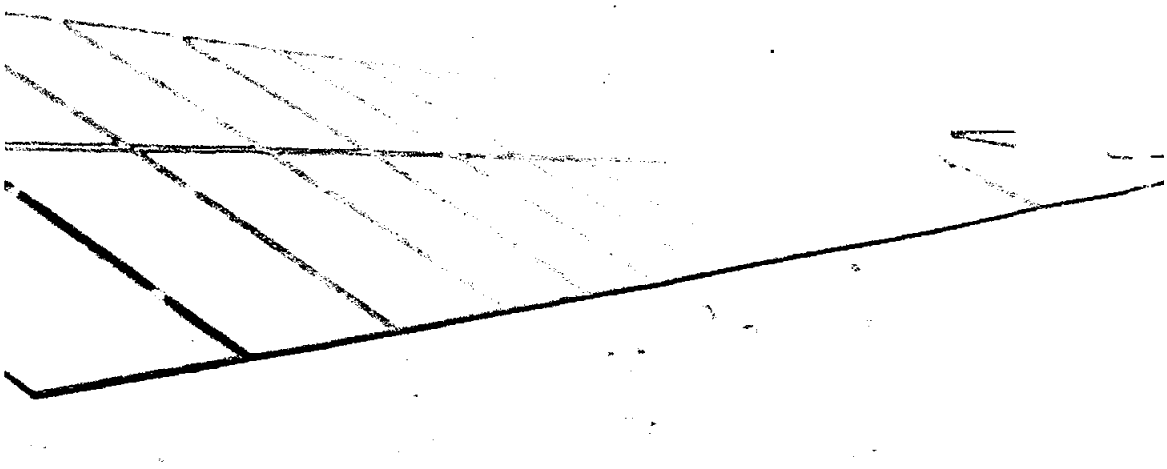
8.2 | The Experts in Renewable Energy



Deh Metha Ghar 150 MW Utility Scale Solar Power Plant

Type of Report:	Auction Evaluation Report
Client:	K-Electric Limited
Purpose:	Assessment of the technical and financial bids of 150 MW Utility Scale Solar Power Plant at Deh-Metha Ghar in accordance with NEPRA Electric Power Procurement Regulations, 2022
Site location, Country:	Deh Metha Ghar (25.154127°N, 67.047010°E), District Malir, Karachi, Sindh, Pakistan.

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Executive Summary

Project Background

K-Electric Limited ("**KE**") and the Sindh Solar Energy Project/Government of Sindh ("**SSEP/GOS**") initiated the competitive bidding process of 150MW Solar Project in Deh Metha Ghar, Sindh ("**Project**") under NEPRA's Electric Power Procurement Regulations, 2022 ("**NEPPR**"). Land acquisition and project related studies, have been facilitated by the Government of Sindh and has been financed by World Bank. The Project will reduce KE's generation cost and help in achieving its PAP commitment and goal to include 30% Renewable capacity by 2030. The Project is planned to be connected through KE Surjani grid through the 220kV transmission line.

Open Competitive Bidding

KE conducted the initial prequalification process for the Project in 2023. Subsequently, the Request for Proposal ("RFP") for the Project was approved by NEPRA on February 29, 2024, under open competitive bidding without benchmark tariff ("**NEPRA Determination**"). In compliance with NEPRA Determination, the pre-qualification was conducted again in April 2024 and subsequently, the pre-qualified participants were invited to submit their bid proposal for the Project by September 30, 2024 (**"Bid Submission Deadline").** The Bid Submission Deadline was initially August 15, 2024, which was subsequently extended for revalidation of technical studies due to change in land coordinates. The same was also communicated to NEPRA on August 13, 2024, vide KE letter having reference No. BD/SQK/NEPRA/O8/2024-1308.

Power Evacuation arrangement

The evacuation of power from the project for construction of the related Transmission Line from the Surjani grid station to the gantry of the Project has been approved by NEPRA under KE's Integrated Investment plan. However, KE has subsequently filed a review motion to NEPRA on the Integrated Investment plan requesting approval on the complete scope of Transmission line including the investment cost for two-line bays, which is still awaited.

Submission of Bids and Evaluation of Technical Proposals

In response to KE invitation to bid, two (02) Bidders participated in the open competitive bidding procedure and their technical bids for the Project were opened on October 01, 2024.

Following a comprehensive technical evaluation, it was determined that both bidders (as mentioned in the below table) successfully met the knock-out criteria and achieved the minimum technical score.

Table 1: List of Technically qualified Bidders

S. No.	Applicant / Lead Sponsor
1	JCM Power Corporation
2	Kot Addu Power Company Limited (KAPCO)

Evaluation of Commercial Proposals

Subsequent to the technical evaluation, financial bids were opened for both the Technically qualified Bidders on October 25, 2024. The summary of tariff proposal submitted by these Bidders is as follows:

Table 2:Summary of Tariff Table

Lead Sponsor Name	Bid Tariff (PKR/kWh)	Ranking
Kot Addu Power Company Limited (KAPCO)	9.8319	1
JCM Power Corporation	10.6111	2

Prudency Check by KE

As directed under the NEPRA Determination, KE has conducted a comprehensive assessment of the successful bid, considering the prevailing macroeconomic and market conditions along with an assessment and analysis of displacement of expensive electricity in its system.

Based on the prudency check of Bid Tariff, KE has independently prepared an estimated Tariff number based on current market conditions and prices which works out to be in the range of range of Rs. Rs. 11.5100/ kWh (USc. 3.9875/ kWh) to Rs. 11.7358/ kWh (USc. 4.0657/ kWh), based on Capacity Factors at P75 and P90 respectively. However, as evident from Table 2 above, the lowest Bidder, KAPCO, has offered a tariff of Rs. 9.8319/kWh (USc. 3.4061/kWh) which is less than the estimated tariff worked out by KE.

Additionally, KE has conducted analysis of displacement of expensive fuel due to offtake from the Project - further detailed in Section 6 of the Auction Evaluation Report ("AER"). Based on the analysis, annual savings expected for the Project in energy cost is PKR 1,812 million (total savings of PKR 45,297 million through the life of the Project) on account of displacement of expensive imported fuel-based generation. Moreover, the Project is also expected to realize annual forex savings of USD 16.98 million (total savings of USD 424.5 million through the life of the Project).

Results of Tariff Proposal

In accordance with the Technical and Financial evaluation criteria approved by NEPRA and in accordance with the prudency check performed by KE, KAPCO is recommended as the Successful Bidder for the Project by the Auction Evaluation Committee ("AEC").

Submission to NEPRA

KE hereby requests the Honourable NEPRA Authority to grant its approval of the Competitive Auction process and the AER so that the Successful Bidder can be notified, and subsequent steps can be taken accordingly.

1 Overview of Bidding Process

1.1 Introduction to Project

Bids were invited for the Project, which is a key component of KE's ongoing efforts to enhance its renewable energy portfolio. By harnessing solar power, K-Electric aims to play a significant role in the country's transition to cleaner energy sources, contributing to the broader national goals of energy diversification, reduced carbon emissions, and environmental sustainability.

This project not only represents a major step forward in K-Electric's commitment to sustainable energy but also help to reduce the dependence on fossil fuel. The project's RFP was submitted under NEPPR, in accordance with the regulation pre-qualification was conducted, and the RFP provided to the pre-qualified parties.

1.2 Pre-Qualification Process:

The pre-qualification process for the Project has been conducted twice. In 2023, K-Electric conducted the first prequalification process for two solar projects: a 120 MW project at Deh Halkani and a 150 MW project at Deh Metha Ghar. A total of 20 companies participated in this process, out of which 4 companies were disqualified. Therefore, 16 companies remained in the process, including 2 companies qualified exclusively for Deh Halkani, while 4 companies qualified exclusively for Deh Metha Ghar, and 10 companies qualified for both sites. The list of 14 companies that qualified for the Project was shared with NEPRA on September 6, 2023, via letter number BD/MZ/NEPRA-0121/2023-0609. Table 3 shows the companies that qualified for Deh Metha Site.

Table 3: List of Pre-Qualified Bidders in phase 1

S. No.	Company
1	Atlas Power
2	HUB Power Company Limited
3	Zahir Khan & Brothers (ZKB), KalyonInsaat Sanayi ve Ticaret A.S
4	JCM Power Corporation, Burj Energy International Management Limited
5	Liberty Mills Limited
6	Engro Energy Limited
7	Lucky Cement Limited
8	Sapphire Textile Mills Limited
9	Sapphire Electric Company Ltd., Sapphire Fibres Limited
10	Novatex
11	Artistic Milliners (Pvt.) Ltd.
12	Ib VOGT Group
13	Sardar Muhammad Ashraf D. Baluch (Pvt) Limited, Xinrong Construction Engineering (SMC-Private) Limited

14 Metro Energy Group

As per NEPRA Determination, the pre-qualification was to be conducted again, however the parties already pre-qualified were not required to undergo the pre-qualification assessment again, consequently the second pre-qualification process was initiated in April 2024.

The invitation for prequalification for the Project(s) was published on 2nd April 2024, under major publications as follows:

1. International newspapers: China Daily, Khaleej Times, New York Times and Financial Times
2. Local newspapers: Daily Dawn, Business Recorder, Express Tribune and others
3. Tendering websites: globaltenders.com and tendersinfo.com

During this phase, Kot Addu Power Company Limited (KAPCO) and Kohinoor Energy Limited applied for pre-qualification for Deh Metha Ghar and resultantly, KAPCO was prequalified while Kohinoor was disqualified as it failed to meet the prequalification criteria. Later on, JCM Power also requested a change in consortium and its pre-qualification was reconducted.

As per the NEPPR only the pre-qualified participants were provided RFP for onward submission of their bids. The RFP document was made available on the KE website. All Bidders/Applicants were required to register on SAP ARIBA software, for submission of soft copy of the bids. All correspondence, clarifications and amendments were uploaded on the Ariba Software and/or KE website.

The updated list of companies that qualified for the Project was communicated to NEPRA on June 12, 2024, via letter number BD/MZ/NEPRA-1066/2024-1206, as referred in Table 4 and Annexure A.

Table 4: List of Pre-Qualified Bidders in phase 2

Sr. No	Company
1	Metro Energy Group
2	Atlas Power Limited
3	Hub Power Holdings Ltd.
4	Zahir Khan & Brothers (ZKB) & KalyonInsaat Sanayi ve Ticaret A.S
5	JCM Power Corporation, Burj Energy International Management Limited & Rana Naseem
6	Liberty Mills Limited
7	Engro Energy Limited
8	Lucky Cement Limited
9	Sapphire Textile Mills Limited
10	Sapphire Electric Company Ltd & Sapphire Fibres Limited
11	Novatex
12	Artistic Milliners (Pvt.) Ltd.

13	Sardar Muhammad Ashraf D. Baluch (Pvt) Limited & Xinrong Construction Engineering (SMC-Private) Limited
14	Ib VOGT Group
15	Kot Addu Power Company Limited

2 Bid Clarification Process

In the course of the bidding process for the Project, K-Electric implemented a structured bid clarification phase to address the pre-qualified bidders' inquiries and ensure full alignment with the project's technical and operational requirements.

2.1 Overview of the Bid Clarification Process

The bid clarification process has been structured in three main stages: Pre-Qualification, Pre-Bid Evaluation, and Post-Bid Evaluation. Each phase has been essential in maintaining transparency, addressing bidder concerns, and ensuring clarity in project requirements.

- **Pre-Qualification Stage**
  During the Pre-Qualification stage, interested applicants submitted their queries through the ARIBA portal. K-Electric's team promptly responded to these initial queries via the same portal, providing direct clarifications to the applicants. This facilitated a streamlined pre-qualification process, ensuring applicants had sufficient information to proceed without delays.

- **Pre-Bid Evaluation Stage**
  In the Pre-Bid Evaluation phase, queries from the pre-qualified bidders were systematically reviewed and addressed. All bid-related communication, including bid acceptance, query submissions, and the issuance of corrigenda, has been conducted through the ARIBA portal to maintain a centralized, accessible record of all interactions. K-Electric's team addressed each query in writing, ensuring consistent and transparent responses. To preserve fair competition, clarified responses have been shared simultaneously with all shortlisted bidders.

  On September 24, 2024, a General Clarification document, attached in Annexure B, was issued, addressing key questions and clarifying project requirements for all pre-qualified parties. Corrigenda, reflecting amendments to the RFP and EPA, were also issued and are attached as Annexure C. Revised Energy Purchase Agreement was shared with the bidders, refer Annexure E (submission letter to NEPRA). These clarifications and amendments were also uploaded to the project website, making them accessible to all bidders.

