-11.

Table 10: Actual Generation (MU)

Description	FY 2009-10	FY 2010-11
Design Energy (ex bus)	2498.03	2498.03
Actual Generation	2682.64	2855.82
Short term energy billed to PTC	448.06	468.57
Long term energy billed to PTC	897.67	949.82
Energy billed to JKPDD	1336.91	1437.42

Infirm Power

- 2.9 The Petitioner has submitted that the project generated 704.82 MU of infirm power from the date of commissioning of first unit on 8th October 2008 to 1st April 2009, which is the date of commercial operation of the Baglihar HEP. The infirm power was sold to PTC and JKPDD and the revenues generated are given in Table 11

Table 11: Infirm Power Generated

Name of buyer	Infirm Power Generated (MU)	Revenue Collected (Rs Cr)
PTC	28.200	25.97
PDD	676.62	239.52
Total	704.82	265.50

- 2.10 The Petitioner has submitted that Rs. 25.97 Cr has been received from PTC against sale of infirm power and no payment has been received from JKPDD on account of infirm power sold to JKPDD. The actual revenue received from PTC India Ltd for infirm power has been considered and deducted from the total project cost for the purpose of tariff determination.

Project Cost

- 2.11 The Government of Jammu and Kashmir granted approval to the Baglihar Hydro Electric Project in the year 1999 vide letter number PDD/IV-21/85 – III dated 9th April 1999. This project was initially approved at an estimated cost of Rs. 3495 Cr and the date of completion of project was fixed as 31st December 2004.
- 2.12 However due to reasons like non-availability of land, security, adverse geological conditions, time extension for completion of works was given upto 30th June 2006. The project suffered severe damage due to unprecedented floods of July-August 2005, and the project suffered huge cost and time overrun and the completion date was revised to 31st December 2007. Due to various unforeseen circumstances, several time extensions were granted and the project was finally commissioned on 1st April 2009.
- 2.13 The Petitioner has submitted that the Board of Directors of JKSPDC during 58th meeting held on 15th October 2009 approved the final estimated completion cost of Baglihar HEP as Rs. 5827.17 Cr which is inclusive of interest during construction and financing costs (IDC & FC) of Rs. 757.30 Cr. IDC considered as part of the capital cost calculated up to October 2009 as the repayments on loans commenced from October 2009. However, the Petitioner in its petition has considered Rs 640.36 Cr as IDC and FC calculated upto COD, which is 1st April 2009.
- 2.14 Detailed break-up of expenditure incurred on Baglihar HEP Stage I as on 31st March 2009, 31st March 2010 and the final estimated completion cost approved by the Board of Directors are provided in Table 12.

Table 12: Detailed of break-up of expenditure of Baglihar HEP Stage I (Rs Cr)

Particulars	Expenditure as of 31.03.2009	Expenditure as of 31.03.2010	Final Estimated Completion Cost
Pre-operative expenses	38.5	43.22	64.10
Infrastructure works	69.13	72.38	111.15
Civil & Hydro mechanical Works	3264.8	3632.15	3773.09
Electro-mechanical works	671.78	709.146	712.50
Transmission works	149.57	149.57	152.33
Environment R&R and legal expenses	38.48	40.2	113.67
Fee for Owner's Engineer	115.22	129.47	130.75
O&M mobilization etc.	0.07	0.07	5.00
Contingencies	0	0	7.28
Subtotal base cost	4347.55	4776.21	5069.87
IDC & FC (upto 31.03.2009)	640.36	640.36	640.36
Total	4987.91	5416.57	5710.23
IDC & FC (upto Oct 2009)	-	757.30	757.30
Final Estimation	-	5533.51	5827.17

Net Project Cost

- 2.15 The Petitioner has submitted that as per Regulation 17 of JKSERC Hydro Tariff Regulations, any revenue earned by the utility from the sale of infirm power is to be

taken as reduction in project cost and not to be treated as revenue. Net project cost calculated by the Petitioner is given in Table 13.

Table 13: Net Project Cost of Baglihar HEP Stage I (Rs Cr)

Capital Cost	Cost as of 31.03.2009	Cost as of 31.03.2010	Final Est Completion Cost
Total Project Cost	4987.91	5416.57	5710.23
Less: Infirm Power Sold to PTC	25.97	25.97	25.97
Net Project Cost	4961.94	5390.59	5684.26

2.16 The net project cost has been further bifurcated for Baglihar Hydro and Baglihar Transmission System for final estimated completion cost and expenditure incurred as on 31st March 2009 and 31st March 2010 as given in Table 14.

Table 14: Net Project Cost Bifurcated into Baglihar Hydro and Transmission System (Rs Cr)

Description	Final estimated completion cost			FY 2009-10			FY 2010-11		
	Baglihar HEP Stage-I	Baglihar Hydro	Baglihar Trans System	Baglihar HEP Stage-I Exp as 31-3-09	Baglihar Hydro	Baglihar Trans System	Baglihar HEP Stage-I Exp as 31-3-10	Baglihar Hydro	Baglihar Trans System
Total cost excluding IDC +FC	5069.87	4917.54	152.33	4347.55	4197.98	149.57	4776.21	4626.64	149.57
IDC +FC	640.36	621.12	19.24	640.36	621.12	19.24	640.36	621.12	19.24
Total cost including IDC +FC	5710.23	5538.66	171.57	4987.91	4819.10	168.81	5416.57	5247.76	168.81
Less: Infirm power	25.97	25.19	0.78	25.97	25.19	0.78	25.97	25.19	0.78
Net Cost	5684.26	5513.47	170.79	4961.94	4793.91	168.03	5390.60	5222.57	168.03

Cost and Time over runs

2.17 The Government of Jammu and Kashmir granted approval to the Baglihar Hydro Electric Project in the year 1999 vide letter number PDD/IV-21/85 – III dated 9th April 1999. Excavation and other works for setting up the generating station were started by JKSPDC in the year 1999. The original period of construction was estimated at 60 months and with the date of commissioning as 31st December 2004.

2.18 The Petitioner has submitted that the construction work was impeded by various factors such as non-availability of land, concerns of security at the project site, adverse geological conditions, non availability of sufficient and reliable construction power, bad conditions at Nasri bypass among others. Owing to these reasons, the time period for completion of all work related to the project was extended until 30th June 2006.

- 2.19 The year 2005 proved to be a difficult year with the work on site suffering severe damages due to unprecedented snow fall during January – February 2005 followed by heavy rains in the month of July - August 2005. Heavy rains led to flooding of the river and massive landslides which caused major damage to the dam site. This caused further delays in completion of work and increase in project costs. The date of completion of project was further revised to 31st December 2007.
- 2.20 Further extensions were granted for the final completion of the project. The three units of the generating station were finally commissioned on 8th October 2008, 28th October 2008 and 25th November 2008 with the Baglihar station being declared commercially operational on 1st April 2009.
- 2.21 The original cost of Baglihar HEP was estimated at Rs.3495 Cr which was revised to Rs.3810 Cr after award of major packages. Government of Jammu and Kashmir sanctioned revision in the cost of the project to Rs.4000 Cr on 31st August 2004 vide letter number 271-PDD of 2009. The project cost was again revised to Rs.5200 Cr vide order number 166-PDD of 2008 dated 5th April 2008 issued by Government of Jammu and Kashmir.
- 2.22 The final estimated cost of completion of the project of Rs 5827 Cr was approved by the Board of Directors during the 58th Board Meeting held on 15th October 2009.

Table 15: Summary of periodic sanction on increase in project cost

No.	Estimated	Rs. Cr
1	Original cost as per DPR with year 1997 as base price	3495.00
2	Revised cost after placement of order for plant and equipment during the year	3810.00
3	Revised cost estimated by Govt. of J&K vide letter no. 271-PDD of 2009 dated 31 st August 2004	4000.00
4	Revised cost as on COD by Govt. of J&K vide order No. 166-PDD of 2008 dated 25 th April 2008	5200.00
5	Final estimated completion cost as approved by B.O.D. during 58 th meeting held on 15 th October 2009	5827.00

Details of financing

- 2.23 The Petitioner has submitted that the Baglihar Project has been financed through debt, equity and subsidy/ plan assistance provided by the Government of India and the State Government of Jammu & Kashmir.

Debt Component

- 2.24 The Petitioner has submitted that it had signed a Common Loan Agreement dated 19th January 2005 with lenders to raise debt of Rs.1770 Cr for the project. These lenders included Power Finance Corporation Limited (PFC), Rural Electrification Corporation Limited (REC), Housing and Urban Development Corporation Limited (HUDCO), UCO Bank, Indian Overseas Bank, Central Bank of India, Union Bank of India (UBI), Canara Bank and The Jammu & Kashmir Bank Limited.

- 2.25 An addendum to the common loan agreement was signed by the Petitioner on 24th April 2009 for raising additional loans from the lenders to meet the increased cost of the project due to time and cost overrun experience. Details of loan raised as per common term loan agreement and the revised amount of debt raised has been summarised in Table 16.

Table 16: Summary of debt raised (Rs Cr)

Bank/ Financial Institution	Loan amount as per original Common Loan Agreement	Revised loan amount as per addendum to Common Loan Agreement
PFC	600.00	845.00
REC	400.00	565.00
HUDCO	300.00	300.00
Central bank of India	37.00	37.00
Union bank of India	0.00	73.00
Canara Bank	73.00	73.00
J&K Bank	360.00	360.00
Total	1770.00	2253.00

Equity Component

- 2.26 The Petitioner has submitted that the Plan Assistance provided by the Government of Jammu & Kashmir from time to time and the amount raised through non convertible bonds issued by the Petitioner (interest upon which has been serviced by the state government) has been treated as equity for the project.
- 2.27 Details of amount of equity deployed by the Petitioner is summarised in Table 17:

Table 17: Summary of equity infused (Rs Cr)

Source of funds	Amount
State plan	1198.20
Bonds	1053.96
Total	2252.16

Subsidy Component

- 2.28 The Petitioner has been granted subsidy by the Government of India as Additional Central Plan Assistance and by the Government of Jammu & Kashmir as Special Plan Assistance towards Baglihar project.
- 2.29 The Petitioner has submitted that the Government of India has sanctioned funds as Additional Central Plan Assistance of Rs.630 Cr for the project, of which Rs.567 Cr has been sanctioned as subsidy and the balance of Rs.63 Cr has been sanctioned as loan. The actual amount received by the Petitioner towards cost of the project is Rs. 556 Cr as subsidy (out of a sanctioned sum Rs.567 Cr) and Rs. 31 Cr as loan (out of a

sanctioned sum of Rs.63 Cr).

- 2.30 The State Government of Jammu and Kashmir has sanctioned for the project an amount of Rs 670 Cr as Special Plan Assistance which is in the form of interest free loan. The Petitioner has made a drawal of Rs 200 Cr in FY 2008-09 and Rs 30 Cr in FY 2009-10 from the SPA.
- 2.31 Table 18 provides the details of the Additional Central Plan Assistance from Government of India and Special Plan Assistance (SPA) from J&K Govt and the amounts availed by the Petitioner.

Table 18: Summary of subsidy/ grant sanctioned and availed (Rs Cr)

Subsidy/ Grant from GoI & GoJ&K	Sanctioned	Availed
Additional Central Plan Assistance from Govt. of India (ACPA) for subsidy	567.00	556.00
Loan portion of additional central plan assistance from Government of India	63.00	31.00
Total ACPA	630.00	587.00
Special Plan Assistance (SPA) from J&K Govt. (interest free loan)	670.00	
Drawn in FY 2008-09		200.00
Drawn in FY 2009-10		30.00
Total SPA		230.00

Summary of financing from various sources

- 2.32 Table 19 provides a summary of debt, equity and subsidy sanctioned and availed for the project.

Table 19: Summary of finance sanctioned (Rs Cr)

Source of fund	Amount Sanctioned	As on 31 st Mar 2009	Drawn during FY 2010	As on 31 st Mar 2010
Equity by Govt. of J&K / JKSPDC	2252.16	2440.09	00.00	2440.09
Debt from FI/Banks	2253.00	1770.00	483.00	2253.00
Loan portion of ACPA	63.00	31.00	00.00	31.00
Special Plan Assistance (SPA) from J&K Govt. (interest free loan)	670.00	200.00	30.00	230.00
Subsidy	567.00	556.00	00.00	556.00
Total	5805.16	4997.09	513.00	5510.09

Interest during Construction and Financing Charges (IDC and FC)

- 2.33 The Petitioner has submitted that debt repayments on loans raised for the project commenced from October 2009 and the total amount of IDC and FC up till October 2009 was Rs.757.30 Cr and this amount was included in the project cost approved by the Board of Directors in the 58th Board Meeting held on 15th October 2009. However, in the instant petition filed, the Petitioner has considered IDC and FC as Rs.640.36 Cr which has been calculated up to 1st April, 2009, which is the date of

commissioning of the Baglihar HEP.

Interest on Loans

- 2.34 The Petitioner has submitted the details of the opening balance of loans, the loans drawn and the interest applicable on the respective loans for FY 2009-10 and FY 2010-11. The details submitted are in Table 20.

Table 20: Details of Loans (Rs Cr)

	Lender	Details of Loan as on 31.03.2009						Details of Loan as on 31.03.2010						
		Loan sanctioned	Loan Drawn during FY09	Loan Drawal 1	Loan Drawal 2	Loan Drawal 3	Weighted average ROI	Opening Loan as on 1.4.2009	Loan Drawn during FY10	Loan Drawal 4	Loan Drawal 5	Loan Drawal 6	Loan Drawal as on 31.03.2010	Weighted average ROI
1	PFC	845	600	107	289	204		600	245	220	15	10	845	
	ROI (Quarterly) - floating			9.00%	9.75%	12.00%	12.00%			11.75%	11.50%	11.25%		11.25%
2	REC	565	400	267	133			400	165	102	63		565	
	ROI (Quarterly) - floating			10.50%	12.75%		12.75%			12.75%	11.75%			11.75%
3	HUDCO	300	300	200	100			300					300	
	ROI (Monthly) -floating			10.25%	11.75%		10.75%							10.75%
4	Canara Bank	73	73	48.66	17.53	6.81		73					73	
	ROI (Monthly) -floating			10.50%	12.25%	11.75%	11.75%							11.75%
5	Central Bank of India	37	37	25	12			37					37	
	ROI (Monthly) -fixed			10.50%	10.50%		10.50%							10.50%
6	Union Bank of India	73	0						73	73			73	
	ROI (Monthly) -fixed									11.50%				11.50%
7	J&K Bank	360	360	200	160			360					360	
	ROI (Monthly) -floating			9.75%	13.00%		11.19%							11.19%
8	Loan portion of ACPA*	63	31	31				31					31	
	ROI (Monthly) -fixed			9.00%			9.00%							9.00%
9	Special Plan Assistance	670	200	200				200	30	30			230	
	ROI			0.00%						0.00%				
	Total	2986	2001	1079.36	712.23	211.05		2001	483	395			2314	
	Total weighted average of ROI						10.53%							10.25%
*	*ACPA: - Total amount of Rs. 63 Cr as shown in the table is corresponding to 10% of the total ACPA which is @ 9.0% interest on monthly basis													

Net Project Cost of Baglihar Hydro and Baglihar Transmission System

2.35 The Petitioner has submitted the bifurcation of cost, IDC, equity, debt and subsidy for Baglihar hydro and Baglihar transmission system for FY 2009-10 and FY 2010-11 for the purpose of determination of tariff. The bifurcation is as given in Table 21.

