



Registrar

# National Electric Power Regulatory Authority Islamic Republic of Pakistan

NEPRA Tower, Attaturk Avenue (East), G-5/1, Islamabad  
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Web: www.nepra.org.pk, E-mail: registrar@nepra.org.pk

No. NEPRA/R/DG(Lic)/LMG-01/791-97

January 17, 2023

**Chief Executive Officer**

Quaid-e-Azam Solar Power (Private) Limited  
3rd Floor, 83-A, E/1, Main Boulevard  
Gulberg III Lahore

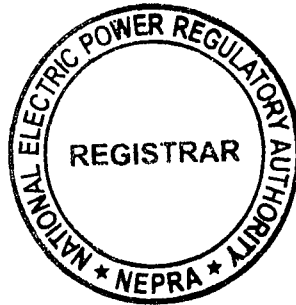
Subject: **Grant of Microgrid Licence No. MGL/01/2023**  
**Licence Application No. LMG-01**  
**Quaid-e-Azam Solar Power (Private) Limited**

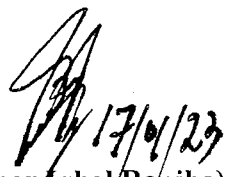
Reference: *QASPPL's application vide letter No. nil dated 14.10.2022*

Enclosed please find herewith Microgrid Licence No. MGL/01/2023 granted by National Electric Power Regulatory Authority (NEPRA) to Quaid-e-Azam Solar Power (Private) Limited for Microgrid Facilities to generate upto 721.50 kW for supply to the consumers connected to the Microgrid located at Districts Bahawalpur, Dera Ghazi Khan and Rajanpur in the Province of Punjab, pursuant to Section 14B, 20 and 23E of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 read with NEPRA Licensing (Microgrid) Regulations 2022. Further, the determination of the Authority in the subject matter is also attached.

2. Please quote above mentioned Microgrid Licence No. for future correspondence.

Enclosure: **Microgrid Licence**  
**(MGL/01/2023)**



  
(Engr. Mazhar Iqbal/Ranjha)

Copy to:

1. Secretary, Ministry of Energy (Power Division), A-Block, Pak Secretariat, Islamabad.
2. Managing Director, NTDC, 414 -WAPDA House, Lahore.
3. Chief Executive Officer, CPPA(G), 73 West, A.K. Fazl-ul-Haq Road, Blue Area, Islamabad
4. C.E.O Alternative Energy Development Board (AEDB), 2<sup>nd</sup> Floor, OPF Building, G-5/2, Islamabad
5. Chief Executive Officer, Multan Electric Power Company, MEPCO Headquarters, Khanewal Road, Multan
6. Director General, Environmental Protection Department, Government of the Punjab, National Hockey Stadium, Ferozpur Road, Lahore

**National Electric Power Regulatory Authority**  
**(NEPRA)**

**Determination of the Authority**  
**in the Matter of Application of Quaid-e-Azam Solar Power (Private)**  
**Limited for the Grant of Micro Grid Licence**

**January 17, 2023**  
**Case No. LMG-01**

**(A). Background**

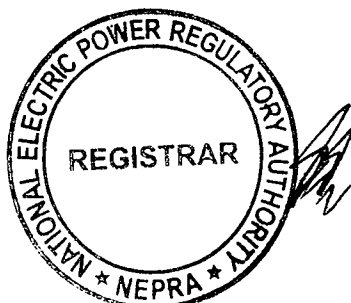
(i). According to various national and international surveys, around 25% of the total population of Pakistan is deprived of access to electricity. In consideration of the said, the Government of Pakistan (GoP) through "the Alternative and Renewable Energy Policy 2019" (hereafter "the ARE Policy") envisages the development of microgrids in the country.

(ii). The ARE Policy recognizes the huge potential of mini/micro grids, localized energy systems (LESSs) and Business to Business (B2B) solutions to combat challenge of energy poverty. In order to harness the said potential, the Authority has formulated and notified the NEPRA Licensing (Microgrid) Regulations, 2022 (the Microgrid Regulations").

**(B). Filing of Application**

(i). Quaid-e-Azam Solar Power (Private) Limited (QASPPL) submitted an application on October 17, 2022 for the grant of microgrid licence in terms of Sections-14B, 20 and 23-E of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (the "NEPRA Act") read with the relevant provisions of Microgrid Regulations.

