

24th July 2019

The Registrar
National Electric Power Regulatory Authority
NEPRA Tower Attaturk Avenue (East),
Sector G-5/1, Islamabad.

Subject: Submission of the Tariff Petition of 50 MWp Solar Power Project of HNDS Energy (Pvt.) Limited (Company)



Dear Sir,

We herewith submit the Company's Tariff Petition along with the fee as determined by the National Electric Power Regulatory Authority ("NEPRA" or the Authority-) for kind consideration and favorable approval by the Authority in accordance, inter alia, with section-31 of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 read with Rule 3 of the NEPRA tariff Standards and Procedure Rules, 1998 and other applicable provisions of NEPRA law.

The Tariff Petition (including its Annexures) is submitted in triplicate together with:

- a. The Bank Draft No. 00319115 dated 24th July 2019, amounting to PKR 685,440 (Pakistan Rupees Six hundred eighty five thousand four hundred and forty only) as requisite for fee for Tariff Petition as communicated by NEPRA.
- b. Board Resolution of HNDS Energy (Pvt.) Limited
- c. Affidavit of Mr. Mr. Usman Ahmad

Yours sincerely,



Mr. Usman Ahmad
Chief Executive Officer
HNDS Energy (Pvt.) Limited

BEFORE
THE NATIONAL ELECTRIC POWER REGULATORY AUTHORITY (NEPRA)
TARIFF PETITION
FOR NEPRA'S APPROVAL OF REFERENCE GENERATION TARIFF FOR

HNDS ENERGY (PVT.) LIMITED
FOR 50 MWp SOLAR POWER PROJECT

AT
GOTH GAGRAWARA, TALUKA SALEH PAT, DISTRICT SUKKUR, SINDH

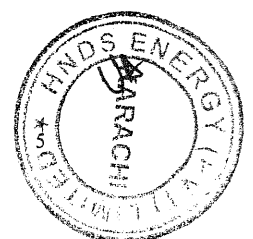
5th July 2019

HNDS Energy (Pvt.) Limited
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01 Details of the Petitioner

1.1 Petitioner's Name and Address

HNDS Energy (Pvt.) Limited (HEPL)
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TEL: +92 21 111 176 527, +92 21 35360583-4, +92 21 35304863-4
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1.2 Representatives of Petitioner

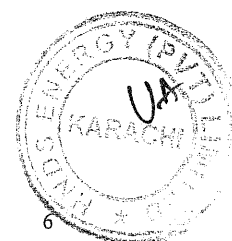
Mr. Usman Ahmad
Chief Executive Officer, HNDS Energy (Pvt.) Limited

1.3 Project Sponsors

- 1) Scatec Sukkur B.V., a fully owned subsidiary of Scatec Solar ASA, Norway (Scatec)
- 2) Nizam Energy (Private) Limited, Pakistan (Nizam)

1.4 Project Advisors

Bridge Factor (Private) Limited	Financial Advisors
Renewable Resources (RII2)	Engineering Consultant
Axis Law Chambers	Legal Advisors



02 Grounds of the Petition

2.1 Legal Context and Project Background

Under the Regulation for Generation, Transmission and Distribution of Electric Power Act (XL of 1997) (the **NEPRA Act**), the National Electric Power Regulatory Authority (**NEPRA** or **Authority**) is responsible, inter alia, for determining tariffs and other terms and conditions for the supply of electricity through generation, transmission and distribution. NEPRA is also responsible for determining the process and procedures for reviewing tariffs and recommending tariff adjustments. Further, pursuant to the enabling provisions of the NEPRA Act, the procedure for tariff determination has been prescribed in the **NEPRA** (Tariff Standards and Procedure) Rules, 1998 (the **NEPRA Rules**).

HNDS Energy (Pvt.) Limited (**HEPL**) applied to the Authority twice for unconditional acceptance of the upfront solar tariff in respect of its 50 MWp solar power project to be set up at Goth Gagrara, Taluka Saleh Pat, District Sukkur, Sindh (the **Project**). However, the Authority through letters dated 03 December 2015 and 29 January 2016 returned the applications on the basis of non-availability of approvals for the Grid Interconnection Study and Central Power Purchasing Agency (Guarantee) Limited's consent, which were delayed by the relevant entities without any plausible justification. HEPL finally received the requisite National Transmission and Despatch Company (**NTDC**) approvals in April 2017.

In the meantime, NEPRA through its decision dated 03 March 2017 abolished the feed in tariff regime for solar power projects, subsequent to which sponsors decided to submit tariff petition under cost plus regime.

HEPL thereafter on the basis of clear direction by Authority and after fulfilling all the regulatory requirements, filed tariff petition (under cost plus regime) to the Authority on 07 August 2017 for determination of generation tariff. Tariff petition was admitted by the Authority and a public hearing for the Project was conducted at NEPRA on 14 November 2017.

