



Registrar

National Electric Power Regulatory Authority

Islamic Republic of Pakistan

NEPRA Tower, Attaturk Avenue (East), G-5/1, Islamabad
Ph: +92-51-9206500, Fax: +92-51-2600026
Web: www.nepra.org.pk, E-mail: registrar@nepra.org.pk

No. NEPRA/R/ADG(TRF-H)/TRF-594/PEDO(GMHP)-2022/19136-38
December 11, 2024

Subject: Decision of the Authority in the matter of Tariff Petition filed by Pakhtunkhwa Energy Development Organization (PEDO) for Tariff Determination of 84 MW Gorkin Matiltan Hydropower Project –
(Case No. NEPRA/TRF-594/PEDO(GMHP)-2022)

Dear Sir,

Please find enclosed herewith subject Decision of the Authority along with Annex-I & II (34 Pages) in Case No. NEPRA/TRF-594/PEDO(GMHP)-2022.

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.

3. The Order along with Reference Tariff Table (Annex-I) & Debt Servicing Schedule (Annex-II) of the Decision are to be notified in the Official Gazette.

Enclosure: As above


(Wasim Anwar Bhinder)

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

CC:

1. Secretary, Cabinet Division, Cabinet Secretariat, Islamabad.
2. Secretary, Ministry of Finance, 'Q' Block, Pak Secretariat, Islamabad.



**DECISION OF THE AUTHORITY IN THE MATTER OF TARIFF PETITION
SUBMITTED BY PAKHTUNKHWA ENERGY DEVELOPMENT ORGANIZATION
(PEDO) FOR ITS 84 MW GORKIN MATILTAN HYDROPOWER PROJECT**

Background:

1. Pakhtunkhwa Energy Development Organization (hereinafter referred to as the "Petitioner" or "PEDO"), envisages to set up 84 MW run-of-the-river, hydropower project (hereinafter referred to as the "Project") at Ushu River near Kalam, District Swat of Khyber Pakhtunkhwa province.
2. PEDO filed a tariff petition for determination of generation tariff for the Project pursuant to the National Electric Power Regulatory Authority (Tariff Standards & Procedures) Rules, 1998.

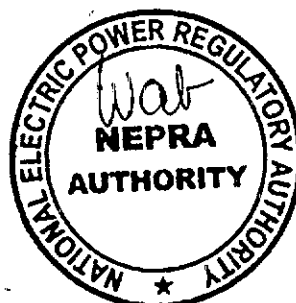
Submissions of the Petitioner:

3. The salient features of the petition are as follows:

Project Size	84 MW
Project Site	Ushu River near Kalam, District Swat, Khyber Pakhtunkhwa
Construction Period	48 Months
Plant Factor	47%
Capital Structure	80% Debt and 20% Equity
ROE (Dollar-based)	17%
Interest Rate	6 months KIBOR 15.52%
Debt Tenor	20 years (Biannual Installments)
Proposed Levelized Tariff	US Cents. 7.4692/kWh & Rs. 16.3150/kWh
Total Project Cost	USD 123.61 Million

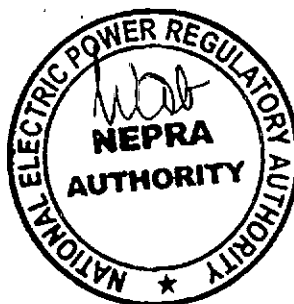
4. According to PEDO, the proposed project cost and reference tariff is based on the following assumptions.
 - i. Project financing structure is based on 80:20 debt-equity ratio, though the Project has been entirely funded from PEDO's resources. 80% of the project capital cost is considered to be arranged through sponsor loan and 20% is considered as equity.
 - ii. The insurance during operation cost assumed 1.00% of the EPC Cost and is in line with NEPRA's benchmarks.

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- iii. Annual Plant Factor-47.00%, Installed Capacity-84 MW and Annual Energy 346 GWh.
- iv. Construction period of 48 months has been requested for approval by NEPRA for IDC purposes.
- v. Every maintenance cycle shall be as per manufacturer's recommendations.
- vi. Cost of Transmission Line will be included in Tariff calculation at the time of COD Stage
- vii. Debt Tenor of 20 years.
- viii. 100% of Debt has been assumed to be financed through sponsor loan provided by PEDO.
- ix. No sales tax is assumed, General Sales Tax, all other taxes and any new taxes shall be treated as pass-through.
- x. Withholding tax on dividend @ 7.5% as required under the Income Tax Ordinance, 2001 is assumed. Any change the rate of the Withholding tax would be pass through to the Power Purchaser.
- xi. Hydrological Risk to be borne by Power Purchaser.
- xii. Return on Equity and Return on Equity during construction 17% per annum is assumed over 30 years.
- xiii. Being a Public Sector Project, no Water use charges have been considered.
- xiv. Reference exchange rate (PKR/US\$) is taken for tariff calculations PKR 218.431 US\$ and the tariff does not incorporate any inflation.
- xv. The tariff table shall be updated at COD in order to correct the tariff according to the prevailing CPI, WPI, KIBOR, LIBOR and exchange rates (PKR/US\$ and US\$/€ and PKR/€).
- xvi. Actual equity investment profile will be used to update Return on Equity during Construction at the time of COD.

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- xvii. Actual IDC using the actual spread will be used to update the capital cost at COD. Any assumptions on commitment fees, upfront fees arranger costs and similar charges assumed in the funding plan including PRI etc. will be adjusted at financial close.
- xviii. Any change in applicable accounting standards which impact revenues, costs and equity IRR shall be reflected in tariff accordingly.

Proceedings:

- 5. The Authority admitted the subject tariff petition on November 14, 2022. The hearing was fixed for February 15, 2023 at 10: AM. Notice of hearing containing approved list of issues was also published on February 02, 2023 and the tariff petition was uploaded on the NEPRA's website.

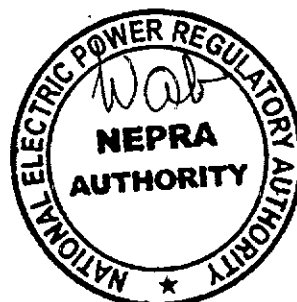
Hearing:

- 6. The hearing in the matter was held on February 15, 2023 at 10:00 AM which was attended by the representatives of Pakhtunkhwa Energy Development Organization (PEDO), Central Power Purchasing Agency Guaranteed Limited (CPPA-G), Pakistan Engineering Council and other stakeholders. CPPA-G also submitted written comments which were forwarded to the Petitioner for response. The response of PEDO on CPPAG's comments have been discussed under the relevant issues.
- 7. Subsequent to the hearing, PEDO was asked vide the Authority's letter dated February 28, 2023, and March 08, 2023 for the written response on the list of issues. In response, PEDO submitted its replies on April 14, 2023, and July 17, 2023. Thereafter, PEDO was asked vide email dated January 15, 2024, for a response and further clarification on certain issues. PEDO responded to the issues vide email dated February 02 & 19, 2024.

Issues:

- 8. The following issues were approved for the hearing:
 - 1. Whether the plant factor of 47%, plant capacity and annual generation and auxiliary consumption claimed by the Petitioner are justified?
 - 2. Whether an approved Interconnection Study has been obtained?
 - 3. Whether NOCs have been obtained from the Environmental Protection departments?
 - 4. Whether the construction period of 48 months claimed by the Petitioner is justified?

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5. Whether the Project cost of USD 123.61 million claimed by the Petitioner is justified?
6. Whether the EPC has arrived in accordance with NEPRA Competitive Bidding Tariff (Approval Procedure) Regulations?
7. Whether the terms & conditions relating to Project funding including debt and equity IRR of 17% (dollar-based) claimed by the Petitioner are justified?
8. Whether the O&M cost of the Project claimed by the Petitioner is justified?
9. Whether the insurance during operation assumed @ 1.00% of the EPC cost claimed by the Petitioner is justified?
10. Whether the withholding tax on dividend @ 7.5% claimed by the Petitioner is justified?
11. Whether hydrological risk assumed by the Petitioner to be borne by the Power Purchaser is justified?
12. Whether the provision of including the Transmission line cost in the tariff CALCULATION at the time of the COD stage is justified?

9. On the basis of the pleadings, record/evidence produced during the course of the hearing and afterwards, the issue-wise findings and decision of the Authority are given hereunder:

10. During the processing period (after admission) of the instant tariff petition, the Authority approved NEPRA Electric Power Procurement Regulations, 2022 on 6th December 2022 (hereinafter referred as "NEPPR 2022"). As per clause 2 of the referred Regulations, "*These regulations shall come into force at once.*" The NEPPR 2022 provides for mandatory competitive auction for power procurement other than those projects covered under the regulation 8 (1), or those that meet the criteria in regulation 26(2). The Authority after deliberations noted that the instant Project was considered "**Committed**" in the IGCEP 2022-31. In view of the legal position, the Authority noted that the committed projects approved under IGCEP approved prior to the coming into force of the NEPPR 2022 are exempted from compulsory auction requirements. Therefore, the Authority has been decided to determine the Project tariff under the cost-plus regime.

Issue No # 01 Whether the plant factor of 47%, plant capacity and annual generation and auxiliary consumption claimed by the Petitioner are justified?

11. PEDO reported that an optimization study, using hydrology data from 1961 to 2015, determined that a plant capacity of 84 MW is the most economically viable solution for the project. This conclusion was based on flow probabilities and a 47% plant factor, assuming a design discharge of 40 m³/sec and a net head ranging from 254.7 to 237.2 m. The study supports an estimated mean

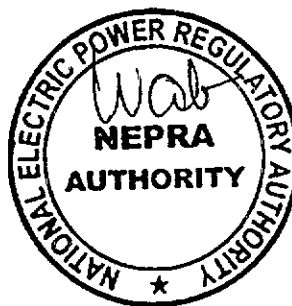
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annual energy generation of 346 GWh, confirming the project's feasibility. Regarding the auxiliary consumption the petition is silent, however, in response to the CPPA-G comments on the auxiliary issue, PEDO submitted that the tariff petition is based on net energy 342.54 GWh after excluding the auxiliary consumption of 1% from the Gross Energy of 346.00 GWh.

