__TO BE PUBLISHED IN THE GAZETTE OF PAKISTAN__
__EXTRA ORDINARY, PART-I__

National Electric Power Regulatory Authority

NOTIFICATION

Islamabad, the 26th day of July, 2023

S.R.O. 976 **(I)/2023**.- 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 Decision of National Electric Power Regulatory Authority in the matter of Motion for Leave for Review filed by Central Power Purchasing Agency (Guarantee) Limited against Determination of Authority dated August 12, 2022 in the matter of Tariff Petition filed by Zorlu Solar Pakistan Ltd. in Case no. NEPRA/TRF-400/ZSPL-2017.

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.

(Engr. Mazhar Iqbal Ranjha)
Registrar

National Electric Power Regulatory Authority
Islamic Republic of Pakistan
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REGISTRAR

No. NEPRA/TRF-400 19342-44

July 26, 2023

The Manager
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Subject: **DECISION OF NATIONAL ELECTRIC POWER REGULATORY AUTHORITY IN THE MATTER OF MOTION FOR LEAVE FOR REVIEW FILED BY CENTRAL POWER PURCHASING AGENCY (GUARANTEE) LIMITED AGAINST DETERMINATION OF AUTHORITY DATED AUGUST 12, 2022 IN THE MATTER OF TARIFF PETITION FILED BY ZORLU SOLAR PAKISTAN LTD.**

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 '*Decision of National Electric Power Regulatory Authority in the matter of Motion for Leave for Review filed by Central Power Purchasing Agency (Guarantee) Limited against Determination of Authority dated August 12, 2022 in the matter of Tariff Petition filed by Zorlu Solar Pakistan Ltd.*' 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 [17 pages]

(Engr. Mazhar Iqbal Ranjha)

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.14274-14276 dated June 09, 2023]*

DECISION OF NATIONAL ELECTRIC POWER REGULATORY AUTHORITY IN THE MATTER OF MOTION FOR LEAVE FOR REVIEW FILED BY CENTRAL POWER PURCHASING AGENCY (GUARANTEE) LIMITED AGAINST DETERMINATION OF THE AUTHORITY DATED AUGUST 12, 2022 IN THE MATTER OF TARIFF PETITION FILED BY ZORLU SOLAR PAKISTAN LTD.

1. National Electric Power Regulatory Authority ("NEPRA" or "the Authority") issued a tariff Determination in the matter of a tariff petition filed by M/s. Zorlu Solar Pakistan Limited ("ZSPL" or "Zorlu" or "the Company") for Determination of Reference Generation Tariff in respect of its 100 MWp Solar Power Project on August 12, 2022 ("Tariff Determination" or "the Impugned Determination") and thereby approved levelized tariff of US Cents. 4.0136/kWh for 25 years.

2. Central Power Purchasing Agency (Guarantee) Limited ("CPPAGL" or "the power purchaser" or "the petitioner") vide its letter dated September 20, 2022 (received on September 21, 2022) filed the subject motion for leave for review against the impugned determination under section 7(2)(g) of the NEPRA Act read with regulation 3(2) of the NEPRA (Review Procedures) Regulations, 2009 as amended (the "Review Regulations") and Rules 16(6) of the NEPRA (Tariff Standards and Procedure,) Rules, 1998 (the "Tariff Rules").

3. The Authority admitted the same and decided to hold a hearing on the subject matter which was initially scheduled for November 1, 2022. Subsequently, notices of hearing were sent to the relevant stakeholders on October 24, 2022. However, the Authority postponed and rescheduled the hearing for November 3, 2022, at 10:30 A.M. The revised notices of hearing were sent to the relevant parties, including the petitioner on October 31, 2022. The hearing was held as per the revised schedule through Zoom which was attended by the petitioner i.e. CPPAGL, ZSPL and others.

