National Electric Power Regulatory Authority
Islamic Republic of Pakistan

Registrar

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No. NEPRA/R/ADG(Trf)/TRF-555/DOH-2021/2456-2458
February 17, 2022

Subject: **Determination of the Authority in the matter of Petition for Tariff Modification filed by Punjab Power Development Company Ltd. (PPDCL) for 4.04 MW Deg-Outfall Hydropower Project at Upper Chenab Canal, Sheikhupura, Punjab** (Case No. NEPRA/TRF-555/DOH-2021)

Dear Sir,

Please find enclosed herewith the subject Determination of the Authority along with Annex-I & II (15 Pages) in Case No. NEPRA/TRF-555/DOH-2021.

2. The Determination 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 Determination 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.

3. The Order along with Annex-I (Reference Tariff Table) and Annex-II (Debt Servicing Schedule) of the Authority Determination are to be notified in the official Gazette.

Enclosure: As above

17 02 22
(Syed Safeer Hussain)

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.

DETERMINATION IN THE MATTER OF PETITION FOR TARIFF MODIFICATION FILED BY PUNJAB POWER DEVELOPMENT COMPANY (PPDCL) FOR 4.04 MW DEG-OUTFALL HYDROPOWER PROJECT AT UPPER CHENAB CANAL, SHEIKHUPURA, PUNJAB

BACKGROUND

1. Deg-Outfall Hydropower Project (hereinafter referred to as the "**Project**") is 4.04 MW hydro power project of the Punjab Power Development Company Limited (hereinafter referred to as "**PPDCL**" or the "**Petitioner**") located at upper Chenab Canal, Sheikhupura, Punjab.

2. For this purpose, the Authority issued generation license to the Project on June 30, 2015, and approved EPC stage generation tariff of Rs. 8.8640/kWh or US Cents 8.6114/kWh on May 5, 2016 (hereinafter referred to as the "**Tariff Determination**").

FILING OF TARIFF MODIFICATION PETITION

3. The Petitioner, vide letter dated March 24, 2021, filed tariff modification petition (hereinafter "**Modification Petition**") under Section 31 of NEPRA Act, 1997 read with Rule 3 of the NEPRA (Tariff Standards and Procedure) Rules, 1998 for modification of Authority's determination dated August 2, 2016.

4. The tariff modification petition was admitted by the Authority on April 13, 2021, for further processing.

HEARING

5. In order to proceed further, the Authority decided to conduct an online hearing in the matter. Accordingly, the notice of admission/hearing, along-with list of issues, were published in newspapers on May 20, 2021, and individual notices were sent to stakeholders on May 21, 2021. The list of issues framed for this hearing are as follows:

   I Whether to allow Pre-COD sale of electricity at the applicable tariff minus repayment of debt and interest components of tariff till execution of PPA?

   II Whether NEPRA (Selection of Operations and Maintenance Contractors by Generation Companies) Guidelines, 2021, shall be applicable in the instant case?

6. In response to individual notices, comments from Lahore Electric Supply Company (LESCO) and Punjab Power Development Board (PPDB) were received. PPDB vide letter dated June 04, 2021, has supported the development of this Project to harness the indigenous resource. The comments of LESCO will be discussed under the relevant sections. No intervention requests were received.

7. Hearing in the matter was held as per schedule on Tuesday, June 1, 2021, at 10:00 AM via Zoom which was participated by, among others, the Petitioner, the Petitioner's consultant and the representative of LESCO, the power purchaser identified in the Tariff Determination. The Petitioner, with the support of its consultant, presented its case for modification in tariff.

8. Subsequent to the hearing, the Petitioner vide letter dated June 8, 2021, submitted additional submissions in support of its claims.

9. During the deliberations of the aforementioned issues, additional issues regarding the case came up which were not made part of the proceedings previously. Therefore, in order to seek comments of stakeholders,

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including the Petitioner, the Authority directed to conduct a hearing on those additional issues. The list of these additional issues is as follows:

I Whether to allow tariff on Take and Pay basis instead of existing Take or Pay?

II Whether to allow debt repayment term of 30 years instead of existing 20-year term, if it decreases existing tariff?

III Whether to allow insurance during operations at a maximum of 1.35% of EPC or otherwise?

IV Whether to reduce ROE & ROEDC from 17% with USD indexation to 10% without USD indexation, similar to the Federal Government recently allowed projects including WAPDA/GENCOs etc.?

V Whether to include provision for claw back of excess return or otherwise?

10. Accordingly, another hearing in the matter was fixed for Wednesday, October 20, 2021, for which hearing notice, along-with the list of additional issues, were published in newspapers on October 14, 2021, and individual notices were sent to stakeholders on October 15, 2021. Hearing was held as per schedule. In response to the individual notices, LESCO submitted that its earlier comments filed vide letter dated June 9, 2021, may be considered before taking decision in the subject case. LESCO's comments filed vide letter dated June 9, 2021, have been discussed under the relevant sections below. During the second hearing, representatives from CPPA-G were present and their comments are addressed under the relevant issues.

ISSUES FOR THE HEARING

Whether to allow Pre-COD sale of electricity at the tariff applicable minus debt and interest components of tariff till execution of PPA?