Based on the hearing and submission, Authority awarded a tariff of 5.2662 US Cents/kWh against the requested tariff of US Cents 5.9574 kWh for the Project on 25 January 2018 (the **Determination**). Thereafter, HEPL filed a motion for leave for review on 12 February 2018. Authority gave its decision on the motion for leave for review on 09 August 2018, under which the Authority maintained its earlier decision.

As per paragraph 56 of the Determination, the Federal Government was intimated to notify the tariff in the official gazette pursuant to Section 31(4) of the NEPRA Act. However, neither any such notification was made by Federal Government, nor HEPL was issued a Letter of Support (**LOS**) by relevant agencies, in spite of it being compliant with all the requirements (HEPL also submitted requisite performance guarantee to Alternative Energy Development Board (**AEDB**) of US\$ 125,000) of the Policy for Development of Renewable Energy 2006 (the **RE Policy 2006**). Because of these reasons, HEPL could not achieve financial close and the reference tariff awarded to HEPL expired on 24 January 2019 (as per the Determination).

We understand that the reasons behind the failure of the government agencies in notification of the tariff / issuance of the LOS etc. emanates from the Cabinet Committee on Energy (CCoE) decision of December 2017 and February 2018 (the **CCoE Decision**), that halted progress on all renewable energy power projects under pipeline, including HEPL.

It is important to highlight that HEPL continued development activities on the Project during 2018 based on the NEPRA's Determination (since NEPRA had issued the Determination after the CCoE Decision) and the expectation that the said CCoE decision will be reversed (being in contradiction with the rights conferred to HEPL under RE Policy 2006 and the Constitution of Pakistan 1973).

Lately, another CCoE decision dated 29 March 2019 / 4 April 2019 (the **Latest CCoE Decision**), reactivated the renewable energy projects, which were in pipeline and were on halt, through amending the earlier CCoE decision that halted RE projects for over a year.

As per paragraph V of the Latest CCoE Decision: *"All projects that have been issued LOIs and have been granted tariff by NEPRA and issued a generation license will be allowed to proceed ahead towards the achievement of their requisite milestones as per the RE Policy 2006. However, if the tariff validity period has elapsed, NEPRA will be requested for review of the same to make it consistent with the current market environment and consumer interest. Such review will include appropriate time extension to reach financial closing".* The scope of the review on the Determination is established under paragraph XI that states: *"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".*

Based on the Latest CCoE Decision on the matter and the fact that more than one (1) year has elapsed from the Determination of Authority with regard to the Project, HEPL hereby submits tariff petition for determination by the Authority in light of the above referred clauses of Latest CCoE Decision, the NEPRA Act, and Rule 3 of the NEPRA Rules which states that any licensee, consumer or person interested in the tariff may file a petition with the Authority by filing it with the Registrar along with such fees as may be determined by the Authority from time to time. A petition "means a petition made to the Authority for the determination, modification or revision of tariff".

2.2 Basis for Request of Tariff Determination

Further to the Latest CCoE's Decision, HEPL hereby submits petition before NEPRA for determination of tariff, keeping in view the following:

- (a) all Project approvals including LOI, land, environment and interconnection have already been submitted in the earlier petition dated 07 August 2017,
- (b) binding EPC arrangement for supply, construction, erection and commissioning of the project is in the process of updation with the same EPC contractor, and
- (c) project debt funding has been arranged (on the basis of earlier debt equity structure approved by NEPRA in the earlier Determination) and lenders have got their credit approvals, based original terms and conditions provided in the Original Determination and sponsors have committed the required equity for the Project.

This tariff petition is requested to be considered as a continuation of the earlier Determination for the Project and further it is requested that assumptions already allowed in the Determination (except the economic assumptions and indices i.e. LIBOR, exchange rate, Pak CPI and US CPI) may allowed to be continued.

The tariff assumptions allowed by the Authority are reproduced in the below table for ease of reference and the Authority is requested to allow the same for the sake of equality and justice.

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Description	Already Allowed in Determination	Assumptions for this Petition
Insurance During Construction	0.5% of the EPC Cost	0.5% of the EPC Cost
Financing Costs	2.5% of the Debt Amount excluding the impact of IDC and Financing Cost	2.5% of the Debt Amount excluding the impact of IDC and Financing Cost
Capitalized Degradation	3.722% of the EPC Cost	3.722% of the EPC Cost
Insurance During Operation	0.5% of the EPC Cost	0.5% of the EPC Cost
Tariff Period	25 years	25 years
Debt Equity Ratio	75:25	75:25
LIBOR Rate	1.694%	2.40%
Spread Margin (Foreign)	4.25%	4.25%
Loan Repayment Period	14 years	14 years
US\$/PKR exchange rate	105	150
Discount Rate for Levelization	10%	10%
Return on Equity	15%	15%
True up conditions	Same as per the earlier Determination except for the change in exchange rate provided above	
Sharing Mechanism	As allowed in the earlier Determination	
Indexation	US CPI and Pak CPI to be established by Authority	