- **Post-Bid Evaluation Stage**
  This stage involves clarifications taken from participants in their bids if any ambiguity is found. It is a vital step in the process, ensuring that all parties have a clear and mutual understanding of the bid requirements and expectations. This phase has helped KE to resolve any ambiguities or misunderstandings in the bid documents submitted by the participants.

3 Knock-off Criteria and Other Compliance Requirements

This section outlines the essential compliance standards for evaluating bidders, combining rigorous technical knock-off criteria with legal prerequisites as detailed in the RFP. The technical knock-off criteria required bidders to demonstrate strict adherence to specified performance parameters, while the legal requirements were emphasized to ensure compliance with regulatory and contractual obligations, confirming each bidder's full suitability for project execution.

3.1 Parameters of Knock-off Criteria

K-Electric's knock-off criterion was strategically formulated to align with global standards, maximize the project's operational efficiency, and ensure the solar facility's reliability throughout its lifecycle. As highlighted in Table 4 below, each technical prerequisite underscored KE's commitment to high-quality, sustainable energy production.

Table 5: Technical Knock-off Criterion for Bidders

Compliance Requirement	Description	JCM Power Compliance	KAPCO Compliance
Solar Panels	Tier 1	Met	Met
Yield	Greater than 21.5%	Met	Met
Grid Code	Compatibility of the Complex and equipment with technical standards of Grid Code (Power factor, voltage variation, operating frequency range etc.), Distribution Code and Other applicable documents etc.	Met	Met

3.2 Additional Requirements

According to RFP, the Bidder must comply with several standards and regulations to ensure effective environmental and social management and meet safety requirements. These include:

- IFC and World Bank EHS Guidelines (2007
- Pakistan Environmental Protection Act (PEPA, 1997)
- Sindh Environmental Protection Agency Act (SEPA, 2014)
- ESMP for the 150 MW Solar Power Project in Deh Metha Ghar
- NOC from Sindh Environmental Protection Agency (dated 23rd February 2023)

Both the bidders, JCM Power and KAPCO, provided compliance to these requirements in their bid submissions.

3.3 Legal Compliance Requirements

In addition to knock-off criteria, KE required bidders to meet several legal obligations as detailed in its RFP. These requirements were intended to establish the bidder's legal standing, financial stability, and capability to undertake the project responsibly. The following legal compliance elements were assessed:

Table 6: Financial & Legal Knock off Criterion for Bidders

Requirement	Compliance by JCM Power	Compliance by KAPCO
Bid Bond	Provided[1]	Provided
Bid Processing Fee	Provided	Provided
Performance Guarantee	Confirmed	Confirmed
Affidavit	Provided	Provided
Confidentiality Agreement	Provided	Provided
Covenant of Integrity	Provided	Provided
Power of Attorney	Provided	Provided
Joint Venture/Consortium Agreement	Provided	Provided

After carefully reviewing the knock-off criteria and other mandatory requirements, it was concluded that both JCM Power and KAPCO fully met the technical and legal standards set by K-

[1] JCM requested for consideration of the Winder/Bela solar project bid bond for the said Project and submitted an amendment to Winder/Bela bid bond in this regard.

Electric (KE). Each bid was thoroughly checked for compliance with global standards, environmental responsibility, and financial commitment.

This strict adherence to the criteria assured KE of the bidders' technical skills and legal readiness. Their complete compliance allowed both bidders to move on to the next phase, making them reliable partners aligned with KE's operational and strategic goals.

4 Technical Evaluation of Bidders

In evaluation of the technical bids received for the Project, it is observed that both bidders have demonstrated exceptional technical soundness across all specified criteria. Overall, both bids have successfully met and exceeded the technical criteria outlined in the RFP. Their proposals reflect a deep understanding of the requirements necessary for a successful project execution. With their emphasis on high-efficiency solar panels, reliable power inverters, durable mounting structures, and comprehensive support systems, both bidders have positioned themselves as strong contenders for this initiative. Detailed scoring criteria and the scores achieved by each bidder are included in Annexure F, while an overview of their technical bids is presented in the following sections.

- **Solar Panels:** Both JCM Power and KAPCO proposed solar panels exceeding the 22% efficiency requirement. JCM offered JA Solar panels with 22.5% efficiency, while KAPCO provided Longi panels at 24.1% efficiency. Both panels came from Tier-1 manufacturers, ensuring quality with minimal degradation rates of 0.4% per year for JA Solar and 0.35% for Longi. This selection aimed to guarantee long-term reliability and high energy yield.
- **Inverters:** Both bids met and slightly exceeded the required 98% efficiency standard. JCM's inverters offered 98.7% efficiency, while KAPCO's provided 98.8%, both backed by 5-year warranties.
- **Balance of Plant (BoP):** The Balance of Plant components proposed by both bidders included high-quality systems that met industry standards. Both companies demonstrated experience in managing large-scale installations and offered local technical support, facilitating timely maintenance and quick responses to operational issues, thus ensuring smoother, continuous operation throughout the system's lifespan.
- **Civil Works:** Both JCM and KAPCO provided comprehensive civil engineering plans, including foundations designed for local soil and wind conditions, optimized for long-term structural stability and reduced environmental impact. Each bidder's civil work approach reflected their experience with large-scale solar projects, promising efficient, durable installation.
- **Corporate Social Responsibility (CSR):** Both bidders emphasized positive local impact through Corporate Social Responsibility (CSR) initiatives. Their plans included community engagement, local job creation, and environmental responsibility efforts. JCM and KAPCO both aimed to involve local resources where possible, contributing to regional economic development and fostering community relations.
- **Operations and Maintenance (O&M):** Both proposals outlined solid Operations and Maintenance (O&M) strategies to ensure high system reliability. These strategies were designed to maximize performance and longevity of the equipment, minimizing downtime and ensuring operational efficiency over the project lifecycle.
- **Health, Safety, and Environment (HSE):** Both bidders committed to health, safety, and environmental measures as mentioned in the RFP, ensuring system reliability and safe

operations throughout the project's life. Their plans were tailored to maintain safety standards and provide a secure working environment.

- **Warranty & Execution:** Comprehensive warranties were provided by both bidders, covering key components to ensure long-term performance. Each company also presented structured timelines for efficient project delivery, showcasing their capacity for timely execution.

4.1 Grievance and Redressal Committee

From and after the announcement of the technically qualified Bidders, any Bidder feeling aggrieved by the evaluation outcome may lodge a written complaint before the Grievance Redressal Committee concerning its grievance not later than seven (7) days after the announcement with adequate particulars of the complaint and attaching copies of any documents relevant to the complaint, via electronic mail to the following address: email address: project.grievance@ke.com.pk.

No grievance was received for the Project as both the Bidders were declared technically qualified.

5 Financial Evaluation

The financial evaluation for the **Project** was conducted with strict adherence to the guidelines set out in the **Request for Proposal (RFP)** issued by K-Electric (KE). The RFP outlined mandatory financial requirements, evaluation metrics, and compliance criteria, ensuring a structured, transparent, and competitive bidding process. The financial evaluation process is discussed in detail in the subsequent sections.

5.1 RFP Financial Submission Requirements

According to the RFP, bidders were required to submit detailed financial proposals that included a breakdown of costs, proposed tariffs, and supporting documents to substantiate their pricing. The RFP specified that each bid must include:

- **Proposed Tariff Structure**: Bidders needed to provide a clear and comprehensive tariff proposal (PKR/kWh), which would be the primary basis of financial evaluation.
- **Applicability of Macroeconomic Factors**: As per RFP instructions, all the bids were required to be made in by considering the same macroeconomic factors to facilitate a standardized comparison.

5.2 Bid Opening Process

The financial bid opening took place on **25th October** at the KE Head Office in Karachi. In strict compliance with the RFP's requirements, sealed financial proposals from both **JCM Power Corp** and **KAPCO** were presented, ensuring confidentiality until the designated time. Representatives of KE, bidders, independent consultant and AEC members were present to monitor the bid opening.

5.3 Financial Proposal Details and RFP Compliance

The financial proposals were assessed on the basis of key metrics defined in the RFP, primarily focusing on the proposed tariffs and compliance with KE's financial guidelines for project viability. The results of the financial bid were as follows:

Table 7: Proposed Bid Tariff by Bidders

Applicant Name	Proposed Bid Tariff (PKR/kWh)	(Cents/kWh)
KAPCO	9.8319	3.4061
JCM Power Corp	10.6111	3.6761

The RFP specified that the lowest evaluated tariff would play a crucial role in determining the financial competitiveness of the bids. KAPCO emerged with the lowest tariff of 9.8319 PKR/kWh (or 3.4061 cents/kWh), meeting the RFP's financial criterion for cost-effectiveness.

5.4 Outcome and Justification

As evident from above and in line with the RFP's financial evaluation criteria, **KAPCO** achieved the lowest evaluated tariff of **9.8319 PKR/kWh** (3.4061 USc. /kWh). KAPCO's submission met all mandatory technical, commercial and legal requirements, making it the frontrunner in terms of both compliance and affordability.

6 Prudency Assessment in Bid Evaluation

As required by NEPRA in the RFP approval, KE has performed a prudency check on the successful bid based on the prevailing equipment cost, market conditions and funding costs. Moreover, analysis for displacement of expensive fuel have also been done as per IGCEP and PAP.

6.1 Prudency of Bid Tariff

KE has performed an analysis of the submitted tariffs based on its assessment of the prevailing EPC cost of the Project and the prevailing market conditions. The key assumptions and results of the above analysis are as follows:

Table 8: Financial Assumptions

Parameter	Assumptions
Exchange Rate	288.65
SOFR + Spread	5.37% + 4.25%
Foreign Debt Tenor	15 Years
KIBOR + Spread	21.28% + 2.5%
Local Debt Tenor	15 Years
Capacity Factor	23.18%
Debt: Equity Ratio	75:25
Foreign: Local Loan Ratio	80:20
Return on Equity	15%
IRR[2]	13%
EPC Cost per MW[3]	USD 0.467 Mn

Table 9: Estimated bid Tariff

Bid Tariff upon KE independent assessment	
P75 (CF 23.64%)	Rs. 11.5100/ kWh (USc. 3.9875/ kWh)
P90 (CF 23.18%)	Rs. 11.7358/ kWh (USc. 4.0657/ kWh)

[2] The presented IRR does not consider variation in macroeconomic factors which may further reduce the IRR.

[3] The GIS, Power Transformer, and related switchyard equipment are based on the radial interconnection from the project to the Surjani Grid Station, with a busbar rating of 2500A and a short circuit level of 40kA. If the interconnection scheme changes to a loop-in loop-out arrangement from the Surjani-Baldia circuit, the busbar rating will need to increase to at least 4000A, and the short circuit level will need to be at least 50kA.

6.2 Displacement Cost Analysis[4]

The induction of the Project in KE fleet is expected to bring savings in both national system and KE grid due to replacement of expensive generation in National Grid and KE fleet with renewable power from the Project. Based on KE estimate, the Project will bring following cost and forex savings:

Table 10: Project Savings

Parameters	Annual savings	Project life savings
Energy Cost Savings - PKR	1,812 Mn	45,297 Mn
Forex Savings - USD	16.98 Mn	424.5 Mn

The above savings are indicative only and have been computed based on certain assumptions including but not limited to the hourly demand profile, availability of supply from National Grid (assumed at 1,700 MW for the analysis), fuel prices, marginal cost of National Grid, technical constraints etc.

[4] Savings due to displacement of imported fuel has been worked out using prevalent fuel cost considering horizon of 7 years, which have then been prorated over entire Project Life. The amount for energy cost savings has been computed after adjusting the cost impact of any part load operations.

7 Conclusion

Based on the technical and financial evaluations for the Project, along with the prudency checks, the AEC confirms that both KAPCO and JCM Power are technically qualified bidders. However, in the financial evaluation, KAPCO led over JCM with a more competitive tariff of 9.8319 PKR/kWh (3.4061 cents/kWh) compared to JCM Power's 10.6111 PKR/kWh (3.6761 cents/kWh), resulting in its success subject to NEPRA decision. It is requested to the Honourable NEPRA Authority to approve this Auction Evaluation Report and declare M/s KAPCO (refer Annexure D for Bid Details) as the Successful Bidder. This declaration is requested in accordance with the criteria set forth in the NEPPR and the NEPRA Determination.