11. According to the Petitioner, the Project is part of the Government of Punjab's Renewable Energy Development Sector Investment Program (hereinafter referred to as the "**REDSIP**") and is expected to commence operations by June 30, 2021, however, during commissioning, testing phase, and thereafter till the execution of the EPA, the Project will be able to provide electricity to the grid.

12. According to the Petitioner, it held a meeting on November 15, 2019, with the CPPA-G management in connection with the execution of the EPA and requested the CPPA-G to evacuate power from Deg-Outfall to the national grid through the concerned DISCO as has been in the case of other REDSIP projects of GoPb and GoKPK. Subsequently, according to the Petitioner, the CPPA-G's board meeting was held on March 19, 2020, wherein it was decided that CPPA-G shall request the Ministry of Energy to direct the concerned DISCO to sign EPA with the Project. Based on this, according to the Petitioner, CPPA-G, vide letter dated April 7, 2020, requested the Ministry of Energy, Power Division to do the same. According to the Petitioner, a reminder in the matter was also sent by CPPA-G to the Ministry.

13. According to PPDCL, subsequently, on November 3, 2020, CPPA-G requested LESCO, the concerned DISCO, for the execution of the EPA, however, the request of PPDCL was denied by LESCO on the basis that LESCO needed the requisite authorizations and approvals to negotiate and sign EPA.

14. Subsequently, according to PPDCL, vide letter dated February 22, 2021, it directly approached LESCO, the concerned DISCO, for execution of agreement for Pre-COD sale of electricity, however, LESCO provided no response in the matter.

15. In view of the above, according to the Petitioner, it is unable to declare COD which is scheduled to be achieved in June 2021, until the execution of the EPA. According to the Petitioner, no provision of Pre-

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COD sale of electricity has been provided in the Tariff Determination due to which during and after the completion of testing phase, the Project will not be able to dispatch electricity to the national grid. According to the Petitioner, the Authority in case of upfront tariff and cost-plus tariff for small hydel projects allowed Pre-COD sale at applicable tariff excluding principal repayment of debt component and interest component. Further, according to the Petitioner, pre-COD sale was also allowed to similar hydropower projects developed by Energy Department GoPb under REDSIP.

16. In this regard, the Petitioner particularly highlighted the case of small hydro upfront tariff wherein Authority allowed pre COD sale at applicable tariff excluding principal repayment of debt component and interest component. The Petitioner also highlighted the case of Pak-Pattan hydro power project wherein pre-COD sale was allowed by the Authority at applicable tariff minus the repayment of debt and interest components.

17. In the light of the above, the Petitioner has requested the Authority to allow Pre-COD sale of electricity in the revised order as allowed to similar projects, at the applicable tariff excluding principle repayment of debt component and interest component. Further, according to the Petitioner, the requested modification has no implication on the tariff rate already determined by the Authority.

18. LESCO, being the concerned DISCO, participated during the hearing and made their point clear that they did not intend to evacuate power from the Project. Later, in response to the notice of hearing, in the instant case, LESCO also submitted the following comments vide letter dated June 09, 2021:

> *NEPRA issued generation license to Punjab Power Development Company Limited for its 4.268 MW Deg-Outfall hydro power project located on Upper Chenab Canal, Sheikhpura vide letter dated 30-0-2015. Further, NEPRA approved the tariff in the matter of tariff petition filed by PPDCL for its Deg-Outfall HPP vide letter dated 05-05-2016.*
>
> *The levelized tariff which was determined by Authority for 30 years @ US Cents 8.6114/kWh at reference exchange rate of 1 USD = Rupees 102.98. Now at the current exchange rate of 1 USD = Rupees 155 levelized tariff in Pak Rs. 13.3476/kWh which is more than LESCO average purchase price i.e., Rs. 11.90/kWh and resultantly consumer end tariff will increase.*
>
> *In the light of guidelines/SOPs for power procurement, issued by CPPA-G vide letter dated 31-05-2016 under NEPRA Renewable Energy Guidelines 2015 LESCO issued consent enabling CPPA-G to procure power for National Pool from Deg-Outfall HPP vide letter No. 2604-09 dated 01-02-2017. LESCO did not attend/participate in any hearing in proceeding of generation license and tariff determination which shows that LESCO did not intend to purchase power directly and never given consent for purchase of power directly through PPA from PPDCL and only gave consent enabling CPPA-G to procure power for national pool.*
>
> *PPIB endorsed decision of its 125th Board Meeting held on 29-08-2019. In clause (v) of said decision, it was communicated that Energy Purchase Agreement will be signed by CPPA-G regardless of interconnection voltage i.e., 11kV or 132 kV. Back to back agreement shall be signed to formalize the power purchase, dispatch, billing, payment arrangements, etc.*
>
> *Pursuant to PPIB instructions, LESCO issued revised consent in similar nature cases, i.e., Ravi Hydro Power Project enabling CPPA-G to procure power from the project company for central pool. In response to LESCO's revised consent, CPPA-G communicated vide letter dated 28-04-2020 that CPPA-G is allocating sufficient capacity to LESCO as per demand. Neither LESCO has been asked to CPPA-G to increase its demand from the pool nor CPPA-G has declined to fulfill any additional allocation of LESCO demand from Pool. As per the above submission, CPPA-G fails to understand for which demand LESCO has issued consent.*

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PPIB convened a meeting held on 01-12-2020 to resolve the issues of small hydro power projects. MD (PPIB) asked the sponsors/ relevant entities to present issues/ bottlenecks being faced by them in obtaining required consent/approvals of DISCOs/NTDC/CPPA-G. In the meeting after detailed discussion by all stakeholders, it is concluded that a clear-cut procedure needs to be devised for issuance of consents by DISCOs and CPPA-G. In this respect a separate meeting will be held shortly and the outcome of the meeting will be shared with all stakeholders. No further meeting is held up till now. (Copy of the minutes is attached).