2.3 Submission

Pursuant to the Latest CCoE Decision, the relevant provisions of the NEPRA Rules read with the provisions of the NEPRA Act and the Rules and Regulations made thereunder, HEPL hereby submits the following for consideration and determination by the Authority:

- **Change in Technology and resultant impact on EPC cost, O&M cost and Capacity factor**
- **Project Development Cost**

To be clear HEPL would not be filing this tariff petition had the Determination been notified in the official gazette, the LOS issued, Energy Purchase Agreement (EPA)/ Implementation Agreement (IA) signed etc., basically had the Project been allowed to continue, HEPL would have timely achieved financial close and would not be having to submit another petition to NEPRA. This petition therefore only contains information relating to the Project that (a) has been demanded by the Latest CCoE Decision or (b) is a consequence of the delay faced by HEPL in project development due to the failure of the government agencies in following the RE Policy 2006 – all other information is as contained in the original tariff petition and as determined by NEPRA in the Determination (both the original tariff petition and Determination to be read as if incorporated in full herein).



03 Issues for Authority's Consideration

The issues discussed under this section are requested to be considered by the Authority, keeping in view the following facts:

- a. the levelized reference tariff the Project based on the Determination was **US Cents 5.2662/kWh** at a LIBOR of 1.69% as established in the Determination, had the levelized reference tariff been updated on 'As Is' basis at a LIBOR of 2.40% (as used by Authority in its last determination for similar size solar IPP i.e. Siachin) the same would have increased to **US Cents 5.3952/kWh**.
- b. HEPL refers Authority's decision of 11 October 2018 on Motion for Leave for Review filed by M/s. Access Solar (Private) Ltd, under which following decisions were made by Authority:
 - ".....compensation of legitimate cost of the project company due to its prolonged development period would be given due deliberations on the basis of verifiable documentary evidence."
 - Debt: Equity ratio and return on equity and similar other terms were maintained at same level as allowed in the original determination dated 18 January 2018 for Access Solar (Private) Limited, though NEPRA (Benchmark for Tariff Determination) Guidelines 2018 were issued on 19 June 2018.
- c. In case of hydro sector where two stage structure for establishing reference tariff is applicable, the parameters related to sponsor's returns and capital structure are not generally changed.
Case Reference: Para 4.17.2 of NEPRA's Tariff determination dated 17 May 2018 for EPC stage tariff determination of 700.7 MW Azad Pattan Hydro Power Projects states "The Authority has observed that the feasibility stage tariff determination request for Azad Pattan Hydropower Project was submitted by NTDC on 23 October 2012 (after approval of the feasibility study in December 2011 by PPIB) based on the then prevailing financial/capital market situation. Whereby the Authority had allowed a rate of 17% to Azad Pattan Hydropower Project at par with other comparable Hydropower Project. The Authority considers that it will not be fair to reduce the return at this stage on the same analogy as was done in other similar projects. In view thereof return on equity at 17% (IRR based) is allowed in the instant case."
- d. HEPL Determination was issued in 25 January 2018, and the reasons behind non-achievement of financial close are not attributable to HEPL.

Keeping in view the above it is requested to kindly allow continuation of tariff structure and other terms conditions of the Determination, except for the matters discussed hereunder:



3.1 Change in Technology

3.1.1 Original EPC Design

The original EPC design was based on polycrystalline silicon, double glass, single axis tracking modules, which were selected because of the high yield. Double glass technology allows for better and more efficient cleaning options.

3.1.2 Considerations for Change in Design

HEPL is now considering state of the art bifacial technology, which in the opinion of the sponsors best suits the site conditions. The Project site is located in a desert area and has reflective sandy surface, therefore use of bifacial panels would potentially improve the energy generation of the Project.

Scatec Solar is well experienced in realizing bankable solar PV projects with bifacial panels, as the company has already commissioned a 195 MWp project with similar technology in Egypt and is near completion of additional 205 MWp.

HEPL has selected this technology considering the best interest of consumers and the solar industry of Pakistan, and to seek innovation and introduction of state of the art technology.

Further it is highlighted that Authority in its decision dated 11 January 2019 in the matter of approval of Energy Purchase Agreement submitted by K-Electric Limited with regard to 50 MWp Ghara Solar, has allowed the project company to switch to monocrystalline bifacial modules from poly crystalline modules as was previously allowed in tariff determination dated 25 January 2018, subject to license modification.

3.1.3 The Proposed Technology

HEPL now plans to install bifacial Tier 1 modules for the Project. Breakup of targeted EPC cost is provided hereunder:

EPC Cost	US\$ M	US\$ M/MW
Modules	15.50	0.310
Inverters	2.00	0.040
Mounting Structure	7.50	0.150
Balance of Plant (Civil Works, Cables, Transformer etc.)	11.80	0.236
Total EPC cost	36.80	0.736

Based on our review of various determinations within solar sector and Authority's views on allowed EPC costs in said determinations, we understand that Authority has considered following benchmarks for different solar technologies at stated dates in finalizing EPC costs for the related projects.

