



National Electric Power Regulatory Authority
Islamic Republic of Pakistan

2nd Floor, OPF Building, G-5/2, Islamabad
Ph: 9206500, 9207200, Fax : 9210215
E-mail: registrar@nepra.org.pk

Registrar

No. NEPRA/TRF-153/PHPL-2010/4357-4359
December 8, 2010

Subject: **Determination of the Authority in the matter of Tariff Petition filed by Punjnad Hydropower (Pvt.) Ltd. (Case No. NEPRA/TRF-153/PHPL-2010) Intimation of Determination of Tariff pursuant to Section 31(4) of the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of 1997)**

Dear Sir,

Please find enclosed herewith the subject Determination of the Authority along with Annexure-I, II (22 pages) in Case No. NEPRA/TRF-153/PHPL-2010.

2. The Determination is being intimated to the Federal Government for the purpose of notification of the approved tariff in the official gazette pursuant to Section 31(4) of the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of 1997) and Rule 16(11) of the National Electric Power Regulatory Authority (Tariff Standards and Procedure) Rules, 1998.

3. Please note that only Order of the Authority at para 22 of the Determination relating to the reference tariff, adjustments, indexation and terms and conditions etc along with Annexure-I & II needs to be notified in the official gazette.

Enclosure: As above

(Syed Safer Hussain)

Secretary
Ministry of Water & Power
'A' Block, Pak Secretariat
Islamabad

CC:

1. Secretary, Cabinet Division, Cabinet Secretariat, Islamabad.
2. Secretary, Ministry of Finance, Islamabad.





**DETERMINATION OF THE AUTHORITY IN THE MATTER OF TARIFF PETITION
FILED BY PUNJNAD HYDROPOWER (PRIVATE) LIMITED**

1. Punjad Hydropower (Pvt.) Ltd. (hereinafter referred to as the "Petitioner") filed a tariff petition (hereinafter referred to as the "petition") under rule 3 of the National Electric Power Regulatory Authority Tariff (Standards and Procedure) Rules, 1998 (hereinafter referred to as the "the Tariff Rules") vide letter dated 16-03-2010 for determination of feasibility stage reference tariff in respect of 15 MW hydropower project envisaged to be set up at Punjad Barrage, District Muzaffargarh, Punjab.
2. In accordance with sub-rule (3) of rule 4 of the Tariff Rules, the petition was admitted by the Authority on May 26, 2010. Consequent to the admission and in accordance with sub-rule (5) of rule 4 of the Tariff Rules, the Authority gave directions for service of notices to the respondents and other parties affected or interested which in the opinion of the Authority are likely to be affected or interested for filing replies or communications in opposition or in support of the petition and for the purpose of expeditious and efficient conduct of hearing. The notice of admission/hearing was also published in national newspapers on May 30, 2010 and public hearing was held on June 21, 2010. In response to the notice of admission/hearing published in the daily newspapers no intervention was filed. However, comments were received from the following:
 - Punjab Power Development Board (PPDB)
 - Central Power Purchasing Agency (CPPA)
 - Central China Power Group International Economic & Trade Co. Ltd. and Elba International

The comments received from the above given sources were forwarded for Petitioner's response.

3. The Authority also issued numerous information directives to the Petitioner for seeking information/explanations/documentations. The Petitioner vide letter nos. PHPL/2010/2208 and PHPL/2010/2250 dated June 26, 2010 and July 23, 2010 respectively replied to these comments and information directives.
4. Summary of the technical and financial information provided by the Petitioner is as follows:

Type of the project	:	Run of the river hydropower plant
Capacity	:	15 MW (14.75 MW net)
Average annual plant capacity factor	:	44%



Handwritten signatures and initials.

Gross annual generation	:	58.10 GWh
Total project cost	:	US \$ 36.424
Debt equity ratio	:	80 : 20 Equity component is adjustable up to 30% if required by the lenders
Loan period	:	10 years plus 36 months grace period
Interest rate on loan	:	10% p.a. for local loan and 5% p.a. for foreign loan
Return on equity	:	17% (IRR based)
Construction period	:	39 months
Tariff control period	:	30 years
Project basis	:	BOOT
Levelized tariff	:	6.78 PKR /kWh (8.47 cents/kWh)
Date of feasibility study	:	July 2009

5. Issues

Based on the aforesaid, comments of the stakeholders and proceedings of the case, the following main issues were considered by the Authority which have been discussed separately:

- Feasibility study
- Annual generation
- Project cost
- Power acquisition request and interconnection cost
- Construction period
- Hydrological risk
- Complaint filed by Central China Power Group International Economic & Trade Co. Ltd. and ELBA International
- Internal rate of return
- O & M costs
- Water use charge
- Cost of working capital
- Insurance
- Return on equity
- Financing structure and debt servicing component
- Carbon credits
- Tariff



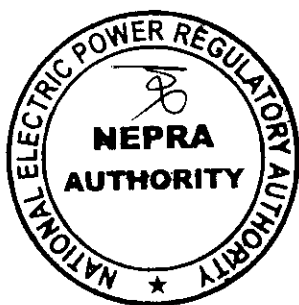


6. Feasibility study

- 6.1 The Petitioner has sought feasibility stage reference tariff. Such a request demands that feasibility study of the project is complete and accurate. The corresponding cost estimates are also required to be firm within the acceptable variation bands.
- 6.2 It was noted that feasibility study of the Petitioner was carried out pursuant to Letter of Interest issued by the Managing Director, PPDB, Irrigation & Power Department and was approved by the PPDB appointed panel of experts.
- 6.3 While carrying out due diligence of the feasibility study it was observed that the feasibility study presented by the Petitioner was not comprehensive and contained errors. Data submitted was in some cases not supported with the underlying schedules, there were discrepancies in the data provided in the feasibility study, etc. Furthermore, the Petitioner estimated different figures for the project cost and construction period from the ones projected in the feasibility study, on the grounds that there were inadvertent errors and certain costs were also missed in the feasibility study. If a comprehensive feasibility study with due stress on details is not carried out, the costs at EPC stage and COD stage may entirely change making feasibility stage reference tariff and adjustment formula at feasibility stage irrelevant.
- 6.4 In spite of deficiencies in the feasibility study, in order to encourage private power producers for development of small hydropower projects, the Authority decided to determine tariff on the basis of information given in the feasibility study/provided by the Petitioner.

7. Annual generation

- 7.1 The feasibility study provided by the Petitioner considered the average power potential as 15 MW, annual gross energy as 58.01 GWh (as against 58.10 GWh stated in the petition), plant factor as 44% and net generation available for sale after deduction of auxiliary consumption of 57.71 GWh.
- 7.2 Annual plant capacity factor in the feasibility study has been based on the daily downstream flow data for the period of 1980-2007 (27 years) collected from the I & P department, Government of Punjab and additional water releases from Mangla dam raising project. In the daily downstream flow data, in few years two to three months are missing which have been ignored in the feasibility study. Further, Mangla Dam raising project is in progress, on completion of this project, according to the feasibility study, additional storage of 2.9 MAF water will be available for irrigation purposes. Keeping in view the share of Punjab and Sindh, the magnitude of shortages in the canal systems



G

[Handwritten signature]

2

related to Sindh, it has been estimated in the feasibility study that 37% of the additional storage at Mangla i.e. approximately 1.07 MAF will pass downstream to Punjad barrage during September to November and February to April. According to the feasibility study this estimation refers to an additional flow of average 100 cumecs downstream to Punjad barrage.

7.3 Auxiliary consumption has been estimated at 0.50% in the feasibility study which works out to 0.075 MW. Net capacity of the Petitioner accordingly works out to 14.925 MW as against 14.75 MW stated in the tariff petition.

