National Electric Power Regulatory Authority
Islamic Republic of Pakistan

Registrar

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No. NEPRA/R/ADG(Trf)/IPT-14/ 33730-34 October 06, 2023

Subject: **Decision of the Authority in the matter of Tariff Proposal Submitted by Islamabad Electric Supply Company Ltd. (IESCO) for Procurement of Power from the 3 MW Qadirabad Hydropower Project located in AJK (Case No. NEPRA/IPT-14)**

Dear Sir,

Please find enclosed herewith subject Decision of the Authority (total 21 Pages) in Case No. NEPRA/IPT-14.

2. The Decision is being intimated to the Federal Government for the purpose of notification in the official Gazette pursuant to Section 31(7) of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 within 30 days from the intimation of this Decision. In the event the Federal Government fails to notify the subject tariff Decision or refer the matter to the Authority for reconsideration, within the time period specified in Section 31(7), then the Authority shall notify the same in the official Gazette pursuant to Section 31(7) of NEPRA Act.

Enclosure: As above

(Engr. Mazhar Iqbal Ranjha)

Secretary,
Ministry of Energy (Power Division),
Government of Pakistan
'A' Block, Pak Secretariat,
Islamabad.

CC:

1. Secretary, Cabinet Division, Cabinet Secretariat, Islamabad
2. Secretary, Ministry of Finance, 'Q' Block, Pak Secretariat, Islamabad.
3. Chief Executive Officer, Islamabad Electric Supply Company, IESCO
   Head Office Street 40 Sector G-7/4, Islamabad
4. Chairman, Azad Jammu and Kashmir Power Development Organization
   PDO Complex, Upper Chattar Muzaffarabad.

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1. Secretary, Cabinet Division, Cabinet Secretariat, Islamabad
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3. Chief Executive Officer, Islamabad Electric Supply Company, IESCO Head Office Street 40 Sector G-7/4, Islamabad
4. Chairman, Azad Jammu and Kashmir Power Development Organization PDO Complex, Upper Chattar Muzaffarabad.

N.O.O.

No. NEPRA/R/ADG(Trf)/IPT-14/ 33735 October 06, 2023

Forwarded for information and further necessary action please.

Registrar

ADG (Tariff)

Master File [w.r.t ATC/M (Law) D # 1428 dated 05.10.2023 & RO D # 14038 dated 06.10.2023]

For information:

1. Chairman
2. Member (Technical)
3. Member (Licensing)
4. Member (Tariff & Finance)
5. Member (Law)

Distribution: Director (I.T.) [Decision has already been e-mailed for uploading please]

DECISION OF THE AUTHORITY IN THE MATTER OF TARIFF PROPOSAL SUBMITTED BY ISLAMABAD ELECTRIC SUPPLY COMPANY LTD. (IESCO) FOR PROCUREMENT OF POWER FROM THE 3 MW QADIRABAD HYDROPOWER PROJECT LOCATED IN AJK.

1. Islamabad Electric Supply Company Ltd. (hereinafter referred to as the "Petitioner" or IESCO) vide letter dated April 04, 2022, submitted the tariff proposal for the 3 MW Qadirabad Hydropower plant hereinafter referred to as "the Project" developed by the Power Development Organization (hereinafter referred as the "Project Developer or PDO") Azad Jammu & Kashmir for consideration in conformity with the provision of NEPRA (Tariff Standards & Procedures) Rules, 1998 and NEPRA (Import of Electric Power) Regulations, 2017.

2. As per the tariff proposal, the Project is located at Qadirabad, Tehsil and District Bagh, AJK (about 1 km upstream of the confluence of Qadirabad Nullah with Mahl River). The Project was developed by Hydro Electric Board now Power Development Organization in August 2013. The Project is currently operated and maintained by PDO. The electricity is being supplied to the local area of Bagh city and adjacent areas. The Project is connected to a 132kv grid station at Bagh through an 11kv overhead dedicated transmission line of 5 km. A levelized tariff of Rs. 3.5031/kWh has been claimed for the instant Project.

PROCEEDINGS

3. The tariff proposal was admitted by the Authority admitted on April 25, 2022, and the salient features of the tariff proposal were published in daily newspapers inviting filing of replies, intervention requests, or comments. It was also decided to conduct a hearing on the matter on July 26, 2022, at 10:00 AM.

4. Notice of the hearing was also published in the national newspaper on July 02, 2022. The tariff proposal was also uploaded on the NEPRA website for review by stakeholders. In response to the notice of hearing, no intervention request was submitted, However, Central Power Purchasing Agency Guarantee Limited (CPPA-G) vide letter dated July 25, 2022, submitted written comments which were forwarded to the Petitioner for the response. The comments of CPPA-G and the response of the PDO are incorporated in this determination under the relevant issue.

5. The hearing was attended by the representatives of IESCO, AJK Power Development Organization, CPPA-G and other stakeholders. During the hearing, the Authority directed IESCO and PDO to submit the monthly progress status of interconnection and related transmission infrastructure so that power from these projects is procured without any technical bottlenecks. In view thereof, a letter dated August 3, 2022, followed by a reminder letter dated October 6, 2022,

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directing IESCO and PDO to comply with the directions of the Authority by submitting the monthly progress report henceforth. However, no response has been submitted.