EPC Cost Benchmarks	Zorlu	Helios	Ghara	Sachin	Zhenfa	Access	Pro
	US\$ M/MW						
Determination Date	Jan 2018	Jan 2018	Jan 2018	Nov 2018	Aug 2018	Jan 2018	Oct 2018
Proposed design	Fixed tilt	Si-poly single axis tracking	Single axis tracking	Monocrystalline, Single Axis Tracking	Si-poly - 30% single axis tracking -70% fixed tilt	Fixed tilt	Single axis tracking
Modules	0.320	0.320	0.340	0.270	0.240	Break up not available	
Inverters	0.040	0.040	0.060	0.040	0.040		
Mounting Structure	0.080	0.150	0.150	0.150	0.108		
Balance of Plant (Civil Works, Cables, Transformer etc.)	0.274	0.236	0.200	0.244	0.229		
EPC cost allowed	0.714	0.746	0.750	0.704	0.617	0.724	0.704

a) Modules

As per the Determination, the Authority has allowed US\$ M 0.320/MWp for polycrystalline modules (as per HEPL's earlier design), however, HEPL is now changing the technology to bifacial monocrystalline modules. The prices for bifacial modules are attached as Annexure A as provided by the EPC contractor.

Based on the attached quotes, the prices of said technology ranges between US\$ 0.302/MWp to US\$ 0.3125/MWp for delivery at Karachi sea port. However, further to the ongoing negotiations with the EPC contractor, HEPL's module cost will be US\$ 0.310/MWp including transportation cost from Karachi sea port to Project site.

b) Inverters

We have used same benchmark price of invertors as has been allowed in the Determination. Kindly note that the prices of inverters are at increasing trend in the international market, however HEPL has used NEPRA benchmark (discussed above) for calculating targeted EPC cost for the purposes of this petition.

c) Mounting Structure

We have used same benchmark price of mounting structure as has been allowed in the Determination. It is important to highlight that tracker based mounting structure for bifacial modules will be expensive compared to mounting structure for standard tracker based modules due to increased height and weight for attracting light at the back of the modules. However, HEPL is of the view that this additional impact of cost will be neutralized from higher efficiency of the modules.

d) Balance of Plant (Civil Works, Cables, Transformer etc.)

We have used same costs of Balance of Plant (Civil works, Cables, Transformers etc.) as has been allowed in the Determination. As discussed in mounting structure, cable lengths and civil works requirements will be higher in case of bifacial monocrystalline modules; however, these are expected to be neutralized because of other cost efficiencies from change of technology.

3.1.4 O&M Costs

Change in technology from polycrystalline silicon to bifacial will result in increased O&M cost of the Project. Main reasons for increased O&M cost in case of bifacial monocrystalline technology includes the following:

- Bifacial technology requires a more complex and higher mounting structure with increased cable layout, to minimize rear-side shading, therefore more maintenance cost will be required.
- Bifacial technology requires more cleaning costs due to dual side of the modules.
- Higher table heights also results in difficulty in cleaning and maintenance, thus will have a consequential increase in associated operational costs.

A comparison of allowed O&M cost to various projects is provided hereunder:

EPC Cost Benchmarks Determination Date	Zorlu Jan 2018	Helios Jan 2018	Ghara Jan 2018	Shachin Nov 2018	Zhenfa Aug 2018	Access Jan 2018	Access Oct 2018
Proposed design	Fixed tilt	Si-poly single axis tracking	Single axis tracking (now with bifacial)	Monocrystalline, Single Axis Tracking	Si-poly - 30% single axis tracking - 70% fixed tilt	Fixed tilt	Single axis tracking
Plant Capacity (MWp)	100	50	50	100	100	11.52	11.52
Annual O&M cost (US\$)	1,100,000	560,000	759,000	1,265,000	1,166,000	148,500	174,874
Annual O&M cost (US\$ /MWp)	11,000	11,200	15,180	12,650	11,660	13,200	15,180

Based on above, Authority is requested to allow an increase of 25% in the annual O&M cost allowed in earlier Determination. Accordingly, the Authority is requested to allow an annual O&M cost of US\$ 0.70 Million to the Project.

Above requested O&M cost for the Project translates into US\$ 14,000/MWp which is still significantly lower (7.8%) than the benchmark of US\$ 15,180/MWp set for Ghara power project of 50 MWp that has recently been allowed to switch on similar technology (single axis tracking with bifacial monocrystalline) by the Authority.

3.1.5 Capacity Factor

As a result of change in technology, capacity factor of the Project has been changed from 22.21% to 23% with an energy generation of 100,740,000 kWh per annum. The Yield Assessment Report is attached as Annexure B.

By changing technology from polycrystalline silicon to bifacial, the capacity factor for the Project will be increased from 22.21% to 23%. It is important to note that the capacity factor proposed by HEPL is higher than all the projects currently in development or in operations.

