Date: 08 February 2021

The Registrar
National Electric Power Regulatory Authority
2nd Floor, OPF Building, Sector G-5/2
Islamabad.

Subject: **Application for Generation License for 1 MWp**

Dear Sir,

I, **Maaz Mashkoor, Director,** being the duly authorized representative of **Burj DG (Private) Limited** by virtue of Board Resolution dated 19 January 2021 hereby apply to National Electric Power Authority for the Grant of Generation License to **Burj DG (Private) Limited** pursuant to section 15 of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997.

I certify that the documents-in-support attached with this application are prepared and submitted in conformity with the provisions of the National Electric Power Regulatory Authority Licensing (Application and Modification Procedure) Regulations, 1999 and undertake to abide by the terms and provisions of the above-said regulations. I further undertake and confirm that the information provided in the attached documents-in-support is true and correct to the best of my knowledge and belief.

A BANK DRAFT in sum of Rupees Ninety-Three Thousand, Four Hundred and Seventy-Two **Rs. 93,472** being the non-refundable license application fee calculated in accordance with Schedule II to the National Electric Power Regulatory Authority Licensing (Application and Modification Procedure) Regulations, 1999, is also attached herewith.

The application is filed in triplicate with all annexure appended with each set of the application.

Sincerely,

Burj DG (Private) Limited

Maaz Mashkoor
Director

AA600926

Rupees 50 ۵۰ روپیہ

017460

M. Shahid Qureshi
Advocate
L.Nd 3543 KBA

AFFIDAVIT

I, Maaz Mashkoor son of, Mashkoor Ullah holding CNIC No.- 42201-4389581-5, Director of Burj DG (Pvt.) Ltd, hereby solemnly affirm and declare on oath that the contents of the accompanying application for Generation License dated 08 February 2021 including all attached documents-in support are true and correct to the best of my knowledge and belief and that nothing has been concealed.

DEPONENT

Burj DG (Private) Limited

Maaz Mashkoor
Director
Burj DG Private Limited
08 February 2021

Extracts from
Resolution Passed by the Board of Directors of
OF Burj DG (Pvt.) Limited
On 8th February 2021

"**RESOLVED** that an application for the Generation License (the "**GL Application**") be filed by and on behalf of Burj DG Private (Pvt.) Limited (the "**Company**") with the National Electric Power Regulatory Authority ("**NEPRA**"), in connection with the GL Application for the Company in respect of the Company's 1 MWp Solar Power Project at The Crescent Textile Mills Limited - Hattar Industrial Estate - Haripur – Rooftops in the province of Khyber Pakhtunkhwa (the "**Project**").

RESOLVED FURTHER that Mr. Maaz Mashkoor, holding CNIC 42201-4389581-5, the Director of the Company, be and is hereby authorized to sign the GL Application, and any documentation ancillary thereto, pay all filing fees, and provide any information required by NEPRA in respect of the Project, and do all acts and things necessary for the processing, completion and finalization of the GL Application.

CERTIFICATION

CERTIFIED, that, the above resolution by circulation was duly passed by the Board of Directors of Burj DG (Pvt.) Limited on February 8th , 2021 for which the quorum of directors was present.

FURTHER CERTIFIED, that the said resolution has not been rescinded and is in operation and that this is a true copy thereof.

Saad uz Zaman

Maaz Mashkoor

Farid Arshad Masood

Burj DG (Private) Limited

THE GENERATION LICENSE APPLICATION

1. APPLICANT COMPANY'S PROFILE

1.1. Burj DG (Private) Limited (the "Applicant Company"), is registered vide Registration No. 0157069 dated 3rd September 2020 under the Companies Ordinance, 1984. The copy of certificate of incorporation is attached herewith as **Annexure — A.** The copy of Memorandum & Articles of Association is attached herewith as **Annexure — B.**

1.2. The registered office of the Applicant Company is situated at "16, Abdullah Haroon Road, 3rd Floor Faysal Bank Building, Karachi".

1.3. The Applicant Company is since not required to submit the annual return to the Registrar of Companies pursuant to Section 156 of the Companies Ordinance, 1984, therefore the information, in as close a form and content as possible, laid down in the third schedule to the Ordinance is being provided. The information, in lieu of annual return, is **Annexure — C.**

1.4. The Applicant Company has financial strength to meet with the requirements of the Project. The summarized last five-year financials of the sponsor company Burj Capital is presented as **Annexure – D.** The latest audited balance sheet and income statement for 2018 are also presented in the same annexure.

1.5. Directors

1.5.1. Saad Zaman
1.5.2. Maaz Mashkoor
1.5.3. Farid Ahmed Masood

1.6. Auditors

The company is newly incorporated so an auditor has not been appointed as of yet. However, the company has received proposals for appointing auditor and will be appointing one shortly.

1.7. Form 1

Form 1 of the company is attached herewith as **Annexure — E**

1.8. The list of the directors, senior management, key technical and professional staff of the Applicant Company is provided hereunder: -

Name	Designation
Saad Zaman	Director

MM

Burj DG (Private) Limited

Maaz Mashkoor	Director
Farid Ahmed Masood	Director
Bilal Saeed	Sr. Project Manager

1.9. Brief introduction of the above-named officials is as follows:

1.9.1. Saad Zaman

Saad as Chairman and CEO of Burj Energy, has more than 25 years of experience and has held leadership positions in organizations like Citibank, where in his last role, he led the Islamic Investment Banking Business for the Middle East and Levant. Subsequent to Citi, he served as CEO for the Investment Banking Business and International Operations of Dubai Islamic Bank. He was the founder CEO of DIB Pakistan, and led DIB's international expansion into other regional markets. Saad has held various Board and Advisory positions with leading businesses like Citi, DIB, Etisalat International and DP WORLD Group.

1.9.2. Farid Ahmed Masood

Farid currently serves as a Managing Director of Vitol Group, based out of Dubai, and has more than 25 years of experience working for blue chip financial institutions as well commercial enterprises. In his current role, he oversees Vitol's investments in the region including investments in renewable energy space. In his previous role, he was CEO of Kansai Plascon Africa and Global Advisor, Finance and M&A. During this period, he expanded the business both through organic growth and through the with the acquisition of the largest player in East Africa as well as led a corporate restructuring initiative in South Africa and reduced costs by 15%. Before that, he served as a Director in ICD-IDB, where he grew the asset management business from scratch to US$ 800m under management and expanded the advisory business to work in 12 different countries. Before that, Fareed had leadership positions with KASB and BMA. Fareed is an MBA from Cambridge and BS from University of Virginia

1.9.3. Maaz Mashkoor

Maaz currently works in business development at Vitol Group, based out of Dubai, and oversees the group's investments in the region. He was previously working as manager strategy at Engro Corp, one of the largest private sector business houses of the

MM

Burj DG (Private) Limited

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Burj Dg (private) Limited

create pollution.

2.1.4. Naturally, Pakistan is located in the Sunny Belt and can take advantage of its ideal situation for utilization of solar energy. The country potential for solar generation is beyond doubt as it has high solar irradiation and enough space for installation of generation system those are ideal for PV and other solar energy applications.

2.1.5. Villages and other areas which are away from grid or distribution system of utilities can also benefit from solar power generation which will also save the extra cost of laying the system and the losses.

2.2. Business Model

2.2.1. The Applicant Company intends to sell electricity to residential, commercial, industrial and agricultural entities (Buyers) through its owned complete on-grid solution of electricity based on solar power (Generating Facilities) under the long-term Energy Purchase Agreements (EPAs)

2.2.2. In this regard, the Applicant Company has conducted financial analysis and found this model to be financially workable if there are long term contracts involved. The Company will therefore, plan, design, procure material, construct, install, operate and maintain Generating Facilities at sites of the Buyers.

2.2.3. The Applicant Company shall provide product of the Generation Facilities to the Buyers on terms and conditions as agreed between the Parties so as to recover the cost of investment, working capital, operation and maintenance cost with reasonable rate of return on basis of actual delivery of electricity while taking the risk of shortfall in generation on account of reduction in solar irradiation at its own.

2.2.4. The Applicant Company shall install various Generation Facilities at the sites of the Buyers and understands that the activity of generation and sale of electricity shall take place within the same premises without crossing any other property or requiring the use of transmission or distribution lines.

2.2.5. The electricity generated through the Generation Facilities of the Applicant Company shall be fed directly into the Distribution Panel of the Buyer and in no case shall be fed or exported to the

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- PV / AC Electrical Board;
- Main Distribution Panel;
- Safety & Protection devices (Automatic with manual override)
- Fuses;
- Wires;
- Breakers;
- Meters;
- Online monitoring devices/ data loggers for
- remote sensing and monitoring;
- Internet access devices/ connects;
- Water taps for panels washing
- Steel Structure,
- Screws, Nuts/Bolts

List of Equipment with Technical details & the Single Line Diagram is attached herewith as **Annexure — H & Annexure — I**, as well as flow diagram is attached as **Annexure J**.

3.1.7. The configuration, technology, model, technical details and design of the Generation Facilities to be acquired, constructed, developed and installed at the premises of Buyers shall be on a standard module but may have slight variations in installation on case to case basis. However, a general overview Annexure H (Single Line Diagram). Grid interconnection and protections required for grid interconnection are in compliance with "NEPRA ARE (Alternative & Renewable Energy) Distributed Generation / Net Metering Rules"

3.1.8. Before the Distribution Panel and after the PV AC Electrical Board there shall be installed the Meter for reading of the actual energy delivered through Generation Facilities of the Applicant Company to the Buyer.

3.2. Capacity

3.2.1. The Applicant will deploy solar PV facilities totaling 1MWp at Buyer premises – Crescent Textiles - Hattar Industrial Estate, Hattar, starting with Phase I of 520 kWp and future expansion of 480 kWp in Phase II.

3.3. Site(s)

The Generation Facilities to be offered by the Applicant Company shall be at the premises of the Buyer and therefore the Applicant Company does not require

- PV / AC Electrical Board;
- Main Distribution Panel;
- Safety & Protection devices (Automatic with manual override)
- Fuses;
- Wires;
- Breakers;
- Meters;
- Online monitoring devices/ data loggers for
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3.3. Site(s)

The Generation Facilities to be offered by the Applicant Company shall be at the premises of the Buyer and therefore the Applicant Company does not require

purchasing or acquiring a particular site. Moreover, since the electricity generated by the Generation Facilities of the Applicant will not be sold to any electricity utility i.e. DISCO hence it would not require any evacuation by the national grid company (NTDC) therefore the mentioning of a particular site as required under the provisions of NEPRA Licensing (Application and Modification Procedure) Regulations, 1999 is not relevant in this case. However, the site is at Crescent Textile Mills, Phase III Plot 48-49, Hattar Industrial Estate, Haripur, Khyber Pakhtunkhwa. Coordinates Latitude: 33°54'35.3"N Longitude: 72°50'21.6"E.

3.4. Interconnection

Since the Generation Facilities of the Applicant Company shall be installed at the site of the Buyer and shall provide electricity to that premises in order to supplement the electricity requirement of the Buyer therefore, the interconnection point shall also be within the premises of the Buyer at the point as identified by the Buyer. The Applicant Company shall deliver electricity to the Buyer's distribution box/panel at 400V level.

3.5. Commissioning & Expected Life

The terms as to commissioning shall be as per terms of EPA. However, the average expected life of the Generation Facilities shall be 25 Years.

3.6. Operation & Maintenance

The Applicant Company shall also provide the operation and maintenance, including periodical washing of the PV modules, of the Generation Facilities Installed at the site of the Buyer.