7.4 The Authority considers that since the feasibility study was approved by the panel of experts of PPDB, therefore, all the basic parameters, methodology and the data given in the feasibility study of the project, on which the annual production of the plant has been estimated, must have been taken into account. Hence, relying on the figures given in the feasibility study of the project, the Authority accepts the net capacity of 14.925 MW and net generation available for sale after deduction of auxiliary consumption of 57.71 GWh.

8. Project cost

8.1 The Petitioner has requested for assessing the total project cost at US\$ 36.424 million (US\$ 2.428 million per MW) as against project cost of US \$ 34.704 million (US\$ 2.314 million per MW) determined in the feasibility study.


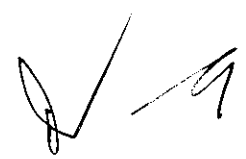

8.2 Difference between the petition and feasibility study:

8.2.1 The Petitioner has requested that the difference of US\$ 1.720 million in the project cost estimated by the Petitioner and project cost estimated in the feasibility study should be allowed.

8.2.2 Head wise break-up and comparison of the project cost provided by the Petitioner is as follows:

	Cost as per		Difference
	Feasibility report	Company's estimate	
	US \$ in million		
Preliminary costs	1.904	2.304	0.400
EPC costs	27.164	27.164	-
Project company's costs	-	0.820	0.820
Capital cost	29.068	30.288	1.220
Financing cost		0.500	0.500
Interest during construction	5.636	5.636	-
Total project cost	34.704	36.424	1.720



8.2.3 Since the Petitioner has applied for determination of feasibility stage reference tariff, therefore its request for allowing project cost in excess of the one determined in the feasibility study (already approved by the panel of experts), although the expenses claimed might be justified, is not maintainable at this stage. If the Petitioner had any reservations in respect of the feasibility study, proper course of action available to it was to submit a modified feasibility study, duly approved by the panel of experts, which would have included all the costs now being claimed by the Petitioner. The Authority does not accept unilateral increases in the project cost by the Petitioner and accordingly this claim for difference of US\$ 1.720 million in the project cost estimated by the Petitioner is not allowed.

8.3 Capital cost:

8.3.1 Contingencies

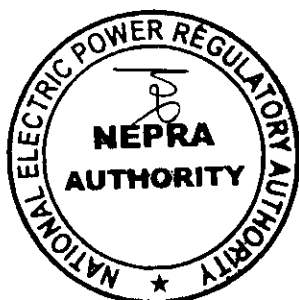
During scrutiny of the project cost given in the feasibility study, it was observed that physical contingencies @ 5% amounting to Rs. 107.189 million were included in the project cost. Since the 'Mechanism for Determination of Tariff for Hydropower Projects' already allows tariff adjustments according to the mechanism provided there in at EPC stage and COD stage, therefore there is no justification for allowing physical contingencies at this stage and the amount of Rs. 107.189 million is therefore disallowed.

8.3.2 Engineering & administration cost

Engineering & Administration cost including audit @ 5% of local cost amounting to Rs.74.485 million was also included in the project cost. The Authority after comparing this cost with other projects, considers this cost estimate to be on the higher side. The Authority hereby allows this cost with maximum ceiling of 3% of the Authority adjusted local cost which works out to Rs. 42.361 million. However, at the COD stage prudence of this cost will be rechecked by the Authority and this cost will be adjusted based on actual expenditure and prudence check subject to maximum ceiling of 3% of the local project cost allowed.

8.3.3 Miscellaneous works

In the feasibility study a computational error was noted in the project cost. Under the heading of Intake weir – stone for main weir it was noted that the multiplication of quantity with the unit rate gives value of Rs. 1.838 million. However, this value was taken as Rs. 8.548 million in the feasibility study. The reply of the Petitioner regarding error in the quantity quoted in the feasibility study, in the absence of detailed basis for computation of this quantity included in the feasibility study, is not considered valid, therefore the difference of Rs. 6.710 million between the two values specified above is hereby disallowed.



8.3.4 Land compensation

The Petitioner has claimed Rs. 25.455 million as land compensation including cost of land acquisition of Rs. 25.200 million.

According to the feasibility study paragraph 5.9.2:

“Land measuring 63.08 acres will be required for the construction of power house and allied civil works. Out of these 17.50 acres will be acquired from the private land owners and the remaining 45.58 acres will be government land. The land will be acquired under the provisions of LAA, 1894”.

In table 8-1 of the feasibility study land has been valued at an average rate of Rs. 400,000 per acre. On an inquiry the Petitioner has informed that the rate per acre has been worked out on an average basis by the consultant, some of the land has also been encroached upon by the local farmers and a final settlement needs to be reached.

The Authority after consideration of the location of the project, total area and rate per acre allows land compensation of Rs. 25.455 million at feasibility stage. However, subject to maximum ceiling of Rs. 25.455 million fixed in the feasibility study, this cost will be replaced with actual verifiable cost at COD stage.

8.3.5 Duties and taxes

The overall project cost being allowed is inclusive of duties and taxes, as has been explicitly stated in paragraph 47 of the petition which reads as follows:

“Customs duties, port clearance, transportation and related cost on plant & equipment to be imported for the project are included in the cost estimates of plant & equipment in accordance with Punjab Power Generation Policy 2006 as amended and GOP’s Policy for Power Generation Projects 2002 as amended from time to time”.

No adjustment in respect of duties and taxes will be allowed in future.

8.3.6 Although capital cost of hydropower projects varies materially from case to case due to various factors such as head height, type of the project i.e. run of the river or canal based, design, type of plant & equipment used, etc. however it was noted that the capital cost of the Petitioner is within the range of capital costs already allowed to other hydropower projects. The Authority therefore allows the capital cost detailed below subject to conditions stipulated herein and verification/prudency test at EPC stage and COD stage.

8.3.7 The total allowed capital cost of the Petitioner, inclusive of duties and taxes but excluding interest during construction, with the adjustments detailed above, after conversion at reference exchange rate of PKR Rs. 80 / US\$ works out to US\$ 27.243 million (US\$ 1.816





million per MW). This cost includes local component of Rs. 1,454 million and foreign component of US \$ 9.063 million.

8.4 Interest during construction (IDC):

8.4.1 The Petitioner has claimed IDC of Rs. 450.898 million. In the feasibility study return on equity during construction (ROEDC) has also been made a part of the project cost which is against the standard practice of the Authority and is therefore disallowed, as ROEDC is being allowed as a separate tariff component.

8.4.2 The feasibility study has assumed debt equity ratio of 80:20. Further, in accordance with the information provided in the petition foreign debt is assumed as 20% and local debt as 80%; with interest rate as 5% on foreign debt and 10% on local debt. Based on these parameters and construction period of three years, IDC is estimated at Rs. 247.451 million as against Rs. 450.898 million (inclusive of ROEDC and computed at higher interest rates) included in the feasibility study.

8.4.3 This estimated figure of IDC of Rs. 247.451 million is accordingly allowed at this stage, and it will be readjusted at COD based on actual construction period allowed by the Authority, actual debt draw downs (within the overall limit of debt as a percentage of project cost allowed by the Authority at COD), actual debt composition allowed by the Authority and actual interest rates not exceeding the following limits:

Foreign debt	:	3 months LIBOR plus 4.50%
Local debt	:	3 months KIBOR plus 3.00%

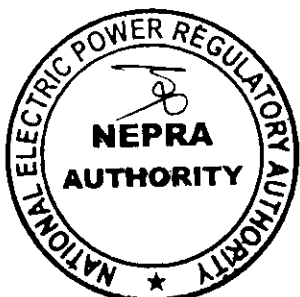
8.5 Overall view of the project cost:

8.5.1 The revised project cost of the Petitioner after accounting for all the adjustments detailed above works out to Rs 1,675 million local component and US\$ 9.399 million foreign component. This entire project cost converted at reference exchange rate of Rs. 80/ US\$ works out to US\$ 30.336 million (US\$ 2.022 million per MW).