(ii). The Registrar examined the submitted application and found that QASPPL has complied with the requirement of the necessary documents and information as stipulated in the relevant regulations. Accordingly, the Registrar submitted the application for the consideration of the Authority to decide the admission of the same or otherwise. The Authority admitted the application on November 14, 2022 for consideration of the grant of microgrid licence and decided to hold public



hearing in the matter. In consideration of the said, the public notice was published on November 17, 2022 in one (01) English and one (01) Urdu newspaper to inform the general public, interested/affected parties, and different stakeholders about the admission of application and public hearing.

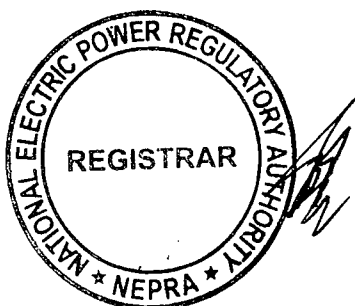
(iii). Apart from above, separate letters were also sent to government ministries, their attached departments and representative organizations etc. on November 17, 2022. Through the said letters, the stakeholders were informed about the public hearing and publication of notice in the press. Further, the said entities were invited for submitting their views and comments in the matter for assisting the Authority.

### (C). Public Hearing

(i). The public hearing in the matter was held on November 28, 2022 at NEPRA Headquarter, Islamabad which was attended by various stakeholders in person and via Zoom link *inter alia*, including AEDB, Multan Electric Power Company Limited (MEPCO), Central Power Purchasing Agency (Guarantee) Limited (CPPA-G), Energy Department of Government of Balochistan, Pakhtunkhwa Energy Development Organization (PEDO), representatives of various project developers, media persons and general public at large.

(ii). In the above hearing, QASPPL briefly explained about the scheme of arrangement of the microgrid systems. It was informed that the power generated from the facilities will be supplied to 1200-1300 households and the said system will also have battery backups. The company also clarified that the abovementioned sites are not included in the grid expansion plan of MEPCO. QASPPL mentioned that Ranjanpur and Cholistan sites are commissioned and the same are readily available for supply of power to the community.

(iii). Regarding cost of the projects, it was highlighted that the projects will be funded from the CSR activities as well as Annual Development Program of the Government of Punjab. Further, it will not charge consumers for the first two (02) years as the same will be covered in Operation & Maintenance cost of EPC contract. However, the Govt. of Punjab will decide to charge consumers which will be nominal tariff of around Rs. 2-3/kWh.

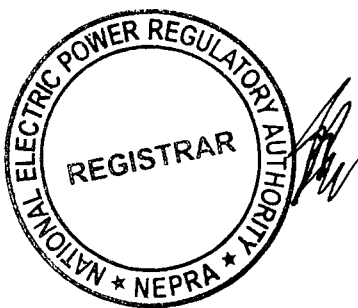


(iv). QASPPL also confirmed that it will comply with the minimum standards/specifications laid down by the concerned distribution company i.e. MEPCO for installation and operation of electrical equipment. It is pertinent to mention that MEPCO appreciated the efforts of the company for setting up of microgrids in the unserved areas and confirmed that there is no distribution network existing or planned in the abovementioned sites.

**(D). Comments of Stakeholders**

(i). In response to the above notices dated November 17, 2022, the Authority received comments from Energy Department of Government of Sindh (EDGoS) and MEPCO which are summarized in the following paragraphs:

- (a). EDGoS raised certain observations pertaining to application of QASPPL for the grant of microgrid licence including: (i). the standards of the equipment need to be quoted instead of names of the brands; (ii). the higher efficiency of the solar panels can be explored like bifacial technology which has higher efficiency than mono or poly crystalline technology; (iii). as per Regulation-5 of the Microgrid Regulations, the company need to commit and mention the minimum standards used for designing, construction and operation of the microgrid systems and which the company should comply with as per the standards, distribution code and all applicable laws; (iv). the long life energy storage systems can be explored instead of lead acid batteries which generally have low life as compared to the technologies like lithium ion or super capacitor. If the cost estimates are higher for lithium ion or super capacitor then locally built lead acid and tubular batteries for energy storages can be explored to reduce the cost of the system operation and maintenance; (v). as per Regulation-6 of the Microgrid Regulations, the justified tariff need to be determined and approved by the Authority; (vi). the total maximum output for six sites is 590 kW instead of 600 kW claimed by the company in one of the applications which need to be revised; (vii). the rated solar PV capacities differs from the equipment specifications and maximum output which needs to be rechecked and amended



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accordingly; and (viii). for sustainability, the period of operation and maintenance may be increased to at least five years.