Projects in operations:

Projects of 100 MW	Unit	NEPRA Approved	2015-16	Actual 2016-17	2017-18
Quaid-e-Azam Solar Power (Pvt) Ltd	%age	17.50%	18.27%	18.46%	18.78%
Crest Energy Pakistan Ltd	%age	17.50%	-	19.38%	19.00%
Best Green Energy Pakistan Ltd	%age	17.50%	-	19.11%	18.93%
Appollo Solar Development Pakistan Ltd	%age	17.50%	-	19.05%	18.47%

Source: CPPA Energy Purchase Data

Projects under Development:

Projects	Unit	Capacity Factor
Zorlu Solar Pakistan (Pvt.) Limited	%age	20.50%
Ghara Solar (Pvt.) Limited	%age	22.21%
Siachen Energy Limited	%age	22.21%
Zhenfa Pakistan New Energy Company (Pvt.) Limited	%age	19.25%
Access Solar (Private) Limited (ASPL)	%age	20.26%

Authority is therefore requested to approve a capacity factor of 23% for the Project, based on bifacial technology.

3.2 Non-EPC and Project Development Cost

Authority allowed US\$ 1.782 Million as project development cost in HEPL's Determination, however, a sum of US\$ 0.687 Million has already incurred till date.

The detailed breakup of the project development cost incurred to date and further expected to be incurred compared with cost allowed in Determination is provided hereunder:



Cost	Original Determination	Costs Incurred	Costs To be Incurred	Requested Cost
		US\$ M		
Consultancy Costs & Technical Studies – Pre-Financial Close	0.340	0.272	0.126	0.398
Owner's Engineer Supervision – Post Financial Close	0.067	-	0.067	0.067
Independent Engineer - Pursuant to the EPA	0.100	-	0.100	0.100
Permits, Permissions and Related Costs	0.025	0.025	-	0.025
Site, Security and Infrastructure	1.000	-	1.000	1.000
Administration Cost	0.150	0.153	0.120	0.273
Travelling Costs	0.100	0.236	0.100	0.336
Non-EPC & Project Dev. Cost	1.782	0.687	1.513	2.200

Based on above it can be observed that HEPL has incurred a sum of US\$ 0.687 Million as Project development cost till date, and a further sum of US\$ 1.513 Million is required to be incurred till financial close, based on which a total project development cost of US\$ 2.20 Million is estimated.

Paragraphs below explain the reasons for increase in project development cost, provided in above table, for each of the above sub-head for Authority's consideration.

- (a) Consultancy Costs & Technical Studies (Project Company/Sponsors) - Pre Financial Close: HEPL has endeavored to put together the best team of consultants for the Project so as to ensure that solar power sector in the country is developed and the Project is bankable from all aspects.

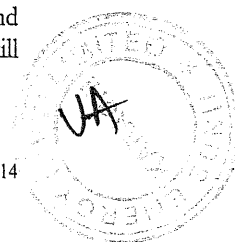
This is to highlight that cost for certain consultants were on time cap basis which were initially forecasted based on the assumption that the financial close will be achieved in early 2018. However, due to delays in the Project, additional costs have been incurred after the time cap period which have increased the overall cost of consultants engaged for the Project.

HEPL has also incurred a sum of more than US\$ 0.04 Million for legal cases due to CCoE Decision. Similarly, further cost (legal and financial consultants) has been incurred for development of this tariff petition based on the Latest CCoE Decision. Also, technical studies have been updated due to change in design of the Project because of which additional amount is to be paid to owner's technical consultants.

Major component of consultancy costs relates to cost of international consultants, which are time based costs. HEPL has to incur these costs since Project inception i.e. April 2015 till date (more than four (4) years period). Moreover, HEPL has also engaged international lenders financial technical and legal advisors for financing of the Project, which have completed their due-diligence but the Project could not achieve financial close due to non-award of Project LOS by AEDB. These advisors are continuously working since inception of the Project, and their costs are time based and increased many folds due to delays on part of government. Authority is therefore requested to allow these additional costs for the Project, which are not required to be incurred in case of other projects.

Similarly, services of technical consultants were required to be obtained for change in Project design from polycrystalline to bifacial monocrystalline modules.

HEPL has already incurred a sum of US\$ 0.272 Million for the cost of consultants and technical studies, and a further sum of US\$ 0.126 Million is expected to be incurred till



financial close making a sum of US\$ 0.398 Million for the cost of consultants and technical studies.

(b) Owner's Engineer & Supervision Costs – Post Financial Close:

Owner's Engineer cost will be incurred post financial close, therefore HEPL has kept it same as approved by the Authority in its earlier Determination for this Project.

(c) Independent Engineer:

Similarly, Independent Engineer's cost will be incurred post financial close, therefore HEPL has kept it same as approved by the Authority in its earlier Determination for this Project.

(d) Permits, Permissions and Related Costs:

This head includes fees to be paid to different regulatory authorities, i.e. NEPRA, AEDB, Energy Department, Government of Sindh, NTDC etc.