Signatories:

Signatory Name	Organization	Signature
Mudassir Zuberi	K-Electric Limited (KE)	
Ayesha Akhtar	K-Electric Limited (KE)	
Muhammad Faizan Pasha	K-Electric Limited (KE)	
Syed Irfan Ali Shah	K-Electric Limited (KE)	
Jasim Hasan	K-Electric Limited (KE)	
Mehfooz Ahmed Qazi	Sindh Solar Energy Project	
Khurshid A Jamali	Government of Sindh	Nov. 6, 2024 1:10 pm
Arif Mateen Ansari	Independent Member	
Samir Ahmad	Independent Member	

8 Annexures:

Annexure A: Prequalification Letter to NEPRA

Reference no. BD/MZ/NEPRA-1066/2024-1206
June 12, 2024

Registrar,

NEPRA Tower
Attaturk Avenue (East)
G-5/1
Islamabad

Subject: **Prequalification of New Applicants and Invitation to Bid for the (i) 120 MW solar project at Deh Halkani, District West and (ii) 150 MW solar project at Deh Metha Ghar, District Malir)**

Dear Sir,

decision in the matter of Request for Proposal for the Projects dated 29 February 2024 having reference number NEPRA/Advisor(CTBCM)/RFP-14/3103-3107 & NEPRA/Advisor(CTBCM)/RFP-13/3109-13 wherein the Authority directed K-Electric KE to conduct the prequalification process again, excluding the bidders who have already been prequalified.

In this regard, KE is pleased to apprise the Authority that it has concluded the prequalification process of the Projects (details of new Applicants and consolidated list of prequalified parties is attached as Annexure A).

Moreover, KE would also like to apprise the Authority that upon completion of the prequalification process, KE has issued the RFP to prequalified applicants on 3rd June 2024 having a bid submission deadline of August 15th, 2024. The relevant project documents are available for download at the below provided link:

https://www.ke.com.pk/our-business/tenders/project-procurement/#renewable_project

Sincerely,

Mudassir Zuberi
Head of Business Development

Annexure A

List of New Applicants

S. No.	Applicant Name	Applied For	Status
1	Atlas Power Limited	120 MW - District West	Qualified
2	Kot Addu Power Company Limited (KAPCO)	Both Projects	Qualified
3	Kohinoor Energy Limited	Both Projects	Disqualified

Consolidated List of Prequalified Applicants

S. No.	Name of Applicant	No. of Sites Qualified
1.	Gul Ahmed Energy Limited	District West
2.	Metro Energy Group	District Malir
3.	Atlas Power Limited	Both sites
4.	HUB Power Company Limited	Both sites
5.	Zahir Khan & Brothers (ZKB) & KalyonInsaat Sanayi veTicaret A.S	Both sites
6.	JCM Power Corporation & Burj Energy International Management Limited[1]	Both sites
7.	Liberty Mills Limited	Both sites
8.	Engro Energy Limited	Both sites
9.	Lucky Cement Limited	Both sites
10.	Sapphire Textile Mills Limited	Both sites
11.	Sapphire Electric Company Ltd & Sapphire Fibres Limited	District Malir
12.	Orient Power Company (Private) Limited, Oursun Pakistan Limited & Shams Power Company	District West
13.	Novatex	District Malir
14.	Artistic Milliners (Pvt.) Ltd.	Both sites
15.	Sardar Muhammad Ashraf D. Baluch (Pvt) Limited Xinrong Construction Engineering (SMC-Private) Limited	Both sites
16.	Ib VOGT Group	Both sites
17.	Kot Addu Power Company Limited	Both sites

[1] Conditionally Qualified

Annexure B: General Clarification

Consolidated Clarification Document of 120MW Deh Halkani and 150MW Deh Metha Ghar Bidding Process

The responses are as shared with prospective bidders on the clarifications sought; any change in responses is issued as Amendment and Corrigendum on KE Website and on Ariba.

We have now concluded the clarification process of Deh Halkani and Deh Metha Ghar bidding process.

S. No.	Reference / Clause	Clarifications Sought	KE Response
1.	1.0 Invitation to Bid	Same is mentioned in section 5.2 of RFP as "The Project site spans across 727 acres of land". Please clarify project site land area 600 acres or 727 acres. (Deh Mitha Ghar)	Project site area is 600 acres
2.	8.10 Bid Validity	Will it be mandatory or optional for 06 months extended BID validity in addition to 08 months BID validity.	Extension in Bid bond validity will only be requested in case the process is delayed due to reasons beyond control of KE and in such a case, each applicant will be required to extend its bid validity and bid bond if it intends to continue participating in the bidding process.
3.	12.1.1.8 Performance Tests	EPA Schedule for Commissioning and Performance test is not provided. Please provide EPA Schedules e.g. Schedule, 5, 7 for inclusion in EPC scope.	EPA Schedules will be shared with the successful bidder.
4.	12.1.1.10 Electrical Design/ PV Module	BNEF list for Tier 1 Solar PV panels changes each Quarter of the year. What if a panel offered is in Tier 1 at the time of Bid submission and is excluded in next Quarter. Please clarify.	"Panels considered for the Project should be Tier-1 as determined by BNEF, and the Original Equipment Manufacturer (OEM) must be listed on the BNEF Tier1 list at the time of bid submission. Tier-2 or above shall be disqualified without any assessment. Bidder shall select the technology of panel considering the site/area condition. In the event that the selected OEM loses its BNEF Tier-1 status after the bid is awarded or due to any other reason in which the bidder may not be able to procure panels from the selected OEM, the bidder shall propose an alternative OEM from the latest available BNEF Tier-1 list with the prior written consent of KE. The substitution of the OEM will not, under any circumstances, impact the submitted proposed tariff."

5.	12.1.1.10 Electrical Design/Power Inverters	Extended inverter warranty is offered with additional cost so confirm extended warranty required or not as tariff is to be submitted final without any condition.	Refer Corrigendum # 02.
6.	12.1.1.10 Electrical Design/Power Inverters	Is there any starting time requirement for the inverter e.g. 03 minutes.	Bidder to comply with requirements stipulated in RFP.
7.	12.1.1.10 Electrical Design/Terminal points	Please indicate site boundary or direction on the map for the transmission line entry to the site so that 220 KV GIS position and overall layout is optimized for the PV Project.	Transmission Line is yet to be constructed for the evacuation of power from these projects. Hence, this will be discussed with the successful bidder. Bidders have to provide a draft layout as of now.
8.	12.1.1.10 Power Transformer and Switchyard Equipment	What if it is ONAF	Refer Corrigendum # 02.
9.	Exhibit 10: Technical Information	Please explain the term Generator used herein	Please consider this as an Inverter.
10.	Exhibit 16: Bid Evaluation Criteria	Please share details for Technical Evaluation Criteria and submission of documents for the same	Technical Evaluation Criteria is explained in the RFP Exhibit 16, and Bid Proposal should also be in this sequence, while submission of documents is explained in the RFP Section 12.
11.	1. DEFINITIONS; INTERPRETATION	EPA Schedule not provided. Please provide EPA Schedule 2 and 5 for inclusion in EPC scope.	EPA Schedules will be shared with the successful bidder. EPA Schedules will be shared with the successful bidder.

12.	1. DEFINITIONS; INTERPRETATION	Please provide schedule 3 and clarify transmission lines herein.	EPA Schedules will be shared with the successful bidder.
13.	2.2 TERM	Seems not relevant as project will be on BOOT basis i.e. to be transferred to GOS after expiry of EPA term as described in RFP (Invitation to BID)	Extensions of EPA term as provided under the EPA will be applicable and transfer of project will only be made once EPA term (including all extensions) have been completed. However, any extension beyond the contractual period will be made with the respective Owner of the Project (as this project is under BOOT arrangement).
14.	7.2, 7.3 INSTALLATION, TESTING OF METERING SYSTEM	Usually cost of backup metering and its testing cost is borne by the Seller. Hence, main metering and its testing should be in account of **Purchaser**	The requirement has been included in accordance with Grid Code 2023.
15.	7.3 TESTING OF METERING SYSTEM	It should be the Purchaser to bear additional tests cost for main metering if it proves to be inaccurate by more than one-fifth of one percent (0.2%)	Bidder to comply with requirements stipulated in RFP.
16.	7.7 PROTECTIVE DEVICES AND TELECOMMUNICATIONS CIRCUIT	Provide EPA Schedule 3.	EPA Schedules will be shared with the successful bidder.

17.	8.1 TESTING PROGRAMME	30 days provision for the delay in account of Purchaser is unusual and should be eliminated.	Refer Updated EPA circulated by KE, the said provision is part of standard terms of all EPAs
18.	General	1. In the EPA, where the nonpayment is due to NEPRA not permitting the same to the Purchaser should result in extension of the relevant agreement year and EPA term accordingly.	The said proposals are not acceptable to KE. Applicant is requested to provide its acceptance to the amended EPA as required under Exhibit 8 of the RFP.
19.	Definitions	2. Once EPA is approved by NEPRA then the Carrying Cost should not be subject to change by NEPRA. 3. The clause (b) of Change in Law is applicable from date of Agreement instead of date of bid submission.. 4. The earliest time period for the COD should at least be 90 days and not 15 days prior to RCOD. 5. The delayed Payment rate needs to incorporate the spread of 3% in the event of purchaser EOD in section 16. 6. In absence of any precedent to our understanding, please explain rationale for hiring third party service provided for Hybrid Forecast model, together with qualifying criteria for the same. 7. Ordinary Share Capital now includes Purchaser also, the reference to the Purchaser should be deleted. 8. The SOFR should be based on agreement with the Lenders.	Refer Amended EPA circulated by KE. Other recommendations as highlighted are not acceptable to KE and the Applicant is requested to provide its acceptance to the amended EPA as required under Exhibit 8 of the RFP.

		9. Agreement Year gets extended on account of OFME event declared by Seller during such Agreement Year, where Seller was unable to generate net delivered energy due to such OFME. However, If net delivered energy is partially affected, then the extension should be prorated. Current definition does not make that distinction.	
20.	2.2- Term	1. Clause 2.2(e) allows extension of term in the event NEPRA does not permit PE Compensation as pass through. The disallowance by NEPRA of any pass through item(s) should result in term extension.	Refer Amended EPA circulated by KE.
21.	2.9 (b) Specification of Contract capacity	The shortfall in contract capacity attracts LD's under this section of up to less than or equal to 5% of the Contract Capacity. This concept has been changed from reduction in installed capacity to variation installed capacity and further LD's are applicable on first 5% reduction capacity instead of reduction from 5% to 10%. Furthermore, a condition has been imposed to seek approval prior to any capacity variation. Furthermore, the rate of LD's has also increased from 350 K /MW to 400 K /MW, specially when the exchange rate has significantly changed.	The said proposals are not acceptable to KE. Applicant is requested to provide its acceptance to the amended EPA as required under Exhibit 8 of the RFP.
22.	5.3 (b)	The revision of forecast of net delivered energy should not be restricted once only. It should be between 5 and 2 hours prior to the relevant hour without restriction of one revision only.	Refer Amended EPA circulated by KE. The said proposals are not acceptable to KE. Applicant is requested to provide its acceptance to the amended EPA as required under Exhibit 8 of the RFP.
23.	5.4 (c)	The acceptance of the Net Delivered Energy due to change in the availability of Arrays should not be at purchaser sole discretion.	
24.	6.5	Clause 6.5 (iv), reference of the same in proviso and in 6.5 (b) should be deleted as any event beyond	

		Purchaser's control that affect its performance is covered under the Force Majeure section.	
25.	6.5 (c)	The spread on treated loan representing on principal of purchaser carries interest rate K+3%. Given that this payment is owing to Purchaser default therefore there should not be nay delayed payment on such loan. Furthermore the spread should not exceed 2% i.e. same spread allowed to seller.	
26.	8.1	1. (b) (1) The time period for to defer the commissioning test by Purchaser should not exceed 7 days from existing 30 days in draft EPA. 2. (b) - (5)- Given that this payment is owing to Purchaser default therefore there should not be any delayed payment on such loan. The loan amount is to be adjusted at the rate of 20% of the Energy prices from the monthly energy payments, this %age needs to be renegotiated later.	
27.	9.3 (b)	The delay LD's are USD. 4 per KW of contract capacity this should not be more than 2.5 KW of the Contact capacity given that the exchange rate has considerably increased.	
28.	9.4 (h)	The Disallowance under the determined by the NEPRA should result in extension of term of EPA.	
29.	9.5(d)	The USD obligation cannot carry interest at KIBOR especially when the purchaser is protected for any exchange rate movement. This has to be based on SOFR.	
30.	9.8	1. The Escrow Arrangement being in place is subject to all Consent being timely obtained. All Consents, especially Purchaser Consents should not be an exception for Escrow Arrangement. 2. Escrow Arrangement should secure all payments under the EPA and not just the Energy Payments.	Please refer to detailed clarification document on Escrow Arrangement.