6. After the hearing, PDO vides various correspondence dated August 01, 2022, September 09, 2022, & December 20, 2022, and submitted a written response on certain issues including on the list of issues, agreements/contracts regarding the civil works and E&M & source of funds etc.

ISSUES FOR HEARING

7. Based on the information, documents and evidence available with the Authority, the issue-wise discussion and determination of the Authority is as under:

Issue No# 01 Whether the plant Capacity of 3.0 MW and annual net generation of 17.69 GWh claimed by the Petitioner are justified?
Issue No# 09 Whether auxiliary consumption of 0.03 MW (1%) of the project is justified?

8. In the tariff proposal, PDO submitted that the plant factor has been taken from the feasibility study report (part of PC-I) which is derived from the hydrology available in the Qadirabad Nullah. The calculations are tabulated below:

Installed Capacity	3.0 MW
Auxiliary Consumption	1% - 0.03 MW
Net Capacity	2.97 MW
Plant Factor	68%
Gross Annual Energy	17.87 GWh
Net Annual Energy	17.69 GWh

9. PDO further submitted that *"The Auxiliary consumption is in-line with the allowable consumption to other hydropower Projects. NEPRA in its different tariff determinations to hydropower projects has allowed 1% of auxiliary consumption"*.

10. CPPA-G vide letter dated July 25, 2022, submitted that *"the approved feasibility study has not been attached with the tariff proposal and neither the approval of panel of expert is attached. Therefore, this office is unable to comment on the plant capacity and annual plant factor. The Authority may look into the matter after reviewing the documents of POE. However, the plant factor proposed by the project company is 68%, which seems to be optimal based on the fact that the plant will be operated in the Take and Pay regime"*.

11. CPPA-G further submitted that the auxiliary consumption during the normal operation is not more than 0.5% of the total capacity and the Authority has already considered 0.5% auxiliary

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consumption in the case of 10.2 MW Jabori HPP, therefore, the auxiliary consumption for this Project may be aligned with Jabori HPP.

12. In response to the comments of CPPA-G, PDO vide letter dated August 12, 2022, replied that *"The feasibility study report being part of approved PC-I, has already been submitted to NEPRA along with the tariff proposal. The calculations of annual generation have been submitted in response to the issues for public hearing."*

13. The Authority assessed the submitted documents by PDO and based on the information available in the submitted documents, the following annual energy, capacity and auxiliary consumption are considered for tariff calculations:

Installed Capacity	3.0 MW
Gross Annual Energy	19.23 GWh
Auxiliary Consumption	0.5%

14. Based on the aforementioned parameters, the Authority has calculated the net annual energy of 19.134 GWh with a plant factor of 73.17 % and the same has been approved.

Issue No # 02
Whether a construction period of 36 months is justified?

15. In the tariff proposal, PDO has submitted that *"36 months of construction period was assumed at the time of development of feasibility study report. However, the construction work depends on lot of factors e.g. availability of funds, environment etc. The following major factors contributed to the extension of the construction period:*

    i. Release of funds from the Government. As the Project was developed through the funding under Annual Development Plan. The delay in the release of funds from the government results in the delayed appointment of contractors.
    ii. The major flood in the year 2010 also contributed to the extended construction period.
    iii. Right of way – land acquisition was also one of the challenges faced by the department, which overall contributed to the construction period.

16. CPPA-G vide letter dated July 25, 2022, submitted *"the Company claimed the construction period of 36 months, which is on the higher side. It is highlighted that the construction period of such a small hydel project may be considered up to 24 months. As recently NEPRA has allowed the construction period of 30 months in the case*

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of 10.2 MW Jabori HPP, which is double in capacity and required more civil works. Therefore, Authority may rationalize the construction period of the project".

17. In response to the comments of CPPA-G, PDO responded that "*the construction period has been approved under the PC-I (approved by the relevant departments/ Authority). The construction period of hydropower projects does not depend upon the installed capacity but relates to the project components and the geographical location of the Project. In the recent determination of 1.875 MW Shishi HPP has allowed 48 months of construction period".*

18. The Authority has considered the submissions of PDO regarding the construction period and is of the considered opinion that the construction period of 36 months is closer to the construction period of similar projects and the same has also been approved in the submitted PC-I, therefore, the same has been approved.

Issue No: 03
Whether the total Project cost of Rs. 441.713 million claimed by the Petitioner is justified?

19. In the tariff proposal, PDO has claimed Rs. 441.713 million as the total Project cost and the following breakup has been provided:

Item	Total (PKR Million)
i. Civil Works	207.386
ii. Electro-Mechanical Equipment	145.156
iii. Land Acquisition	12.50
iv. Other Development Cost	32.470
Base Project Cost	**397.512**
v. Interest During Construction	44.201
Total Project Cost	**441.713**

20. PDO further provided the bifurcation of each cost item of the Project costs, which are discussed below:

Civil Works Cost:

21. As per the documents submitted by PDO, five (05) agreements for civil works were signed and executed with different contractors and are detailed as under.