HEPL has already paid annual generation license renewal fee for two (2) years, and a further fee for two (2) more years is expected to be paid since 2020. HEPL was also required to pay additional processing fee to AEDB. This head also includes cost of Bank Guarantee for the LOI and LOS. Bank guarantee for LOS is already extended for an additional period of two (2) years.

HEPL has already incurred a sum of US\$ 0.025 Million for the cost of permits, permissions and related costs.

(e) Site, Security and Infrastructure:

HEPL has to follow strict security protocols at site due to involvement of foreign sponsors Scatec Solar ASA, Norway keeping in view prevailing security conditions in the country.

A sum of US\$ 1.00 Million is expected to be incurred till financial close for the cost of site security and infrastructure as approved by the Authority in the earlier Determination.

In this regard, it is highlighted that the Authority has allowed higher security cost to CPEC power projects and it is requested that above proposed security cost is considered on the same grounds.

(f) Administration Costs:

This sub-head includes administration costs of HEPL's head office (Karachi), branch office (Islamabad) and site office. This portion of the Non-EPC Cost includes costs associated with accounting and admin staff, rent, utilities, equipment inspection, communication charges, printing & stationery, supplies, communication charges, vehicles fuel and maintenance and other allied expenses during the construction period.

Authority has already allowed a sum of US\$ 0.153 Million under this sub-head. The main reason for increase in administration costs is due to extension in duration of for the Project development period. The initial assumptions for administration costs were for a period of sixteen (16) month i.e. on the basis of six (6) month development period and ten (10) month construction period. However, in actual the development period has been extended to a period thirty-four (34) months, i.e. twenty-four (24) months project development plus ten (10) months of Project construction.

HEPL has already incurred a sum of US\$ 0.153 Million for administration costs, and a further sum of US\$ 0.120 Million is expected to be incurred till financial close making a total sum of US\$ 0.273 Million for administration costs.

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(g) Travelling Cost:

This head covers costs related to travelling, accommodation, daily allowances and other allied expenses of the foreign and local staff, incurred for development, arrangement of financing and EPC and for progress/ monitoring meetings etc. during development and construction period of the Project.

HEPL earlier estimated travelling costs for a six (6) month project development period, but due to increased project development period travelling costs have increase many fold. This sub-head also includes travelling for court case and meeting Government officials for follow up with respect to the Project.

HEPL has already incurred a sum of US\$ 0.236 Million for travelling costs, and a further sum of US\$ 0.100 Million is expected to be incurred till financial close making a total sum of US\$ 0.336 Million for travelling costs.

Authority is requested to allow compensation of legitimate project development costs of US\$ 2.20 Million to HEPL due to change in technology and prolonged development period (due to delay on part of the Government of Pakistan) since HEPL is in process of development of the Project since a period of more than two (2) years and a further period is required till financial close of the Project.

Authority is also requested to allow higher cost expected to be incurred under the head of "financial fees and charges" due to re-performance of lenders due-diligence for the financial close, because of new tariff and resulting changes in the Project. The over-run expected under financial fees and charges are requested to be allowed under project development cost, as same would not have incurred had the LOS been issued by the relevant Government department based on the earlier Determination of the Authority.

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04 Project Cost, Tariff and Conclusion

4.1 Revised Project Cost

Factors mentioned in section 03 above have consequential impact on other cost components resulting in revised project cost as follows:

Investment / Cost	US\$ M
EPC Cost	36.800
Capitalized Degradation	1.370
Non-EPC & Project Development Cost	2.200
Pre-COD Insurance Cost	0.735
Financial Charges	0.184
Interest During Construction	0.748
Total Project Cost	42.036

4.2 Financing Terms

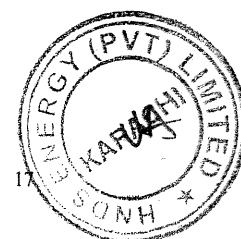
The following terms for financing the debt portion of the Project cost have been agreed and locked, between HEPL and the lenders:

Cost Head	Terms
Total Value of Debt @ 75% of total project Value US\$ 42.036 Million	31.527
Base Rate	2.40%
Spread	4.25%
Debt Markup	5.20%
Repayment Period	14 years
Grace Period	Up to 12 months
Re-Payment Schedule	Quarterly

4.3 Summary of Reference Generation Tariff

A summarized reference generation tariff table setting out the two bands is provided below:

Years		1 – 14 (PKR/kWh)	15 – 25 (PKR/kWh)
O&M	Local	0.5211	0.5211
	Foreign	0.5211	0.5211
Insurance		0.2740	0.2740
ROE		2.4884	2.4884
Debt Servicing		5.1781	-
Total		8.9828	3.8047