		3. Please confirm that the rights of the project lenders would be Pari passu with those of KE's existing lenders having rights over collections/escrow arrangement.	
31.	13.1 (k)	The EPA amendment aspect is covered under clause 19.2 and should be deleted from here.	Refer Amended EPA circulated by KE. Other recommendations as highlighted are not acceptable to KE and the Applicant is requested to provide its acceptance to the amended EPA as required under Exhibit 8 of the RFP.
32.	14.4 (a) (i)	In the event of NEPRA not permitting an item to be pass through, then it should result in extension of term.	
33.	15.6 (a) (ii)	The monitory cap in this clause should be USD. 1 million instead of USD. 750 K	
34.	15.6 (iii) (a)	1. The PE Compensation should be based on the average daily energy adjusted for ambient site conditions. Furthermore, there should not be any % age reduction from such payment. 2. If NEPRA rejects such payment, there should be Term extension.	
35.	15.6	In the event of termination under 15.9, all amounts payable under 15.6(b) should be paid to Seller no later than the day compensation amounts determined in accordance with Section 15.9.	
36.	15.6 (l)	The PE Compensation should be based on the average daily energy adjusted for ambient site conditions. Furthermore, there should not be any % age reduction from such payment.	
37.	15.6 (k)	Reference to CLFME needs to be excluded.	
38.	15.6 (k)	1. The right for suspension and termination under this section should be with the Seller only. The Party not affected by force majeure should not have the right of suspension or termination. 2. Non-payment after 180 days on account of PPFME/CLFME should be deleted.	

39.	15.6 (A)	1. The right for suspension under this section should be with the Seller only. The Party not affected by force majeure should not have the right of suspension or termination. 2. It should be clarified that any extension on account of FME Suspension Period shall be in addition to extension for PPFME or CLFME under 2.2(b). 3. It should be clarified that prior obligations to suspension to remain intact.	
40.	16.1 (a) (i) (ii) (iii) Seller EOD	(i) The period of should be 90 Days. (ii) The period should be 365 Days. (iii) The period should be 45 Days.	
41.	16.1 (m)	The contract capacity reduction cap should be 10% instead of 5%.	
42.	16.3	1. In case of Seller EOD under 16.1(i) [Gen license cancellation], cure period should be 365 days and not 5 Business Days. 2. In case of EOD under 16.1(e) and 16.2(c) [Dissolution or winding up], the cure period should be 365 days and not 90 days. 3. In case of EOD under 16.1(f) [Rep or Warranty], the cure period should be 365 days and not 90 days.	
43.	16.3A Consequences of Seller EOD	1. Scope of seller other defaults has been enhanced. 2. In the event, of seller other default is not cured within 365 days, the purchaser may elect to suspend the Agreement for total of 5 years. During suspension all obligations of parties remain suspended. Beyond 5 years, the termination of EPA kicks in. This needs to be deleted. 3. If purchaser elects not to suspend EPA, then it should pay full tariff instead of certain %age tariff for delivered kWh.	

		4. Seller other default should include only the failure of Seller to deliver energy over 12 months period being less than 50% of contract capacity. 5. The suspension right is available either after lapse of time under 16.3 or lapse of time under 16.3A(a) and this makes the period of 365 days redundant. 6. The reference to Seller Event of Default in 16.3A(d) should instead be Seller Other Default. 7. The payment under 16.3(A)(e) should also cover payment for NPMV and DP. The payment for net delivered energy should be without any % reduction.	
44.	16.3B Consequences of Purchaser EOD	1. Purchaser major default should include default under 16.2(b). 2. If purchaser EOD continues for more than 3 years during the term, then termination right kicks in, for either party, with mutual consent. In case of Purchaser EOD, Purchaser should not have any termination right. 3. The term should get extended equivalent to purchaser major default and/or seller suspension period. 4. During Seller Suspension Period, obligation of the Purchaser to take delivery of net delivered energy and pay for same cannot be suspended. 5. In 16.3B(a), references should, instead of Energy Payment be to Energy Price and instead of Average Daily Energy, should be forecasted energy at ambient conditions.	
45.	18.3 (b)	The words "Karachi Pakistan" appearing for the second time needs to be deleted.	Please note that Karachi, Pakistan is mentioned twice in clause 18.3(b) and cannot be deleted as it provides options for both the seat and venue of arbitration to be Karachi, Pakistan or London, United Kingdom. Additionally, clause 18.3(c) states that if either Party requires arbitration in London for a Dispute not meeting the specified amount, they must cover all incurred arbitration

			costs for the other Party. Therefore, we understand there is no need to delete Karachi, Pakistan in this clause
46.	-	Request to access to Solar GIS data for the proposed location of the Sindh Solar Project i.e. Deh Metha Ghar and Deh Halkani. We understand that K Electric may already possess this data and obtaining it would significantly aid us in evaluating the site's solar energy potential. Access to Solar GIS data would allow us to conduct a more thorough assessment of the project's viability and optimize our bid proposal. This, in turn, would benefit both K Electric by potentially attracting a more competitive bid and us by ensuring a well-informed proposal.	The Solar GIS data for SSEP Project has been shared with all participants.
47.	General	Please confirm that the lowest bidder tariff in its entirety will either be approved or rejected by NEPRA, and no changes can be made to the tariff conditions, including pass-through.	NEPRA reserves the right to reject a successful bid if found imprudent. Pass-through items have already been approved by NEPRA and are outlined in the RFP document
48.	General	Draft of escrow agreement needs to be provided to the bidders for review especially by the lenders.	Refer to clarifications specific to Escrow Arrangement that has been shared on ARIBA on 8th Aug-24
49.	General	There are numerous instances where existing projects are unable to remit dividends to foreign shareholders or to get forex for meeting operational needs. How will the situation be different for these projects and is KE prepared to bear the cost, for similar delays? .	KE is not participating in the Projects as an Equity partner and will only act as Power Purchaser.
50.	Section 7 of RFP Land	a) KE has so far been engaged with GoS regarding Land Lease. Therefore KE's continued involvement would be required until execution of Lease Agreement between SSEP and Bidder. a) Please share copy of the Statement of Conditions 2015 issued on 11 June 2015, pursuant to which SRECL has procured the land from GoS.	The Land Lease Agreement which has been shared is the standard draft of GoS. Further with respect to Land acquisition issues please refer to KE Ariba correspondence for revised Land coordinates.

		b) The delayed payment rate as per clause 3.5 should not be more than what is provided in the draft EPA. c) As per clause 4.2 the Site Lease Agreement becomes void ab initio and of no legal effect, if bidder fails to achieve the project milestones as per LoI issued by KE. The automatic termination of lease should be linked with EPA termination prior to COD and not project milestones. For project milestones, there can be certain delays because of third parties (NEPRA or lenders). d) Clause 4.4 refers to termination of lease in accordance with clause 4.1. However, there is no termination under clause 4.1. Furthermore the Site Lease Agreement needs to specifically state that the same is non-terminable until the expiry of EPA. e) In the event of dispute under Site Lease Agreement, instead of Senior Member Board of Revenue, GoS or his nominee, the final arbitral authority should be independent third party. f) It is the responsibility of SSEP and KE to ensure the possession of the full 612 acres and uninterrupted access to the land. We have observed few issues at sites which are provided below and the pictures of the below mentioned issues are also pasted at the end of this document. 1. Local Houses are constructed within the demarked land. 2. Plots Demarcations with boundary are within the allocated land. 3. Two Mosques constructed within the allocated land. 4. Graveyards and graves at different locations are within the allocated land. 5. Bounded plot and building on the property line near the highway.	

		g) Roads running through the property going to houses outside the property line. 1. APL Pipeline Marker and Pipe line route (Confirmation Required) 2. Precast Boundary wall freshly constructed.	
51.	Section 8.3 & 9.2 of RFP Communications and Bid Submission Requirements	(a) While the Bidders will be submitting both the Technical and Tariff Proposal on ARIBA also, how the confidentiality of the financial part of bid will be ensured on ARIBA? (b) What will be the procedure of opening of Financial Bids? (c) There is no requirement of uploading password protected file in the folder.	a) ARIBA is a global procurement software which ensures that the financial bid of applicant remains confidential until the technical proposal is evaluated, and technically qualified bidders are announced. (b) Explained in RFP section 8 of the document. (c) Considering the confidentiality of Applicant submission as mentioned in Point (a) above, there is no need for password protected file
52.	Section 8.1 of RFP Project milestones-	If there is a delay in the project milestones that are beyond the reasonable control of bidder, will the dates mentioned in the milestones extend accordingly?	If there are any such delays, it will be evaluated by KE at such point of time.
53.	Section 16.1.2 footnote Pass through items	In the event of payment of interest to foreign lenders is liable to withholding tax deduction Then Please confirm this would be treated as pass through as the same cannot be accounted for in bid tariff as SOFR is not known today.? Also confirm that any change in withholding rate would also be a passthrough?	NEPRA reserves the right to reject a successful bid if found imprudent. Pass-through items have already been approved by NEPRA and are outlined in the RFP document
54.	Section 16.1.2 footnote Pass through items	The dividend withholding tax is not a pass through. However, if rate of withholding tax on dividend is increased from the current rate, then it should be treated as passthrough. Please confirm.	Pass-through items have already been approved by NEPRA and are outlined in the RFP document
55.	EPA- LDs for delay in COD	We understand that EPA contain LDs for delay in COD. Please confirm that such delay shall be excused if caused by third parties and is beyond the reasonable control of bidder.	The LDs will be applicable in accordance with the updated EPA shared by KE.

56.	Minimum Capacity factor required is 21.5%	If Bidder achieves higher ACTUAL capacity factor during the Term of the EPA, the same rate will continue to apply on the excess generation, without any sharing with KE, since this is not a "cost plus tariff"? Please confirm.	The understanding is correct
57.	Clause 13.3 (a) and (b) Pass through items	As per Clause 13.3 (a) and (b) of RFP, "Duties and/or taxes" and "duties, cess or taxes" not being of refundable nature and imposed on bidder are pass through. In this regard following clarification is required: 1. The term "duties" not defined in either RFP or draft EPA. The term taxes is defined in EPA but the term used in RFP is not referring to it since it is not capitalized. In light of this, please clarify, which of the following items would not be a pass through; a. Income tax at import stage? b. Sales tax at import stage? c. Custom duties (including additional custom duty and/or regulatory duty) at import stage? d. Import surcharge at import stage? e. Sindh infrastructure cess at import stage? f. Port and clearing agent charges at import stage? g. Inland transportation?	Pass-through items have already been approved by NEPRA and are outlined in the RFP document
58.	12.1.1.4 Technical Life time Bidder shall ensure adequate redundancy to avoid single points of failure in the complex design.	RFP is not clear on this requirement. Ensuring redundancy on major equipment will increase cost significantly and the tariff.	Redundancies should be maintained as per the Grid Code 2023.

59.	12.1.1.4 (x) HSE The Bidder shall comply with Environment and Social Management Plan (ESMP) and World Bank EHS requirements necessary for implementation of renewable energy projects	If the world Bank conditions are adopted by Pakistan as binding in this instance, then such compliance would automatically fall within the provision of the overall compliance of Pakistani Laws. However, if such provision has not been adopted, please provide the exact nature and text of these conditions to be followed.	Bidder to attach a Compliance Letter, indicating the acceptance.
60.	12.1.1.6 (d) Services The Bidder shall prepare and submit to the Purchaser, Complex design, engineering and drawing packages for construction permitting, installation and "as-built" documentation.	The services section is not included in WBB and is specific in this RFP. Why is there a need to submit the complex design drawings to KE, when this is a bid project and the bidders are taking the total responsibility. Approvals of drawings and design will add time, and possibly delay, to the construction period.	Basic design of the Complex needs to be submitted at the time of Bid Submission. Detailed design and drawings will be discussed at the time of Construction.
61.	12.1.1.9 Equipment Reactive Power Compensation	It states "Reactive Power Compensation". SVGs or SVCs are required or can we satisfy the requirements from inverter.	As mentioned in the EPA Section 1.1, "Reactive Power", Reactive Power Compensation must adhere to the Grid Code 2023. This will particularly include clause CC6.3.2 of the Grid code, which stipulates the following: "A SWE shall manage at the Connection Point the reactive power control to maintain the power factor within the range of 0.90 lagging to 0.95 leading, over the full range of operation, as per dispatch instructions and/ or Voltage adjustments requirements within the above range of power factor."
62.	12.1.1.10 (b) 12.1.1.10 (b-i-i) Electrical Design - PV modules	Please clarify the requirement of listing with specified insurers.	Refer Corrigendum # 02.