Grounds of Review motion

4. The petitioner has requested the Authority for the review of Impugned Determination with respect to the following parameters:

- EPC cost
- Additional cost due to change in technology
- Capacity factor
- Insurance during construction
- Provision of clawback mechanism and ROE
- Degradation factor

5. The submissions of the petitioner on the aforementioned grounds are summarized as follows:

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EPC Cost

6. CPPAGL has submitted that the Authority has approved EPC cost of USD 65 million, which is higher as compared to the EPC cost of USD 57.440 million allowed to Siachen Energy Limited ("Siachen"), and EPC cost of USD 53.550 million allowed to Zhenfa Pakistan New Energy Company (Pvt.) Ltd ("Zhenfa"). Furthermore, CPPAGL has also contended that ZSPL has not adhered to the NEPRA (Selection of EPC Contractor by IPPs) Guidelines, 2017. The petitioner further submitted that the Authority partially rationalized the EPC costs, when compared with the claim of ZSPL of USD 68 million, yet the petitioner contends that the said rationalization requires a further review on the basis of the Authority's earlier determination in comparable cases as mentioned above.

Additional Cost due to change in technology

7. CPPAGL submitted that ZSPL incurred certain costs as a result of change of technology from "mono-facial module with fixed tracking" to "bi-facial module and single-axis tracking" and sought to pass on said costs to the consumers by way of its tariff. CPPAGL contended that the said costs were incurred by the Project at the time when it had neither achieved its Financial Close, nor had it been accorded a valid tariff. The petitioner further contended that by including these 'Sunk Cost' in the projects EPC costs is a clear violation of fundamental principles of economic prudence and would impose an unjustifiable burden on the consumers which is contrary to the established norms of economic reasonableness.

Capacity Factor

8. CPPAGL submitted that the Authority has approved the annual plant capacity factor of 22.97% in the Impugned Determination. It submitted that a comparable solar PV power project — i.e. Siachen — was given capacity factor of 23.20%. The petitioner highlighted that the Authority may consider applying international standards with regards to the capacity factors for solar PV power projects, which stand at around 31% as per the data published by the US Energy Information Administration vide the Annual Energy Outlook, 2021. During the hearing, CPPAGL emphasized that the better capacity factor of Siachen is due to PERC technology and contended that had the tariff of Zorlu also been approved on PERC technology, then the capacity factor of ZSPL would have been increased.

Insurance during Construction

9. CPPAGL submitted that the Authority has approved the insurance during construction at the rate of 0.4% of the approved EPC cost. The petitioner requested that this particular component should be determined based on the actual insurance expenses incurred, subject to a maximum cap of 0.4% of the EPC costs.

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Provision of clawback mechanism and ROE

10. CPPAGL in the review motion expressed appreciation to the Authority's decisions regarding the incorporation of the provision of claw back mechanism whereby the profits of the company, exceeding the allowed limit, shall be shared between producer and purchaser. However, the petitioner contended that the mechanism should be explicitly delineated in this regard. Furthermore, CPPAGL requested that the Return on Equity ("ROE") allowed to ZSPL be reduced from 13% to the level of 12%, as allowed by the Authority to Siachen.

Degradation Factor

11. CPPAGL submitted that the Authority approved degradation factor of modules at 0.5% per year, and capitalized the impact thereof in the approved project cost. The petitioner submitted that the international standard for the degradation factor is 0.4% annually. Further, CPPAGL requested that the impact of degradation be allowed on an actual basis determined through an Annual Capacity Test, subject to a maximum annual cap of 0.4%, as making it the part of the project cost enables the project company to earn return on equity and claim financing cost thereon.

12. The petitioner during the hearing reiterated the aforementioned submissions.

13. The arguments were heard and the record was perused.

14. The Authority has noted that Regulation 3 (2) of the Review Regulations provides that any party aggrieved from any order of the Authority and who, from the discovery of new and important matter of evidence or on account of some mistake or error apparent on the face of record or from any other sufficient reasons, may file a motion seeking review of such order. Further Regulation 3 (7) of the Review Regulations read with Rule 16(9) of the Rules provides that the motion for leave for review may be refused by the Authority if it considers that the review would not result in the withdrawal or modification of the order.

