*TO BE PUBLISHED IN THE GAZETTE OF PAKISTAN*
*EXTRA ORDINARY PART-I*

# National Electric Power Regulatory Authority

**NOTIFICATION**

Islamabad, the 31st day of Oct, 2022

**S.R.O. 1993 (1)/2022.**- In pursuance of Sub-Section 7 of Section 31 of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (XL of 1997), NEPRA hereby notifies the *Determination of National Electric Power Regulatory Authority in the matter of Tariff Petition filed by M/s. Access Electric (Pvt.) Limited for Determination of Reference Generation Tariff in respect of 10 MWp Solar PV Power Project* in Case # NEPRA/TRF-517/AEPL-2019.

2. While effecting the Decision, the concerned entities including Central Power Purchasing Agency Guarantee Limited (CPPAGL) shall keep in view and strictly comply with the orders of the courts notwithstanding this Decision.

31 X 22

**(Syed Safeer Hussain)**
Registrar

**DETERMINATION OF NATIONAL ELECTRIC POWER REGULATORY AUTHORITY IN THE MATTER OF TARIFF PETITION FILED BY M/S ACCESS ELECTRIC (PVT.) LIMITED FOR DETERMINATION OF REFERENCE GENERATION TARIFF IN RESPECT OF 10 MWp SOLAR PV POWER PROJECT**

1. M/s Access Electric (Pvt.) Limited ("AEPL" or "the petitioner" or "the company") filed a tariff petition ("the Petition") before the National Electric Power Regulatory Authority ("NEPRA" or "the Authority") on January 11, 2022 for determination of generation tariff in respect of its 10 MWp solar PV power project ("the Project") to be set up at Pind Daden Khan, Jhelum, Punjab. Later, AEPL on June 21, 2022 requested to read the amount of insurance during construction as USD 0.0272 million, instead of USD 0.272 million as earlier submitted in the Petition.

2. The Petition was filed by AEPL under the Regulation for Generation, Transmission and Distribution of Electric Power Act, 1997 ("the NEPRA Act") and NEPRA (Tariff Standards & Procedure) Rules, 1998 ("Tariff Rules"). The petitioner requested for the approval of levelized tariff of US Cents 4.9889/kWh (Rs. 8.8802/kWh) over the tariff control period of 25 years.

3. AEPL submitted that it is a company incorporated under the laws of Pakistan to set up the Project. During the proceedings, AEPL submitted a copy of its incorporation certificate issued by Securities and Exchange Commission of Pakistan ("SECP") dated October 7, 2011.

4. The company informed that it was issued Letter of Intent ("LOI") by Alternative Energy Development Board ("AEDB") on February 13, 2014 in favour of the sponsors of AEPL i.e. TechAccess FZ LLC, Dubai for the establishment of the Project. The said LOI was issued in accordance with the Government of Pakistan's Policy for Development of Renewable Energy for Power Generation, 2006 ("RE Policy, 2006").

5. AEPL stated that post award of upfront tariff by NEPRA on March 28, 2014, the company received the Letter of Support ("LOS") from Alternative Energy Development Board ("AEDB") on December 22, 2014. Recently, AEDB vide its letter No. B/3/2/SPV/AEPL/14 dated June 30, 2022, copied to NEPRA, has granted an extension in the validity period of aforementioned LOS, up to December 27, 2022.

6. Stating the history of the case, AEPL submitted that the Authority approved 1st upfront tariff for AEPL on March 28, 2014 and 2nd upfront tariff on December 30, 2015, but the same were not notified by the Federal Government and resultantly those tariffs lapsed. Due to non-issuance of notifications in respect of the aforesaid tariffs, the company approached the honourable Islamabad High Court ("IHC") against, inter alia, the Federal Government. Following the decision of IHC in that matter, the 3rd tariff for AEPL was approved by NEPRA on January 30, 2018, which was later reviewed on October 11, 2018. However, that tariff also expired due to delay in the notification by the Federal Government.

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7. According to the petitioner, the failure of the Federal Government to delay the notification of 3rd tariff was originated from the Cabinet Committee on Energy's ("CCOE") decisions of December 17, 2017 and February, 2018, which halted progress on all renewable energy power projects. Later, the above decision of CCOE was revised pursuant to an amendment therein issued on April 4, 2019, whereby the renewable energy projects that had already been issued LOS were allowed to proceed towards the achievement of their requisite milestone as per the RE Policy, 2006.

8. AEPL submitted that in light of the above amended CCOE decision, it filed a cost plus tariff petition before NEPRA on March 24, 2020, against which 4th tariff was determined by the Authority on December 30, 2020. The said tariff was modified on July 19, 2021 to allow Prior Period Development Cost ("PPDC") in the tariff of the company before Financial Close ("FC"). Under the said tariff, the company was required to achieve FC by December 30, 2021. According to AEPL, it could not achieve the said milestone due to the delays caused by Islamabad Electric Supply Company ("IESCO") by withholding approvals of Grid Interconnection Studies ("GIS"). AEPL submitted that the said action of IESCO was in clear disregard to CCOE's decision dated April.4, 2019, NEPRA's directive as well as repeated reminders by other stakeholders such as Central Power Purchasing Agency Guarantee Limited ("CPPAGL") and AEDB. To support its position, the company referred about 75 Nos. communications in the Petition made to IESCO by different stakeholders for the approval of GIS. AEPL submitted that due to above reason, it is once again filing the subject petition for determination of generation tariff for the Project.

9. The petitioner submitted that the delay in the Project has not only derailed the process of achieving various milestones, but has also adversely affected several cost parameters, especially the cost of modules and transportation. The petitioner explained that due to recent global energy crises and raw material shortage as well as increased demand of solar panels, the prices for such equipment have increased substantially. Additionally, AEPL highlighted that the transportation cost has increased exponentially due to a more than threefold increase in the per container cost between China and Pakistan as well as elsewhere in the world. Given the above, AEPL submitted that the EPC contractor has expressed its inability to meet the EPC price stipulated in the previous determination, and requested that the price may be revisited by the Authority in light of recent price trends.

10. The summary of the key information as provided in the Petition is as follows:

| | | |
|---|---|---|
| Project Company | : | Access Electric (Pvt.) Ltd |
| Main Sponsor | : | TechAccess FZ LLC, Dubai |
| Capacity | : | 10 MWp |
| Project Location | : | Pind Dadan Khan, District Jhelum, Punjab |
| Land Area | : | 46 Acres |

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| | | | |
|---|---|---|---|
| Concession Period | : | 25 years from COD | |
| Purchaser | : | Central Power Purchasing Agency (Guarantee) Ltd. | |
| PV Modules | : | 540 Wp mono bi-facial modules | |
| Tracking | : | Single Axis | |
| Construction period | : | 8 months | |
| Annual Energy Production | : | 18.046 GWh | |
| Plant Capacity Factor | : | 20.60% | |
| **Project Cost** | | **USD in millions** | |
| EPC Cost | : | 6.800 | |
| Land and PDC | : | 0.365 | |
| Insurance during Construction | : | 0.027 | |
| Financing Fee & Charges | : | 0.118 | |
| Interest during Construction | : | 0.088 | |
| **Total Project Cost** | : | **7.398** | |
| Financing Structure | : | Debt: 80% : Equity: 20% | |
| Debt Composition | : | 100% Local loan (State Bank of Pakistan Scheme) | |
| Interest Rate | : | 6% | |
| Repayment Period | : | 10 years | |
| Return on Equity | : | 13% IRR based | |
| Annual O&M Cost | : | USD 11,500 per MW | |
| Annual Insurance Cost | : | 0.4% of EPC cost | |
| **Tariff** | | **PKR/kWh** | **US Cents/kWh** |
| **Levelized** | : | **8.8802** | **4.9889** |
| Exchange rate | : | 1 USD = PKR 178 | |

11. The Authority admitted the Petition and decided to hold a hearing in the matter. Notice of Admission & Hearing was published in the daily national newspapers on April 9, 2022 stating the hearing date as April 20, 2022 at 11:00 A.M, along with the salient features of the Petition, issues framed for hearing and invitation to file comments/intervention request from the interested parties. Individual Notices of hearing were also sent to the stakeholders, considered relevant by

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NEPRA in the matter, and the petitioner on April 13, 2022 for participation in the hearing. The Petition and Notice of Admission & Hearing were also hosted on NEPRA's website for information of general public.