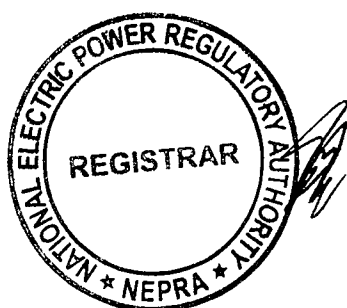
- (b). MEPCO remarked that seven out of total eleven (11) sites are located within five (05) kilometers of existing distribution facilities of MEPCO therefore, the same do not qualify the requirement of microgrid system as stipulated in relevant provisions of the Microgrid Regulations.

(ii). The Authority examined above comments of stakeholders and considered it appropriate seeking perspective of the company/QASPPL on the same. On the comments of EDGoS, it was confirmed that the company will comply with all the provisions of Microgrid Regulations including minimum standards specified for the electric equipment. Regarding using of bifacial instead of monofacial technology, QASPPL submitted that the solar panels having higher efficiency have been used i.e. Mono-Perc technology whereas, the bifacial panel glass has less strength and doesn't pass the Pounds per Square Inch (PSI) strength. Further, the batteries to be used for the back-up system will be Lithium Iron Phosphate (LiFePO<sub>4</sub>) which have 5000 life cycles. About the tariff, it was informed that the company will not charge any tariff to the consumers for the time being. As per PC-I and Request for Proposal (RFP), the O&M period is 2 years after which the project will be handed over to the concerned department for the next O&M contract. Also, for the six (06) microgrid sites the rated capacity of the inverter is 120 kW, and the PV Capacity is 100 kW<sub>p</sub> whereas, the total capacity of the project will be 600 kW<sub>p</sub>. Further, QASPPL has confirmed that microgrid sites are neither served by the host distribution licensees i.e. MEPCO nor the same are projected to be included in the investment plan.

(iii). The Authority reviewed the above reply of QASPPL and considered it appropriate to proceed further in the matter as stipulated in the NEPRA Act and the Microgrid Regulations.

#### **(E). Evaluation/Findings**

(i). The Authority has examined the submissions of QASPPL including the information provided in its application for the grant of microgrid licence, comments of the stakeholders, the rejoinder in the matter and the relevant rules & regulations.



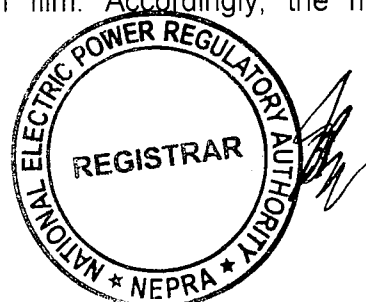
Accordingly, the observations of the Authority in the matter are summarized in the following paragraphs.

**(ii).** The Authority has observed that the applicant i.e. QASPPL is a public sector entity owned by the Government of Punjab incorporated on September 16, 2013 under Section-32 of the Companies Ordinance, 1984 (XLVII of 1984) vide Corporate Universal Identification No. 0085152. The Registered/Business Office of the company is 83-A, E/1, Main Boulevard, Gulberg-III, Lahore. According to the Memorandum of Association, the main objective of the company is to generate and supply electricity. It is pertinent to mention that the Authority had granted a generation licence (No. SPGL/04/2014 dated June 26, 2014) to QASPPL for setting up 100.0 MW solar based generation facility located at Lal Sohanra in Cholistan, District Bahawalpur, Punjab. The said facility is already in operation since July 15, 2015 and supplying power to the National Grid. In view of the said, the Authority considers that the company has the required technical capability to implement the microgrid systems.

**(iii).** The Authority has noted that QASPPL has submitted an application for developing microgrids at five (05) different locations in the province of Punjab including: (a). Basti Chaapu, Bahawalpur (280 kW); (b). Gatta Raikh, Dera Ghazi Khan (71 kW); (c). Basti Mud Sainad, Rajanpur (84.50 kW); (d). Basti Kheersar, Bahawalpur (91 kW); and (e). Pughla Shumali/Janubi, Dera Ghazi Khan (195 kW). In consideration of the said, the company plans to generate, distribute and supply electric power to the consumers of said villages. The total installed capacity of the generation facilities at the said sites will be 721.50 kW.