3.7. Monitoring Facilities

The Applicant shall develop, install and maintain a remote monitoring facility at its premises for overall monitoring of the Generation Facilities to be installed at various sites. The Applicant will hire trained staff to carry out maintenance activities on the installed facilities at the Buyer's sites. The Applicant also has a team of qualified engineers to plan and supervise the routine / regular maintenance needs. Detail of Monitoring Facilities is presented as Annexure K.

3.8. Eligible Site/Buyer

The Applicant Company declares the following eligibility criteria for the site/buyer for whom Generation License is required:

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i. Generation Facility to be setup should be within the site of the buyer;
ii. Electricity generated through the Generation Facility should not be provided to any premises other than the buyer's premises/site where the Generation Facility is installed;
iii. Electricity from the Generation Facility should be in addition and supplemental to the electricity being obtained from the electric utility company;
iv. Capacity of Generation Facility per site should not exceed 1MW;
v. Interconnection point should be within the premises/site where the Generation Facility is installed;
vi. Generation Facility installed should ensure no back flow of electricity to the distribution system of the utility;
vii. The delivery of electricity from the PV Modules to the distribution box/panel of the buyer should not require crossing of any public road/area and the distribution network of the electric utility;
viii. The buyer should not be a defaulter of dues of electricity obtained from electric utility company.

3.9. Site Description

1.	**Name of Licensee**	Burj DG Pvt. Ltd.
2.	**Registered/Business**	16, Abdullah Haroon Road, 3rd Floor Faysal Bank Building, Karachi
3.	**Plant Location**	The Crescent Textile Mills Limited, Hattar, Khyber Pakhtunkhwa: Latitude 33°54'35.3"N Longitude: 72°50'21.6"E
4.	**Type of Generation**	Solar Photovoltaic (PV)
5.	**Type of Technology**	Photovoltaic (PV) Cell
6.	**System Type**	Grid Tied
7.	**Plant Capacity**	1Wp Peak (520kWp in first phase)

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3.10. Google image of the site

The Crescent Textile Mills Limited, Hattar

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4. FINANCIAL OVERVIEW

4.1. Capital Cost

4.1.1. Detailed Feasibility Report of the Project is attached as **Annexure L.**

4.1.2. The Capital cost shall include the cost borne by the Applicant Company on feasibility studies, planning, designing, material, construction and installation of the Generation Facilities.

4.1.3. The cost of land, step-up transformer, interconnection with distribution system of utility are not required in this case.

4.1.4. The Applicant Company aims to provide the Generation Facilities up to 1 MWp in a period of about 12 months, with an estimated cost on per Watt basis is worked out by the Applicant Company as below:

4.1.5. The expected cost of the installations under has been estimated to be US$ 0.62/Wp. This cost does not include cost of land as facility shall be installed at the premises of the Buyers.

Description	US$/Wp
EPC Cost: • Panels / Inverters / JBs / DC Cables / Freight / Clearing Charge • Steel Structure • Installation Cost	0.595
Insurance during construction	0.005
Administrative and Development Costs.	0.020
Total Costs	0.62

The expected cost of the installations under has been estimated to be US$ 0.62/Wp. Based on this, the total project cost is estimated to be USD 322,000. The project is being financed entirely by equity in the beginning and will later on be refinanced from the bank in 80:20 ratio

This cost does not include cost of land as facility shall be installed at the premises of the Buyers.

4.2. Source of funding

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4.2.1. The applicant will deploy its projects in Single phase, with total of 1MWp and will be completely equity financed in the beginning and then refinanced with bank debt at a later stage.

5. Profile of Subcontractor

5.1.1. Reputed contractor has been selected for the construction of Phase I, (The Crescent Textiles Mills Limited - Hattar Unit). Their profile is attached as **Annexure M.**

6. ENVIRONMENTAL

The Generation Facilities by the Applicant, as visualized, will be without emissions and chemical usages. The Applicant Company shall use limited quantity of the tap water available at the premises of Buyer for the purposes of washing the PV modules and shall use the available sewerage for disposal to avoid any negative impact on the environment.

Our requested generation license is for small-scale solar (PV) generation on site of the consumers who will mainly be in Urban areas where there is little natural flora or fauna to be affected. Moreover, given the nature of the technology, there are no harmful emissions nor any natural fresh water sources are compromised. Only tap-water in small quantities is needed for cleaning on periodic basis. In fact, given the nature of the technology, it is actually beneficial for the environment since it replaces harmful fossil fuel-based power. Detailed Environmental Study of the project is attached as **Annexure N**

7. PROJECT TIMELINES

The project timelines are added in Gantt Chart form as **Annexure O**

8. Proof of Funds

Cash and Balance Certificate of Company is attached as **Annexure P**

9. EXECUTIVE SUMMARY & PRAYER

9.1. To supplement the supply of electricity by utilities, the Applicant Company intends to set up small scale solar PV modules (Generation Facilities) at Crescent Textile Mills Hattar for which the Application for grant of Generation License is being submitted before the Authority in terms of Section 15 of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 read with the relevant Rules and Regulations.

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9.2. For the reasons mentioned above, it is prayed that Application in hand may please be admitted and a Generation License be granted in name of Burj DG (Private) Limited for generation of in maximum of 1 MWp through Solar PV Modules, of the prospective buyer who are eligible in terms of the criteria and parameters mentioned above in this application.

MM

Burj DG (Private) Limited

A079750

SECURITIES AND EXCHANGE COMMISSION OF PAKISTAN

SECP

COMPANY REGISTRATION OFFICE, KARACHI

CERTIFICATE OF INCORPORATION

[Under section 16 of the Companies Act, 2017 (XIX of 2017)]

Corporate Universal Identification No. 0157069

I hereby certify that **BURJ DG (PRIVATE) LIMITED** is this day incorporated under the Companies Act, 2017 (XIX of 2017) and that the company is **limited by shares.**

Given under my hand at **Karachi** this **Third** day of **September, Two Thousand** and **Twenty**

Incorporation fee Rs. **1,000/=**

(Muhammad Nasir Khan)
Additional Joint Registrar

Company Registration Office ★ Karachi ★ Securities and Exchange Commission of Pakistan

14711

5/11/2026

Annexure B

Memorandum and Articles

THE COMPANIES ACT, 2017(XIX of 2017)

(PRIVATE COMPANY LIMITED BY SHARES)

MEMORANDUM

OF

ASSOCIATION

OF

BURJ DG (PRIVATE) LIMITED

directly or indirectly in the business of a Banking Company, Non-banking Finance Company (Mutual Fund, Leasing, Investment Company, Investment Advisor, Real Estate Investment Trust management company, Housing Finance Company, Venture Capital Company, Discounting Services, Microfinance or Microcredit business), Insurance Business, *Modaraba* management company, Stock Brokerage business, forex, real estate business, managing agency, business of providing the services of security guards or any other business restricted under any law for the time being in force or as may be specified by the Commission.

(iv) It is hereby undertaken that the company shall not:

(a) engage in any of the business mentioned in sub-clause (iii) above or any unlawful operation;

(b) launch multi-level marketing (MLM), Pyramid and Ponzi Schemes, or other related activities/businesses or any lottery business;

(c) engage in any of the permissible business unless the requisite approval, permission, consent or licence is obtained from competent authority as may be required under any law for the time being in force.

4. The liability of the members is limited.

5. The authorized share capital of the company is Rs.100,000/- (Rupees One Hundred Thousand only) divided into 10,000 (Ten Thousand) ordinary shares of Rs.10 (Rupees Ten).

THE COMPANIES ACT, 2017 (XIX of 2017)

(Private Company Limited by Shares)

ARTICLES OF ASSOCIATION

OF

BURJ DG (PRIVATE) LIMITED

PRELIMINARY

1. (1) In these regulations-

(a) "section" means section of the Act;

(b) "the Act" means the Companies Act, 2017; and

(c) "the seal" means the common seal or official seal of the company as the case may be.

(2) Unless the context otherwise requires, words or expressions contained in these regulations shall have the same meaning as in this Act; and words importing the singular shall include the plural, and *vice versa*, and words importing the masculine gender shall include feminine, and words importing persons shall include bodies corporate.

PRIVATE COMPANY

2. The Company is a "Private Company" within the meaning of Section 2(1)(49) of the Act and accordingly:

(1) No invitation shall be made to the public to subscribe for the shares or debentures of the Company.

(2) The number of the members of the Company (exclusive of persons in the employment of the Company), shall be limited to fifty, provided that for the purpose of this provision, where two or more persons hold one or more shares in the company jointly, they shall be treated as single member; and

(3) The right to transfer shares of the Company is restricted in the manner and to the extent herein appearing.

BUSINESS

3. The directors shall have regard to the restrictions on the commencement of business imposed by section 19 if, and so far as, those restrictions are binding upon the company.

SHARES

4. In case of shares in the physical form, every person whose name is entered as a member in the register of members shall, without payment, be entitled to receive, within thirty days after allotment or within fifteen days of the application for registration of transfer, a certificate under the seal specifying the share or shares held by him and the amount paid up thereon:

Signature .....
Transferee
Full Name, Father's / Husband's Name
CNIC Number (in case of foreigner, Passport Number)
Nationality
Occupation and usual Residential Address

Cell number
Landline number, if any
Email address

Witness 2:

Signature.....date .....
Name, CNIC Number and Full Address

only persons recognised by the company to deal with the share in accordance with the law.

12. The shares or other securities of a deceased member shall be transferred on application duly supported by succession certificate or by lawful award, as the case may be, in favour of the successors to the extent of their interests and their names shall be entered to the register of members.

13. A person may on acquiring interest in a company as member, represented by shares, at any time after acquisition of such interest deposit with the company a nomination conferring on a person, being the relatives of the member, namely, a spouse, father, mother, brother, sister and son or daughter, the right to protect the interest of the legal heirs in the shares of the deceased in the event of his death, as a trustee and to facilitate the transfer of shares to the legal heirs of the deceased subject to succession to be determined under the Islamic law of inheritance and in case of non-*Muslim* members, as per their respective law.

14. The person nominated under regulation 12 shall, after the death of the member, be deemed as a member of company till the shares are transferred to the legal heirs and if the deceased was a director of the company, not being a listed company, the nominee shall also act as director of the company to protect the interest of the legal heirs.

15. A person to be deemed as a member under regulation 11, 12 and 13 to a share by reason of the death or insolvency of the holder shall be entitled to the same dividends and other advantages to which he would be entitled if he were the registered holder of the share and exercise any right conferred by membership in relation to meetings of the company.

ALTERATION OF CAPITAL

16. The company may, by special resolution-

(a) increase its authorised capital by such amount as it thinks expedient;

(b) consolidate and divide the whole or any part of its share capital into shares of larger amount than its existing shares;

(c) sub-divide its shares, or any of them, into shares of smaller amount than is fixed by the memorandum;

(d) cancel shares which, at the date of the passing of the resolution in that behalf, have not been taken or agreed to be taken by any person, and diminish the amount of its share capital by the amount of the share so cancelled.

17. Subject to the provisions of the Act, all new shares shall at the first instance be offered to such persons as at the date of the offer are entitled to such issue in proportion, as nearly as the circumstances admit, to the amount of the existing shares to which they are entitled. The offer shall be made by letter of offer specifying the number of shares offered, and limiting a time within which the offer, if not accepted, will deem to be declined, and after the expiration of that time, or on the receipt of an intimation from the person to whom the offer is made that he declines to accept the shares offered, the directors may dispose of the same in such manner as they think most beneficial to the company. The directors may likewise so dispose of any new shares which (by reason of the ratio which the new shares bear to shares held by persons entitled to an offer of new shares) cannot, in the opinion of the directors, be conveniently offered under this regulation.