Table 21: Project Cost of Baglihar Hydro and Baglihar Transmission System (Rs Cr)

Description	Final estimated completion cost			FY 2009-10			FY 2010-11		
	Baglihar HEP Stage-I	Baglihar Hydro	Baglihar Trans System	Baglihar HEP Stage-I Exp as 31-3-09	Baglihar Hydro	Baglihar Trans System	Baglihar HEP Stage-I Exp as 31-3-10	Baglihar Hydro	Baglihar Trans System
Total cost excl IDC +FC	5069.87	4917.54	152.33	4347.55	4197.98	149.57	4776.21	4626.64	149.57
IDC +FC	640.36	621.12	19.24	640.36	621.12	19.24	640.36	621.12	19.24
Total cost incl IDC +FC	5710.23	5538.66	171.57	4987.91	4819.10	168.81	5416.57	5247.76	168.81
Less: Infirm power	25.97	25.19	0.78	25.97	25.19	0.78	25.97	25.19	0.78
Net Cost	5684.26	5513.47	170.79	4961.94	4793.91	168.03	5390.60	5222.57	168.03
Equity 30% for tariff purpose	1705.28	1654.04	51.24	1488.58	1438.17	50.41	1617.18	1566.77	50.41
Debt+ Subsidy (70% net cost)	3978.98	3859.43	119.55	3473.36	3355.74	117.62	3773.42	3655.80	117.62
Subsidy	556	539.29	16.71	556	539.29	16.71	556	539.29	16.71
Debt for tariff purpose	3422.98	3320.13	102.85	2917.36	2816.44	100.92	3217.42	3116.50	100.92

Determination of Tariff for Baglihar HEP and Baglihar Transmission System

2.36 The Baglihar HEP Stage I was declared commercially operational on 1st April 2009 along with 68 km of 400 kV D/C transmission line from Baglihar to Kishenpur for evacuation of power from the project. The 400 kV D/C transmission line has been connected with 2 nos. 400 kV terminating bays at Kishenpur Sub-station of PGCIL.

2.37 The Petitioner has made a submission to the Commission for approval of tariff for

- Sale of 50% power generated by Baglihar Hydro Project to Jammu & Kashmir Power Development Department (JKPDD) and
- The 400 kV Transmission line from Baglihar HEP to Kishenpur for the purpose of wheeling charges to be claimed from JKPDD for the portion of energy used/ purchased by JKPDD. The Petitioner has signed an agreement for supply at Kishenpur sub-station which includes the cost of wheeling charges in the agreed tariff.

2.38 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.

- 2.39 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.

Determination of Tariff for Baglihar Hydro

- 2.40 The submissions made by the Petitioner in respect of the different components of total annual fixed charges proposed by the Petitioner for FY 2009-10 and FY 2010-11 have been described in this section.

Norms of Operation

- 2.41 The Petitioner has followed the norms as specified in Chapter 3 of JKSERC Hydro Tariff Regulations for filing the tariff for Baglihar Hydro. The norms considered are given in Table 22.

Table 22: Norms of Operation for Baglihar Hydro

No	Particulars	Value	
1	Auxiliary Consumption	With Rotating Exciter	With Static Excitation
	Surface	0.20%	0.50%
	Underground	0.40%	0.70%
2	Transformer Losses	0.50%	0.50%
3	Transmission losses	0.30%	0.30%
4	O&M Expenses		
	% of Cap Cost	1.50%	
	Annual Escalation	4.00%	
5	Depreciation	As per regulation	
	Advance Against Depreciation	Equivalent to difference of actual repayment of loan and normal depreciation	
6	Working Capital		
	Receivable	2 months	
	O & M Expenses	1 month	
	Spares for Maintenance	1% of historic cost	
	Escalation in Spares Inventory	6% p.a.	
	Rate of Interest p.a.	14.50% as per PLR of J&K Bank as on 1.4.2009	
7	Return on Equity	14% of normative equity	
8	Initial Spares as part of Capital Cost	1.50% of capital cost	
9	Equity	30%	
	Loan	70%	
10	Interest	as per sanction	
11	Moratorium	No moratorium after COD	

No	Particulars	Value
12	Sale of Infirm Power	UI Rate
13	Foreign Exchange Rate Variation	Allowed, can be hedged

Interest on Loan

- 2.42 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.
- 2.43 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 2009, 1st April 2010. The amount of subsidy 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. Table 23 provides the computation of interest on loan proposed by the Petitioner.

Table 23: Proposed Interest on Loan for Baglihar Hydro (Rs Cr)

Particulars	FY 2009-10	FY 2010-11
Net Cost	4793.91	5222.57
Equity 30% for tariff purpose	1438.17	1566.77
Debt + Subsidy (70% of the net cost)	3355.74	3655.80
Subsidy	539.29	539.29
Debt for Tariff purpose	2816.44	3116.50
Loan at the beginning of the year	2914.97	3116.50
Repayment of loan (Normal depreciation + AAD)	281.64	311.65
Loan at the end of the year	2633.33	2804.85
Average of the loan	2774.15	2960.67
Rate of Interest on loan	10.53%	10.25%
Interest on the loan	292.25	303.43

Depreciation including Advance against Depreciation

- 2.44 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.
- 2.45 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. Table 24 provides the computation of depreciation proposed by the Petitioner.

Table 24: Proposed Depreciation for Baglihar Hydro (Rs Cr)

Particulars	FY 2009-10	FY 2010-11
Cost of project excluding Land Cost at the beginning of the year	4776.82	5205.48
Normal depreciation rate	As specified in appendix to Hydro Generation Regulations, 2005 for each individual class of assets.	As specified in appendix to Hydro Generation Regulations, 2005 for each individual class of assets.
Total depreciation	110.26	114.99

2.46 The Petitioner has submitted that advance against depreciation has been calculated in accordance with provisions of Regulation 24 of JKSERC Hydro Tariff Regulations. 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 25 provides the computation of advance against depreciation proposed by the Petitioner.

Table 25: Proposed Advance against Depreciation for Baglihar Hydro (Rs Cr)

Particulars	FY 2009-10	FY 2010-11
Total Normative Loan Amount	2816.44	3116.50
Annual Repayment of Loan 1/10th	281.64	311.65
Normal Depreciation for full year	110.26	114.99
Advance Against Depreciation	171.38	196.66

Return on Equity

2.47 The Petitioner has submitted that the return on equity (RoE) proposed has been calculated as per provisions of Regulation 25 of the JKSERC Hydro Tariff Regulations.

2.48 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 26 provides the computation of return on equity proposed by the Petitioner.

Table 26: Proposed Return on Equity for Baglihar Hydro (Rs Cr)

Particulars	FY 2009-10	FY 2010-11
Net cost of the Project	4793.91	5222.57
Total normative Equity 30% of the Project Cost	1438.17	1566.77
Rate of Return on Equity	14.00%	14.00%
Return on Equity	201.34	219.35

Operation & Maintenance (O&M) expenses

2.49 The Petitioner has submitted that 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.

- 2.50 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 for FY 2010-11. Table 27 provides the computation of operation & maintenance expenses proposed by the Petitioner.

Table 27: Proposed Operation & Maintenance for Baglihar Hydro (Rs Cr)

Particulars	FY 2009-10	FY 2010-11
Final estimated completion cost	5513.47	5513.47
O & M Expenses	1.50%	1.50%
Annual Escalation in O & M expenses		4.00%
O & M Expenses	82.70	86.01

Interest on working capital

- 2.51 The Petitioner has submitted that the interest on working capital proposed in the petition for FY 2009-10 and FY 2010-11 has been calculated in accordance with Regulation 27 of JKSERC Hydro Tariff Regulations.

- 2.52 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

- 2.53 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 28 provides the computation of interest on working capital proposed by the Petitioner.

Table 28: Proposed Interest on working capital for Baglihar Hydro (Rs Cr)

Description	Months	FY 2009-10	FY 2010-11
Receivable	2	148.07	158.83
O & M Expenses	1	6.89	7.17
Spares	1.00%	55.13	58.44
Escalation in spares	6.00%		
Total Working Capital		210.1	224.4
Working Capital Loan		210.1	224.4
Rate of Interest	14.50%	14.50%	14.50%
Interest On working capital		30.46	32.54

Income Tax

- 2.54 The Petitioner has submitted that as per Regulation 7(1) of JKSERC Hydro Tariff Regulations, tax on the income streams of the utility from its core business shall be computed as an expense and shall be recovered from the beneficiaries. Regulation 7(2) of the said regulation provides that any under-recoveries or over-recoveries of tax on income shall be adjusted every year on the basis of income tax assessment under the Income Tax Act, 1961 as certified by the statutory auditors.
- 2.55 The Petitioner has submitted that tax on income for the FY 2009-10 and FY 2010-11 has not been considered in the annual fixed charges computed for arriving at the proposed tariff for the these years. However, such tax shall be recovered from the ensuing years.

Annual Fixed Charges for Baglihar Hydro

- 2.56 The Petitioner has submitted that the annual fixed charges proposed for FY 2009-10 and FY 2010-11 have been calculated by considering the various components of tariff as described above. The indicative tariff proposed for FY 2009-10 and FY 2010-11 has been computed by taking into account the net saleable energy of 2498.03 MU.
- 2.57 Table 29 summarises the AFC and indicative tariff proposed by the Petitioner for FY 2009-10 and FY 2010-11.

Table 29: Proposed AFC and Indicative Tariff Baglihar Hydro

Description	Unit	FY 2009-10	FY 2010-11
O&M Expenses	Rs Cr	82.70	86.01
Interest on Loan	Rs Cr	292.25	303.43
Depreciation	Rs Cr	110.26	114.99
Additional Depreciation	Rs Cr	171.38	196.66
Return on Equity	Rs Cr	201.34	219.35
Interest on Working Capital	Rs Cr	30.46	32.54
Income Tax	Rs Cr	0.00	0.00
Total Annual Fixed Cost	Rs Cr	888.41	952.98
Net Saleable Energy	MU	2498.03	2498.03
Indicative Tariff	Rs/kWh	3.56	3.81

Determination of Tariff for Baglihar Transmission System

- 2.58 The Petitioner has made a submission to the Commission for approval of tariff of the Baglihar Hydro Project and the Baglihar Transmission System separately. The Petitioner has filed the petition for approval of tariff for the Baglihar Transmission System in accordance with the provisions of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009.
- 2.59 Submissions made by the Petitioner in respect of the different components of total

annual fixed charges proposed by the Petitioner for FY 2009-10 and FY 2010-11 have been described in this section.

Norms of Operation

2.60 The Petitioner has followed the norms as specified in Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009. The norms considered are given in Table 30

Table 30: 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

2.61 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.

2.62 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 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. Table 31 provides the computation of interest on loan proposed by the Petitioner.

Table 31: Proposed Interest on Loan for Baglihar Transmission System (Rs Cr)

Particulars	FY 2009-10	FY 2010-11
Net Cost	168.03	168.03
Equity 30% for tariff purpose	50.41	50.41
Debt + Subsidy (70% of the net cost)	117.62	117.62
Subsidy	16.71	16.71
Debt for Tariff purpose	100.92	100.92
Loan at the beginning of the year	100.92	100.92
Repayment of loan (Normal depreciation + AAD)	10.09	10.09
Loan at the end of the year	90.82	90.82
Average of the loan	95.8696	95.8696
Rate of Interest on loan	10.53%	10.25%
Interest on the loan	10.10	9.83

Depreciation including Advance against Depreciation

2.63 The Petitioner has submitted that depreciation proposed for the Baglihar Transmission System for FY 2009-10 and FY 2010-11 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.

Table 32: Proposed Depreciation proposed for Baglihar Transmission System (Rs Cr)

Particulars	FY 2009-10	FY 2010-11
Cost of project excluding Land Cost at the beginning of the year	168.03	168.03
Normal depreciation rate	2.57%	2.57%
Total depreciation for the year	4.32	4.32

2.64 The Petitioner has submitted that advance against depreciation has been calculated in accordance with the provisions of Regulation 24 of JKSERC Hydro Tariff Regulations. 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 33 provides the computation of advance against depreciation proposed by the Petitioner.

Table 33: Proposed Advance against Depreciation for Baglihar Transmission System (Rs Cr)

Particulars	FY 2009-10	FY 2010-11
Total Normative Loan Amount	100.92	100.92
Annual Repayment of Loan 1/10th	10.09	10.09
Normal Depreciation for full year	4.32	4.32
Advance Against Depreciation	5.77	5.77

Return on Equity

- 2.65 The Petitioner has submitted that the return on equity (RoE) proposed has been calculated as per the provisions of Regulation 25 of the JKSERC Hydro Tariff Regulations. 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 34 provides the computation of return on equity proposed by the Petitioner.

Table 34: Proposed Return on Equity for Baglihar Transmission System (Rs Cr)

Particulars	FY 2009-10	FY 2010-11
Net cost of the Project	168.03	168.03
Total normative Equity 30% of the Project Cost	50.41	50.41
Rate of Return on Equity	14.00%	14.00%
Return on Equity	7.06	7.06

Operation & Maintenance expenses

- 2.66 The Petitioner has submitted that the operation and maintenance expenses proposed for FY 2009-10 and 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 30 provides the computation of operation & maintenance expenses proposed by the Petitioner.