In view of above, LESCO cannot proceed for any consent to procure power, signing of PPA/EPA as well as Pre-COD sale agreement and any other arrangement which does not fall under legal & regulatory framework.

19. The Authority noted that sale of power before COD occurs when the plant is synchronized with the grid and the power is generated as a result of conducting certain tests such as initial capacity test, reliability run test, turbine governor operation; minimum load capability etc. These tests are generally called commissioning tests which are agreed well before COD through EPAs. In the instant case, it was noted that as per the information provided, no EPA has been agreed. However, as stated by the Petitioner, the Project is about to commence operations, therefore, the Authority has decided to allow a tariff of variable O&M and Water Use Charge, which is also consistent with the Standard PPA of hydropower projects, as Pre-COD tariff in the instant case and the same shall be incorporated in the eventual EPA with concerned Buyer.

Whether NEPRA (Selection of Operations and Maintenance Contractors by Generation Companies) Guidelines, 2021, shall be applicable in the instant case?

20. The Petitioner, vide letter dated June 08, 2021, submitted that PPDCL is a public sector entity that is fully owned by the Government of Punjab and is required to follow the Punjab Procurement Regulatory Authority (PPRA) Rules, 2014, for the selection of a contractor. Further, the Petitioner submitted that in compliance with PPRA Rules, 2014, an Expression of Interest (EOI) for O&M Services for the Projects was published on March 27, 2021, on PPRA Punjab and PPDCL's websites and in a couple of newspapers. According to the Petitioner, 3 EOIs were received in response. The Petitioner further submitted that the received EOIs were evaluated against the criteria laid down in the Prequalification Document as per PPRA Rules which is also compliant with the requirements of NEPRA O&M Guidelines, 2021. Keeping in view the PPRA Rules, the Petitioner claims that it has finalized the RFP document which is also substantially compliant with NEPRA (Selection of Operations and Maintenance by Generation Companies) Guidelines, 2021.

21. The Authority noted that NEPRA (Selection of Operation and Maintenance Contractors by Generation Companies) Guidelines, 2021, shall be applicable to all the upcoming power generation projects only and the subject project has acquired the Generation License before notification of the Guidelines. Hence, the Authority is of the view that these Guidelines shall not be applicable in the instant case, therefore, the issue stands addressed.

Whether ROE & ROEDC should be reduced to 10% with no USD indexation to keep in line with other public sector generation projects?

22. On this issue, no written comments have been received from the Petitioner, however, during the second hearing, the Petitioner submitted that it is understood that this issue is coming from the CCOE's decision with regards to public sector projects, wherein the CCOE decided to reduce the rate of returns of public sector projects in order to reduce the capacity payments. However, the Petitioner stated that in the instant case, the Petitioner has agreed to convert its tariff from take or pay to take and pay which will have no fixed capacity payments (the Petitioner submissions on the issue of take and pay is discussed under the same title

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below). According to the Petitioner, for projects that assume hydrological risk, the rate of return should be higher compared to projects for which hydrological risk is assumed by the power purchaser.

23. Further, the Petitioner stated during the second hearing that IPPs and WAPDA-owned projects are exempted from tax, however, in the instant case, since the Project is owned by a provincial government, there is no tax exemption. So, in the instant case, tax of 30% shall have to be paid on the rate of return allowed by the Authority. In addition to that, the Petitioner submitted that the canal discharges have suffered over the past few years, which will add to the reduction in return since the Petitioner has agreed on a take and pay tariff.

24. The representative of CPPA-G, during the second hearing and vide letter dated November 05, 2021, submitted that since the Petitioner has already admitted that the equity has not been injected in USD in the instant case, therefore, according to CPPA-G, the Project should not get adjustments due to variation USD/PKR parity on the ROE component. Further, according to CPPA-G, with the passage of time, risks have been mitigated in the hydropower sector, therefore, 17% IRR based return may be rationalized to bring it in line with the Authority's recent decisions of 10% return without USD indexation in the cases of WAPDA projects like Neelum Jhelum and other PEDO projects; Karora, Jabori, Koto & Lawi.

25. The Authority has considered the submissions of the Petitioner and other stakeholders on the issue and noted that the Project was allowed tariff in May 2016 where USD based 17% IRR was allowed based on the then market conditions, therefore, its comparison with recent HPPs (such as Karora, Koto, Jabori and Lawi, where returns of 13% were allowed in November 2021 from the previous 10% return), may not be prudent. However, being a provincial government funded project (Rs based equity), no more USD indexation shall be allowed. Therefore, a 17% PKR based return assuming monthly cash flows with no USD indexation is thus being allowed to the project. Accordingly, combined ROE & ROEDC components decrease from Rs. 3.4086/kWh to Rs. 3.1687/kWh.