	Panels considered for the Project shall be produced by Tier 1 manufacturer as determined by BNEF, which shall be certified and listed with third party insurance company providing worldwide coverage such as Solar IF, Power Guard etc. or equivalent.		
63.	12.1.1.10 (b-ii-a) 12.1.1.10 (b-ii-g) Electrical Design – Inverter Grid voltage shall also be continuously monitored and in the event of voltage going below a pre-set value and above a pre-set value, the solar system shall be disconnected from the grid within the set time. Both over voltage and under voltage relays shall have adjustable voltage (50% to 130%) and time settings (0 to 5 seconds).	Usually, inverter implements this scheme using electronic cards etc. Inverter does not use specific under/over voltage relays to achieve this function.	Bidder can select any mechanism to meet the criteria mentioned in the referred clause of RFP.
64.	12.1.1.10 (b-ii-a) 12.1.1.10 (b-ii-g) Grid frequency control range +/- 3 Hz.	This requirement is part of grid code as well and is higher than international standard's requirement.	Generally, the Grid Code has to be followed but here, KE has specified a more stringent criteria based on its experience. Further, the inverters available in the market are capable of handling these ranges.
65.	12.1.1.10 (b-ii-a) 12.1.1.10 (b-ii-g) THD 2.5% or lesser.	This is not requirement of IEEE-519. Even if we consider K.E response from WBB that this is due to PCC's requirement. This number should not be here. Because for 220kV the THD requirement is 1.5%. Then why is RFP specifying 2.5%?	Bidder can consider any THD below 2.5%.

66.	12.1.1.10 (b-ii-a) 12.1.1.10 (b-ii-g) Grid Voltage tolerance -20% and + 15%.	This requirement is high. Usually OEM has tolerance requirement. It should be -10% - +10% as per Grid code	Generally, the Grid Code has to be followed but here, KE has specified a more stringent criteria based on its experience.
67.	12.1.1.10 (b-v-d) 12.1.1.10 (b-v-n) 220kV Substation Communication lines as required by the system operator for network control and protection.	This requirement is ambitious. For internal substation it is fine. But if we have to do scope out of boundary then it may cost.	The bidder is solely responsible for installing communication lines for equipment located in the vicinity of the complex.
68.	12.1.1.10 (b-v-d) 12.1.1.10 (b-v-n) The GIS switchgear shall have a product warranty covering defects in materials and workmanship of at least five (5) years counting from the Commercial Operation Date.	The warranty requirement of GIS has been raised to 5 years. Which was standard warranty in WBB. This may cause extended warranty option to be triggered with GIS OEM	Refer Corrigendum # 02.
69.	12.1.1.10 (b-vi-a) Power Transformer & Switchyard The step-up transformer shall be oil immersed, ONAN, dual low-voltage and core type.	Why is dual Low voltage required?	Refer Corrigendum # 02.
70.	12.1.1.10 (b-x-d) 12.1.1.10 (b-x-g) 12.1.1.10 (b-x-k) 12.1.1.10 (b-x-z) Balance of Plant	This will increase cost. Copper is extremely expensive. Aluminium should be an option.	Refer Corrigendum # 02.

	Medium Voltage Cables will be Cross Linked Polyethylene (XLPE) insulated with Copper Conductors suitable for laying in ground for interconnection between PV array and MV switchgear room at the Sub-station.		
71.	12.1.1.10 (b-x-d) 12.1.1.10 (b-x-g) 12.1.1.10 (b-x-k) 12.1.1.10 (b-x-z) Communication between PV area and inverter station shall be done through copper cables and communication from inverter to main control room through fibre optic cables.	It should be up to bidder and EPC to determine the network topology.	This is not the knock-off criteria, and the proposed scheme will be evaluated as per the scorecard.
72.	Lighting shall be provided at regular intervals to ensure required visibility at night.	This requirement is vague. It should be at watchtowers or inverter stations where power supply is available.	Bidder can select any mechanism to meet the criteria mentioned in the referred clause of RFP.
73.	12.1.1.13 (a) 12.1.1.13 12.1.1.13 (d) 12.1.1.13 (g) Single Axis Tracker The tracker system shall be of proven design and shall be based on trackers systems that have been deployed in the field in at least three (3) PV power plants	The requirements are specific in RFP and we will have to check with vendors about this.	Bidder to comply with requirements stipulated in RFP.

	with a minimum of two (2) years of successful operation each and with a respective capacity of at least 20 MW.		
74.	12.1.1.13 (a) 12.1.1.13 12.1.1.13 (d) 12.1.1.13 (g) Mounting structure and tracker structure shall be made of Aluminium or Hot Dip Galvanized Steel, able to withstand at least 25 years of outdoor exposure without special signs of corrosion or fatigue at site conditions.	General	Bidder to comply with requirements stipulated in RFP.
75.	12.1.1.13 (a) 12.1.1.13 12.1.1.13 (d) 12.1.1.13 (g) Dynamic wind analysis shall be performed considering torsional galloping ad aeroelastic instability. Wind tunnel test report shall be submitted by the Contractor for approval. Consent required from Bidder for submission of this report.	We will have to confirm with vendors whether they can provide this analysis.	Bidder to comply with requirements stipulated in RFP.
76.	5.2 Salient features of the Project Site	It is mentioned that site spans over [612/600] acres of Land. What if project is set up in lesser area, will remaining land go	The land will be allotted to successful bidder on 30-year lease as per the GoS policy.

		back to GoS? If not, will bidder be required to fence all the area or only PV area?	
77.	Section 8.10 The Bidders shall provide the validity period of their bids for eight (08) months from Bid submission Deadline	Period of 08 months from 15th August 2024 is unrealistic due to variation of EPC cost as 80% is offshore component.	The said proposal is not acceptable to KE. Applicant is requested to provide its acceptance to the amended EPA as required under Exhibit 8 of the RFP
78.	Section 12.1.1.7 Grid connection	The Bidder understands that it will not be requiring to conduct again with real time scenario at time of construction.	The Interconnection study will be re-run once all the equipment is finalized to confirm/endorse the previous results.
79.	Section 12.1.1.9 The equipment/Plant will include the following	It is mentioned that PV modules will capacity of 120 MWp/ 150MWp with agreed loss ratio, or higher if loss ratio is higher. What is loss ratio and can bidder exceed 120 MWp/ 150MWp if loss ratio is higher as mentioned?	The Capacity of the plant should be consistent with the RFP conditions, whereas the plant design is bidder's responsibility.
80.	Section 12.1.10 (b) (i) Electrical Design	It is mentioned that The PV modules shall have a performance warranty of minimum 25 years counting from the Commercial Operation Date. However, some manufacturers guarantee the performance from date of manufacturing to modules? Please clarify if module manufacturer doesn't warranty from COD.	The conditions of RFP to be complied, further the construction time for solar plant is very less so it can be negotiated with OEM.
81.	Section 12.1.10 (b) (ii) f. Power inverters Warranty	It is stated for inverters that "Provision of product warranty covering defects in materials and workmanship of at least ten (10) years counting from the Commercial Operation Date, and option with extendable warranty from supplier". Whereas standard inverter warranty is 5 years. There will be additional cost for extended warranty so this condition should be eliminated.	Bidders can consider lesser warranty; higher warranty equipment will be graded higher in the technical scoring criteria.

	Section 12.1.10 (b) (ii) g. Power inverters THD	One of condition mentioned for THD for inverter is as "Typical technical features of the suggested inverters must mention as per following sequence: THD 2.5% or lesser. It is to be noted that as per latest specs of inverters 3% THD is offered and same should be allowed.	Bidders can consider that; it will be graded accordingly.
82.	Section 12.1.1.10 (X) d.	It is mentioned that Medium Voltage Cables will be Cross Linked Polyethylene (XLPE) insulated with Copper Conductors suitable for laying in ground for interconnection between PV array and MV switchgear room at the Sub-station. There is latest example where Aluminum Cable is used as Copper is expensive. Is the bidder allowed to use Al instead of Cu for MV cables?	Yes, Bidders are allowed to use Al cable.
83.	Section 12.1.1.10 (X).	33kV medium voltages are considered in RFP document, however in Grid Interconnection Study the MV voltages are 22kV, KE is requested to confirm the MV voltage levels in order to further proceed with further bid design works.	Plant design is the responsibility of the bidder, and they're free to choose the MV voltage level.
84.	Section 12.1.1.13 j.	It is mentioned that Each tracker must be specifically constructed. It is to be noted that tracker manufacturer gives standard design and provision of water accumulation or moisture is included in design	Ok, noted.
	Section 12.1.1.13 m.	It is mentioned that Tracker range should be at least 120 degrees. The Tracker range varies from tracker to tracker. The range mentioned is considered maximum. There is not much difference in energy for range of -45 - +45 & -60 - +60 but	Ok, it on Bidders discretion.

		range of motion of 90 & 120 degrees create impact on carbon pads or bearings life. It should be discretion of Bidder.	
	Section 12.1.1.13 o.	It is mentioned that time to stow at 0° from full tilt shall be less that 5 minutes. The stow angle is mentioned as 0 degree that is not correct. Every tracker has its own angle as per Site specifications (usually 0 to 30).	Noted
	Section 12.1.1.13 aa.	It is mentioned that the tracker shall present a minimum steep-slope tolerance to 15% grade on NS axis. 15% grading seems high. The range of 5-7 % slope is generally offered by the tracker manufacturers.	Bidders are free to consider the same.
	Section 12.1.1.13 r.	It is mentioned that the minimum distance between the lower level of PV module and the ground shall be 0.6m from the ground. This condition is stringent as tracker manufacturer has its own design and even for absolute flat surfaces, meeting this condition is challenging so this should be discretion of Bidder.	Bidders to comply the condition of RFP.
85.	9.3 EPA provides that in case of delay beyond RCOD, LDs will be charged at USD 4 /KW per month.	We request to revise the rate to USD 2.5 per KW per month as is provided in other NTDC/CPPA Agreements	The said proposal is not acceptable to KE. Applicant is requested to provide its acceptance to the amended EPA as required under Exhibit 8 of the RFP

86.	Definitions SOFR is defined as "The Secured Overnight Financing Rate, or SOFR is a backward-looking compounded rate based on the volume weighted median of overnight daily treasury repo transactions i.e., the cost of borrowing cash overnight collateralized by U.S. Treasury securities."	Current financing agreements for IPPs in Pakistan define SOFR as "the secured overnight financing rate administered by the Federal Reserve Bank of New York (or any other person which takes over the administration of that rate) published by the Federal Reserve Bank of New York (or any other person which takes over the publication of that rate);" It is requested that the same definition be adopted in this EPA as well.	Kindly refer to Amended EPA
87.	Clause 9.8 (a) The Purchaser shall secure the payments due to the Seller under this Agreement through KE's consumer collections by way of a waterfall arrangement, Escrow or any other method ("Payment Security").	The wording of this clause suggests that the mechanism is not finalized for now and will be done at a later stage. During the roundtable for investors, it was informed that payment security shall be through an escrow arrangement. Please confirm the nature / structure of payment security mechanism and provide details of the MCAs to be allocated for this project.	Please refer to detailed clarification document on Escrow Arrangement.
88.	Definitions	Both Change in Law and Change in Tax provisions are applicable from the Agreement (EPA) date whereas they should be linked to the Bid Submission Date	Kindly refer to Amended EPA
89.	16.1 (a) (ii) Non-achievement of COD after 180 days of RCOD is an EOD	Earlier KE precedents have this at 365 days which should be considered for this EPA as well.	The said proposal is not acceptable to KE. Applicant is requested to provide its acceptance to the amended EPA as required under Exhibit 8 of the RFP
90.	8.10 Bid Validity	Securing a bid validity from different OEMs for a period of 8 months would be difficult and may not be acceptable to OEMs. We request KE to re-consider reducing the bid validity to less than 6 months.	The bid validity period of 08 months is in accordance with the bidding timeline and approval of Auction Evaluation Report from NEPRA and cannot be reduced.