Table 35: Proposed O&M expenses for Baglihar Transmission System (Rs Cr)

Particulars	FY 2009-10	FY 2010-11
Final estimated completion cost	170.79	170.79
O & M Expenses for the year	1.47	1.56
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	km	68
No of Bays	Nos	2

Interest on working capital

- 2.67 The Petitioner has submitted that the interest on working capital proposed in the petition for FY 2009-10 and FY 2010-11 has been calculated in accordance with Regulation 27 of JKSERC Hydro Tariff Regulations.
- 2.68 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

- 2.69 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 36 provides the computation of interest on working capital proposed by the Petitioner.

Table 36: Proposed Interest on working capital for Baglihar Transmission System (Rs Cr)

Description	Months	FY 2009-10	FY 2010-11
Receivable	2	4.95	4.92
O & M Expenses	1	0.12	0.13
Spares	1.00%	1.71	1.81
Escalation in spares	6.00%		
Total Working Capital		6.8	6.9
Working Capital Loan		6.8	6.9
Rate of Interest	14.50%	14.50%	14.50%
Interest On working capital		0.98	0.99

Income Tax

- 2.70 The Petitioner has submitted that Regulation 7(1) of JKSERC Hydro Tariff Regulations states that tax on the income streams of the utility from its core business shall be computed as an expense and shall be recovered from the beneficiaries. Regulation 7(2) of the said regulation provides that any under-recoveries or over-recoveries of tax on income shall be adjusted every year on the basis of income tax assessment under the Income Tax Act, 1961 as certified by the statutory auditors.
- 2.71 The Petitioner has submitted that tax on income for the FY 2009-10 and FY 2010-11 has not been considered in the annual fixed charges computed for arriving at the proposed tariff for the these years. However, such tax shall be recovered from the ensuing years.

Annual Fixed Charges for Baglihar Transmission System

- 2.72 The Petitioner has submitted that the annual fixed charges proposed for FY 2009-10 and FY 2010-11 has been calculated by considering the various components of tariff as described above. The indicative tariff proposed for FY 2009-10 and FY 2010-11 has been computed by taking into account saleable energy of 2498.03 MU.
- 2.73 Table 29 summarises the AFC and indicative tariff proposed by the Petitioner for FY 2009-10 and FY 2010-11.

Table 37: Proposed AFC and Indicative Tariff for Baglihar Transmission System

Description	Unit	FY 2009-10	FY 2010-11
O&M Expenses	Rs Cr	1.47	1.56
Interest on Loan	Rs Cr	10.10	9.83

Description	Unit	FY 2009-10	FY 2010-11
Depreciation	Rs Cr	4.32	4.32
Additional Depreciation	Rs Cr	5.77	5.77
Return on Equity	Rs Cr	7.06	7.06
Interest on Working Capital	Rs Cr	0.98	0.99
Income Tax	Rs Cr	0	0
Total Annual Fixed Cost	Rs Cr	29.71	29.53
Net Saleable Energy in MU	MU	2498.03	2498.03
Indicative Tariff Rs. per kWh	Rs/kWh	0.12	0.12

Taxes and Duties

- 2.74 The Petitioner has submitted that the petition does not include any statutory levies, taxes and duties or cess, whatsoever, imposed or charged by the Central Government or any State Government and by any local bodies or authorities including auxiliary consumption.
- 2.75 Any amount on account of such taxes, levies, cess shall be required to be borne by the beneficiary additionally. Incidence of tax liability and other charges as notified under JKSERC Hydro Tariff Regulations shall also be required to be borne by the beneficiary additionally.

Reimbursement Fee

- 2.76 The Petitioner has submitted that filing fee amounting to Rs. 2 lakhs and consultancy fee amounting to Rs. 24.66 lakhs paid to consultants engaged for the purpose of preparation of ARR and Tariff Petition for FY 2009-10 and FY 2010-11 may be allowed to be recovered from the beneficiary.

Prayer of the Petitioner

- 2.77 The Petitioner has prayed to the Commission to:
- Approve the annual fixed charges for Baglihar HEP and Transmission Line for FY 2009-10 and FY 2010-11.
 - Approve the reimbursement of expenditure incurred by the Petitioner towards filing fee and fee of consultants engaged for preparation of ARR and tariff petition for FY 2009-10 and FY 2010-11.
- 2.78 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 Upon admittance of the petition filed by the Petitioner for approval of capital cost of the Baglihar project and the ARR and tariff for FY 2009-10 and FY 2010-11, 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/10/15/75 dated 4th 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 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:
- State Times on 7th March 2011
 - Dainik Jagran, Jammu on 7th March 2011
 - Rising Kashmir on 15th March 2011
 - Daily Aftab, Srinagar on 17th March 2011
- 3.4 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 28th March 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. The Commission and Petitioner received written objections and comments from several respondents. Table 38 provides the names of stake holders who submitted their comments on the petition in writing.

Table 38: List of stake holders who have made written submissions

No	Name of Respondent
1.	Anil Suri, President Bari Brahmana Industries Association
2.	G.H.Lone, Domestic Consumer

- 3.6 The Commission held public hearings in Srinagar on 2nd April 2011 and in Jammu on 5th April 2011, to discuss the matters pertaining to the petition filed by the Petitioner for approval of capital cost, determination of ARR and generation tariff for FY 2009-

10 and FY 2010-11.

- 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.

Non availability of all documents pertaining to the petition filed by the Petitioner

- 3.9 Various stakeholders submitted that the Petitioner had not made available all details, documents, annexures and information necessary to justify the claims and enable stakeholders to offer well informed objections/comments/suggestions to enable the Commission to apply the necessary prudence check in approval of the revenue requirement and determination of tariff in a transparent and effective manner. They also said that such lack of appropriate information being made available has in turn compromised the independence and the effectiveness of the exercising of regulatory powers by the Commission.
- 3.10 The annexures referred in Part A of the petition were not placed in public domain. Copy of the PPA referred as annexures 1, 2 and 3, copy of the DPR referred as annexure 4 and copy of the report of the independent consultant regarding validation of design energy referred as annexure 5 were not made available to stakeholders. All documents and annexures referred as Part C and D in the petition have not been provided to the public and stakeholders.

Petitioner's response

- 3.11 The Petitioner responded that the main petition stands uploaded on the website along with Part B (Formats). Part C comprises documents related to auditor's report and income tax reimbursement details to enable the Commission to carry out a prudence check. However, the hard copies (Part A, B and C) have already been provided to the Commission for forwarding it to the members of the State Advisory Committee.

Commission's View

- 3.12 The Commission opined that the Petitioner has made available all supporting documents and annexures along with the petition itself. However, some of these

documents were voluminous and may have not been uploaded on the website. The stakeholders had been advised to obtain copies of such documents from the office of the Petitioner. The Petitioner was required to provide documents or annexures forming part of the petition as required by the stakeholders.

Retrospective increase in tariff should not be permitted

- 3.13 Stakeholders pointed out that the Petitioner has proposed a retrospective increase in tariff for FY 2009-10 and FY 2010-11. It was submitted that consumers in the state cannot be burdened with any retrospective application of revised tariff.

Petitioner's response

- 3.14 The Petitioner submitted that it had filed a petition on 12th January 2011 for determination of tariff of all the HEPs of the Corporation for FY 2009-10 and FY 2010-11. However, Hon'ble Commission in its order dated 30th April 2010 issued directions to file a separate petition for Baglihar HEP. Accordingly, the petition for Baglihar HEP for FY 2009-10 and FY 2010-11 was filed.

Commission's View

- 3.15 The Commission in its tariff order dated 30th April 2010 for FY 2009-10 and FY 2010-11 had taken a decision to determine the generation tariff for Baglihar HEP separately and had directed Petitioner to file a separate tariff petition for the Baglihar HEP. Subsequently, in the Order related to Review Petition No. 22 of 2010 filed by Petitioner against the Tariff Order dated 30th April 2010, the Commission allowed the Petitioner to provisionally charge tariff for Baglihar HEP at Rs 3.54 per kWh for FY 2009-10 and Rs 3.71 per kWh for FY 2010-11 in accordance with the PPA signed between JKSPDC and JKPDD till such time as the tariff order for the Baglihar HEP Stage I was approved by the Commission. The Commission decided in the order that the provisional tariff allowed shall be revised on approval of tariff by the Commission with retrospective effect from the date of commissioning of the project.
- 3.16 In compliance with the directive of the Commission, the Petitioner has filed the instant petition for approval of capital cost and determination of tariff of Baglihar HEP for FY 2009-10 and FY 2010-11. The tariff determined by the Commission on disposal of this tariff petition shall be considered for determining the annual fixed charges recoverable by the Petitioner from JKPDD for FY 2009-10 and FY 2010-11. Any over recovery or under recovery by the Petitioner shall be tried up.

Determination of tariff over and above the PPA

- 3.17 The stakeholders mentioned that the Petitioner has not given any justification for determination of tariff over and above the power purchase agreement. They pointed out that the tariff hike if allowed over and above the rate mentioned in the PPA, would lead to an increase in the power purchase cost for the Power Development Department which would have an impact of increasing the power purchase tariff to

the ultimate consumers.

Petitioner's response

- 3.18 The Petitioner responded that the PPA was executed between JKSPDC and JKPDD prior to the establishment of the State Electricity Regulatory Commission. The petition has accordingly been filed before the Commission for approval of capital cost and determination of tariff in compliance with the provisions of the relevant Act and the regulations in vogue.

Commission's View

- 3.19 Regulation 2 of JKSERC Hydro Tariff Regulations, shall apply where capital based tariff is to be approved by the Commission and the said regulation was in force when the Baglihar Project was commissioned on 1st April 2009.
- 3.20 The Commission shall determine the annual fixed charges and tariff for Baglihar HEP based on the capital cost approved by the Commission after conducting due prudence check and in accordance with the provisions of JKSERC Hydro Tariff Regulations.

Exclusion of Plan Assistance and Subsidy from the cost of the project and depreciation

- 3.21 The stakeholders opined that the plan assistance and subsidy given by the Central Government and the State Government should not form part of the cost of the project. Accordingly, the amount of plan assistance and subsidy received from the government should be reduced from the cost of the project to arrive at the net cost of the project.
- 3.22 It was also pointed out that the Petitioner has considered the amount of plan assistance and subsidy as part of the debt capital which is in contravention with the principles of accounting since plan assistance and subsidy bear no character of repayment. It was also submitted that this amount should be reduced from the normative equity capital of 30% instead of being reduced from debt as has been done by the Petitioner at present.
- 3.23 The Petitioner should not be allowed to earn return at the rate of 14% on the equity element of the project when a part of the cost of the project has been met by the Government in the form of plan assistance and subsidy.
- 3.24 The stakeholders also pointed out that the Petitioner has calculated depreciation on the cost of the project without reducing the amount of plan assistance and subsidy. The normal accounting principles including taxation laws allow depreciation on the net cost of the asset after reducing the amount of plan assistance and subsidy received from the government. Depreciation should not be allowed on the part of cost of the project that has not been incurred by the Petitioner but subsidized by the government.

Petitioner's response

- 3.25 The Petitioner submitted that the subsidy as availed from central government has not been considered as loan as no interest has been claimed on the same. However, this amount of plan assistance and subsidy forms part of capital cost as per regulations. Similarly, no return on equity is claimed on the subsidy amount.
- 3.26 The Petitioner explained that they are a fully owned State Government utility and the funds provided by the State Government are its equity towards the projects. The equity element has however been restricted to 30% of the cost as per the regulations.

Commission's View

- 3.27 The Commission agrees with the views of the stakeholders. The Commission shall appropriately treat the funds received as Central and State subsidy/ grant while approving the capital cost and tariff for Baglihar HEP.

Pre-operative expenses

- 3.28 The stakeholders pointed that the Petitioner has submitted that cost of the project increased by Rs.839.26 Cr from Rs.4987.91 Cr to Rs.5827.17 Cr after the date of commissioning when commercial operations were said to have begun. It was also pointed out that the Petitioner has also submitted in the petition that the estimated cost of pre-operative expenses after the commissioning of the Baglihar HEP Stage I project is Rs.25.60 Cr. The stakeholders objected to such increase in cost after the date of commissioning of the project.

Petitioner's response

- 3.29 The Petitioner clarified that in the case of Baglihar HEP, all the civil and other construction works like road, building could not be completed till commissioning of the plant due to technical reasons. Some of the work could be commenced only after the units were commissioned and water was diverted from dam to tunnel for power generation. All these costs against the works being carried out after commissioning were accounted for in the estimated project and are not additional cost.

Commission's view

- 3.30 The Commission agrees with the views of the stakeholders and shall appropriately treat the issue while approving the capital cost and tariff for Baglihar HEP

Free power

- 3.31 The stakeholders highlighted that the Petitioner has not taken into consideration the availability of free power to the state from the Baglihar project which has been commissioned and is in commercial operation. It was pointed out that the State of Jammu and Kashmir is entitled to royalty as free power from the generating station situated within the State and as such the benefit of the same ought to be passed on to the consumers in the State. The stakeholders have requested the Commission to make

adequate adjustments in the revenue requirement of the Petitioner after taking into account the availability of free power to the state.

Petitioner's response

- 3.32 Petitioner has submitted that there is no free power available to the State of Jammu and Kashmir as JKSPDC is owned by the State Government. As per the PPA signed by the Petitioner with JKPDD and PTC for sale of power from Baglihar HEP, 50% power generated from the station shall be sold to JKPDD and balance 50% shall be sold to PTC.

Commission's View

- 3.33 The Commission agreed with the submission made by the Petitioner that there is no provision for providing free power to the State of Jammu and Kashmir and 50% power generated from the project shall be sold to JKPDD and 50% to PTC as per the PPA signed by the Petitioner.

Interest on working capital

- 3.34 The stakeholders mentioned that interest on working capital has been calculated at the rate of 14.50% per annum taking as base the short term prime lending rate of J&K Bank Limited as on 1st April 2009. The Reserve Bank of India has introduced the concept of base rate instead of prime lending rate which is more relevant. The interest on working capital should be allowed on the base rate of State Bank of India or J&K Bank prevalent at the relevant time.

Petitioner's response

- 3.35 The Petitioner clarified that the Interest on working capital has been taken as per Regulation 27 (2) of JKSERC Hydro Tariff Regulations. The prime lending rate (PLR) of J&K Bank as on 1.4.2009 was 14.5%. A copy of J&K Bank letter is attached with the petition as Annexure-32

Commission's view

- 3.36 As per Regulation 27 of Jammu and Kashmir State Electricity Regulatory Commission (Terms and Conditions for Determination of Hydro Generation Tariff) Regulations, 2005, the rate of interest on working capital shall 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.