4.4 Reference Generation Tariff

Year	O&M Local PKR/kWh	O&M Foreign PKR/kWh	Insurance PKR/kWh	ROI PKR/kWh	Loan Repayment PKR/kWh	Interest Payment PKR/kWh	Total Tariff PKR/kWh	Total Tariff USC/kWh
1	0.5211	0.5211	0.2740	2.4884	2.1090	3.0691	8.9828	5.9885
2	0.5211	0.5211	0.2740	2.4884	2.2528	2.9254	8.9828	5.9885
3	0.5211	0.5211	0.2740	2.4884	2.4063	2.7718	8.9828	5.9885
4	0.5211	0.5211	0.2740	2.4884	2.5703	2.6078	8.9828	5.9885
5	0.5211	0.5211	0.2740	2.4884	2.7455	2.4326	8.9828	5.9885
6	0.5211	0.5211	0.2740	2.4884	2.9326	2.2455	8.9828	5.9885
7	0.5211	0.5211	0.2740	2.4884	3.1325	2.0456	8.9828	5.9885
8	0.5211	0.5211	0.2740	2.4884	3.3460	1.8321	8.9828	5.9885
9	0.5211	0.5211	0.2740	2.4884	3.5741	1.6040	8.9828	5.9885
10	0.5211	0.5211	0.2740	2.4884	3.8177	1.3604	8.9828	5.9885
11	0.5211	0.5211	0.2740	2.4884	4.0779	1.1002	8.9828	5.9885
12	0.5211	0.5211	0.2740	2.4884	4.3559	0.8222	8.9828	5.9885
13	0.5211	0.5211	0.2740	2.4884	4.6528	0.5253	8.9828	5.9885
14	0.5211	0.5211	0.2740	2.4884	4.9699	0.2082	8.9828	5.9885
15	0.5211	0.5211	0.2740	2.4884	0.0000	0.0000	3.8047	2.5365
16	0.5211	0.5211	0.2740	2.4884	0.0000	0.0000	3.8047	2.5365
17	0.5211	0.5211	0.2740	2.4884	0.0000	0.0000	3.8047	2.5365
18	0.5211	0.5211	0.2740	2.4884	0.0000	0.0000	3.8047	2.5365
19	0.5211	0.5211	0.2740	2.4884	0.0000	0.0000	3.8047	2.5365
20	0.5211	0.5211	0.2740	2.4884	0.0000	0.0000	3.8047	2.5365
21	0.5211	0.5211	0.2740	2.4884	0.0000	0.0000	3.8047	2.5365
22	0.5211	0.5211	0.2740	2.4884	0.0000	0.0000	3.8047	2.5365
23	0.5211	0.5211	0.2740	2.4884	0.0000	0.0000	3.8047	2.5365
24	0.5211	0.5211	0.2740	2.4884	0.0000	0.0000	3.8047	2.5365
25	0.5211	0.5211	0.2740	2.4884	0.0000	0.0000	3.8047	2.5365
AVERAGE TARIFF							6.7045	4.4696
LEVELIZED TARIFF							8.0071	5.3381

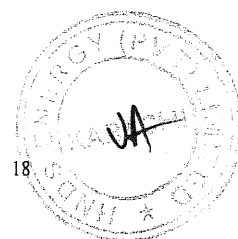
Assumptions:

Financing Rate: 6.65%
LIBOR: 2.40%
Spread: 4.25%
US\$ exchange rate: PKR 150

4.5 Conclusion

In terms of Rule 3 (2) (d) of the NEPRA Rules, a comparative schedule is attached as Annexure C.

The reference levelized tariff of HEPL as per the Determination was US Cents 5.2662/kWh at a LIBOR rate of 1.62%. Had the tariff approved in the Determination been adjusted for change in LIBOR (now 2.40%), the resultant tariff would have been US Cents 5.3952/kWh, while under this petition HEPL has requested a levelized tariff of US Cents 5.3381/kWh with the change in design and after incorporating impact of increase in LIBOR rate.