91.	12.1.1.7 Preliminary Studies	Grid interconnection study is part of Technical Information Package shared by KE with bidders. For the sake of clarity, please confirm whether there are any additional details yet to be provided by KE.	Please confirm which additional details you're expecting
92.	12.1.1.8 Construction	KE to confirm whether the provision of external drain is within Bidder's scope or it will be catered by GoS/KE itself.	Bidders to ensure construction of drainage system till the main existing drainage system.
93.	12.1.1.9 Equipment	KE needs to confirm that the Company/Developer is not bound to consider MVAR and type of reactive power compensation recommended in the grid interconnectivity study provided with RFP, rather, the Company/Developer has the right to decide on the MVAR and type of reactive power compensation based on the technical grounds through inverters.	"As mentioned in the EPA Section 1.1, "Reactive Power", Reactive Power Compensation must adhere to the Grid Code 2023. This will particularly include clause CC6.3.2 of the Grid code, which stipulates the following: "A SWE shall manage at the Connection Point the reactive power control to maintain the power factor within the range of 0.90 lagging to 0.95 leading, over the full range of operation, as per dispatch instructions and/ or Voltage adjustments requirements within the above range of power factor.""
94.	12.1.1.9 Equipment	Is it permissible to construct the cable trench using block masonry instead of reinforced concrete (RCC)?	Cable trenches should conform with Pakistan Building Standards.
95.	12.1.1.10 Design Requirements a) Civil Design Criteria (ii) Main Design Criteria	We understand that the architectural layout of KE substation is based on the requirements of NTDC/NEPRA. Please confirm.	Please refer to RFP section 12.1.1.10 regarding the Design Requirements

96.	12.1.1.10 Design Requirements	Approved vendor lists is missing. Kindly specify if we are to utilize only KE approved vendors for HV systems for interconnection with the grid. If yes then KE is requested to provide approved vendor list for major equipment like 220kV substation, HV Switchgear, SCADA, telecom and teleportation systems, Metering and Backup Metering Systems etc.	Bidders are free to choose the vendor, however compliance to RFP regarding the technical specification is mandatory.
97.	12.1.1.10 Design Requirements b) Electrical Design (i) PV Module	BNEF Tier-1 is a varying assessment every year, therefore, few of the top tier may not make it to the list every time. As such there should be a specific criterion to the BNEF Tier-1 list or OEMs	"Panels considered for the Project should be Tier-1 as determined by BNEF, and the Original Equipment Manufacturer (OEM) must be listed on the BNEF Tier1 list at the time of bid submission. Tier-2 or above shall be disqualified without any assessment. Bidder shall select the technology of panel considering the site/area condition. In the event that the selected OEM loses its BNEF Tier-1 status after the bid is awarded or due to any other reason in which the bidder may not be able to procure panels from the selected OEM, the bidder shall propose an alternative OEM from the latest available BNEF Tier-1 list with the prior written consent of KE. The substitution of the OEM will not, under any circumstances, impact the submitted proposed tariff."

98.	12.1.1.10 Design Requirements b) Electrical Design (ii) Power Inverters	As per CC 6.3.2 of the Grid Code 2023, " A SWE shall manage at the Connection Point the reactive power control to maintain the power factor within the range of 0.90 lagging to 0.95 leading, over the full range of operation, as per dispatch instructions and/or Voltage adjustments requirements within the above range of power factor." The requirement in the RFPs is not aligned with abovementioned requirement of Grid Code 2023. KE is requested to revisit this requirement.	The Grid Code specifies a range in which network operator may instruct the generator to maintain the power factor at the Connection Point. The requirement mentioned in the RFP is the specification related to the inverter which is within the range of the power factor mentioned in the grid code.
99.	12.1.1.10 Design Requirements b) Electrical Design (ii) Power Inverters	As per CC 6.3.5 of the Grid Code 2023, "A SWE must control Voltage at Connection Point. The following parameter is set as: (a) Voltage offset: ± 5 % under normal operating conditions and ± 10% during contingency conditions. " The requirement in the RFPs is not aligned with abovementioned requirement of Grid Code 2023. KE is requested to revisit this requirement.	The referred clause of the RFP is related to inverter only whereas the mentioned clause of Grid Code refers to the voltage to be maintained at Connection Point.
100.	12.1.1.10 Design Requirements b) Electrical Design (iv) SCADA, Tele-Communication & Protection Schemes	KE is requested to share the protection schemes for the Complex and interconnection facilities.	Protection Scheme will be finalized at the later stage, however bidders to consider the protection relays in their proposals

101.	12.1.1.10 Design Requirements b) Electrical Design	We understand that complete substation design including engineering & equipment design, will be as per IEC standards and NEPRA/NTDC Grid code specifications. Please confirm.	Please refer to RFP section 12.1.1.10 regarding the Design Requirements
102.	12.1.1.10 Design Requirements b) Electrical Design	We understand that no Online Partial Discharge Monitoring System is required with GIS. Please confirm.	Please refer to RFP section 12.1.1.10 regarding the Design Requirements
103.	12.1.1.10 Design Requirements b) Electrical Design (v) 220kV Substation	KE is requested to share complete scope of works for the 220kV protection systems, so that appropriate equipment is selected and offered.	Protection Scheme will be finalized at the later stage, however bidders to consider appropriate transmission line protection system in their proposal
104.	12.1.1.10 Design Requirements b) Electrical Design (v) 220kV Substation	KE is requested to elaborate on the specific requirement "type approved by system operator"	It is the responsibility of the design consultant to provide the OEM/EPC with relevant details, such as GIS specifications, according to the standards outlined in Sections 12.1.1.11 Clause (c) of the RFP. The provided Grid Interconnection Study shall also be referred while designing.
105.	12.1.1.10 Design Requirements b) Electrical Design	Please share coordinates of 220kV GIS.	The coordinates are not fixed, however, bidders to consider the GIS location facing the main road.
106.	12.1.1.10 Design Requirements b) Electrical Design	We understand that specifications of Power Transformer will be shared with KE, only for information, not for review and approval. Please confirm.	Please refer to RFP section 12.1.1.10 regarding the Design Requirements.

107.	12.1.1.10 Design Requirements b) Electrical Design	We understand that no Sergi and deluge systems are required for power transformer. Please confirm.	Please refer to RFP section 12.1.1.10 regarding the Design Requirements.
108.	12.1.1.10 Design Requirements b) Electrical Design vii) Metering System and Back-up Metering System	Main Metering System is generally installed by the Power Purchaser, whereas, the Backup meter is installed by the Company. KE is requested to review and reconsider this requirement.	"As per the requirement of Grid Code, Section MC 3. "METERING SYSTEM", Seller (SPV) will be responsible for procuring and installing Metering System and Back-up Metering System at its expense. After testing and commissioning, ownership will be transferred to KE(Purchaser) and KE will be responsible for maintenance of Meter and Back-up Meter while Seller will be responsible for Allied Metering Equipment and Allied Back-up Metering Equipment. Refer EPA Section 7.2, and RFP Section 15.6"
109.	12.1.1.10 Design Requirements b) Electrical Design	We understand that only Metering Equipment (main & backup) will be reviewed and approved by KE. Please confirm.	Your understanding is correct
110.	12.1.1.10 Design Requirements	The medium voltages are considered as 33kV in RFP document, however in Grid Interconnection Study the MV voltages are 22kV. In this regard, KE is requested to confirm the MV voltage levels in order to proceed with further bid design works.	Bidders are free to choose the MV voltage level of the plant.
111.	12.1.1.13	Installing Single Axis Tracking system doesn't seem a viable option considering humid conditions at project site. Is it a mandatory requirement?	Yes, it is mandatory requirement
112.	12.1.1.18 Weather Station	Please share details of Hybrid Forecast Model.	Please refer RFP and EPA regarding details of Hybrid Forecast Model

113.	Exhibit 15	EPA Schedules are not provided as part of the RFP. Please share these schedules as they are an integral part of the EPA and are required for a thorough commercial & financial review.	Schedule 8,9 and NPMV Schedule have already been shared by KE
114.	15.6 COMPENSATION FOR PPFME OR CLFME	KE is requested to consider limiting compensation in case of any FME for six months instead of limiting it to six month in an year, in case there is more than one FME in an year.	The said proposal is not acceptable to KE. Applicant is requested to provide its acceptance to the amended EPA as required under Exhibit 8 of the RFP

119.	General	KE is requested to provide tender stage Single Line Diagram (SLD) for the project.	Please refer to RFP section 12.1.1.10 (III) (b) regarding the Design Requirements: "The interconnection point will be droppers from the terminal tower connected to the gantry of 220kV transmission lines. The interconnection point shall be the HV line bushings installed at the gantry of the Complex. The interconnection point shall represent the boundary of responsibility between the project facility and system operator."
120.	3.2 - Definitions – Bid Bond	The bid bond validity period of 8 months is quite aggressive and may not be acceptable to the lending bodies/banks. Request to re-consider reducing the bid bond validity to less than 6 months.	Bid bond validity period has already been reduced from 12 months to 8 months Further reduction is not possible.
121.	1-Invitation to Bid	The Project site spans across 727 acres of land as mentioned in RFP (section 5.2 Salient Features of the Project Site) K.E to clarify if the land is approximately 600 acres or 727 acres as there is a discrepancy in the RFP. (Deh Mitha Ghar)	Kindly note that the land is approximately 600 acres
122.	8.10 Bid Validity	Securing a bid validity from the OEMs for a period of 8 months is aggressive and may not be acceptable to OEMs. Request for reconsideration below 06 months	Bid validity period has already been reduced from 12 months to 8 months. Further reduction is not possible.

123.	12.1.1.7 Preliminary Studies	Grid interconnection study has already been shared by KE with bidders, for the sake of clarity please confirm if any additional details are yet to be provided by KE.	Please specify what additional details are you expecting regarding bid preparation
124.	12.1.1.8 Construction a) Site Preparation	KE to confirm that the land provided is free of any encroachment, encumbrance and settlement etc.	GoS is responsible for providing land for this project that will be free from encroachment.
125.	12.1.1.8 Construction e) Performance Tests	We understand that the performance test shall include testing at complex level, please confirm	The performance tests shall include testing both at equipment level as well as complex level as stipulated in EPA.
126.	12.1.1.10 Design Requirements b) Electrical Design (ii) Power Inverters	According to the clause CC 6.3.2 of the Grid Code, which stipulates the following: " *A SWE shall manage at the Connection Point the reactive power control to maintain the power factor within the range of 0.90 lagging to 0.95 leading, over the full range of operation, as per dispatch instructions and/or Voltage adjustments requirements within the above range of power factor.*" The requirement in the RFPs is not inline with the requirement mention in the grid code, in order to avoid ambiguity KE is requested to revisit this requirement.	The Grid Code specifies a range in which network operator may instruct the generator to maintain the power factor at the Connection Point. The requirement mentioned in the RFP is the specification related to the inverter which is within the range of the power factor mention in the grid code.

127.	12.1.1.10 Design Requirements b) Electrical Design (ii) Power Inverters	According to the clause CC 6.3.5 of the Grid Code, which stipulates the following: "*A SWE must control Voltage at Connection Point. The following parameter is set as: (a) Voltage offset: ± 5 % under normal operating conditions and ± 10% during contingency conditions.* " The requirement in the RFPs is not inline with the requirement mention in the grid code, in order to avoid ambiguity KE is requested to revisit this requirement.	The referred clause of the RFP is related to inverter only whereas the mentioned clause of Grid Code refers to the voltage to be maintained at Connection Point.
128.	12.1.1.10 Design Requirements b) Electrical Design (v) 220kV Substation	K.E is requested to elaborate on the specific requirement "type approved by system operator"	It is the responsibility of the design consultant to provide the OEM/EPC with relevant details, such as GIS specifications, according to the standards outlined in Sections 12.1.1.11 Clause (c) of the RFP. The provided Grid Interconnection Study shall also be referred while designing.

129.	12.1.1.10 Design Requirements b) Electrical Design (i) PV Module	BNEF Tier-1 is a varying assessment every year whereas few of the top tier may not make it to the list every time. As such there should be a specific criterion to the BNEF Tier-1 list or OEMs.	Panels considered for the Project should be Tier-1 as determined by BNEF, and the Original Equipment Manufacturer (OEM) must be listed on the BNEF Tier-1 list at the time of bid submission. Tier-2 or above shall be disqualified without any assessment. Bidder shall select the technology of panel considering the site/area condition. In the event that the selected OEM loses its BNEF Tier-1 status after the bid is awarded, the bidder SHALL propose an alternative OEM from the latest available BNEF Tier-1 list with the prior written consent of KE. The substitution of the OEM will not, under any circumstances, impact the submitted proposed tariff.
130.	General	The topographic map for Deh Halkani does not include contours for west side of the land (Only eastern section shared). KE is requested to kindly provide the missing information.	The required information has been requested from GoS and their consultants.
131.	General	Reactive power assumptions are to be considered as per the provided grid study shared by KE, that recommends installing an SVC of 50MVAR at MV Bus bar. KE is requested to confirm that this would not be in the scope of the Developer.	As mentioned in the EPA Section 1.1, SVG (Static VAR Generator) and Reactive Power Compensation must adhere to the Grid Code 2023. This will particularly include clause CC6.3.2 of the Grid code, which stipulates the following: "A SWE shall manage at the Connection Point the reactive power control to maintain the power factor within the range of 0.90 lagging to 0.95 leading, over the full range of operation, as per dispatch instructions and/ or Voltage adjustments requirements within the above range of power factor."
132.	General	KE is requested to provide tender stage Single Line Diagram (SLD) for the project.	The Interconnection scheme will be 220 kV loop-in/ loop-out arrangement.