12. CPPA-G submitted that as per the approved Generation License, the gross capacity of the plant is 88.30 MW with the allowed auxiliary consumption of 0.833 MW constituting the capacity of the power plant as 87.417 MW as against the claimed designed capacity of 84 MW. Thus CPPA-G is of the view that annual plant generation and plant factor should be revisited by PEDO to bring it in line with the 87.417 MW, which is aligned with their generation license.
13. Regarding the auxiliary consumption, CPPA-G submitted that generally, auxiliary consumption of 1% is more than sufficient for a hydel project having a capacity of less than 100 MW, as evident in the case of 81 MW Malakand-III HPP whereas the auxiliary consumption is 0.63%. Therefore, the Authority is requested that the auxiliary consumption may be considered less than 1%.
14. PEDO in response to the CPPA-G comments submitted that the nominal generation capacity of the plant has been considered as 84 MW with a plant factor of 47% as per the feasibility study and the annual generation capacity of 346 GWh has been calculated after taking into account the dry, wet and average seasons. Regarding the auxiliary consumption PEDO, responded that given the past precedent of approving 1% for Daral Khawar by the Authority and the Project being located in an area with very harsh weather where higher auxiliary consumption will be required, 1% auxiliary is justified and thus may be considered. Further, as per the EPC contract, the capacity is mentioned as 84 MW.
15. The Authority has reviewed the revised feasibility study and noted that the annual average energy of 348.63 GWh is mentioned, thus the updated energy figure in the revised feasibility is relied upon and the same has been considered instead of the claimed 346 GWh. Moreover, the Authority also noted that the claimed auxiliary consumption is not in conformity to the international standards as well as NEPRA's previous approved tariff determinations, thus the Authority has decided to consider an auxiliary consumption of 0.5%. Thus, taking into account these factors, the resultant net energy works out 346.89 GWh and the same is hereby approved. However, the Authority also decided that for any energy beyond the approved limit, the plant will receive only 10% of the applicable tariff for the relevant period.
16. To address the issue of capacity, the Authority is of the view that a capacity test at the time of COD will reflect the true capacity and therefore obligated PEDO to carry out such test and in case the excess capacity/energy generation is established, only upward adjustment shall be made at the time of COD.

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Issue No # 02 Whether an approved Interconnection Study has been obtained?

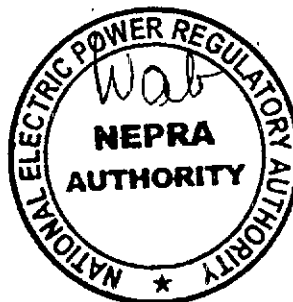
17. PEDO submitted that the Interconnection Study of the Plant has been approved by Peshawar Electric Supply Company (PESCO) on 03-08-2022 and National Transmission Despatch Company (NTDC) has conveyed final comments on the Integrated Study Scheme of various HPPs in Swat Valley on 02-02-2023, which has been incorporated. Furthermore, Base Cases 2024-25 and 2030-31 have been finalized with NTDC Planning.
18. CPPA-G commented that PESCO has given the provisional approval of the interconnection study vide its letter dated August 03, 2022, whereas the vetting of the same from NTDC is still pending. CPPA-G further stated that PESCO in its approval mentioned that the subject Project is included in the integrated study for various HPP schemes in Swat Valley, which are not finalized and are under approval with NTDC, therefore the final approval depends upon the consent of NTDC. CPPA-G states that it seems that the Project does not have the approved and final interconnection study as per the PESCO letters. It is therefore requested that the Authority may look into the matter.
19. In response to the CPPA-G comment, PEDO submitted that the Project will be connected via a 132kv line with the PESCO network and subsequently PESCO has approved the interconnection study and the same has been shared with NTDC for approval. PEDO further submitted that NTDC is of the view, that the Interconnection Study of the Project will be approved only once the Integrated Study of various HPPs in Swat Valley is approved.
20. The Authority noted that NTDC vide letter dated July 21, 2023 has approved the Final Integrated Study Report regarding the various HPPs in Swat Valley including the instant Project. This approval has only been approved for the interconnection aspect of the plant and the relevant extracts of the NTDC letter are as reproduced:

"The integrated study report for evacuation of power from 84 MW Gorkin Matiltan HPP and other HPPs in swat valley has been approved at NTDC as per the assumptions, results and recommendations presented in the report.

The Major considerations regarding the subject study are highlighted as under:

- i) *The power from 84 MW Gorkin Matiltan HPP can be evacuated at 132 kV level under normal contingency N-1 contingency conditions subject to upgradation/reinforcement of 132 kV S/C transmission line from Khawza Khela to Madyan including reconductoring of the existing 132 kV T/Line from Lynx to Rail conductor and stringing of 2nd 132 kV circuit on Rail conductor from Khawza Khela to Madyan before COD of 84 MW Gorkin Matiltan HPP. It is highlighted that if the requisite 132 kV upgradation/reinforcement is not completed before COD of Matiltan HPP, then its generation will have to be curtailed even under normal operating condition and in case of N-1 contingency, its complete shutdown may be required.*

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It is intimated that the subject report has been approved only for the interconnection aspects of the 84 MW Gorkin Matiltan HPP. Any commitment regarding the induction of 84 MW Gorkin Matiltan HPP and/or for any other purpose should be discussed with/decided by PESCO, CPPA-G and relevant stakeholders.

It is added that during the PPA, if there is any major change in the parameters of the HPP as used in the interconnection study/ or any change in the upcoming generation/ transmission plant in the vicinity of the HPP, the relevant studies will have to be revisited."

21. The Authority has considered the submissions of the Petitioner, CPPA-G and is of the opinion that NTDC has approved the interconnection study, therefore, the issues stand addressed.

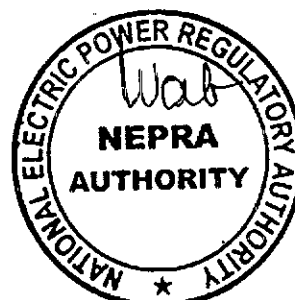
Issue No # 03 Whether NOCs have been obtained from the Environmental Protection departments?

22. PEDO submitted that an NOC has been obtained and has also submitted an approval letter No. EPA/EIA/Matiltan Hydro/799, dated June 21, 2011, issued by the Director General, Environmental Protection Agency, Khyber Pakhtunkhwa.
23. The Authority observed that the issued NOC is only for the construction phase, whereas approval for the operation phase of the hydropower plant will be required. Thus, for the construction stage, the issue stands addressed, however, for the operation stage PEDO is required to obtain the NOC from EPA for the operation of the Plant and submit the same at the COD.

Issue No # 04 Whether the construction period of 48 months claimed by the Petitioner is justified?

24. PEDO submitted that the EPC contract was signed in October 2016 and 48 months were envisaged as a timeline for the construction of the Project. Thus, the construction period of the Project is 48 months which is factual and justified and the same is claimed for approval.
25. CPPA-G commented that since the Project is already in the construction phase, the allowed timeframe of 48 months seems to be sufficient for the instant project. Therefore, CPPA-G has no objection regarding the proposed construction period.
26. The Authority considered the submissions of PEDO and CPPA-G and is of the view that the claimed period of 48 months is per the approved PC-I and also reflected in the tender document, therefore, the same is justified. Hence the same has been approved and all the allied adjustments at COD will be restricted to this allowed period.
27. The Authority has noted that the Notice to Proceed (NTP) was issued on November 7, 2016, with the Project scheduled for completion within 48 months, by November 6, 2020. However, the Project remains under construction, and PEDO has not provided any explanation for the delay.

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28. PEDO is therefore directed to submit a comprehensive report at the time of the COD tariff adjustment request. This report should outline the reasons for the delay and detail the measures taken to recover costs associated with the delays from the EPC contractor. Additionally, PEDO must submit the latest approved PC-1 at the COD stage. The Authority will make its decision based on the information and documents provided at that time.

Issue No # 05 Whether the Project cost of USD 123.61 million claimed by the Petitioner is justified?

Issue No# 06 Whether the EPC has arrived in accordance with NEPRA (Selection of Engineering, Procurement & Construction Contractor by Independent Power Producers) Guidelines, 2017?

29. Issue No# 05 has been clubbed with issue No# 06 as the EPC cost is part of the Project cost.
30. PEDO has requested a project cost of USD 123.61 million @ 1US\$ = Rs.218.431, with the following breakup:

Project Cost	US\$ Million	Rs. Million
EPC contract	91.87	20,068
Land Acquisition	1.58	345
Project establishment	1.61	352
Cost of loan arrangement/ financing fee	0.78	170
Management consultant	1.84	402
Hiring of POEs, WCE, PPA	0.48	105
Capital cost without IDC	98.16	21,442
Interest During Construction (IDC)	25.45	5,559
Total	123.61	27,001

EPC Cost:

31. PEDO submitted that the EPC cost estimate of US\$ 91.87 million is based on the signed EPC contract which is firm price except the allowed variations stipulated in the contract. PEDO submitted that the EPC contract is FIDIC based and thus not only provides transparency but also is per best international practices providing a fair/win-win situation for the Employer as well as Contractor. PEDO further submitted that the EPC Price includes the cost of civil works as well as electromechanical equipment and also includes warranty and spares cost and the variation orders, foreign exchange, cost incurred due to Extension of Time regarding COVID, security issues will be adjusted at the time of COD stage.

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32. The Project was advertised many times. The last time (on the fourth attempt) it was advertised in October 2015 whereas, NEPRA EPC guidelines were issued on May 19, 2017, therefore, such guidelines may not be applicable. However, the Authority noted that PEDO being a government entity is required to conduct bidding including for the EPC contract as per KP PPRA rules, the bidding process has thus been reviewed by the Authority for transparency and other factors, the discussion of which is discussed in the following paragraphs.