**(iv).** In this regard, the sponsors of the project carried out a feasibility study according to which a survey of forty seven (47) villages was conducted to identify the unserved areas in the province of Punjab. Out of the said, seven (07) villages were shortlisted on the basis of their population, socio-economic conditions, availability of land and distance from the grid. The microgrid system will consist of solar panels, Inverters, battery banks, SCADA and distribution system. The systems will be installed at available land of Government of Punjab at the sites located on the outskirts of the selected villages.

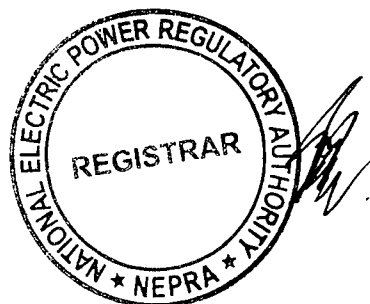
**(v).** Further to the above, the Authority has observed that the company considered three (03) different solar cell technologies including mono-crystalline, polycrystalline and thin film. Accordingly, the mono-crystalline technology was



selected due to long lifetime of PV modules, low degradation of maximum 0.1 - 0.5% per year, lower installation costs and environmental friendliness. The said technology also offers higher efficiencies in comparison to the polycrystalline or thin film cells typically within 17-20%. There will be battery bank of different sizes for the abovementioned sites in order to provide back-up (80 Ah per household) of around four (04) hours during the night time. According to the submitted information, the total outlay of the project will be Rs. 330 million out of which Rs. 130 million will be financed through Annual Development Program 2021-22 of Government of Punjab whereas, the rest of the amount will be utilized from the Corporate Social Responsibility (CSR) activities of QASPPL. The company has already entered into Operation & Maintenance contracts for a period of two (02) years for design, supply, installation, testing and commissioning of the microgrid sites.

**(vi).** The Regulation-2(1)(e) of the Microgrid Regulations provides definition of "microgrid" which means a localized energy system that fulfills the certain criteria including: (a). a self-contained distribution system operating at a voltage not exceeding 33 kV for distribution of electric power with peak distribution load not exceeding five megawatt; (b). it is intended to serve an unserved market; and (c). it is not connected directly or indirectly to the national grid. Further, Regulation-2(1)(g) of the Microgrid Regulations states that "unserved market" means a service territory of the host distribution licensee which is: (a). not served by the host distribution licensee at the time of the application for a license under these regulations; (b). outside five kilometers on either side and tail end points of existing distribution facilities of the host distribution licensee; and (c). where the host distribution licensee's service is not projected to extend under its investment plan approved by the Authority.

**(vii).** In this regard, the Authority has observed that microgrid facilities of QASPPL falls within the definition of microgrids as the same are isolated systems with a cumulative generation capacity of 721.50 KW for supplying power to different communities at 33/11 kV voltage level. On the compliance of Regulation-2(1)(g) of the Microgrid Regulations as mentioned above, QASPPL has confirmed that microgrid sites are neither served by the host distribution licensees i.e. MEPCO nor the same are projected to be included in the investment plan. However, MEPCO in its comments pointed out that some of the proposed microgrids are located within five (05) kilometers of existing distribution network. In this regard, the Authority considers that MEPCO has already confirmed that these sites are still un-electrified and are not



included in its system expansion plan in the near future. Therefore, the Authority is of considered view that there is the case for the grant of microgrid licence despite located within five (05) kilometers of existing distribution infrastructure of MEPCO.

(viii). The Authority has noted that Regulation-5 of the Microgrid Regulations envisages the development of microgrids in accordance with the applicable documents, distribution code, applicable laws and international standards set forth in schedule-IV to the said regulations, as amended or replaced from time to time. Accordingly, the Authority directs QASPPL to adhere to the minimum standards laid down in the relevant applicable documents. The Authority also directs the company to comply with all the specifications those being widely used by the host distribution licensee in order to ensure that integration with the network of the host distribution licensee is not hampered in the event of expansion of host distribution licensee's network to the area served by the microgrid. In view of the said, the Authority considers that the project of QASPPL fulfills the eligibility criteria for the grant of the microgrid licence as stipulated in the NEPRA Act, rules and regulations and other applicable documents.