Land Queries

S. No.	Project Name	Queries/Concerns	KE Response
1.	Deh Halkani	Consists of 4 pieces of land – Portion D consists of a narrow dimension unsuitable for the optimal design	This is no longer part of the sub-project boundaries, where the boundaries have been revised to exclude these items and minimize the impacts from the project on the surroundings.
2.	Deh Halkani	Block A has a graveyard for about ten families. This graveyard cannot be relocated or blocked for the families, which is very concerning under IFC guidelines.	This is no longer part of the sub-project boundaries, where the boundaries have been revised to exclude these items and minimize the impacts from the project on the surroundings.
3.	Deh Halkani	In Block C, a private owner owned 400 acres of land, so cannot be relocated without his consent and compensation under IFC guidelines	The claim of the private party is not factual. All land for Deh Halkani and Deh Bund Murad is state land. Land Lease Agreement has also been provided.
4.	Deh Halkani	The colossal construction cost to create linkages between the 4 blocks of land and the huge cost of the wires and power wastages is to bring the power to one place for off-takers.	The land parcels are adjacent to each other, and the land is divided by the Northern bypass and a hill only, hence there will not be a significant cost impact as in solar power plant the blocks of PV arrays is spread over the large area which need to be interconnected.
5.	Deh Halkani	A 2-meter gully is between the blocks. Under the IFC guidelines, one cannot change the natural water flow; hence, one has to cover it or provide a safeguard to protect it in its original form.	This is now outside the boundaries as the boundaries are revised. The revised kmz file has been shared.
6.	Deh Metha Ghar	Block B of the location has a road for agriculture.	Since the boundaries for the project site have been revised where much of block b has been removed. The revised land under Mitahghar sub-project is state own land except only 18 acres of Deh Mitha Ghar, which is private land, and this land will not be acquired and excluded from the project. Under IFC guidelines the access to the private landowners will be ensured.
7.	Deh Metha Ghar	Both sides of the road are farmland, planting cash crops indicating its agricultural use and ecological value. Converting agricultural land to a solar power plant site will have socio-	The boundaries for the project site have been revised, where required. where the socio-economic impacts on the people have been taken into account in the separately prepared Resettlement

		economic impacts, and the solar plant is not qualified for the national policy or IFC guidelines.	plan which will compensate these people in line with WB guidelines and resettle them before any project development.
8.	Deh Metha Ghar	There is a water source in block C, whether it is a protected water source? It needs to be verified. It is problematic under IFC guidelines.	The Hub Dam Canal passes from nearby where this is not a protected source. It also passes by from a height from nearby the site where the revised boundaries are further out from it. The GoS will clear land and implement the ARAP study, there will be no cost of the relocation on bidders.
9.	Deh Metha Ghar	Local communities living in small huts inhabit the area designated for the solar power plant. The presence of these residents poses a significant challenge for land acquisition and project development under IFC guidelines (reference recent solar plants constructed by M/s Static).	The boundaries for the project site have been revised to avoid resettlement, where the socio-economic impacts on the people have been taken into account in the separately prepared Resettlement plan which will compensate these people in line with WB guidelines and resettle them before any project development. There is no land acquisition, project land is state owned land.
10.	Deh Metha Ghar	Adjacent to the Hub Dam drain channel, which is a threat to the design and maintenance of the power plant due to the humid environment.	Since the boundaries for the project site have been revised in which the Hub canal is bit away in comparison to the old one. So, issues due to humidity will be minimal. Overall environment of Karachi is humid, and Hub Canal proximity will not add any significant amount of humidity, which will not cause any change in design.

Annexure C: Corrigendum to RFP

July 02, 2024

CORRIGENDUM No. 1: EXTENSION IN DEADLINE FOR CLARIFICATION REQUESTS
120 MW SSEP Solar Project at Deh Halkani and 150 MW SSEP Solar Project at Deh Metha Ghar ("Projects")

KE had invited bids/proposals from the investors for the development of the subject Projects on June 03, 2024.

This corrigendum is to notify that the deadline for submission of clarifications on the RFP Documents has been extended as follows:

S. No.	Project Name	Clarification Submission Deadline (Original)[1]	Clarification Submission Deadline (Revised)
1	120 MW SSEP Solar Project at Deh Halkani	04-July-2024	20-July-2024
2	150 MW SSEP Solar Project at Deh Metha Ghar	04-July-2024	20-July-2024

[1]Clarification date as per RFP Section 6.3 of 120 MW SSEP Solar Project at Deh Halkani and 150 MW SSEP Solar Project at Deh Metha Ghar

KE will timely be responding to clarifications received prior to the deadline and KE will not have any obligation to respond to clarifications received after the clarification deadline.

K-Electric Limited
39-B KE House Sunset Boulevard, DHA- Phase 2, Karachi, Pakistan

September 20, 2024

CORRIGENDUM No. 2: AMENDMENT IN SECTION 21.3.
120 MW SSEP Solar Project at Deh Halkani and 150 MW SSEP Solar Project at Deh Metha Ghar ("Projects")

KE had invited bids/proposals from the investors for the development of the subject Projects through advertisement made on June 03, 2024.

This corrigendum is issued to notify an amendment in Section 12.1.1.10 of the subject Projects RFP document.

1. The earlier mentioned Section 12.1.1.10 clause b) (i) stated that:

   "Panels considered for the Project shall be produced by Tier 1 manufacturer as determined by BNEF, which shall be certified and listed with third party insurance company providing worldwide coverage such as SolarIF, PowerGuard etc. or equivalent. The module manufacturer shall have fully automated production cycle, and reduced sources of variation in production. However, the solar panel shall meet the requirement set in IEC 61215:2016, IEC 61730-1:2004 or latest and IEC 61730- 2:2004 or latest, IEC 61701(latest), / international standards. The additional specifications for the PV module are also given below.",

   has now been revised to

   "Panels considered for the Project shall be produced by Tier 1 manufacturer as determined by BNEF. The module manufacturer shall have fully automated production cycle, and reduced sources of variation in production. However, the solar panel shall meet the requirement set in IEC 61215:2016, IEC 61730-1:2004 or latest and IEC 61730- 2:2004 or latest, IEC 61701(latest), / international standards. The additional specifications for the PV module are also given below."

2. The earlier mentioned Section 12.1.1.10 clause b) (ii) f) stated that:

   "Provision of product warranty covering defects in materials and workmanship of at least ten (10) years counting from the Commercial Operation Date, and option with extendable warranty from supplier.",

   has now been revised to

   "Provision of product warranty covering defects in materials and workmanship of at least five (5) years counting from the Commercial Operation Date, and option with extendable warranty from supplier."

3. The earlier mentioned Section 12.1.1.10 clause b) (v) n) stated that:

   "The GIS switchgear shall have a product warranty covering defects in materials and workmanship of at least five (5) years counting from the Commercial Operation Date.",

   has now been revised to

   "The GIS switchgear shall have a product warranty covering defects in materials and workmanship of at least two (2) years counting from the Commercial Operation Date."

4. The earlier mentioned Section 12.1.1.10 clause b) (vi) a) stated that:

   "The Complex design will include the step-up transformer considering (N-1) contingency. Step-up Transformer shall comprise of adequate electrical and mechanical protections to ensure safety and reliability. The step-up transformer shall be oil immersed, ONAN, dual-low-voltage and core type. Transformer is Insulation Class A. Transformer routine tests are carried out as per IEC standard or equivalent. The type test reports shall be provided. Over and under voltage limits shall be controlled by ON load tap changer at each tap position shall be governed by relevant IEC standard applicable to oil filled transformers.",

   has now been revised to

   "The Complex design will include the step-up transformer considering (N-1) contingency. Step-up Transformer shall comprise of adequate electrical and mechanical protections to ensure safety and reliability. Transformer is Insulation Class A. Transformer routine tests are carried out as per IEC standard or equivalent. The type test reports shall be provided. Over and under voltage limits shall be controlled by ON load tap changer at each tap position shall be governed by relevant IEC standard applicable to oil filled transformers."

5. The earlier mentioned Section 12.1.1.10 clause b) (x) d) stated that:

   "Medium Voltage Cables will be Cross Linked Polyethylene (XLPE) insulated with Copper Conductors suitable for laying in ground for interconnection between PV array and MV switchgear room at the Sub-station.",

   has now been revised to

   "Medium Voltage Cables will be Cross Linked Polyethylene (XLPE) suitable for laying in ground for interconnection between PV array and MV switchgear room at the Sub-station."

Annexure D: Bid Details for KAPCO

The bid evaluation for KAPCO is detailed below, covering all relevant sections including solar panels, power inverters, switchgear, mounting structures, SCADA systems, civil works, operation and maintenance (O&M), corporate social responsibility (CSR), and warranties. Each section includes specific criteria and KAPCO's performance against those criteria based on the Technical Scorecard.

Table 11: Annex D: Bid Details for KAPCO

Sr. No.	Description	KAPCO
1	Solar Panels	
	Efficiency	Proposed **Longi Solar** as preferred manufacturer and **Trina Solar** as contingency, both having efficiency greater than 22%
	Degradation Rate	Both brands proposed for the project have annual degradation less than 0.4%
	Lifetime	Both brands offer 30-year linear power output warranty
	Compliance with RFP	According to documentation provided by KAPCO, Longi Solar modules meet the RFP standards, with several tests referenced under IEC 61215. Additional test reports provided highlights compliance for performance and energy ratings.
	Manufacturer's Reputation	Both brands are Tier-1 manufacturers according to BNEF
2	Power Inverters	
	Efficiency	KAPCO proposed **Sungrow** as main manufacturer and **Sineng** as second option, both having efficiency >98% as per set criterion in RFP
	Track record	Sungrow meets the RFP criterion, having been in the manufacturing business for over 10 years with inverters widely used in commercial and utility-scale projects of 5MW and above, and a proven record of operational reliability.
	After Sale Service	Sungrow provides local support in Karachi, Pakistan, through authorized service centers and local partners.
	Compliance with RFP	The proposed inverter meets the majority of the RFP requirements. However, it's important to highlight that the Total Harmonic Distortion (THD) is specified as less than 3% in provided datasheet, while the RFP requires it to be less than or equal to 2.5%. Despite this minor discrepancy, the inverter remains a best choice for the project.
3	220 KV Switchgear	
	Compliance with RFP, grid code and applicable policies by Power Purchaser	KAPCO Proposed **XI'AN XD China** (preferred) and **Shandong Taikai** as second option as gas insulated switchgears.
	Compliance with the Grid Code and RFP requirements	The bidder's switchgear meets RFP requirements for the 220kV project in Karachi, confirming a nominal voltage of

	Compliance with IEC 60947 standards Provision of type test reports 220kV switchyard will utilize Gas Insulated Switchgear in a double bus-bar single breaker scheme	220kV and a rated frequency of 50Hz. Compliance with IEC 60947 standards and provision of type-tested components enhance reliability, making the proposal a solid solution for the project's electrical infrastructure needs.
	Track record & quality of main equipment	XD China has a strong track record in supplying high-voltage switchgear for major projects in Pakistan, including the Chashma Nuclear Power Plant and various coal-fired plants. The manufacturer's experience with GIS solutions at 145kV, 220kV, and 550kV showcases its commitment to industry standards and local regulations.
	Historical performance in local environment	The XD's historical performance indicates successful operations in diverse environmental conditions, showcasing their ability to meet the unique challenges of the local market. Shandong Taikai, on the other hand, has done successful projects in China but not in Pakistan.
4	**Mounting Structure**	
	Trackers	Single axis **Trina Tracker (Vanguard -1P)**. KAPCO has proposed **sunchaser** as second option, but no technical documentation is provided for its products.
	Track record	Trina Tracker has deployed over 5GW worldwide in more than 400 projects.
	Material of structure	The Trina Tracker Vanguard -1P features mounting and tracker structures constructed from high-yield strength steel, ensuring durability and resistance to outdoor conditions. Designed to withstand exposure for at least 25 years, the structure demonstrates exceptional resilience against corrosion and fatigue under various site conditions as per criterion set in RFP.
	Protection coating	Compliant with 100 microns. Additionally, KAPCO has provided a letter of compliance to ensure the same.
	Compliance with RFP	The structure proposed by KAPCO complies with ICC ES AC428 and UL 2703 certifications, ensuring its adherence to industry standards. Engineered to withstand wind speeds of at least 130 km/h, it is designed for a minimum operational lifespan of 25 years. Additionally, all components, including fasteners, are constructed from stainless steel, enhancing durability and resistance to corrosion.
5	**SCADA and Telecommunication System**	
	Manufacturer track record	KAPCO proposed **Jiangsu Himark Technology Co., Ltd.** (as preferred manufacturer) and **ABB China** as second option. Jiangsu Himark Technology Co., Ltd meets the RFP requirement of having at least three years of experience in SCADA and telecommunication systems for commercial/utility scale projects (5 MW and above)