12. Following are the issues which were framed by the Authority for the hearing:

- Being in category-I of the decision of Cabinet Committee on Energy, Access Electric was given tariff under cost plus regime on December 30, 2020, which had lapsed on December 20, 2021. Whether the above categorization of Access Electric merits the determination of its tariff under cost plus regime again or otherwise?
- Whether the claimed tariff, which is higher than the tariff approved earlier through determination dated December 30, 2020, is justified viewing that the previous tariff lapsed due to non-achievement of milestones by the petitioner?
- Whether the NEPRA (Selection of EPC Contractor by IPPs) Guidelines, 2017 have been fully complied with?
- Whether the claimed Non-EPC cost is justified?
- Whether the claim of Prior Period Development Cost is justified?
- Whether the claimed annual energy generation and corresponding plant capacity factor are reasonable and justified?
- Whether the petitioner's proposed solar modules technology satisfies the international standards of quality and operation?
- Whether the project grid interconnection study has been approved by the relevant organization(s)?
- Whether the claimed O&M costs are justified? Whether the adjustment of O&M component of tariff be made on quarterly or on annual basis?
- Whether the NEPRA (Selection of O&M Contractor) Guideline, 2021 have been fully complied with?
- Whether the claimed insurance during operation cost is justified?
- Whether the claimed return on equity is justified? Whether the adjustment of Return on Equity component of tariff be made on quarterly or on annual basis?
- Whether the claimed financing/debt terms are justified?
- Whether the claimed construction period is justified?
- Whether any compensation be allowed for pre-COD sale of energy?

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- What should be the treatment of income tax in light of the amendments made through Finance Bill, 2021?
- Any other issue with the approval of the Authority.

13. In response to Notice of Admission/Hearing, CPPAGL vide its letter dated April 18, 2022 submitted that the tariff determination of AEPL was revised by NEPRA in December, 2020, having the validity of one year. The sponsor could not achieve the pre-requisite for the project development and the tariff once again expired on December 29, 2021. CPPAGL proposed to treat the project under the competitive bidding process under the ARE Policy, 2019. However, CPPAGL also submitted that in case of any legal compulsion, the Authority considers determining tariff afresh then the same may be aligned with the determined tariffs of M/s. Safe Solar (Pvt.) Ltd. and Zhenfa Energy, which is in vicinity of US Cents 3.7/kWh, in levelized terms.

14. The hearing was held on April 20, 2022 (Wednesday) which was attended by a number of participants including the petitioner, representatives of CPPAGL, IESCO, Punjab Power Development Board ("PPDB") and other stakeholders.

15. The issue wise submissions of the petitioner and commentators followed by the Authority's analysis, findings and decision thereon are as under.

**Being in category-I of the decision of Cabinet Committee on Energy, Access Electric was given tariff under cost plus regime on December 30, 2020, which had lapsed on December 20, 2021. Whether the above categorization of Access Electric merits the determination of its tariff under cost plus regime again or otherwise?**

16. The Project is placed in the list of Category I (LOS Stage) of CCOE's decision dated April 04, 2019. The decision of CCOE states the following in this regard:

*"All those projects which have been granted LOS by AEDB will be permitted to proceed towards the achievement of their requisite milestones as per RE Policy 2006. However, if more than one year has elapsed since determination of tariff by NEPRA, the said tariffs would be reviewed by NEPRA to bring them in line with the prevailing market conditions and rationalization of cost keeping in view the consumer interest as well as subsequent determinations on the same technologies given by NEPRA. Such review shall include appropriate time extension to reach financial closing."*

And

"Projects that are going back for review of tariff, will be asked to submit their applications on the basis of latest technology and technology related factors"

17. In accordance with the above mentioned CCOE decision, the tariff for AEPL was determined by the Authority on December 30, 2020 which has lapsed on December 29, 2021. The instant matter is the 2nd tariff petition which has been filed by AEPL, post issuance of aforesaid CCOE decision.

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This issue was framed to discuss that whether the CCOE decision allows tariff determination of any project under cost plus regime 2nd time also or it should participate in the competitive bidding as envisaged for the projects falling under category-III of the above CCOE decision.

18. The petitioner submitted that tariff earlier determined by the Authority under cost plus regime had lapsed, due to inordinate delays caused by IESCO which were beyond the control of the company. According to AEPL, IESCO was not providing the requisite consents and documentation to CPPAGL, as a result of which the CPPAGL was unable to finalize the Energy Purchase Agreement ("EPA") with the company. As stated above, CPPAGL though has proposed to treat the project preferably under the competitive bidding process.

19. The Authority deliberated upon the decision of the CCOE dated April 4, 2019 as well the submissions of the CPPAGL in this regard. The Authority has also considered the communications made by AEPL and other stakeholders with IESCO for the provision of requisite approvals to the Project. Most importantly, it was noted that NEPRA also directed the IESCO for the issuance of requisite approvals, however, the same were not provided on timely basis. Looking at these details, it is considered that the failure for the non-achievement of FC cannot be attributed to the AEPL, as it was IESCO which did not timely provide the approvals that were required to achieve that milestone. Therefore, the Authority is of the view that it would not be justified to not determine tariff for AEPL in the instant matter. Nevertheless, the Authority has noted that determination of tariff for the projects falling in category-I of the CCOE decision cannot be made for unlimited number of times under Tariff Rules. The Authority has decided that the instant case is to be the final tariff being determined for AEPL under the cost plus regime. In case the AEPL would not be able to achieve the FC milestone given in instant tariff determination, it shall then have to participate in the competitive bidding for the approval of tariff from NEPRA.

20. With respect to latest technology, the Authority has noted that the Petition has been filed on the technology as approved by the Authority through Licensee Proposed Modification ("LPM") decision issued on August 03, 2022 - based on bifacial modules as against mono facial modules as earlier approved by the Authority. The capacity factor of 20.60% has been claimed in the Petition as against ~20.36% approved in the earlier tariff determination. The Authority is of the view that the above information satisfies the condition of latest technology given in the above CCOE decision.

**Whether the claimed tariff, which is higher than the tariff approved earlier through determination dated December 30, 2020, is justified viewing that the previous tariff lapsed due to non-achievement of milestones by the petitioner?**

21. In the last tariff determination, the levelized tariff of US Cents 4.1564/kWh was determined by the Authority for AEPL, which was later reviewed to US Cents 4.2820/kWh vide decision issued on

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December 29, 2021. In the Petition, the levelized tariff of US cents 4.9889/kWh has been claimed by AEPL.

22. In this regard, the petitioner submitted that it has filed the subject tariff petition as it could not achieve FC – under the previous tariff - owing to delays caused by IESCO. The petitioner submitted that since it is classified as a Category-I project under the CCOE's decision, endorsed through ARE Policy, 2019, hence, the project company has approached NEPRA for the determination of a new tariff. The increase in the claimed tariff, compared to previous tariff, has been associated by AEPL with the increase in global energy prices and transportation cost.

23. During the hearing, the representatives of IESCO argued that the delay in the approval of GIS was not on its part. Nevertheless, as stated above, the Authority is of the considered view that the non-achievement of FC, on timely basis, cannot be attributed to AEPL. The Authority has also noted that the prices of solar equipment, required materials and cost of transportation have increased substantially since the time the previous tariff of AEPL was determined. In the instant determination, the Authority has assessed the technical and financial parameters keeping in view the prevailing costs, based on the technology as approved in the LPM decision of AEPL, issued by NEPRA on August 03, 2022.