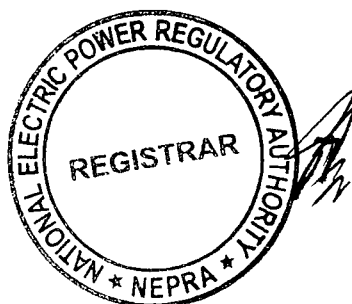
**(F). Grant of Microgrid Licence**

(i). The Authority is cognizant of the fact that access to electricity is one of the key factors indicating the socio-economic status of any community. The reliable and adequate provision of electricity is mandatory for improved standards of living including better health, education, transport, agriculture and employment opportunities. According to the International Energy Agency (IEA), an estimated 20 million Pakistanis live without access to electricity. Further, electrification of remote rural communities through national grid interconnection is not economically feasible due to high cost associated with the development of generation, transmission and distribution infrastructure. In consideration of the said, the Authority considers that the development of microgrids with distributed generation and low voltage distribution are the only solution to address the said issue.

(ii). Further, the Authority considers that sustainable and affordable energy/electricity is a key prerequisite for socio-economic development of any country. In fact, the economic growth of any country is directly linked with the availability of safe, secure, reliable and cheaper supply of energy/electricity. In view of the said, the

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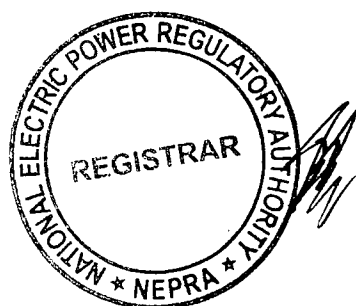


Authority is of the considered opinion that for sustainable development, all indigenous power generation resources, especially RE must be developed on priority basis.

**(iii).** The Authority has observed that Government of Punjab through QASPPL has taken the initiative of setting up five (05) microgrid sites in the far-flung/remote areas in various districts of the province of Punjab for provision of electricity to the consumers. Accordingly, it has submitted an application for the grant of microgrid licence in terms of relevant provisions of microgrid licence. In this regard, the Authority considers that the company has provided the necessary details pertaining to the location, technology, size, technical details and other related information for the proposed PV based generation facilities/solar power plants.

**(iv).** Regarding tariff of the abovementioned sites, the Authority has observed that company intends to initially provide the electric supply services to the consumers of the communities free of any charge for a period of two (02) as the same is covered in O&M contract. Thereafter, QASPPL will charge the consumers nominal tariff as per the mutually agreed rates. In this regard, the Authority considers Regulation-6 of the Microgrid Regulations stipulates that licensee shall supply electric power to the consumers on a reasonable tariff which is fair and equitable between the consumers and the licensee, and shall submit a copy of contract containing the tariff agreed with the consumers, or any subsequent change therein, to the Authority within thirty (30) days of such contract or revisions therein. Further, the Authority may carry out a tariff reassessment where it has reason to believe that the licensee's tariff is unjustified. Accordingly, the Authority directs QASPPL to submit a copy of the said contract within stipulated time period as mentioned above.

**(v).** The Authority has noted that pursuant to Regulation-4(5) of the Microgrid Regulations, a microgrid licence shall be granted for a maximum term of ten years. Accordingly, the Authority hereby fixes the term of microgrid licence of QASPPL as ten (10) years from the date of issuance. However, the Licensee may apply for renewal ninety (90) days prior to the expiry of the said term as stipulated in the relevant regulations prescribed from time to time. Further, in case the host distribution licensee extends its distribution network to the area served by the microgrid, the Authority directs the same to comply with the Regulation-7 of the Microgrid Regulations in true letter and spirit.



(vi). Regarding compliance with the environmental standards, QASPPL has confirmed that it will comply with the required standards during the term of the microgrid licence. In view of the importance of the issue, the Authority has decided to include a separate article in the microgrid licence along with other terms and conditions making it obligatory for QASPPL to comply with relevant environmental standards at all time.

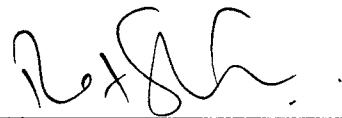
(vii). In consideration of the above, the Authority hereby grants the microgrid licence to QASPPL for its five (05) sites having a cumulative capacity of 721.50 kW on the terms and conditions set out in the microgrid licence annexed to this determination. The grant of microgrid licence will be subject to the provisions contained in the NEPRA Act, relevant rules, regulations framed thereunder and other applicable documents.