15. The Petitioner has failed to present any new and significant evidence that was not already considered by the Authority when making the original decision, with the exception of addressing the impact of the degradation factor and also failed to point out any mistake or error apparent on the face of the record. The fact of matter which is also evident from the perusal of the decision is that all material facts and documents were in the knowledge of the Authority and the record clearly shows that the Authority issued the Impugned decision after consideration of all material facts and documents.

16. Regarding the treatment of the degradation factor, the Authority acknowledges that allowing for compensation of module degradation helps offset the loss of generation over the operational period. This compensation can be achieved through either capitalization, as allowed

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in other cases, or adjusting degradation on an as-and-when basis without capitalization. Both practices are commonly employed internationally, aiming to ensure that neither the consumer nor the Company is placed at a disadvantage.

17. It is worth noting that the power purchaser (the petitioner) involved in this particular case expressed a preference for removing the impact of degradation upfront in the project. Consequently, it has requested that degradation be addressed on an as-and-when basis. Taking this into account, the Authority has made the decision not to capitalize the impact of module degradation, as was allowed in the Impugned tariff determination. Instead, the Authority has opted to permit degradation at a rate of 0.5% per annum, to be applied on an as-and-when basis (if any) based on submission of documentary evidence to be provided by the Company.

18. The Authority duly acknowledged that the challenged decision encompassed strict timelines for achieving Financial Close. However, considering that the proceedings to finalize the ongoing petition requires a significant amount of time, the Authority has decided, in the interest of fairness and justice, to grant an extension of 4 months for the Financial Close of the projects in question. This extension shall commence from the originally stipulated Financial Close dates as provided by NEPRA in its initial determination.

Order:

19. In pursuance of section 7(3)(a) read with the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 and NEPRA (Tariff Standards & Procedure) Rules, 1998 and NEPRA (Review Procedures) Regulations, 2009, the Authority hereby determines and approves the generation tariff along with terms and conditions for Zorlu Solar Pakistan Limited (ZSPL) for its 100 MWp solar power project for delivery of electricity to the power purchaser as follows:

- Levelized tariff works out to be Rs. 7.8033/kWh (US Cents 3.9017/kWh).
- The tariff has been worked out on Build Own and Operate basis.
- EPC cost of USD 65.000 million has been approved.
- Project Development Cost of USD 1.320 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.
- Debt to Equity ratio of 80:20 has been approved.
- Tariff has been computed on 100% foreign financing.

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- ROE and ROEDC of 13% has been allowed.
- The cost of debt of 3 month LIBOR (2.28514%) + spread (4.25%) has been used for foreign financing.
- Debt servicing period of 14 years from COD has been used.
- O&M Cost of USD 9,000 per MW per year has been allowed.
- Insurance during Operation has been calculated as 0.40% of the allowed EPC Cost.
- Construction period of 10 months has been allowed.
- Net Annual Plant Capacity Factor of 22.97% has been approved.
- Degradation factor of 0.5% per year as a maximum limit on as and when basis has been approved from 2nd operational year subject to the provision of documentary evidence.
- Reference Exchange Rates 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	5.00%
Month 4	15.00%
Month 5	15.00%
Month 6	15.00%
Month 7	6.67%
Month 8	6.67%
Month 9	13.33%
Month 10	13.33%

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

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

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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 and 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 used in the COD decision.

v. 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.

vi. 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.

vii. 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. The IDC shall also be adjusted for the changes in LIBOR, as applicable in the financing documents, during the project construction period.

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%.

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

x. 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.

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xi. For the above adjustments, the construction period of lower or equal to ten months, as approved by the Authority, shall be considered.