Provisional capital cost

- 3.37 The stakeholders have opined that the capital cost intimated by the Petitioner is only provisional and has not been audited. The project cost should be audited by the

auditors of the company or a practicing Chartered Accountant and it should be certified that the project cost has been determined in accordance with the accounting standards issued by the Institute of Chartered Accountants of India.

Petitioner's response

- 3.38 The Petitioner explained to the stakeholders that each hydro electric project is unique and cannot be generalized therefore, the capital cost is project specific and depends on various factors like location, geology, size, length and type of water conductor system and type of other structures. It is also subject to variations on any geological surprises and conditions beyond the control of the developer. The capital cost arrived at the conclusion of this exercise, is however, subject to prudence check and approval of the Commission.
- 3.39 The Petitioner also stated that the capital cost submitted in the petition pertaining to Baglihar Hydro Project and Baglihar Transmission System is the total amount of expenditure incurred for completing the project. Details of the total capital cost incurred by the Petitioner have been forwarded to the Commission for carrying out a prudence check. All necessary documents in this regard have been submitted with the Commission.

Commission's view

- 3.40 The Commission has taken cognisance of the submission made by the stakeholders. The Petitioner in its petition has submitted that as per Board Resolution 58.1.2 taken during the 58th Board of Director meeting held on 15 October 2009, it was decided to approach Member (Hydro) CEA to review the escalation in the completion cost of Baglihar HEP Stage I from Rs 5200 CR to Rs 5827 Cr. In compliance with the resolution of the Board, JKSPDC vide letter No. PS/MD/JKSPDCL/876 dated 8 December 2009 submitted the documents for review by Member (Hydro), CEA. The review of cost escalation and final approval of capital cost of Baglihar HEP Stage I is awaited from CEA.
- 3.41 The Commission, keeping in view the above, has decided to provisionally approve the 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 received from CEA on review of cost escalation and final approval of capital cost of Baglihar HEP Stage I.

Sale of Infirm Power

- 3.42 The stakeholders pointed out that the revenue generated from the sale of infirm power has not been reduced from the project cost. The Petitioner has not made any adjustment of revenue from sale of infirm power.

Petitioner's response

- 3.43 The Petitioner has submitted that it has made adjustment in the capital of an amount

of Rs 25.97 Cr that has been received from PTC against the infirm power sold to PTC. JKPDD has not paid the amount of Rs 239.52 Cr against the infirm power sold to them. Hence, this amount has not been reduced from the capital cost.

Commission's view

3.44 As per Regulation 17 of JKSERC Hydro Tariff Regulations, any revenue earned by the Petitioner from the sale of infirm power shall be taken as reduction in capital cost and shall not be treated as revenue. The Commission shall treat the revenue from infirm power as per the above regulations.

3.45 The capital cost forms the basis for calculation of various components of tariff and the one time reduction on account of sale of infirm power shall be a step towards rationalisation of tariff. Further, such treatment is in line with the regulations enacted in this regard and would ensure that undue burden is not passed on to the consumer.

Operational efficiency and financial health of the Petitioner

3.46 The stakeholders pointed out that the Petitioner does not have its own cadre of employees. Most of the employees are on deputation from JKPDD. As a result, the Petitioner has not been able to develop a strong, skilled and motivated employee base that contributes to the growth of the organization.

Petitioner's response

3.47 The Petitioner explained to the stakeholders that they had already planned a restructuring exercise which was underway. An independent consultant has been engaged for this purpose and the Petitioner targets to have a full fledged establishment in terms of a technical and non technical cadre of employees by 2012-13.

Commission's view

3.48 The Commission agrees with the views of the stakeholders that there is an urgent need to develop a dedicated cadre of Petitioner's own employees to handle all aspects of power generation, with minimum dependence on outside agencies/ deputed employees. The Commission has already issued a directive to the Petitioner to get a detailed manpower study conducted for creation of a separate cadre for its permanent employees. The Petitioner was directed during the public hearing to expedite creation of its own cadre, technical as well as non technical, with inbuilt training and capacity building facilities.

A4: DETERMINATION OF CAPITAL COST

Introduction

- 4.1 The Commission has notified the Jammu and Kashmir State Electricity Regulatory Commission (Terms and Conditions for Determination of Hydro Generation Tariff) Regulations, 2005 on 23rd September 2005 vide notification No. 5/JKSERC/2005. The regulations were in force for a period of 5 (five) years from the date of notification. By notification No: 06/JKSERC/2010 dated 29th October 2010, the Commission extended the JKSERC Hydro Tariff Regulations, 2005 (notified vide No. 5/JKSERC/2005 dated 23rd September 2005) till 31st March 2012.
- 4.2 The capital cost and the tariff for Baglihar Hydro Electric Project is being determined and approved by the Commission in accordance with JKSERC Hydro Tariff Regulations extended till 31st March 2012.
- 4.3 Regulation 2 of the JKSERC Hydro Tariff Regulations defines the scope of these regulations and these regulations are applicable where capital based tariff is to be approved by the Commission. The regulation is reproduced below:
- “(1) The Regulations shall apply where capital based tariff is to be approved by the Commission.”*
- 4.4 Regulation 4, clause (2) sub clause (a) stipulates that the utility shall file an application for determination of tariff based on the actual capital expenditure incurred up to the date of commercial operation of the generation station. The Clause (1) and Clause (2) of Regulation 4 on Application for Determination of Tariff states:
- “(1) A utility may make an application for fixation of tariff in respect of the completed units of the generating station in such formats and along with such information, which the Commission may require from time to time.*
- (2) In case of a generating station declared under commercial operation on or after 1.4.2005, an application for fixation of tariff shall be made in two stages, namely:*
- (a) A utility may make an application for determination of provisional tariff in advance of the anticipated date of completion of project based on the capital expenditure actually incurred up to the date of making the application or a date prior to making of the application, duly audited and certified by the statutory auditors and the provisional tariff shall be charged from the date of commercial operation of the respective unit of the generating station;*
- (b) A utility shall make a fresh application for determination of final tariff based on actual capital expenditure incurred up to the date of commercial operation of the generating station, duly audited and*

certified by the statutory auditors.”

4.5 Further, Regulation 5 on Tariff Determination states as follows:

- “(1) The tariff in respect of a generating station under these Regulations shall be determined stage-wise, unit-wise or for the whole generating station.*
- (2) For the purpose of tariff, the capital cost of the project shall be broken up into stages and by distinct units forming part of the project. Where the stage-wise or unit-wise break-up of the capital cost is not available and in case of on-going projects, the common facilities shall be apportioned on the basis of the installed capacity of the units, In relation to multipurpose hydro electric projects, with irrigation, flood control and power components, the capital cost chargeable to power component to the project only shall be considered for determination of tariff.”*

4.6 Also, Regulation 15 on Capital cost calls for a prudence check by the Commission of the actual expenditure incurred on completion of the project, which shall form the basis for determination of tariff. The Regulation 15 is reproduced below:

“Subject to prudence check by the Commission, the actual expenditure incurred on completion of the project shall form the basis for determination of final tariff. The final tariff shall be determined based on the admitted capital expenditure-actually incurred up to the date of commercial operation of the generating station and shall include initial capital spares subject to a ceiling norm of 1.5% of the original project cost as on the cut off date:

Provided further that where the power purchase agreement entered into between the utility and the beneficiaries provides a ceiling of actual expenditure, the capital expenditure shall not exceed such ceiling for determination of tariff.

Note -The scrutiny of the project cost estimates by the Commission shall be limited to the reasonableness of the capital cost, financing plan, interest during construction, use of efficient technology and such other matters for the purposes of determination of tariff.”

4.7 The Commission in its Tariff 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 owned and operated by the Petitioner. 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 HEPs. The Commission had directed the Petitioner to file a separate petition for determination of tariff for Baglihar HEP.

4.8 The Petitioner had filed a combined Petition for determination of capital cost of the project and approval of ARR and tariff petition for FY 2009-10 and FY 2010-11 for the hydro generation station and the associated transmission system for approval of the Commission.

- 4.9 The Commission is, therefore, conducting the exercise of prudence check of the capital cost to be admitted for the purpose of tariff determination to be determined in accordance with the JKSERC Hydro Tariff Regulations.

Determination Capital cost of the project

- 4.10 Commission in its exercise of conducting a prudence check has examined the documentation submitted by the Petitioner in support of the capital expenditure incurred on the project and the final completion cost of the project.
- 4.11 Baglihar HEP Stage I project was approved by the State Government of Jammu & Kashmir vide letter no. PDD/10-21/85-111 dated 9th April 1999 at an estimated cost of Rs.3495.00 Cr which was subsequently revised to Rs.3810.00 Cr after award of major packages. The original project commissioning date was 31st December 2004 with a zero date of 1st January 2000 and a completion period of 60 months. The cost was again revised to Rs 4000 Cr by JKSPDC and sanctioned by State Govt of J&K vide order No.271-PDD of 2004 dated 31st August 2004.
- 4.12 The project experienced time and cost over run due to delay in land acquisition, law and order situation, non-availability of construction power, geological surprises etc and the severe damage to the plant in the monsoon of 2005 which threatened abandonment of the project.

Review by Central Electricity Authority

- 4.13 As per the decision taken in the 11th Review meeting of Jammu & Kashmir Reconstruction Plan, a Committee under the Chairmanship of Member (Hydro), Central Electricity Authority was set up for reviewing the escalation in cost estimates for Baglihar HEP as per Ministry of Power Order No. 9/1/2002-DO (NHPC) Vol. II dated 01.12.2006. The terms of reference of the committee were
- (a) To enquire into the causes for the time and cost overrun for the project;
 - (b) Assess the revised cost and requirement of further financing and means to raise the same;
 - (c) Suggest corrective action, finalise a time bound action plan and put in place a proper monitoring mechanism to ensure timely completion of the project.
- 4.14 The Commission has examined the report No.119/2/1/2007/HPM/1237 dated 18th June 2007 of the Committee for reviewing the escalation in the cost estimates for Baglihar H.E. Project (450 MW) being executed by JKSPDC in Jammu & Kashmir.
- 4.15 As per the report, JKSPDC provided the Committee with the revised estimates for the project at Rs 5000 Cr (base cost of Rs 4485 Cr and IDC of Rs 525) and increase of Rs 1000 Cr (25%) over the sanctioned cost of Rs. 4000 Cr (base cost of Rs. 3700 Cr and IDC of Rs 300 Cr). The Committee carried out an assessment of the revised cost

submitted by JKSPDC and arrived at the final revised cost estimate of Rs 4960 Cr with a base cost of Rs 4437 Cr and IDC of Rs 523 Cr considering an option I which is of cost overrun being funded through debt only.

- 4.16 The table below summaries the details of the estimates of the cost submitted by JKSPDC and finalised by the Committee.

Table 39: CEA Revised Cost Estimates for the Project (Rs Cr)

No	Particulars	Rev to Rs 4000 Cr	Exp till Mar 2007	Rev Est by JKSPDC	Rev as per CEA Committee
1	Pre operative expenses	41.80	31.00	60.80	59.40
2	Infrastructure Works	92.60	61.00	98.45	96.45
3	Civil & Hydro Mechanical Works	2669.70	2461.49	3243.70	3200.17
4	Electro-mechanical works	589.70	512.54	645.21	645.21
5	Transmission Work	106.70	152.86	158.83	158.83
6	Environment R&R and legal expenses	68.87	9.65	113.87	113.67
7	Fee for Owner's Engineer	60.77	81.27	100.09	99.59
8	Fee for Financial advisor, fund arranger, L.E etc	4.50	2.00	4.50	4.50
9	O&M mobilization etc.	5.00	-	5.00	5.00
10	Margin Money in Working Capital	24.60	-	24.60	24.60
11	Financing Charges	22.60	-	22.60	22.60
12	Contingencies	13.00	-	7.23	7.23
13	Sub Total Base Cost	3700	3311.81	4484.88	4437.25
14	IDC	300.00	272.35	525.00	523.00
15	Total Cost	3999.84	3584.16	5009.88	4960.25

Time and Cost Over-run

- 4.17 The contractors were unable to complete the civil works as per the time schedule envisaged in the contract agreement due to various reasons such as non-availability of land, law and order and security problem, delay in payments, non-availability of construction power, bad condition of Nasri bye-pass road etc, the contractors sought an extension of 18 months in time for completion of works upto 30th June 2006. After scrutiny by JKSPDC and the Engineer-in-charge, a time extension of 18 months was granted by JKSPDC vide Addendum No.2 dated 18th June 2005. Accordingly the project was now to be completed by 30th June 2006, and delayed by 18 months from the date of original commissioning date.
- 4.18 The project suffered damages in the monsoon of 2005. Due to the phenomenon of high water discharge in the river which was supplemented by early monsoon rains caused erosion and scouring on the banks which caused landslides and as a result of which diversion tunnel-2 was choked on 5th July 2005. On 14th August 2005, the site was hit by a massive land slide due to which diversion tunnel -1 was choked. Massive landslides occurred on 15th and 16th August 2005 on the right bank causing serious damages to right abutment of dam. As a result of various landslides and

sustained high water flow and overtopping of the dam, the right abutment was further damaged and eroded to form a big cavity. The project faced an extreme difficult and delicate situation due to blockage of diversion tunnels and overtopping of the dam.

- 4.19 Subsequent to the land slides and overtopping of the dam, the contractor submitted a revised construction program seeking extension in time targeting completion of works and power generation by December 2007. The Engineer-in-charge expressed that the revised program was rather optimistic and a lot of inputs will be required to accomplish the target. Keeping in view the damages suffered and additional works required to be done, JKSPDC vide Addendum No.3 dated 23 August 2006 granted second extension of 18 months with the commissioning of the units by December 2007, the total delay of 36 months in commissioning of the project.
- 4.20 Since, the contractor was unable to complete the work by 31st December 2007, it submitted to JKSPDC the detailed justification for the delays in execution of work and requested for extension of time for completion upto 30th June 2009. JKSPDC agreed to the time extension sought but extended it upto 30th June 2008, which was provided vide Addendum 4 dated 4th June 2008 which bought the delay in commissioning to 102 months.
- 4.21 As the contractor was unable to meet this revised deadline, it sought further extension of time for completion upto 30th June 2009 which was granted by JKSPDC vide Addendum 5 dated 2nd March 2009. The three units of the project were commissioned finally on 8th October 2009, 28th October 2009 and 25th November 2009 respectively, with the station entering into commercial operation on 1st April 2009. It took 111 months to commission the station, a delay of 52 months.