NOTICE AND PROCEEDINGS OF GENERAL MEETINGS

26. Twenty-one days' notice at the least (exclusive of the day on which the notice is served or deemed to be served, but inclusive of the day for which notice is given) specifying the place, the day and the hour of meeting and, in case of special business, the general nature of that business, shall be given in manner provided by the Act for the general meeting, to such persons as are, under the Act or the regulations of the company, entitled to receive such notice from the company; but the accidental omission to give notice to, or the non-receipt of notice by, any member shall not invalidate the proceedings at any general meeting.

27. All the business transacted at a general meeting shall be deemed special other than the business stated in sub-section (2) of section 134 namely; the consideration of financial statements and the reports of the board and auditors, the declaration of any dividend, the election and appointment of directors in place of those retiring, and the appointment of the auditors and fixing of their remuneration.

28. No business shall be transacted at any general meeting unless a quorum of members is present at that time when the meeting proceeds to business. The quorum of the general meeting shall be-

(a) in the case of a public listed company, not less than ten members present personally, or through video-link who represent not less than twenty-five percent of the total voting power, either of their own account or as proxies;

(b) in the case of any other company having share capital, two members present personally, or through video-link who represent not less than twenty-five percent of the total voting power, either of their own account or as proxies.

29. If within half an hour from the time appointed for the meeting a quorum is not present, the meeting, if called upon the requisition of members, shall be dissolved; in any other case, it shall stand adjourned to the same day in the next week at the same time and place, and, if at the adjourned meeting a quorum is not present within half an hour from the time appointed for the meeting, the members present, being not less than two, shall be a quorum.

30. The chairman of the board of directors, if any, shall preside as chairman at every general meeting of the company, but if there is no such chairman, or if at any meeting he is not present within fifteen minutes after the time appointed for the meeting, or is unwilling to act as chairman, any one of the directors present may be elected to be chairman, and if none of the directors is present, or willing to act as chairman, the members present shall choose one of their number to be chairman.

31. The chairman may, with the consent of any meeting at which a quorum is present (and shall if so directed by the meeting), adjourn the meeting from time to time but no business shall be transacted at any adjourned meeting other than the business left unfinished at the meeting from which the adjournment took place. When a meeting is adjourned for fifteen days or more, notice of the adjourned meeting shall be given as in the case of an original meeting. Save as aforesaid, it shall not be necessary to give any notice of an adjournment or of the business to be transacted at an adjourned meeting.

32. (1) At any general meeting a resolution put to the vote of the meeting shall be decided on a

in accordance with the provisions of section 138 is in force.

42. (1) The instrument appointing a proxy shall be in writing under the hand of the appointer or of his attorney duly authorised in writing.

(2) The instrument appointing a proxy and the power-of-attorney or other authority (if any) under which it is signed, or a notarially certified copy of that power or authority, shall be deposited at the registered office of the company not less than forty-eight hours before the time for holding the meeting at which the person named in the instrument proposes to vote and in default the instrument of proxy shall not be treated as valid.

43. An instrument appointing a proxy may be in the following form, or a form as near thereto as may be:

INSTRUMENT OF PROXY

..... Limited

"I ..... s/o ..... r/o ..... being a member of the ..... Limited, hereby appoint ..... s/o ..... r/o ..... as my proxy to attend and vote on my behalf at the (statutory, annual, extraordinary, as the case may be) general meeting of the company to be held on the ..... day of ....., 20..... and at any adjournment thereof."

44. A vote given in accordance with the terms of an instrument of proxy shall be valid notwithstanding the previous death or insanity of the principal or revocation of the proxy or of the authority under which the proxy was executed, or the transfer of the share in respect of which the proxy is given, provided that no intimation in writing of such death, insanity, revocation or transfer as aforesaid shall have been received by the company at the office before the commencement of the meeting or adjourned meeting at which the proxy is used.

DIRECTORS

45. The following subscribers of the memorandum of association shall be the first directors of the company, so, however, that the number of directors shall not in any case be less than that specified in section 154 and they shall hold office until the election of directors in the first annual general meeting:

1. SAAD UZ ZAMAN
2. MAAZ MASHKOOR
3. FARID ARSHAD MASOOD

46. The remuneration of the directors shall from time to time be determined by the company in general meeting subject to the provisions of the Act.

47. Save as provided in section 153, no person shall be appointed as a director unless he is a member of the company.

THE SEAL

53. The directors shall provide for the safe custody of the seal and the seal shall not be affixed to any instrument except by the authority of a resolution of the board of directors or by a committee of directors authorized in that behalf by the directors and in the presence of at least two directors and of the secretary or such other person as the directors may appoint for the purpose; and those two directors and secretary or other person as aforesaid shall sign every instrument to which the seal of the company is so affixed in their presence.

DISQUALIFICATION OF DIRECTORS

54. No person shall become the director of a company if he suffers from any of the disabilities or disqualifications mentioned in section 153 or disqualified or debarred from holding such office under any of the provisions of the Act as the case may be and, if already a director, shall cease to hold such office from the date he so becomes disqualified or disabled:

Provided, however, that no director shall vacate his office by reason only of his being a member of any company which has entered into contracts with, or done any work for, the company of which he is director, but such director shall not vote in respect of any such contract or work, and if he does so vote, his vote shall not be counted.

PROCEEDINGS OF DIRECTORS

55. The directors may meet together for the dispatch of business, adjourn and otherwise regulate their meetings, as they think fit. A director may, and the secretary on the requisition of a director shall, at any time, summon a meeting of directors. Notice sent to a director through email whether such director is in Pakistan or outside Pakistan shall be a valid notice.

56. The directors may elect a chairman of their meetings and determine the period for which he is to hold office; but, if no such chairman is elected, or if at any meeting the chairman is not present within ten minutes after the time appointed for holding the same or is unwilling to act as chairman, the directors present may choose one of their number to be chairman of the meeting.

57. At least one-third ($1/3^{rd}$) of the total number of directors or two (2) directors whichever is higher, for the time being of the company, present personally or through video-link, shall constitute a quorum.

58. Save as otherwise expressly provided in the Act, every question at meetings of the board shall be determined by a majority of votes of the directors present in person or through video-link, each director having one vote. In case of an equality of votes or tie, the chairman shall have a casting vote in addition to his original vote as a director.

59. The directors may delegate any of their powers not required to be exercised in their meeting to committees consisting of such member or members of their body as they think fit; any committee so formed shall, in the exercise of the powers so delegated, conform to any restrictions that may be imposed on them by the directors.

60. (1) A committee may elect a chairman of its meetings; but, if no such chairman is elected, or if at any meeting the chairman is not present within ten minutes after the time appointed for holding the same or is unwilling to act as chairman, the members present may choose one of

73. Subject to the rights of persons (if any) entitled to shares with special rights as to dividends, all dividends shall be declared and paid according to the amounts paid on the shares.

74. (1) The directors may, before recommending any dividend, set aside out of the profits of the company such sums as they think proper as a reserve or reserves which shall, at the discretion of the directors, be applicable for meeting contingencies, or for equalizing dividends, or for any other purpose to which the profits of the company may be properly applied, and pending such application may, at the like discretion, either be employed in the business of company or be invested in such investments (other than shares of the company) as the directors may, subject to the provisions of the Act, from time to time think fit.

(2) The directors may carry forward any profits which they may think prudent not to distribute, without setting them aside as a reserve.

75. If several persons are registered as joint-holders of any share, any one of them may give effectual receipt for any dividend payable on the share.

76. (1) Notice of any dividend that may have been declared shall be given in manner hereinafter mentioned to the persons entitled to share therein but, in the case of a public company, the company may give such notice by advertisement in a newspaper circulating in the Province in which the registered office of the company is situate.

(2) Any dividend declared by the company shall be paid to its registered shareholders or to their order. The dividend payable in cash may be paid by cheque or warrant or in any electronic mode to the shareholders entitled to the payment of the dividend, as per their direction.

(3) In case of a listed company, any dividend payable in cash shall only be paid through electronic mode directly into the bank account designated by the entitled shareholders.

77. The dividend shall be paid within the period laid down under the Act.

ACCOUNTS

78. The directors shall cause to be kept proper books of account as required under section 220.

79. The books of account shall be kept at the registered office of the company or at such other place as the directors shall think fit and shall be open to inspection by the directors during business hours.

80. The directors shall from time to time determine whether and to what extent and at what time and places and under what conditions or regulations the accounts and books or papers of the company or any of them shall be open to the inspection of members not being directors, and no member (not being a director) shall have any right of inspecting any account and book or papers of the company except as conferred by law or authorised by the directors or by the company in general meeting.

81. The directors shall as required by sections 223 and 226 cause to be prepared and to be laid before the company in general meeting the financial statements duly audited and reports as are referred to in those sections.

INDEMNITY

91. Every officer or agent for the time being of the company may be indemnified out of the assets of the company against any liability incurred by him in defending any proceedings, whether civil or criminal, arising out of his dealings in relation to the affairs of the company, except those brought by the company against him, in which judgment is given in his favour or in which he is acquitted, or in connection with any application under section 492 in which relief is granted to him by the Court.

We, the several persons whose names and addresses are subscribed below, are desirous of being formed into a company, in pursuance of these ARTICLES OF ASSOCIATION, and we respectively agree
to take the number of shares in the capital of the company set opposite our respective names:

Name and surname (present & former) in full (in Block Letters)	NIC No. (in case of foreigner, Passport No)	Father's/ Husband's Name in full	Nationality (ies) with any former Nationality	Occupation	Usual residential address in full or the registered/ principal office address for a subscriber other than natural person	Number of shares taken by each subscriber (in figures and words)	Signatures
SAAD UZ ZAMAN	42301-8489997-7	QAMAR UZ ZAMAN	PAKISTANI	Business Executive	House No. F-52/2, Block 7 Clifton, Karachi	1 (One)	
MAAZ MASHKOOR	42201-4389581-5	MASHKOOR ULLAH	PAKISTANI	Business Executive	House No: K-504, Creek Vista, DHA Phase 8, Karachi	1 (One)	
FARID ARSHAD MASOOD	42301-3551103-7	ARSHAD MASOOD	PAKISTANI	Business Executive	B56 Lime Tree Valeey, JGE, Dubai, UAE	1 (One)	
		Total number of shares taken (in figures and words)				3 (Three)	

Dated the 20th day of August, 2020

Annexure C

Form 1

Inc . Form - II

COMPANIES (INCORPORATION) REGULATIONS, 2017
[See Section 16 of the Act and Regulation 5]

APPLICATION FOR COMPANY INCORPORATION

PART- I

1.1 Name of the Company	BURJ DG (PRIVATE) LIMITED	
1.2 Fee Payment Details	1.2.1 Challan No	E-2020-142656
	1.2.2. Challan Amount (Rs.)	250.0

PART- II

Section - A - Company Information

2.1 Correspondence Address*					
City		District		Province	
Telephone Number		Email Address			
Mobile Number					

* Information regarding Correspondence address is to be provided only if company does not have a place at its registered office at the time of incorporation of the company

2.2 Registered office Address, if any	3rd Floor,, Faysal Bank Building, 16 Abdullah Haroon Road, Karachi, Karachi, Saddar Town, KARACHI SOUTH, Sindh				
City	Saddar Town	District	KARACHI SOUTH	Province	Sindh
Telephone Number	02135631537	Website (if any)			
Mobile Number	03343077630	Email Address	saleem.zaman@burjcap.com		

2.3 Principal line of business (Brief object as per clause 3(i) of the Memorandum may be mentioned)	--ALTERNATE ENERGY

Section - B - Capital Structure

	Class / Kind	Face Value	No of Shares	Total Amount
2.4 Authorised Capital	Ordinary	10	10000	100000
2.5 Paid Up Capital	Ordinary	10	3	30