**Whether the NEPRA (Selection of EPC Contractor by IPPs) Guidelines, 2017 have been fully complied with?**

24. The petitioner has claimed USD 0.68 million/MW (USD 6.800 million) on account of Engineering Procurement and Construction ("EPC") cost. The Authority noted that an additional cost of USD 1.200 million (USD 0.12 million per MW) has been claimed by the petitioner, compared to the EPC cost of USD 5.600 million, as approved by the Authority in the previous tariff determination. AEPL submitted that since the time of previous tariff determination, the module prices have increased by USD 0.06 million per MW, shipping cost by USD 0.045 million per MW and the cost of balance supplies (inverters, mounting structures, civil works and local transportation) by about USD 0.04 million per MW, however, the additional claim has been restricted to USD 0.12 million per MW only.

25. AEPL submitted that the last tariff determination was based on 450Wp mono-crystalline PV modules with single axis tracking system. Given the recent development in the solar module technology and the fact that 450 Wp modules are no longer in production, the company intends to utilize 540 Wp mono bi-facial modules, which is the latest technology available.

26. Regarding the issue of compliance of NEPRA (Selection of Engineering, Procurement and Construction Contractor by Independent Power Producers) Guidelines, 2017 ("EPC Guidelines"), the petitioner during the hearing apprised the Authority that following the honourable IHC decision, the EPC cost in all tariff determinations, including the most recent tariff determination

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of December 30, 2020 was issued based on assessments by NEPRA, without the requirement of process under the EPC Guidelines, 2017. The petitioner submitted that the current petition is an update of the previous tariff case, therefore, the EPC Guidelines, 2017 in the instant case should not apply.

27. AEPL did not submit EPC Contract along with the petition and was asked to submit the same during the proceedings. In response, AEPL vide email dated June 14, 2022 submitted copy of EPC Term Sheet as per which the total EPC contract price agreed is USD 6.800 million, which is same as claimed by the petitioner in the Petition.

28. The Authority has noted that the process for the selection of the EPC contractor has not been followed by AEPL as per the EPC Guidelines. It was further noted that the tariff determinations of more than fifteen (15) solar PV projects have been approved by NEPRA in last few years. In some of those cases, the relaxation with respect to the compliance of the EPC Guidelines was allowed, as those projects had started development before coming into effect of the EPC Guidelines. However, the EPC cost in those tariff cases was approved by the Authority on the basis of its assessment, which was carried out in view of the prevailing costs/prices of equipment and other cost heads, instead of relying on their claims. Likewise, in the previous tariff case of AEPL, the EPC cost was approved by the Authority on the basis of the costs/prices prevailing at that time. In line with its earlier decisions, the Authority has decided to approve the EPC cost in the subject case also.

29. The Authority has relied upon the EPC cost and project cost data of solar PV projects in different countries. The prices of different types of modules, inverters and mounting structures in different parts of the world were researched through a number of reports published by credible organizations. Moreover, a number of online sources providing spot prices data of equipment of solar power system were also surfed. Additionally, the data which was submitted by the petitioner was also given due deliberation. Keeping in view all these factors and size of the Project, the Authority is of the view that the EPC cost, i.e. USD 6.800 million as claimed by the petitioner is reasonable and decided to allow the same to AEPL. The allowed EPC cost shall be adjusted at Commercial Operations Date ("COD') in accordance with the mechanism given in the Order part of this determination.

**Whether the claimed Non-EPC cost is justified? And Whether the claim of Prior Period Development Cost is justified?**

**Project Development Cost**

30. AEPL has claimed Project Development Cost ("PDC") of USD 0.280 million (Rs. 49.84 million @ Rs. 178/USD) in Petition. AEPL requested the Authority that the requested claim may be approved on account of small size of the Project. The Authority noted that PDC of Rs. 40 million was approved

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for AEPL in the previous tariff determination. As stated above, the Authority is of the view that it was not the fault of the company that it could not timely achieve the FC. Therefore, the Authority has decided that the amount of PDC be increased for the company to cover the extended development period, i.e. from December, 2021 onward. In this regard, the Authority considers that the PDC of Rs. 49.84 million (USD 0.249 million @ Rs. 200/USD), as claimed by the company, is reasonable, and has decided to allow the said amount. This amount is being approved on lump sum basis, i.e. the cost incurred on individual heads of PDC may change but should not exceed the overall amount. The allowed PDC shall be adjusted at COD in accordance with the mechanism given in the Order part of this determination.

**Land Cost**

31. In the previous tariff determination issued on December 30, 2020, the cost of land of Rs. 14.159 million was approved for AEPL, i.e. Rs. 307,800 per acre for 46 acres of land. In the Petition, AEPL has submitted that it has assumed the same land cost for the computation of the claimed tariff.

32. The Authority noted that the sponsors of the Project is developing another solar PV project namely Access Solar (Pvt.) Limited ("ASPL") having capacity of 11.52 MW. During the proceedings of the previous tariff determination, the petitioner submitted that ASPL has purchased a land area of around 97 acres for which documents were also submitted. As per the said documents, 96.70 acres land (land area + access road) was purchased against the total proceeds (including stamp and other charges) of Rs. 29.769 million (around PKR 307,800 per acre). The petitioner submitted that the above land available for ASPL is in excess of its requirements, therefore, ASPL agreed to lease/sale about 46 acres of land to AEPL for which an MOU was also submitted by the petitioner. Considering the above details, the Authority allowed the cost of Rs. 14.159 million to AEPL in respect of cost of land.

33. To assess this cost head, the Authority considered the cost of land allowed to other solar PV power projects. It was noted that in majority of the cases, the respective Provincial Governments have leased land on concessional rates to solar PV projects. In their tariffs, the arrangement was approved as per which the majority part of that lease cost is paid by the companies out of their approved O&M cost. On the other hand, there have been tariff cases where the land was purchased by the companies. For example, in the case of Gharo Solar Limited, a 50 MW solar PV Project, the land was purchased by the said project company from a private party, and the prudent cost in lieu thereof was approved by the Authority by including the same in the project cost of the company. Likewise, the cost of land was also allowed in the project cost approved by the Authority for AEPL, in its previous tariff determination.

34. Though approved earlier, the Authority however deliberated upon whether to allow the cost of land, when purchased by the project companies, in their tariffs or otherwise. As stated above, the land leased to project companies by the relevant Government are given yearly rental through

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O&M cost. The cost of land, when purchased by the project companies, is made part of the project cost and the recovery thereof (70-80%) is made through debt servicing and the equity part (20-30%) is allowed specified return. The ownership of land, when purchased, remains with the companies whereas the cases where land is leased, the same is to be returned back to lessor. The companies, having land on lease, shall only have the residual value of the equipment to recover the equity amount (under Build Own Operate basis) whereas the companies procuring land shall also have the ownership of land despite given cost recovery thereof in the tariff. In view of these points, the Authority is of the considered view that the appropriate method of approving cost of land — when purchased by the power companies — is to allow the rental value of the same in the O&M component of the tariff. Therefore, the Authority has decided not to approve the claimed land cost in the project cost of AEPL, and the rental value of the same has been included in the O&M cost being approved in this determination.

**Pre-COD Insurance Cost**

35. AEPL submitted that that the insurance cost during construction has been assumed as per the benchmark approved in the previous determination by the Authority i.e. 0.4% of the claimed EPC Cost.