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Contract Title	Amount in PKR
(I) Construction of Diversion Weir & Approach Channel	**43,317,202**
Diversion Weir-I	4,016,661
Diversion Weir-II	2,950,999
Approach Channel (DW-I to DW-II)	23,806,453
Connecting Channel	3,611,971
Desilting Chamber	7,552,892
Escalation	1,378,225
(II) Construction of Power House & tailrace	**35,064,513**
Powerhouse	31,975,201
Plumbing, sanitary Installations	77,344
Electrification for Power House	533,972
Tailrace Channel	898,996
Escalation	1,579,000
(III) Construction of Power Channel	**89,974,200**
Power Channel (DW-II to Forebay)	89,974,200
(IV) Construction of forebay, spillway channel & anchor blocks	**32,514,110**
Construction of aqueduct	3,439,035
Construction of Forebay	13,844,146
Construction of Penstock anchored Blocks	14,394,874
Escalation	836,055
(V) Construction of Residential Quarter	**6,516,305**
Construction of Residential Quarter	6,641,575
Sanitary Fittings	339,781
Electrification	258,178
(less 10%)	(723,229.45)
Total Civil Works	**207,386,330**

22. Regarding the civil works cost, CPPA-G vide letter dated July 25, 2022, submitted that "*the Company shared the cost submitted in the head of civil work, which includes escalations in each head covered under the civil works, which requires some clarification from the Project Company. However, it is pointed out that the Project has already been commissioned and has a finalized cost of civil work, which needs to be substantiated by documentary evidence (as-built drawings) verified by the third party. Any escalation in cost occurred due to a delay in commissioning on part of the Company (PDO) or Contractor may not be allowed in the project cost for tariff calculation.*

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23. In response, PDO stated that the civil works cost is based on the agreements executed with different contractors, the details of which have been provided and were approved by the relevant government departments.

24. As per the documents submitted by PDOvide letter dated September 09, 2022, the Authority has noted that the civil works of the instant project have been divided into four parts. Further, the contracts for each category of civil works have been awarded through soliciting tender from eligible contractors and awarded to a contractor based on the lowest rates offered. The details of each lot contract are tabulated below:

Lot. No #	Description	Signing Date	Contract Price (Rs.)
I	Construction of Diversion Weir and Approach Channel	31st March 2009	39,191,500
II	Construction of Power Channel (DW-II to Forebay)	March 31, 2009	72,944,716
III	Construction of Forebay, Spillway channel & Anchor Blocks	May 28th, 2009	18,942,474
IV	Construction of Power House, Tail Race, Switch Yard & Transformer Pad:	May 12, 2009	16,829,304
V	Residential Colony	October 17, 2011	6,300,828
Total			**154,208,822**

25. The Authority after assessing the submitted documents noted that the claimed civil works cost of **Rs. 207.386 million** is on the higher side as compared to the costs mentioned in the PC-I of **Rs. 170.338 million** and civil works contracts cost which cumulatively amounts to **Rs. 154.208 million.** There is an increase of 34.5% between the cumulative civil work contract cost and claimed cost and no justification has been provided whether such deviation is owing to an escalation of cement, steel, labour and fuel or otherwise. For justifying higher costs, PDO has provided only a deviation sheet for each contract amounting to **Rs. 53.178 million**.

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26. The Authority upon reviewing the deviation sheet noted that out of the total amount of Rs. 53.178 million, Rs. 45.412 million pertains to a change in the cost of civil works due to a variation in quantity and is not supported by verifiable documentary evidence, thus the same is not justified to be considered. Further, the Authority also noted that an amount of Rs. 7.766 million relates to a change in unit prices and some level of escalation may be permissible, however, the Authority noted that the signed contract explicitly states that any escalation within the 5% range of the contract price should be borne by the contractors. Thus allowing any amount on account of escalation beyond the prescribed limit is not justified, therefore the same has not been considered.

27. Recapitulating the above, the Authority hereby approves the contract cost of Rs. 154.209 million as a maximum ceiling subject to adjustment at COD and the lower of actual or allowed will be adjusted.

Electro-Mechanical Equipment:

28. PDO in its tariff proposal claimed an amount of Rs. 145.156 million on account of the E&M equipment with the following breakup:

Head	Amount in PKR Million
Generators & Exciter, 1800 kVA	25.000
Inlet Valves	13.500
Gantry Crane (15 tons)	4.000
Turbines & Governors	52.00
Power Transformers & Cable Works	11.00
Automation and Auxiliary Equipment	8.500
Switchgear, Protection & Control	9.735
Substation & Transmission Interconnection	**3.00**
Penstock Pipes & Gate Equipment	18.421
Total E&M Works	**145.156**

29. The Authority observed that the E&M claimed cost was devoid of any documentary evidence, therefore, PDO the petitioner was asked to provide the same. The requisite E&M contract documents provided by PDO vide letter dated October 04, 2022, were reviewed and the Authority noted that the E&M contract of Qadirabad HPP amounting to **Rs. 119.520 million,** was signed with M/S Hydro Tech Pak (Pvt. Ltd.) on June 26th May 2010 with the following breakup:

S.No	Major Financial Breakup of the contract	Amount in PKR
1	Details Engineering Design/Drawings	3,000,000

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2	Supply & transporting of the complete set of electro-mechanical equipment for 2x1500 kW Qadirabad HPP (On a Turnkey Basis)	83,169,145
3	Erection/installation at the site	10,200,000
4	Testing & Commissioning	99,31,802
5	Defect liability period (DLP) min. 12 months	6,144,053
6	Spare Parts of the equipment installed at the site	70,75,000
	Total	**119,520,000**

30. The Authority noted that the contract price is also inclusive of all the applicable fees, customs duties, income tax/sales tax, levies, import fees, port clearance charges, handling, local district taxes, octroi, insurance and other incidental charges as may be applicable for transportation, delivery of goods, equipment and material/spare parts to the site.

31. Further, the Authority also noted in the contract that *"the type and quantity of spare parts suggested by the supplier shall be evaluated and finally approved by the Hydro Electric Board (HEB) amounting to* ***Rs. 7.075 million"*** which means that this is not a final figure, however in the absence of any firm approval from the HEB, the same may not be justified to consider at this stage, however, at the time of COD tariff adjustment request, the Authority may be considered this cost as the max ceiling subject to adjustment at lower of actual or Rs. 7.075 million upon the provision of verifiable documentary evidence.

32. In view of the aforementioned facts, the contract price after excluding the spare parts cost of Rs. **7.075 million** works out to be **Rs. 112.445 million** has been considered and will be subject to adjustment at COD based on the verifiable documentary evidence.

Land Acquisition:

33. In its tariff proposal, PDO has claimed an amount of **Rs. 12.5 million** on account of land acquisition and stated that this cost includes compensation for houses, trees and crops affected in the project area.

34. The Authority has observed, that claimed cost with regard to land acquisition is not substantiated by any documentary evidence. However, the Authority understands that the cost of land is an integral part of any project cost, therefore, the cost claimed by PDO amounting to Rs. 12.5 million

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is hereby allowed at this stage as a maximum ceiling subject to adjustment at lower of actual or allowed at COD duly substantial by verifiable documentary evidence.

Other Development Costs:

35. In the tariff proposal, PDO has claimed an amount of **Rs. 32.47 million** with the following breakup.

S. No	Head	PKR Million
1	Custom Duties @5% of FEC of E&M	4.525
2	L/C Charges & Taxes	3.195
3	Port Clearance & Trans. @2% of FEC of E&M	1.810
4	Project Engineering & Management	5.000
5	Project Staff	8.420
6	Owner Administration	9.520
	Total Development Cost	**32.470**

36. The Authority noted that that cost claimed under the subhead S.No. 1,2, and 3 of the E&M-related equipment collectively amounting to Rs.9.53 million are part of the E&M contract, therefore, being not justified is not considered. The relevant extract of the E&M contract is reproduced as under:

2. **Contract Price** :

The total contract price for the above mentioned works shall be Rs. 1,19,520,000/- (Rupees One Hundred nineteen million five hundred and twenty thousand only) (Inclusive of all taxes) as firm and final amount for entire scope of works given above. The contract price is inclusive of all the cost and charges as applicable as fees, custom duties, income tax /sales tax, levies, import fees, port clearance charges, handling, local district taxes, octroi, insurance and such other incidental charges as may be applicable for transportation, delivery of goods, equipment and material/spare parts to the site .

37. The PDO has not provided any evidence/contract documents for Sr no 4 of the table above, i.e., the Project Engineering and Management Cost of Rs 5 million has been reflected in the submitted PC-I document, therefore, the same is considered at this stage as a maximum cap subject to adjustment at lower of actual or allowed upon the provision of the documentary evidence to the satisfaction of the Authority at COD adjustment.

38. The **Project Staff** cost of Rs. 8.420 million as claimed by the PDO in the tariff proposal the following breakup has been reflected the in the PC-I document.

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Project Construction Management Structure

S.#	Staff	Scale	Position	Emoluments (Rs.)	Months	Amount (MRs.)
1	Project Director	B-19	1	60000	30	1800000
2	Resident Engineer (Civil)	B-18	1	40000	30	1200000
3	Resident Engineer (Electrical)	B-18	1	40000	30	1200000
4	Junior Engineer (Civil)	B-17	1	30000	30	900000
5	Sub-Engineer (Civil)	B-11	1	20000	30	600000
6	Sub-Engineer (Electrical)	B-11	1	20000	30	600000
7	Sub-Engineer (Mechanical)	B-11	1	20000	30	600000
8	Computer operator	B-12	1	13000	30	390000
9	Office Assistant	B-14	1	15000	30	450000
10	Driver	B-3	2	8000	30	480000
11	N.Qasid	B-1	1	6667	30	200010
						8,420,010.00

39. The Authority has relied upon the PC-I cost and the same has been considered at this stage as a maximum cap subject to adjustment at COD and lower of actual or allowed will be adjusted upon the provision of documentary evidence to the satisfaction of the Authority.

