



# National Electric Power Regulatory Authority Islamic Republic of Pakistan

NEPRA Tower, Attaturk Avenue (East), G-5/1, Islamabad  
Ph: +92-51-9206500, Fax: +92-51-2600026  
Web: www.nepra.org.pk, E-mail: registrar@nepra.org.pk

No. NEPRA/R/DL/LAG-503/435-40

April 11, 2022

**Mr. Mujtaba Haider Khan**  
Chief Executive Officer  
Grid Edge (Private) Limited  
3<sup>rd</sup> Floor, Dawood Center,  
M.T Khan Road, Karachi

**Subject: Grant of Generation Licence No. SGC/162/2022**  
**Licence Application No. LAG-503**  
**Grid Edge (Private) Limited (GEPL)**

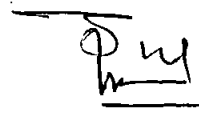
**Reference:** GEPL's application vide letter nil dated 08.02.2021

Enclosed please find herewith Generation Licence No. SGC/162/2022 granted by National Electric Power Regulatory Authority (NEPRA) to Grid Edge (Private) Limited (GEPL) for its 3.451 MWp PV based Generation Facility located at Crescent Textile Mills Limited, Sargodha Road, Noorpur, District Faisalabad in the province of Punjab, pursuant to Section 14(B) of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997, as amended or replaced from time to time. Further, the determination of the Authority in the subject matter is also attached.

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

**Enclosure: Generation Licence**  
**(SGC/162/2022)**



  
11 04 22  
(Syed Safer Hussain)

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, Central Power Purchasing Agency Guarantee Ltd, 73 East, A.K. Fazl-ul-Haq Rd, Blue Area, Islamabad
4. Chief Executive Officer, Faisalabad Electric Supply Company (FESCO), Abdullahpur, Canal Bank Road, Faisalabad
5. Director General, Environment Protection Department, Government of Punjab, National Hockey Stadium, Ferozpur Road, Lahore.

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

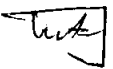
**Determination of the Authority**  
**in the Matter of Application of Grid Edge (Private) Limited**  
**for the Grant of Generation Licence**

**April 11, 2022**  
**Case No. LAG-503**

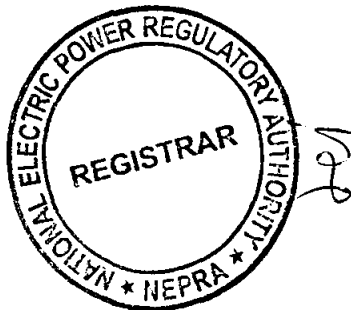
**(A). Filing of Application**

(i). Grid Edge (Private) Limited (GEPL) submitted an application on February 16, 2021 for the grant of generation licence in terms of Section-14B of Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (the "NEPRA Act") read with the relevant provisions of the NEPRA Licensing (Application and Modification Procedure) Regulations, 1999 (the "Licensing Regulations").

(ii). The Registrar examined the submitted application and found that application was deficient in terms of the Licensing Regulations. Accordingly, the Registrar directed GEPL for submitting the missing information/documents as required under the said regulations. GEPL completed the submission of missing information/documentation by March 04, 2021. The Authority considered the matter and found the form and content of the application in substantial compliance with Regulation-3 of the Licensing Regulations. Accordingly, the Authority admitted the application on March 15, 2021 for consideration of the grant of generation licence as stipulated in Regulation-7 of the Licensing Regulations. The Authority approved a Notice of Admission (hereafter the "Notice") to be published in the press for inviting comments of general public, interested and affected persons in the matter as stipulated in Regulation-8 of the Licensing Regulations. Accordingly, Notice was published in one (01) Urdu and one (01) English newspapers on March 16, 2021.







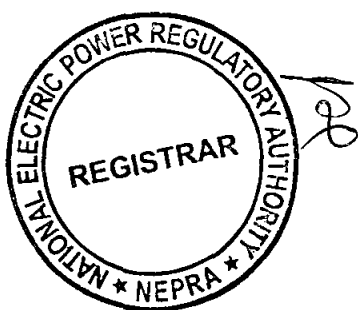
(iii). In addition to the above, the Authority also approved a list of stakeholders to seek their comments for its assistance in the matter in terms of Regulation-9(2) of the Licensing Regulations. Accordingly, letters were sent to different stakeholders as per the approved list on March 16, 2021, soliciting their comments for assistance of the Authority.

**(B). Comments of Stakeholders**

(i). In reply to the above, the Authority received comments from two (02) stakeholders including Central Power Purchasing Agency (Guarantee) Limited (CPPAGL) and Faisalabad Electric Supply Company Limited (FESCO). The salient points of the comments offered by stakeholders are summarized below: -

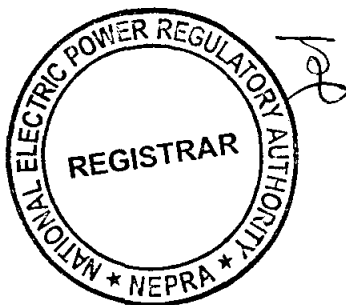
(a). CPPAGL submitted that GEPL is planning to set up a Photo Voltaic (PV) cell based generation facility of 3.451 MW<sub>P</sub> for supplying/selling to Crescent Textile Mills Limited (CTML), district Faisalabad, in the province of Punjab. According to the existing tariff structure for the end consumer, the major portion of fixed charge (Capacity, UoSC, MOF, DM) is being recovered through sale of energy to end consumers (i.e. Volumetric Charges). As a result, the more the number of units sold, the less will be the per unit rate for the fixed capacity charges and vice versa. In view of the foregoing, it is requested that further comments in this matter may be obtained from relevant Distribution Company i.e. FESCO because CTML is a consumer of the said utility; and

(b). FESCO remarked that GEPL intends to develop 3.451 MW PV based generation facility at the premises of CTML by having an Energy Purchase Agreement (EPA) with it. Under



Section-20 of the NEPRA Act, the Authority had granted FESCO an exclusive licence to distribute the electric power within the territory specified in the said licence. CTML has two connections from FESCO bearing reference No. 28-13128-5313870 and 28-13128-5313880 under tariff category B-3(14)T and having sanctioned loads of 4.780 MW and 4.900 MW respectively, fed through independent 11 kV feeders namely CTML-I and CTML-II. The cumulative load of both connections is 9.68 MW, whereas, GEPL will have an EPA of 3.451 MW with CTML. As explained above, the sanctioned load of the two connections of CTML is approximately 5.00 MW in each, which means, by allowing a generation licence to GEPL, the Authority will provide space to the consumers of FESCO for misuse of tariff (by avoiding next tariff category i.e. B-4). In view of the said, the Authority will not be safeguarding/protecting the interest of FESCO in its viability to meet the universal service obligations. Further, allowing some consumers of FESCO to purchase the desired quantum of electricity from another supplier without discontinuing of supply from Distribution Company, is a sheer violation of the Section-22 of the NEPRA Act which requires a notice of one (01) year in writing before any such stoppage/curtailment. In this regard, FESCO has not received any notice as yet from any of the units of CTML. Furthermore, there will be no restriction on the BPC(s) to purchase part of its load from DISCO as its consumer and part from another supplier/generator under bilateral contract. This is absolutely restricted in any other Market i.e. either a BPC is a consumer of the DISCO or it contracts up to its full peak demand in bilateral trade from a generator. Due to the hybrid nature of the consumer, the Authority will have to



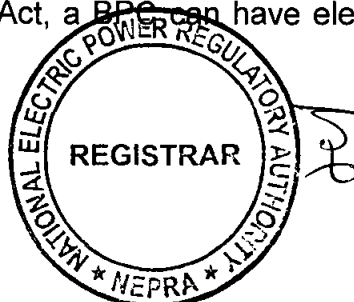
determine tariff for remaining energy purchase from a DISCO on case to case basis. This is required because the new load factor of the remaining energy will be different from the original load factor (if the BPC is purchasing its total energy from DISCO). Therefore, allocation of fixed cost/kWh basis to such consumers based on new load factors will change and as such should be charged to these consumers. In view of the said, the BPC(s) should not be allowed to purchase part of their load from DISCO and part from another supplier/generator under bilateral contract.

(ii). The Authority considered the above comments and in view of the observations raised, considered it appropriate to seek perspective of GEPL on the same. On the observations of CPPAGL, it was submitted that GEPL has entered into an understanding with CTML whereby PV cell based Roof Top solar generation facility will be set up at the premises to supply to its different units. The total connected load at this facility is 9.68 MW, GEPL has planned to construct, install and operate a generation facility of 3.451 MW<sub>P</sub> at the premises of CTML to supply PV solar based electric power which will only be about 7.00 % of the units supplied by FESCO. Therefore, there will not be any significant drop in the units of electric power FESCO is supplying to CTML however, it will have a very positive impact for CTML as it will now be obtaining environment friendly electric power for its textile products mainly for export purposes.