36. The Authority noted that in the previous tariff determination of AEPL, the insurance during construction cost was approved at 0.4% of the approved EPC cost. AEPL in the Petition has requested to allow the captioned cost on the same benchmark. The Authority has noted that NEPRA (Benchmarks for Tariff Determination) Guidelines, 2018 ("Benchmark Guidelines") issued vide S.R.O. 763(I)/2018 notification dated June 19, 2018 states the provision of insurance during construction at the rate of 0.40% of the EPC cost of solar PV projects. In accordance thereof, the Authority has decided to allow insurance during construction at the rate of 0.4% of the approved EPC cost, including all the taxes/charges, to AEPL. On this basis, the amount being approved under this head works out to be around USD 0.027 million. The allowed amount under the captioned head shall be adjusted at COD in accordance with the mechanism given in the Order part of this determination.

**Prior Period Development Cost**

37. The Authority in the tariff determination of AEPL issued on December 30, 2020, decided to allow the PPDC to the company to cover the costs incurred by the company for its extended development period. Subsequently, the Authority vide its decision issued on December 29, 2021 approved the said cost to the tune of Rs. 49.413 million, against the claim of about Rs. 105.146 million. In the subject petition and during hearing, AEPL requested the Authority to review its above decision and allow the said cost as earlier claimed by the company.

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38. The Authority has noted that the detailed explanation and basis had been stated in the decision issued on December 29, 2021, for allowing the amount of PPDC to the extent of about Rs. 49.413 million. Neither any new evidence has been submitted nor has any error been identified by the petitioner in the aforesaid decision, for the review of the approved PPDC amount. Therefore, the Authority is of the view that allowed PPDC does not merit upward revision and has maintained its earlier decision issued on December 29, 2021. That is, the Authority has decided to allow the already approved PPDC of Rs. 49.413 million (equivalent to USD 0.247 million @ 200/USD) to AEPL.

**Financing Fee and Charges**

39. The Authority in the previous tariff determination of AEPL allowed financing fee and charges at 2% of the approved debt portion of the allowed capital expenses. AEPL in Petition has requested to allow financial fees and charges based on the same benchmark. It is noted that Benchmark Guidelines states the provision of financing fee & charges, not exceeding 2.00% of the approved debt amount. In light of above benchmark, the Authority has decided to allow the captioned fees/charges at the rate of 2%, including all the taxes/charges, of approved debt portion of allowed capital expenses, as maximum limit, to the petitioner. On this basis, the amount being approved under this head works out to be around USD 0.117 million. The allowed amount under the captioned head shall be adjusted at COD in accordance with the mechanism given in the Order part of this determination.

**Interest during construction**

40. The petitioner has submitted that Interest during Construction ("IDC") has been calculated as USD 0.088 million based on 8 months construction period and debt financing under SBP refinancing scheme for renewable projects at the rate of 6%. AEPL submitted that disbursement have been assumed in equal monthly proportions.

41. Based on the abovementioned approved costs while considering the drawdown schedule as given in the Order part of this determination, the IDC works out to be around USD 0.103 million and is hereby approved. The details of financing terms and construction period that have been used to work out the aforesaid amount of IDC is discussed in the ensuing relevant sections. The allowed IDC shall be recomputed/adjusted at COD as per the mechanism given in the Order part of this determination.

42. Recapitulating above, the summary of the approved project cost is given hereunder:

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| Project Cost | USD Million |
|---|---|
| EPC Cost | 6.800 |
| Project Development Cost | 0.249 |
| Prior Period Development Cost | 0.247 |
| Insurance during Construction | 0.027 |
| Financing Fee and Charges | 0.117 |
| Interest During Construction | 0.103 |
| **Total** | **7.543** |

**Whether the claimed annual energy production and corresponding plant capacity factor are reasonable and justified? And Whether the petitioner's proposed solar modules technology satisfies the international standards of quality and operation?**

43. The petitioner in the Petition and during the hearing has submitted the following in this regard:

| | |
|---|---|
| Project Capacity | 10 MWp |
| Annual Energy Generation (for 1st year) | 18.046 GWh |
| Net capacity factor | 20.60% |

44. AEPL informed that the previous determination was approved based on 450 Wp mono-crystalline PV modules with single axis tracking system. Given the recent development in the solar module technology and the fact that 450 Wp modules are no longer in production, the company intends to utilize 540 Wp mono bi-facial modules, which is the latest technology available. The petitioner submitted that the estimated plant factor based on the location and Solar GIS data is 20.60% (as against 20.36% approved in previous determination). According to the petitioner, the net annual energy generation for the 1st year would be about 18.046 GWh.

45. During the hearing, the petitioner submitted that the claimed plant factor has been established through a PV Syst simulation based on data from Meteonorm. To justify its claim, the petitioner also presented comparison of the availability of the resource at different locations of the country, and explained that the proposed capacity factor is the most efficient yield given the availability of resource at the location the Project is being developed.

46. For plant capacity factor, the Authority has considered the modules, inverters and other equipment as proposed by AEPL with respect to their quality and energy yield. The energy simulation parameters as submitted by the petitioner has also been examined. The plant capacity

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factor that has been allowed for bifacial mono crystalline modules with single axis tracking, in the recent tariff cases at different regions of the country were also checked. Considering these factors, the Authority is of the view that the claimed net plant capacity factor is quite on the lower side, and decided to compute and approve the tariff of AEPL on the capacity factor of 21.70%.

47. Further, the Authority has decided that the solar resource risk shall be borne by the power producer and a sharing mechanism given in the Order part of this determination shall be applied on the energy produced beyond the approved annual capacity factor.

48. With respect to the issue of compliance of international standards of proposed module technology, the Authority considers that the decision of LPM has been issued on August 03, 2022 for the technology as claimed in the Petition. Accordingly, this matter is considered settled.

**Whether the project grid interconnection study is approved by the relevant organization(s)?**

49. The petitioner during the hearing submitted that the power evacuation for the Project has been approved by IESCO vide its letter No. 2587-88/CE(P&E)/DM(T&G) dated April 1, 2022. The Authority has noted that during the proceedings of the LPM as approved for AEPL on August 03, 2022, the matter of interconnection of the Project has already been discussed and addressed. The Authority further noted that as per the IGCEP, as submitted by National Transmission and Despatch Company Limited ("NTDCL") and approved by NEPRA on September 24, 2021, AEPL's Project has been listed as Committed Project. In view of these details, the Authority considers this issue as settled.

**Whether the claimed O&M costs are justified? Whether the adjustment of O&M component of tariff be made on quarterly or on annual basis? Whether the NEPRA (Selection of O&M Contractor) Guideline, 2021 have been fully complied with?**

50. AEPL in the Petition and during the hearing requested the Authority for due consideration of the size of the Project in the instant case and approve the O&M cost at USD 11,500 per MW per year. It also submitted that the amount earlier allowed, i.e. USD 10,000 per MW per year cannot be considered sufficient for a small project.

51. It was found that the petitioner did not submit the O&M Agreement along with the Petition. Accordingly, AEPL vide email communication dated June 9, 2022 was asked to submit the same. In response, AEPL vide email dated June 14, 2022 submitted the EPC Term Sheet signed on January 27, 2022, which provides that Offshore Supplier or its local affiliate may provide the O&M services for two years (option extendable to 5 years), commencing on the COD. The consideration of USD 140,000 (USD 14,000/MW/year) for first year – with 5% increment from the second year- had been agreed in the said term sheet.

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52. To evaluate this claim of AEPL, the O&M cost being allowed to solar PV projects in other parts of the world has been referred. The O&M cost recently being approved for other solar PV power projects, including in the previous tariff case of AEPL, has also been compared. Considering these details, the Authority is of the view that the O&M cost, i.e. USD 10,000 per MW per year, as approved in the previous tariff of AEPL, is a reasonable amount to be allowed to the petitioner in the instant case also.

53. It is important to mention here that the O&M cost as approved in the previous tariff determination of AEPL was 100% in local currency. While applying the impact of local inflation on that cost since December, 2020, the indexed O&M works out to be lower than USD 10,000 per MW per year, using the parity value of Rs. 200/USD. However, the Authority has decided to maintain the same so that the prudent cost of rentals in respect of land may be managed out of the approved cost.