Table 40: Time taken for Commissioning of Project

Description	Date	Completion Period
Date of Commencement of work	1-Jan-2000	
Original Date of Commissioning	31-Dec-2004	60 Months
Actual Date of Commissioning	1-Apr-2009	111 Months
Delayed by		52 Months

- 4.22 With the commissioning of the units and water being discharged through diversion tunnels 1 and 2, work on downstream of the dam could now be under taken. The Contractor requested for and received three additional time extensions of 3 months upto 30th June 2009, 6 months upto 31st December 2009 and 6 months upto 30th June 2010 vide Addendum No 6 dated 20th May 2009, Addendum No 7 dated 28th August 2009 and Addendum No 10 dated 30th March 2010 respectively to complete the work downstream to the dam. The extension sought and granted are summarised below:

Table 41: Time Extensions Granted to Contractor

Extensions granted	Date of Extension	Extension from	Extension till	months
Addendum 2	18-Jun-2005	1-Jan-2005	30-Jun-2006	18
Addendum 3	23-Aug-2006	1-Jul-2006	31-Dec-2007	18

Extensions granted	Date of Extension	Extension from	Extension till	months
Addendum 4	4-Jun-2008	1-Jan-2008	30-Jun-2008	6
Addendum 5	2-Mar-2009	1-Jul-2008	31-Mar-2009	9
Addendum 6	20-May-2009	1-Apr-2009	30-Jun-2009	3
Addendum 7	28-Aug-2009	1-Jul-2009	31-Dec-2009	6
Addendum 8	30-Mar-2010	1-Jan-2010	30-Jun-2010	6

4.23 Subsequently the project cost was revised to Rs 5200 Cr and sanctioned by State Govt of J&K vide order No. 166-PDD of 2008 dated 25th April 2008. The final completion cost for the project has been estimated at Rs 5827 Cr and was approved by the Board of Directors of JKSPDC during 58th meeting held on 15th October 2009. The revision of project cost is tabulated below:

Table 42: Revision of Project Cost (Rs Cr)

No	Estimated	Cost Rs Cr	Increase Rs Cr	Increase %	Per MW
1	Original cost as per DPR with year 1997 as base price	3495			7.77
2	Revised cost after placement of order for plant and equipment during the year	3810	315	9%	8.47
3	Revised cost estimated by Govt. of J&K vide letter no. 271-PDD of 2009 dated 31-08-2004	4000	190	5%	8.89
4	Revised cost as on COD by Govt. of J&K vide order No. 166-PDD of 2008 dated 25.04.2008	5200	1200	30%	11.56
5	Final estimated completion cost as approved by B.O.D. during 58 th meeting held on 15-10-2009	5827	627	12%	12.95
	Total		2332	67%	12.95

4.24 As seen from the Table 42, the cost has escalated by 67% from the original cost as per DPR, resulting in extremely high cost of Rs 12.95 Cr/ MW, which is one of the highest costs incurred in the country to set up a hydro project.

Break up of Project Cost

4.25 Table 43 shows the movement of various project cost components due to the time and cost overruns suffered by the project.

Table 43: Break up of Project Cost Overrun as submitted by Petitioner (Rs Cr)

No	Particulars	Rev to Rs 4000 Cr	As per CEA Committee	Rev to Rs 5200 Cr	Rev to Rs 5827 Cr
1	Pre operative expenses	41.80	59.40	38.75	64.10
2	Infrastructure Works	92.60	96.45	68.23	111.15
3	Civil & Hydro Mechanical Works	2669.70	3200.17	3512.97	3773.09
4	Electro-mechanical works	589.70	645.21	667.25	712.50
5	Transmission Work	106.70	158.83	149.57	152.33
6	Environment R&R and legal expenses	68.87	113.67	18.87	113.67
7	Fee for Owner's Engineer	60.77	99.59	112.43	130.75
8	Fee for Financial advisor, fund arranger, L.E etc	4.50	4.50	-	-

No	Particulars	Rev to Rs 4000 Cr	As per CEA Committee	Rev to Rs 5200 Cr	Rev to Rs 5827 Cr
9	O&M mobilization etc.	5.00	5.00	0.07	5.00
10	Margin Money in Working Capital	24.60	24.60	-	-
11	Financing Charges	22.60	22.60	-	-
12	Contingencies	13.00	7.23	-	7.28
13	Sub Total Base Cost	3700	4437.25	4568.14	5069.87
14	IDC	300.00	523.00	636.40	757.30
15	Total Cost	3999.84	4960.25	5204.54	5827.17

Total Base Cost Approved

4.26 As submitted by the Petitioner, the final estimated cost approved by the Board of Directors of JKSPDC during 58th meeting held on 15th October 2009 is Rs. 5827.17 Cr (base cost of Rs 5069.87 Cr) which includes the IDC & FC of Rs 757.30 Cr calculated upto October 2009. In the Board meeting, a resolution was passed (Resolution No. 58.1.1) to approach Member (Hydro) CEA to review the escalation in the completion cost of Baglihar HEP Stage I from Rs 5200 Cr to Rs 5827 Cr. In compliance to the resolution of the Board, JKSPDC vide letter No. PS/MD/JKSPDCL/876 dated 8th December 2009 submitted the documents for review by Member (Hydro), CEA.

4.27 Review of cost escalation and final approval of capital cost of Baglihar HEP Stage I is awaited from CEA.

4.28 The Commission vide letter no. JKSERC/PS/M-3/77 dated 4th March 2011, sought response from the Petitioner on inclusion of additional capital expenditure incurred beyond the cut-off date. As per Regulation 3 (21), the original project cost should be taken as the actual cost incurred, as per the original scope of project, till cut-off date i.e. 31st March 2010. The said regulation is reproduced below;

“Original Project Cost’ means the actual expenditure incurred by the utility, as per the original scope of project up to first financial year closing after one year of the date of commercial operation of the last unit as admitted by the Commission for determination of tariff.

4.29 The Petitioner in its reply vide letter No. PDC/P-241/CJ/7821 dated 14th March 2011, has drawn attention of the Commission to Regulation 16(2) of JKSERC Hydro Tariff Regulations, which deals with expenses incurred after the cut-off date for additional capitalisation. The regulation is reproduced below:

“16. Additional Capitalization.

(1)The following capital expenditure within the original scope of work actually incurred after the date of commercial operation up to the cut off date may be admitted by the Commission subject to prudence check:

- (i) *Deferred liabilities;*
- (ii) *Works deferred for execution;*
- (iii) *Procurement of initial capital spares in the original scope of works subject to ceiling specified in Regulation 15;*
- (iv) *Liabilities to meet award of arbitration or in compliance of the order or decree of a court; and*
- (v) *On account of change in law.*

Provided that original scope of works along with estimates of expenditure shall be submitted along with the application for provisional tariff:

Provided further that a list of the deferred liabilities and works deferred for execution shall be submitted along with the application for final tariff after the date of commercial operation of generating station.

- (2) *Subject to the provision of sub-regulation (3) of this Regulation, the capital expenditure of the following nature actually incurred after the cut off date may be admitted by the Commission subject to prudence check:*
 - (i) *Deferred liabilities relating to works/services within the original scope of work;*
 - (ii) *Liabilities to meet award of arbitration or in compliance of the order or decree of a court;*
 - (iii) *On account of change in law; and*
 - (vi) *Any additional works/services which has become necessary for efficient and successful operation of plant but not included in the original capital cost.”*

4.30 The Petitioner in its reply has submitted that though major works necessary for the commercial operation were completed by 31st April 2009, a number of works remained pending which were deferred and had no direct bearing on commissioning of the station. The difference in expenditure incurred and the project estimate is due to the cost of deferred works which are carried out during FY 2009-10 and FY 2010-11.

4.31 The works on which expenditure is being incurred are as follows:

- (a) Discharge of deferred liabilities, where the project work has been completed but payment not released.
- (b) Payments towards retention money as security which matured after 31st March 2010 and were to be released post Defect Liability Period (one year beyond actual completion) subject to clearance of defects.
- (c) Rehabilitation of damages caused due to flood in year 2005.
- (d) Land related payment.
- (e) Infrastructural works for O&M staff.
- (f) Rehabilitation and re-settlement works being executed by other government

agencies

- (g) Environmental related expenditure like CAT works being executed by Forest Department.
- 4.32 The additional expenditure incurred on deferred works was Rs 428.66 Cr in FY10 and Rs 231.88 Cr in FY11,
- 4.33 The Commission provisionally approves the base cost expenditure incurred by the Petitioner on the project as on 31st March 2009 and the additional capital expenditure incurred as on 31st March 2010 and as on 31st March 2011. The Commission shall finally approve the base cost and the capital cost (including IDC) based on the approval received from CEA on Review of cost escalation and final approval of capital cost of Baglihar HEP Stage I.
- 4.34 The provisionally approved base cost with the details of expenditure incurred on various heads as on 31st March 2009, 31st March 2010 and 31st March 2011 is shown in Table 44

Table 44: Provisionally Approved Base Cost (Rs Cr)

Particulars	Expenditure as of 31.03.2009	Additional Capitalisation in FY10	Expenditure as of 31.03.2010	Additional Capitalisation in FY10	Expenditure as of 31.03.2011
Infrastructure Works	224.33	4.03	228.36	94.67	323.03
Major Civil Works	2778.05	257.28	3035.33	116.85	3152.18
Hydro Mechanical works	202.95	2.01	204.96	10.41	215.37
Electro-Mechanical works	671.78	37.37	709.15	0.00	709.15
Transmission Works	149.57	0.00	149.57	0.00	149.57
Design & Engineering	67.03	3.51	70.54	0.74	71.28
Environment & Ecology & Rehab / Resett	25	1.00	26	3.00	29
Taxes and Duties	80.26	104.49	184.75	1.00	185.75
Construction & Pre-commissioning	115.23	14.24	129.47	4.21	133.68
Preoperative expenses / establishment	33.13	4.72	37.85	1.00	38.85
Overheads	0.22	0.01	0.23	0.00	0.23
Subtotal base cost	4347.55	428.66	4776.21	231.88	5008.09

Means of finance

- 4.35 The Petitioner has submitted that the project has been funded through a combination of debt, equity, subsidy and central plan assistance. The details of the means of finance availed by the petitioner are described in Chapter A2 of the order.
- 4.36 The Commission has approved the financing of the project at a debt to equity ratio of 70:30 as per Regulation 18 of the Hydro Tariff Regulations taking into consideration the project cost that has been funded through Central grant received in the form of Additional Central Plan Assistance (ACPA). The equity in excess of 30% has been considered as normative loan.

4.37 Regulation 18 Clause 1 has been reproduced below:

“(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.”

Debt Component

4.38 The Commission has approved the loans as sanctioned and drawn by the Petitioner in accordance with the Common Loan Agreement (CLA) signed on 19th January 2005 and Additional Financial Assistance signed on 24th April 2009 as Addendum to common loan agreement. The loans drawn from Banks/ Financial Institutions as per the CLA and the Addendum to the CLA is shown in Table 45.

Table 45: Provisionally Approved Loans Drawn from Banks/ FIs (Rs Cr)

Bank/ Financial Institutions	Common Loan Agreement	Additional Financial Assistance
PFC	600.00	845.00
REC	400.00	565.00
HUDCO	300.00	300.00
UCO Bank	50.00	-
Indian Overseas Bank	37.00	-
Central Bank of India	37.00	37.00
Union Bank of India	73.00	73.00
Canara Bank	73.00	73.00
Jammu & Kashmir Bank	200.00	360.00
Total Debt	1770.00	2253.00

Equity Component

4.39 The Petitioner has submitted that Plan Assistance provided by the State Government and the amount raised through non convertible bonds issued by the Petitioner, (interest upon which has been serviced by the State Government) have been treated as equity for the project. The total equity infused by the Petitioner is Rs 2252.16 Cr.

4.40 The Petitioner has shown the equity position as on 31st March 2009 to be Rs 2440.09 Cr which is an increase of Rs 187.93 Cr from Rs 2252.16 Cr. The Commission sought clarification on the source of the additional equity infusion shown by the Petitioner. The Petitioner submitted that the loans and the subsidy amounts were not released in time and therefore the Petitioner had to complete the project by availing a bridge loan till the sanctioned loan and subsidy amounts were received.

- 4.41 The Commission has not considered the additional amount of Rs 187.93 Cr as equity and approves Rs 2252.16 Cr as equity infused in the project as shown in Table 46.

Table 46: Provisionally Approved Equity Funding

Particulars	Rs Cr
State Plan	1198.20
Bonds	1053.96
Total Equity	2252.16

Subsidy Component

- 4.42 The Petitioner has received funds for the project from Government of India as Additional Central Assistance (ACA) and Special Central Assistance (SCA) from State Govt of Jammu and Kashmir.

Additional Central Assistance for Baglihar HEP

- 4.43 The Planning and Development Department under Prime Minister's Re-construction Plan has sanctioned Rs 630 Cr and as of 31st March 2011, released Rs 609 Cr as grant-in-aid and loans towards utilisation in Baglihar Stage – I Project of which Rs 567 Cr is as grant-in-aid and Rs 42 as loan at 9% rate of interest and repayment period of 20 years with a grace period of 5 years. The Petitioner has submitted that ACA loan portion of Rs 21 Cr is due as on date.
- 4.44 The Commission has considered the ACA as an approved source of funding for the project. The Table 47 shows the ACA sanctioned and utilised by JKSPDC on Baglihar HEP.

Table 47: Provisionally Approved Additional Central Assistance (Rs Cr)

Particulars	Sanctioned	Utilised
Additional Central Assistance (ACA)	567.00	567.00
ACPA converted to Loan	63.00	42.00
Total ACA	630.00	609.00

Special Central Assistance (SCA) from J&K Govt

- 4.45 Government of Jammu and Kashmir through Order No. 334 PDD of 2008 dated 21st November 2008 sanctioned Rs 670 Cr as Special Central Assistance in the form of interest free loan and an advance drawal of Rs 200 Cr was accorded as first instalment on 21st November 2008 for utilisation on Baglihar HEP. Govt of J&K through order No. 114-PDD of 2009 dated 1st June 2009 sanctioned second advance drawal of Rs 30 Cr as interest free loan for Baglihar HEP. Govt of J&K through its order Nos. 214-PDD of 2010 dated 20 August 2010 and 217-PDD of 2010 dated 25 August 2010 released Rs 240 Cr and Rs 200 Cr as interest free loan taking the cumulative interest free loan amount to Rs 670 Cr.