(iii). About the observations of FESCO, it was clarified that the utility after due diligence has granted CTML two connections which have been running for the past many years. The only change being envisaged is that CTML has planned to have an agreement with GEPL to have a PV based solar generation facility to supply only a meagre portion of the consumption. The assertion of FESCO that CTML is trying to avoid the higher slab of tariff is not based on facts and is contrary to the actual position at site. It is pertinent to mention that under Section-22 of the NEPRA Act, a BPC can have electric power from a licensee







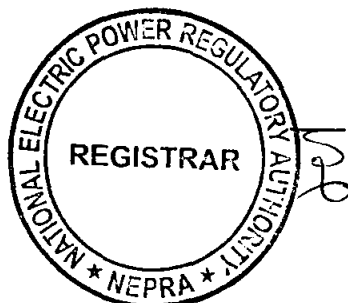
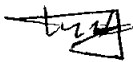
including a generation company. Further, one year notice is required if the BPC plans on stopping purchasing from the utility however, in the current case CTML/BPC will continue to purchase from FESCO despite having another source from GEPL. In this regard, it is pertinent to mention that there is no prohibition in the law that a BPC cannot purchase electric power simultaneously from the utility and a generation company. In view of the fact it is clear that CTML will continue to be a consumer of FESCO and will continue to pay the cross subsidy it is being now.

(iv). The Authority considered the above submissions and considered it appropriate to proceed further in the matter of the application of GEPL for the consideration of the grant of generation licence as stipulated in the NEPRA Licensing (Generation) Rules 2000 (the "Generation Rules") and Licensing Regulations.

### **(C). Evaluations/Findings**

(i). The Authority examined the submissions of GEPL including the information provided with its application for the grant of generation licence, the comments of the stakeholders, rejoinder submitted by the company/applicant/GEPL and the relevant rules & regulations in the matter.

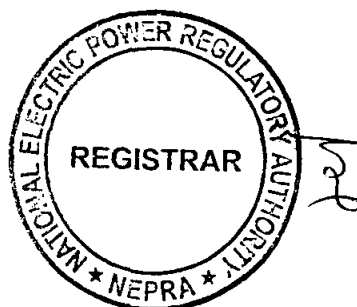
(ii). The Authority has observed that the applicant i.e. GEPL is an entity incorporated under Section-16 of the Companies Act, 2017 (XIX of 2017), having Corporate Universal Identification No. 0122474, dated August 08, 2018 complying with the provisions of Section-24 of the NEPRA Act. Further, the Authority has also observed that GEPL is a private limited company with the principal line of business to generate, accumulate, transmit, distribute, purchase, sell and supply electric power or any other energy and power generated by any source i.e. conventional or non-conventional resources.



(iii). The Authority has duly considered the provisions of the Memorandum of Association and Articles of Association of the company and has observed that the applicant company i.e. GEPL has been incorporated jointly by Reon Energy Limited (REL) and Eni International B.V. (ENIIBV) having equity contribution in the proportion of 60:40 specifically to operate in the Renewable Energy (RE) Sector of Pakistan. REL, is the Renewable Energy (RE) arm of Dawood Group (DG), looking after the solar energy business.

(iv). The Authority has noted that DG is a conglomerate involved in various sectors of economy including electric power sector, operating natural gas and coal projects. Further the group has also set up a 50.00 MW wind based generation facility at Gharo in the province of Sindh. Further, a number of other projects of wind and solar are in different stages of implementation. Also, the group has planned to diversify its portfolio by investing in the segment of distributed generation whereby it has planned to set up generation facilities at the door step of the consumers/BPC(s) using PV cells. Similarly, ENIIBV is a world renowned entity involved mainly in the exploration and development of the oil and gas but has been actively involved in the diversification with special emphasis on RE. In view of the said, the Authority considers GEPL/DG/ENIIBV has the required financial and technical capabilities to implement the project.

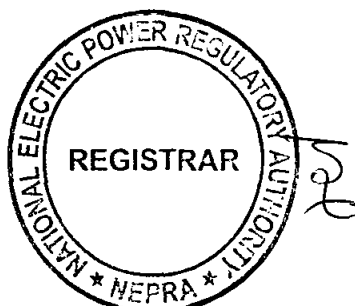
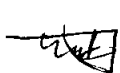
(v). The Authority has observed that GEPL through its current application is pursuing a generation licence for setting up a PV based generation facility of 3.451 MW<sub>p</sub> to be located at CTML, Faisalabad in the province of Punjab. In consideration of the said, it is pertinent to mention that GEPL plans on supplying to the aforementioned entity/CTML as BPC through cable(s) located on private property owned by the BPC. According to the submitted information, the total cost of the project will be about Pak Rs. 240.00 million which will be financed through a combination of debt (75% of the total cost of project i.e. Rs. 180.00 million) and equity (25% of the total cost of project i.e. Rs. 60.00 million).



In this regard, a number of financial institution/commercial banks have shown their willingness to finance the debt portion of the project.

(vi). The Authority has considered the feasibility study which the sponsors of the project carried out including *inter alia*, solar power plant equipment details, PV-sitting details, power production estimates based on solar irradiation data of the project sites, soil tests reports, technical details pertaining to selected PV panels and other allied equipment to be used in the solar power plant, electrical studies, environmental study and project financing etc. The review of the feasibility study reveals that for the proposed location to achieve the capacity of 3.451 MW<sub>p</sub> the company will be installing 6512 PV panels each of 530 Watt. In consideration of the said, it is clarified that the company plans installing PV cells/panels from Tier-I manufactures including Jinko Solar, JA Solar, Renesola or LONGI. The Authority has observed that the company has confirmed that deal for purchase of PV cells/panels of JAM72830 525-550/MR Series has been locked with JA Solar where the manufacturer has assured an average capacity factor of approximately 16.00% at the site.

(vii). The Authority has considered the submissions of GEPL and has observed that the supply from proposed generation facility will be supplied to a BPC in the name of CTML as explained in the preceding paragraphs. According to the system study of the project, the dispersal to the BPC will be made at 220/440 volts through cables located/placed on the Roof Top/private property owned by the BPC without involving any public or third party. In this regard, it is pertinent to mention that BPC is a defined term as stipulated in Section-2 (ii) of the NEPRA Act. According to the said, a BPC is a consumer which purchases or receives electric power, at one premises, in an amount of one megawatt or more or in such other amount and voltage level and with such other characteristics as the Authority may specify and the Authority may specify different amounts and voltage levels and with such other characteristics for different areas. In terms of Section-2 (xxva) of the NEPRA Act, for the purpose of specified means specified by regulations made by the Authority under the NEPRA

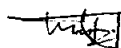


Act. It is pertinent to mention that the relevant regulations in this regard are still under formation and in the absence of the same, the Authority has been allowing even less than 1.00 MW to be treated as BPC therefore, the load of the above mentioned entity explained in the preceding Paras may be considered as BPC.

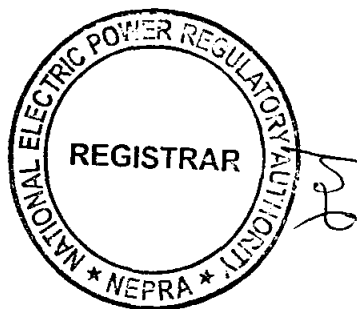
(viii). Further to the above, Section-2(v) of the NEPRA Act defines the term "Distribution" wherein the ownership, operation, management and control of distribution facilities located on private property and used solely to move or deliver electric power to the person owning, operating, managing and controlling those facilities or to tenants thereof is not included in the definition of "distribution". As explained above, the facilities to be used for delivery of electric power to above BPC are located on private property (without involving any public property or any third party) will be owned, operated, managed and controlled by the BPC therefore, the supply of electric power to CTML by GEPL does not constitute a distribution activity under the NEPRA Act, and a distribution licence will not be required by the company.

(ix). Further, the Authority has also considered the submissions of GEPL that necessary due diligence has been completed and there will be no environmental impact of the proposed arrangement as PV cells/panels will be utilizing only the existing infrastructure of roof top of buildings and GEPL has confirmed that it will comply with the concerned environmental standards. In view of the said, the Authority considers that GEPL is made obligatory to comply with the relevant environmental standards for which a separate article will be included in the proposed generation licence.