40. Regarding the **Owner Administration Cost**, the amount Rs. 9.520 million claimed in the tariff proposal has been reflected in the submitted PC-I with the following breakup:

S.No.	Description	Rs. Million
1	Contingency @ 2 %of the cost of Civil Works	6.720
2	Vehicles	2.80
	Total	**9.520**

41. The Authority observed that the Project has already been constructed and operational and for the project at such an advanced stage, the Authority has not allowed the cost of contingency, therefore, the cost of contingency is not justified and has not been considered, however, the cost claimed for the vehicle's claimed is considered at the stage as maximum cap subject to adjustment at COD and lower of actual or allowed will be adjusted upon the provision of documentary evidence to the satisfaction of the Authority.

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42. Recapitulating the above, the following is the summary of the assessed development cost.

S. No	Head	PKR Million
1	Custom Duties @5% of FEC of E&M	0
2	L/C Charges & Taxes	0
3	Port Clearance & Trans. @2% of FEC of E&M	0
4	Project Engineering & Management	5.00
5	Project Staff	8.420
6	Owner Administration	2.8
	Total Development Cost	**16.220**

43. The summary of the Project cost claimed and assessed is tabulated below:

S.No.	Description	Claimed Rs. Million	Assessed Rs. Million
1	Civil Works	207.39	154.21
2	E&M cost excluding T.L	142.16	112.45
	EPC cost	**349.54**	**266.65**
3	Land Acquisition	12.50	12.50
4	Other Development Cost	32.47	16.22
	Total Project Cost	**394.51**	**295.38**

Issue No: 04 # Whether the claimed IRR of 17% on equity is justified?
Issue No: 05 #Whether the cost of debt claimed @ 9.15% and indexation thereon due to variation on 6-month KIBOR is justified?
Issue No: 06 #Whether a 20 year debt repayment term is justified?

<u>**Sources of Finances:**</u>

44. Since the above issues are related to the cost of capital, therefore, for ease of decision making these are clubbed together.

45. Here it is important to highlight that PDO in its tariff proposal submitted that the Project has been entirely funded from PDO sources through Annual Development Fund (ADP)-GOAJK.

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The Project Developer further stated that for tariff computation, the Project cost has been bifurcated into debt (75%) & equity (25%) based on NEPRA (Benchmarks for Tariff Determination) Guidelines, 2018.

46. PDO submitted that "*the Project was commissioned in 2013. The IRR applicable at that year i.e. 2013, for hydropower projects, is 17%. The precedent of Authority is available in the case of PEDO for 36.6 MW Daral Khawar HPP decision dated July 05, 2022. The Authority has allowed the same i.e. 17% IRR PKR-based return. The decision states*:

> ***"Therefore, a 17% PKR-based return assuming monthly cash flow with no USD indexation is thus being allowed to the project."***

47. CPPA-G submitted that "*the Company has claimed the 17% IRR for return on equity and return on equity during construction. It is highlighted that the Cabinet Committee on Energy (CCoE) in it meeting held on August 27, 2020, has reduced the returns of the public sector and in the case of WAPDA/GENCO, the return is considered as 10% with no US indexation. Furthermore, keeping in view the government decision, the Authority has allowed the return of 10% in the case of PEDO projects. Therefore, the return of the PDO project may be aligned with the CCoE decision and already approved tariffs of Authority for provincial government hydropower plants*"

48. In response to comments of CPPA-G, PDO submitted that "*CCOE decision is only applicable on the public sector projects funded by Federal Government of Pakistan specifically WAPDA hydroelectric, GENCOs, and Nuclear Power Plant. The ROE must be higher than the interest on local currency long-term bonds, which is approx. 13.554% for 20 years, to incentives to invest in developing local hydropower resources. Furthermore, the Authority has increased the ROE from 10% to 13% in recent determinations of 40.8 MW Koto HPP, 11.8 MW Karora HPP, and 10.2 MW Jabori HPP*".

49. Regarding the debt repayment period PDO in the tariff proposal has requested debt servicing components for 20 years period and with regards to the cost of the debt has stated that "*since the project was commissioned in August 2013, therefore the 6-month KIBOR (9.15%) as of 30-Aug-2013 has been applied.*" Further, PDO has also requested KIBOR indexation according to the NEPRA mechanism.

50. In addition to the above PDO has claimed interest during construction (IDC) and return on equity during construction (ROEDC) for 3 years (36 months).

51. CPPA-G submitted that "*Since the PDO is entirely financing the Qadirabad Hydropower Project from its own sources (ADP-GOAJK) and using an opportunity cost of fund. It is therefore suggested that instead of a 9.15% rate the interest rate may be rationalized to SBP financing schemes available to renewable energy at a flat rate of*

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6% for debts. It is also suggested that debt: equity shall be approved in the range of 80: 20 instead of the assumed debt: equity ratio of 75: 25 by the PDO in order to pass on the relief to electricity consumers.

52. In response to comments of CPPA-G, PDO submitted that "*the interest rate of SBP financing scheme is only applicable to projects who have secured financing from the SBP. The Project was executed before the SBP financing scheme therefore, the interest rate of SBP financing is not applicable. Moreover, the NEPRA tariff guidelines 2018 allows the 2.5% spread over KIBOR, in light of this the claimed cost of Debt is already in reasonability*".