33. As per the PEDO's submitted Bid Evaluation Report dated April 2016, (hereinafter referred to as "The Report") the Project was previously advertised on an EPC basis three times, however, the contract could not be awarded due to the cancellation of the tendering process due to the following reasons as provided by PEDO:

a. 1st Time Bidding-November, 2012

The tendering process was cancelled as the lowest bidder quoted a price which was almost 98% above the EPC cost of the original PC-I against the permissible limit of 15%.

b. 2nd Time Bidding-November 2013

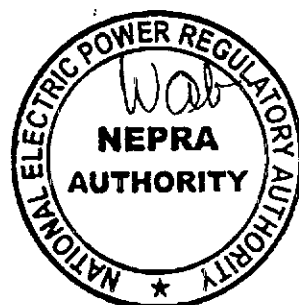
On the complaint of one of the bidders against the lowest quoted bid, an inquiry was initiated by the CM which was headed by the Secretary (Finance). The inquiry committee after detailed investigation/deliberations, upheld the complainant's claim against consideration of the discount offered by the lowest bidder in the Matiltan Hydropower Project. The tendering process of the Project was, therefore, annulled & on the directives of the CM, the Project was retendered. This was challenged in the Peshawar High Court by the lowest bidder. It took the court five (05) months to decide in favour of the Government of KPK.

c. 3rd Time Bidding-June 2014

The tendering process was cancelled under the provision of tendering documents as the lowest bidder provided incorrect information and was found to have concealed poor performance in his other projects. In this regard, on the instruction of the PEDO board, a verification process of the documents provided by the lowest bidder in his submission was initiated which was concluded in three (03) months.

34. Regarding the fourth bidding, process, the Report further stated that the Bid Opening and Evaluation Committee evaluated the Technical Bids of the following five (05) bidders and found all the bidders except M/s Gorkin Matiltan JV were substantially responsive.

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- i. DOGUS-DESCON-YENGUNIV-CWTW JV
- ii. CMC-GRC JV
- iii. SWEB-SCC JV
- iv. WENFU-BANU MUKHTAR-QINGYUAN JV
- v. GORKIN-MATILTAN JV(SINOTCH-ZZHPC-ZDWP-USMANI)

35. The Report states that the Price Bid opening was held on April 19, 2016, at 14:00 hrs. in the conference room of PEDO house, Peshawar by the Bid Opening & Evaluation Committee, the composition of which was as follows:

- | | |
|---|----------|
| i. General Manager (Hydel), PEDO | Chairman |
| ii. Chief Financial Officer (CFO), PEDO | Member |
| iii. Director (P&F), PEDO | Member |
| iv. Project Director (GMHPP), PEDO | Member |
| v. PD(MMHPPs), PEDO | Member |
| vi. Director (PP) GMHPP, PEDO | Member |
| vii. Project Manager BARQAAB | Member |

36. The Report states that the Price Bid envelopes were opened in the presence of representatives of all the bidders. The Committee examined and signed the documents and announced the Bidder's name and Bid Prices and the following were the readout prices:

S.No	Name of Bidder	Total Bid Price Rs.
1	M/s Dogus-Descon JV	14,118,000,000 (Discounted) at Rs. 104.9999/US\$
2	M/s CMC-GRC JV	12,397,143,965 at Rs. 104.70/US\$
3	SWEB-SCCJV	14,579,497,385.5 at Rs. 105.5/US\$
4	M/s WENGFU JV	16,260,688,730 at Rs.105/US\$

37. The report provides the summary of the comparative position of Evaluation Bid Prices for which a conversion rate of Rs. 105.05 per US\$ as of January 05, 2016, has been applied and further, the report states that the provisional sum has also been excluded. As per the report the following is the summary of EPC price:

S.No	Name of Bidder	Readout Bid Price Rs.	Evaluated Price Rs.
1	M/s Dogus-Descon JV	14,118,000,000 (Discounted) at Rs. 104.9999/US\$	14,121,188,518
2	M/s CMC-GRC JV	12,397,143,965 at Rs. 104.70/US\$	12,201,917,879
3	SWEB-SCCJV	14,579,497,385.5 at Rs. 105.5/US\$	14,673,657,626
4	M/s WENGFU JV	16,260,688,730 at Rs.105/US\$	16,260,688,730

38. The Report states that after the evaluation/review of the Technical Bid and Price Bids by the Bid Opening Committee & Evaluation Committee M/s CMC-GRC JV bid responsive and offer the lowest price is recommended for the award of the contract.

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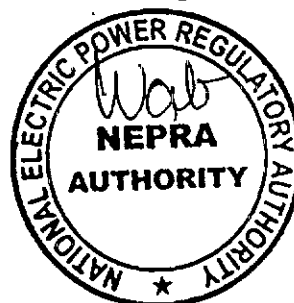


39. As per the EPC contract document, the contract was made on the 27th October 2016 between PEDO and Cooperative Muratori & Cementisti (CMC) & Ghulam Rasool & Company Pvt Ltd.
40. The Authority has noted that PEDO invited the bid in accordance with the Single-Stage Two Envelope Bidding Procedure on October 02, 2015, in accordance with the International Competitive Bidding (ICB) standards. The contract with the EPC contractor was signed on October 27th, 2016. The Authority consider it pertinent to mention that NEPRA (Selection of Engineering, Procurement and Construction Contractor by Independent Power Producers) Guidelines, 2017 were issued in May 2017, therefore, these guidelines were not applicable to the Project at the time of selection of EPC contractor although it was noted that KP PPRA rules were the relevant guidelines for such procurement being a Provincial Government funded project.
41. The Authority noted that the lowest evaluated bid price of PKR 12,201,917,879 of M/s Cooperative Muratori & Cementisti (CMC) & Ghulam Rasool & Company Pvt. Ltd. was selected with the following breakup:

Description	Foreign (USD)	Local (PKR)
Plant and Mandatory Spare Parts	38,155,341	313,832,494
Design Services	2,850,000	365,000,076
Civil Works, Installation and Other Services	27,489,520	4,288,365,161
Schedule of Day Works		39,335,000
Total	68,494,861	50,066,532,731
Total (PKR Million) at an Exchange Rate of 105.05 at the time of signing of the EPC Contract	12,201,917,879	

42. The Authority observed that a difference exists in the cost claimed in the tariff petition against the approved in Revised PC-1 2015. Thus, PEDO was asked for clarification and PEDO submitted that as per revised PC-1 dated January 2015, the local component of civil work cost without the Transmission Line has been approved as Rs 10,564 million, while in the EPC contract signed on October 27th, 2016, the local components cost work out as Rs 5,006 million. This shows that the local portion of EPC costs is significantly lower than what has been approved in PC-1.
43. PEDO further submitted that the foreign portion of EPC assumed in PC-1 was USD 57.10 million which when converted to the then assumed USD to PKR rate of 100.427 works out to Rs as 5,734 million. While the EPC bid for the foreign portion was USD 68.5 million or PKR 7,159 million at 1US\$=105.05. According to PEDO, the increase in foreign components of EPC as compared to the provision of PC-1 is due to the inclusion of foreign components amounting to USD 27.49 million in

not *note*



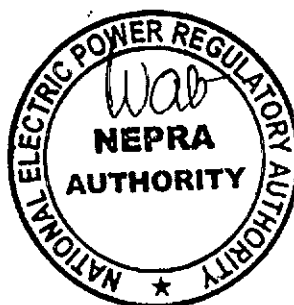
the civil works of the EPC contract. The EPC JV has a foreign partner CMC (an Italian company) which has taken responsibility for the Tunnel works and engineering design of the project, for which the JV quoted price in US\$ in the bid price.

44. In comparison to PC-1, PEDO argued that the total EPC claimed amounting to Rs 12,201 million excluding the provisional sum (contingency cost) is lower than the approved PC-1 cost, which is Rs.16,297 million PKR. PEDO has thus stated that the EPC awarded has benefited the Project.
45. PEDO also highlighted that the 2nd revised PC-1 of the project has been recommended to CDWP and ECNEC for approval by the Govt. of KPK's Provincial Development Working Party (PDWP) during its meeting held on 10-01-2024. As per PEDO an exchange rate of 1 US \$=Rs. 300 has been assumed in the 2nd revised PC-1. This PC-I has been prepared in light of the actual cost of work as per the EPC Contract.
46. The Authority considered the PEDO's latest submission and has made a comparison with PC-1 cost assumed at @ PKR 100.43=1USD, and EPC cost @ PKR 105.05 = 1 USD has been recomputed based on a common exchange rate of 218.431 = 1 USD as assumed in the petition which is tabulated:

EPC Cost	As per PC-I	Approved EPC	Claimed EPC
Local Portion Rs. Mln	10,563.05	5,006.53	5,006.53
Provisional sum (Contingency cost)		0	100
Local portion in USD Mln at 1USD = Rs. 218.431	48.36	22.92	23.38
Foreign Portion USD Mln	57.10	68.49	68.49
Total EPC cost in USD Mln	105.46	91.42	91.87

47. The Authority noted that the above table indicates that the EPC price at USD 91.42 million is lower than the PC-1 approved cost updated to the latest exchange rate, however, the Authority observed that the total claimed EPC cost in USD works out as USD 91.87 million. The Authority observed that the difference between the approved EPC cost (which is being based on the EPC contract) of USD 91.42 million and the claimed EPC is the provisional sum of USD 0.46 million (Rs. 100 million). This cost is not being considered as being disregarded in other recent hydro cases.
48. The Authority further noted that as per particular conditions of the EPC contract's sub-clauses 4.2 regarding the schedule of price (Rates & Prices) wherein the rates and prices of the contract shall be fixed and shall not be subject to adjustments, 48.1 (Local Taxation Customs and Import Duties) wherein the contract prices shall be deemed to have included, business taxes, income taxes, super tax, customs, import duties and fees charges for service provided under the EPC contract, and 53.1 (Payment of Income Tax. etc.,) is the responsibility of the contractor and be included in the bid contract price, therefore, no adjustment shall be made for these at the COD. However, only the

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foreign portion of the above EPC contract will be subject to exchange rate variation for 48 months from the date of NTP at COD stage subject to the provision of documentary evidence to the satisfaction of the Authority, whereas the local Component of Rs. 5,006.5 million will remain the same and will not be subject to any escalation whatsoever and will be adjusted at COD at lower of actual or allowed.