Section - C - Special Business Information*

(Applicable in case of Banking Company, Non-banking Finance Company, Insurance company, Modaraba management company, Stock Brokerage business, forex, real estate business, managing agency, business of providing the services of security guards and any other business restricted under any other law or as may be notified by the commission)

2.6 Nature of business in case of specialized business requiring licence / permission / approval (please specify and also attach NOC / approval of the relevant authority)	N/A

(Additional documents will be required by the registrar)

Company Registration Office Karachi
Securities and Exchange Commission of Pakistan
SECP

5/11/2020

Section - D - Company subscribers, directors, chief executive officer and in case of sinlge member company, nominee

2.7 State Number of directors fixed by subscribers:

[Please note that as per law a company must have minimum director as follows:]

Kind of company	Minimum number of directors required by law	No. of proposed directors
Single Member Company	01	
Private Limited Company	02	3
Public Limited Company	03	

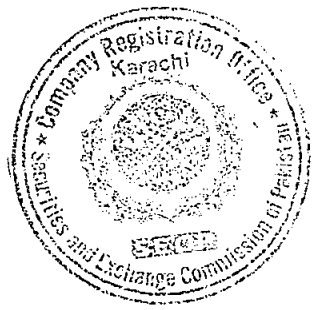
2.8 Details of subscribers, directors and chief executive officer *

Name	Father/Husband Name	NIC/Passport No/NICOP	**Incorporation/Registration No	Nationality	***Occupation	Residential/Registered office address	NTN	Designation (Director/Subscriber/CEO) Please specify	No of shares subscribed (for subscriber)	****Signatures
Saad Uz Zaman	S/O Qamar Uz Zaman	4230184899977		Pakistan		House No: F 52/2 Kehkashan Block 7, Clifton, Karachi Karachi Sindh Pakistan		Director And Subscriber	1	Electronically signed by Saad Uz Zaman
Saad Uz Zaman	S/O Qamar Uz Zaman	4230184899977		Pakistan		House No: F 52/2 Kehkashan Block 7, Clifton, Karachi Karachi Sindh Pakistan		Chief Executive		
Maaz Mashkoor	S/O Mashkoor Ullah	4220143895815		Pakistan		House No: K-504, Creek Vista, DHA Phase 8, Karachi Karachi Sindh Pakistan		Director And Subscriber	1	Electronically signed by Maaz Mashkoor
Farid Arshad Masood	S/O Arshad Masood	4230135510037		Pakistan		B58 Lime Tree Valley JGE Dubai UAE Karachi Sindh Pakistan		Director And Subscriber	1	Electronically signed by Farid Arshad Masood

*Add details as applicable
** Applicable on subscribers other than natural persons
***Please also mention names of other companies where directorship is held.
**** Signature of subscribers and consent to act as director or chief executive as the case may be. In case of online submission, the document will be signed electronically

2.9 Details of Nominee (only in case of single member company- Nominee shall not be a person other rhan relatives of the member- namely, a spouse, father, mother, brother, sister and son or daughter)

Name of Nominee	
NIC of Nominee	
Residential address of Nominee	
Telephone number of Nominee	
Email address of Nominee	
Relationship of Nominee with subscriber	
Signature of nominee	



Section - E - If the company intends to adopt tables contained in First Schedule to the Companies Act, 2017 (XIX of 2017) as its articles of association

☑ Table A- Part I (Articles of association of company limited by shares)

☐ Table A- Part II (Articles of association of single member company limited by shares)

Section - F - The company limited by shares in case it has not adopted articles contained in First Schedule to the Act company limited by guarantee and unlimited company shall attach the articles of association.

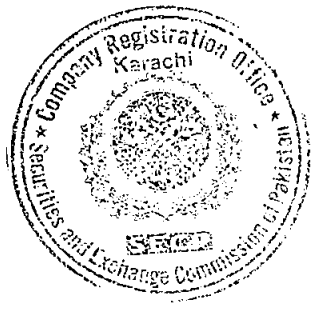
PART- III

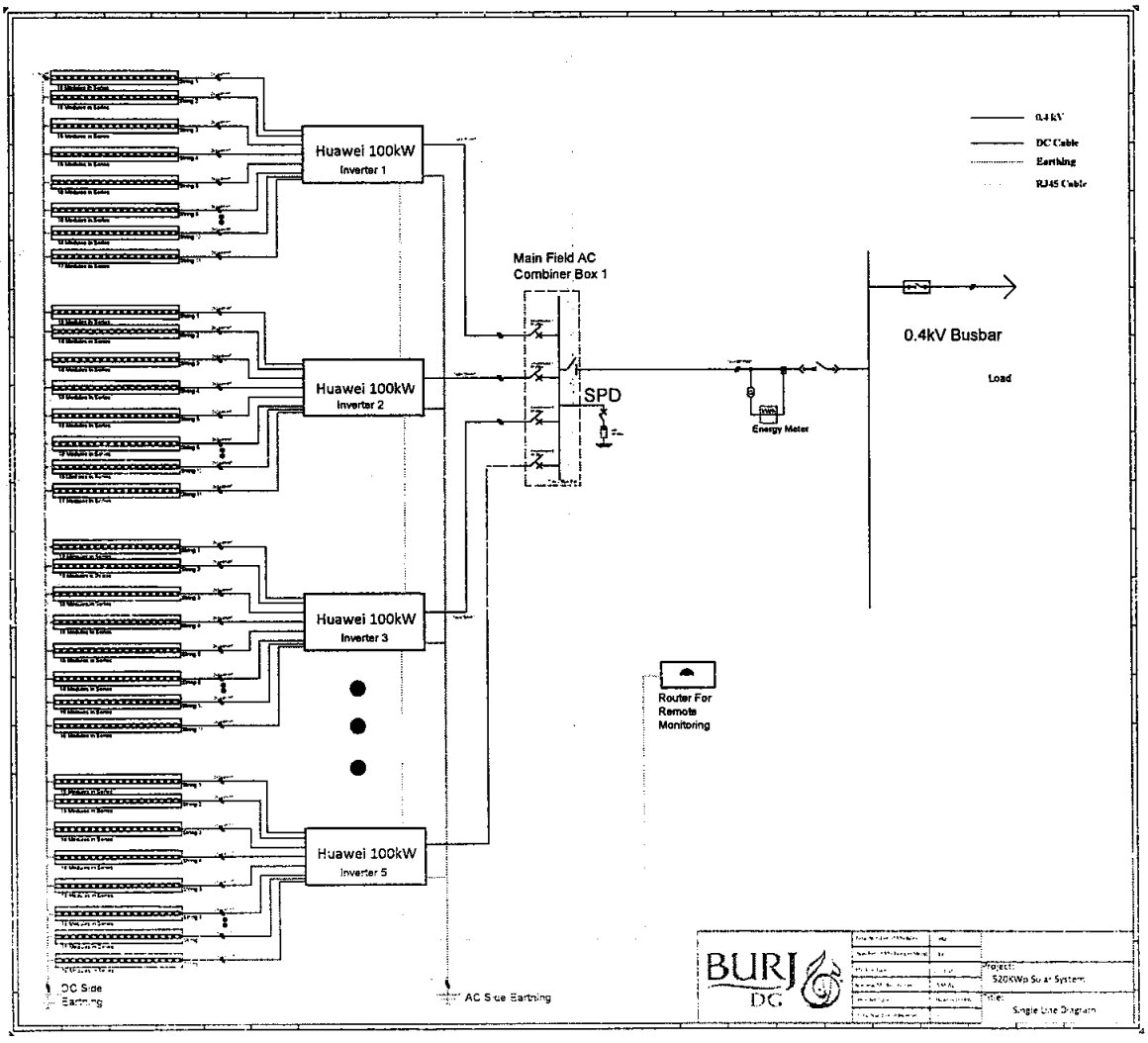
Declaration under section 16

3.1 Declarant's Name	Mr Saad Uz Zaman
3.2 Declarant Profession / Designation	☐ Authorized Intermediary ☑ a person named in the articles as Director of the proposed company
3.3 Declaration	I do hearby solemnly and sincerely declare that: a) I have been authorized as declarant by the subscribers; b) all the requirements of the Companies Act, 2017, and the regulations made there under in respect of matters precedent to the registration of the said Company and incidental thereto have been compiled with c) I make this solemn declaration conscientiously believing the same to be true.
3.4 Declarant Signature	
3.5 Registration No of authorized intermediary, if applicable	
3.6 Date(dd/mm/yyyy)	24/08/2020

ENCLOSURES

(i) Original paid bank challan evidencing payment of fee;
(ii) Memorandum of Association;
(iii) Articles of Association, where applicable;
(iv) Copies of valid CNIC/NICOP of the subscribers/directors/chief executive officer or copy of Passport in case of a foreigner;
(v) Copy of valid CNIC/NICOP of Nominee only in case of single member company or copy of Passport in case of a foreigner;
(vi) Copy of valid CNIC of witness in case of physical filing;
(vii) NOC/Letter of Intent/ License (if any) of the relevant regulatory authority in case of specialized business;
(viii) Authority letter for filing of documents for the proposed company on behalf of the subscribers as per requirement of clause (vi) of sub-regulation (2) of regulation 5.
(ix) Copy of valid CNIC/Passport of person duly authorized by the Board of directors of a body corporate which is a subscriber. Further, along with copy of Board resolution along with and attendance sheet duly authorizing the representative. In case of a subscriber which is a limited liability partnership, copy of valid NIC/ Passport of designated partner empowered to act as such, along with copy of instrument empowering him;
(x) In case the subscriber is a foreign company or a foreign body corporate, the profile of the company, detail of its directors, their nationality and country of origin, certified copy of its charter, statute or memorandum and articles etc.
(xi) In case of foreign subscriber/ officer, an undertaking on stamp paper of requisite value duly signed , notarized and witnessed to the effect that in case name of subscriber/officer is not security cleared by MoI, the subscriber/officer and the company, shall take immediate steps for replacement and shall transfer shares if any, held by the subscriber.