- 4.46 The Commission has considered the SCA as an interest free loan and not grant/subsidy as an approved source of funding for the project. The Table 48 shows the SCA sanctioned and availed by JKSPDC on Baglihar HEP.

Table 48: Special Central Assistance (SCA) from J&K Govt. (interest free loan) (Rs Cr)

Particulars	Sanctioned	Availed
Special Central Assistance (SCA)	670.00	
Drawn in FY 2008-09		200.00
Drawn in FY 2009-10		30.00
Drawn in FY 2010-11		440.00
Total	670.00	670.00

Approved Means of Finance

- 4.47 The total funding approved by the Commission for the project is summarised in Table 49.

Table 49: Provisionally Approved Means of Finance (Rs Cr)

Source of Fund	Approved by Commission
Equity	2252.16
CLA Loan (Bank/ FIs)	2253.00
SCA Loan (Interest Free)	670.00
ACA Loan	42.00
ACA Subsidy	567.00
Total Funding	5784.16

Interest during construction and financing charges

- 4.48 The Commission provisionally approves Rs 640.36 Cr as IDC and FC incurred on the project upto 1st April 2009, the COD of the station as submitted by the Petitioner. The Commission shall finally approve the IDC and FC cost based on the approval received from CEA on Review of cost escalation and final approval of capital cost of Baglihar HEP Stage I.

Capital cost of project

- 4.49 Based on the discussion above, the capital cost of the project considering the provisionally approved base cost and IDC cost is shown in Table 50 below:

Table 50: Provisionally Approved Capital Cost (Rs Cr)

Particulars	Expenditure as of 31.03.2009	Expenditure as of 31.03.2010	Expenditure as of 31.03.2011
Total Base Cost	4347.55	4776.21	5008.09
IDC & FC (upto 31.03.2009)	640.36	640.36	640.36
Total Capital Cost	4987.91	5416.57	5648.45

Capital Cost Net of Infirm Power

- 4.50 It has been submitted by the Petitioner that energy of 704.82 MU was generated as infirm power between 8 October 2008 (date of commissioning of Unit-I) up till 31 March (COD of the station) and sold to PTC and JKPDD. The energy generated and its revenues from sale of infirm power is tabulated below:

Table 51: Infirm Power - Generation and Revenues as Submitted by Petitioner

Infirm Power	MU	Rs Cr
Buyer - PTC	28.2	25.97
Buyer - PDD	676.62	239.52
Total	704.8	265.50

- 4.51 Petitioner in its submission of net project cost has deducted the revenue received from PTC for infirm power from the total project cost and has not considered Rs 239.52 Cr which is still due from JKPDD.
- 4.52 As per Regulation 17 of JKSERC Hydro Tariff Regulations, 2007, revenue earned by the utility from sale of infirm power shall be taken as reduction in capital cost and shall not be treated as revenue. The regulation is reproduced below

“17 Sale of Infirm Power

Any revenue earned by the utility from sale of infirm power shall be taken as reduction in capital cost and shall not be treated as revenue. The rate for infirm power shall be the same as the primary energy rate of the generating station.”

- 4.53 The Commission has determined the net project cost by reducing the total revenue earned from sale of infirm power considering the rate of infirm power same as the primary energy rate determined by the Commission for FY 2009-10. The net project cost after considering the revenue from infirm power as approved by the Commission is as below:

Table 52: Provisionally Approved Capital Cost Net of Infirm Power (Rs Cr)

Particulars	Cost as of 31.03.2009	Cost as of 31.03.2010	Cost as of 31.03.2011
Project Cost Incl transmission	4987.91	5416.57	5648.45
Infirm Power Sold to PTC	25.97	25.97	25.97
Infirm Power Sold to PDD	206.60	206.60	206.60
Provisionally Approve Net Project Cost	4755.34	5184.00	5415.88

- 4.54 The provisionally approved net capital cost has further been bifurcated for Baglihar Hydro Station and Baglihar Transmission System as given in table below:

Table 53: Provisionally Approved Net Project Cost Bifurcated into Hydro & Trans System (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

- 4.55 The Commission provisionally approves 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 received from CEA on Review of cost escalation and final approval of capital cost of Baglihar HEP Stage I.

A5: DETERMINATION OF ARR & TARIFF FOR BAGLIHAR HYDRO PROJECT

Introduction

- 5.1 The Commission in its tariff order dated 30th April 2010 for FY 2009-10 and FY 2010-11 for 18 HEPS owned and operated by the Petitioner, 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 and had directed Petitioner to file a separate tariff petition for the Baglihar HEP.
- 5.2 In compliance with the directive of the Commission, the Petitioner, on 27th December 2010 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 23rd September, 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 2009-10 and FY 2010-11 for the Baglihar Hydro generating station.
- 5.3 The Commission is determining the tariff for FY 2009-10 and FY 2010-11 for Baglihar Hydro Project (without the Baglihar transmission system) in accordance with JKERC Hydro Tariff Regulations, 2005.

Date of Commissioning

- 5.4 The Baglihar HEP consists of three units of 150 MW each and after facing inordinate delays the first unit was commissioned on 8th October 2008, the second unit on 28th October 2008 and the final unit on 25th November 2008. As the units were commissioned during winter months when the water was not available in sufficient quantity, it was decided not to declare the project commercially operational. The energy generated during the winter season was sold to PTC and JKPDD as infirm power. The whole station was declared commercially operational on 1st April 2009.
- 5.5 The Baglihar HEP, after encountering extensive delays, was declared commercially operational on 1st April 2009. The three units were commissioned on the respective dates mentioned in the table below:

Table 54: Commercial Operation Date of Baglihar HEP

Date of COD	Capacity	Date of COD
Unit 1	150 MW	8-Oct-08
Unit 2	150 MW	28-Oct-08
Unit 3	150 MW	25-Nov-08
Baglihar Station	450 MW	1-Apr-09

Design Energy

- 5.6 The Petitioner has submitted that as per the original DPR, the design energy in a 90% dependable year with 95% installed capacity was 2643 MU in base year of 1974 with hydrological data for the period 1963-1996. With the hydrological data for years 1997 to 2007 being available, Power Potential Studies were undertaken and the design energy was revised to 2536.07 MUs.
- 5.7 Commission in its Tariff Order for the FY 2008-09, had directed the Petitioner, to appoint an independent consultant for revalidation of design energy based upon the norms specified in the JKSERC Hydro Tariff Regulations, 2005 and to adhere to the definition of design energy as per the Regulations for new projects.
- 5.8 The Petitioner has submitted the report of the independent consultant appointed in compliance of the directive issued in the Tariff Order of FY 2008-09. The assessment of design energy for various plants has been done in accordance with the Regulation 3 clause (14) of JKSERC Hydro Tariff Regulations, 2005, which has been reproduced below:

“(14) Design Energy’ means the quantum of energy, which could be generated in a 90 percent dependable year with 95 percent installed capacity of the generating station.”

- 5.9 The Commission has gone through the workings in the report and found the same to be in accordance with the Regulations. The comparison of the design energy originally estimated in the DPR for Baglihar HEP and that in the validation exercise undertaken by the Petitioner are shown in the table provided below:

Table 55: Design Energy

Plant	Installed Capacity (MW)	Design Energy as per DPR (MU)	As per Validation Report (MU)	% change
Baglihar HEP	450	2643	2536.07	-4.05%

Debt Equity Ratio

- 5.10 As per Regulation 18 of JKSERC Hydro Tariff Regulations, the debt-equity ratio as on the date of commercial operation shall be 70:30 for determination of tariff and equity more than 30% shall be considered as normative loan. Regulation 18 clause (1) and clause (2) are reproduced below:

“(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.”*

- 5.11 The Commission in Table 52 has provisionally approved the net capital cost for the Baglihar HEP Stage I as Rs 5184.00 Cr for FY 2009-10 and Rs 5415.88 Cr for FY 2010-11. The provisionally approved net capital cost is further bifurcated for Baglihar Hydro Station and Baglihar Transmission System on the basis of expenditure incurred on the respective system as of 31st March 2009 and 31st March 2010 and is given in Table 53.
- 5.12 For the purpose of determination of tariff and determination of actual debt equity ratio, the Commission has reduced the grant/ subsidy of Rs 556.00 Cr available to the project. The grant has been allocated to Baglihar Hydro and Baglihar Transmission System in proportion to the expenditure incurred on the respective system as of 31st March 2009 and 31st March 2010.
- 5.13 The provisionally approved capital cost for determination of debt equity ratio is given in Table 56.

Table 56: Provisionally Approved Capital Cost Net of Grant (Rs Cr)

Description	FY 2009-10			FY 2010-11		
	HEP Stage-I	Hydro	Trans System	HEP Stage-I	Hydro	Trans System
Total Base 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
Less: Grant/ Subsidy	556.00	539.29	16.71	567.00	549.96	17.04
Net Cost for 70: 30 D:E	4628.00	4482.88	145.12	4848.88	4704.10	144.79

- 5.14 The means of finance considering central grant, debt equity of 70:30 and normative equity is as shown in Table 57.

Table 57: Provisionally Approved Means of finance (Rs Cr)

Means of Finance		FY 2009-10			FY 2010-11		
		HEP Stage-I	Hydro	Trans System	HEP Stage-I	Hydro	Trans System
Net Project Cost	A	5184.00	5022.18	161.82	5415.88	5254.06	161.82
Less: Grant/ Subsidy	B	556.00	539.29	16.71	567.00	549.96	17.04
Net Cost for 70:30 D:E	C	4628.00	4482.88	145.12	4848.88	4704.10	144.79
Equity @ 30% of C	D = 30% * C	1388.40	1344.87	43.54	1454.66	1411.23	43.44
Debt @ 70% of C	E = 70% * C	3239.60	3138.02	101.58	3394.22	3292.87	101.35
Debt from Banks/ FIs	F	2514.00	2435.17	78.83	2965.00	2876.47	88.53

Means of Finance		FY 2009-10			FY 2010-11		
		HEP Stage-I	Hydro	Trans System	HEP Stage-I	Hydro	Trans System
Normative Loan	G = E-F	725.60	702.85	22.75	429.22	416.40	12.82
Sub Total	H = E+F+G	4628.00	4482.88	145.12	4848.88	4704.10	144.79
Central Grant	B	556.00	539.29	16.71	567.00	549.96	17.04
Net Project Cost	I=A+H+B	5184.00	5022.18	161.82	5415.88	5254.06	161.82

5.15 As per clause (2) of Regulation 18 of JKSERC Hydro Tariff Regulations, the debt and equity amounts arrived at in accordance with clause (1) of Regulation 18 has be used by the Commission for calculating interest on loan, return on equity and Advance Against Depreciation.

Interest on Loan Capital

5.16 As per Regulation 22 clause (1) of JKSERC Hydro Tariff Regulations, the interest on loan capital shall be computed loan-wise including normative loans as determined as per Regulation 18. 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 into account the interest resets, if any, as submitted by the Petitioner.

5.17 As per the information submitted by the Petitioner, the interest on ACA Loan is at 9% p.a. with a repayment period of 20 years with initial 5 years as grace period. The State Plan Assistance from Govt of Jammu & Kashmir is in the form of interest free loan and as per the terms and conditions of the loan, the entire amount of Rs. 670 Cr is to be recovered in 12 monthly installments during FY 2009-10, starting from April 2009. The Petitioner has submitted that during FY 2010-11, it has made a repayment of Rs 502.50 Cr against the total loan of Rs 670 Cr. The Commission has considered the actual repayment done by the Petitioner for calculation of interest on loans and advance against depreciation.

5.18 The interest rate applied on the normative loan is the weighted interest rate applicable for FY 2009-10 and FY 2010-11 considering all loans except state plan assistance which is an interest free loan. The weighted rate of interest for normative loan is 11.58% for FY 2009-10 and 10.97%% for FY 2010-11.

5.19 The repayment and interest charges provisionally approved for Baglihar Stage I by the Commission for FY 2009-10 and FY 2010-11 and allocated to Baglihar Hydro are given in Table 58:

Table 58: Provisionally Approved Loan Repayment and Interest for Baglihar Hydro (Rs Cr)

Banks/ FIs	FY 2009-10					FY 2010-11				
	Open	Draw down	Repay ment	Closing Bal	Int	Open Balance	Draw down	Repay ment	Closing Balance	Int
PFC	600.00	245.00	42.25	802.75	84.36	802.75	0.00	84.50	718.25	81.09
REC	400.00	165.00	56.50	508.50	55.07	508.50	0.00	56.50	452.00	55.87

Banks/ FIs	FY 2009-10					FY 2010-11				
	Open	Draw down	Repayment	Closing Bal	Int	Open Balance	Draw down	Repayment	Closing Balance	Int
HUDCO	300.00	0.00	15.00	285.00	31.72	285.00	0.00	30.00	255.00	28.76
CBI	37.00	0.00	1.85	35.15	3.82	35.15	0.00	3.70	31.45	3.46
UBI	0.00	73.00	1.83	71.18	2.53	71.18	0.00	7.30	63.88	8.18
Canara Bank	73.00	0.00	3.65	69.35	8.44	69.35	0.00	7.30	62.05	8.04
J&K Bank	360.00	0.00	18.00	342.00	37.90	342.00	0.00	36.00	306.00	34.32
ACA Loan	0.00	31.00	0.00	31.00	2.79	31.00	11.00	0.00	42.00	3.78
SPA	200.00	30.00	0.00	230.00	0.00	230.00	440.00	502.50	167.50	0.00
Normative Loan	0.00	725.60	36.28	689.32	82.61	689.32	-296.38	39.29	353.64	40.58
Total	1970.00	1269.60	175.36	3064.25	309.21	3064.25	154.62	767.09	2451.77	264.08
Allocation to Baglihar Hydro	96.86%					97.01%				
Baglihar Hydro Share	1908.23	1229.79	169.86	2968.16	299.51	2972.75	150.00	744.19	2378.56	256.19

- 5.20 The Commission for FY 2009-10 has provisionally approved the interest charges for Baglihar Hydro at Rs 299.51 Cr which is higher than Rs 292.25 Cr as petitioned by the Petitioner. The Petitioner in its petition has taken an average debt of Rs 2774.15 Cr, considering the opening loan amount and repayments in FY 2009-10 and an interest rate of 0.53% to arrive at interest charges of Rs 292.25 Cr. Further, the Petitioner has considered the loans outstanding as on 31st March 2009 for calculation of interest and has not taken into consideration the loans drawn during FY 2009-10.
- 5.21 The Commission while provisionally approving the interest charges for FY 2009-10, has taken into consideration the actual interest rates applicable on the loans based on the additional submission made by the Petitioner during the course of disposal of the instant petition. The Commission has considered the debt outstanding as per the actual loan drawal with opening debt of Rs 1908.23 Cr and closing at Rs 2968.16 Cr. The weighted interest rate calculated based on the actual interest rate applicable on the loan is 10.88% and interest charges of Rs 299.51 Cr for FY 2009-10.