49. The Authority observed that the Project is still under construction despite the fact it should have been completed within 48 months as per EPC contract by November 06, 2020 assuming NTP of November 07, 2016, which means a delay of more than 4 years. However, the USD to PKR rate assumed in the petition is of a later period which is the end of 2022. To understand the financial impact, PEDO was directed to update about the Project's financial and physical progress upto RCOD as per the contract and onward. PEDO in its submissions dated February 02, 2024, submitted the following details:

Progress	Nov 07, 2016 to Nov 06, 2020	Jan 01, 2024	Remarks
Financial Progress	52%	75%	The financial progress against EPC Contract provisions for foreign and local components is 75% while it is 94.8% if the foreign component paid to the EPC Contractor is converted to PKR as per the existing dollar rates at the time of payment as per contract provisions which shows the significant impact of dollar parity on the project. Furthermore, delays in the project are due to land issues, COVID-19, Security threats to the Chinese, August 2022 flood.
Physical Progress	48.5%	76%	

50. The Authority understands that the public sector-based projects which approach NEPRA for EPC/contract-based tariff are generally at the construction stage, while assessing its tariff generally the actual progress and resultant adjustments are not taken into account. However, in the instant case

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it was felt important to adjust the Project cost based on the actual financial progress so that the overall allowed tariff eventually, closely mirrors the reality.

51. Therefore, the EPC cost has been divided into two parts for conversion into equivalent PKR. For financial progress which is 52% up till the required COD of 48 months as per the contract, the relevant average exchange of the 48 months starting from November 07, 2016 to November 06, 2020 has been used which in the instant case is 1 US\$ =Rs. 132.59. For the remaining 48% of EPC cost, an ER of Nov 06, 2020 has been used which is 1 US\$ =Rs. 159.09. Based on these assumptions, the EPC in PKR works out as 14,959.51 million or equivalent USD 103.24 million and the same has been considered. The following is the summary of the converted costs:

EPC Cost Bifurcation as per Financial Position 52%				
Item	Description	Price		Total
		Foreign US\$ Mln		US\$ Mln
		52%	48.00%	100.00%
1	Plant and Mandatory Spare Parts Foreign Portion	19.8	18.3	38.16
2	Design Service	1.5	1.4	2.85
3	Civil Works, installation and other services	14.3	13.2	27.49
4	Scheduled of Day Works		-	
	Sub Total	35.6	32.9	68.49
	Average Exchange Rate	132.59		
	R-COD Exchange Rate		159.09	
	Foreign Portion EPC cost in PKR Million	4,722.36	5,230.61	9,952.98
Item	Description	Price		Total
		Local Rs. Mln		PKR. Mln
		52%	48.00%	100.00%
1	Plant and Mandatory Spare Parts Local Portion	163.19	150.64	313.83
2	Design Service	189.80	175.20	365.00
3	Civil Works, installation and other services	2,229.95	2,058.42	4,288.37
4	Scheduled of Day Works	20.45	18.88	39.34
	Sub Total	2,603.40	2,403.14	5,006.53
	Average Exchange Rate	132.59		
	R-COD Exchange Rate		159.09	
	Local Portion EPC Cost In US\$ Million	19.64	15.11	34.74
	Total EPC in US\$ Million			103.24
	Total EPC in PKR Million			14,959.51

52. The revised EPC works out as 14,595.51 million against Rs 19,967.93 million excluding provisional sum, the latter being assessed on an exchange rate of 218.431. Out of Rs 14,595.51, only the foreign portion amounting to USD 68.49 million will be subject to adjustment with the actual exchange rate during the construction period. For the payments beyond November 06, 2020, the EP of November 6, 2020 will be applied. Further, the local portion of Rs. 5006.53 million will remain fixed.

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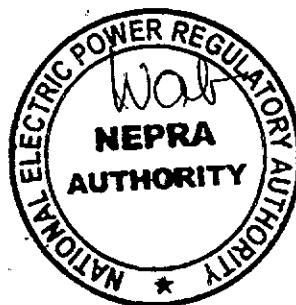
Land Acquisition and Mitigation Cost:

53. PEDO claimed a cost of Rs. 345 million (equivalent to US\$ 1.58 million @ Rs. 218,431) regarding the cost associated with the acquisition of land, and compensation for resettlement to the inhabitants of the area to be affected by the development of the Project.
54. It was observed that as per the revised PC-1 dated September 2018, the cost for land is given as Rs 341.38 million. PEDO was asked for the difference between the claimed Rs. 345 million vs PC-I cost of Rs. 341.38 million. In response, PEDO submitted the details of the actual payment of Rs. 235 million supported by bank cheques with the following breakup:

<u>DETAIL OF LAND ACQUISITION PAYMENTS FOR 84 MW GORKIN MATILTAN HPP.</u>					
SR.NO	DESCRIPTION	CHEQUE HAND OVER TO	CHEQUE NO.	CHEQUE DATE	AMOUNT
1	land acquisition	district officer, revenue & estate/collector, Swat KPK	877185	30.06.2011	48,001,074
2	land acquisition	district officer, revenue & estate/collector, Swat KPK	10363851	21.05.2012	27,838,846
3	land acquisition	divisional forest officer Kalam Forest Division Swat KPK	13 63096813	25.6.2020	422,500
4	land acquisition	Deputy Commissioner Swat KPK	13 50998934	24.10.2018	68,415,750
5	compensation trees	Deputy Commissioner Swat KPK	13 47873241	27.11.2017	3,630,615
7	land acquisition	Deputy Commissioner Swat KPK	13 66970998	19.03.2021	38,960,622
9	land acquisition	Deputy Commissioner Swat KPK	13 64500540	12.11.2020	47,729,439
TOTAL					234,998,846

55. However, for the difference amount of Rs. 106. 38 million between the PC-I revised cost of Rs. 341.38 million and the paid amount of Rs. 235 million, no supporting document has been provided. PEDO vide email dated December 12, 2023, submitted that land PC-I is not yet closed as the Project is still under construction and it assumed that the expenditures will be incurred in the future for unforeseen land acquisition or compensation on account of the following:

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- i. Excavation of the Headrace Tunnel from the Adit Tunnel side is in process. EPC Contractor has acquired the land approx. 42 Kanal on lease for construction of access road to Adit Tunnel temporarily. PEDO Higher-Ups are in favor of making an inspection chamber from the Adit side for maintenance/repair/inspection purposes in future. Based on the above, the land for the construction of the access road to Adit Tunnel will be acquired permanently.
- ii. A 12 km, dedicated 11KV transmission line from the Powerhouse to weir/intake will be constructed soon, for which land compensation to locals will be paid during the execution of the project activities.
- iii. A 460m length of penstock pipe will be installed/buried in March 2024 initiating from the Headrace Tunnel Outlet to the Power House. As there are chances of damaging houses during the execution/installation of penstock. For any damages/mitigations, compensation will be paid to locals through local administration from land PC-I.
- iv. As there are two Terminal Towers (one at the Start and one at Tail end) for the construction of 132/220 kV Transmission Line for which land will be acquired permanently for said towers.

56. The Authority is aware of the fact that in the case of hydropower projects, the land acquisition cost is subject to adjustment as per actual based on the documentary evidence at COD, therefore, the PC-I revised cost of Rs. 341.38 million has been considered as a maximum cap with a downward adjustment at COD if duly substantiated with supporting documents to the satisfaction of the Authority.

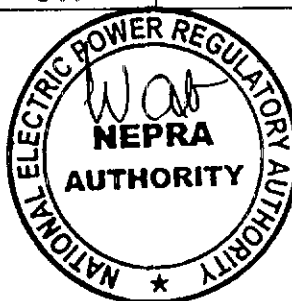
Project Establishment Cost/Security Charges:

57. PEDO claimed an amount of US\$ 1.61 million (Rs. 352 million @ R.s 218.431) as a Project Development cost including (salary, generation licensee and tariff petition fee, purchase and repair of durable goods, commodities and services) and external security cost. PEDO has not provided the exact breakup of the claimed cost.