4.6 Debt Repayment Schedule

Quarters	Principal Repayment US\$	Principal Repayment Tariff Component (Rs./kWh)	Interest US\$	Interest Tariff Component (Rs./kWh)	Installments US\$	Installment Tariff Component (Rs./kWh)
1	345,394	0.5143	524,012	0.7802	869,406	1.2945
2	351,135	0.5228	518,271	0.7717	869,406	1.2945
3	356,971	0.5315	512,435	0.7630	869,406	1.2945
4	362,905	0.5404	506,501	0.7542	869,406	1.2945
5	368,936	0.5493	500,469	0.7452	869,406	1.2945
6	375,068	0.5585	494,337	0.7361	869,406	1.2945
7	381,302	0.5678	488,103	0.7268	869,406	1.2945
8	387,640	0.5772	481,766	0.7173	869,406	1.2945
9	394,083	0.5868	475,323	0.7077	869,406	1.2945
10	400,633	0.5965	468,773	0.6980	869,406	1.2945
11	407,292	0.6065	462,114	0.6881	869,406	1.2945
12	414,062	0.6165	455,344	0.6780	869,406	1.2945
13	420,944	0.6268	448,462	0.6678	869,406	1.2945
14	427,940	0.6372	441,466	0.6573	869,406	1.2945
15	435,053	0.6478	434,353	0.6467	869,406	1.2945
16	442,284	0.6586	427,122	0.6360	869,406	1.2945
17	449,635	0.6695	419,771	0.6250	869,406	1.2945
18	457,108	0.6806	412,297	0.6139	869,406	1.2945
19	464,706	0.6919	404,700	0.6026	869,406	1.2945
20	472,430	0.7034	396,976	0.5911	869,406	1.2945
21	480,282	0.7151	389,124	0.5794	869,406	1.2945
22	488,265	0.7270	381,141	0.5675	869,406	1.2945
23	496,380	0.7391	373,026	0.5554	869,406	1.2945
24	504,631	0.7514	364,775	0.5431	869,406	1.2945
25	513,018	0.7639	356,388	0.5307	869,406	1.2945
26	521,545	0.7766	347,861	0.5180	869,406	1.2945
27	530,214	0.7895	339,192	0.5051	869,406	1.2945
28	539,026	0.8026	330,380	0.4919	869,406	1.2945
29	547,985	0.8159	321,421	0.4786	869,406	1.2945
30	557,093	0.8295	312,313	0.4650	869,406	1.2945
31	566,353	0.8433	303,053	0.4512	869,406	1.2945
32	575,766	0.8573	293,640	0.4372	869,406	1.2945
33	585,336	0.8716	284,070	0.4230	869,406	1.2945
34	595,065	0.8860	274,341	0.4085	869,406	1.2945
35	604,955	0.9008	264,451	0.3938	869,406	1.2945
36	615,010	0.9157	254,396	0.3788	869,406	1.2945
37	625,232	0.9310	244,174	0.3636	869,406	1.2945
38	635,624	0.9464	233,782	0.3481	869,406	1.2945
39	646,189	0.9622	223,217	0.3324	869,406	1.2945
40	656,929	0.9782	212,477	0.3164	869,406	1.2945
41	667,848	0.9944	201,558	0.3001	869,406	1.2945
42	678,948	1.0109	190,458	0.2836	869,406	1.2945
43	690,233	1.0277	179,173	0.2668	869,406	1.2945
44	701,705	1.0448	167,701	0.2497	869,406	1.2945
45	713,368	1.0622	156,037	0.2323	869,406	1.2945
46	725,225	1.0798	144,181	0.2147	869,406	1.2945
47	737,279	1.0978	132,127	0.1967	869,406	1.2945
48	749,533	1.1160	119,872	0.1785	869,406	1.2945
49	761,991	1.1346	107,414	0.1599	869,406	1.2945
50	774,656	1.1534	94,749	0.1411	869,406	1.2945
51	787,532	1.1726	81,874	0.1219	869,406	1.2945
52	800,622	1.1921	68,784	0.1024	869,406	1.2945
53	813,929	1.2119	55,477	0.0826	869,406	1.2945
54	827,457	1.2321	41,949	0.0625	869,406	1.2945
55	841,210	1.2525	28,196	0.0420	869,406	1.2945
56	855,192	1.2734	14,214	0.0212	869,406	1.2945

Assumptions:

Financing Rate: 6.65%

LIBOR: 2.40%

Spread: 4.25%

US\$ exchange rate: PKR 150

UA

05 Prayer

In light of the foregoing, it is respectfully prayed that the earlier Determination may be reviewed based on the proposed technology and related factors, current market environment and consumer interest as per paragraph V and XI of the Latest CCoE Decision.

Authority is requested to allow (a) change in design, (b) change in EPC cost, O&M cost and capacity factor because of change in design, and (c) increase in project development cost because of the prolonged development period of the Project.

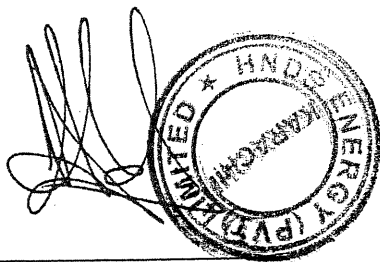
In terms of paragraph XI of the Latest CCoE Decision, the Authority is further requested to maintain original decision (as per the Determination) with regard to debt equity structure, return on equity, other costs and all indexations, escalations, adjustments and sharing mechanism. Any other relief that the Petitioner may be entitled to, be also allowed to the Project in the interest of justice.

Authority is also requested to approve a reference tariff table based on assumptions (LIBOR rate and exchange rate parity) as requested in the petition.

Further any taxes, stamp duties, fees and levies (sales tax of non-refundable nature) etc. of federal, provincial, local or district governments, which are not factored in the tariff calculation are requested to be allowed as pass through.

Authority is kindly requested to process the tariff petition at the earliest thereby enabling HEPL to proceed further with the development process.

Respectfully submitted on the behalf of Petitioner.

A handwritten signature in black ink is written over a circular stamp. The stamp contains the text "HNDS ENERGY (PVT.) LIMITED" around the perimeter and a star in the center.

HNDS Energy (Pvt.) Limited
Dated: 24 July 2019