54. In line with the recent tariffs approved for solar PV projects, the Authority has decided to allow whole of O&M cost in local currency. Additionally, the Authority has decided that it may direct the petitioner to follow NEPRA (Selection of Operation and Maintenance Contractors by Generation Companies) Guidelines, 2021 issued vide S.R.O.210/2021 notification dated February 16, 2021, during any time of tariff control period for the provision of O&M cost to the company.

55. AEPL has requested for quarterly adjustment in the approved O&M cost. It is noted that major portion of the O&M cost of solar PV projects comprises of administration expenses which generally require increase on yearly basis. Further, it was noted that the Authority has recently approved the benchmark tariff for the competitive bidding for solar PV projects whereby the annual indexation has been approved. In addition, the yearly indexation was approved by the Authority in the tariff cases of Siachen Energy issued in November, 2021 and Zorlu Solar issued on August 12, 2022. In view of these details, the Authority has decided to allow the indexation in the approved O&M cost on yearly basis. The mechanism of the said adjustment is given in the Order part of this determination.

**Whether the claimed insurance during operation is justified?**

56. The Authority in the previous tariff determination of AEPL allowed insurance during operation cost at 0.4% of the approved EPC cost. AEPL during the hearing has requested to allow the same benchmark for the operational phase insurance. The Authority noted that in the recently approved tariffs of solar PV projects, the insurance during operation at the rate of 0.4% of the approved EPC cost has been allowed. Benchmark Guidelines also provide insurance during operation at the rate of 0.4% of EPC cost for solar projects. In view thereof, the Authority has decided to allow insurance during operation at the maximum limit of 0.4% of the approved EPC cost, including all taxes/charges, to the petitioner subject to adjustment on actual basis as per the mechanism given in the Order part of this determination.

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**Whether the claimed return on equity is justified? Whether the adjustment of Return on Equity component of tariff be made on quarterly or on annual basis?**

57. The Authority in the previous tariff determination of AEPL allowed ROE of 13% with quarterly indexation due to change in exchange rates. The petitioner in the Petition has requested to allow the same level of return with the same quarterly indexation thereon.

58. The Authority has noted that in two most recent comparable cases of renewable technologies, the ROE of 12% has been approved by NEPRA. That approved ROE component was allowed adjustment, due to change in exchange rates, on annual basis. The Authority is of the view that the ROE of 12% with yearly indexation thereon due to exchange rate variations, as approved in the recent tariff cases, be also allowed in the tariff case of AEPL. However, the Authority considered that given the significant PKR devaluation, especially in the last couple of years, the yearly indexation would have a negative impact on the approved ROE. To neutralize the impact thereof, the Authority has decided to approve ROE for AEPL at 13%, with annual indexation on this tariff component due to change in exchange rates. The mechanism of the said adjustment is given in the Order part of this determination.

59. It is important to highlight here that the component of ROE has been computed and approved while taking into account the monthly cash flows such that annual ROE comes out as 13%.

60. It is to be noted that the approved ROE amount shall be the maximum limit of the annual equity return to be earned by the project company. The amount of ROE of any year, if exceeds by the given limit, shall be shared between the power producer and consumers through claw back formula to be decided by the Authority under the relevant framework.

**Whether the claimed financing/debt terms are justified?**

61. AEPL in the Petition and during the hearing submitted that the Project is proposed to be financed under SBP Refinancing Scheme for Renewable Energy Projects. As given in the said Scheme, the cost of financing at the rate of 6%, with debt repayment period of 10 years, was taken into account by the petitioner. The debt to equity ratio of 80:20 was used in the Petition.

62. AEPL submitted that due to the small size of the Project, it is non-viable for the company to contract for the foreign loans. However, the company requested that in case of non-availability of funding under the SBP Scheme, the flexibility to obtain commercial financing be allowed, in accordance with the benchmarks given in the NEPRA framework and as approved in other tariff cases.

63. The Authority has noted that Benchmark Guidelines provide that the debt to equity ratio for all renewable power projects are to be 80:20 and in case of change in ratio, the return approved on equity shall be adjusted to maintain cost of capital at the same level as under 80:20 debt to equity

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ratio capital structure. The debt to equity ratio of 80:20 has also been approved by the Authority in the recent wind and solar tariff determinations. Therefore, the Authority has decided to compute and approve tariff of AEPL at debt to equity ratio of 80:20, as claimed by the petitioner.

64. The Benchmarking Guidelines also provide that in case of renewable energy projects eligible for securing debt under SBP Scheme, a flat rate of 6% shall be approved. The size of the Project is 10 MW which makes it eligible to avail whole of the required financing under SBP Scheme, hence, the Authority has decided to compute and approve tariff of AEPL at 6% as given in the SBP Scheme. In case the petitioner is not able to secure financing under SBP Scheme then the tariff shall be adjusted on commercial local/foreign financing, or a mix of both, at the time of its COD on the terms as given in the Benchmarking Guidelines. However, the petitioner shall have to prove through documentary evidence issued by SBP/commercial bank that it exhausted the option of availing financing under SBP scheme before opting for conventional local/foreign loan.

65. The petitioner has claimed debt servicing period of 10 years for SBP financing. The Authority has noted that in recently approved wind and solar tariff determinations, it has allowed debt repayment period of 10 years for financing under SBP Scheme and therefore decided to allow the same to the petitioner also.

**Whether the claimed construction period is justified?**

66. During the hearing, the petitioner informed that the construction period of 8 months is being claimed. The Authority has considered the said claim of the petitioner while comparing it with what has been allowed in other comparable cases. In view of these details, the Authority has decided to approve construction period of 8 months to AEPL.

**Whether any compensation be allowed for pre-COD sale of energy?**

67. The Authority noted that it has been allowing payment of certain percentage of the tariffs to solar PV projects with respect to electricity generated and supplied by these sources during the commissioning tests, i.e. before achieving COD. For thermal power projects (coal, gas and furnace oil), electricity generated during testing phase is generally allowed the payment of fuel cost component on the pretext that it is additional cost incurred by thermal projects which is not covered otherwise in the tariff. On contrary, total tariffs of solar PV projects are of fixed nature whereby the recovery of all the approved costs (both during construction and operations) are confirmed, and there is no incurrence of any additional cost during the testing phase. In view thereof, the Authority considers that it is not justified to allow for the payment of electricity supplied during the commissioning tests by solar PV projects and hereby decides that no compensation shall be paid to AEPL in this regard.

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**What should be the treatment of income tax in light of the amendments made through Finance Bill, 2021?**

68. This additional issue was framed in light of the amendments made through Finance Bill, 2021 whereby, inter alia, the income tax exemptions given to power generation projects were discontinued. The Authority noted that exemption from income tax is allowed in the relevant policies under which power generation projects are developed. Likewise, the provision of income tax exemption has also been stated in the RE Policy, 2006 under which AEPL is being developed. Nevertheless, given the above amendments in the Finance Bill, the Authority hereby decides that the relevant Government Entities shall deal this matter while signing concession agreements with AEPL.

**Degradation Factor**

69. The petitioner has proposed annual degradation of 0.5% to be included in addition to the capital cost as part of the project cost as per provision of the previous determination. The Authority has noted that degradation factor of modules at 0.5% per year has been taken into account in the recently approved tariff cases of solar PV power projects and decided to approve the same in AEPL's tariff. The Authority has decided to capitalize the impact of allowed degradation in the approved project cost. The amount of USD 0.246 million has been made part of the approved project cost while calculating the same at the levelized rate of 3.62% of the approved EPC cost.