58. While reviewing the claimed cost the Authority noted that cost of US\$ 1.58 million can be ascertained against the claimed cost of US\$ 1.61 million with the following breakup:

Sr.#	Description	Rs. Mln	US\$.@ 218.431 Mln
1	Salary & Admin Expenses	190	0.87
2	Security Cost	154	0.71
Total		344	1.58

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59. Regarding the salary and admin cost, PEDO was asked to provide the details and further breakup. PEDO provided the excel worksheet indicating the salary and admin expenses from 2011 to 2022, however the same were not backed by any documentary evidence. PEDO was again asked to provide the details of this cost incurred during the construction period of 48 months. PEDO submitted head-wise expenses of Rs. 102 million regarding the salary and admin expenses for the construction period starting from November 07, 2016, to Nov 6, 2020, with the following breakup:

Salary and Admin Expenses		
Particular	Rs. Mln	% of Total Expenditure
Pay and other allowance	62.40	61%
Transport (Vehicle Purchase etc)	23.2	23%
Rent of Buildings (Residential & Office)	4.9	5%
Advertisement Charges	2.3	2%
POL Charges (Fuel)	4.1	4%
Miscellaneous Charges	5.4	5%
Total Expenditure	102	100%

60. The Authority considered the submissions for the PEDO and is of the considered opinion that the cost incurred during the construction period is appropriated to be allowed, therefore, the cost of Rs. 102 million is allowed as a maximum cap subject to adjustment at COD and lower of the actual or allowed will be adjusted based on the verifiable documentary evidence.
61. Regarding the **security cost**, the Authority has noted that PEDO has provided formal agreements with the District Police Office (DPO) Swat, KPK for hiring security personnel for the protection of the Chinese working on the Project. In support of the claimed amount of Rs. 154 million, the bank cheques issued by PEDO in the name of DPO SWAT were provided. It is pertinent to mention that in the case of another PEDO project namely KOTO 40.8 MW located in District Dir, the Authority disallowed the security cost, due to the reason the security cost and arrangement is the responsibility of the Provincial Government. Thus, based on the same justification, the Authority has not considered the security cost.
62. Recapitulating the above the following is the summary of the Project Establishment Cost/Security Charges:

Sr.#	Description	Claimed Rs. Million	Approved Rs. Million
1	Salary & Admin Expenses	190	102
2	Security Cost	154	0
Total		344	102

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Cost of Loan Arrangement/Financing Fee:

63. PEDO claimed an amount of US\$ 0.78 million (Rs. 170 million @ an exchange rate of 218.431) as financial fees/charges and commitment fees related to the debt financing of the Project. PEDO further states that these charges are calculated @ 1% of the debt (excluding Interest During Construction and Financial Charges). As per the tariff petition, the Project financing is based on an 80:20 debt-equity ratio and has been entirely funded from PEDO's resources. However, PEDO in subsequent written submission after hearing submitted that a local loan from Habib Bank Limited (HBL) up to PKR 2,500 million has also been arranged for this Project based on 6 Month KIBOR basis with no spread.
64. The Authority observed that the Project's PC-I outlines that 20% of the equity would be financed through the Provincial Annual Development Programme (ADP), with the remaining 80% funded by Hydel from the Development Fund (HDF). In similar cases involving other PEDO projects with comparable financial structures, the Authority has previously disallowed loan arrangements and related financing fees.
65. Additionally, the Authority noted that no commercial loan has been utilized for this Project. Furthermore, no documentation has been provided to substantiate the receipt of funds from a bank for the Project, apart from an MOU with an offer validity up to April 15, 2022, which was not realized. This confirms that no such expense has been incurred. Consequently, the financial charges are deemed unjustified and have not been considered by the Authority.

Management Consultants Cost/Hiring of POEs, W.C.E, PPA.

66. PEDO claimed an amount of US\$ 1.84 million (Rs. 401 million @ an exchange rate of 218.431) for Management Consultants (MC) and US\$ 0.48 million (Rs. 105 million) as a cost for hiring POEs and other consultants.
67. Regarding the MC cost, the Authority observed that the submitted MC contract amounting to Rs. 135.159 million was signed on April 17, 2012, and due to delay in the Project, the amendments to the original contracts were made vide amendment no. 1, 2 & 3 respectively. Moreover, the MC contract expired on November 05, 2020, and the third amendment which was signed on August 26, 2021 is beyond the contract period, therefore the cost of Rs. 168.420 million upto amendment no.2 as tabulated is justified and hence allowed:

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Summary of MC Cost as per the Contract				
		17-Apr-12 (Signed)	31-Dec-16 (Signed)	19-Apr-17 (Signed)
		Original Contract	Amendment 01	Amendment 02
Sr #	Description	Amount Rs.	Amount Rs.	Amount Rs.
1	Pre-Construction Phase	39,631,219	72,102,436	72,891,725
2	Construction Phase	91,624,213	91,624,213	91,624,213
3	Defect Liability Period	3,904,506	3,904,506	3,904,506
Total		135,159,938	167,631,155	168,420,444

68. The approved cost represents a maximum cap, subject to adjustment at the Commercial Operation Date (COD). The final amount will be based on verifiable documentary evidence, with adjustments made to reflect the lower of either the actual cost incurred or the approved cost.
69. Further, the Authority noted that the cost of US\$ 0.48 million (Rs. 105 million) claimed for hiring POEs, and other consultants is devoid of any supporting documents and breakup. However, the Authority is of the opinion that the plant is already under construction since 2016, by now some level of documentary evidence would have been put in place. Therefore, due to the lack of any evidence, this cost has not been considered in the tariff calculation. However, at COD this amount of Rs. 105 million as a maximum cap may be considered subject to documentary evidence to the satisfaction of the Authority with the provision that the lower of actual or allowed shall be adjusted.
70. Recapitulating the above the following is the breakup of the claimed versus approved non-EPC costs.

Sr.#	Description	Rs. Mln	Rs. Mln
1	Land Acquisition	345	341
2	Project Establishment	352	102
3	Cost of loan arrangement	170	0
4	Management Consultant	402	168
5	Hiring of POEs and other Consultants	105	0
Total		1,374	611

Issue No # 07 Whether the terms & conditions relating to Project funding including debt and equity IRR of 17% (dollar-based) claimed by the Petitioner are justified?

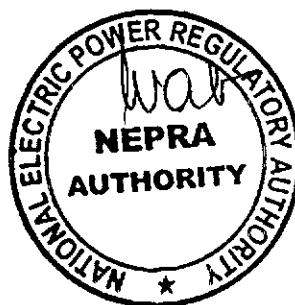
71. PEDO submitted that the project financing is based on an 80:20 debt-to-equity ratio and has been entirely funded from PEDO's resources. For the cost of debt based on the 6-Month KIBOR without any spread as allowed by the Authority to PEDO's other projects (Koto, Lawi, Jabori & Karora), a 6 Month KIBOR rate of 15.52% without any spread has been taken, however, for loan repayment period, 20 years are taken. Regarding the equity, a dollar-based IRR of 17% has been claimed for a tariff control period of 30 years.

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72. CPPA-G regarding the return on equity submitted that the Company has claimed the 17% Internal Rate of Return on equity (dollar-based) and Return on Equity During Construction. Since, the instant project of the PEDO is financed through its own resource, which is in rupees, therefore, it seems illogical to ask for a dollar-based indexation. It is further highlighted that the Cabinet Committee on Energy (CCoE) in its meeting held on August 27, 2020, has reduced the returns of public sector entities 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 this Project may be aligned with the CCoE decision and already approved tariffs of the Authority for Provincial Government hydropower plants.
73. CPPA-G regarding the return on debt submitted that, since the PEDO is financing the Project from its own sources and using an opportunity cost of funds. It is therefore suggested that the interest rate may be rationalized to 6 months KIBOR without any spread in line with other PEDO HDF-funded projects such as Koto Hydropower Project to pass on the relief to electricity consumers.
74. PEDO in response submitted that the Authority in the case of MLR for Lawi 69 MW HPP has approved a 13% return based on the long-term bonds premium rate of SBP in 2021, whereas the current long-term premium rate is 15.97%. However, the rate approved by the Authority for Daral Khawar HPP of PEDO in 2018 (17% IRR dollar-based) may be allowed for the instant Project.
75. The Authority reviewed the submissions made by PEDO and CPPA-G and acknowledged that for PEDO's approved projects with similar financing structures, a 6-month KIBOR without any spread has been allowed as the cost of debt, subject to biannual KIBOR adjustments. Consequently, the Authority has considered the 6-month KIBOR on a similar basis for 80% of the debt for this Project. Additionally, it is noted that while the Authority previously approved extending the debt repayment period from 10 years to 30 years for other PEDO projects such as Karora and Jabori, no such request has been made for this Project. Therefore, the requested 20-year loan repayment period has been accepted.
76. Regarding the rate of return, the Authority evaluated the submissions of PEDO and CPPA-G and recognized that hydropower projects entail additional risks. As such, it is important to ensure a reasonable return that compensates for these risks. The Authority believes that an appropriate rate of return on equity is essential for harnessing local resources, which will enhance energy security and mitigate the adverse effects of climate change by reducing reliance on imported fossil fuels. Given the local source of funding used for this Project, the Authority determined that a PKR-based 16% rate of return on equity without dollar indexation is appropriate. This aligns with the returns approved for recent hydropower projects utilizing local funding, such as Rehra, Qadirabad and Shishi Hydropower

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projects. Consequently, the Authority approved a 16% rate of return on equity without dollar indexation for this Project.

Interest during Construction (IDC):

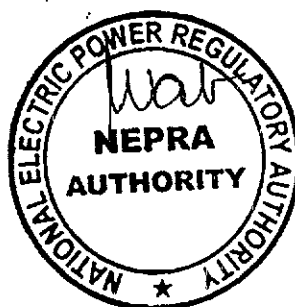
77. PEDO stated that the estimated IDC figure is US\$ 25.45 million which is calculated based on a construction period of 48 months and for this 6 Month KIBOR of 15.52% as of October 17, 2022, has been applied with no spread.
78. For the reasons as mentioned in para 50 & 51 above, similar treatment has also been made while computing IDC and RoEDC to mirror the project's actual financial progress. For IDC an average 6-month KIBOR of 8.82% + 0 spread for the 48 months of construction time ending November 06, 2020, has been used. Accordingly, IDC based on the financial progress of 52% while assuming a capital structure of 80:20, debt drawdown as tabulated below works out as Rs 1,255 million and the same has been considered. The IDC is to be adjusted based on actual drawdown with prevalent 6-month KIBOR for the assumed construction period of 48 months.