(x). The grant of generation licence is governed by the provisions of Rule-3 of the Generation Rules. The Authority has observed that GEPL has provided the details of the proposed generation facility about (a). location; (b). size; (c). technology; (d). interconnection arrangement; (e). technical limits; (f). technical functional specification and (g). other specific/relevant details as stipulated in Rule-3 (1) of the Generation Rules. According to the Rule-3(5) of the





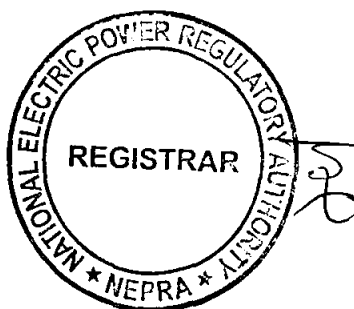


Generation Rules, the Authority may refuse to issue a generation licence where the site, technology, design, fuel, tariff or other relevant matters pertaining to the proposed generation facility/solar power plant/Roof Top Solar proposed in an application for a generation licence are either not suitable on environmental grounds or do not satisfy the Least Cost Option Criteria (LCOC). In this regard, the Rule-3(5) of the Generation Rules stipulates the conditions pertaining to LCOC which includes (a). sustainable development or optimum utilization of the RE or non-RE resources proposed for generation of electric power; (b). the availability of indigenous fuel and other resources; (c). the comparative costs of the construction, operation and maintenance of the proposed generation facility/solar power plant/Roof Top Solar against the preferences indicated by the Authority; (d). the cost and right-of-way considerations related to the provision of transmission and interconnection facilities; (e). the constraints on the transmission system likely to result from the proposed generation facility/solar power plant/Roof Top Solar and the costs of the transmission system expansion required to remove such constraints; (f). the short-term and the long-term forecasts for additional capacity requirements; (g). the tariff resulting or likely to result from the construction or operation of the proposed generation facility/solar power plant/Roof Top Solar; and (h). the optimum utilization of various sites in the context of both the short-term and the long-term requirements of the electric power industry as a whole.

(xi). In view of the above, the Authority considers that the proposal of GEPL for installing PV based generation facility will result in optimum utilization of the RE which is currently untapped, resulting in pollution free electric power. It is pertinent to mention that solar is an indigenous resource and such resources should be given preference for the energy security. As explained in the preceding paragraphs above, the company will be supplying electric power to BPC(s) directly which only involve laying small feeder(s), which concludes that the project will not face any constraints in transmission of electric power. Further, being located in the same vicinity as that of the BPC, the project will not result in cost

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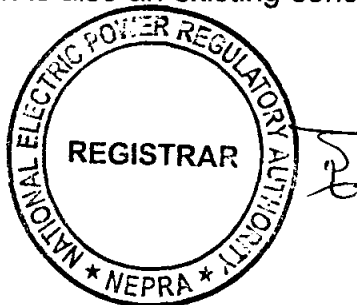
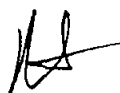
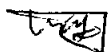
and right-of-way issues for the provision of interconnection facilities. In view of the said, the Authority considers that the project of GEPL fulfills the eligibility criteria for the grant of the generation licence as stipulated in the NEPRA Act, rules and regulations and other applicable documents.

**(D). Grant of Licence**

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

(ii). The Authority observes that the existing energy mix of the country is heavily skewed towards the thermal power plants, mainly operating on imported fossil fuels. The continuous import of fossil fuels not only creates pressure on the precious foreign exchange reserves of the country but is also an environmental concern. Therefore, in order to achieve sustainable development, it is imperative that indigenous resources especially RE, are given priority for power generation and their development is encouraged. The Authority is really encouraged to observe that with each passing day, the cost of RE technologies is showing a downward trend making the same affordable for commercial use. The Authority is also encouraged to observe that the Govt. of Pakistan is planning to enhance the share of RE from its current level of 5% of the installed capacity to 30% of the total installed capacity by 2030. Furthermore, a number of initiatives are also being undertaken in the private sector in this regard.

(iii). The Authority has observed that in the current case, GEPL has approached for the grant of a generation licence for setting up a PV based generation facility with a cumulative Installed Capacity of 3.451 MW<sub>P</sub> for supplying to CTML/BPC(s) which is also an existing consumer of the local utility

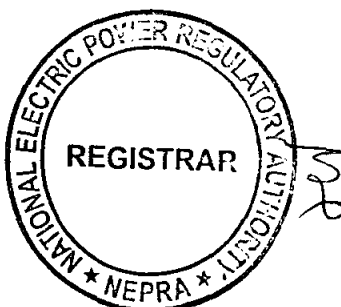


i.e. FESCO. The Authority considers that the above proposal of GEPL is in line with the provisions of the NEPRA Act, relevant rules and regulations framed thereunder and vision of the Govt. of Pakistan to enhance the contribution of RE in generation of electric power. The project will not only help GEPL in diversifying its portfolio but will also enhance the energy security of the CTML/BPC. Further, the project will also help in reducing carbon emissions by generating clean electricity, thus improving the environment.

(iv). As explained above, GEPL has provided the details of location, technology, size, net capacity/energy yield, interconnection arrangements, technical details and other related information for the proposed PV based generation facility/solar power plant/ Roof Top Solar. In this regard, the Authority has observed that sponsors of the project have acquired/available with them the required premises/space for setting up the distinct PV based generation facilities. The said details are being incorporated in the generation licence.

(v). The Authority has observed that the proposed generation facility of GEPL will be used for supplying to a BPC. According to Section-2(ii) of the NEPRA Act, a consumer that purchases or receives electric power at one premises, in an amount of one megawatt or more or in such amount and voltage level and with such characteristics as the Authority may determine/specify is treated as BPC. It is pertinent to mention that the relevant regulations in this regard are still under formulation and in the absence of the same the Authority has been allowing even amount of less than 1.00 MW to be treated as BPC therefore, the Authority allows the above mentioned entity/CTML as explained in the preceding Paras to be BPC of GEPL.

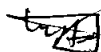
(vi). Regarding supply to the BPC, the Authority observes that the BPC and the proposed generation facilities of GEPL are located within the same premises and the BPC will be supplied through underground cable/feeder of 220/440 volts. Pursuant to proviso to Section-21 of the NEPRA Act, the Authority is empowered to allow a generation company to sell electric power to a BPC



located in the service territory of a distribution company. In view of the said, the Authority allows the GEPL to sell electricity to BPC. Further, under Section-2(v) of the NEPRA Act, ownership, operation, management and control of distribution facilities located on private property and used solely to move or deliver electric power to the person owning, operating, managing and controlling those facilities or to tenants thereof has not been included in the definition of "distribution". Based on the said considerations that the proposed BPC is located within the same premises and no public or third party properties are involved, the supply of power to BPC by GEPL does not constitute a distribution activity under the NEPRA Act, and GEPL will not require a distribution licence for supplying to the BPC.

(vii). The term of a generation licence under Rule-5(1) of the Generation Rules is required to match with the maximum expected useful life of the units comprised in a generating facility. According to the information provided by GEPL, the Commercial Operation Date (COD) of the proposed generation facility/solar power plant/ Roof Top Solar will be April 30, 2022 and it will have a useful life of around twenty five (25) years from its COD. In this regard, GEPL has requested that the term of the proposed generation licence may be fixed as per the said useful life of generation facility/solar power plant/rooftop solar. The Authority considers that said submission of GEPL about the useful life of the generation facility/solar power plant/Roof Top Solar and the subsequent request of GEPL to fix the term of the generation licence is consistent with international benchmarks; therefore, the Authority fixes the term of the generation licence to twenty five (25) years from COD of the project.

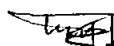
(viii). Regarding compliance with the environmental standards, GEPL has confirmed that it will comply with the required standards during the term of the generation licence. In view of the importance of the issue, the Authority has decided to include a separate article in the generation licence along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



(ix). Regarding the rates, charges and terms and conditions of tariff between GEPL and its BPC, it is reiterated that under Section-7(3)(a) of the NEPRA Act, determining tariff, rate and charges etc. is the sole prerogative of the Authority. However, the Authority observes that tariff between GEPL and its BPC, does not affect any other consumer or third party. Therefore for the purpose of tariff, the Authority considers it appropriate to direct GEPL and its BPC to agree on a bilateral agreement and accordingly GEPL will be allowed to charge the agreed tariff subsequent to the grant of the generation licence.

(x). The Authority has duly considered the comments of different stakeholders as explained above. In this regard, the Authority has observed that CPPAGL and FESCO have raised various concerns on the proposal of GEPL of supplying the proposed BPC/CTML including (a). the arrangement will have a negative impact on the tariff for FESCO and allow CTML to misuse of the tariff; (b). GEPL cannot sell electric power to CTML due to exclusive licence of FESCO; and (c). requirement for a BPC to serve notice to FESCO before switching to a generation company under Section-22(2) of NEPRA Act.