### Authority

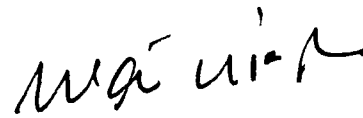
Engr. Maqsood Anwar Khan  
(Member)



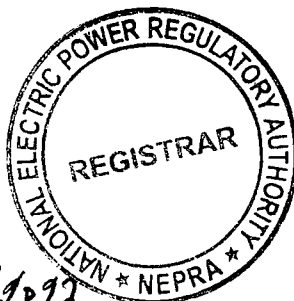
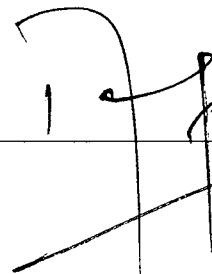
Rafique Ahmed Shaikh  
(Member)



Mathar Niaz Rana  
(Member)



Tauseef H. Farooqi  
(Chairman)



**National Electric Power Regulatory Authority  
(NEPRA)  
Islamabad – Pakistan**

**MICROGRID LICENCE**

**No. MGL/01/2023**

In exercise of the powers conferred upon the National Electric Power Regulatory Authority (NEPRA) under Section-14B, 20 and 23E of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 read with the National Electric Power Regulatory Authority Licensing (Microgrid) Regulations, 2022, the Authority hereby grants a Microgrid Licence to:

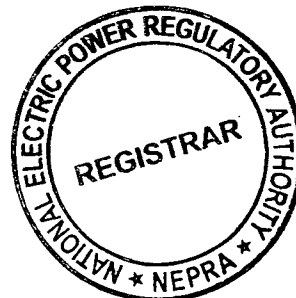
**Quaid-e-Azam Solar Power (Private) Limited**

**for its Microgrid Facilities Located at Districts Bahawalpur,  
Dera Ghazi Khan and Rajanpur in the Province of Punjab**

to generate electricity up to 721.50 KW and to distribute and supply electric power to the consumers connected to the microgrid and to perform all activities incidental or ancillary thereto subject to and in accordance with the Articles and Schedule(s) of this licence.

Given under my hand this on 17<sup>th</sup> day of January Two Thousand & Twenty Three and expires on 16<sup>th</sup> day of January Two Thousand & Thirty Three.

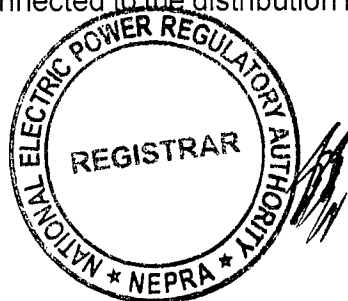
  
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Registrar



## **Article-1** **Definitions**

### **1.1 In this licence**

- (a). "Act" means the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 as amended from time to time;
- (b). "Applicable Documents" means the rules and regulations under the Act, any documents or instruments issued or determinations made by the Authority under any of the foregoing or pursuant to the exercise of its powers under the Act, the applicable Distribution Code, any manuals, directions, guidelines, orders or notifications issued or approved under the Act, the documents or instruments made by the Licensee pursuant to its Microgrid licence, in each case of a binding nature applicable to the Licensee or, where applicable, to its affiliates and to which the Licensee or any of its affiliates may be subject;
- (c). "Applicable Laws" means all the Applicable Documents and shall include any other law made by any competent authority as may be applicable on the Licensee;
- (d). "Authority" means the National Electric Power Regulatory Authority established under section-3 of the Act;
- (e). "Commercial Operations Date (COD)" means the day immediately following the date on which the Microgrid system of the Licensee is commissioned;
- (f). "Distribution Code" means the code prepared by a distribution licensee and approved by the Authority, which defines the technical and operational standards and procedures for distribution licensee and all those connected to the distribution licensee's system as may



be revised and amended from time to time with necessary approval of the Authority;

- (g). "Licensee" means **Quaid-e-Azam Solar Power (Private) Limited** or its successors or permitted assigns;
- (h). "Microgrid Regulations" mean the National Electric Power Regulatory Authority Licensing (Microgrid) Regulations, 2022, as amended or replaced from time to time;
- (i). "MEPCO" means Multan Electric Power Company Limited or its successors or permitted assigns;

1.2 The words and expressions used but not defined herein bear the meaning given thereto in the Act or the Microgrid Regulations.