9. Power acquisition request and inter connection cost

9.1 Multan Electric Power Company vide its letter No.2670/M T/DMCM dated 31-10-2009 has shown its willingness to purchase power from the Petitioner provided the cost of connectivity is borne by the sponsor.

9.2 According to the feasibility study 10 KM long transmission line is required whose cost is projected as US \$ 0.750 million (Rs. 60 million) in the feasibility study. However, this cost is not included in the project cost of the Petitioner. The exact mechanics about the development of interconnection facilities need to be finalized between the Petitioner and



5

8

11

2

the power purchaser. In case the Petitioner is ultimately required to bear this connectivity cost, it will be allowed recovery of the same as a part of tariff. However, the Petitioner will be required to provide complete verifiable documents to the satisfaction of Authority that these costs have been actually incurred in a prudent manner.

10. Construction period

10.1 The Petitioner has requested for allowing construction period of 39 months from 'financial closing/notice to proceed' as against construction period of 32 months given in the feasibility study. The Authority after due consideration has decided that the construction period and required commercial operations date should be fixed in the terms and conditions of power purchase agreement to be executed between the power purchaser and the Petitioner. Prudence of this period/date will be evaluated by the Authority at COD stage.

11. Hydrological risk:

11.1 For hydel power plants, water inflows to generate electricity do not remain the same throughout a year, they rather depend on seasonal variations. The out put of power plant is accordingly dependent on water inflows. During a period of lean water inflows, the power project will not be able to recover its full fixed costs due to actual operation of the power plant at less than the average estimated plant factor. In hydel power projects almost whole of the operational cost is fixed. As per Policy for Power Generation Projects 2002 (Power Policy 2002), Policy for Development of Renewable Energy for Power Generation 2006 (Renewable Policy 2006) and Punjab Power Generation Policy Year 2006 revised in 2009 (Punjab Power Policy 2006), the hydrological risk is to be borne by the power purchaser. However, the exact mechanism for sharing of hydrological risk needs to be finalized between the PPDB/Petitioner and power purchaser.

11.2 The Petitioner has requested that in the event its annual energy production is more than the bench mark energy assumed for calculation of the feasibility stage reference tariff in any agreement year, besides energy purchase price, additional capacity payment shall be made @ 10% of the levelized capacity purchase price per KWh for the energy delivered beyond the bench mark energy in any agreement year.

11.3 The Authority has considered this request and has decided to allow the specific mechanism for hydrology risk allocation given in the Renewable Policy 2006 to the Petitioner.

11.4 The Petitioner has requested for approval of capacity charges on Rs/kW/h basis. The Power Policy 2002 and Punjab Power Policy 2006 both state that capacity purchase price of the hydropower projects will be expressed in Rs/kW/month.



11.5 In view of the above the Authority has, decided to allow fixed cost of the Petitioner on Rs/kW/month basis in the tariff table as per the requirement of Power Policy 2002 and Punjab Power Policy 2006.

12. Complaint filed by Central China Power Group International Economic & Trade Co. Ltd. and Elba International

12.1 Central China Power Group International Economic & Trade Co. Ltd. and Elba International have jointly filed comments where by it was stated that they are affected joint sponsors in the case of Rasul Hydropower (Pvt.) Limited another hydropower project of Habib Rafiq (Pvt.) Limited. Since the grounds raised are not directly connected with the Petitioner and have no implications on the tariff therefore the same do not effect the determination of feasibility stage reference tariff of the Petitioner.

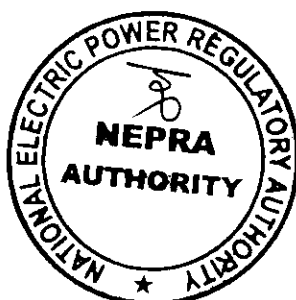
13. Internal rate of return

13.1 The Petitioner has requested for allowing twenty percent (20%) return on equity (hereinafter "ROE") based on internal rate of return (hereinafter "IRR"). The proposed ROE, twenty percent (20%) has been demanded on the basis of change in risk profile of the projects over the period. The Petitioner has sighted weakening economic fundamentals, increased political and economic uncertainty as well as increased security and terrorism risks as key factors that have all led to deteriorating risk profile of the country and consequently of the projects. The Petitioner has also sighted that increased risk is reflected in the sovereign rating of Pakistan by the international rating agencies, the yield on the Pakistan sovereign Eurobond which is trading at a considerable discount. However, in the petition and feasibility study reference tariff has been calculated on seventeen percent IRR based return.

13.2 The Authority has already allowed higher IRR for hydel projects i.e. 17% compared to 15% for thermal power projects. The Petitioners request for allowing IRR of 20% is not maintainable as IRR of 17% is for all practical purposes being allowed in US\$ terms (indexation for US \$ / PKR parity variation is already being allowed on return on equity). In the present world scenario where interest rates in most part of the developed world are below 5%, IRR of 17% does not seem to need any further upward revision.

14. O & M costs

14.1 Break-up of O & M cost included in the feasibility study and requested by the Petitioner is as follows:



[Handwritten signatures and marks]

14.1.1 VARIABLE COST

<u>Description of expense</u>	<u>Amount in million US \$</u>
Lubricants repair & maintenance	0.2000
Plant maintenance	0.2907
Other consumables	0.1500
Vehicle O & M	0.2000
Total	0.8407

14.1.2 FIXED COST

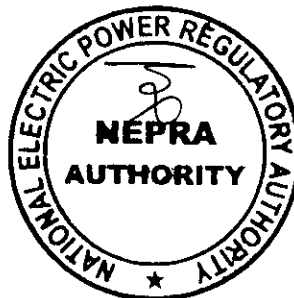
<u>Description of expense</u>	<u>Amount in million US \$</u>
Staff salaries and wages	0.5720
Import duty on spare parts	0.0368
Office overheads	0.1600
Total	0.7688

14.2 The Petitioner has requested that the entire variable O & M cost be allowed in foreign currency. The Petitioner has further submitted that fixed O & M cost includes 20% foreign component and 80% local component.

14.3 The Authority after consideration of the size of the project, nature of O & M expenditure, comparison of O & M costs already allowed to other hydro power projects, ratio between fixed and variable O & M costs and their requested composition into foreign and local components has concluded that the O & M costs requested by the Petitioner are not justified.

14.4 The Authority after due consideration here by allows variable O & M cost component of Rs. 0.1820/kWh computed on the basis of net generation available for sale of 57.71 GWh. Keeping in view the nature of these expenditures, the Petitioners request for allowing the entire variable O & M cost in foreign currency is not justified, therefore the Authority hereby allows Rs. 0.0910/kWh as foreign component of variable O & M and Rs. 0.0910/kWh as local component of variable O & M.

14.5 The Authority hereby allows fixed O & M cost component of Rs. 136.7631/kW/month with Rs. 109.4105/kW/month local component and Rs. 27.3526/kW/month foreign component computed on the basis of net capacity of 14.925 MW.



Handwritten signatures and initials are present in the bottom right corner of the page.

14.6 Further indexation of the local component of O & M cost with WPI and foreign component of O&M cost with US CPI and Rs. / USD variation by taking July 2009 as reference for WPI and US CPI and Rs. 80 /US\$ as reference exchange rate, as requested by the Petitioner, is hereby allowed.