	Monitoring parameters and integration	The system will provide a 24-hour log with average data values every 10 minutes, customizable via a controller. Key logs include energy production, availability, weather data, and real-time plant overview. Two communication channels will link to the load dispatch center for SCADA data transfer, adhering to IEC 61850-7-420 standards.
	Data backup and storage	A 24-hour log system will configure data presentation, while the SCADA system enables real-time generation monitoring in the control room. Secure data transmission will be ensured through firewalls and VPN for remote access. Voice communication systems will be installed at both the plant and the operator's control room.
	Compliance with RFP	KAPCO has ensured via compliance letter, that protection schemes, interconnection facilities, and all telecom links comply with the System Operator's technical specifications, The system will support visibility in the KE's LDC (Load Dispatch Center) control room as per the specs provided by KE, Backup metering, protection relays, bus-bar protection, and step-up transformer protection will meet design and technical requirements.
6	**Civil Works and Infrastructure**	
	Buildings and ancillary facilities	KAPCO's proposal comprehensively addresses the requirements outlined in the technical specifications for the civil works of the project. It includes the construction of essential buildings such as accommodations, offices, a control room, a workshop, a warehouse, and auxiliary structures necessary for smooth plant operation. Additionally, the proposal encompasses the provision of watchtowers and associated civil works, ensuring all aspects of the project are effectively covered under the contractor's responsibilities.
	Flood mitigation measures	KAPCO has provided flood mitigation details in its proposal
	Plant accessibility - internal & external roads; fencing	KAPCO, through its compliance letter, has committed to executing all necessary civil works, including the construction of temporary and permanent access roads with appropriate drainage arrangements. The scope of work also encompasses proper cable routing, cable terminations, and underground fiber optic installation, all while considering the site's topography to ensure minimal shading impact on the plant's operations.
7	**Balance of Plant**	
	Track record of key equipment	KAPCO has proposed the following manufacturers for the specified equipment: for MV Cables, **Zhejiang Wanma Co., Ltd** (preferred) and **ZTT**; for MV Switchgear, **Shandong Tikai** (preferred) and **ABB China**; and for Power Transformers, **Xian XD** (preferred) and **Sanbian Sci-tech.**

	MV Switchgears, Transformers & MV Cables: The Bidder must have a history of providing MV Switchgears, Transformers & MV Cables switchgear and equipment that meet industry standards and local regulations. No. of projects with in last 05 years having size > 10 MW: 10 projects	The proposed manufacturers for MV Switchgears, Transformers, and MV Cables have extensive experience, with each completing over 10 projects exceeding 10 MW in the last five years. Zhejiang Wanma Co., Ltd, Shandong Tikai, and Xian XD have demonstrated reliability and quality, confirming their capability to meet the Bidder's requirements effectively.
	Local Presence:	Zhejiang Wanma, Shandong Tikai, Xian XD, and ABB all have local teams in Pakistan, ensuring prompt installation, maintenance, customer support, and comprehensive service for their equipment.
	Overall layout of plant	KAPCO's plant layout utilizes bifacial modules with 5.6-meter east-west and 1-meter north-south row spacing to reduce shading, optimize cable runs, and facilitate maintenance. Underground cabling is proposed to enhance aesthetics and protect them against environmental factors.
	Cable selection and sizing	KAPCO's compliance letter confirms that MV cables will handle 0.9 to 1.1 p.u. voltages with power factors of 0.85 (leading) and 0.95 (lagging). AC cables will meet IEC 60502 or IEC 60840 standards, while DC cables will withstand -55°C to 125°C and include environmental insulation.
	Auxiliary facilities and back up	KAPCO has attached a compliance letter confirming that diesel engines and UPS systems will provide at least 12 hours of backup power for the SCADA system. Additionally, a 33kV/400V transformer with a 400 kVA rating will supply power to the main distribution board, while emergency lighting will activate automatically during AC supply failures.
	Security, surveillance and fire fighting	KAPCO's compliance letter confirms adherence to NFPA fire safety guidelines with detection and alarm systems in the MV substation. The plant will include adequate lighting for visibility and surveillance systems with cameras and access control to enhance security and restrict access to critical areas.
	Earthing, grounding, lightning protection	KAPCO's compliance letter confirms adherence to IEC standards for earthing and grounding at the 220kV substation, ensuring safety during faults. Galvanized iron strips will provide lightning protection, while interconnected PV system grounding will include "danger mark" indicators for maintenance safety.
	Compliance with RFP	KAPCO's compliance letter verifies that the entire system meets RFP requirements, adhering to IEC standards for switchgear, transformers, cables, and equipment. Key components, including switchgear and transformers, are backed by a 2-year warranty. Grounding, lightning protection, fire safety, backup systems, and surveillance protocols also align with IEC and NFPA standards as mentioned in RFP.
8	**O&M Methodology**	

	Key staff (organization; qualification/experience and facilities)	KAPCO's submission includes staffing levels and organizational structure based on plant design, ensuring personnel qualifications meet utility practices. Adequate facilities support operations, and qualified staff oversee maintenance activities, with CVs attached.
	Emergency spares, list and necessary stock	KAPCO has provided a list of spare parts, including a stock of emergency spares as per RFP requirements, along with the quantity percentages indicating how many spare parts will be available.
9	HSE	
	Compliance with RFP	KAPCO has provided HSE management plan confirming compliance with all the requirements mentioned in RFP.
10	Warranty	
	PV Modules	10 years
	Material, Manufacturing, and Workmanship Warranty: 10 years.	
	Performance Warranty:	
	Minimum 90% of the rated power output at the end of 10 years.	
	Minimum 80% of the rated power output at the end of 25 years.	
	Inverters	
	Product Warranty: A minimum of 5 years for defects in materials and workmanship, with an option for an extendable warranty	5 years and extendable
	Mounting structures (single axis)	
	The module mounting structures will be warranted for 10 years. This warranty covers defects in material, workmanship, and any damage caused by environmental factors such as wind or rain.	10 years
	Warranty period of 5 years for other elements of the structure (drive system, bearing set, control system, bolts and nuts, washers, clamps, bonding straps, etc.).	05 years
	Switchgears	
	Product warranty covering defects in materials and workmanship of **at least two (2) years** counting from the Commercial Operation Date for **220kV SWGR**	220 kV Switchgear: 2 years
	Product warranty covering defects in materials and workmanship of **at least two (2) years** counting from the Commercial Operation Date for **MV SWGR**	MV Switchgear: 2 years
	Transformers	

	The transformers will carry a product warranty covering defects in materials and workmanship for a minimum of **two (2) years** from the Commercial Operation Date, ensuring their reliability and effectiveness throughout this period.	2 years
	Cables	
	The Bidder warrants that all AC cables and associated primary and secondary equipment provided for the solar farm substation, including but not limited to switchgear, terminations, protection devices, current transformers (CTs), voltage transformers (VTs), earthing systems, surge arrestors, lightning protection, and metering equipment, shall be free from defects in materials and workmanship. This warranty shall apply for a period of **at least two (2) years** from the Commercial Operation Date (COD).	2 years
	Terms of warranty and warranty period	KAPCO has ensured in its proposal that all the other equipment provided for the solar farm project shall be as per the RFP and free from defects in materials and workmanship.
	Extended warranty option	Extendable Warranty of Inverter provided
	Compliance with RFP	Compliance, Letter attached
11	**Plant performance; guarantee values**	
	Plant performance; guarantee values	87.52% as per PVSyst Report
12	**Execution and timeline**	
	Detailed Structure and Logical Timeline	KAPCO has provided a detailed timeline with respect to project activities.
	Sustainability and feasibility of proposed tasks	The tasks mentioned in KAPCO timelines are carefully structured and seem sustainable and feasible.
13	**Corporate Social Responsibility /Ability to contribute towards local economy**	
	Percentage of Local Workforce	Committed for 75% Local Employment

	Training and Skill Development Programs	KAPCO has included a comprehensive training plan in its proposal, detailing various training topics and a documented methodology for effective stakeholder engagement. This plan demonstrates their commitment to ensuring that all necessary training is thoroughly addressed for the successful execution of the project.
	Community Outreach and Engagement Initiatives	KAPCO's proposal outlines a community engagement strategy that includes a plan for outreach initiatives. This strategy emphasizes communication channels, feedback mechanisms, and the frequency of community meetings and surveys to effectively engage the local community during the project.
	Philanthropic Initiatives	KAPCO has provided details for school, community projects, healthcare, etc.
	Environmental Sustainability Initiatives	KAPCO has provided evidence to show its commitment to environmental initiatives.

Annexure E: Draft Energy Purchase Agreement

Reference No. BD/MZ/NEPRA-1072/2024-0924
September 24, 2024

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

Subject: **Competitive Auction for 150 MW Solar Project at Deh Metha Ghar and 120MW Solar Project at Deh Halkani (the "Projects")**

Dear Sir,

We write this letter in continuation to our letter having reference no. Ref No. BD/SQK/NEPRA/08/2024-1308 dated Aug 13, 2024 of the Projects.

In this regard, we would like to apprise NEPRA that based on comments received from the bidders, KE has revised the draft Energy Purchase Agreement ("EPA"). Accordingly, the final draft of EPA of the Projects is enclosed in Annexure A and Annexure B for your consideration.

Sincerely,

Mudasser Zuberi
Head of Business Development

Enclosed:

Annexure A – Energy Purchase Agreement (150 MW Solar Project at Deh Metha Ghar)

Annexure B – Energy Purchase Agreement (120 MW Solar Project at Deh Halkani)

Annexure F: Technical Scoring Sheet

Table 12: Annex F: Technical Scoring Sheet

Sr. No	Technical Evaluation Criteria	Overall Score	Score of Bidders	
			KAPCO	JCM
1	**Components/equipment and technical solution**	**90**		
1.1	Solar Panels	10	10	10
	Efficiency			
	Annual degradation / guarantee			
	Lifetime			
	Compliance with RFP			
	Track record			
1.2	Power Inverters	10	8	8
	Efficiency			
	Track record			
	After sales service			
	Compliance with RFP			
1.3	Mounting Structures	5	5	5
	Trackers - single axis tracking system			
	Track record			
	Material of structure			
	Protection coating			
	Compliance with RFP			
1.4	Balance of Plant	10	8	8
	Track record of key equipment			
	Cable selection and sizing			
	Auxiliary facilities and back up			
	Security, surveillance and fire fighting			
	Earthing, grounding, lightning protection			
	Overall layout of plant			
	Compliance with RFP			
1.5	SCADA and Telecommunication system	4	4	4

	Manufacturer track record			
	Monitoring parameters and integration			
	Data backup and storage			
	Compliance with RFP			
	O&M Methodology			
	Key staff (organization; qualification/experience and facilities)			
	Emergency spares, list and necessary stock			
	HV Switchgear			
	Compliance with RFP, grid code and applicable policies byPower Purchaser			
	Track record & quality of main equipment			
	Historical performance in local environment			
	Civil Works & Infrastructures			
	Buildings and ancillary facilities			
	Flood mitigation measures			
	Plant accessibility - internal & external roads; fencing			
	HSE			
	Compliance with RFP and all necessary regulatory standards			
	Plant performances guarantee Values			
	Performance Ratio			
	Warranty			
	PV Modules			
	Inverters			
	Mounting structures (single axis)			
	Switchgears			
	Transformers			
	Cables			
	Terms of warranty and warranty period			
	Extended warranty option			
	Compliance with RFP			
	Execution Timeline			
	Detailed, structured and logic time schedule			
	Suitability and feasibility of proposed tasks			

	TOTAL	**100**	**88**	**87.5**