Whether to include provision for claw back of excess return or otherwise

26. On this issue, no written comments have been received from the Petitioner, however, during the second hearing, the Petitioner submitted that in other projects, where the Authority included the claw back provision, the Authority did not elaborate or define the mechanism itself. The Petitioner further submitted that since it has been agreed that the Project shall assume hydrological risk, and that for instance in one year, if the water flows are not sufficient enough to get full compensation of in terms of return, and in the very next year, the water flows are high enough to cope prior year's shortfall, then it is unclear how the claw back mechanism will treat this scenario. Therefore, according to the Petitioner, in the instant case, there should be no claw back mechanism.

27. The representative of CPPA-G, during the second hearing, submitted that it is the right of the consumer to claw back returns from the Project if the Project earns more than the return allowed by the Authority and in this case, the representative submitted that the Project company's audited accounts may be made a basis for determining excess return. Further, CPPA-G, vide letter dated November 05, 2021, submitted that an effective claw back mechanism may also be introduced for claw back of excess return for the subject project so that any excess profit/ gain over and above the regulated returns (on which tariff would be based) can be passed on to the electricity consumers in line with the practice carried out by the Authority in the cases of Tapal Energy and Gul Ahmed Energy.

28. The Authority considered the submissions of the Petitioner and the comments of CPPA-G, and decided that the return allowed to the Project shall be considered maximum ceiling and that return earned beyond the stated limit, if any, shall be adjusted, for which a claw back mechanism shall be prescribed at the time of COD.

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Whether to allow Tariff of Take and Pay Basis?

29. On this issue, no written comments have been received from the Petitioner, however, during the second hearing, the Petitioner, submitted that its concerned DISCO, that is LESCO in the instant case, has also previously requested to get the tariff modified to Take and Pay based tariff, therefore, it is willing to accept a Take and Pay tariff instead of the existing Take or Pay based tariff. However, the Petitioner further submitted that it has reservations with regards to reduction in returns if the Project's tariff is converted to Take and Pay.

30. The CPPA-G vide letter dated November 05, 2021, submitted that the Authority in its recent tariff determinations has approved Take and Pay basis instead of Take or Pay basis; therefore, the tariff may be allowed on take and pay basis with a condition that hydrological risk must be borne by power producer. Further, while referring to the State of Industry Report 2021, the CPPA-G submitted that the Authority also engaged WAPDA to convert the tariff of some of its old plants from take or pay to take and pay basis. as it will require the power producer to be more vigilant towards their plant performance and would be in the better interest of the power sector and electricity consumers.

31. The Authority noted that it approved a single-part tariff for the Project based on net annual benchmark energy generation 27.374 GWh. For this Project, the hydrological risk was to be taken by power purchaser. In the most recent decisions for hydro power projects, particularly Karora HPP, Jabori HPP, Lawi HPP and Koto HPP, NEPRA has determined tariffs on take and pay basis wherein the hydrological risk was to be borne by the power producer with bonus energy, produced beyond their respective plant factors to be charged at 10%.

32. The Authority observed that the tariff in the instant case will not change as the benchmark energy on which the tariff is calculated will remain the same. However, the power purchaser and the end-consumers will benefit from the proposed arrangement as it will reduce the additional burden of capacity payments to be made in case of shortfall of water resource.

33. Since the Petitioner has also agreed during the hearing to change its tariff regime from the existing Take or Pay basis to Take and Pay basis, therefore, the same is being allowed meaning thereby that hydrological risk shall now be borne by the power producer and any excess generation beyond the determined annual benchmark energy shall be charged at 10% of the prevailing tariff. In case the PPDCL wants to exit and sell the energy from Deg-Outfall HPP to the buyer(s) other than the national grid/CPPA-G/DISCOs then the terms of such arrangement shall be mutually agreed between parties to the EPA and, reflected in the draft EPA and submitted before the approval of the Authority.

Whether to allow debt repayment term of 30 years instead of existing 20-year term, if it decreases existing tariff

34. On this issue, no written comments have been received from either the Petitioner or the CPPA-G, however during the second hearing the Petitioner, submitted that it has secured debt from the Asian Development Bank (ADB) under its REDSIP project with the Federal Government. According to the Petitioner, the cost of debt is LIBOR + 0.6%, which is very low and the repayment period is 20 years.

35. The Petitioner acknowledged that in levelized terms, the tariff will decrease by Rs. 0.6981/kWh in the instant case, however, in absolute terms, the consumers will end up paying more on account of interest due to extension in debt repayment period. However, the Petitioner further submitted that a 30-year debt repayment period will create a conflict with the existing arrangement with the ADB, therefore, the debt repayment period may not be changed at this stage when the Project is about to commence operations.

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36. The Authority noted in the instant case it has allowed a debt of USD 16.28 million based on a 20-year debt repayment period and with interest of 6-month LIBOR of 0.189% + spread of 0.6%. The Authority after hearing the Petitioner, is of the view that since the Petitioner's lender has not agreed with an extension in debt repayment period which is a major stakeholder in the Project, allowing the same shall deteriorate the bankability of the project and create problems for the sponsor. Therefore, the Authority has decided not to change the debt repayment period in the instant case.