70. **ORDER**

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 generation tariff along with terms and conditions for Access Electric (Pvt.) Limited (AEPL) for its 10 MWp solar PV power project for delivery of electricity to the power purchaser as follows:

- Levelized tariff works out to be Rs. 9.3684/kWh (US Cents 4.6842/kWh).
- The tariff has been worked out on Build Own and Operate basis.
- EPC cost of USD 6.800 million has been approved.
- Project Development Cost of USD 0.249 million has been approved.
- Prior Period Development cost of USD 0.247 million has been approved.
- Insurance during construction at the rate of 0.4% of the approved EPC cost has been approved.
- Financing fee at the rate of 2% of the debt portion of the capital cost has been approved.

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- Debt to Equity ratio of 80:20 has been approved.
- Tariff has been computed on 100% local financing under SBP Scheme.
- ROE and ROEDC of 13% has been allowed.
- The cost of debt of 6% (SBP Scheme) has been used.
- Debt servicing period of 10 years from COD has been used.
- O&M Cost of USD 10,000 per MW per year, including the cost of land, has been allowed.
- Insurance during Operation has been calculated as 0.40% of the allowed EPC Cost.
- Construction period of 8 months has been allowed.
- Net Annual Plant Capacity Factor of 21.70% has been approved.
- Degradation factor of 0.5% per year has been approved.
- The financial impact of the allowed degradation of USD 0.246 million has been taken into account in the approved project cost.
- Reference Exchange Rate of 200 PKR/USD has been used.
- IDC and ROEDC have been worked out using following drawdown schedule:

| | |
|---|---|
| Month 1 | 5.00% |
| Month 2 | 5.00% |
| Month 3 | 15.00% |
| Month 4 | 15.00% |
| Month 5 | 15.00% |
| Month 6 | 15.00% |
| Month 7 | 15.00% |
| Month 8 | 15.00% |

- Detailed component wise tariff is attached as Annex-I of this decision.
- Debt Servicing Schedule is attached as Annex-II of this decision.

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**A. One Time Adjustments at COD**

i. 80% of the approved EPC cost is being allowed in terms of USD, and shall be adjusted at COD at lower or equal to the corresponding approved USD amount. At the time of COD, the PKR amount for this portion of the EPC cost shall be re-computed, on the exchange rates prevailing on the respective payment dates during the approved construction period OR on the exchange rates as decided in the relevant contracts, whichever is lower.

ii. 20% of the approved EPC cost is being allowed in terms of PKR (@ Rs. 200/USD), and shall be adjusted at lower or equal to the corresponding approved PKR amount. At the time of COD, the USD amount for this portion of the EPC cost shall be re-computed, on the exchange rates prevailing on the respective payment dates during the approved construction period. The adjusted amount, in terms of USD, shall not exceed beyond the USD amount computed at Rs. 200/USD.

iii. PDC, Insurance during construction and Financing Fee & Charges shall be adjusted at COD at lower or equal to the corresponding approved PKR amount, computed using the exchange rate of Rs. 200/USD. At the time of COD, the USD amount for these cost heads shall be re-computed, on the exchange rates prevailing on the respective payment dates during the approved construction period. The adjusted amount, in terms of USD, shall not exceed beyond the USD amount computed at Rs. 200/USD.

iv. The amounts retained or payable by the company, on account of EPC cost, PDC, Insurance during Construction and Financing Fee & Charges, till the date of COD, shall be given approval upon payment of such amount. The adjustment on such amounts under the respective heads, as per the mechanism given in (i), (ii) and (iii) above, shall be made on the exchange rate prevailing on the prescribed COD date.

v. The approved amount of PPDC shall not be subject to verification at the time of COD. The PKR amount of PPDC shall be converted in USD at COD, on the weighted average exchange rate of the revised project cost.

vi. Duties and/or taxes, not being of refundable nature, relating to the construction period, directly imposed on the company up to COD, will be allowed at actual, upon production of verifiable documentary evidence to the satisfaction of the Authority.

vii. The amount of degradation, as approved in this determination, shall be converted in PKR using the exchange rate of Rs. 200/USD at the time of COD.

viii. The tariff has been determined on debt: equity ratio of 80:20. The tariff shall be adjusted at COD while taking actual debt : equity mix on the approved project cost, subject to equity share of not more than 20%.

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ix. IDC will be recomputed at COD on the basis of actual timing of debt draw downs (for the overall debt allowed by the Authority at COD) during the project construction period.

x. For full/part of commercial foreign or local loan or a mix of both, if applicable and availed by the company, the IDC shall also be allowed adjustment for change in applicable LIBOR/KIBOR.

xi. The savings in the approved financing cost/spreads shall be shared between the power purchaser and power producer in the ratio of 60:40.

xii. ROEDC 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.

xiii. For the above adjustments, the construction period of lower or equal to eight (08) months, as approved by the Authority, shall be considered.

**B. Indexations**

Adjustment of O&M and ROE shall be made on annual basis starting from 1st July every year. Adjustment of Debt Servicing Component, if applicable, shall be made on quarterly/bi-annual basis, as decided in the financing documents. Insurance component shall be adjusted on annual basis starting from either 1st January or 1st July every year. The indexation mechanisms are given hereunder:

**i) Operation and Maintenance Costs**

O&M component of tariff shall be adjusted on account of change in local Inflation (NCPI) as notified by the Pakistan Bureau of Statistics according to the following mechanism:

| | | |
|---|---|---|
| L. O&M (Rev) | = | L. O&M (Ref) * CPI (Rev) / CPI (Ref) |
| Where; | | |
| L. O&M (Rev) | = | The revised O&M Local Component of Tariff |
| L. O&M (Ref) | = | The reference O&M Local Component of Tariff |
| CPI (Rev) | = | The revised N-CPI (General) |
| CPI (Ref) | = | The reference N-CPI (General) of 165.23 for the month of May, 2022 |

*Note: For the adjustment of O&M component at COD, the revised N-CPI value for the month of May, prior to the date of COD, shall be considered. That revised component shall be applicable for the supply of electricity from the date of COD till the 30th of June,*

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*after COD. Afterwards, the N-CPI for the next month of May shall be used to compute the revised O&M for the next year starting from the month of July, and so on.*

**ii) Insurance during Operation**

The actual insurance cost for the minimum cover required under contractual obligations with the power purchaser, not exceeding 0.4% of the approved EPC cost, will be treated as pass through. Insurance component of reference tariff shall be adjusted annually as per actual upon production of authentic documentary evidence according to the following formula:

| | | |
|---|---|---|
| AIC | = | Ins (Ref) / P (Ref) * P (Act) |
| Where; | | |
| AIC | = | Adjusted insurance component of tariff |
| Ins (Ref) | = | Reference insurance component of tariff |
| P (Ref) | = | Reference premium @ 0.4% of approved EPC Cost at Rs. 200/USD |
| P (Act) | = | Actual premium or 0.4% of the approved EPC Cost converted into Pak Rupees on exchange rate prevailing on 1st day of the insurance coverage period whichever is lower |

*Note: The reference tariff component shall be revised after making the required adjustments at the time of COD.*

**iii) Return on Equity**

The ROE (ROE + ROEDC) component of the tariff will be adjusted on yearly basis on account of change in PKR/USD parity. The variation relating to these components shall be worked out according to the following formula:

| | | |
|---|---|---|
| ROE (Rev) | = | ROE (Ref) * ER (Rev) / ER (Ref) |
| Where; | | |
| ROE (Rev) | = | Revised ROE Component of Tariff |
| ROE (Ref) | = | Reference ROE Component of Tariff |
| ER (Rev) | = | The revised TT & OD selling rate of US dollar as notified by the National Bank of Pakistan |

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| | | |
|---|---|---|
| ER (Ref) | = | The reference TT & OD selling rate of Rs. 200/USD |

*Note: The reference tariff component shall be revised after making the required adjustments at the time of COD.*

## C. Terms and Conditions

The following terms and conditions shall apply to the determined tariff:

- All plant and equipment shall be new and of acceptable standards. The verification of the plant and equipment will be done by the independent engineer at the time of the commissioning of the plant duly appointed by the power purchaser.
- This tariff will be limited to the extent of net annual energy generation supplied to the power purchaser up to 21.70% net annual plant capacity factor. Net annual energy generation supplied to the power purchaser in a year, in excess of 21.70% net annual plant capacity factor, will be charged at the following tariffs:

| Net annual plant capacity factor | % of prevalent tariff allowed to power producer |
|---|---|
| Above 21.70% to 21.90% | - |
| Above 21.90% to 22.65% | 10% |
| Above 22.65% to 24.40% | 20% |
| Above 23.40% to 24.15% | 30% |
| Above 24.15% | 40% |

- The risk of solar resource shall be borne by the power producer.
- The maximum plant PV capacity shall not exceed 10 MWp.
- No adjustment for certified emission reductions has been accounted for. However, upon actual realization of carbon credits, the same shall be distributed between the power purchaser and the power producer in accordance with the applicable GOP Policy, amended from time to time.
- The petitioner is directed to ensure that all the equipment is installed as per the details/specifications given in the generation license and tariff determination.

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- The petitioner is hereby directed to secure the maximum available loan under the SBP Scheme. The savings in the cost of financing under SBP Scheme shall be shared between power purchaser and power producer in the ratio of 60:40 at the time of COD or during any time of the loan tenor, as applicable.

- In case the company shall secure full or part of local commercial loan then the tariff of company shall be computed/adjusted at the time of COD at applicable KIBOR + spread of 2.25%. The savings in the approved spreads anytime during the loan tenor shall be shared between the power purchaser and power producer in the ratio of 60:40. The tenor of the debt servicing shall not be less than thirteen years for this loan.

- In case the company shall secure full or part of foreign conventional loan then the tariff of company shall be computed/adjusted at the time of COD at applicable LIBOR + spread of 4.25%. The savings in the approved spreads any time during the loan tenor shall be shared between the power purchaser and power producer in the ratio of 60:40. The tenor of the debt servicing shall not be less than thirteen years for this loan.

- In case the company shall secure foreign loan under any credit insurance (Sinosure etc.) then the cost of that insurance shall be allowed to the maximum limit of 0.6% of the approved yearly outstanding principal and interest amounts. For financing with Sinosure, the spread/margin over LIBOR shall be adjusted to the extent such that the total financing cost (applicable LIBOR + Adjusted Margin + Sinosure) shall not exceed the financing cost without Sinosure (applicable LIBOR + Approved Margin).

- For the provision of the O&M cost, the Authority may consider making changes in the approved O&M cost while capping the allowed prevailing level, which shall be governed under NEPRA (Selection of Operation and Maintenance Contractors by Generation Companies) Guidelines, 2021.

- In case the company earns annual profit in excess of the approved ROE, then that extra amount shall be shared between the power producer and consumers through claw back formula to be decided by the Authority through the relevant framework. For that purpose, the share of producer as given in the bonus energy mechanism shall be taken into account. That is, the receipts of the producer in respect of energy beyond the approved net annual capacity factor, shall not be considered as excess profit.

- Allowed limit of degradation has been made part of the approved project cost. No extra financial compensation shall be provided in the Energy Purchase Agreement.

- The company will have to achieve financial close within one year from the date of issuance of tariff determination. The tariff granted to the company will no longer remain applicable/valid, if financial close is not achieved by the company, for whatever reason, in the abovementioned timeline or its generation license is declined/revoked by NEPRA.

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- The targeted maximum construction period from prescribed date/time of financial close is 8 months. No adjustment will be allowed in this tariff to account for financial impact of any delay in project construction. However, the failure of the company to complete construction within 8 months will not invalidate the tariff granted to it.
- No compensation for Pre COD sale of electricity is to be allowed to the power producer.
- Withholding tax on dividend shall not be a pass through item.
- The approved tariff along with terms & conditions shall be made part of the Energy Purchase Agreement. General assumptions, which are not covered in this determination, may be dealt with as per the standard terms of the Energy Purchase Agreement.

71. The Order part along with 2 Annexures is recommended for notification in the official gazette in accordance with Section 31(7) of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997.

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**AUTHORITY**

(Engr. Maqsood Anwar Khan)
Member

(Engr. Rafique Ahmed Shaikh)
Member

(Tauseef H. Farooqi)
Chairman

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**Annex-I**

# ACCESS ELECTRIC (PVT.) LIMITED
## REFERENCE TARIFF TABLE

| Year | O&M Local | Insurance | Return on Equity | Return on Equity during Construction | Principal Repayment | Interest Charges | Tariff |
|---|---|---|---|---|---|---|---|
| | Rs. / kWh | Rs. / kWh | Rs. / kWh | Rs. / kWh | Rs. / kWh | Rs. / kWh | Rs. / kWh |
| 1 | 1.0521 | 0.2862 | 2.0135 | 0.0822 | 4.9425 | 3.8240 | 12.2005 |
| 2 | 1.0521 | 0.2862 | 2.0135 | 0.0822 | 5.2457 | 3.5207 | 12.2005 |
| 3 | 1.0521 | 0.2862 | 2.0135 | 0.0822 | 5.5676 | 3.1988 | 12.2005 |
| 4 | 1.0521 | 0.2862 | 2.0135 | 0.0822 | 5.9093 | 2.8572 | 12.2005 |
| 5 | 1.0521 | 0.2862 | 2.0135 | 0.0822 | 6.2719 | 2.4946 | 12.2005 |
| 6 | 1.0521 | 0.2862 | 2.0135 | 0.0822 | 6.6568 | 2.1097 | 12.2005 |
| 7 | 1.0521 | 0.2862 | 2.0135 | 0.0822 | 7.0653 | 1.7012 | 12.2005 |
| 8 | 1.0521 | 0.2862 | 2.0135 | 0.0822 | 7.4988 | 1.2677 | 12.2005 |
| 9 | 1.0521 | 0.2862 | 2.0135 | 0.0822 | 7.9590 | 0.8075 | 12.2005 |
| 10 | 1.0521 | 0.2862 | 2.0135 | 0.0822 | 8.4473 | 0.3191 | 12.2005 |
| 11 | 1.0521 | 0.2862 | 2.0135 | 0.0822 | - | - | 3.4340 |
| 12 | 1.0521 | 0.2862 | 2.0135 | 0.0822 | - | - | 3.4340 |
| 13 | 1.0521 | 0.2862 | 2.0135 | 0.0822 | - | - | 3.4340 |
| 14 | 1.0521 | 0.2862 | 2.0135 | 0.0822 | - | - | 3.4340 |
| 15 | 1.0521 | 0.2862 | 2.0135 | 0.0822 | - | [illegible] | 3.4340 |
| 16 | 1.0521 | 0.2862 | 2.0135 | 0.0822 | - | [illegible] | 3.4340 |
| 17 | 1.0521 | 0.2862 | 2.0135 | 0.0822 | [illegible] | - | 3.4340 |
| 18 | 1.0521 | 0.2862 | 2.0135 | 0.0822 | [illegible] | - | 3.4340 |
| 19 | 1.0521 | 0.2862 | 2.0135 | 0.0822 | [illegible] | - | 3.4340 |
| 20 | 1.0521 | 0.2862 | 2.0135 | 0.0822 | [illegible] | - | 3.4340 |
| 21 | 1.0521 | 0.2862 | 2.0135 | 0.0822 | [illegible] | - | 3.4340 |
| 22 | 1.0521 | 0.2862 | 2.0135 | 0.0822 | - | [illegible] | 3.4340 |
| 23 | 1.0521 | 0.2862 | 2.0135 | 0.0822 | - | - | 3.4340 |
| 24 | 1.0521 | 0.2862 | 2.0135 | 0.0822 | - | - | 3.4340 |
| 25 | 1.0521 | 0.2862 | 2.0135 | 0.0822 | - | - | 3.4340 |
| **Levelized Tariff** | **1.0521** | **0.2862** | **2.0135** | **0.0822** | **4.2366** | **1.6978** | **9.3684** |