15. Water use charge

15.1 This component represents water use charges payable to the provincial government for water usage. The feasibility study has taken US\$ 0.0019 kWh as water use charges which converted at reference exchange rate of Rs. 80/US\$ works out to Rs. 0.152 kWh.

15.2 According to the Power Policy 2002 para 76 "The water use charge per kWh will be fixed at the rate of Rs. 0.15/kWh." In accordance with the provisions of Power Policy 2002, this rate has already been allowed as a part of tariff to number of hydel power projects by the Authority. Further, para 79 of the Punjab Power Policy 2006 also states that "The water use charge shall be fixed at the rate of Rs. 0.15/kwh subject to annual adjustability."

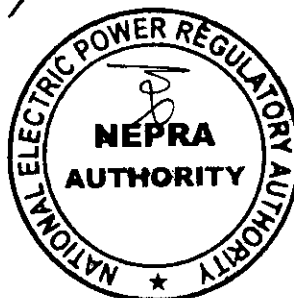
15.3 Accordingly the rate of Rs. 0.15/kWh as specified by the Power Policy 2002 and Punjab Power Policy 2006 is allowed in this case. Further, indexation of this component with WPI is also allowed on annual basis after COD.

16. Cost of working capital

16.1 The feasibility study has estimated working capital cost of US \$ 0.140 million (tariff component as per feasibility study US\$ /kWh. 0.0024). The feasibility study does not provide details of any mis-match between cash inflows and outflows requiring working capital for bridging this gap.

16.2 CPPA has also objected to this cost and has stated that pursuant to the terms of the standard EPA, the power purchaser is liable to make the payment of monthly energy invoice within 30 days following the day of submission of the invoice. The project company has to manage the working capital at its own rather than at the cost of power purchaser/end consumer. Therefore, cost of working capital is not a justified component of the reference tariff.

16.3 Since the recovery of various tariff components does not exactly match with their actual cash flows, it is therefore difficult to assess the requirement for working capital without review of detailed working for cash shortfalls which need to be funded by availing working capital finance.



16.4 In view of absence of any justification or working for this cost component included in the feasibility study and the fact that working capital has not been allowed to other hydropower projects, the same is also not allowed to the Petitioner.

17. Insurance

17.1 The Petitioner has claimed insurance cost of US \$ 0.436 million on the basis of which tariff component has been worked out. The Authority considers that the insurance cost claimed by the Petitioner and estimated in the feasibility study is on the higher side and there is no justification for allowing insurance cost in excess of 1.35% of the qualifying assets.

17.2 In the instant case insurance as 1.35% of the qualifying assets works out to US\$ 0.355 million i.e. Rs. 158.4376 kW/month and the same is hereby allowed subject to the condition that insurance will be adjusted on actual at COD based on verification of the documentary evidence with maximum ceiling of 1.35% of EPC cost.

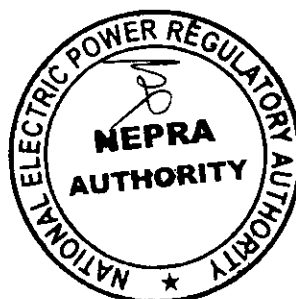
17.3 The Petitioner has requested for allowing indexation of insurance with US CPI and Rs. / USD variation. The request for allowing indexation with US CPI has not been allowed by the Authority to other projects and in the absence of strong justifications for allowing the same in the instant case, the same is also not allowed here. In case of insurance by a foreign company, whereby insurance premium is payable in US \$, the insurance cost component will be adjusted on account of variation in Rs. / USD variation on annual basis.

18. Return on equity

18.1 The Petitioner has requested for allowing return on equity for year 1 - 30 of US\$ 0.0088/kWh which converted at reference exchange works out to Rs. 519.486 kW/month.

18.2 The instant case is a BOOT project. Accordingly it has been allowed redemption of its equity after completion of debt servicing. Return on equity based on 17% IRR works out for the year 1 - 10 Rs. 460.7152 kW/month and for the year 11 - 30 Rs. 481.5567 kW/month which is hereby allowed. The return on equity will be adjusted at COD based on actual equity injections allowed by the Authority.

18.3 The Petitioner has requested the Authority to allow US\$ 0.0006/kWh as return on equity during construction (ROEDC) based on 17% IRR. This claim is in addition to ROEDC claimed as a part of interest during construction by the Petitioner. The Authority has disallowed ROEDC as a part of interest during construction as discussed earlier and has decided to allow ROEDC as a separate tariff component.



Handwritten signatures and initials are present in the bottom right area of the page, including a signature that appears to be "G" and another that appears to be "N".

18.4 ROEDC has been estimated as Rs. 129.6409 kW/month by the Authority which is allowed as a separate tariff component. Computation of ROEDC is an estimated one at this stage and it will be adjusted at the time of COD, keeping in view the construction period allowed, relevant dates of equity injections, allowing annual compounding and compounding for any incomplete period preceding COD at COD.

19. Financing structure and debt servicing component

19.1 The feasibility study has assumed debt equity ratio of 80:20. Further, in accordance with the information provided in the petition foreign debt is assumed as 20% and local debt as 80%; with interest rate as 5% on foreign debt and 10% on local debt. The Authority has decided to allow following maximum ceilings of interest rates:

Foreign debt	:	3 months LIBOR plus 4.50%
Local debt	:	3 months KIBOR plus 3.00%

19.2 Debt servicing component accordingly works out to Rs. 1,658.7163 kW/month.

19.3 The maximum ceilings indicated above are just for reference and the Petitioner is encouraged to negotiate better terms than the above mentioned maximum ceilings with its lenders.

20. Carbon credits

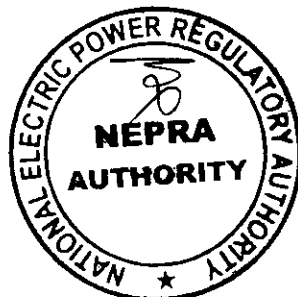
20.1 The Petitioner has not taken into account future proceeds with respect to certified emission reductions in its tariff calculations. The Petitioner is directed that in case its project becomes entitled to receive carbon credits, the same shall be processed and obtained expeditiously and credited to the power purchaser as per the policy issued by the government and agreed terms between the Petitioner and the power purchaser.

21. Tariff

21.1 Based on the approved costs, the reference tariff for each cost component is given in a table attached to this determination as Annex-I.

22. ORDER

Pursuant to Rule 16 (11) of the Tariff Rules the Petitioner is hereby allowed to charge the following specified/approved tariff for delivery of electricity to the Power Purchaser.



Handwritten signatures and initials are present in the bottom right corner of the page, including a signature that appears to be "G" and another that appears to be "M".



iv. Adjustment due to Duties and Taxes

Project cost is inclusive of duties and taxes therefore no adjustment in respect of these will be allowed in future.

v. Adjustment for variation in Dollar/Rupee parity

Relevant components of the reference tariff shall be adjusted at COD on account of actual variation in US\$/PKR parity over the reference US\$/PKR rate of Rs. 80 to 1 dollar.