B. Indexations

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

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, 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:

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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 a 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
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.*

iv) **Indexations applicable to debt**

With regards to foreign debt, the principal and interest components shall be adjusted on quarterly/bi-annual basis, on account of revised TT & OD selling rate of US Dollar, as notified by

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the National Bank of Pakistan as at the last day of the preceding period, over the applicable reference exchange rate as approved at COD.

v) **Variations in LIBOR**

The interest part of the tariff component for the loan shall remain unchanged throughout the term except for the adjustment due to variation in interest rate as a result of variation in LIBOR according to the following formula:

Δ I	=	P (REV) * (LIBOR (REV) – 2.28514%) / 4
Where;		
ΔI	=	The variation in interest charges applicable corresponding to variation in 3 month LIBOR. ΔI can be positive or negative depending upon whether 3 month LIBOR (REV) per annum > or < 2.28514%. The interest payment obligation will be enhanced or reduced to the extent of ΔI for each quarter under adjustment
P (REV)	=	The outstanding principal (as indicated in the attached debt service schedule to this order), at the relevant quarterly calculations date. Quarter 1 shall commence on the commercial operations date (i.e. the first figure will be used for the purposes of calculation of interest for the first quarter after commercial
LIBOR (REV)	=	Revised 3 month LIBOR as at the last day of the preceding quarter.

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 to be utilized shall be new and conform 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 shall be applicable only to the extent of net annual energy generation supplied to the power purchaser, up to a maximum 22.97% net annual plant capacity factor. Any net

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annual energy generation supplied to the power purchaser exceeding the 22.97% net annual plant capacity factor in a given year shall be subject to the following tariffs:

Net annual **plant capacity factor**	**% of prevalent tariff** **allowed to power producer**
Above 22.97% to 23.0%	-
Above 23.0% to 23.75%	10%
Above 23.75% to 24.50%	20%
Above 24.50% to 25.25%	30%
Above 25.25%	40%

- The risk of solar resource shall be borne by the power producer.
- The maximum installed plant PV capacity shall not exceed 100 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.
- ZSPL is required to ensure that all the equipment is installed as per the details/specifications given in the generation license and tariff determination.
- The savings in the approved limit of spread over foreign loan 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 loan tenor, as applicable.
- For the provision of the O&M cost, the Authority retains the discretion to make modifications in the approved O&M cost, while ensuring that it does not exceed the allowed limit as determined in accordance with the 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.
- Allowed limit of degradation is 0.5% on as and when basis (if any) from 2nd operational year based on submission of documentary evidence to be provided by the Company and the mechanism for reimbursement for the same shall be provided in the Energy Purchase Agreement.

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- The time of Financial Close is extended by 4 months starting from the Financial Close dates as previously given by NEPRA in its original determination.
- The targeted maximum construction period from prescribed date/time of Financial Close is 10 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 10 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 incorporated into the Energy Purchase Agreement. General assumptions, which are not covered in this determination, shall be governed by standard terms of the Energy Purchase Agreement.

20. The Order, including two 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.

AUTHORITY

* (Mathar Niaz Rana (nsc)) Member (Tariff & Finance)	(Eng. Maqsood Anwar Khan) Member (Licensing)
(Eng. Rafique Ahmed Shaikh) Member (Technical)	(Amina Ahmed) Member (Law)