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Annex-II

## ACCESS ELECTRIC (PVT.) LIMITED
## Debt Servicing Schedule

| Relevant Quarters | Base Amount (Rs.) | Principal Repayment (Rs.) | Interest (Rs.) | Balance Principal (Rs.) | Total Debt Service (Rs.) | Annual Principal Repayment (Rs./kWh) | Annual Interest (Rs./kWh) |
|---|---|---|---|---|---|---|---|
| 1 | 1,246,321,700 | 22,966,097 | 18,694,826 | 1,223,355,603 | 41,660,922 | 4.9425 | 3.8240 |
| 2 | 1,223,355,603 | 23,310,588 | 18,350,334 | 1,200,045,015 | 41,660,922 | | |
| 3 | 1,200,045,015 | 23,660,247 | 18,000,675 | 1,176,384,768 | 41,660,922 | | |
| 4 | 1,176,384,768 | 24,015,151 | 17,645,772 | 1,152,369,618 | 41,660,922 | | |
| 5 | 1,152,369,618 | 24,375,378 | 17,285,544 | 1,127,994,240 | 41,660,922 | 5.2457 | 3.5207 |
| 6 | 1,127,994,240 | 24,741,009 | 16,919,914 | 1,103,253,231 | 41,660,922 | | |
| 7 | 1,103,253,231 | 25,112,124 | 16,548,798 | 1,078,141,107 | 41,660,922 | | |
| 8 | 1,078,141,107 | 25,488,806 | 16,172,117 | 1,052,652,302 | 41,660,922 | | |
| 9 | 1,052,652,302 | 25,871,138 | 15,789,785 | 1,026,781,164 | 41,660,922 | 5.5676 | 3.1988 |
| 10 | 1,026,781,164 | 26,259,205 | 15,401,717 | 1,000,521,959 | 41,660,922 | | |
| 11 | 1,000,521,959 | 26,653,093 | 15,007,829 | 973,868,866 | 41,660,922 | | |
| 12 | 973,868,866 | 27,052,889 | 14,608,033 | 946,815,977 | 41,660,922 | | |
| 13 | 946,815,977 | 27,458,683 | 14,202,240 | 919,357,295 | 41,660,922 | 5.9093 | 2.8572 |
| 14 | 919,357,295 | 27,870,563 | 13,790,359 | 891,486,732 | 41,660,922 | | |
| 15 | 891,486,732 | 28,288,621 | 13,372,301 | 863,198,111 | 41,660,922 | | |
| 16 | 863,198,111 | 28,712,951 | 12,947,972 | 834,485,160 | 41,660,922 | | |
| 17 | 834,485,160 | 29,143,645 | 12,517,277 | 805,341,515 | 41,660,922 | 6.2719 | 2.4946 |
| 18 | 805,341,515 | 29,580,799 | 12,080,123 | 775,760,716 | 41,660,922 | | |
| 19 | 775,760,716 | 30,024,511 | 11,636,411 | 745,736,204 | 41,660,922 | | |
| 20 | 745,736,204 | 30,474,879 | 11,186,043 | 715,261,325 | 41,660,922 | | |
| 21 | 715,261,325 | 30,932,002 | 10,728,920 | 684,329,323 | 41,660,922 | 6.6568 | 2.1097 |
| 22 | 684,329,323 | 31,395,982 | 10,264,940 | 652,933,340 | 41,660,922 | | |
| 23 | 652,933,340 | 31,866,922 | 9,794,000 | 621,066,418 | 41,660,922 | | |
| 24 | 621,066,418 | 32,344,926 | 9,315,996 | 588,721,492 | 41,660,922 | | |
| 25 | 588,721,492 | 32,830,100 | 8,830,822 | 555,891,392 | 41,660,922 | 7.0653 | 1.7012 |
| 26 | 555,891,392 | 33,322,551 | 8,338,371 | 522,568,841 | 41,660,922 | | |
| 27 | 522,568,841 | 33,822,390 | 7,838,533 | 488,746,451 | 41,660,922 | | |
| 28 | 488,746,451 | 34,329,725 | 7,331,197 | 454,416,726 | 41,660,922 | | |
| 29 | 454,416,726 | 34,844,671 | 6,816,251 | 419,572,055 | 41,660,922 | 7.4988 | 1.2677 |
| 30 | 419,572,055 | 35,367,341 | 6,293,581 | 384,204,713 | 41,660,922 | | |
| 31 | 384,204,713 | 35,897,852 | 5,763,071 | 348,306,862 | 41,660,922 | | |
| 32 | 348,306,862 | 36,436,319 | 5,224,603 | 311,870,542 | 41,660,922 | | |
| 33 | 311,870,542 | 36,982,864 | 4,678,058 | 274,887,678 | 41,660,922 | 7.9590 | 0.8075 |
| 34 | 274,887,678 | 37,537,607 | 4,123,315 | 237,350,071 | 41,660,922 | | |
| 35 | 237,350,071 | 38,100,671 | 3,560,251 | 199,249,400 | 41,660,922 | | |
| 36 | 199,249,400 | 38,672,181 | 2,988,741 | 160,577,219 | 41,660,922 | | |
| 37 | 160,577,219 | 39,252,264 | 2,408,658 | 121,324,955 | 41,660,922 | 8.4473 | 0.3191 |
| 38 | 121,324,955 | 39,841,048 | 1,819,874 | 81,483,907 | 41,660,922 | | |
| 39 | 81,483,907 | 40,438,664 | 1,222,259 | 41,045,244 | 41,660,922 | | |
| 40 | 41,045,244 | 41,045,244 | 615,679 | (0) | 41,660,922 | | |

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

**National Electric Power Regulatory Authority**
Islamic Republic of Pakistan
NEPRA Tower, G-5/1 (East), Near MNA Hostel, Islamabad
Phone: 9206500, Fax: 2600026
Website: www.nepra.org.pk, Email: info@nepra.org.pk

**REGISTRAR**

No. NEPRA/TRF-517/20968-70 October 31, 2022

The Manager
Printing Corporation of Pakistan Press
Shahrah-e-Suharwardi
Islamabad

Subject: **NOTIFICATION REGARDING DETERMINATION OF NATIONAL ELECTRIC POWER REGULATORY AUTHORITY IN THE MATTER OF TARIFF PETITION FILED BY M/S. ACCESS ELECTRIC (PVT.) LIMITED FOR DETERMINATION OF REFERENCE GENERATION TARIFF IN RESPECT OF 10 MWP SOLAR PV POWER PROJECT**

In pursuance of Sub-Section 7 of Section 31 of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (XL of 1997), enclosed please find herewith '*Determination of National Electric Power Regulatory Authority in the matter of Tariff Petition filed by M/s. Access Electric (Pvt.) Limited for Determination of Reference Generation Tariff in respect of 10 MWp Solar PV Power Project*' for immediate publication in the official gazette of Pakistan. Please also furnish thirty five (35) copies of the Notification to this Office after its publication.

**Encl:** Notification [27 pages & CD]

31 x 22
**(Syed Safeer Hussain)**

**CC:**

1. Chief Executive Officer, Central Power Purchasing Agency (Guarantee) Limited, 73 East, AKM Fazl-e-Haq Road, Block H, G-7/2, Blue Area, Islamabad

2. **Syed Mateen Ahmed**, Deputy Secretary (T&S), Ministry of Energy – Power Division, 'A' Block, Pak Secretariat, Islamabad *[w.r.t. NEPRA's Decision issued vide No. 17004-17006 dated September 7, 2022]*