Depreciation

- 5.22 The Commission has determined the depreciation and AAD in accordance with Regulation 23 of JKSERC Hydro Tariff Regulations, 2005 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.”*

5.23 The base value of assets for determination of depreciation has been taken by the Commission as determined in Table 56 above which is capital cost net of grant. The value of land has been further reduced to arrive at the depreciable capital cost. The Commission has considered after prudence check the asset details as submitted by the Petitioner and has proportionately reduced the grant funding from asset costs for calculation of depreciation for FY 2009-10 and FY 2010-11. The depreciation as provisionally approved by the Commission for FY 2009-10 and FY 2010-11 is shown in Table 59.

Table 59: Provisionally Approved Depreciation for Baglihar Hydro (Rs Cr)

	FY10	FY11
Net Project Cost	5022.18	5254.06
Less: Grant/ Subsidy	539.29	549.96
Less: Land	16.56	53.90
Capital cost considered for Depreciation	4466.33	4650.19
Depreciable Value (90% value)	4019.69	4185.18
Approved Depreciation	94.46	100.87

Advance against depreciation

5.24 The Commission has determined Advance Against Depreciation (AAD) in accordance with the Regulation 24 of JKSERC Hydro Tariff Regulations 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.”

- 5.25 The Petitioner in its submission has not calculated AAD in accordance with the Regulation 24 of JKSERC Hydro Tariff Regulations, 2005 and has considered the ceiling amount of 1/10th of loan amount as repayment instead of actual loan repayment amount. As per the Regulation 24, lower of the two values has to be considered for calculation of AAD.
- 5.26 The AAD as provisionally approved by the Commission for FY 2009-10 and FY 2010-11 is given in Table 60:

Table 60: Provisionally Approved AAD for Baglihar Hydro (Rs Cr)

Particulars		FY10	FY11
Debt (Banks/ FIs)		2435.17	2876.47
Normative Loan		702.85	416.40
Total Loans		3138.02	3292.87
1/10th of the Loans	A	313.80	329.29
Repayment of the Loans as considered for working out Interest on Loan	B	169.86	744.19
Minimum of the Above	C	169.86	329.29
Less: Depreciation during the year	D	94.46	100.87
A	E=C-D	75.39	228.41
Cumulative Repayment of the Loans as considered for working out Interest on Loan	F	169.86	914.05
Less: Cumulative Depreciation	G	94.46	195.34
B	H=F-G	75.39	718.71
Advance Against Depreciation		75.39	228.41

Return on Equity

- 5.27 The Commission has determined return on equity at 14% as per Regulation 25 of JKSERC Hydro Tariff Regulations. The return on equity has been determined at the equity base as determined in Table 57 above.
- 5.28 The return on equity as provisionally approved by Commission for Baglihar HEP for FY 2009-10 and FY 2010-11 is as given in Table 61

Table 61: Provisionally Approved Return on Equity for Baglihar Hydro (Rs Cr)

Particulars	FY10	FY11
Net Cost of Project	4482.88	4704.10
Equity at 30% of project cost	1344.87	1411.23
Rate of Return on Equity	14%	14%
Return on Equity	188.28	197.57

Operations & Maintenance Expenses

5.29 The Commission has determined the Operations and Maintenance expenses (O&M) as per Regulation 26 clause (2) of JKSERC Hydro Tariff Regulations. 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.”

5.30 The Commission has considered the Total Project Cost (incl IDC and FC) approved in Table 52 for determination of O&M expenses for Baglihar HEP for FY 2009-10 and FY 2010-11. The O&M expenses provisionally approved by the Commission are given in Table 62.

Table 62: Provisionally Approved O&M Expenses for Baglihar Hydro (Rs Cr)

Particulars	FY10	FY11
Capital Cost	5247.76	5479.64
O&M Expenses	78.72	85.34

Interest on Working Capital

5.31 The Commission has determined the interest on working capital as per Regulation 27 of JKSERC Hydro Tariff Regulations 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.”

- 5.32 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. The working capital provisionally approved by the Commission for Baglihar HEP is given in Table 63.

Table 63: Provisionally Approved Interest on Working Capital for Baglihar Hydro (Rs Cr)

Particulars		FY10	FY11
O&M	1 month O&M	6.56	7.11
Maintenance spares	1% of historical cost escalated at 6% p.a	48.19	51.08
Receivable	2 months	127.12	149.76
Working Capital		181.87	207.96
Rate of Interest	J&K PLR as on COD	14.50%	14.50%
Interest on Working Capital		26.37	30.15

Reimbursement of Fee

- 5.33 The Petitioner in its submission has sought reimbursement through tariff of the filing fee of Rs 2.00 lakhs deposited with the Commission and the consultancy fee of Rs 24.66 lakhs for consultants engaged for preparation of the ARR and Tariff Petition for FY 2009-10 and FY 2010-11.
- 5.34 The Commission is of the view that expenses incurred on engagement of consultants for assistance in filing of ARR and tariff petition is a routine business activity of the JKSPDC and forms part of the O&M expenses approved by the Commission and allows recovery of the filing fee of Rs 2.00 lakhs through tariff for FY 2010-11.

Annual Fixed Charges for Baglihar HEP

- 5.35 The Annual Fixed Charges determined based on the above parameters and as provisionally approved by the Commission for Baglihar HEP for FY 2009-10 and FY 2010-11 is given in Table 64.

Table 64: Provisionally Approved Annual Fixed Charges for Baglihar Hydro (Rs Cr)

Particulars	FY10	FY11
O&M	78.72	85.34
Interest on Loan	299.51	256.19
Depreciation	94.46	100.87
AAD	75.39	228.41
Return on Equity	188.28	197.57
Interest on Working Capital	26.37	30.15
Reimbursement of filing fee		0.02
Total AFC	762.74	898.57

Primary and Secondary Energy Charge

5.36 The Commission has determined the primary and secondary energy charges in accordance with Regulation 28 of JKSERC Hydro Tariff Regulations. Regulation 28 states:

“(1) *Primary Energy Charges shall be worked out on the basis of paise per kWh rate on ex-bus energy scheduled to be sent out from the hydro power generating station after adjusting for the free power if any delivered to the home state.*

(2) *The primary energy charge shall be computed based on the primary energy rate and saleable energy of the station:*

Provided that in case the primary energy charge recoverable by applying the above primary energy rate exceeds the Annual Fixed Charge of a generating station, the primary energy rate for such generating station shall be calculated by the following formula:

Primary Energy Rate = Annual Fixed Charges/Saleable Primary Energy

(3) *Primary Energy Charges = Saleable Primary Energy x Primary Energy Rate*

Secondary Energy Rate shall be equal to Primary Energy Rate.

Secondary Energy Charges = Saleable Secondary Energy x Secondary Energy Rate.”

5.37 As per Regulation 28, the primary energy charge in Rs Cr is to be determined on the basis of paise per kWh of ex-bus energy scheduled to be sent out from the HEP.

5.38 The actual generation done by Baglihar HEP for FY 2009-10 is 2682.64 MU and for FY 2010-11 is 2855.82 MU and the energy billed to JKPDD is 1336.91 MU in FY 2009-10 and 1437.42 MU in FY 2010-11. The actual energy billed to PTC and JKPDD as submitted by the Petitioner is shown in

Table 65: Actual Energy Delivered to PDD & PTC (MU)

Particulars	FY10		FY11	
	MU	%	MU	%
Net Saleable Energy	2682.64		2855.82	
Short Term Energy Billed to PTC	448.06	16.70%	468.57	16.41%
Long Term Energy Billed to PTC	897.67	33.46%	949.82	33.26%
Energy Billed to PDD	1336.91	49.84%	1437.42	50.33%

5.39 The total secondary energy generated is 146.57 MU and 319.75 MU and the share of JKPDD is 68.88 MU and 169.39 MU for FY 2009-10 and FY 2010-11 respectively. As per Regulation 28, the secondary energy is to be billed at the rate of primary energy rate. The Commission has determined the provisional primary energy charges, secondary energy charge and total charges based on the provisionally approved AFC for FY 2009-10 and FY 2010-11 in Table 66.

Table 66: Provisionally Approved Primary and Secondary Energy Charge for Baglihar Hydro

Particulars	Units	Baglihar HEP		JKPDD Share @ 50%	
		FY10	FY11	FY10	FY11
Actual Generation	MU	2682.64	2855.82	1336.91	1437.42
Primary Energy = Design Energy (ex bus)	MU	2498.03	2498.029	1249.01	1249.01
Saleable Primary Energy = Primary Energy - Free Power to State	MU	2498.03	2498.029	1249.01	1249.01
Secondary Energy = Actual Generation - Design Energy (ex bus)	MU	184.61	357.79	87.90	188.41
Saleable Secondary Energy = Secondary Energy - Free Power to State	MU	184.61	357.79	87.90	188.41
Primary Energy Rate = Annual Fixed Charges/ Saleable Primary Energy	Rs/ kWh	3.05	3.60	3.05	3.60
Primary Energy Charges = Saleable Primary Energy X Primary Energy Rate	Rs Cr	762.74	898.57	381.37	449.29
Secondary Energy Rate = Primary Energy Rate	Rs/ kWh	3.05	3.60	3.05	3.60
Secondary Energy Charge = Saleable Secondary Energy X Secondary Energy Rate	Rs Cr	56.37	128.70	26.84	67.77
Total Recovery from Primary & Secondary Charge	Rs Cr	819.11	1027.27	408.21	517.06

A6: DETERMINATION OF ARR & TARIFF FOR BAGLIHAR TRANSMISSION SYSTEM

Introduction

- 6.1 The Baglihar HEP consists of the 450 MW Baglihar Hydro Project and 400 kV double circuit transmission line which runs for 68 km from Baglihar to Kishenpur and has 400kV two bays at Kishenpur.
- 6.2 The Commission has not notified regulations with regard to determination of tariff applicable to a transmission system. Since there are no tariff regulations pertaining to determination of transmission systems in force in the State of Jammu and Kashmir, the Petitioner has exercised the option of filing its petition for approval of tariff under regulations notified by the Central Electricity Regulatory Commission (CERC) in this regard.
- 6.3 The Petitioner filed an application on 27th December 2010 under Chapter 2 of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 dated 19th January 2009 framed by the CERC for approval of its ARR and tariff petition for FY 2009-10 and FY 2010-11 for the Baglihar Transmission System.
- 6.4 The Petitioner has mentioned in their petition that the application for approval of ARR and tariff for FY 2009-10 and FY 2010-11 has been filed under the said CERC regulations notified in this regard. However, the Commission on scrutiny and analysis of the Petition has observed that the Petitioner has not complied with the said CERC regulations in entirety. The Petitioner has chosen to compute certain components of tariff such as O&M expenses in accordance with provisions of the said CERC regulations. Further, they have chosen to compute the remaining components of tariff including interest on loan, depreciation including advance against depreciation, return on equity and interest on working capital in accordance with JKSERC (Terms and Conditions for Determination of Hydro-Generation Tariff) Regulations, 2005 dated 23rd September, 2005.
- 6.5 The Commission has taken view of the approach followed by the Petitioner and has decided to determine tariff for the Baglihar transmission system for FY 2009-10 and FY 2010-11 in accordance with CERC (Terms and Conditions of Tariff) Regulations, 2009 followed in its entirety.

Date of Commissioning

- 6.6 The Baglihar Transmission System was declared commercially operational along with the Baglihar Hydro Project on 1st April 2009.

Debt Equity Ratio

- 6.7 As per Regulation 12 of CERC Tariff Regulation, 2009, the debt-equity ratio as on the

date of commercial operation shall be 70:30 for determination of tariff and equity more than 30% shall be considered as normative loan. Regulation 12 clause (1) and clause (2) are reproduced below:

“(1) For a project declared under commercial operation on or after 1.4.2009, if the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:”

Provided that where equity actually deployed is less than 30% of the capital cost, the actual equity shall be considered for determination of tariff:

Provided further that the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment.”

- 6.8 As discussed in Chapter A4: of this Order, the Commission has provisionally approved the net capital cost for the Baglihar HEP Stage I as Rs 5184.00 Cr for FY 2009-10 and Rs 5415.88 Cr for FY 2010-11. The provisionally approved net capital cost is further bifurcated for Baglihar Hydro Station and Baglihar Transmission System on the basis of expenditure incurred on the respective system as of 31st March 2009 and 31st March 2010 and is given in Table 53.
- 6.9 For the purpose of determination of tariff and determination of actual debt equity ratio, the Commission has reduced the grant/ subsidy of Rs 556.00 Cr available to the project. The grant has been allocated to Baglihar Hydro and Baglihar Transmission System in proportion to the expenditure incurred on the respective system as of 31st March 2009 and 31st March 2010.
- 6.10 The revised capital cost for determination of debt equity ratio is given in Table 67.

Table 67: Provisionally Approved Capital Cost Net of Grant (Rs Cr)

Description	FY 2009-10			FY 2010-11		
	HEP Stage-I	Hydro	Trans System	HEP Stage-I	Hydro	Trans System
Total Base 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
Less: Grant/ Subsidy	556.00	539.29	16.71	567.00	549.96	17.04
Net Cost for 70: 30 D:E	4628.00	4482.88	145.12	4848.88	4704.10	144.79

- 6.11 The revised means of finance considering central grant, debt equity of 70:30 and normative equity is as shown in Table 68.