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Burj DG (Private) Limited

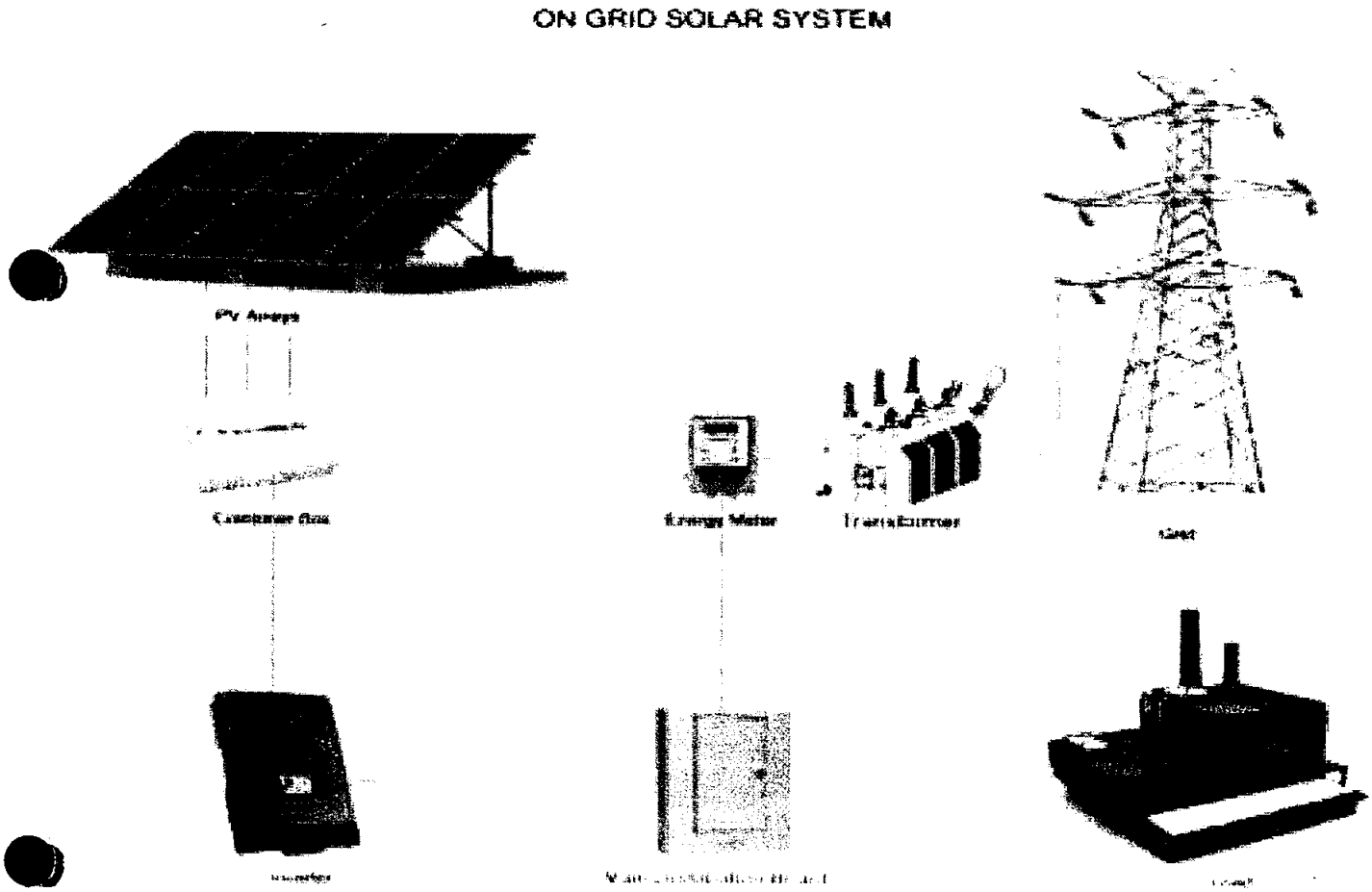

Figure # 01: Solar PV On-Grid System Conceptual Diagram

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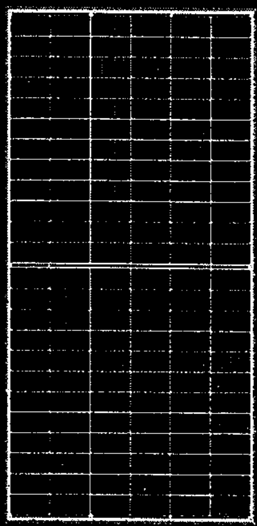
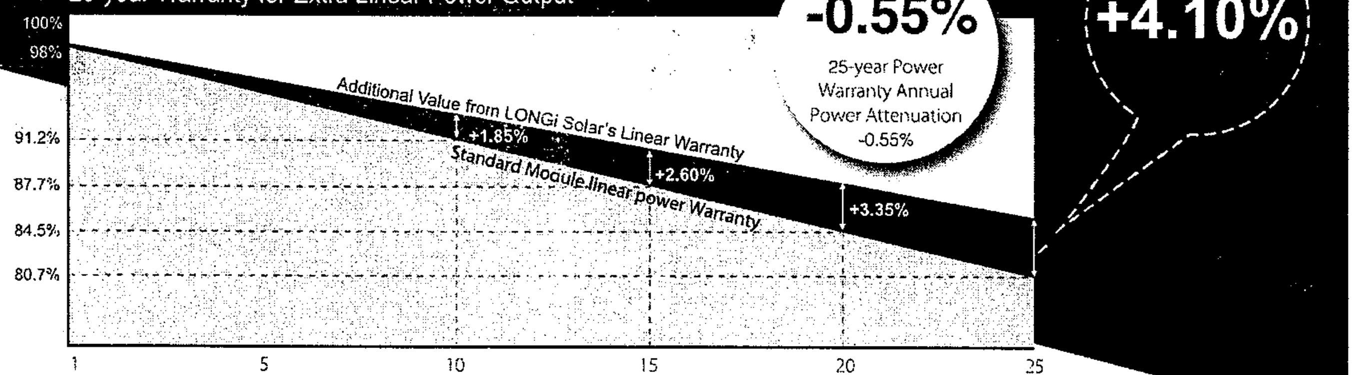
LR5-72HPH
525~545M

Hi-MO 5m



High Efficiency Low LID Mono PERC with Half-cut Technology

12-year Warranty for Materials and Processing;
25-year Warranty for Extra Linear Power Output



Complete System and Product Certifications

IEC 61215, IEC 61730, UL 61730

ISO 9001:2008: ISO Quality Management System

ISO 14001: 2004: ISO Environment Management System

TS62941: Guideline for module design qualification and type approval

OHSAS 18001: 2007 Occupational Health and Safety

Positive power tolerance (0 ~ +5W) guaranteed

High module conversion efficiency (up to 21.3%)

Slower power degradation enabled by Low LID Mono PERC technology: first year <2%, 0.55% year 2-25

Solid PID resistance ensured by solar cell process optimization and careful module BOM selection

Reduced resistive loss with lower operating current

Higher energy yield with lower operating temperature

Reduced hot spot risk with optimized electrical design and lower operating current

Buri DG (Private) Limited

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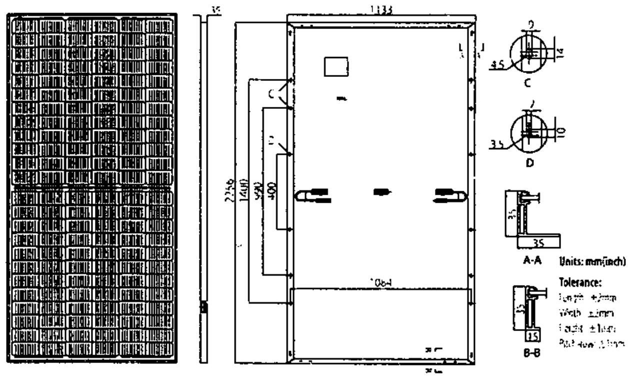
LONGi

Room 801, Tower 3, Lujiazui Financial Plaza, No.826 Century Avenue, Pudong Shanghai, 200120, China
Tel: +86-21-8016 2606 E-mail: module@longi-silicon.com Facebook: www.facebook.com/LONGi Solar

Note: [illegible] LONGi [illegible] shall request for the latest datasheet for such as contract need, and make it a consisting and binding part of [illegible]

LR5-72HPH **525~545M**

Design (mm)



Mechanical Parameters

Cell Orientation: 144 (6×24)
Junction Box: IP68, three diodes
Output Cable: 4mm², 300mm in length, length can be customized
Glass: Single glass
3.2mm coated tempered glass
Frame: Anodized aluminum alloy frame
Weight: 27.2kg
Dimension: 2256×1133×35mm
Packaging: 31pcs per pallet
155pcs per 20'GP
620pcs per 40'HC

Operating Parameters

Operational Temperature: -40℃ ~ +85℃
Power Output Tolerance: 0 ~ +5 W
Voc and Isc Tolerance: ±3%
Maximum System Voltage: DC1500V (IEC/UL)
Maximum Series Fuse Rating: 25A
Nominal Operating Cell Temperature: 45±2 ℃
Safety Protection Class: Class II
Fire Rating: UL type 1 or 2

Electrical Characteristics

Test uncertainty for Pmax: ±3%

Model Number	LR5-72HPH-525M		LR5-72HPH-530M		LR5-72HPH-535M		LR5-72HPH-540M		LR5-72HPH-545M	
Testing Condition	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax/W)	525	392.1	530	395.8	535	399.5	540	403.3	545	407.0
Open Circuit Voltage (Voc/V)	49.05	45.98	49.20	46.12	49.35	46.26	49.50	46.41	49.65	46.55
Short Circuit Current (Isc/A)	13.65	11.04	13.71	11.09	13.78	11.15	13.85	11.20	13.92	11.25
Voltage at Maximum Power (Vmp/V)	41.20	38.36	41.35	38.50	41.50	38.64	41.65	38.78	41.80	38.92
Current at Maximum Power (Imp/A)	12.75	10.23	12.82	10.28	12.90	10.34	12.97	10.40	13.04	10.46
Module Efficiency(%)	20.5		20.7		20.9		21.1		21.3	

STC (Standard Testing Conditions): Irradiance 1000W/m², Cell Temperature 25℃, Spectra at AM1.5

NOCT (Nominal Operating Cell Temperature): Irradiance 800W/m², Ambient Temperature 20℃, Spectra at AM1.5, Wind at 1m/S

Temperature Ratings (STC)

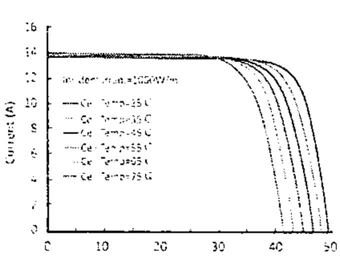
Temperature Coefficient of Isc	+0.048%/℃
Temperature Coefficient of Voc	-0.270%/℃
Temperature Coefficient of Pmax	-0.350%/℃

Mechanical Loading

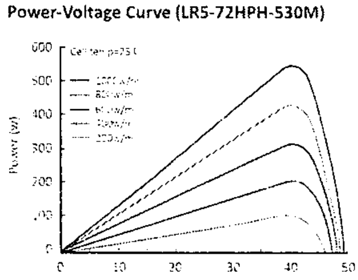
Front Side Maximum Static Loading	5400Pa
Rear Side Maximum Static Loading	2400Pa
Hailstone Test	25mm Hailstone at the speed of 23m/s

I-V Curve

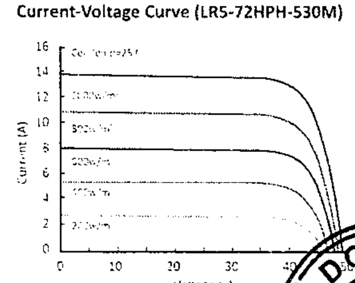
Current-Voltage Curve (LR5-72HPH-530M)



Power-Voltage Curve (LR5-72HPH-530M)



Current-Voltage Curve (LR5-72HPH-530M)



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Buri DG (Private) Ltd

LONGi

[illegible] Century Avenue, Pudong Shanghai, [illegible] China
Tel: [illegible] Facebook: www.facebook.com/LONGi Solar

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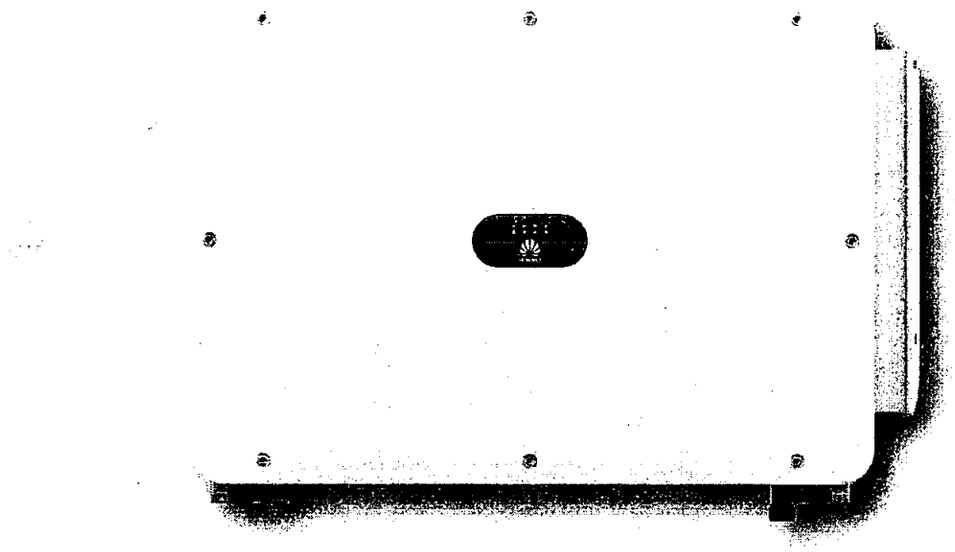
SUN2000-100KTL-M1