* (Tauseef H. Farooqi)
Chairman

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09/06/23

* My additional note attached

* My additional note

Annex-I

ZORLU SOLAR PAKISTAN LIMITED
TARIFF TABLE

Year	O&M Local	Insurance	Return on Equity	ROEDC	Loan Repayment	Interest Charges	Tariff
	Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh
1	0.8946	0.2584	1.6842	0.0897	2.4847	3.5239	8.9355
2	0.8946	0.2584	1.6842	0.0897	2.6511	3.3575	8.9355
3	0.8946	0.2584	1.6842	0.0897	2.8286	3.1800	8.9355
4	0.8946	0.2584	1.6842	0.0897	3.0180	2.9906	8.9355
5	0.8946	0.2584	1.6842	0.0897	3.2202	2.7884	8.9355
6	0.8946	0.2584	1.6842	0.0897	3.4358	2.5728	8.9355
7	0.8946	0.2584	1.6842	0.0897	3.6659	2.3427	8.9355
8	0.8946	0.2584	1.6842	0.0897	3.9114	2.0972	8.9355
9	0.8946	0.2584	1.6842	0.0897	4.1734	1.8352	8.9355
10	0.8946	0.2584	1.6842	0.0897	4.4529	1.5557	8.9355
11	0.8946	0.2584	1.6842	0.0897	4.7511	1.2575	8.9355
12	0.8946	0.2584	1.6842	0.0897	5.0693	0.9393	8.9355
13	0.8946	0.2584	1.6842	0.0897	5.4088	0.5999	8.9355
14	0.8946	0.2584	1.6842	0.0897	5.7710	0.2376	8.9355
15	0.8946	0.2584	1.6842	0.0897	-	-	2.9269
16	0.8946	0.2584	1.6842	0.0897	-	-	2.9269
17	0.8946	0.2584	1.6842	0.0897	-	-	2.9269
18	0.8946	0.2584	1.6842	0.0897	-	-	2.9269
19	0.8946	0.2584	1.6842	0.0897	-	-	2.9269
20	0.8946	0.2584	1.6842	0.0897	-	-	2.9269
21	0.8946	0.2584	1.6842	0.0897	-	-	2.9269
22	0.8946	0.2584	1.6842	0.0897	-	-	2.9269
23	0.8946	0.2584	1.6842	0.0897	-	-	2.9269
24	0.8946	0.2584	1.6842	0.0897	-	-	2.9269
25	0.8946	0.2584	1.6842	0.0897	-	-	2.9269
Levelized Tariff	**0.8946**	**0.2584**	**1.6842**	**0.0897**	**2.8792**	**1.9972**	**7.8033**