53. CPPPA-G also submitted that "*according to the benchmark for Tariff Determination guidelines, 2018 issued by the Authority, in case of renewable energy projects eligible for securing debt financing under the revised SBP financing scheme for renewable energy, debt repayment period shall not exceed 12 years*".

54. In response to comments of CPPA-G, PDO responded that "*Since the Project does not fall under SBP financing scheme, the repayment period as per SBP financing is also not applicable.*

55. The Authority observed that PDO in the tariff proposals has claimed interest during construction, return on equity during construction, return on equity and debt servicing components, however, no details/agreements of the funding sources have been provided, therefore, IESCO/PDO was asked to vide Authority letter dated November 28, 2022, to provide documentary evidence of source of fund (debt/equity) including the cost of debt, terms of loan etc. If, the fund provided for the Project is not going to be paid back, then justify why the cost of debt/equity should be allowed and for what purpose?

56. PDO in response submitted that PDO has been established through an Act passed by the Legislative Assembly of the Azad Jammu & Kashmir and among others one of the functions of this organization is to construct, maintain and operate the powerhouse, grids, microgrids and transmission lines connected with the powerhouses. Thus the Qadirabad and Rehra hydropower projects are constructed by the PDO from the funds provided by the Government of AJK and selling electricity from these power plants will enable the PDO to be self-reliant by earning revenues and utilizing these for initiating more projects. PDO further submitted that a Fund has been established for meeting the expenses related to its functions, including but not limited to all administrative expenses and salaries and further stated that any/all revenue generated through the sale of power, and water use charges are credited to this fund. The amount available in the Fund may be then invested after obtaining the approval from the Board, if not required for immediate expenditure in any of the securities. PDO referred to Chapter VI of its Act which deals with the funds of the organization. The relevant provisions of the Act regarding the Fund are as under:

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CHAPTER VI
FINANCE

23. **Fund.**- (1) There shall be a fund to be known as the Fund of the Organization vested in the Organization which shall be utilized with the approval of Board to meet charges in connection with its functions under the Act, including the payment of salaries and other remunerations to the Managing Director, Officers and employees of the Organization.

(2) The fund shall consist of,-

(a) grants made by the Government including the Federal Government;

(b) loans obtained from the Government including the Federal government;

(c) grants made by local bodies as required by the Government;

(d) sale proceeds of bonds issued under the authority of the Government;

(e) loans obtained by the Organization from commercial banks or any other source;

(f) foreign loans, grants or any other financial assistance obtained; and

(g) revenue through sale of power generated, water use charges, other than Mangla Dam and all other sums received by the Organization.

(3) The Organization may keep money in any scheduled bank or the Bank of Azad Jammu and Kashmir or a National Saving Centre with the approval of the Board.

(4) Nothing in sub-section (3) shall be deemed to preclude the Organization from investing any such moneys which are not required for immediate expenditure in any of the securities described in Section 20 of the Trusts Act, 1882 (Act II of 1882), as adapted in Azad Jammu and Kashmir or placing them in a fixed deposit with a scheduled bank or the Bank of Azad Jammu and Kashmir or a National Saving Centre with the approval of the Board.

(5) The Board shall endeavor to promote private sector in the generation, transmission and distribution of Power. For this purpose it may sponsor, promote or join private limited Companies incorporated and established under the Companies Act, 1984 (XLVII of 1984), as enforced in Azad Jammu and Kashmir.

(6) The Board may also permit the Organization to join, promote, sponsor or incorporate public limited Companies involved in the generation, transmission and distribution of power.

(7) To join other statutory or corporate bodies, involved in the generation, transmission and distribution of power.

57. Regarding the justification of claiming ROE, ROEDC, Debt and IDC, PDO submitted that tariff proposals of the projects are submitted under the NEPRA import-regulations which apply to the import of power from the territories outside the jurisdiction of Pakistan, therefore, the PDO-AJK shall be treated an independent power producer and accordingly, ROE, ROEDC, IDC and debt repayment as allowed on a cost-plus tariff be allowed.

58. After considering the submissions, the Authority is of the view that the revenue from the sale of the instant power plant is not subject to any debt-related obligation. In similar cases i.e., 2 MW Birmogh Gol HPP and 1.875 MW Shishi HPP projects where finances were not received from

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any bank or financial institutions, the Authority has determined the tariff on the Weighted Average cost of Capital (WACC), by including a depreciation charge and a rate of return in capital investment to commensurate that earned by other investments of comparable risk. Thus the Authority is of the considered opinion that the nature of the Project financing of the instant Project is similar to the Birmogh & Shishi, therefore, the tariff claimed by PDO for the instant Project on the Cash Flow basis may not be prudent. Hence, the tariff methodology approved by the Authority for the referred projects is hereby approved for the instant Project.

59. The Authority considered the assumptions made by PDO regarding the bifurcation of the Project cost into 75% debt and 25% equity and is aligned with the NEPRA (Benchmarks for Tariff Determination) Guidelines, 2018, therefore, the same has been considered.