II. Pass-Through Items

i. No provision for income tax has been accounted for in the tariff. If the Petitioner is obligated to pay any tax on its income, the exact amount paid by the Petitioner shall be reimbursed by the power purchaser on production of original receipts. This payment should be considered as pass-through payment (Rs/kW/M) spread over a twelve (12) months period in addition to fixed charges in the reference tariff. Furthermore, in such a scenario, the Petitioner shall also submit to the power purchaser details of any tax savings and the power purchaser shall deduct the amount of these savings from its payment to the Petitioner on account of taxation.

ii. Withholding tax is also a pass through item just like other taxes as indicated in the government guidelines. In tariff table withholding tax number is indicated as a reference and the power purchaser shall make payment on account of withholding tax at the time of actual payment of dividend subject to maximum of 7.5% of 17% equity according to the following formula:

$$\text{Withholding Tax Payable} = [(17\% * (E_{(Ref)} - E_{(Red)}) + ROEDC_{(Ref)})] \times 7.5\%$$

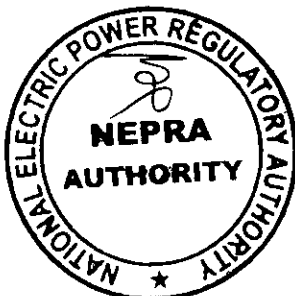
Where:

$E_{(Ref)}$ = Adjusted Reference Equity at COD

$E_{(Red)}$ = Equity Redeemed

$ROEDC_{(Ref)}$ = Adjusted Reference Return on Equity During Construction

iii. In case the Company does not declare a dividend in any particular year or only declares a partial dividend, then the difference in the withholding tax amount (between what has been paid in that year and the total entitlement as per the net return on equity) would be carried forward and accumulated so that the Petitioner is able to recover the same as a pass through item from the power purchaser in future on the basis of the total dividend pay out.



[Handwritten signature]

[Handwritten mark]



III. Hydrological Risk

As per Power Policy 2002, Renewable Policy 2006 and Punjab Power Policy 2006, the hydrological risk is to be borne by the power purchaser. However, the exact mechanism for sharing of hydrological risk needs to be finalized between the PPDB/Petitioner and the power purchaser.

IV. Indexations:

The following indexation shall be applicable to the reference tariff;

i. Indexation applicable to O&M

The local part of O&M cost will be adjusted on account of WPI and O&M foreign component will be adjusted on account of variation in dollar/rupee exchange rate and US CPI. Quarterly adjustments for local inflation, foreign inflation and exchange rate variation will be made in July, October, January & April respectively on the basis of the latest available information with respect to WPI (notified by the Federal Bureau of Statistics), US CPI (notified by US Bureau of Labor Statistics) and revised TT & OD selling rate of US Dollar as notified by the National Bank of Pakistan. The mode of indexation will be as under:

a) Fixed O&M

$$F O\&M_{(LREV)} = \text{Rs } 109.4105/\text{kW/M} * WPI_{(REV)} / 141.07$$

$$F O\&M_{(FREV)} = \text{Rs } 27.3526/\text{kW/M} * US CPI_{(REV)} / 215.351 * ER_{(REV)} / 80$$

Where:

$F O\&M_{(LREV)}$ = The revised applicable fixed O&M local component of the capacity charge indexed with WPI

$F O\&M_{(FREV)}$ = The revised applicable fixed O&M foreign component of the capacity charge indexed with US CPI and exchange rate variation

$WPI_{(REV)}$ = The revised wholesale price index (manufacturers)

$WPI_{(REF)}$ = 141.07 wholesale price index (manufacturers) of July 2009 notified by the Federal Bureau of Statistics

$US CPI_{(REV)}$ = The revised US CPI (all urban consumers)

$US CPI_{(REF)}$ = 215.351 US CPI (all urban consumers) for the month of July 2009 as notified by the US Bureau of Labor Statistics



[Handwritten signatures and initials]



$ER_{(REV)}$ = the revised TT & OD selling rate of US dollar as notified by the National Bank of Pakistan

b) Variable O&M

The formula for indexation of Variable O & M component will be as under:

$$V O\&M_{(LREV)} = Rs\ 0.0910 /kWh * WPI_{(REV)} / 141.07$$

$$V O\&M_{(FREY)} = Rs\ 0.0910/kWh * US\ CPI_{(REV)} / 215.351 * ER_{(REV)} / 80$$

Where:

$V O\&M_{(LREV)}$ = The revised applicable variable O&M local component indexed with WPI

$V O\&M_{(FREY)}$ = The revised applicable variable O&M foreign component indexed with US CPI and exchange rate variation

$WPI_{(REV)}$ = The revised wholesale price index (manufacturers)

$WPI_{(REF)}$ = 141.07 wholesale price index (manufacturers) of July 2009 notified by the Federal Bureau of Statistics

$US\ CPI_{(REV)}$ = The revised US CPI (all urban consumers)

$US\ CPI_{(REF)}$ = 215.351 US CPI (all urban consumers) for the month of July 2009 as notified by the US Bureau of Labor Statistics

$ER_{(REV)}$ = the revised TT & OD selling rate of US dollar as notified by the National Bank of Pakistan

ii. Water Use Charge

Water Use Charge will be paid on units delivered basis and will be indexed with Wholesale Price Index (WPI) annually from the date of COD. The first such adjustment shall be made after one year of commercial operations from COD, according to the following formula:

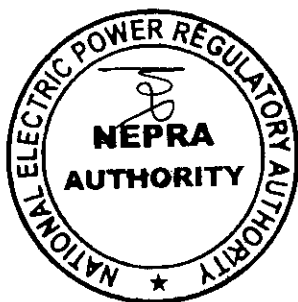
$$WUC_{(REV)} = Rs\ 0.1500/kWh * WPI_{(REV)} / WPI_{(REF)}$$

Where;

$WUC_{(REV)}$ = The revised water use charge component indexed with Whole Sale Price Index (WPI)

$WPI_{(REV)}$ = The revised wholesale price Index (manufacturers)

$WPI_{(REF)}$ = Reference wholesale price index (manufacturers) of the



(Handwritten signatures and initials)



latest available month preceding to the date of COD as notified by the Federal Bureau of Statistics

iii. Insurance

In case of insurance by a foreign company, whereby insurance premium is payable in US \$, insurance cost component of tariff will be adjusted on account of US\$/PKR exchange rate variation at COD and thereafter on annual basis as per the following formula:

$$I_{(REV)} = \text{Rs } 158.4376/\text{kW/M} * ER_{(REV)}/80$$

Where;

$I_{(REV)}$ = Revised insurance cost component of tariff adjusted with the exchange rate variation (US\$/PKR)

$ER_{(REV)}$ = The revised TT & OD selling rate of US dollar as notified by the National Bank of Pakistan

iv. Adjustment for debt service component

Foreign debt and its interest shall be adjusted on account of actual variation in US\$/PKR parity over the reference exchange rate on quarterly basis. Except for this variation of foreign exchange parity, the interest part of fixed charge component will remain unchanged throughout the term except for the adjustment due to variation in interest rate as a result of quarterly variation in three months KIBOR for local debt and three months LIBOR for foreign debt, with the spread not exceeding 3% over KIBOR and 4.5% over LIBOR.

Note:-

The Petitioner shall submit relevant documents to the Authority within seven (7) days of COD for adjustment of relevant tariff components. Adjustment on account of WPI, US CPI, foreign exchange variation and KIBOR /LIBOR variation will be approved and announced by the Authority after receipt of the Petitioner's request for adjustment in accordance with the requisite indexation mechanism stipulated hereinabove.

V. Terms and Conditions of Tariff:

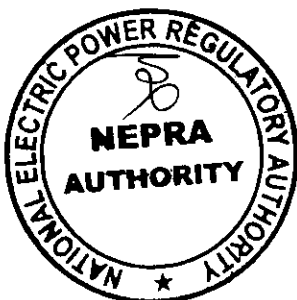
i. Design & Manufacturing Standards:

Hydel Power Generation system shall be designed, manufactured and tested in accordance with the latest IEC standards or other equivalent standards. All plant and equipment shall be new and of standard quality.

ii. Power Curve of the Hydel Power Complex:

The power curve of the hydel power plant shall be verified by the power purchaser, as part of the commissioning tests according to the latest IEC standards and shall be used to measure the performance of the hydel generating units.