Annex-II

ZORLU SOLAR PAKISTAN LIMITED
DEBT SERVICE SCHEDULE

Relevant Quarters	Base amount (USD)	Principal Repayment (USD)	Interest (USD)	Balance Principal (USD)	Total Debt Service (USD)	Annual Principal Repayment Rs/kWh	Annual Interest Rs/kWh
1	55,175,849	609,839	901,455	54,566,010	1,511,294	2.4847	3.5239
2	54,566,010	619,803	891,491	53,946,207	1,511,294		
3	53,946,207	629,929	881,365	53,316,278	1,511,294		
4	53,316,278	640,221	871,073	52,676,057	1,511,294		
5	52,676,057	650,680	860,614	52,025,377	1,511,294	2.6511	3.3575
6	52,025,377	661,311	849,983	51,364,066	1,511,294		
7	51,364,066	672,116	839,178	50,691,950	1,511,294		
8	50,691,950	683,097	828,197	50,008,854	1,511,294		
9	50,008,854	694,257	817,037	49,314,597	1,511,294	2.8286	3.1800
10	49,314,597	705,600	805,694	48,608,997	1,511,294		
11	48,608,997	717,127	794,167	47,891,870	1,511,294		
12	47,891,870	728,844	782,450	47,163,026	1,511,294		
13	47,163,026	740,752	770,542	46,422,274	1,511,294	3.0180	2.9906
14	46,422,274	752,854	758,440	45,669,421	1,511,294		
15	45,669,421	765,154	746,140	44,904,267	1,511,294		
16	44,904,267	777,655	733,639	44,126,612	1,511,294		
17	44,126,612	790,360	720,934	43,336,252	1,511,294	3.2202	2.7884
18	43,336,252	803,273	708,021	42,532,979	1,511,294		
19	42,532,979	816,397	694,897	41,716,582	1,511,294		
20	41,716,582	829,735	681,559	40,886,848	1,511,294		
21	40,886,848	843,291	668,003	40,043,557	1,511,294	3.4358	2.5728
22	40,043,557	857,068	654,226	39,186,489	1,511,294		
23	39,186,489	871,071	640,223	38,315,417	1,511,294		
24	38,315,417	885,302	625,992	37,430,115	1,511,294		
25	37,430,115	899,766	611,528	36,530,349	1,511,294	3.6659	2.3427
26	36,530,349	914,467	596,827	35,615,882	1,511,294		
27	35,615,882	929,407	581,887	34,686,475	1,511,294		
28	34,686,475	944,592	566,702	33,741,883	1,511,294		
29	33,741,883	960,024	551,270	32,781,859	1,511,294	3.9114	2.0972
30	32,781,859	975,709	535,585	31,806,150	1,511,294		
31	31,806,150	991,650	519,644	30,814,500	1,511,294		
32	30,814,500	1,007,851	503,443	29,806,649	1,511,294		
33	29,806,649	1,024,317	486,977	28,782,332	1,511,294	4.1734	1.8352
34	28,782,332	1,041,053	470,241	27,741,279	1,511,294		
35	27,741,279	1,058,061	453,233	26,683,218	1,511,294		
36	26,683,218	1,075,348	435,946	25,607,870	1,511,294		
37	25,607,870	1,092,916	418,378	24,514,954	1,511,294	4.4529	1.5557
38	24,514,954	1,110,772	400,522	23,404,182	1,511,294		
39	23,404,182	1,128,920	382,374	22,275,262	1,511,294		
40	22,275,262	1,147,364	363,930	21,127,897	1,511,294		
41	21,127,897	1,166,110	345,184	19,961,788	1,511,294	4.7511	1.2575
42	19,961,788	1,185,161	326,133	18,776,627	1,511,294		
43	18,776,627	1,204,524	306,770	17,572,102	1,511,294		
44	17,572,102	1,224,204	287,090	16,347,899	1,511,294		
45	16,347,899	1,244,204	267,090	15,103,694	1,511,294	5.0693	0.9393
46	15,103,694	1,264,532	246,762	13,839,162	1,511,294		
47	13,839,162	1,285,192	226,102	12,553,970	1,511,294		
48	12,553,970	1,306,189	205,105	11,247,781	1,511,294		
49	11,247,781	1,327,529	183,765	9,920,252	1,511,294	5.4088	0.5999
50	9,920,252	1,349,218	162,076	8,571,033	1,511,294		
51	8,571,033	1,371,262	140,032	7,199,772	1,511,294		
52	7,199,772	1,393,665	117,629	5,806,106	1,511,294		
53	5,806,106	1,416,435	94,859	4,389,672	1,511,294	5.7710	0.2376
54	4,389,672	1,439,576	71,718	2,950,095	1,511,294		
55	2,950,095	1,463,096	48,198	1,487,000	1,511,294		
56	1,487,000	1,487,000	24,294	(0)	1,511,294		

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ADDITIONAL NOTE

It's worth noting that the CCOE's decision dated April 04, 2019, placed Zorlu in Category I (LOS Stage). In accordance with the above referred decision, the tariff of both ASPL was determined by the Authority on September 07, 2020. Subsequent to the expiry of the tariff, ASPL filed 2nd tariff petitions. The compliance with CCOE decision was already made as the CCOE's decision contains no provision for determining tariffs a second time under the cost plus regime. **Instead, the project companies should have been directed to participate in competitive bidding when they filed the 2nd tariff petition as the cost of power in the country even for renewable energy projects is higher than the other regional countries.**

With regard to the cost of degradation of module, I believe it is not a prudent cost to be capitalized.

I believe that the current market price of module and current marine freight should be taken into consideration while allowing the tariff. Although the EPC price is allowed on a lump-sum basis as a maximum cap and adjusted at COD based on actual EPC cost within the maximum allowed cost, the tariff should be reflective of current market conditions. It is apprised that the module prices ending March 2023 (when this issue was being deliberated upon)—including container index used for computing marine freight —have shown a decrease in prices since the last tariff determination, i.e., from USD 0.26 million/MW to USD 0.217 million/MW inclusive of impact of marine freight. **If all else remains constant, this alone will translate into a tariff decrease of about US cent 0.23/kWh.** It is important to highlight that the above decrease in tariff don't take into account the potential increase in Capacity Utilization Factor which has also improved over time thus can lead to much higher reduction in tariff. Therefore, I believe that the tariff should prudently reflect the current market conditions and latest technology offering for which adequate time should have been given for achieving financial close with revised updated tariff.