Whether to allow insurance during operations at a maximum of 1.35% of EPC or otherwise

37. On this issue, no written comments have been received from the Petitioner, however during the second hearing the Petitioner, submitted that PPDCL, is 100% owned by the Government of Punjab and that the Petitioner is bound by insurance ordinance and that it has no choice but to obtain insurances from NICL. Further, the Petitioner submitted that since it has not achieved operations, it is difficult for the Petitioner to ascertain whether it shall be able to obtain insurance at a cheaper rate or not. The Petitioner further submitted that since it is a cap which has to be adjusted on as per actual basis while remaining within the cap, therefore, the same may be allowed to be continued.

38. During the hearing, the representative of CPPA-G submitted that the cap for insurance during operations may be reduced to 1.0% of EPC as prescribed in the NEPRA (Benchmark for Tariff) Guidelines, 2018. However, the CPPA-G, vide letter dated November 05, 2021, submitted that the same may be aligned with the recently issued decisions of the Authority for P&G Energy, Iran Pak, Shafi Energy, Moro Power Company which is 0.4% of the EPC cost (capped) subject to its downwards revision only based on actual.

39. The Authority noted that it had allowed insurance during operations to the Project at a maximum of 1.35% of the EPC cost. However, it was observed that Machai HPP, another public sector project of KPK Government which has approached NEPRA for its tariff modification, had agreed to insurance cost to a maximum cap of 0.8% of EPC cost. The Authority has hence decided to decrease the insurance during operations cost of the instant Project from the existing cap of 1.35% of EPC to a maximum cap of 0.8% of EPC or actual whichever is lower. Accordingly, the insurance during operations component decrease from Rs. 0.9467/kWh to be Rs. 0.5610/kWh.

<u>ORDER</u>

40. 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 Deg-Outfall Hydropower Project of the Punjab Power Development Company (the Petitioner) for delivery of electricity to Power Purchaser:

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Tariff Components	**Years 1-20 Rs./kWh**	**Years 21-30 Rs./kWh**	**Indexation**
Fixed O & M			
- Local	0.8189	0.8189	CPI - General
- Foreign	0.2047	0.2047	US$/PKR & US CPI
Insurance	0.5610	0.5610	US$/PKR
Debt service	3.3151	-	JPY/PKR & LIBOR
Return on equity	2.4189	2.4189	NIL
Return on equity during construction	0.7498	0.7498	NIL
Variable O & M - Local	0.3412	0.3412	CPI - General
Water Use Charge	0.1500	0.1500	CPI - General
Total	**8.5596**	**5.2445**	

i) The reference tariff has been calculated on the basis of net annual benchmark energy generation of 27.374 GWh for installed capacity of 4.04 MW.

ii) The above charges will be limited to the extent of net annual energy generation of 27.374 GWh. Net annual generation supplied during a year to the Power Purchaser in excess of benchmark energy of 27.374 GWh, will be charged at 10% of the prevalent approved tariff.

iii) The tariff is based on Take & Pay basis accordingly, a single part tariff has been allowed to the Project.

iv) 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.

v) The reference US$/PKR rate has been taken as 102.9331.

vi) The above tariff is applicable for a period of thirty years commencing from the commercial operations date (COD).

vii) Annual ROE & ROEDC components at 17% (XIRR) assuming monthly payments has been approved. These components shall not be indexed with PKR to USD exchange rate.

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

ix) Debt Servicing Schedule is attached as Annex-II.

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I. One Time Adjustments

The following onetime adjustments shall be applicable to the reference tariff:

a. The specific items of project cost to be paid in foreign currency (i.e. US$ or JPY) will be adjusted at COD on account of actual variation in exchange rate over the reference US$/PKR exchange rate of Rs. 102.9331 and reference JPY/PKR exchange rate of 0.9033 on production of verifiable documentary evidence by the Petitioner. For all project costs payable in PKR, the amounts allowed in US$ will be converted into PKR using the reference US$/PKR exchange rate of Rs.102.9331.

b. Duties and/or taxes, not being of refundable nature, imposed on the Petitioner up to the commencement of its commercial operations will be subject to adjustment at actual on COD, as against US $ 0.275 Million allowed now, upon production of verifiable documentary evidence to the satisfaction of the Authority.

c. Adjustment of the interconnection cost to be borne by the Petitioner, if any, will be allowed at COD upon submission of a detailed plan duly endorsed by the Power Purchaser and authentic verifiable documents, to the satisfaction of the Authority.

d. Land and Resettlement costs will be allowed as per actual, as against Rs. 63.105 Million (US$ 0.613 Million) allowed now, 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.

e. Financial charges will be adjusted at COD on the basis of actual expense, up to a maximum ceiling of 3% of the total debt allowed (excluding the impact of interest during construction and financial charges), on production of authentic documentary evidence.

f. The interest during construction will be adjusted at COD on the basis of actual debt draw downs (within the overall debt allowed by the Authority at COD), actual JPY/PKR exchange rate variation for foreign loan denominated in Japanese Yen and actual interest rates not exceeding the limit of 6 months LIBOR plus 0.60%, during the project 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. 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.

i. 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.