↓ G ✓
✓

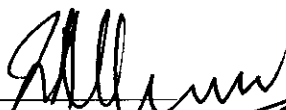


iii. Emissions Trading/Carbon Credits:

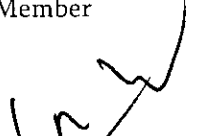
The Petitioner would process and obtain emissions/carbon credits expeditiously and credit the proceeds to the power purchaser as per the government policy and agreed terms between the Petitioner and the power purchaser.


The above tariff and terms and conditions will be incorporated as the specified tariff approved by the Authority pursuant to Rule-6 of NEPRA Licensing (Generation) Rules, in the Power Purchase Agreement between the Petitioner and power purchaser. The tariff and terms and conditions along with the reference tariff table (Annex-I) and debt service schedule (Annex-II) as attached thereto are recommended for notification by the Federal Government in the official gazette in accordance with the Section 31(4) of the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of 1997).

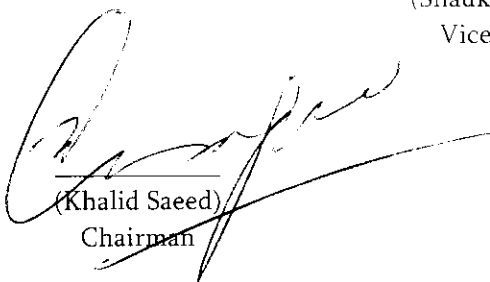
AUTHORITY

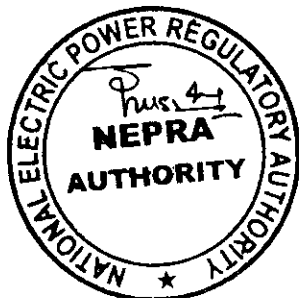

(Zafar Ali Khan)
Member
25/11/10


(Ghiasuddin Ahmed)
Member
30/x/1


(Maqbool Ahmad Khawaja)
Member


(Shaukat Ali Kundi) 02.12.2010
Vice Chairman


(Khalid Saeed)
Chairman



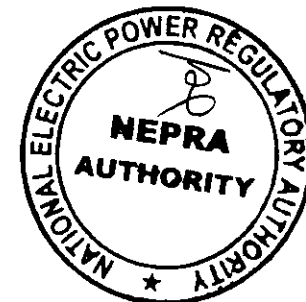
PUNJNAD HYDROPOWER (PVT.) LIMITED
REFERENCE TARIFF

Year	Variable O&M		Water Use Charge	Fixed O&M		Insurance	Return on Equity (ROE)	ROE During Construction	Withholding Tax @7.5%	Loan Repayment	Interest Charges	Tariff
	Local Rs. / kWh	Foreign Rs. / kWh	Rs. / kWh	Local Rs. / kWh	Foreign Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh
1	0.0910	0.0910	0.1500	109.4105	27.3526	158.4376	460.7152	129.6409	44.2767	705.8919	952.8244	8.3652
2	0.0910	0.0910	0.1500	109.4105	27.3526	158.4376	460.7152	129.6409	44.2767	770.0999	888.6164	8.3652
3	0.0910	0.0910	0.1500	109.4105	27.3526	158.4376	460.7152	129.6409	44.2767	840.5112	818.2051	8.3652
4	0.0910	0.0910	0.1500	109.4105	27.3526	158.4376	460.7152	129.6409	44.2767	917.7464	740.9699	8.3652
5	0.0910	0.0910	0.1500	109.4105	27.3526	158.4376	460.7152	129.6409	44.2767	1,002.4891	656.2272	8.3652
6	0.0910	0.0910	0.1500	109.4105	27.3526	158.4376	460.7152	129.6409	44.2767	1,095.4927	563.2236	8.3652
7	0.0910	0.0910	0.1500	109.4105	27.3526	158.4376	460.7152	129.6409	44.2767	1,197.5874	461.1290	8.3652
8	0.0910	0.0910	0.1500	109.4105	27.3526	158.4376	460.7152	129.6409	44.2767	1,309.6882	349.0281	8.3652
9	0.0910	0.0910	0.1500	109.4105	27.3526	158.4376	460.7152	129.6409	44.2767	1,432.8038	225.9125	8.3652
10	0.0910	0.0910	0.1500	109.4105	27.3526	158.4376	460.7152	129.6409	44.2767	1,568.0459	90.6704	8.3652
11	0.0910	0.0910	0.1500	109.4105	27.3526	158.4376	481.5567	129.6409	45.8398	-	-	3.2871
12	0.0910	0.0910	0.1500	109.4105	27.3526	158.4376	481.5567	129.6409	45.8398	-	-	3.2871
13	0.0910	0.0910	0.1500	109.4105	27.3526	158.4376	481.5567	129.6409	45.8398	-	-	3.2871
14	0.0910	0.0910	0.1500	109.4105	27.3526	158.4376	481.5567	129.6409	45.8398	-	-	3.2871
15	0.0910	0.0910	0.1500	109.4105	27.3526	158.4376	481.5567	129.6409	45.8398	-	-	3.2871
16	0.0910	0.0910	0.1500	109.4105	27.3526	158.4376	481.5567	129.6409	45.8398	-	-	3.2871
17	0.0910	0.0910	0.1500	109.4105	27.3526	158.4376	481.5567	129.6409	45.8398	-	-	3.2871
18	0.0910	0.0910	0.1500	109.4105	27.3526	158.4376	481.5567	129.6409	45.8398	-	-	3.2871
19	0.0910	0.0910	0.1500	109.4105	27.3526	158.4376	481.5567	129.6409	45.8398	-	-	3.2871
20	0.0910	0.0910	0.1500	109.4105	27.3526	158.4376	481.5567	129.6409	45.8398	-	-	3.2871
21	0.0910	0.0910	0.1500	109.4105	27.3526	158.4376	481.5567	129.6409	45.8398	-	-	3.2871
22	0.0910	0.0910	0.1500	109.4105	27.3526	158.4376	481.5567	129.6409	45.8398	-	-	3.2871
23	0.0910	0.0910	0.1500	109.4105	27.3526	158.4376	481.5567	129.6409	45.8398	-	-	3.2871
24	0.0910	0.0910	0.1500	109.4105	27.3526	158.4376	481.5567	129.6409	45.8398	-	-	3.2871
25	0.0910	0.0910	0.1500	109.4105	27.3526	158.4376	481.5567	129.6409	45.8398	-	-	3.2871
26	0.0910	0.0910	0.1500	109.4105	27.3526	158.4376	481.5567	129.6409	45.8398	-	-	3.2871
27	0.0910	0.0910	0.1500	109.4105	27.3526	158.4376	481.5567	129.6409	45.8398	-	-	3.2871
28	0.0910	0.0910	0.1500	109.4105	27.3526	158.4376	481.5567	129.6409	45.8398	-	-	3.2871
29	0.0910	0.0910	0.1500	109.4105	27.3526	158.4376	481.5567	129.6409	45.8398	-	-	3.2871
30	0.0910	0.0910	0.1500	109.4105	27.3526	158.4376	481.5567	129.6409	45.8398	-	-	3.2871
Levelized Tariff	0.0910	0.0910	0.1500	109.4105	27.3526	158.4376	467.9720	129.6409	44.8210	659.2890	421.8807	6.5971

Levelized tariff for comparison purposes only at exchange rate of 80 PKR / US \$ translates to cents 8.2463/kwh

Reference net capacity = 14.925 MW.

Reference annual energy production = 57.71 GWh.