Smart PV Controller

HUAWEI



10
MPP Trackers

98.8% (@480V)
Max. Efficiency

String-level
Management

Smart I-V Curve Diagnosis
Supported

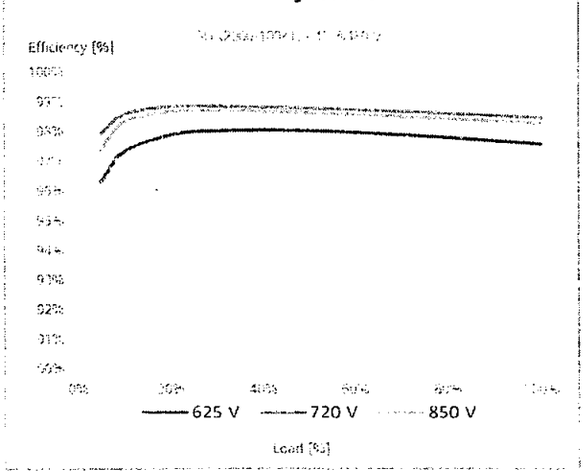
MBUS
Supported

Fuse Free
Design

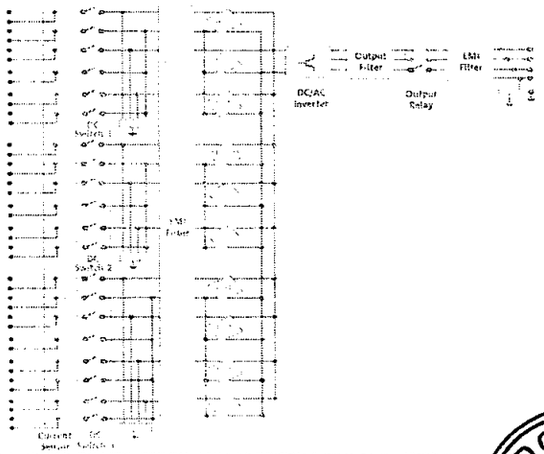
Surge Arresters for
DC & AC

IP66
Protection

Efficiency Curve



Circuit Diagram



SOLAR.HUAWEI.COM/EU/

MM

Technical Specification	SUN2000-100KTL-M1
Efficiency	
Max. efficiency	98.8% @480 V, 98.6% @380 V / 400 V
European efficiency	98.6% @480 V, 98.4% @380 V / 400 V
Input	
Max. Input Voltage [1]	1,100 V
Max. Current per MPPT	26 A
Max. Short Circuit Current per MPPT	40 A
Start Voltage	200 V
MPPT Operating Voltage Range [2]	200 V ~ 1,000 V
Nominal Input Voltage	720 V @480 Vac, 600 V @400 Vac, 570 V @380 Vac
Number of MPP trackers	10
Max. input number per MPP tracker	2
Output	
Nominal AC Active Power	100,000 W
Max. AC Apparent Power	110,000 VA
Max. AC Active Power (cosφ=1)	110,000 W
Nominal Output Voltage	480 V/ 400 V/ 380 V, 3W+(N)+PE
Rated AC Grid Frequency	50 Hz / 60 Hz
Nominal Output Current	120.3 A @480 V, 144.4 A @400 V, 152.0 A @380 V
Max. Output Current	133.7 A @480 V, 160.4 A @400 V, 168.8 A @380 V
Adjustable Power Factor Range	0.8 leading... 0.8 lagging
Max. Total Harmonic Distortion	< 3%
Protection	
Input-side Disconnection Device	Yes
Anti-islanding Protection	Yes
AC Overcurrent Protection	Yes
DC Reverse-polarity Protection	Yes
PV-array String Fault Monitoring	Yes
DC Surge Arrester	Type II
AC Surge Arrester	Type II
DC Insulation Resistance Detection	Yes
Residual Current Monitoring Unit	Yes
PID Recovery	Optional
Arc Fault Protection	Optional
Communication	
Display	LED indicators; WLAN adaptor + FusionSolar APP
RS485	Yes
USB	Yes
Smart Dongle-4G	Yes
Monitoring BUS (MBUS)	Yes (isolation transformer required)
General Data	
Dimensions (W x H x D)	1,035 x 700 x 365 mm
Weight (with mounting plate)	90 kg
Operating Temperature Range	-25°C ~ 60°C
Cooling Method	Smart Air Cooling
Max. Operating Altitude without Derating	4,000 m
Relative Humidity	0 ~ 100%
DC Connector	Staubli MC4
AC Connector	Waterproof Connector + OT/DT Terminal
Protection Degree	IP66
Topology	Transformerless
Nighttime Power Consumption	< 3.5 W
Standard Compliance (more available upon request)	
Certificate	EN 62109-1/-2, IEC 62109-1/-2, EN 50530, IEC 62116, IEC 61727, IEC 60068, [illegible]
Grid Connection Standards	VDE-AR-N4105, EN 50549-1, EN 50549-2, RD 661, RD 1699, C10/[illegible]

[1] [illegible]
[2] [illegible]

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PVMET Weather Station

Solar Energy Efficiency Monitor

The ***PV*MET** series of weather stations were designed to meet the needs of alternative energy power generation, specifically solar generation. These station feature sensors and communication options that provide a power add-on to any solar power plant.

The ***PV*MET-200 is the intermediate level station option.** It features sensors specific to PV and wind power generation. This low cost station is compact and simple to install.

As with all ***PV*MET** stations it includes a RS-485 Mobus interface.

Features

- Global Solar Irradiance Sensor
- Plane of Array Irradiance Sensor
- 2 x Back-of-PV Panel Temp Sensors
- Ambient Air Temperature Sensor
- Wind Speed Sensor
- Wind Direction Sensor

- Modbus RS-485 Communication
- Sunspec Ver. 1.1 Compliant

Sensors & Options

* ***Ambient Air Temperature.***
  Housed in a passive shield

* ***Global Irradiance***
  The irradiance sensor is mounted to the system on an extens[illegible]

* ***Plane-of-Array Irradiance***
  A separate plane-of-array sensor is supplied with a mounting bracket to attach to the side of a PV panel.

* ***Back-of-Module Temperature.***
  These sensors are attached to the back of the PV panel using thermal conductive adhesive tape. They provide accurate panel temperatures, an important parameter for efficiency monitoring. One sensor is shipped with each system. The ***PV*MET-200** supports two sensors.

* ***Wind Speed and Direction***
  A mini-aevane anemometer provides both wind speed and direction information.

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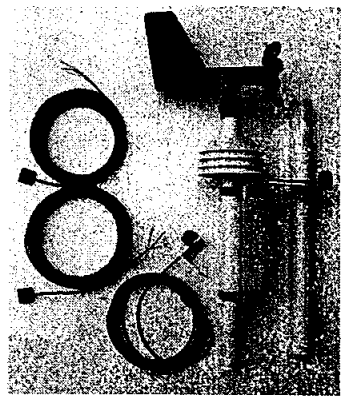

* ***Back-of-Module Temperature.***
These sensors are attached to the back of the PV panel using thermal conductive adhesive tape. They provide accurate panel temperatures, an important parameter for efficiency monitoring. One sensor is shipped with each system. The ***PV*MET-200** supports two sensors.

* ***Wind Speed and Direction***
A mini-aevane anemometer provides both wind speed and direction information.

Communications

The ***PV*MET-200** has a single, 2-wire, half duplex, RS-485 port. Termination can be enabled or disabled using a jumper located near the RS-485 screw terminals.

By default the ***PV*MET-200** is configured to operate as a Modbus slave at address 60.
The Modbus register layout is compatible with SunSpec Ver 1.1. A simplified register set is located at address 200 for those that do not wish to use the SunSpec data format.

For users that wish to change settings, a configuration mode is provided. A simple terminal emulator application such as HyperTerminal is required to make changes.

Installation

The ***PV*MET-200** 's compact light weight design make installation quick and easy. Various mounting options are available, including the Rainwise 3-foot tripod and Mono mount. The ***PV*MET-200** is supplied with a detachable mast section that can bolted to an existing structure.

All electrical connections are made using screw terminals. Standard sensors are factory installed. As a user/installer the only connections required are power and communications. Connections are accessed by removing the front cover. The cover is attached with 4 screws.

For OEM customers the ***PV*MET-200** can be supplied with factor installed power and communication cable. This completely eliminates the need for installer to remove the cover.

Customization

The firmware in the ***PV*MET-200** can be updated through the RS-485 port using a simple PC application. This feature ensure that the ***PV*MET-200** can be kept up to date with the latest available firmware. In addition Rainwise can provide certain OEM firmware customization. This can include register configuration, specific defaults and protocols.

The ***PV*MET-200** can also be customized to support customer specific sensors. This service is only available to volume OEM customers.

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Annexure L

FEASIBILITY STUDY FOR ROOFTOP SOLAR INSTALLATION AT THE CRESCENT TEXTILE MILLS LIMITED, Hattar, KPK

Burj DG Private Limited

EXECUTIVE SUMMARY

The feasibility study examines the costs, practicality, and likely outcome of a solar photovoltaic (PV) installation on the rooftop of The Crescent Textile Mills Limited, Hattar, Khyber Pakhtunkhwa.

The main outcomes of the feasibility report are given below:

Technical Site Analysis: The project site is suitable for a solar PV energy system. For the purpose of estimation of power generation potential, solar specific production is assumed to be "good" (1,554 kWh/kWp/year). As the project is distributed every rooftop is optimized at different azimuth (0 degree), panel tilt (20 degrees) and satisfactory roof condition and structure are also assumed.

Anticipated System Information: The project will accommodate a 520kWp solar PV system (in phase I, with potential to go up to 1MWP in phase II) with a projected annual production of 0.76 GWh/year. Use of Longi LR5-72HPH Mono Perc Half cut (530 watt) PV panel as a basis for design will result in an acceptable system weight density of 5-6 lbs/sq ft. The system will offset approximately 0.127 tons of carbon dioxide annually.

Financial Analysis: The project will be financed on a 100% equity model. The total estimated project cost is $322,000 (Phase I).

Based on the technical and financial analysis, the installation of a 520 kWp (Phase I) Solar PV System on the rooftop of Crescent Textile Mills is deemed to be feasible.

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Index

Contents

MM

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Introduction

The project site is the rooftop of Crescent Textile Mills Hattar Unit. The Hatter unit is the smaller textile unit of The Crescent Textile Mills Group with a larger unit being in Faisalabad. The exact coordinates of the project site are: 33°54'35.3"N 72°50'21.6"E East A bird's eye view of the project site is given in the figure below:

Figure1. Overview of Project Site

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Technical Analysis

Site Conditions

The following tasks were carried out:

- Global Horizontal Irradiation, annual and inter-annual variation was assessed.
- Near shading objects were taken into account for placement of PV modules.
- Area required for selected module technology was calculated. Keeping in view available area and minimum inter row shading, tilt angle and appropriate spacing was calculated from near shading objects.