II. Pass-Through Items

If any tax, non-refundable in nature, is imposed on the Petitioner, the exact amount paid by the Petitioner shall be reimbursed by the power purchaser to the Petitioner on production of original receipts. This payment will be considered as a pass-through payment spread over a 12 months period. Furthermore, in such a scenario, the Petitioner shall also submit to the power purchaser details of any tax shield savings and the power purchaser shall deduct the amount of these savings from its payment to the Petitioner on account of taxation. However, withholding tax on dividends shall not be a pass through item.

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III. Hydrological Risk

Hydrological Risk shall be borne by the Power Producer.

IV. Indexations:

The following indexation shall be applicable to the reference tariff:

i) Indexation applicable to O&M

The local part of O&M cost will be adjusted on account of local inflation and O&M foreign component will be adjusted on account of variation in dollar/rupee exchange rate and US CPI. Quarterly adjustments for inflation and exchange rate variation will be made on 1st July, 1st October, 1st January and 1st April respectively on the basis of latest available information with respect to CPI - General (notified by the Pakistan Bureau of Statistics), US CPI (notified by US Bureau of Labor Statistics) and revised TT & OD selling rate of US Dollar as notified by the National Bank of Pakistan. The mode of indexations will be as follows:

$$F\ O\&M_{(LREV)} = F\ O\&M_{(LREF)} * CPI_{(REV)} / CPI_{(REF)}$$

$$F\ O\&M_{(FREV)} = F\ O\&M_{(FREF)} * US\ CPI_{(REV)} / US\ CPI_{(REF)} * ER_{(REV)} / ER_{(REF)}$$

$$V\ O\&M_{(LREV)} = V\ O\&M_{(LREF)} * CPI_{(REV)} / CPI_{(REF)}$$

Where;

$F\ O\&M_{(LREV)}$	=	The revised applicable fixed O&M local component of tariff
$F\ O\&M_{(FREV)}$	=	The revised applicable fixed O&M foreign component of tariff
$V\ O\&M_{(LREV)}$	=	The revised applicable variable O&M local component of tariff
$FO\&M_{(LREF)}$	=	The reference fixed O&M local component of tariff for the relevant period
$FO\&M_{(FREF)}$	=	The reference fixed O&M foreign component of tariff for the relevant period
$VO\&M_{(LREF)}$	=	The reference variable O&M local component of tariff for the relevant period
$CPI_{(REV)}$	=	The revised Consumer Price Index (General) as notified by the Pakistan Bureau of Statistics
$CPI_{(REF)}$	=	198.80 Consumer Price Index (General) of November 2014 notified by the Pakistan Bureau of Statistics
$US\ CPI_{(REV)}$	=	The revised US CPI (all urban consumers)

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US CPI $_{(REF)}$	=	236.151 US CPI (all urban consumers) for the month of November 2014 as notified by the US Bureau of Labor Statistics
ER $_{(REV)}$	=	The revised TT & OD selling rate of US dollar as notified by the National Bank of Pakistan
ER $_{(REF)}$	=	The reference TT & OD selling rate of US dollar as notified by the National Bank of Pakistan - Current reference 102.9331

ii) <u>Water Use Charges</u>

Water Use Charges will be paid on units delivered basis and will be indexed with Consumer Price Index (CPI) annually. The indexed component of water use charges shall not exceed the actual expense. The first such adjustment shall be due after one year of COD, according to the following formula:

$$WUC_{(REV)} = Rs.\ 0.1500 * CPI_{(REV)} / CPI_{(REF)}$$

Where;

WUC $_{(REV)}$	=	The revised Water Use Charge component indexed with Consumer Price Index (CPI)
CPI $_{(REV)}$	=	The revised Consumer Price Index (General) as notified by the Pakistan Bureau of Statistics
CPI $_{(REF)}$	=	Reference Consumer Price Index (General) of the latest available month preceding the date of COD as notified by the Pakistan Bureau of Statistics

iii) <u>Adjustment of insurance component</u>

In case of insurance denominated in US $, insurance cost component of tariff will be adjusted on account of US$/PKR exchange rate variation on actual basis. Further, insurance component of the reference tariff will be adjusted as per actually incurred prudent costs, subject to the maximum ceiling of 0.8% of the approved EPC cost, on annual basis upon production of authentic documentary evidence by the Petitioner. If no insurance cost has been incurred during the operation phase of the power plant or the same is the part of the O&M cost, the assumed calculated tariff component shall be excluded from the tariff components at the COD stage.

iv) <u>Adjustment for LIBOR variation</u>

The interest part of debt service component will remain unchanged throughout the term except for the adjustment due to variation in 6 months Yen LIBOR, while spread of 0.60% on 6 months Yen LIBOR remaining the same, according to the following formula:

$$\Delta I = P_{(REV)} * (LIBOR_{(REV)} - 0.189\%) / 2$$

Where:

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Δ I	=	the variation in interest charges applicable corresponding to variation in 6 months Yen LIBOR. Δ I can be positive or negative depending upon whether 6 months Yen LIBOR $_{(Rev)}$ per annum > or < 0.189%. The interest payment obligation will be enhanced or reduced to the extent of Δ I 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.

Note:

Adjustments on account of inflation, foreign exchange rate variation, LIBOR variation and actual insurance will be approved and announced by the Authority within fifteen working days after receipt of the Petitioner's request for adjustment in tariff in accordance with the requisite indexation mechanism stipulated herein.