PUNJNAD HYDROPOWER (PVT.) LIMITED
Debt Servicing Schedule

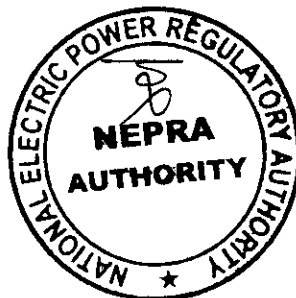
Period	Local Debt					Foreign Debt					Total					Annual Principal Repayment Rs./kW/m	Annual Interest Rs./kW/m	Annual Debt Servicing Rs./kW/m
	Principal	Repayment	Mark-Up	Balance	Total Debt Service	Principal	Repayment	Mark-Up	Balance	Total Debt Service	Principal	Repayment	Mark-Up	Balance	Total Debt Service			
	Million Rupees	Million Rupees	Million Rs.	Million Rs.	Million Rs.	Million Rupees	Million Rupees	Million Rs.	Million Rs.	Million Rs.	Million Rupees	Million Rupees	Million Rs.	Million Rs.	Million Rs.			
	1,553,206,309	23,043,731	38,830,158	1,530,162,578	61,873,889	388,301,577	7,541,366	4,853,770	380,760,212	12,395,135	1,941,507,886	30,585,097	43,683,927	1,910,922,790	74,269,024			
	1,530,162,578	23,619,824	38,254,064	1,506,542,754	61,873,889	380,760,212	7,635,633	4,759,503	373,124,579	12,395,135	1,910,922,790	31,255,457	43,013,567	1,879,667,333	74,269,024			
	1,506,542,754	24,210,320	37,663,569	1,482,332,434	61,873,889	373,124,579	7,731,077	4,664,057	365,393,501	12,395,135	1,879,667,333	31,941,398	42,327,626	1,847,725,935	74,269,024			
	1,482,332,434	24,815,578	37,058,311	1,457,516,856	61,873,889	365,393,501	7,827,717	4,567,419	357,565,784	12,395,135	1,847,725,935	32,643,294	41,625,730	1,815,082,640	74,269,024			
1	1,553,206,309	95,689,453	151,806,102	1,457,516,856	247,495,555	388,301,577	30,735,793	18,844,748	357,565,784	49,580,541	1,941,507,886	126,425,246	170,650,850	1,815,082,640	297,076,096	705.8919	952.8244	1,658.7163
	1,457,516,856	25,435,967	36,437,921	1,432,080,889	61,873,889	357,565,784	7,925,563	4,469,572	349,640,221	12,395,135	1,815,082,640	33,361,530	40,907,494	1,781,721,110	74,269,024			
	1,432,080,889	26,071,866	35,802,022	1,406,009,022	61,873,889	349,640,221	8,024,633	4,370,503	341,615,588	12,395,135	1,781,721,110	34,096,499	40,172,525	1,747,624,611	74,269,024			
	1,406,009,022	26,723,663	35,150,226	1,379,285,359	61,873,889	341,615,588	8,124,941	4,270,195	333,490,648	12,395,135	1,747,624,611	34,848,604	39,420,420	1,712,776,007	74,269,024			
	1,379,285,359	27,391,755	34,482,134	1,351,893,605	61,873,889	333,490,648	8,268,502	4,168,633	325,264,146	12,395,135	1,712,776,007	35,618,257	38,650,767	1,677,157,750	74,269,024			
2	1,457,516,856	105,623,252	141,872,303	1,351,893,605	247,495,555	357,565,784	32,301,638	17,278,903	325,264,146	49,580,541	1,815,082,640	137,924,890	159,151,206	1,677,157,750	297,076,096	770.0999	888.6164	1,658.7163
	1,351,893,605	28,076,549	33,797,340	1,323,817,056	61,873,889	325,264,146	8,329,334	4,065,802	316,934,812	12,395,135	1,677,157,750	36,405,882	37,863,142	1,640,751,868	74,269,024			
	1,323,817,056	28,778,462	33,095,426	1,295,038,594	61,873,889	316,934,812	8,433,450	3,961,685	308,501,362	12,395,135	1,640,751,868	37,211,912	37,057,112	1,603,539,956	74,269,024			
	1,295,038,594	29,497,924	32,375,965	1,265,540,670	61,873,889	308,501,362	8,538,868	3,856,267	299,962,494	12,395,135	1,603,539,956	38,036,792	36,232,232	1,565,503,164	74,269,024			
	1,265,540,670	30,235,372	31,638,517	1,235,305,298	61,873,889	299,962,494	8,645,604	3,749,531	291,316,889	12,395,135	1,565,503,164	38,880,976	35,388,048	1,526,622,187	74,269,024			
3	1,351,893,605	116,588,307	130,907,248	1,235,305,298	247,495,555	325,264,146	33,947,256	15,633,285	291,316,889	49,580,541	1,677,157,750	150,535,563	146,540,533	1,526,622,187	297,076,096	840.5112	818.2051	1,658.7163
	1,235,305,298	30,991,256	30,882,632	1,204,314,042	61,873,889	291,316,889	8,753,674	3,641,461	282,563,215	12,395,135	1,526,622,187	39,744,930	34,524,094	1,486,877,257	74,269,024			
	1,204,314,042	31,766,038	30,107,851	1,172,548,004	61,873,889	282,563,215	8,863,095	3,532,404	273,700,120	12,395,135	1,486,877,257	40,629,133	33,639,891	1,446,248,124	74,269,024			
	1,172,548,004	32,560,189	29,313,700	1,139,987,816	61,873,889	273,700,120	8,973,884	3,421,251	264,726,236	12,395,135	1,446,248,124	41,534,072	32,734,952	1,404,714,052	74,269,024			
	1,139,987,816	33,374,193	28,499,695	1,106,613,622	61,873,889	264,726,236	9,086,057	3,309,078	255,640,179	12,395,135	1,404,714,052	42,460,251	31,808,773	1,362,253,801	74,269,024			
4	1,235,305,298	128,691,676	118,803,879	1,106,613,622	247,495,555	291,316,889	35,676,711	13,903,831	255,640,179	49,580,541	1,526,622,187	164,368,386	132,707,710	1,362,253,801	297,076,096	917.7464	740.9699	1,658.7163
	1,106,613,622	34,208,548	27,665,341	1,072,405,074	61,873,889	255,640,179	9,199,633	3,195,502	246,440,546	12,395,135	1,362,253,801	43,408,181	30,860,843	1,318,845,620	74,269,024			
	1,072,405,074	35,063,762	26,810,127	1,037,341,312	61,873,889	246,440,546	9,314,629	3,080,507	237,125,917	12,395,135	1,318,845,620	44,378,390	29,890,634	1,274,467,229	74,269,024			
	1,037,341,312	35,940,356	25,933,533	1,001,400,957	61,873,889	237,125,917	9,431,061	2,964,074	227,694,856	12,395,135	1,274,467,229	45,371,417	28,897,607	1,229,095,812	74,269,024			
	1,001,400,957	36,838,865	25,035,024	964,562,092	61,873,889	227,694,856	9,548,950	2,846,186	218,145,906	12,395,135	1,229,095,812	46,387,814	27,881,210	1,182,707,998	74,269,024			
5	1,106,613,622	142,051,531	105,444,024	964,562,092	247,495,555	255,640,179	37,494,273	12,086,269	218,145,906	49,580,541	1,362,253,801	179,545,803	117,530,293	1,182,707,998	297,076,096	1,002.4891	656.2272	1,658.7163
	964,562,092	37,759,836	24,114,052	926,802,255	61,873,889	218,145,906	9,668,312	2,726,824	208,477,594	12,395,135	1,182,707,998	47,428,148	26,840,876	1,135,279,850	74,269,024			
	926,802,255	38,703,832	23,170,056	888,098,423	61,873,889	208,477,594	9,789,165	2,605,970	198,688,429	12,395,135	1,135,279,850	48,492,998	25,776,026	1,086,786,852	74,269,024			
	888,098,423	39,671,428	22,202,461	848,426,995	61,873,889	198,688,429	9,911,530	2,483,605	188,776,899	12,395,135	1,086,786,852	49,582,958	24,686,066	1,037,203,894	74,269,024			
	848,426,995	40,663,214	21,210,675	807,763,781	61,873,889	188,776,899	10,035,424	2,359,711	178,741,475	12,395,135	1,037,203,894	50,698,638	23,570,386	986,505,256	74,269,024			
6	964,562,092	156,798,311	90,697,244	807,763,781	247,495,555	218,145,906	39,404,431	10,176,110	178,741,475	49,580,541	1,182,707,998	196,202,742	100,873,354	986,505,256	297,076,096	1,095.4927	563.2236	1,658.7163
	807,763,781	41,679,794	20,194,095	766,083,987	61,873,889	178,741,475	10,160,867	2,234,268	168,580,608	12,395,135	986,505,256	51,840,661	22,428,363	934,664,595	74,269,024			
	766,083,987	42,721,789	19,152,100	723,362,198	61,873,889	168,580,608	10,287,878	2,107,258	158,292,730	12,395,135	934,664,595	53,009,667	21,259,357	881,654,928	74,269,024			
	723,362,198	43,789,834	18,084,055	679,572,364	61,873,889	158,292,730	10,416,476	1,978,659	147,876,254	12,395,135	881,654,928	54,206,310	20,062,714	827,448,618	74,269,024			
	679,572,364	44,884,580	16,989,309	634,687,785	61,873,889	147,876,254	10,546,682	1,848,453	137,329,572	12,395,135	827,448,618	55,431,262	18,837,762	772,017,356	74,269,024			
7	807,763,781	173,075,996	74,419,558	634,687,785	247,495,555	178,741,475	41,411,903	8,168,638	137,329,572	49,580,541	986,505,256	214,487,900	82,588,197	772,017,356	297,076,096	1,197.5874	461.1290	1,658.7163
	634,687,785	46,006,694	15,867,195	588,681,091	61,873,889	137,329,572	10,678,516	1,716,620	126,651,056	12,395,135	772,017,356	56,685,210	17,583,814	715,332,147	74,269,024			
	588,681,091	47,156,861	14,717,027	541,524,229	61,873,889	126,651,056	10,811,997	1,583,136	115,839,059	12,395,135	715,332,147	57,968,859	16,300,165	657,363,288	74,269,024			
	541,524,229	48,335,783	13,538,106	493,188,446	61,873,889	115,839,059	10,947,147	1,447,988	104,891,912	12,395,135	657,363,288	59,282,930	14,986,094	598,080,358	74,269,024			
	493,188,446	49,544,178	12,329,711	443,644,269	61,873,889	104,891,912	11,083,986	1,311,149	93,807,925	12,395,135	598,080,358	60,628,164	13,640,860	537,452,194	74,269,024			
8	634,687,785	191,043,516	56,452,039	443,644,269	247,495,555	137,329,572	43,521,647	6,058,895	93,807,925	49,580,541	772,017,356	234,565,162	62,510,934	537,452,194	297,076,096	1,309.6882	349.0281	1,658.7163
	443,644,269	50,782,782	11,091,107	392,861,487	61,873,889	93,807,925	11,222,536	1,172,599	82,585,389	12,395,135	537,452,194	62,005,318	12,263,706	475,446,876	74,269,024			
	392,861,487	52,052,352	9,821,537	340,809,135	61,873,889	82,585,389	11,362,818	1,032,317	71,222,571	12,395,135	475,446,876	63,415,170	10,853,855	412,031,70				