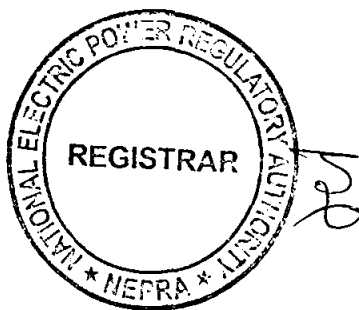
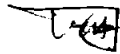
(xi). In consideration to the above, the Authority has observed that GEPL has submitted rejoinders to the above observations of the stakeholders as explained in the preceding paragraphs which the Authority considers tenable. However, the Authority considers it appropriate to give its findings on the above mentioned observations and address the same in the current determination in the matter of application for the grant of generation licence of GEPL. Regarding the impact on the tariff of allowing the arrangement for BPC(s) to have supply from generation companies, the Authority considers that due to the current structure of tariff the observation of CPPAGL and FESCO carries significance however, at the same time it is worth considering that GEPL will only be supplying a very small fraction (around 7.00%) of the sanctioned load of CTML which can be attributed to its natural growth meaning there will not be any adverse impact on the base line consumption pattern of CTML from the utility. About the observation



of FESCO that GEPL cannot sell electric power under Section-22 of NEPRA Act to CTML/BPC, the Authority clarifies that the interpretation is not in line with the provisions of the NEPRA Act and a generation company is allowed supplying to BPC in terms of the provisions of the said Section. In consideration of the comments of FESCO that the BPC is required to serve it a notice before switching to a generation company under Section-22(2) of NEPRA Act, the Authority hereby clarifies that the said requirement of serving notice is applicable when a consumer completely switches over to a Distribution Company whereas, in the current case the consumer/CTML has confirmed that it will continue to maintain its supply from FESCO therefore, the question of notice period does not arise. In light of the said, the observations of CPPAG and FESCO stand addressed and settled.

(xii). Further to the above, the Authority has observed that the honourable Islamabad High Court in its judgement dated July 08, 2021 in the matter of W.P. No. 1592 of 2020 (Islamabad Electric Supply Company Limited VS National Electric Power Regulatory Authority, etc.) had decided that during term of the existing distribution licences, the DISCO(s) will have their exclusivity as per the original NEPRA Act and any other generation company cannot provide electric power to any BPC. In this regard, the Authority has observed that the current distribution licence of FESCO has already expired on March 01, 2022. Further, FESCO has already submitted a request for renewal of its Distribution Licence which is in advance stage of processing and is expected to be decided in terms of the relevant provisions of the NEPRA Act as amended in the year 2018.

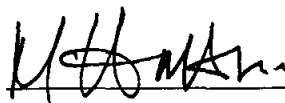
(xiii). In consideration of the above, the Authority hereby approves the grant of generation licence to GEPL on the terms and conditions set out in the generation licence annexed to this determination. The grant of generation licence will be subject to the provisions contained in the NEPRA Act, relevant rules, regulations framed thereunder and other applicable documents. Further to the said, the Authority directs GEPL to apply for a Supplier Licence under Section-



23E of the NEPRA Act, once the necessary/required rules and regulations on the subject are notified and if there is a requirement for such a licence.

**Authority:**

Engr. Maqsood Anwar Khan  
(Member)



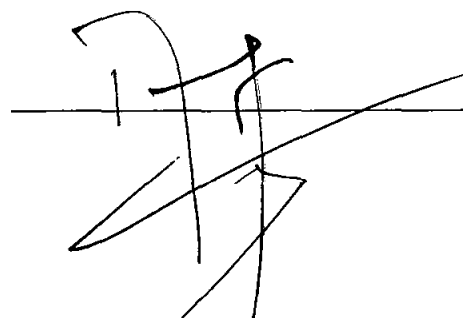
Engr. Rehmatullah Baloch  
(Member)

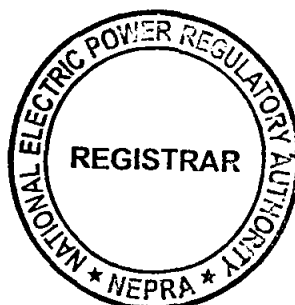
Retired

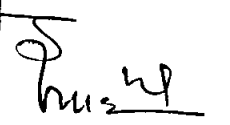
Engr. Rafique Ahmed Shaikh  
(Member)



Engr. Tauseef H. Farooqi  
(Chairman)





  
11 04 22

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

**Islamabad – Pakistan**

**GENERATION LICENCE**

**No. SGC/162/2022**

In exercise of the powers conferred upon the National Electric Power Regulatory Authority (NEPRA) under Section-14(B) of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997, as amended or replaced from time to time, the Authority hereby grants a Generation Licence to:

**GRID EDGE (PRIVATE) LIMITED**

Incorporated Under Section-16 of the  
Companies Act, 2017 (XIX of 2017) Having Corporate Universal Identification  
No. 0122474, dated August 08, 2018

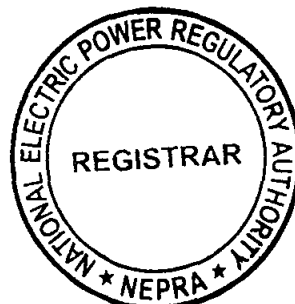
**for its PV based Generation Facility/Roof Top Solar/Solar Power  
Plant located at Crescent Textile Mills Limited, Sargodha Road,  
Noorpur, District Faisalabad in the Province of Punjab**

(Total Installed Capacity:  $\approx$  3.451 MW<sub>P</sub> Gross)

to engage in generation business subject to and in accordance with the  
Articles of this Licence.

Given under my hand on 11<sup>th</sup> day of April Two Thousand &  
Twenty Two and expires on 29<sup>th</sup> day of April Two Thousand & Forty-  
Seven

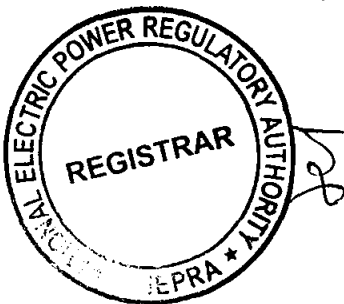
  
\_\_\_\_\_  
Registrar



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

**1.1 In this Licence**

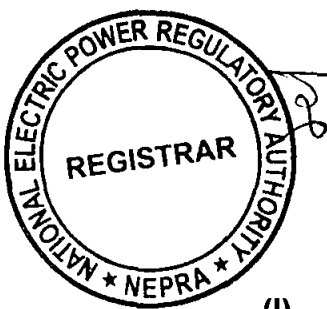
- (a). "Act" means the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997, as amended or replaced from time to time;
- (b). "Applicable Documents" mean the Act, the rules and regulations framed by the Authority under the Act, any documents or instruments issued or determinations made by the Authority under any of the foregoing or pursuant to the exercise of its powers under the Act, the Grid Code, the applicable Distribution Code, the Commercial Code if any, or the documents or instruments made by the Licensee pursuant to its generation 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 Law" means all the Applicable Documents;
- (d). "Authority" means the National Electric Power Regulatory Authority constituted under Section-3 of the Act;
- (e). "Bulk Power Consumer (BPC)" means a consumer which purchases or receives electric power, at one premises, in an amount of one (01) megawatt or more or in such other amount and voltage level and with such other characteristics as the Authority may specify and the Authority may specify different amounts and voltage levels and with such other characteristics for different areas;
- (f). "Bus Bar" means a system of conductors in the generation facility/Solar Power Plant/Roof Top Solar of the Licensee on



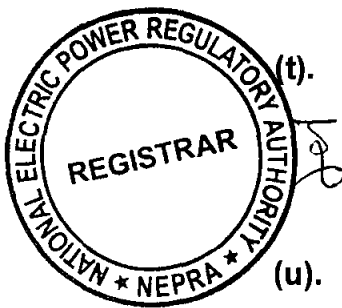
which the electric power from all the photovoltaic cells is collected for supplying to the Power Purchaser;

- (g). "Commercial Code" means the commercial code prepared under the National Electric Power Regulatory Authority (Market Operator, Registration, Standards and Procedure) Rules, 2015 as amended or replaced from time to time;
- (h). "Commercial Operations Date (COD)" means the day immediately following the date on which the generation facility/Solar Power Plant/Roof Top Solar of the Licensee is Commissioned;
- (i). "Commissioned" means the successful completion of commissioning of the generation facility/Solar Power Plant/Roof Top Solar for continuous operation and despatch to the Power Purchaser;
- (j). "Distribution Code" means the distribution code prepared by the concerned XW-DISCO and approved by the Authority, as may be revised from time to time with necessary approval of the Authority;
- (k). "Energy Purchase Agreement-EPA" means the energy purchase agreement, entered or to be entered into by and between the Power Purchaser and the Licensee, for the purchase and sale of electric energy generated by the generation facility/Solar Power Plant/ Roof Top Solar, as may be amended by the parties thereto from time to time;
- (l). "Generation Rules" mean the National Electric Power Regulatory Authority Licensing (Generation) Rules, 2000 as amended or replaced from time to time;
- (m). "Grid Code" means the grid code prepared and revised from time to time by NTDC with necessary approval of the Authority;