Details of the finalized parameters are given below:

Technology Review and Selection

Technology Selection

1	Type of Module	LR5-72HPH
2	Type of Cell	Monocrystalline Half Cut PERC
3	Dimensions of each module	2256*1133*35 mm
4	Weight	27.2 Kg
5	No of Modules	982
6	Total Land Area Used	Roof Top
7	Module Frame Anodized	Aluminium alloy
8	Nominal Max. Power (Pmax)	530W
9	Opt. Operating Voltage (Vmp)	41.35V
10	Opt. Operating Current (Imp)	12.82A
11	Open Circuit Voltage (Voc)	49.20V
12	Short Circuit Current (ISC)	13.71A
13	Module Efficiency	20.7%
14	Operating Temperature	-40°C — +85°C
15	Max. System Voltage	1000V/1500V DC IEC
16	Module Fire Rating	UL Type 1 or 2

S. No	**Specification of Strings**	**Data**
1	No of Strings	55
2	Modules in Strings	16-18

PV Capacity

S. No	**Specification**	**Data**
1	Total Site	520 kWp (Phase I)
2	Net Capacity Factor	17.10%

Inverters

S. No	**Specification**	**Data**
1	Manufacturer	Huawei
2	Capacity of each Unit	100 KW
3	No of Inverters	5
4	MPPT Input Voltage Range	200 V to 1000 V

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5	Rated Input Voltage	600 V
6	Max Input Voltage	1100 V
7	Total Power	100 KW
8	Max Input Current for Each MPPT	26A
9	Max Output Current	160.4 A @400V AC
10	Output Electrical System	3 Phase AC
11	AC Nominal Voltage	230/400 V
12	Rated Power Frequency	50 Hz
13	Efficiency	98.60%
14	Relative Humidity (Non-Condensing)	100%
15	Weight	90KG
16	Degree of Protection	IP65

Junction Boxes

S. No	**Specification**	**Data**
1	Number of J/Box units	5
2	Input circuits in each box	16-18
3	Max. input current for each circuit	20A
4	Protection Level	IP 54
5	Over current protection	Fuse
6	Surge protection	1000V

PV Mounting Structure

S. No	**Specification**	**Data**
1	Structure	Hot Dip Galvanized Steel
2	Tilt of Array Frame	20°

Foundation Pillars

S. No	**Specification**	**Data**
1	Foundation Structure	Reinforced Concrete Where Required

Data Collecting System

S. No	**Specification**	**Data**
1	System Data	Continuous on-line logging and monitoring over web portal
2	Weather Station	Collecting actual Weather Data for PR calculation

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Solar PV Yield Estimation and Simulation of Model Site

The aim of yield estimation is to predict the average annual energy output of the site. Helioscope Software is used for simulation and near shading analysis.

Model and Operation: No Export to Grid

The solar system will have export control device to make sure that PV power generated by the inverters is on par with power consumption of the site load. A device will measure load at injection point and the limit power of inverters by changing register values. AC output is implemented in reference to energy flow at grid connection point which will reduce inverter AC output of the inverter if site load will be less than the solar production

Plant Characteristics

Generation Voltage: 230/400 V three phase four wire system

Power Factor at rated power: 1

Frequency: 50 Hz

Generation characteristic: Inverter has built-in features of controllable active power ramp following grid disturbance or normal connection, voltage regulation and frequency response. There are no additional control metering and instrumentations.

Design Parameters

The following tasks were carried out for PV layout and shading.

- Assessment of shading (horizon and nearby building)
- Outline layout of area suitable for PV development
- Designing row spacing to reduce inter-row shading and associated shading losses.
- Designing the layout to minimize cable runs and associated electrical losses
- Creating access routes and sufficient space to allow movement for maintenance purposes
- Choosing a tilt angle that optimizes the annual energy yield according to the latitude of the site and the annual distribution of solar resource
- Module cleaning strategy
- Simulating the annual energy losses associated with various configurations of tilt angle, orientation and row spacing. The optimized configuration and simulation results are given in section "Energy Yield Prediction"

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Electrical Design

The electrical system comprises the following components:

- Array(s) of PV modules
- DC/AC cabling (module, string and main cable)
- DC connectors (plugs and sockets)
- Junction boxes and combiners
- Disconnects/switches
- Protection devices e.g. fuses, surge protective devices, beakers
- Energy Metering
- Earthing

The single line diagrams of DC and AC sides are given below. The single line diagram includes the protection devices that will be used for safe and smooth operation of the system.

Protections DC Side: String Fuses, Surge Protective Device and DC Disconnect Switches Protections
AC Side: MCBs, Main Breaker

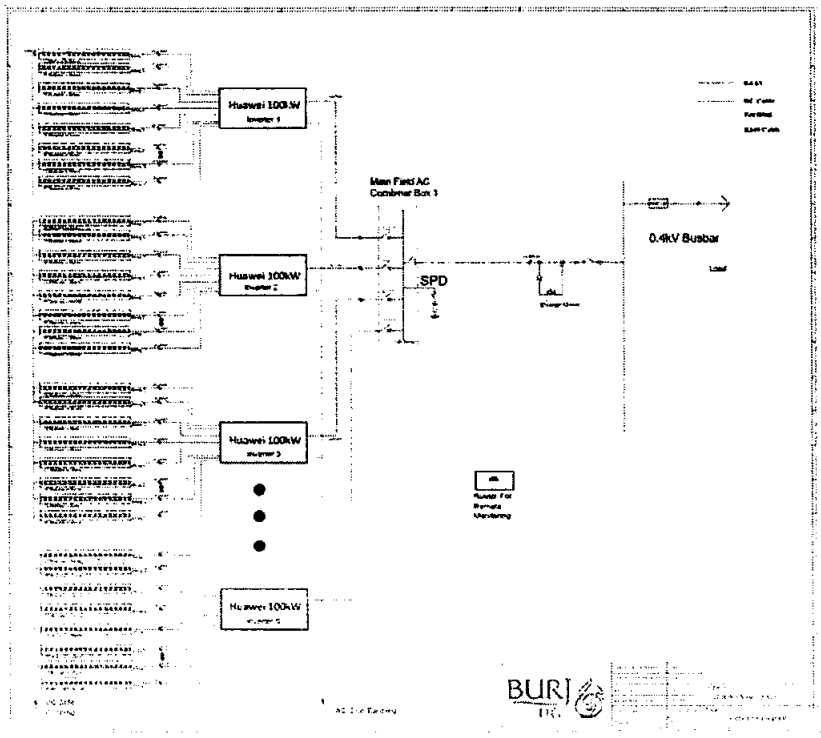
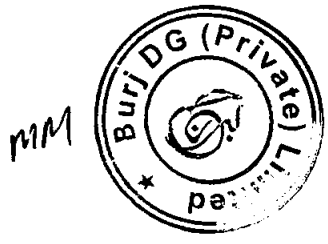


Figure 4: SLD



Energy Yield Estimation

The energy yield prediction provides the basis for calculating project revenues. The aim is to predict the average annual energy output for the lifetime of the proposed power plant.

To estimate accurately the energy produced from a PV power plant, information is needed on the solar resource and temperature conditions of the site. Also required are the layout and technical specifications of the plant components.

A number of solar energy yield prediction software packages are available in the market. These packages use time step simulation to model the performance of a project over the course of a year. Helioscope software has been used for energy yield prediction for this site and its results are given below.

Detailed Simulation Report is under.

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Financial Analysis

Cost/watt: USD 0.62

Total Project Cost for 520 kWp Solar PV System: USD 322,000

Equity: 100%

Debt: 0%

Safety and Emergency Plans

- Only qualified and authorized electricians will be allowed to undertake servicing or maintenance tasks.
- The authorized personnel will wear appropriate equipment, including a safety harness to restrain from falling off the roof, sturdy shoes that will have thick rubber soles to provide electrical insulation and good grip and appropriate clothing for personal protection, including a hat, sunglasses, gloves and long pants and sleeves
- Lock out and tag out procedures will be used before commencement of maintenance tasks.
- On-going operation and maintenance concerns for solar power systems will be addressed properly. These systems are exposed to outdoor weather conditions that enhance the aging process, and the infrastructure needs to be in place for the on-going maintenance of these systems to assure their safe operation.
- Properly grounded or double insulated power tools will be used for maintenance tasks. Tools will be maintained in good condition.
- Working on electrical equipment and circuits will be carried out in de energized state.
- Proper pathways will be available for operation, maintenance and firefighting.
- Fire protection and suppression will be placed at site

Training and Capacity Development

Trained and qualified personnel will be available at site 24/7 with proper safety and firefighting training. Training program will focus on but not limited to Solar Resource Assessment, Site Survey, Technology, Engineering Design, Regulation, Policy, Metering & Billing, and Project Management of Rooftop Solar System. The following components will include in training and development program.

a) Collection of Resource Data
b) Variability and uncertainty of resource data
c) Site evaluation
d) Crystalline and Thin film technology comparison
e) Rooftop solar system components
f) Module mounting structure selection
g) Inverter selection
h) Design of PV Array
i) Shadow Analysis
j) DC cable sizing
k) DC cable layout
l) Protection and Metering
m) Installation and testing standards for solar PV plants
n) Solar Module testing standards
o) Economy of Roof top Solar System
p) Detailed Project Report
q) Operation and maintenance of rooftop solar system
r) Safety and fire-fighting training

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Environmental Aspects

Every energy generation and transmission method affect the environment. Conventional generating options can damage air, climate, water, land and wildlife, landscape as well as raise the levels of harmful radiation. PV technology is substantially safer offering a solution to many environmental and social problems associated with fossil and nuclear fuels. Solar PV energy technology provides obvious environmental advantages in comparison to the conventional energy sources thus contributing to the sustainable development of human activities. Not counting the depletion of the exhausted natural resources, their main advantage is related to the reduced CO2 emissions and normally absence of any air emissions or waste products during their operation.

The use of solar power has additional positive implications such as:

- Reduction of the emissions of the greenhouse gases (mainly CO2, NOx) and prevention of toxic gas emissions (S02, particulates)
- Reduction of the required transmission lines of the electricity grids

Socio-Economic Aspects

In regard to the socio-economic viewpoint, the benefits of exploitation of solar PV system comprise of:

- Increase of the regional/national energy independency
- Provision of significant work opportunities
- Diversification and security of energy supply
- Support of the deregulation of energy markets

Conclusion

This feasibility study is conducted to ascertain the technical feasibility and commercial viability of installation of 520 kWp rooftop PV system installation at Crescent Textile Mills. Installation of the PV system will result in annual power generation of 0.76 GWh. The results of the financial analysis indicate that the project is feasible. Based on the outcomes of both the technical and financial analysis, the project is deemed to be viable.