Table 68: Provisionally Approved Means of Finance(Rs Cr)

Means of Finance		FY 2009-10			FY 2010-11		
		HEP Stage-I	Hydro	Trans System	HEP Stage-I	Hydro	Trans System
Net Project Cost	A	5184.00	5022.18	161.82	5415.88	5254.06	161.82
Less: Grant/ Subsidy	B	556.00	539.29	16.71	567.00	549.96	17.04
Net Cost for 70:30 D:E	C	4628.00	4482.88	145.12	4848.88	4704.10	144.79
Equity @ 30% of C	D = 30% * C	1388.40	1344.87	43.54	1454.66	1411.23	43.44
Debt @ 70% of C	E = 70% * C	3239.60	3138.02	101.58	3394.22	3292.87	101.35
Debt from Banks/ FIs	F	2514.00	2435.17	78.83	2965.00	2876.47	88.53
Normative Loan	G = E-F	725.60	702.85	22.75	429.22	416.40	12.82
Sub Total	H = E+F+G	4628.00	4482.88	145.12	4848.88	4704.10	144.79
Central Grant	B	556.00	539.29	16.71	567.00	549.96	17.04
Net Project Cost	I=A+H+B	5184.00	5022.18	161.82	5415.88	5254.06	161.82

6.12 The total debt (Bank/ FI and Normative loan) has been allocated to Baglihar Hydro and Baglihar Transmission System in proportion to the expenditure incurred on the respective system as of 31st March 2010 and 31st March 2011, which is 96.86% to Baglihar Hydro and 3.14% to Baglihar Transmission system as on 31st March 2010 and 97.01% to Baglihar Hydro and 2.99% to Baglihar Transmission system as on 31st March 2011.

Interest on Loan Capital

6.13 The interest on loan capital as determined by the Commission has been detailed in para 5.15 to para. The repayment and interest charges provisionally approved for Baglihar Stage I by the Commission for FY 2009-10 and FY 2010-11 and allocated to Baglihar Transmission System are given in Table 69.

Table 69: Provisionally Approved Loan Repayment and Interest for Transmission System (Rs Cr)

Banks/ FIs	FY2009-10					FY2010-11				
	Open	Draw down	Repayment	Closing Bal	Int	Open Balance	Draw down	Repayment	Closing Balance	Int
PFC	600.00	245.00	42.25	802.75	84.36	802.75	0.00	84.50	718.25	81.09
REC	400.00	165.00	56.50	508.50	55.07	508.50	0.00	56.50	452.00	55.87
HUDCO	300.00	0.00	15.00	285.00	31.72	285.00	0.00	30.00	255.00	28.76
CBI	37.00	0.00	1.85	35.15	3.82	35.15	0.00	3.70	31.45	3.46
UBI	0.00	73.00	1.83	71.18	2.53	71.18	0.00	7.30	63.88	8.18
Canara Bank	73.00	0.00	3.65	69.35	8.44	69.35	0.00	7.30	62.05	8.04
J&K Bank	360.00	0.00	18.00	342.00	37.90	342.00	0.00	36.00	306.00	34.32
ACA Loan	0.00	31.00	0.00	31.00	2.79	31.00	11.00	0.00	42.00	3.78
SPA	200.00	30.00	0.00	230.00	0.00	230.00	440.00	502.50	167.50	0.00
Normative Loan	0.00	725.60	36.28	689.32	82.61	689.32	-296.38	39.29	353.64	40.58
Total	1970.00	1269.60	175.36	3064.25	309.21	3064.25	154.62	767.09	2451.77	264.08

Banks/ FIs	FY2009-10					FY2010-11				
	Open	Draw down	Repayment	Closing Bal	Int	Open Balance	Draw down	Repayment	Closing Balance	Int
Allocation to Baglihar Transmission	3.14%					2.99%				
Baglihar Transmission Share	61.77	39.81	5.50	96.08	9.70	91.50	4.62	22.91	73.21	7.89

Depreciation

- 6.14 The Commission has allowed depreciation to the Petitioner for FY 2009-10 and FY 2010-11 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.”

- 6.15 The Commission has determined the depreciation for FY 2009-10 and FY 2010-11 on the base cost approved in Table 67 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.
- 6.16 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.
- 6.17 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. Table 70 summarises the computation of depreciation provisionally allowed to the Petitioner for FY 2009-10 and FY 2010-11.

Table 70: Provisionally Approved Depreciation for Baglihar Transmission System (Rs Cr)

Particulars	FY 2009-10	FY 2010-11
Net Project Cost – Transmission System	161.82	161.82
Less: Grant/ Subsidy	16.71	17.04
Capital cost net of grant considered for Depreciation	145.12	144.79
Depreciable Value of assets (90% of cost)	130.61	130.46
Depreciation at the rate of 5.28% per annum	7.66	7.66

O&M Expenses

- 6.18 The Commission has allowed O&M expenses to the Petitioner for FY 2009-10 and FY 2010-11 in accordance with provisions of Regulation 19(g) of CERC (Terms and Conditions of Tariff) Regulations, 2009.
- 6.19 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.0.52 Cr per bay per sub-station for FY 2009-10 and Rs.0.55 Cr per bay per sub-station for FY 2010-11. For AC and HVDC lines the CERC Tariff Regulations, 2009 provides Rs.0.0627 Cr per km FY 2009-10 and Rs.0.0663 Cr per km for FY 2010-11 in respect of a double circuit transmission line (twin and triple conductor).
- 6.20 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.”*
- 6.21 The Commission has allowed O&M expenses to the Petitioner by computing O&M expenses for FY 2009-10 and FY 2010-11 in accordance with the provisions of the CERC Tariff Regulations, 2009 as described above. O&M expenses of Rs.0.52 Cr per bay for FY 2009-10 and Rs.0.55 Cr per bay for FY 2010-11 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.0.0627 Cr per km for FY 2009-10 and Rs.0.0663 Cr per km for FY 2010-11.
- 6.22 Table 71 given below summarises the O&M expenses provisionally allowed to the Petitioner for FY 2009-10 and FY 2010-11.

Table 71: Provisionally Approved O&M Expenses for Baglihar Transmission System (Rs Cr)

Particulars	FY 2009-10	FY 2010-11
Norms per sub-station	Rs.0.52 Cr per bay	Rs.0.55 Cr per bay
Norms per km of AC/HVDC line	Rs.0.00627 Cr per km	Rs.0.00663 Cr per km
O&M expenses for sub-station	1.04	1.1
O&M expenses for transmission line	0.426	0.45
Total	1.47	1.56

Return on Equity

6.23 The Commission has allowed return on equity to the Petitioner for FY 2009-10 and FY 2010-11 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.

“(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.”

6.24 The Petitioner had computed return on equity for FY 2009-10 and FY 2010-11 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.

6.25 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 in Table 68 has computed the equity base for FY 2009-10 and FY 2010-11 for Baglihar Transmission System on which return on equity has been allowed to the Petitioner at the rate 15.50%. Table 72 summarises the return on equity provisionally approved by the Commission for FY 2009-10 and FY 2010-11.

Table 72: Provisionally Approved Return on Equity Baglihar Transmission System (Rs Cr)

Particulars	FY 2009-10	FY 2010-11
Net Cost of Project	145.12	144.79
Equity calculated at the rate of 30% of the cost of project	43.54	43.44
Rate of return on equity	15.50%	15.50%
Return on equity	6.75	6.73

Interest on working capital

6.26 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.

- 6.27 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.”

- 6.28 The Commission has computed working capital for FY 2009-10 and FY 2010-11 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.
- 6.29 Table 73 summarises the return on equity provisionally allowed to the Petitioner for FY 2009-10 and FY 2010-11 by the Commission.

Table 73: Provisionally Approved Interest on working capital for Baglihar Transmission System (Rs Cr)

Particulars	FY 2009-10	FY 2010-11
Receivables	0.12	0.13
Maintenance Spares	0.22	0.23
O&M expenses	4.36	4.06
Total working capital	4.70	4.43
Rate of interest on working capital	12.25%	12.25%
Interest on working capital	0.58	0.54

Annual Fixed Charges for Baglihar Transmission System

- 6.30 The annual fixed charges for the Baglihar Transmission System have been approved by the Commission in accordance with provisions of the CERC (Terms and Conditions of Tariff) Regulations, 2009 dated 19th January 2009.
- 6.31 Table 74 provides a summary of the various components of tariff approved by the Commission for FY 2009-10 and FY 2010-11, the total annual fixed charges provisionally allowed and the provisional tariff.

Table 74: Provisionally Approved AFC and provisional tariff for Baglihar Transmission System (Rs Cr)

Particulars	Unit	FY 2009-10	FY 2010-11
O&M Expenses	Rs Cr	1.47	1.56
Interest on Loan	Rs Cr	9.70	7.89
Depreciation	Rs Cr	7.66	7.66
AAD	Rs Cr	0.00	0.00
Return on Equity	Rs Cr	6.75	6.73
Interest on Working Capital	Rs Cr	0.58	0.54
Total AFC	Rs Cr	26.16	24.38
Net saleable energy	MU	2682.64	2498.03
Indicative Tariff	Rs/ kWh	0.10	0.10

A7: DIRECTIVES

- 7.1 The Commission, based on its analysis of the petition filed 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

Directive 1 – Develop Own Cadre for Baglihar HEP

- 7.2 Baglihar Hydro Electric Project is a 450 MW Project, which requires trained manpower for its operation. Presently, the Project is manned mainly by personnel on deputation from Government Departments, such as JKPDD and Public Works Department, who can be recalled by the Government any time depriving the Project of their experience. A Project of this magnitude requires trained manpower from JKSPDC's own cadre, dedicated to this Project for its efficient operation, with inbuilt training and capacity building facilities. With the second stage expected to be taken up for execution, BHEP would be a mega power project of 900 MW capacity, for the operation of which deployment of dedicated and trained manpower of Petitioner is of paramount importance. The Petitioner is, therefore, directed to look into its manpower policy vis-à-vis the Baglihar Project to develop a dedicated cadre, capable of efficiently operating the power house for maximum generation of power.

Directive 2 - Establishment of training centre

- 7.3 The Petitioner has under its ownership and operation 19 Hydel Power Stations including that of Baglihar HEP and two Gas Turbine Stations. There is an urgent requirement to establish its own training facilities for upgrading the skills of its employees. The Petitioner is directed to initiate expeditious steps in this direction and establish training facilities, including a Hydro Training School, for its employees.

Directive 3 – Norm for manpower

- 7.4 It has been noticed that there are no norms for manpower deployment in different power houses of the Petitioner. The Petitioner is directed to rationalize the manpower requirement at each Power House as per standard practice in the country.

Directive 4 – Expedite review of cost from CEA

- 7.5 The Petitioner is directed to approach the Central Electricity Authority for expeditious review of cost escalation and approval of capital cost so that final tariff of Baglihar Project can be determined.

Directive 5 – Transmission plan for Baglihar I and II

- 7.6 The Petitioner is directed to furnish the transmission plan for evacuation of power from Baglihar I & II based on system studies.

A8: ANNEXURE**Annexure 1: List of participants in Public Hearings****Table 75: Participants at Public Hearing held in Srinagar on 2nd April, 2011**

No	Name	Designation
1	Javeed Bhat	V.President, FCIK
2	Mukhmoor Gowhar	Secretary, FCIK (Kashmir)
3	Siraj Ahmad	President, Kashmir Hotel & Restaurant Association
4	Iqbal Trumbo	Consumer, Kashmir Economic Alliance
5	Chering Dorjay	CE, PDC, Kashmir
6	A.R.Tak	Advisor cum Consultant, JKSPDC
7	Ravi Chanyal	Sr GM, JKSPDC
8	C.M. Jain	Consultant, JKSPDC
9	V.K. Gupta	Consultant, JKSPDC
10	Owais Ahmed	AM, JKSPDC
11	Ehtisham Andrabi	AEE, LDM&T Division, Bemina
12	Hussan Mohd.	Ex.Engineer, LDM&T Division, Bemina
13	Hajee Ghulam.Nabi Wani	President of Mill Owners District Badgam/ Baramullah
14	Javed Yousuf Dar	Exen, ED, Budgam
15	B.A.Khan	SE, JKSPDC
16	Miftah Alam Bhuch	JKSPDC
17	Manzoor A Salroo	Chief Engineer, EM&RE, Kashmir
18	Ab. Rashid Dar	President, Kashmir Rice Oil and Bandsaw mill owner union, Budgam
19	Haji Mohu-ud-din	Vice President
20	Gh. Rasool Dar	
21	Gh.Mohd Tanmarg	President, Mill Owners Union, District Baramulla
22	Gh. Hassan Bhat	
23	Mohd Hatim	
24	Farrukh Aamir	Consultant to the Commission, PwC

Table 76: Participants at Public Hearing held in Jammu on 5th April 2011

No	Name	Designation
1	Asgar Ali	DCP, JKPDD
2	Shahnaz Goni	CE, JKPDD
3	Vinod Khajuria	SE, Commercial & Survey, JKPDD
4	Ravi Chanyal	Sr.GM, JKSPDC
5	A.R.Tak	Advisor cum Consultant, JKSPDC
6	H.S.Gupta	DCP (Retd)
7	B.L.Suri	CE (Retd)
8	Vikram Gour	Member, Advisory Committee
9	D.S.Tara	Ex Secretary, JKSERC
10	Miftah Alam Bhuch	AGM, JKSPDC
11	C.M.Jain	Consultant to JKSPDC
12	V.K.Gupta	Consultant to JKSPDC
13	Aakanksha Srivastava	Consultant to the Commission, PwC
14	Chander Vadan	Company Secretary
15	Nazir Ahmed	Secretary General, FCIK
16	Anil Suri	President, BBIA
17	Virender Jain	General Secretary

Annexure 2: List of participants in State Advisory Committee Meeting**Table 77: Participants at State Advisory Committee Meeting held in Jammu on 20th March, 2011**

Sl.	Name	Department/ Organization
1	Chairman	JKSERC
2	Member (T)	JKSERC
3	Member (F)	JKSERC
4	R.K.Seli	Technical Consultant, JKSERC
5	Secretary	JKSERC
6	M.Javed Khan	Special Secretary to Government, CAPD
7	Shahnaz Goni	Chief Engineer, PDD
8	Vinod Khajuria	SE, PDD
9	H.S. Gupta	Ex Technical Consultant, JKSERC
10	D.S.Tara	Ex Secretary, JKSERC
11	C.M..Jain	Consultant to PDD
12	I.A.Kakroo	DGM
13	I.A. Wani	FA & CAO
14	A.M.M Jehangir	Director, Finance, JKSPDC
15	Ravi Chanyal	SGM, JKSPDC
16	Devinder Verma	Member, State Advisory Committee
17	T.S.Reena	Member, State Advisory Committee
18	Anil Suri	Member, State Advisory Committee
19	Y.P.Sharma	Member, State Advisory Committee
20	Vikram Gour	Member, State Advisory Committee
21	D.R.Danish	Member, State Advisory Committee
22	Miftah Alam Buchh	AGM, JKSPDC
23	Girja Jalali	SE, JKSERC
24	Renu Mahajan	Dy Sec Law, JKSERC
25	Rajdev Sharma	Consultant, SCOPE
26	Aakanksha Srivastava	Consultant to the Commission, PwC