- (n). "Law" means the Act, relevant rules and regulations made there under and all the Applicable Documents;
- (o). "Licence" means this licence granted to the Licensee for its generation facility/ Solar Power Plant/Roof Top Solar;
- (p). "Licensee" means **Grid Edge (Private) Limited** or its successors or permitted assigns;
- (q). "Licensing Regulations" mean the National Electric Power Regulatory Authority Licensing (Application & Modification Procedure) Regulations, 1999 as amended or replaced from time to time;
- (r). "Net Delivered Energy" means the net electric energy expressed in kWh that is generated by the generation facility/Solar Power Plant/Roof Top Solar of the Licensee at its outgoing Bus Bar and delivered to the Power Purchaser;
- (s). "Power Purchaser" means the BPC which will be purchasing electric power from the Licensee, pursuant to a EPA for procurement of electric power;
- (t). "Roof Top Solar" means a cluster of photovoltaic cells/panels installed on the roof top of a building or any other suitable place in the same location used for production of electric power";
- (u). "XW-DISCO" means an Ex-WAPDA distribution company engaged in the distribution of electric power".



1.2 The words and expressions used but not defined herein bear the meaning given thereto in the Act or rules and regulations issued under the Act.

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

This Licence is issued subject to the provisions of the Applicable Law, as amended or replaced from time to time.

**Article-3**  
**Generation Facilities**

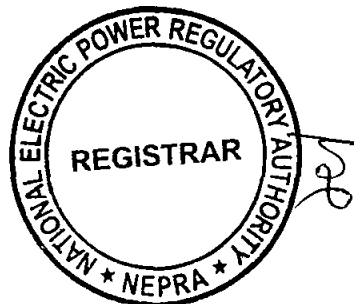
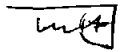
**3.1** The location, size (capacity in MW), technology, interconnection arrangements, technical limits, technical functional specifications and other details specific to the generation facility/Solar Power Plant/Roof Top Solar of the Licensee are set out in Schedule-I of this Licence.

**3.2** The net capacity/Net Delivered Energy of the generation facility/Solar Power Plant/Roof Top Solar of the Licensee is set out in Schedule-II of this Licence. The Licensee shall provide the final arrangement, technical and financial specifications and other specific details pertaining to its generation facility/Solar Power Plant/Roof Top Solar before it is Commissioned.

**Article-4**  
**Term of Licence**

**4.1** This Licence shall become effective from the date of its issuance and will have a term of twenty five (25) years from the COD of the generation facility/Solar Power Plant/Roof Top Solar, subject to the provisions of Section-14(B) of the Act.

**4.2** Unless suspended or revoked earlier, the Licensee may apply for renewal of this Licence ninety (90) days prior to the expiry of the above term, as stipulated in the Generation Rules read with the Licensing Regulations.



**Article-5**  
**Licence fee**

The Licensee shall pay to the Authority the Licence fee as stipulated in the National Electric Power Regulatory Authority (Fees) Regulations, 2021 as amended or replaced from time to time.

**Article-6**  
**Tariff**

The Licensee is allowed to charge the Power Purchaser/BPC a mutually agreed tariff.

**Article-7**  
**Competitive Trading Arrangement**

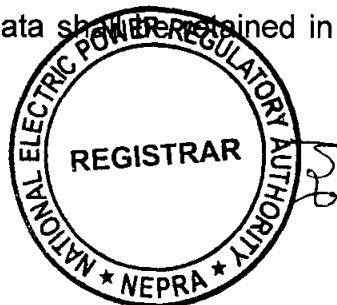
7.1 The Licensee shall participate in such manner as may be directed by the Authority from time to time for development of a Competitive Trading Arrangement.

7.2 The Licensee shall in good faith work towards implementation and operation of the aforesaid Competitive Trading Arrangement in the manner and time period specified by the Authority. Provided that any such participation shall be subject to any contract entered into between the Licensee and another party with the approval of the Authority.

7.3 Any variation or modification in the above-mentioned contracts for allowing the parties thereto to participate wholly or partially in the Competitive Trading Arrangement shall be subject to mutual agreement of the parties thereto and such terms and conditions as may be approved by the Authority.

**Article-8**  
**Maintenance of Records**

For the purpose of sub-rule (1) of Rule-19 of the Generation Rules, copies of records and data shall be retained in standard and electronic form



and all such records and data shall, subject to just claims of confidentiality, be accessible by authorized officers of the Authority.

**Article-9**  
**Compliance with Performance Standards**

The Licensee shall comply with the relevant provisions of the National Electric Power Regulatory Authority Performance Standards (Generation) Rules 2009 as amended or replaced from time to time.

**Article-10**  
**Compliance with Environmental & Safety Standards**

**10.1** The generation facility/Solar Power Plant/Roof Top Solar of the Licensee shall comply with the environmental and safety standards as may be prescribed by the relevant competent authority as amended or replaced from time to time.

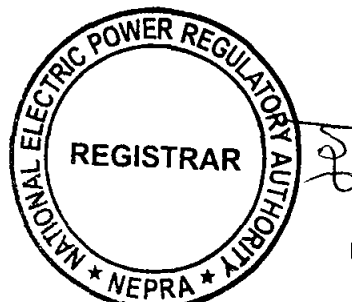
**10.2** The Licensee shall provide a certificate on a bi-annual basis, confirming that the operation of its generation facility/Solar Power Plant/Roof Top Solar is in conformity with required environmental standards as prescribed by the relevant competent authority as amended or replaced from time to time.

**Article-11**  
**Power off take Point and Voltage**

The Licensee shall deliver the electric power to the Power Purchaser at the outgoing Bus Bar of its generation facility/Solar Power Plant/Roof Top Solar. The Licensee shall be responsible for the up-gradation (step up) of generation voltage up to the required dispersal voltage level.

**Article-12**  
**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 desired by the Authority without any exception.

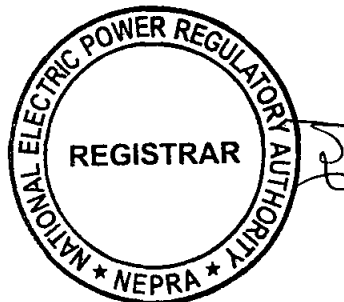


**Article-13**  
**Compliance with Applicable Law**

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.

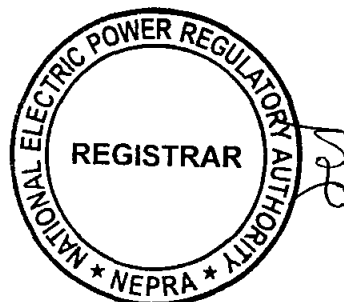
**Article-14**  
**Corporate Social Responsibility**

The Licensee shall provide the descriptive as well as monetary disclosure of its activities pertaining to corporate social responsibility (CSR) on an annual basis.