Period Biannual	Drawdown %age
1	5%
2	10%
3	20%
4	15%
5	15%
6	15%
7	10%
8	10%

79. Recapitulating the above, the following is the summary of the Project Cost claimed vs. approved.

Description	Claimed	Approved
	PKR Million	PKR Million
EPC Cost	20,068	14,960
Land Acquisition & Resettlement Cost	345	341
Project Establishment/Security Charges	352	102
Management Consultant	402	168
Hiring of POEs & Other Consultants	105	-
Financial Charges	170	0.00
Project Cost Excluding IDC	21,442	15,572
Interest During Construction	5,559	1,255
Total Project Cost	27,001	16,827

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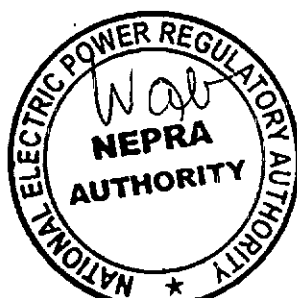
Issue No # 08 Whether the O&M cost of the Project claimed by the Petitioner is justified?

80. PEDO requested an O&M cost of US\$ 0.9816 million per annum as 1% of the Project cost with the following breakup:

Description		Rs/KWh
Fixed O&M (75%)	Local (80%)	0.3737
	Foreign (20%)	0.0934
Variable O&M (25%)	Local (50%)	0.0778
	Foreign (50%)	0.0778

81. CPPA-G submitted that PEDO shall conduct a competitive bidding process for the selection of O&M contractor(s) in line with the NEPRA's (Selection of Operation and Maintenance Contractors by Generation Companies) Guidelines, 2021. The approved cost will be the maximum cost subject to actual, whichever is low. The rationale for the bifurcation of O&M cost in the local and foreign components is not mentioned in the tariff petition, therefore the Authority may look into the matter.
82. In response to CPPA-G comments PEDO submitted that the Authority allowed O&M cost to Daral Khawar HPP @ 1.8% of the Project cost, however for the instant Project an O&M cost @1% of the Project cost is claimed, since the claimed cost is lower, therefore, justified.
83. The Authority reviewed the submissions from PEDO and CPPA-G and determined that 1% of the Project cost, excluding IDC, is reasonable and consistent with regional and international benchmarks. This percentage will serve as the maximum allowable amount. Furthermore, PEDO is directed to comply with NEPRA's O&M Guidelines when procuring an O&M contractor. However, the total O&M costs will be capped at 1% of the approved Project cost.
84. Based on the approved Project cost (excluding IDC) of PKR 15,572 million, the resultant annual O&M expense is calculated at PKR 155.72 million, which is hereby approved. The Authority also mandates that PEDO adhere to the NEPRA (Selection of Operation and Maintenance Contractors by Generation Companies) Guidelines, 2021, as outlined in S.R.O. 210/2021, during the tariff control period for the provision of O&M services.
85. Moreover, the Authority is of the view that the approved amount of PKR 155.72 million adequately covers overall O&M expenses, including, but not limited to, any third-party O&M costs, PEDO's own expenses, and other major operational expenditures. Therefore, this approved annual cost shall be as a maximum ceiling.
86. PEDO has bifurcated the O&M component into local (80%) and foreign (20%) with a request for local CPI on the local O&M component and US CPI and PKR exchange rate on the foreign O&M component. Based on the historical data the Authority observed that in the long term, the local CPI

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should effectively account for both USD depreciation and US CPI fluctuations. However, due to the unprecedented surge in the fluctuations in the USD to PKR parity, coupled with local inflation, have led to a substantial increase in foreign tariff components compared to local ones, therefore, it is imperative to link the O&M indexation with local CPI only, serving as a more suitable proxy for compensating project developers for any inflationary pressures, irrespective of whether the O&M consists of foreign or local components. The Authority has recently approved the 100% local O&M cost with annual indexation for the Siachen Energy Ltd. on November 29, 2021, thus the same mechanism is hereby approved for the instant Project. The indexation mechanism is given in the Order part of this determination.

Issue No # 09 Whether the insurance during operation assumed @ 1.00% of the EPC cost claimed by the Petitioner is justified?

87. PEDO has claimed insurance during operations at 1% of the EPC Cost and stated that the same is in line with the NEPRA (Benchmarks for Tariff Determination), Guidelines, 2018.
88. CPPA-G in its comments regarding the issue submitted that since there is a global decline in the insurance cost, the impact of which is also being seen in recent hydropower projects where the annual insurance premium paid was as low as 0.46% of the EPC cost. In the case of Daral Khwar, the actual insurance cost paid is 0.40% of the EPC cost. Keeping in view the above the Authority may rationalize the allowed insurance cost during operations within the cap.
89. PEDO in response to the comments of CPPA-G submitted that PEDO has claimed insurance during operation @ 1% in accordance with NEPRA-approved Guidelines.
90. Keeping in view the continuous decline in the global insurance index, the Authority has allowed insurance during operation cost at 0.75% of EPC cost subject to a maximum of 1% of EPC cost in case of other hydropower projects. Further, this lower impact is also evident in case of operational hydropower projects wherein the actual insurance premium was as low as 0.46% of the EPC cost. In view thereof, the Authority has decided to allow 0.75% of EPC subject to adjustment on the basis of actual upto a maximum at 1% of the EPC cost upon provision of verifiable documentary evidence by PEDO. For the purpose of calculating insurance during operation, the EPC cost has been calculated as Rs. 15,904 million (Local EPC of Rs. 5007 million + Foreign EPC of USD 68.49 million * exchange rate of 159.09 = Rs.15,904 million). Accordingly, the insurance cost of Rs. 119 million (which is 0.75% of the EPC cost of Rs. 15,904 million) has been approved. However, in case of non-occurrence of this cost during operation stage or if the same is the part of O&M, then this allowed cost shall be excluded at COD stage tariff.

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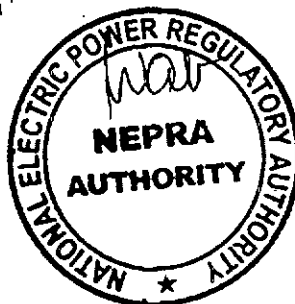
Issue No # 10 Whether the withholding tax on dividend @ 7.5% claimed by the Petitioner is justified?

91. PEDO requested that any withholding tax on dividends will be considered pass-through. The Authority in its recent decisions has disallowed withholding tax on dividends as pass-through. Therefore, the same has not been considered.

Issue No # 11 Whether hydrological risk assumed by the Petitioner to be borne by the Power Purchaser is justified?

92. PEDO in its tariff petition has stated that the hydrological risk is to be borne by the Power Purchaser.
93. CPPA-G in its comments regarding the issue submitted that the Project does not fall under any Federal Government Power Generation Policy, therefore, it is suggested that the Project may be allowed to dispatch on a Take-and-Pay basis along with the provision of a Must-Run arrangement to pass the hydrology risk to PEDO. It is evident from the experience that NEPRA has already provided the incentive to the technologies, which are newly developed or for which the resource is still in the testing phase. Whereas it is a known fact that we have been developing Hydel Power Plants for decades and still the risk of the resource is on the Power Purchaser. Now power sector dynamics have changed, therefore, resource risk (Hydrological risk) may be borne by the Project sponsor, in the case of the first seven (07) projects of wind; resource risk was borne by the Purchaser but onward risk was shifted to Seller. In Solar projects, from the beginning, the resource risk is on the Seller.
94. PEDO in response submitted that at the time of the tariff petition, it was assumed that the hydrological risk was to be borne by the Power Purchaser with a take & Pay basis similar to what was approved by the Authority for Daral Khwar Hydropower Project. However, during a public hearing for the instant Project, as per the direction of the Authority, PEDO was required to rethink the issue of hydrological risk and tariff mode and submit the final submission to the Authority for consideration. Accordingly, PEDO responded vide letter dated April 14, 2023 as under:
- "Tariff would become a sort of 'Take & Pay' basis mechanism. The generation facility would be assigned Must Run Status, thus making it compulsory to dispatch all the kWh made available by the seller to the Purchaser. However, it is also pertinent to mention that a clear Exit Clause in Energy Purchase Agreement (EPA) shall be mentioned with the mutual consent of both parties but without any specific condition therein, for smooth operation and participation in the upcoming market regime."*
95. It is highlighted that the Authority in other PEDO's HPP like Jabori, Karora, Koto and Lawi had approved the tariff on a Take & Pay basis with the hydrological risk to be borne by the Power Producer with a clause that *"In case of PEDO wants to exit and sell the energy from these HPPs to the buyer(s) other than the national grid/ CPPA-G/ DISCOs then the terms of such arrangement shall be mutually agreed between*

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parties to the EPA and reflected in the draft EPA and submitted before the approval of the Authority". Thus, the same is also approved for the instant Project of PEDO as also requested by PEDO.

Issue No # 12 Whether the provision of including the Transmission line cost in the tariff calculation at the time of the COD stage is justified?

96. PEDO submitted that the transmission line will be included in the tariff calculation at the time of the COD stage. PEDO during the hearing also reiterated that it will submit cost details & nominal tariff to NEPRA for approval regarding financing & construction of purchaser's interconnection facilities at the time of COD of the Project. According to PEDO, in case of PESCO/Power Purchaser refusal to carry out O&M services for Purchaser's Interconnection facilities, then PEDO at the time of Project COD or earlier will request the Authority for the issuance of tariff or Special Purpose Transmission License (if required) to carry out the aforesaid O&M services. Further, net delivered energy shall be adjusted for line losses subject to the figure as allowed under the NEPRA (Interconnection for Renewable Generation Facilities) Regulations, 2015.
97. CPPA-G in its comments regarding the issue submitted that the generation cost may not include the transmission cost as in future the transmission line may be handed over to the concerned DISCO or any transmission operator in the upcoming market regime. Therefore, the cost of the transmission line may not be considered in the tariff of the subject project.
98. It is important to note that in recent cases involving hydroelectric power projects (HPPs), the Authority did not allow the inclusion of transmission costs in the project cost for HPPs whose licenses are granted solely for generation purposes. A separate license is required for the transmission business, and therefore, the costs associated with transmission cannot be made part of the generation-related cost of the Project. However, the Authority approved the proposed mechanism by the Sponsor of Riali 7.08 MW and the same mechanism has been approved for a few PEDO's projects. The approved mechanism is reproduced hereunder:

"The Project Sponsors proposed that the Company will submit cost details & nominal tariff to NEPRA for approval pertaining to financing & construction of Purchaser's Interconnection facilities at the time of COD of the Project. In case of PESCO/Power Purchaser refusal to carryout O&M services for Purchaser's Interconnection facilities, then the Sponsors at the time of Project COD or earlier will request the Authority for the issuance of tariff or Special Purpose Transmission License (if required) in order to carry out the aforesaid O&M services. Further, net delivered energy shall be adjusted for line losses subject to figure as allowed under the NEPRA (Interconnection for Renewable Generation Facilities) Regulations, 2015 (amended on June 07, 2018)."