60. Regarding the rate of return, the Authority is of the opinion that the hydropower projects carry additional risks and accordingly a reasonable return should be considered which would cover the associated risks. The Authority is also of the view that an appropriate rate of return on equity will allow for harnessing the local resource. This will not only address the issue of energy security but will address the adverse impact of climate change expectedly by replacing imported fossil fuel-based power plants. Thus the Authority considers that a PKR based 16% rate of return on the equity is reasonable and the same is hereby allowed to the instant Project without any dollar indexation. The same return was also in the case of the 1.875 MW Shishi Hydropower project of PEDO, for which public funds are utilized.

61. Further, regarding the cost of debt, the Authority is of the view that PDO is under no obligation of paying interest to the lenders, however keeping in view the opportunity cost of the fund, a rate safeguarding the interest of the consumer as well as the Project Developer will be fair, therefore the average KIBOR rate of 8.715% which is based on average values of the 3-month KIBOR rate for the last nine (9) years starting from the Project COD period i.e. August 2013 to tariff proposal submission period i.e.July 2022 has been considered and this will remain fixed without any KIBOR variations.

62. Based on the 16% rate of return and KIBOR rate of 8.715% the Authority has calculated the WACC as 10.54% and the same has been approved.

63. The Authority noted that the instant Project, PDO has claimed a tariff for 30 years from the COD period that is from August 2013, however, the tariff proposal for determining the tariff has been submitted after a gap of 9 years. In a similar delay tariff submission case of Shishi HPP which applied for tariff after a gap of 12 years, the Authority allowed tariff for the remaining period of 18 years. Therefore, the Authority has decided to approve the tariff for the instant Project for the remaining 21 years after excluding the 09 years.

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64. However, the Authority in the case of other similar hydropower projects has not allowed the recovery of assets through the remaining period due to the reason as a penalty, for not timely approaching Regulator for approval of tariff. However, in the instant case, the Authority has noted that the situation is different as the Project is located in the territory of AJ&K which is to approach NEPRA via CPPA/DISCO under the then applicable Import of Power Regulations. The Authority upon the review of the facts submitted, noted that PDO approached IESCO multiple times and even approached NEPRA for determination of its tariff as the following chronological order of events reveals:

S.No:	Description	Date
1	COD of the Project	August 2013
2	PDO approached IESCO for the interconnection	July 25, 2013
3	After meetings and correspondences and as per the requisite of IESCO PDO conducted the interconnection study through a consultant and submitted to IESCO	May 30, 2015
4	Upon the request of PDO, IESCO approached NEPRA to seek guidelines for the Purchase of Power	April 25, 2016
5	IESCO approved the Interconnection Study on	April 18, 2017
6	NEPRA responded to proceed in accordance with IPPR-2005	May 23, 2016
7	IESCO submitted the Power Acquisition Request to NEPRA	June 01, 2017
8	NEPRA returned the PAR with the direction to resubmit the PAR under the IPPR -2017 as IPPR-2005 are no longer relevant.	January 10, 2018
9	IESCO required PDO submitted the tariff proposal	September 12, 2019
10	IESCO submitted the tariff proposal to NEPRA	April 11, 2022

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65. Therefore, based on the above, the Authority has decided not to penalize PDO for the late submission of the tariff petition after many years since COD, hence the recovery of the asset has been apportioned on the remaining period.

Issue No: 07

Whether the claimed Operation and Maintenance costs and indexations thereon are justified?

66. In its tariff proposal, PDO submitted that "*The O&M cost of PKR 4.916 million per annum, as of 2008, has been taken in the tariff proposal. The cost is taken from the approved cost under PC-I. The cost claimed is already much less than the already approved O&M cost to other HPPs. The indexations be allowed to the O&M, as being allowed to other HPPs.*

67. CPPA-G submitted that "*The proposed cost for operation and maintenance of the plant may be rationalized with the O&M cost allowed by NEPRA to other comparable hydropower projects. According to the Authority's guidelines for the selection of operation and maintenance contractor by generation companies, the petitioner should conduct a transparent and competitive bidding process for the selection of an O&M contractor for this project with the approved cost as a ceiling.*

68. The Authority considers the submissions of PDO and is of the opinion that the claim of PKR 4.916 million for the operation & maintenance of the plant is reasonable and competitive, thus the same has been hereby approved. Regarding the indexation, the following mechanism has been approved.

<u>Indexation:</u>

The O&M component of the tariff shall be adjusted with local N-CPI (yearly averaged) on an annual basis. The first indexation of the O&M component of the tariff shall be done after 1 year of notification of the tariff for which the reference average N-CPI shall be calculated based on 12 months' N-CPI values prior to notification of this tariff determination and the revised N-CPI shall be the average of 12 months values of N-CPI of the first year of notification.

Issue No: 08

Whether IESCO or CPPA-G will be responsible for the payment/settlement mechanism in the instant case?