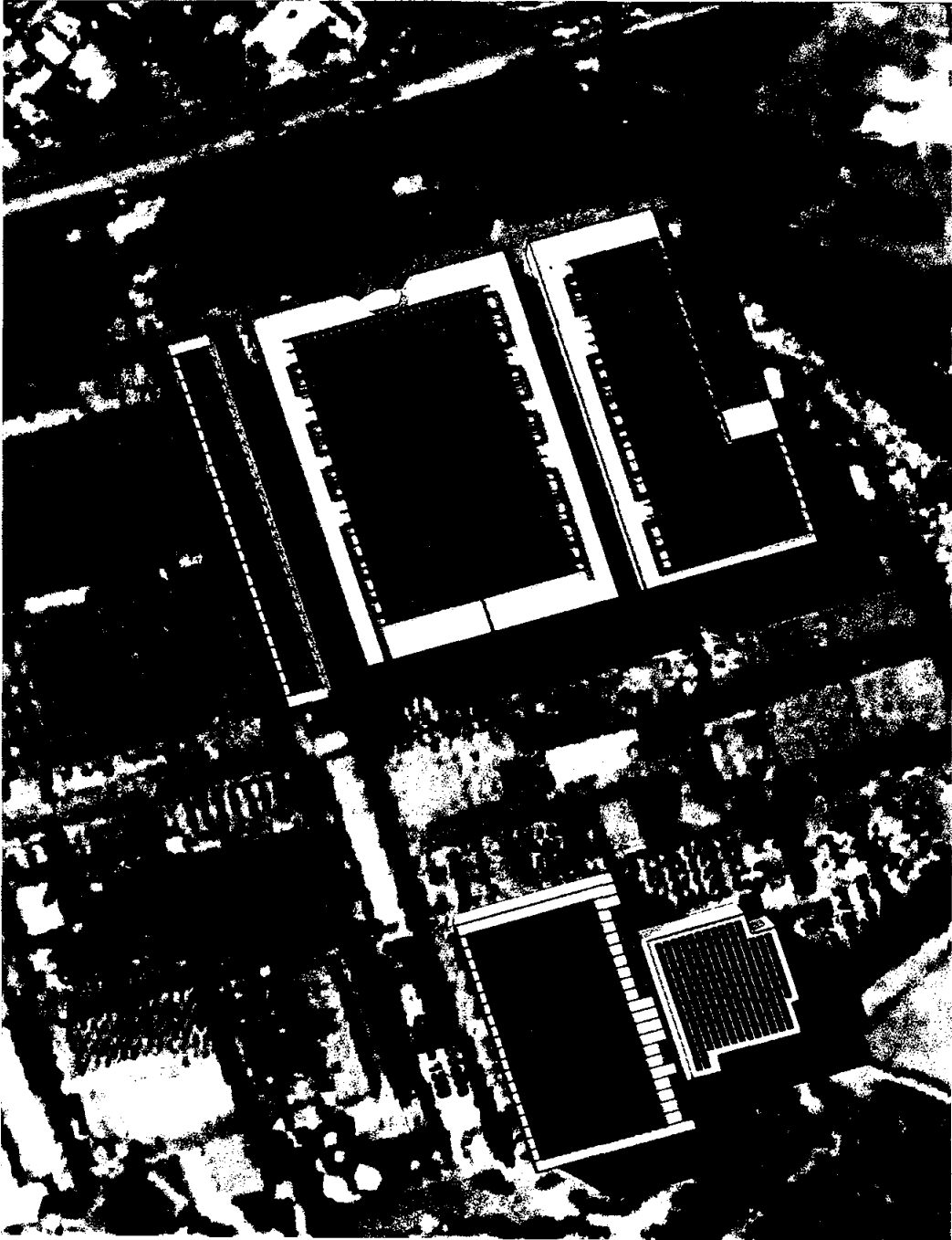


## **SCHEDULE-I**

The Location, Size (i.e. Capacity in MW), Type of Technology, Interconnection Arrangements, Technical Limits, Technical/Functional Specifications and other details specific to the Generation Facilities of the Licensee are described in this Schedule.

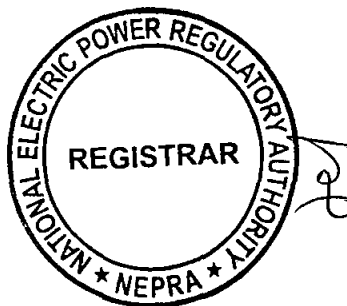


**Location of the  
Generation Facility/Solar Power Plant/Roof Top Solar  
of the Licensee**

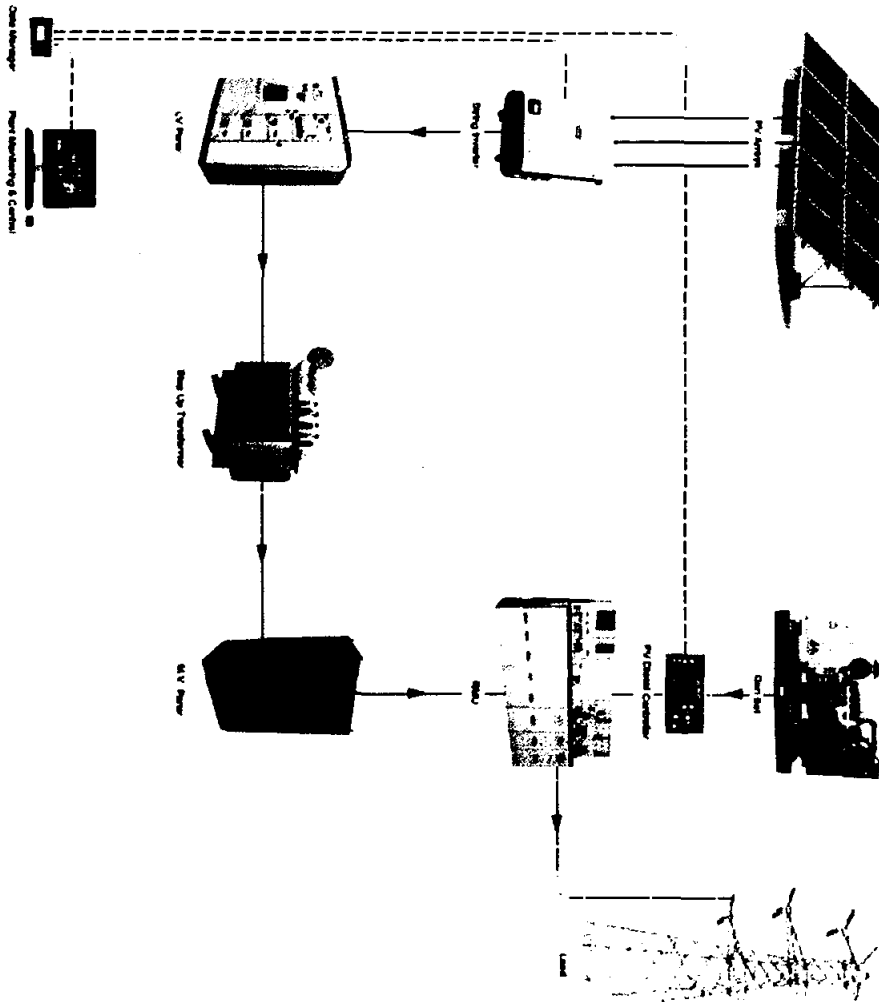


**Land Coordinates of the  
Generation Facility/Solar Power Plant/Roof Top Solar  
of the Licensee**

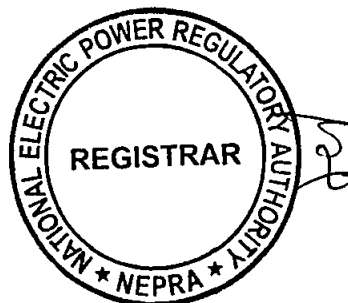
<b><u>Sr. No.</u></b>	<b><u>Location</u></b>	<b><u>Site Coordinates</u></b>	
		Latitude	31.4513208 N
1.	Crescent Textile Mills Limited, Sargodha Road, Faisalabad	Longitude	73.0885344 E