V. 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.

Others:

i. The Authority has allowed/approved only those cost(s), 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.

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iii. In case the PPDCL wants to exit and sell the energy from Deg-Outfall HPP to the buyer(s) other than the national grid/CPPA-G/DISCOs then the terms of such arrangement shall be mutually agreed between parties to the EPA and, reflected in the draft EPA and submitted before the approval of the Authority.

iv. 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 a clawback mechanism to be decided by the Authority at the time of COD tariff adjustment.

v. 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 and WUC component. However, pre-COD sales will not alter the required commercial operations date stipulated by the EPA in any manner.

vi. The order along with reference tariff table and debt service 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

(Engr. Maqsood Anwar Khan)
Member

(Engr. Rafique Ahmed Shaikh)
Member

(Rehmatullah Baloch)
Member

(Tauseef H. Farooqi)
Chairman

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Annex-I

PUNJAB POWER DEVELOPMENT COMPANY LIMITED (PPDCL)
DEG OUTFALL HYDROPOWER PROJECT
REFERENCE TARIFF

Year	Energy Purchase Price		Capacity Purchase Price							
	Variable O&M Local	Water Use Charge	Fixed O&M Local	Fixed O&M Foreign	Insurance	Return on Equity (ROE)	ROE During Construction (ROEDC)	Loan Repayment	Interest Charges	Total Tariff
	Rs./kWh	Rs./kWh	Rs./kWh	Rs./kWh	Rs./kWh	Rs./kWh	Rs./kWh	Rs./kWh	Rs./kWh	Rs./kWh
1	0.3412	0.1500	0.8189	0.2047	0.5610	2.4189	0.7498	2.8376	0.4775	8.5596
2	0.3412	0.1500	0.8189	0.2047	0.5610	2.4189	0.7498	2.8600	0.4550	8.5596
3	0.3412	0.1500	0.8189	0.2047	0.5610	2.4189	0.7498	2.8826	0.4324	8.5596
4	0.3412	0.1500	0.8189	0.2047	0.5610	2.4189	0.7498	2.9054	0.4096	8.5596
5	0.3412	0.1500	0.8189	0.2047	0.5610	2.4189	0.7498	2.9284	0.3867	8.5596
6	0.3412	0.1500	0.8189	0.2047	0.5610	2.4189	0.7498	2.9515	0.3635	8.5596
7	0.3412	0.1500	0.8189	0.2047	0.5610	2.4189	0.7498	2.9749	0.3402	8.5596
8	0.3412	0.1500	0.8189	0.2047	0.5610	2.4189	0.7498	2.9984	0.3167	8.5596
9	0.3412	0.1500	0.8189	0.2047	0.5610	2.4189	0.7498	3.0221	0.2930	8.5596
10	0.3412	0.1500	0.8189	0.2047	0.5610	2.4189	0.7498	3.0460	0.2691	8.5596
11	0.3412	0.1500	0.8189	0.2047	0.5610	2.4189	0.7498	3.0701	0.2450	8.5596
12	0.3412	0.1500	0.8189	0.2047	0.5610	2.4189	0.7498	3.0943	0.2207	8.5596
13	0.3412	0.1500	0.8189	0.2047	0.5610	2.4189	0.7498	3.1188	0.1963	8.5596
14	0.3412	0.1500	0.8189	0.2047	0.5610	2.4189	0.7498	3.1435	0.1716	8.5596
15	0.3412	0.1500	0.8189	0.2047	0.5610	2.4189	0.7498	3.1683	0.1467	8.5596
16	0.3412	0.1500	0.8189	0.2047	0.5610	2.4189	0.7498	3.1934	0.1217	8.5596
17	0.3412	0.1500	0.8189	0.2047	0.5610	2.4189	0.7498	3.2186	0.0965	8.5596
18	0.3412	0.1500	0.8189	0.2047	0.5610	2.4189	0.7498	3.2441	0.0710	8.5596
19	0.3412	0.1500	0.8189	0.2047	0.5610	2.4189	0.7498	3.2697	0.0454	8.5596
20	0.3412	0.1500	0.8189	0.2047	0.5610	2.4189	0.7498	3.2955	0.0195	8.5596
21	0.3412	0.1500	0.8189	0.2047	0.5610	2.4189	0.7498	-	-	5.2445
22	0.3412	0.1500	0.8189	0.2047	0.5610	2.4189	0.7498	-		5.2445
23	0.3412	0.1500	0.8189	0.2047	0.5610	2.4189	0.7498			5.2445
24	0.3412	0.1500	0.8189	0.2047	0.5610	2.4189	0.7498		-	5.2445
25	0.3412	0.1500	0.8189	0.2047	0.5610	2.4189	0.7498		-	5.2445
26	0.3412	0.1500	0.8189	0.2047	0.5610	2.4189	0.7498		-	5.2445
27	0.3412	0.1500	0.8189	0.2047	0.5610	2.4189	0.7498			5.2445
28	0.3412	0.1500	0.8189	0.2047	0.5610	2.4189	0.7498		-	5.2445
29	0.3412	0.1500	0.8189	0.2047	0.5610	2.4189	0.7498		-	5.2445
30	0.3412	0.1500	0.8189	0.2047	0.5610	2.4189	0.7498	-		5.2445
Levelized Tariff	**0.3412**	**0.1500**	**0.8189**	**0.2047**	**0.5610**	**2.4189**	**0.7498**	**2.6998**	**0.2941**	**8.2384**

Levelized Tariff (1-30 years) discounted at 10% per annum = US Cents 8.0036/kWh at reference exchange rate of 1 US$ =Rupees 102.93.