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69. PDO submitted that *the tariff proposal has been filed through IESCO under the NEPRA Import of Electric Power Regulations, 2017. IESCO has agreed to purchase the power from the plant as mentioned in their Board approval dated 25.04.2017, provided along with the tariff proposal. Further, NEPRA in its letter No. NEPRA/Consul.(Hydro)/TRF-100/Hydel/7086-88 dated May 23, 2016, addressing to IESCO stated that An Energy Purchase Agreement may be drafted which incorporates the agreed/proposed tariff along with the rights and obligations of both parties".*

70. CPPA-G submitted that "Regarding the signing of EPA by IESCO or CPPA-G, it is *submitted that Authority vide letter dated May 23, 2016, responded to IESCO, "there would be no role of CPPA-G in the instant case in the signing of the EPA and in approaching NEPRA for approval since the DISCOs are authorized to enter into PPAs/EPAs as per NEPRA rules and regulation ".Furthermore, after the commencement of Market Operations, which is expected in near future, DISCOs will sign the contract directly. Therefore, it is more appropriate for IESCO to enter into the contracts with the PDO for the said project or as decided by the Authority".*

71. The Authority has noted that IESCO didn't submit any written observations/objections. Therefore, it is expected that IESCO is to sign the contract and will be responsible for payment/settlement.. However, the Authority is of the view that IESCO and PDO may settle the issue of settlement of payment at the time of signing the Power Acquisition Contract which shall be submitted to the Authority for approval

<u>Order:</u>

72. The Authority, in the exercise of its powers under Regulation 4(3) of the NEPRA (Import of Electric Power) Regulations, 2017, has decided to approve the following rates and terms and conditions for the import of power by Islamabad Electric Supply Company (IESCO) from 3 MW Qadirabad hydropower project:

- Levelized tariff works out to be PKR. 2.0445/kWh.
- EPC cost of PKR. 266.65. million has been approved.
- Land acquisition cost of PKR. 12.5 million has been approved.
- Other Administration costs of PKR. 16.22 million has been approved.
- Debt to equity ratio of 75:25 has been approved
- A WACC of 10.54% has been allowed based on the average KIBOR rate of 8.715% and ROE of 16%.

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- The reference tariff has been calculated on the basis of net annual benchmark energy generation of 19.134 GWh for an installed capacity of 3 MW. An auxiliary consumption has been restricted to 0.5%.

- This tariff is limited to the extent of net annual energy generation of 19.134 GWh. Net annual generation supplied during a year to the Power Purchaser in excess of benchmark energy of 19.134 GWh will be charged at 10% of the prevalent approved tariff

- O&M cost of PKR 4.196 million per annum has been approved.

- A construction period of 36 months has been approved.

- The tariff will be valid for 21 years and shall be applicable from the date of notification of tariff determination.

- The tariff is based on Take & Pay.

- The component-wise tariff is indicated at Annex-I.

One-Time Adjustments:

- The EPC cost of PKR 266.65 million and other developmental costs of PKR. 16.22 million is allowed as a maximum cap which is subject to adjustment at COD tariff based on the documentary evidence and the lower of actual or allowed will be considered.

- The cost of land acquisition of PKR 12.55 million will be adjusted as per actual based on authentic documentary evidence at COD tariff.

- PDO shall submit the request for adjustment in tariff within 90 days of issuance of this tariff determination.

Indexation:

- The O&M component of the tariff shall be adjusted with local N-CPI (yearly averaged) on an annual basis. The first indexation of the O&M component of the tariff shall be done after 1 year of notification of the tariff for which the reference average N-CPI shall be calculated based on 12 months' N-CP1 values prior to notification of this tariff determination and the

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revised N-CPI shall be the average of 12 months values of N-CPI of the first year of notification.

73. The order along with the reference tariff table as indicated in Annex-I are recommended for notification by the Federal Government in the official gazette in accordance with Section 31 (7) of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997

Authority

Amina Ahmed Member	Mathar Niaz Rana (nsc) Member
Engr. Rafique Ahmed Shaikh Member	Engr. Maqsood Anwar Khan Member

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QADIRABAD HYDROPOWER PROJECT
REFERENCE TARIFF TABLE

Year	O&M	Depreciation Charge	Return on Investment	Total
	PKR/kWh			
1	0.2569	0.5513	1.6265	2.4347
2	0.2569	0.5513	1.5684	2.3767
3	0.2569	0.5513	1.5103	2.3186
4	0.2569	0.5513	1.4522	2.2605
5	0.2569	0.5513	1.3941	2.2024
6	0.2569	0.5513	1.3360	2.1443
7	0.2569	0.5513	1.2780	2.0862
8	0.2569	0.5513	1.2199	2.0281
9	0.2569	0.5513	1.1618	1.9700
10	0.2569	0.5513	1.1037	1.9119
11	0.2569	0.5513	1.0456	1.8539
12	0.2569	0.5513	0.9875	1.7958
13	0.2569	0.5513	0.9294	1.7377
14	0.2569	0.5513	0.8713	1.6796
15	0.2569	0.5513	0.8132	1.6215
16	0.2569	0.5513	0.7552	1.5634
17	0.2569	0.5513	0.6971	1.5053
18	0.2569	0.5513	0.6390	1.4472
19	0.2569	0.5513	0.5809	1.3891
20	0.2569	0.5513	0.5228	1.3311
21	0.2569	0.5513	0.4647	1.2730
Levelized Tariff	**0.2569**	**0.5513**	**1.2362**	**2.0445**

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