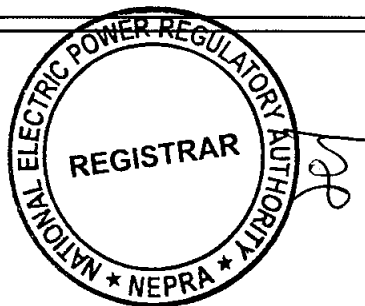
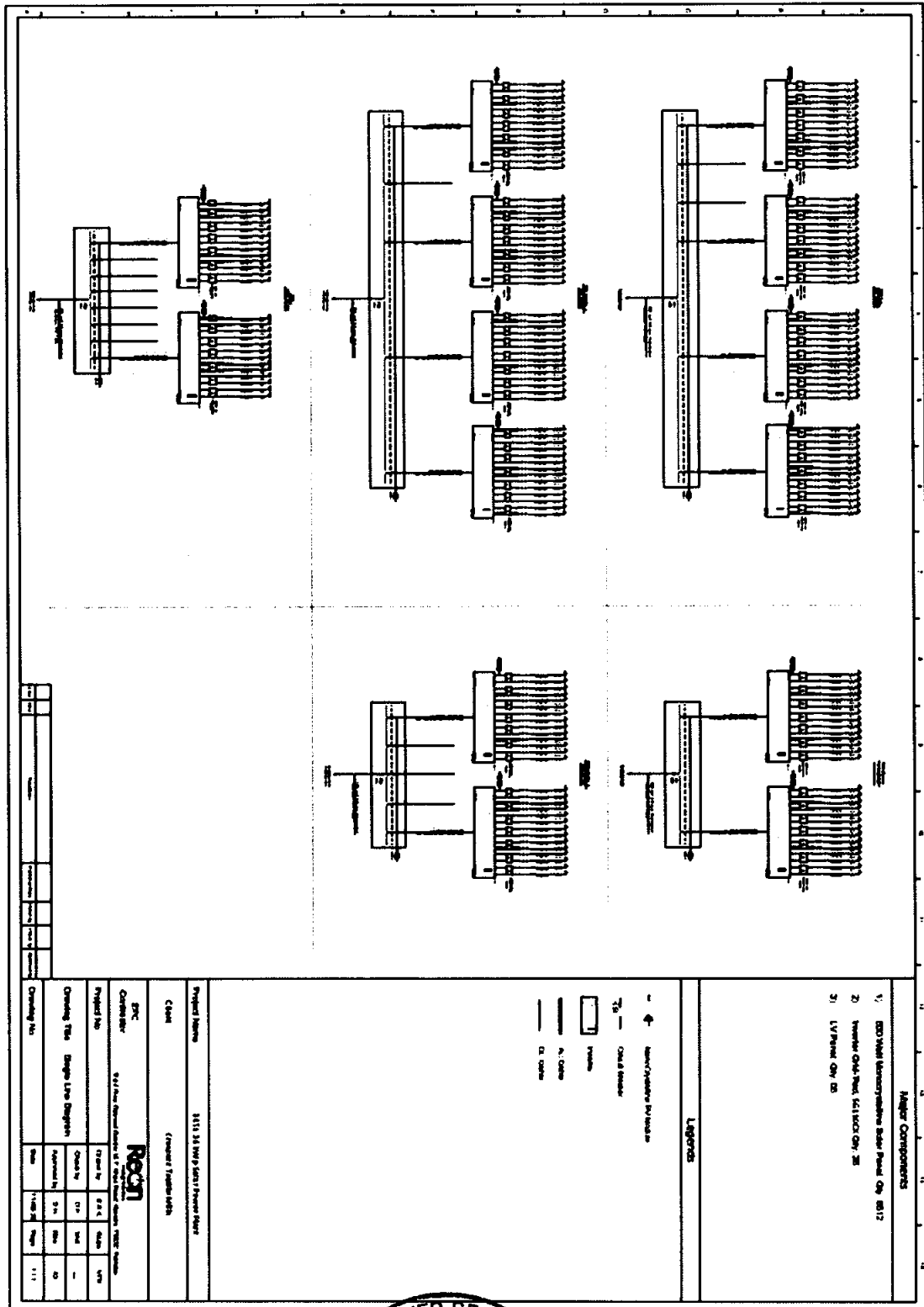
**Process Flow Diagram**  
**of the Generation Facility/Solar Power Plant/Solar Farm of the**  
**Licensees**



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## Single Line Diagram of the Generation Facility/Solar Power Plant/Solar Farm of the Licensee

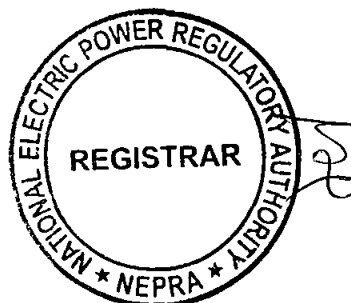


**Interconnection Arrangement/Transmission Facilities for  
Dispersal of Power from the Generation Facility/Solar Power  
Plant/Solar Farm/Roof Top Solar of the Licensee**

The electric power generated from the generation facility of the Grid Edge (Private) Limited-GEPL/Licensee will be delivered/supplied to different units of Crescent Textile Mills Limited-CTML located at Sargodha Road, Noorpur, District Faisalabad in the Province of Punjab

(2). The details pertaining to location of the Bulk Power Consumer(s)/BPC(s), the supply arrangements (feeder details etc.) and other relating information are provided in the subsequent description of this schedule. Any changes in the said details, shall be communicated to the Authority in due course of time.





**Details of**  
**Generation Facility/Solar Power Plant/**  
**Solar Farm**

**(A). General Information**

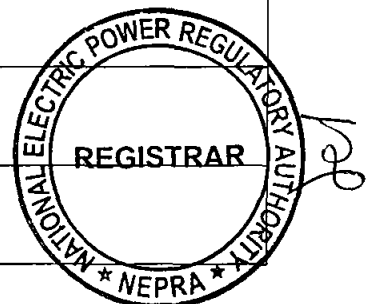
(i).	Name of the Company/Licensee	Grid Edge (Private) Limited
(ii).	Registered/ Business office of the Company/Licensee	3 <sup>rd</sup> Floor, Dawood Center, M T Khan Road, Karachi
(iii).	Type of the generation facility/Solar Power Plant/Solar Farm	Photovoltaic (PV) Cell
(iv).	Location(s) of the generation facility Solar Power Plant/ Solar Farm	located at Crescent Textile Mills Limited Sargodha Road, Noorpur, District Faisalabad, in the Province of Punjab

**(B). Solar Power Generation Technology & Capacity**

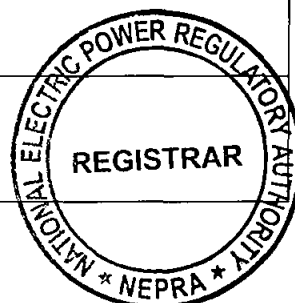
(i).	Type of Technology	Photovoltaic (PV) Cell
(ii).	System Type	ON Grid
(iii).	Installed Capacity of the generation facility Solar Power Plant/Solar Farm (MW)	3.451MW <sub>P</sub>

**(C). Technical Details of Equipment**

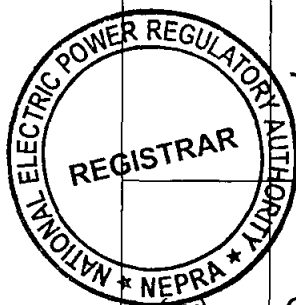
<b>(a).</b>	<b><u>Solar Panels – PV Modules</u></b>	
(i).	Type of Module	Monocrystalline Silicon Solar Modules 530W
(ii).	Type of Cell	Monocrystalline
(iii).	Dimension of each Module	2206 × 1122 × 35mm
(iv).	No. of Panel/Modules	6,512



(v).	Total Module Area	2.475 m <sup>2</sup> per module
(vi).	Frame of Panel	Anodized Aluminium Frame
(vii).	Weight of one Module	28.2 kg
(viii).	No of Solar Cells in each module	144
(ix).	Efficiency of module	20.75%
(x).	Maximum Power (Pmax)	530
(xi).	Voltage @ Pmax	40.16 V
(xii).	Current @ Pmax	13.20 A
(xiii).	Open circuit voltage (Voc)	49.09 V
(xiv).	Short circuit current (Isc)	14.10 A
(xv).	Maximum system open Circuit Voltage	1500 V
<b>(b).</b>	<b><u>PV Array</u></b>	
(i).	Nos. of Strings	356
(ii).	Modules in a string	18 each
<b>(c).</b>	<b><u>Inverters</u></b>	
(i).	Capacity of each unit	110 kW
(ii).	Manufacturer	Sungrow SG110CX
(iii).	Input Operating Voltage Range	200-1100 V



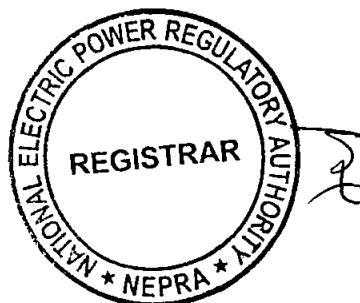
(iv).	Number of Inverters	26	
(v).	Efficiency of inverter	98.7%	
(vi).	Max. Allowable Input voltage	1100 V DC	
(vii).	Max. Current	158.8 A	
(viii).	Max. Power Point Tracking Range	550-850 V	
(ix).	Output electrical system	3 phases, 4 wires	
(x).	Rated Output Voltage	480 V	
(xi).	Power Factor (adjustable)	> 0.99; 0-1 adjustable	
(xii).	Power control	MPP tracker	
(xiii).	Rated Frequency	50/60 Hz	
(xiv).	Environmental Enclosures	Relative Humidity	0-100%, condensing
		Audible Noise	68 dB(A) @ 1m
		Operating Elevation	4000 m
		Operating temperature	-30 to +60°C
(xv).	Grid Operating protection	A	DC circuit breaker
		B	AC circuit breaker
		C	DC overload protection (Type 2)



		D	Overheat protection
		E	Grid monitoring
		F	Insulation monitoring
		G	Ground fault monitoring
(d).	<u>Data Collecting System</u>		
(i).	System Data	Continuous online logging with data logging software to portal.	
(e).	<u>Unit Transformer</u>		
(i).	Rating	N/A	
(ii).	Type of transformer	N/A	
(iii).	Purpose of transformer	N/A	
(iv).	Output Voltage	N/A	