99. Thus, the Authority approves the same mechanism for the instant Project. Moreover, the Authority directs PEDO to execute a formal agreement PESCO/NTDC with a clear mechanism for treating capital expenditure and operational expenditure related to the transmission line cost for this Project.

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Claw Back Mechanism:

100. CPPA-G suggested that an effective clawback mechanism may also be introduced for excess return so that in case of any excess return over and above the regulated return (on which the tariff would be based) can be passed on to the electricity consumers in line with the practice carried out by the Authority in the case of Jabori, Koto and Lawi projects of PEDO.
101. PEDO in response submitted that the Authority did not elaborate or define the mechanism itself, the Project shall assume hydrological risk and that for instance in one year, if the water flows are not sufficient to get the full compensation in terms of return and in the very year the water flows are high enough to cope the prior year's shortfall then it is unclear how the clawback mechanism will treat this scenario. Therefore, in the instant case, there should be no clawback mechanism.
102. The Authority considered the submissions of CPPA-G and the responses of PEDO, and decided that the return allowed to the Project shall be considered the maximum ceiling and that return earned beyond the stated limit, if any, shall be adjusted, for which a clawback mechanism to be devised by the Authority at COD.

ORDER:

103. In pursuance of section 7(3)(a) of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 read with NEPRA (Tariff Standards & Procedure) Rules, 1998, the Authority hereby determines and approves the following generation tariff along with the terms and conditions for Jabori Hydropower Project of Pakhtunkhwa Energy Development Organization (the Petitioner) for delivery of electricity to Power Purchaser:

Tariff Components	Years 1-20 Rs./kWh	Years 21-30 Rs./kWh
Variable O & M	0.0449	0.0449
Fixed O&M	0.4040	0.4040
Insurance	0.3439	0.3439
Debt service (Local)	4.1599	-
Return on equity	1.4489	1.4489
Return on equity during construction	0.2665	0.2665
Total	6.6680	2.5081

- i) Levelized tariff works out to be Rs. 6250/kWh (US Cents 3.9379/kWh)
- ii) EPC cost of Rs. 14,960 million including a foreign Portion of US\$ 68 million equivalent to Rs. 9,953 million and Local Portion of Rs. 5007 million) has been approved.
- iii) Land and Resettlement of Rs. 341 million has been assumed.

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- iv) Project Establishment Cost of Rs.102 million and Managing Consultants cost of Rs. 168 million has been approved.
- v) Debt to Equity ratio of 80:20 has been approved.
- vi) Debt repayment period of 20 years has been taken into account for 100% local loan.
- vii) The KIBOR rate of 8.82% (average) as of 07 Nov 2016 to 06 Nov 2020 has been considered while calculating the cost of debt.
- viii) ROE of 16% (PKR based) has been allowed
- ix) The reference tariff has been calculated on the basis of net annual benchmark energy generation of 346.89 GWh for an installed capacity of 84 MW. An auxiliary consumption has been restricted to 0.5%.
- x) The above charges will be limited to the extent of net annual energy generation of 346.89 GWh. Net annual generation supplied during a year to the Power Purchaser in excess of benchmark energy of 346.89 GWh will be charged at 10% of the prevalent approved tariff.
- xi) O&M cost of Rs. 155.72 million per annum has been approved.
- xii) Insurance during the operation has been calculated as 0.75% of the EPC cost.
- xiii) The reference US\$/PKR rates as 132.9 average as of 07 Nov 2016 to 06 Nov 2020 and 159.09 as of contract RCOD have taken for EPC, IDC and ROED proportionate calculation on financial progress, however for calculating reference levelized tariff in US Cents, and exchange rate of 218.431 has been assumed.
- xiv) A construction period of 48 months has been approved and the same is used for the workings of ROEDC and IDC.
- xv) IDC and ROEDC have been worked out using the following drawdown schedule:

Period (Months)	Draw Down (%)
06	5
12	10
18	20
24	15
30	15
36	15
42	10
48	10

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- xvi) In the above tariff no adjustment for carbon emission reduction receipts, has been accounted for. However, upon actual realization of carbon emission reduction receipts, the same shall be distributed between the Power Purchaser and the Petitioner in accordance with the approved mechanism given in the applicable government policy.
- xvii) The above tariff is applicable for a period of thirty years commencing from the commercial operations date (COD).
- xviii) The tariff is based on Take & Pay, with must run provision, accordingly single part tariff has been allowed to the Project.
- xix) The component wise tariff is indicated at Annex-I.
- xx) Debt Servicing Schedule is attached as Annex-II.

I. One Time Adjustments

The following one-time adjustments shall be applicable to the reference tariff:

- a. The EPC cost shall be verified and adjusted at the actual considering the approved amount as the maximum limit. The applicable foreign portion of the EPC cost will be adjusted at COD on account of variation in PKR/USD parity during the construction period, on the production of authentic documentary evidence by the Petitioner to the satisfaction of the Authority. The adjustment in the applicable portion of the approved EPC cost shall be made only for the currency fluctuation against the reference parity values. The local portion of EPC contract will not be subject to exchange rate variation and the allowed PKR amount shall be actualized. The Lower of Actual or approved shall be taken into account at COD.
- b. Any liquidated damages, penalties, etc. (by whatever name called), actually recoverable by the Petitioner from the EPC contractor(s), pertaining to the construction period allowed by the Authority, will be adjusted in the Project cost at COD.
- c. Land and Resettlement costs will be allowed as per actual, as against Rs. 341 Million allowed as a max cap upon production of verifiable documentary evidence. The initial schedule of rates and variation in them shall be certified by the Provincial government and approved by NEPRA.
- d. Project Establishment Cost of R.102 million and Management consultants Cost of Rs. 168 million shall be subject to verification at COD and shall be considered in local currency. The lower of actual or approved cost under the aforementioned cost items shall be taken into consideration.

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- e. If no insurance cost has been incurred during the operation phase of the power plant or the same is part of the O&M cost, the assumed calculated tariff component shall be excluded from the tariff components at COD stage.
- f. Interest During Construction (IDC) will be adjusted at COD on the basis of actual debt composition, debt drawdown of loan (not exceeding the amount allowed by the Authority) and applicable interest rate during the actual Project construction period (not exceeding the construction period allowed by the Authority).
- g. The return on equity (including return on equity during construction) will be adjusted at COD on the basis of actual equity injections (within the overall equity allowed by the Authority at COD), during the Project construction period allowed by the Authority.
- h. The reference tariff table shall be revised at COD while taking into account the above adjustments. The Petitioner shall submit its request to the Authority within 90 days of COD for necessary adjustments in tariff at the time of COD.

II. Indexations:

The following indexation shall be applicable to the reference tariff:

i) Operation and Maintenance Costs.

The variable and fixed O&M component of the tariff shall be adjusted annually based on revised rates of local Inflation (N-CPI) as notified by the Pakistan Bureau of Statistics according to the following formula;

$O\&M_{(REV)}$	=	$O\&M_{(REF)} * N-CPI_{(REV)} / N-CPI_{(REF)}$
Where;		
$O\&M_{(REV)}$	=	The revised O&M Local Component of Tariff
$O\&M_{(REF)}$	=	The reference O&M Local Component of Tariff
$N-CPI_{(REF)}$		The reference N-CPI (General) of 194.42 for the month of October, 2022
$N-CPI_{(REV)}$	=	The revised N-CPI (General) as notified by Pakistan Bureau of Labour Statistics which shall be the average of N-CPI values of the last 12 months immediately preceding to the relevant adjustment year/period.

ii) Adjustment of insurance component

The insurance component of the reference tariff will be adjusted as per actually incurred prudent costs, subject to the maximum ceiling of 1% of the approved EPC cost, on an annual basis upon production of authentic documentary evidence by the Petitioner.

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iii) Adjustment for KIBOR variation

The interest part of debt service component will remain unchanged throughout the term except for the adjustment due to variation in 6 months KIBOR, according to the following formula:

$$\Delta I = P_{(REV)} * (KIBOR_{(REV)} - 8.81\%) / 2$$

Where:

ΔI = the variation in interest charges applicable corresponding to variation in 6 months KIBOR. ΔI can be positive or negative depending upon whether 6 months KIBOR_(REV) per annum > or < 8.81%. The interest payment obligation will be enhanced or reduced to the extent of ΔI for each half year under adjustment.

$P_{(REV)}$ = is the outstanding principal (as indicated in the attached debt service schedule to this order at Annex-II) on a bi-annual basis at the relevant calculations date.

III. **Terms and Conditions of Tariff:**

Design & Manufacturing Standards:

Hydro 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.

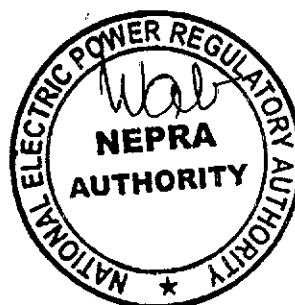
Emissions Trading/ Carbon Credits:

The Petitioner shall process and obtain emissions/carbon credits expeditiously and credit the proceeds to the Power Purchaser as per the applicable government policy and the terms and conditions agreed between the Petitioner and the Power Purchaser.

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.