Lastly, to guarantee that the allowed amount for the power plant is an accurate upper cap, it is my considered opinion that, during the truing up process, **the amount being allowed for individual items should be treated as an upper cap.** This is in contrast to the current approach, where the overall engineering, procurement, and construction (EPC) cost is seen as a whole. In light of the above, **I propose that a more refined methodology be implemented to determine the cost of individual items and these be set as upper caps.** This would ensure that the upper cap is effectively enforced, thereby promoting transparency and accountability in the electricity sector.

Mathar Niaz Rana (nsc)
Member (Tariff & Finance)

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COMMENTS ON ADDITIONAL NOTE OF MEMBER (TARIFF)

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Decision of Cabinet Committee on Energy: The honorable Member has stated that all these three (03) companies (Access Solar, Access Electric and Zorlu Solar) should not have been given a tariff 2nd time under the cost-plus regime, rather should have been directed to participate in the competitive bidding process, in light of CCOE decision dated April 04, 2019. However, I trust the legal opinion was sought on this point at the time of admitting their tariff petitions, which states that the CCoE decision does not bar determining tariffs for Category I & II projects under cost plus regime more than one time. Additionally, this issue was also framed for the tariff proceedings on the above 03 cases, whereupon no opposition was advanced either by the Federal Government (who authored the CCoE decision).

2. **Revision of EPC Cost:** In the review motion, CPPAGL requested for the review of the said parameter while referring to the costs that were approved by the Authority previously (during the years 2020 and 2021), i.e., it was argued that the EPC cost allowed to these 03 projects is higher than the said cost allowed by NEPRA to some companies back in 2020 and 2021. The honorable Member (Tariff) has commented that the EPC cost should be revised downward, as the module prices since the time of Tariff Determinations, have come down. To start with, there is a striking difference in the basis on which the review has been filed by CPPAGL and the note written by the honorable Member (Tariff), and this suggestion by the Honorable Member is beyond the scope of the review motion. The Authority has been approving cost-plus tariffs of renewable energy projects (wind and solar) on the prices prevailing at the time of their tariff determinations while allowing a validity period of one year, i.e., prices are locked for the period of 01 year that are not allowed change due to increase or decrease in prices of equipment during that period. The time of one (01) year was allowed to these 03 Nos. companies also to achieve Financial Close, failing which their tariffs would lapse. In my view, the idea put forth by the Member (Tariff) may sound beneficial in this particular case, but would defeat the whole scheme of 01 year validity period of the tariff, and with the extension in the time of achieving financial close (as proposed in the note), this would warrant the opening of tariff again in case of change in prices during that time and in this way, the tariff shall never attain finality. Most importantly, the proposed idea of opening up the tariff within 1 year lock period would also be counter-beneficial to the consumers in

most cases especially when the equipment prices increase during this period. It is also important to note that the instant matter remained pending before NEPRA for more than 07 months; had that been concluded on time, the issue of change in prices after the date of Tariff Determinations, would not have even risen. The worthy Member has also stated that the capacity utilization factor allowed to these projects could be increased, however, Tariff has been given to them based on the latest available equipment and since technology is changing every passing day, Authority has to draw a line and make the best decision based on the best available information at given point in time.

3. **Adjustment Mechanism of EPC Cost**: It has been proposed that instead of the overall EPC cost, the individual cost items should be treated as the upper cap to allow/adjust the said cost at the COD stage. Though this matter is not under the scope of the review motion, I shall be happy to see a more detailed analysis of it. Authority should consider any positive suggestion whilst staying away from micro-managing the industry through over-regulating and thus scaring the potential investors away, having much more lucrative and attractive investment opportunities all over the world.

Tauseef H. Farooqi
Chairman

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