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Annex-II

DEG OUTFALL HYDROPOWER PROJECT
Debt Servicing Schedule

	Foreign Debt							
Period	Principal Million $	Repayment Million $	Mark-Up Million $	Balance Million $	Debt Service Millin $	Annual Principal Repayment Rs./kW/Month	Annual Interest Rs./kW/Month	Annual Debt Servicing Rs./kW/Month
	16.28	0.38	0.06	15.90	0.4408			
	15.90	0.38	0.06	15.53	0.4408			
1	16.28	0.75	0.13	15.53	0.8816	1,618.3899	272.3170	1,890.7068
	15.53	0.38	0.06	15.15	0.4408			
	15.15	0.38	0.06	14.77	0.4408			
2	15.53	0.76	0.12	14.77	0.8816	1,631.1842	259.5227	1,890.7068
	14.77	0.38	0.06	14.38	0.4408			
	14.38	0.38	0.06	14.00	0.4408			
3	14.77	0.77	0.11	14.00	0.8816	1,644.0796	246.6273	1,890.7068
	14.00	0.39	0.06	13.61	0.4408			
	13.61	0.39	0.05	13.23	0.4408			
4	14.00	0.77	0.11	13.23	0.8816	1,657.0770	233.6299	1,890.7068
	13.23	0.39	0.05	12.84	0.4408			
	12.84	0.39	0.05	12.45	0.4408			
5	13.23	0.78	0.10	12.45	0.8816	1,670.1771	220.5298	1,890.7068
	12.45	0.39	0.05	12.06	0.4408			
	12.06	0.39	0.05	11.66	0.4408			
6	12.45	0.78	0.10	11.66	0.8816	1,683.3808	207.3261	1,890.7068
	11.66	0.39	0.05	11.27	0.4408			
	11.27	0.40	0.04	10.87	0.4408			
7	11.66	0.79	0.09	10.87	0.8816	1,696.6889	194.0180	1,890.7068
	10.87	0.40	0.04	10.47	0.4408			
	10.47	0.40	0.04	10.07	0.4408			
8	10.87	0.80	0.08	10.07	0.8816	1,710.1021	180.6047	1,890.7068
	10.07	0.40	0.04	9.67	0.4408			
	9.67	0.40	0.04	9.27	0.4408			
9	10.07	0.80	0.08	9.27	0.8816	1,723.6215	167.0854	1,890.7068
	9.27	0.40	0.04	8.87	0.4408			
	8.87	0.41	0.03	8.46	0.4408			
10	9.27	0.81	0.07	8.46	0.8816	1,737.2477	153.4592	1,890.7068
	8.46	0.41	0.03	8.05	0.4408			
	8.05	0.41	0.03	7.64	0.4408			
11	8.46	0.82	0.07	7.64	0.8816	1,750.9816	139.7253	1,890.7068
	7.64	0.41	0.03	7.23	0.4408			
	7.23	0.41	0.03	6.82	0.4408			
12	7.64	0.82	0.06	6.82	0.8816	1,764.8241	125.8828	1,890.7068
	6.82	0.41	0.03	6.41	0.4408			
	6.41	0.42	0.03	5.99	0.4408			
13	6.82	0.83	0.05	5.99	0.8816	1,778.7760	111.9308	1,890.7068
	5.99	0.42	0.02	5.58	0.4408			
	5.58	0.42	0.02	5.16	0.4408			
14	5.99	0.84	0.05	5.16	0.8816	1,792.8382	97.8686	1,890.7068
	5.16	0.42	0.02	4.74	0.4408			
	4.74	0.42	0.02	4.31	0.4408			
15	5.16	0.84	0.04	4.31	0.8816	1,807.0116	83.6952	1,890.7068
	4.31	0.42	0.02	3.89	0.4408			
	3.89	0.43	0.02	3.46	0.4408			
16	4.31	0.85	0.03	3.46	0.8816	1,821.2971	69.4098	1,890.7068
	3.46	0.43	0.01	3.04	0.4408			
	3.04	0.43	0.01	2.61	0.4408			
17	3.46	0.86	0.03	2.61	0.8816	1,835.6954	55.0114	1,890.7068
	2.61	0.43	0.01	2.18	0.4408			
	2.18	0.43	0.01	1.75	0.4408			
18	2.61	0.86	0.02	1.75	0.8816	1,850.2076	40.4992	1,890.7068
	1.75	0.43	0.01	1.31	0.4408			
	1.31	0.44	0.01	0.88	0.4408			
19	1.75	0.87	0.01	0.88	0.8816	1,864.8346	25.8723	1,890.7068
	0.88	0.44	0.00	0.44	0.4408			
	0.44	0.44	0.00	-	0.4408			
20	0.88	0.88	0.01	-	0.8816	1,879.5771	11.1297	1,890.7068

1 USD = 103.11 JPY

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