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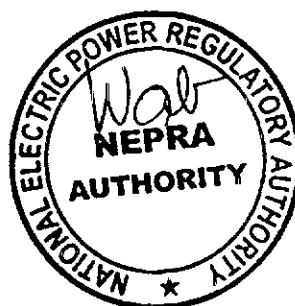




Others:

- i. The Authority has allowed/approved only those cost(s), terms term(s), condition(s), provision(s), etc. which have been specifically approved in this tariff determination. Any cost(s), term(s), condition(s), provision(s), etc. contained in the tariff petition or any other document which are not specifically allowed/approved in this tariff determination, should not be implied to be approved, if not adjudicated upon in this tariff determination.
- ii. The above tariff and terms and conditions shall be incorporated as the specified tariff approved by the Authority pursuant to Rule 6 of the National Electric Power Regulatory Authority Licensing (Generation) Rules, 2000 in the power purchase agreement between the Petitioner and the Power Purchaser. General assumptions, which are not covered in this determination, may be dealt with as per the standard terms of the EPA.
- iii. In case the company earns annual profit in excess of the approved return on equity (including ROEDC), then that extra amount shall be shared between the power producer and consumers through claw back mechanism to be decided by the Authority at COD.
- iv. Pre-COD sale of electricity is allowed to the project company, subject to the terms and conditions of EPA, at the applicable tariff only including variable O&M component. However, pre-COD sale will not alter the required commercial operations date stipulated by the EPA in any manner.
- v. In case the company is obligated to pay any tax on its income from generation of electricity, or any duties and/or taxes, not being of refundable nature, are imposed on the company, the exact amount paid by the company on these accounts shall be reimbursed on production of original receipts. This payment shall be considered as a pass-through payment. However, withholding tax on dividend shall not be a pass-through item.
- vi. Hydrological Risk shall be borne by the Power Producer.

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104. The order along with reference tariff table and debt servicing schedule as attached thereto 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

Mathar Niaz Rana (nsc)
Member

Engr. Maqsood Anwar Khan
Member

Engr. Rafique Ahmed Shaikh
Member

Amina Ahmed
Member

Waseem Mukhtar
Chairman



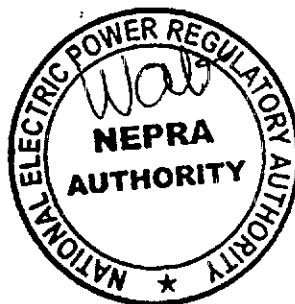


Annex-I

GORKIN MATILTAN HYDROPOWER PROJECT
REFERENCE TARIFF TABLE

Year	O&M		Insurance	ROEDC	ROE	Debt Servicing		Total PKR/kWh
	Variable	Fixed				Principal	Interest	
(PKR/kWh)								
1	0.0449	0.4040	0.3439	0.2665	1.4489	0.7584	3.4015	6.6680
2	0.0449	0.4040	0.3439	0.2665	1.4489	0.8267	3.3332	6.6680
3	0.0449	0.4040	0.3439	0.2665	1.4489	0.9011	3.2588	6.6680
4	0.0449	0.4040	0.3439	0.2665	1.4489	0.9822	3.1777	6.6680
5	0.0449	0.4040	0.3439	0.2665	1.4489	1.0706	3.0893	6.6680
6	0.0449	0.4040	0.3439	0.2665	1.4489	1.1670	2.9929	6.6680
7	0.0449	0.4040	0.3439	0.2665	1.4489	1.2720	2.8879	6.6680
8	0.0449	0.4040	0.3439	0.2665	1.4489	1.3865	2.7734	6.6680
9	0.0449	0.4040	0.3439	0.2665	1.4489	1.5113	2.6486	6.6680
10	0.0449	0.4040	0.3439	0.2665	1.4489	1.6474	2.5125	6.6680
11	0.0449	0.4040	0.3439	0.2665	1.4489	1.7957	2.3642	6.6680
12	0.0449	0.4040	0.3439	0.2665	1.4489	1.9573	2.2026	6.6680
13	0.0449	0.4040	0.3439	0.2665	1.4489	2.1335	2.0264	6.6680
14	0.0449	0.4040	0.3439	0.2665	1.4489	2.3255	1.8344	6.6680
15	0.0449	0.4040	0.3439	0.2665	1.4489	2.5348	1.6251	6.6680
16	0.0449	0.4040	0.3439	0.2665	1.4489	2.7630	1.3969	6.6680
17	0.0449	0.4040	0.3439	0.2665	1.4489	3.0117	1.1482	6.6680
18	0.0449	0.4040	0.3439	0.2665	1.4489	3.2828	0.8771	6.6680
19	0.0449	0.4040	0.3439	0.2665	1.4489	3.5783	0.5816	6.6680
20	0.0449	0.4040	0.3439	0.2665	1.4489	3.9004	0.2595	6.6680
21	0.0449	0.4040	0.3439	0.2665	1.4489			2.5081
22	0.0449	0.4040	0.3439	0.2665	1.4489			2.5081
23	0.0449	0.4040	0.3439	0.2665	1.4489			2.5081
24	0.0449	0.4040	0.3439	0.2665	1.4489			2.5081
25	0.0449	0.4040	0.3439	0.2665	1.4489			2.5081
26	0.0449	0.4040	0.3439	0.2665	1.4489			2.5081
27	0.0449	0.4040	0.3439	0.2665	1.4489			2.5081
28	0.0449	0.4040	0.3439	0.2665	1.4489			2.5081
29	0.0449	0.4040	0.3439	0.2665	1.4489			2.5081
30	0.0449	0.4040	0.3439	0.2665	1.4489			2.5081
Levelized Tariff	0.0449	0.4040	0.3439	0.2665	1.4489	1.3432	2.4136	6.2650

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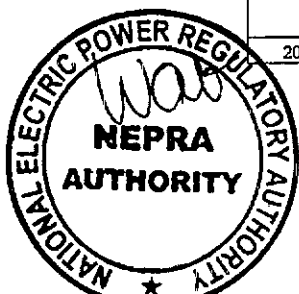
Decision of the Authority in the matter of tariff determination of
84 MW Gorkin Matiltan Hydropower Project

Annex-II

GORKIN MATILTAN HYDROPOWER PROJECT

Debt Servicing Schedule

Period	Opening Balance PKR Million	Mark-UP PKR Million	Principle Repayme nt PKR Million	Debt Service PKR Million	Closing Balance PKR Million	Annual Principal Repayment- Rs./kWh	Annual Interest Rs./kWh	Annual Debt Servicing Rs./kWh
	13,461	592.80	129	722	13,333			
	13,333	587.13	134	722	13,198			
1	13,461	1,180	263	1,443	13,198	0.7584	3.4015	4.1599
	13,198	581.21	140	722	13,058			
	13,058	575.04	146	722	12,912			
2	13,198	1,156	287	1,443	12,912	0.8267	3.3332	4.1599
	12,912	568.59	153	722	12,759			
	12,759	561.85	160	722	12,599			
3	12,912	1,130	313	1,443	12,599	0.9011	3.2588	4.1599
	12,599	554.82	167	722	12,432			
	12,432	547.48	174	722	12,258			
4	12,599	1,102	341	1,443	12,258	0.9822	3.1777	4.1599
	12,258	539.82	182	722	12,077			
	12,077	531.82	190	722	11,887			
5	12,258	1,072	371	1,443	11,887	1.0706	3.0893	4.1599
	11,887	523.46	198	722	11,689			
	11,689	514.74	207	722	11,482			
6	11,887	1,038	405	1,443	11,482	1.1670	2.9929	4.1599
	11,482	505.64	216	722	11,266			
	11,266	496.13	225	722	11,041			
7	11,482	1,002	441	1,443	11,041	1.2720	2.8879	4.1599
	11,041	486.20	235	722	10,806			
	10,806	475.84	246	722	10,560			
8	11,041	962	481	1,443	10,560	1.3865	2.7734	4.1599
	10,560	465.02	256	722	10,303			
	10,303	453.73	268	722	10,036			
9	10,560	919	524	1,443	10,036	1.5113	2.6486	4.1599
	10,036	441.94	280	722	9,756			
	9,756	429.63	292	722	9,464			
10	10,036	872	571	1,443	9,464	1.6474	2.5125	4.1599
	9,464	416.77	305	722	9,159			
	9,159	403.35	318	722	8,841			
11	9,464	820	623	1,443	8,841	1.7957	2.3642	4.1599
	8,841	389.34	332	722	8,509			
	8,509	374.71	347	722	8,162			
12	8,841	764	679	1,443	8,162	1.9573	2.2026	4.1599
	8,162	359.44	362	722	7,800			
	7,800	343.50	378	722	7,422			
13	8,162	703	740	1,443	7,422	2.1335	2.0264	4.1599
	7,422	326.85	395	722	7,028			
	7,028	309.47	412	722	6,616			
14	7,422	636	807	1,443	6,616	2.3255	1.8344	4.1599
	6,616	291.33	430	722	6,185			
	6,185	272.38	449	722	5,736			
15	6,616	564	879	1,443	5,736	2.5348	1.6251	4.1599
	5,736	252.61	469	722	5,267			
	5,267	231.96	490	722	4,778			
16	5,736	485	958	1,443	4,778	2.7630	1.3969	4.1599
	4,778	210.40	511	722	4,267			
	4,267	187.89	534	722	3,733			
17	4,778	398	1,045	1,443	3,733	3.0117	1.1482	4.1599
	3,733	164.39	557	722	3,176			
	3,176	139.86	582	722	2,594			
18	3,733	304	1,139	1,443	2,594	3.2828	0.8771	4.1599
	2,594	114.24	607	722	1,987			
	1,987	87.50	634	722	1,353			
19	2,594	202	1,241	1,443	1,353	3.5783	0.5816	4.1599
	1,353	59.58	662	722	691			
	691	30.43	691	722	-			
20	1,353	90	1,353	1,443	-	3.9004	0.2595	4.1599



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