## **Article-2** **Applicability of Law**

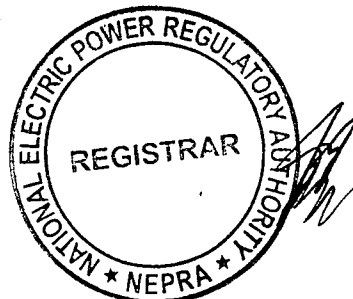
This licence is issued subject to the provisions of the Applicable Documents as amended or replaced from time to time.

## **Article-3** **Term of Licence**

This licence shall become effective on the date of its issuance and will have a term of ten (10) years from the said date. The Licensee may apply for renewal of this Licence ninety (90) days prior to the expiry of the said term as stipulated in the relevant regulations specified from time to time.

## **Article-4** **Tariff**

4.1 The Licensee shall supply electric power to the consumers on a reasonable tariff which is fair and equitable between the consumers and the Licensee, and shall submit a copy of contract containing the tariff agreed with the consumers, or any subsequent change therein, to the Authority within thirty days of such contract or revisions therein.



4.2 The Authority may carry out a tariff reassessment where it has reason to believe that the licensee's tariff is unjustified.

### **Article-5** **Minimum Standards**

The microgrid facilities of the Licensee shall be designed, constructed and operated in compliance with the Applicable Documents, Distribution Code, Applicable Laws and international standards set forth in schedule-IV of the Microgrid Regulations, each as amended or substituted from time to time.

### **Article-6** **Maintenance of Accounts**

The Licensee shall keep and maintain proper books of accounts and shall cause its accounts to be audited annually by a chartered accountant and shall file the audited accounts with the Authority within one hundred twenty days of the close of its financial year.

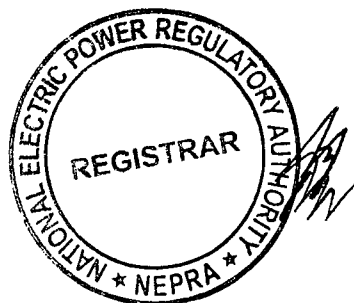
### **Article-7** **Compliance with Environmental & Safety Standards**

7.1 The microgrid facilities of the Licensee shall comply with the relevant environmental and safety standards as may be prescribed by the relevant competent authority from time to time.

7.2 The Licensee shall also comply invariably with the NEPRA Power Safety Code, where applicable.

### **Article-8** **Provision of Information**

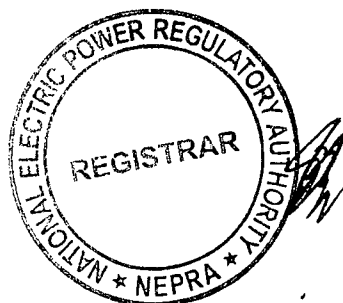
In accordance with provisions of Section-44 of the Act, the Licensee shall be obligated to provide the required information in any form as may be required by the Authority without any exception.



**Article-9**  
**Compliance with Applicable Law**

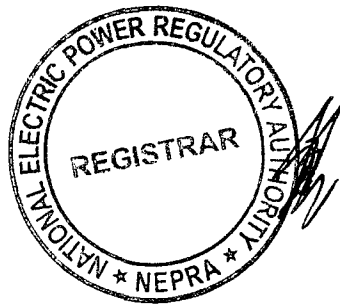
**9.1** The Licensee shall comply with the provisions of the Applicable Law, guidelines, directions and prohibitory orders of the Authority as issued from time to time.

**9.2** The Licensee shall invariably comply with the Microgrid Regulations, as amended or replace from time to time, and the provisions of the Microgrid Regulations shall be binding and made part of the terms and conditions of this licence by reference here.



**SCHEDULE**

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**Locations of the  
Different Microgrid(s) Facilities**

| Sr. No. | Site Location                          | Installed Capacity | No. of Consumers |
|---------|--|--------------------|------------------|
| 1.      | Basti Chaapu, Bahawalpur               | 280 KW             | 40-45 households |
| 2.      | Gatta Raikh, Dera Ghazi Khan           | 71 KW              | 40-45 households |
| 3.      | Basti Mud Sainad, Rajanpur             | 84.50 KW           | 50-60 households |
| 4.      | Basti Kheersar, Bahawalpur             | 91 KW              | 35-40 households |
| 5.      | Pughla Shumali/Janubi, Dera Ghazi Khan | 195 KW             | 40-45 households |

The electric power generated from microgrid facilities of the Licensee/Quaid-e-Azam Solar Power (Private) Limited shall be supplied to the consumers at above sites.