REFERENCE TARIFF

Tariff Components	Year 1-10	Year 11-30	Indexation
Fixed Charges (Rs./kW/Month)			
Fixed O&M			
- Local	109.4105	109.4105	WPI
- Foreign	27.3526	27.3526	US\$/PKR, US CPI
Insurance	158.4376	158.4376	US\$/PKR
Return on equity	460.7152	481.5567	US\$/PKR
Return on equity during construction	129.6409	129.6409	US\$/PKR
Debt service	1,658.7163	-	KIBOR for local debt and LIBOR for foreign debt, US\$/PKR for foreign debt
Variable Charges (Rs./Kwh)			
Variable O&M			
- Local	0.0910	0.0910	WPI
- Foreign	0.0910	0.0910	US\$/PKR, US CPI
Water use charges	0.1500	0.1500	WPI

- i) The reference tariff has been calculated on the basis of net capacity of 14.925 MW and benchmark annual energy production of 57.71 GWh.
- ii) In the above tariff no adjustment for certified emission reductions has been accounted for. However, upon actual realization of carbon credits, the same shall be distributed between the power purchaser and the Petitioner in accordance with the government policy and agreed terms between the Petitioner and the power purchaser.
- iii) The above tariff is applicable for a period of thirty years (30) commencing from the date of COD.
- iv) Debt service shall be paid in the first 10 years of commercial operations of the plant after COD.
- v) The component wise tariff is indicated at Annex-1. debt service schedule is attached as Annex-II.
- vi) The Petitioner is entitled to adjustment of cost reopeners and cost escalation subject to provision of the required information/data in accordance with the Mechanism for Determination of Hydropower Tariff approved by the Authority, through a fresh tariff petition.

The following indexations shall be applicable to the reference tariff:



I. One Time Adjustments

i. Adjustment due to variation in net capacity

The reference tariff for the capacity charge has been determined on the basis of net capacity of 14.925 MW. The fixed tariff components (CPP) shall be adjusted at the time of COD based upon the Initial Dependable Capacity (IDC) test to be carried out for determination of capacity. Adjustment shall not be made if the IDC is established at less than 14.925 MW. The adjustment will be made according to the formula:

$$CC_{(Adj)} = CC_{(Ref)} \times 14.925 \text{ MW} / NC_{(IDC)}$$

Where;

- $CC_{(Adj)}$ = Adjusted relevant capacity charge component of tariff
 $CC_{(Ref)}$ = Reference relevant capacity charge component of tariff
 $NC_{(IDC)}$ = Net capacity at the reference site conditions established at the time of IDC test.

Note: Above formula shall be applicable to all the individual relevant components of the capacity charge.

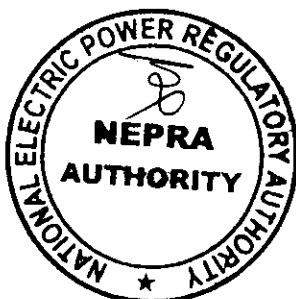
ii. Financing structure

The return on equity, return on equity during construction and debt service component are based on debt equity ratio of 80:20. Further, the debt service component of tariff has been based on 80% local debt and 20% foreign debt. The return on equity, return on equity during construction and debt service component shall be adjusted as per actual financing structure allowed by the Authority i.e. debt equity ratio and local and/or foreign debt as the case may be.

iii. Interest During Construction

Interest during construction (IDC) has been estimated as Rs. 247.451 million. This will be adjusted at COD on account of actual construction period allowed, actual draw downs (within the overall limit of debt as a percentage of capital cost allowed by the Authority at COD), actual debt composition allowed by the Authority and actual interest rates not exceeding the following limits:

Foreign debt	:	3 months LIBOR plus 4.50%
Local debt	:	3 months KIBOR plus 3.00%



[Handwritten signatures and initials]