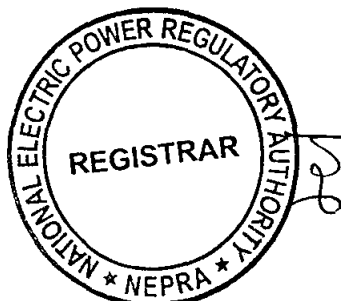
**(D). Other Details**

(i).	Expected COD of the generation facility Solar Power Plant/ Roof Top Solar	April 31, 2022
(ii).	Expected useful Life of the generation facility Solar Power Plant/ Roof Top Solar from the COD	25 years



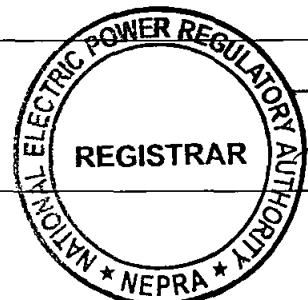
**Information**  
**Regarding Bulk Power Consumer(s)/BPC(s) to be**  
**Supplied by the Licensee**

(i).	No. of Consumers	Two (02)
(ii).	Location of consumers (distance and/or identity of premises)	Crescent Textile Mills Limited Unit No-I & Unit No.-II, Sargodha Road, Noorpur, District Faisalabad, in the Province of Punjab
(iii).	Contracted Capacity and Load Factor for consumer	3.451MW <sub>p</sub> / 10 - 15%
(iv).	Specify Whether	
	(a).	The consumer is an Associate undertaking of the Licensee -If yes, specify percentage ownership of equity; No
	(b).	There are common directorships: No
	(c).	Either can exercise influence or control over the other. No
(v).	Specify nature of contractual Relationship	
	(a).	Between each consumer and Licensee. Licensee will construct, own and operate the solar generation facilities and provide electricity to BPC.
	(b).	Consumer and Distribution Company. Yes Existing Consumer of FESCO with Sanctioned Load of 4.75 MW & 4.90 MW
(vi)	Any other network information deemed relevant for disclosure to or consideration of the Authority.	Not Applicable

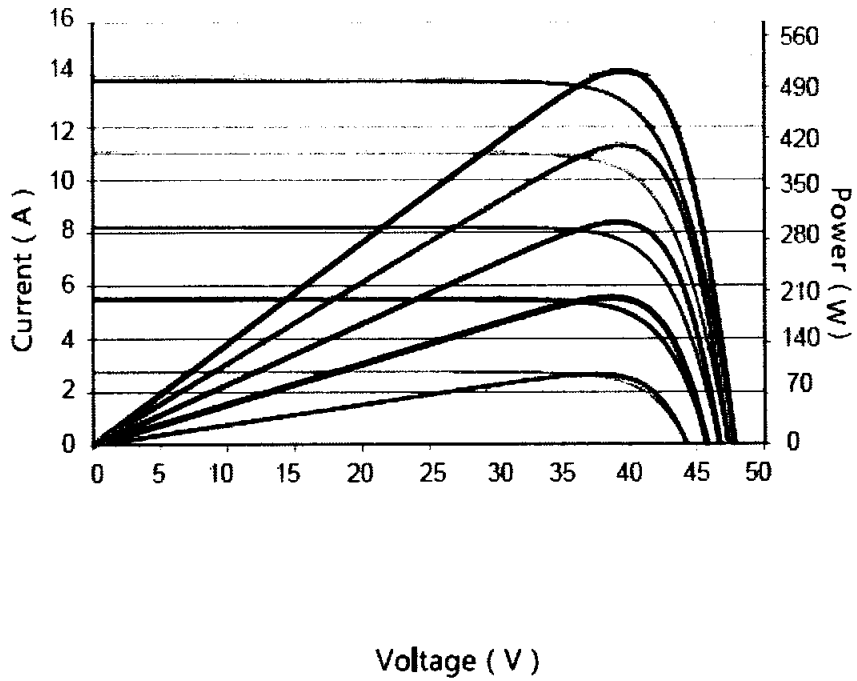


**Information**  
**Regarding Distribution Network for Supply of Electric**  
**Power to BPC**

(i).	No. of Feeders	Two (02)
(ii).	Length of Each Feeder (Meter)	500-650 meter
(iii).	Length of Each Feeder to each Consumer	-do-
(iv).	In respect of all the Feeders, describe the property (streets, farms, Agri land, etc.) through, under or over which they pass right up to the premises of customer, whether they cross-over.	The underground cable supplying to BPC from the generation facility will be located on private property owned by BPC
(v).	Whether owned by Licensee, Consumer or Distribution Company -(deal with each Feeder Separately)	
	(a).	If owned by Distribution Company, particulars of contractual arrangement
	(b).	Operation and maintenance responsibility for each feeder
(vi).	Whether connection with network of Distribution Company exists (whether active or not)- If yes, provide details of connection arrangements (both technical and contractual)	Yes- B3(14)T consumers of FESCO
(vii).	Any other network information deemed relevant for disclosure to or consideration of the Authority.	NA



**V-I Curve**  
**Generation Facility/Solar Power Plant/Roof Top Solar**  
**of the Licensee**



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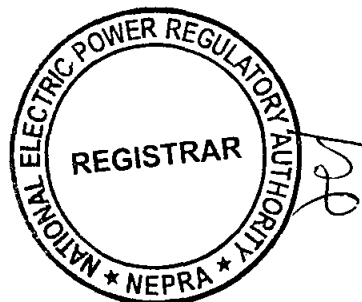
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## **SCHEDULE-II**

The Total Installed Gross ISO Capacity of the Generation Facility/Power Plant/Solar Plant (MW), Total Annual Full Load (Hours), Average Sun Availability, Total Gross Generation of the Generation Facility/Solar Farm (in kWh), Annual Energy Generation (25 years Equivalent Net Annual Production-AEP) KWh and Net Capacity Factor of the Generation Facility/Solar Farm of Licensee are given in this Schedule.

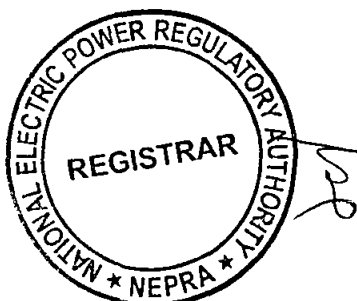


## **SCHEDULE-II**

(1).	Total Installed Capacity of the Generation Facility/Solar Power Plant/Solar Farm	3.451 MW <sub>p</sub>
(2).	Average Sun Hour Availability/Day (Irradiation on Inclined Surface)	8 to 8.5 Hours
(3).	No. of days per year	365
(4).	Annual generating capacity of Generation Facility/Solar Power Plant/Solar Farm (As Per Simulation)	4794 MWh (This is P90 value)
(5).	Total (approximated) expected generation of the Generation Facility/Solar Power Plant/Solar Farm during the twenty five (25) years term of this licence	113,197 MWh
(6).	Annual generation of Generation Facility/Solar Power Plant/Solar Farm based on 24 hours working	28,764 MWh
(7).	Net Capacity Factor of Generation Facility/Solar Power Plant/Solar Farm	15.9% (As per P90 Value)

**Note**

All the above figures are indicative as provided by the Licensee. The Net Delivered Energy available to Power Purchaser for dispatch will be determined through procedures contained in the Energy Purchase Agreement (EPA) or the Applicable Document(s).



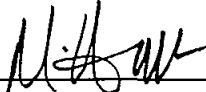
**Authorization**  
**by National Electric Power Regulatory Authority (NEPRA) to**  
**Grid Edge (Private) Limited**


Incorporated under Section-16 of  
the Companies Act, 2017 (XIX of 2017) having Corporate Universal Identification  
No. 0122474, dated August 08, 2018


**NEPRA GENERATION LICENCE No. SGC/162/2022**  
**For Sale to Bulk Power Consumer(s)**

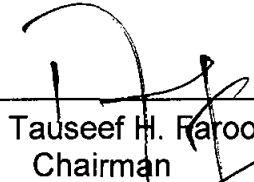
Pursuant to Section-22 of the Act and Rule-7 of the NEPRA Licensing (Generation) Rules, 2000, the Authority hereby authorize Grid Edge (Private) Limited- (GEPL) the Licensee to engage in second-tier supply business, limited to the following consumers:-

- (a). Crescent Textile Mills Limited-CTML, Sargodha Road,  
Noorpur, District Faisalabad in the province of Punjab.

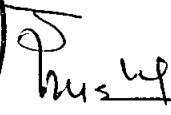
  
Engr. Maqsood Anwar Khan  
(Member)

  
Engr. Rehmatullah Baloch  
(Member)

  
Engr. Rafique Ahmed Shaikh  
(Member)

  
Engr. Tauseef H. Farooqi  
Chairman



  
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