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Revised Layout 20 Tilt CTM Hattar, Crescent Textile Mills Hattar Industrial Estate

Report

Project Name	CTM Hattar
Project Address	Crescent Textile Mills Hattar Industrial Estate
Prepared By	Syed Azhar bilal.azhar@burjcap.com

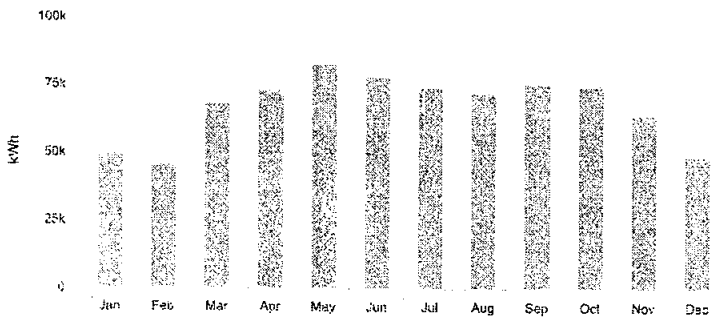
BURJ Energy International Management Ltd

System Metrics

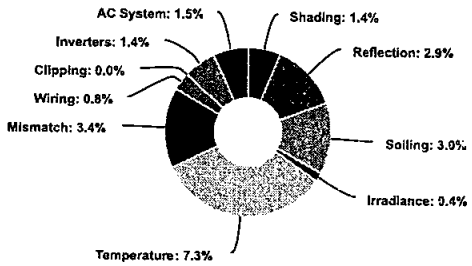
Design	Revised Layout 20 Tilt
Module DC Nameplate	520.5 kW
Inverter AC Nameplate	500.0 kW Load Ratio: 1.04
Annual Production	810.4 MWh
Performance Ratio	79.9%
kWh/kWp	1,557.2
Weather Dataset	TMY, 10km Grid, meteonorm (meteonorm)
Simulator Version	3882232029-9f87be7113-cb35e05405-8e4bf740e1

Project Location

Monthly Production



Sources of System Loss



Annual Production

	Description	Output	% Delta
Irradiance (kWh/m²)	Annual Global Horizontal Irradiance	1,734.3	
	POA Irradiance	1,948.6	12.4%
	Shaded Irradiance	1,921.9	-1.4%
	Irradiance after Reflection	1,866.3	-2.9%
	Irradiance after Soiling	1,810.3	-3.0%
	Total Collector Irradiance	**1,810.4**	**0.0%**
Energy (kWh)	Nameplate	942,386.3	
	Output at Irradiance Levels	938,860.3	-0.4%
	Output at Cell Temperature Derate	870,176.3	-7.3%
	Output After Mismatch	840,842.0	-3.4%
	Optimal DC Output	834,466.9	-0.8%
	Constrained DC Output	834,464.6	0.0%
	Inverter Output	822,782.1	-1.4%
	Energy to Grid	**810,440.4**	**-1.5%**
Temperature Metrics			
	Avg. Operating Ambient Temp		25.1 °C
	Avg. Operating Cell Temp		36.9 °C
Simulation Metrics			
	Operating Hours		4561
	Solved Hours		4561

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Condition Set

Description	Condition Set 1
Weather Dataset	TMY, 10km Grid, meteonorm (meteonorm)
Solar Angle Location	Meteo Lat/Lng
Transposition Model	Perez Model
Temperature Model	Diffusion Model

Temperature Model Parameters

Rack Type	U_{const}	U_{wind}
Fixed Tilt	24	0
Flush Mount	15	0
East-West	29	0
Carport	29	0

Soiling (%)

J	F	M	A	M	J	J	A	S	O	N	D
3	3	3	3	3	3	3	3	3	3	3	3

Irradiation Variance	5%
Cell Temperature Spread	4° C
Module Binning Range	-2.5% to 2.5%
AC System Derate	1.50%

Characterizations

Module	Uploaded By	Characterization
LR5-72HPH-530M (Longi Solar)	Folsom Labs	Spec Sheet Characterization, PAN

Component Characterizations

Device	Uploaded By	Characterization
SUN2000-100KTL-M1 (380/400) (Huawei)	Folsom Labs	Spec Sheet

Components

Component	Name	Count
Inverters	SUN2000-100KTL-M1 (380/400) (Huawei)	5 (500.0 kW)
Strings	4 mm2 (Copper)	60 (5,196.4 m)
Module	Longi Solar, LR5-72HPH-530M (530W)	982 (520.5 kW)

Wiring Zones

Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	12	16-18	Along Racking

Field Segments

Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
Field Segment 2	Fixed Tilt	Portrait (Vertical)	20°	187°	1.5 m	1x1	160	160	84.8 kW
Field Segment 3	Fixed Tilt	Portrait (Vertical)	20°	187°	1.5 m	1x1	72	72	38.2 kW
Field Segment 3	Fixed Tilt	Portrait (Vertical)	20°	187°	1.5 m	1x1	46	46	24.4 kW
Field Segment 4	Fixed Tilt	Portrait (Vertical)	20°	187.5062209617555°	1.5 m	1x1	102	102	54.1 kW
Field Segment 5	Fixed Tilt	Portrait (Vertical)	20°	187.12792765222207°	3.1 m	2x1	48	96	50.9 kW
Field Segment 5 (copy)	Fixed Tilt	Portrait (Vertical)	20°	187.12793°	3.1 m	2x1	48	96	50.9 kW
Field Segment 5 (copy 1)	Fixed Tilt	Portrait (Vertical)	20°	187.12793°	3.1 m	2x1	47	94	49.8 kW
Field Segment 5 (copy 2)	Fixed Tilt	Portrait (Vertical)	20°	187.12793°	3.1 m	2x1	47	94	49.8 kW
Field Segment 9	Fixed Tilt	Portrait (Vertical)	20°	187.5°	1.5 m	1x1	52	52	27.6 kW
Field Segment 10	Fixed Tilt	Portrait (Vertical)	20°	188.13362°	1.5 m	1x1	12	12	6.36 kW
Field Segment 11	Fixed Tilt	Portrait (Vertical)	20°	186.58417068439303°	1.5 m	1x1	42	42	22.3 kW
Field Segment 12	Fixed Tilt	Portrait (Vertical)	20°	186.95880423405083°	1.5 m	1x1	116	116	61.5 kW

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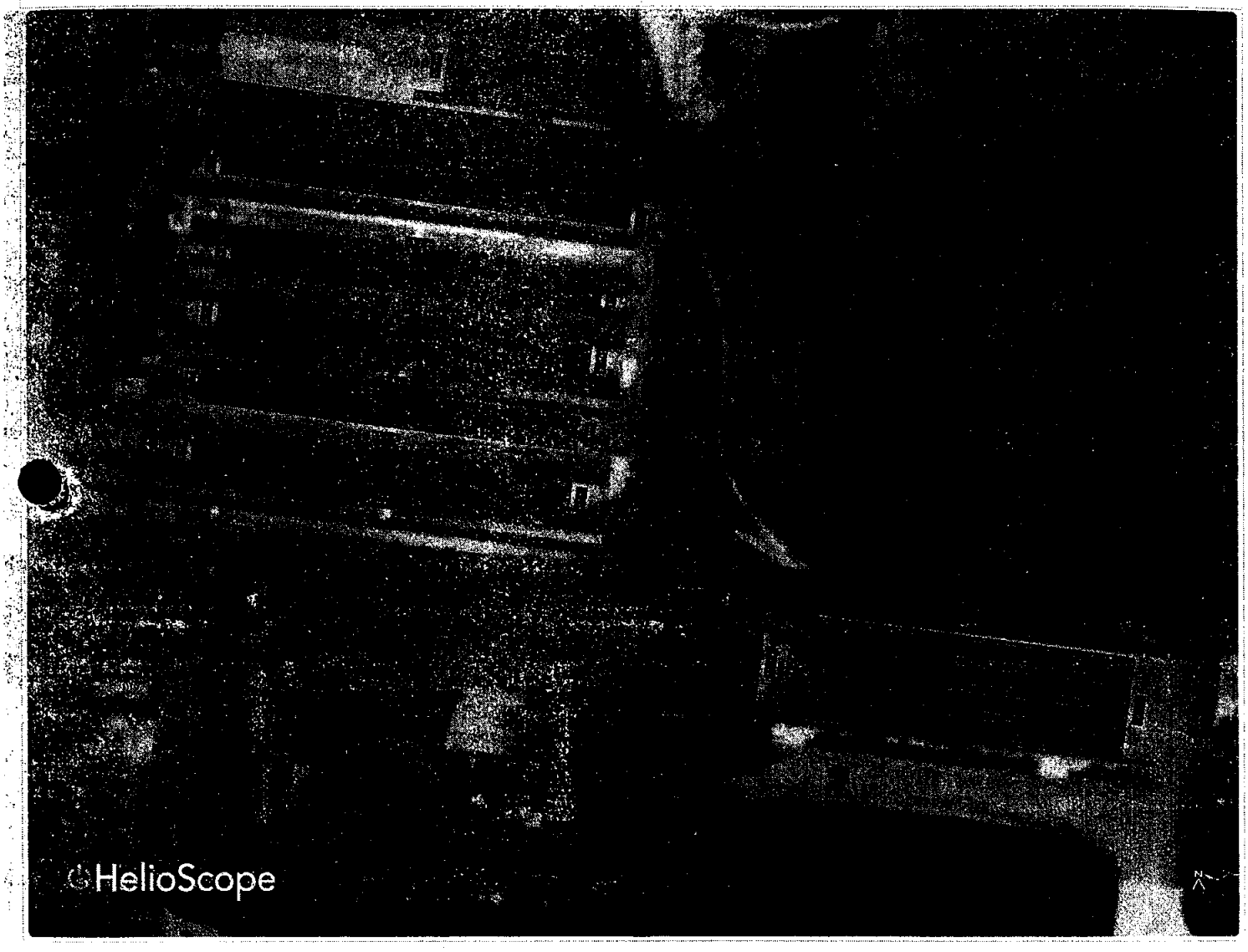
Detailed Layout



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Annexure M

Contractors' Profile

SOLAR

PRIVATE & CONFIDENTIAL

GSOLAR COMPANY PROFILE

February 2020

www.gsolar.pk
www.vitol.com
www.belectric.com

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GSolar Overview

years of experience

150+ employees

nationwide footprint

20+ MW install base

GSolar is Pakistan's largest fully integrated solar company offering services across the complete value chain.

Headquartered in Karachi with a nationwide footprint and regional offices in Lahore, Islamabad and Multan.

Install base of 500+ plants.

EPC:
Large-scale ground-& roof mounted PV plants for the C&I segment.

The Market Leader in Solar PV Solutions for Agricultural clients.

PPA:
Pakistan's sole solar EPC company with an in-house financing facility for solar PV Power Purchase Agreements ("PPAs") / Rentals.

Analytics:
AlsoEnergy analytics platform is critical for solar asset management. It's cloud based, customizable and scalable offering meets our client's growing needs.

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GSolar - Summary and our Strengths

Shareholder	• Owner operators and Vitol.
Nationwide Footprint	• 3 main offices nationwide, Karachi , Lahore & Multan • Over 150 professional staff
Strong Leadership	• Experienced owner / operators with strong professional & engineering backgrounds
In-house Teams	• Our solutions are exclusively designed, installed and monitored by our staff. We do not sub-contract any of our work
World Class Design	• Our exclusive technical partnership with BElectric gives us access to best global solar PV design and engineering resources
Experienced Team	• GSolar has 4+ years of solar PV experience with 750+ installations & 20 MW to date. Repeat blue chip C&I clients • Can leverage BElectric's 15 years and 3 GW+ experience for large projects
Financing Facility; PPA	• With our financial partner/Shareholder's strength Vitol, (Annual revenue in excess of 200 Billion USD) we have the unique capacity to do large scale utility projects

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Burj DG (Private) Ltd

With an executive team unparalled in depth & experience

MUSHTAQ CHHAPRA , CHAIRMAN

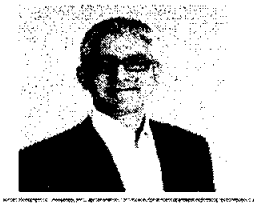
Mr. Chhapra is an industrialist with diversified business interests in Pakistan, South Africa & Sri Lanka. He is recognized internationally for his philanthropic work as Founder and Chairman of The Citizen's Foundation and also runs The Patient Aid Foundation, a private-public partnership at Jinnah Hospital. In addition, he is a recipient of the Sitara-e-Imtiaz, Pakistan's highest civilian honor.

ZAIN ABDULLAH, CEO, DIRECTOR

Zain is a seasoned finance executive with over 25 years of experience. Till most recently, he was the Senior Executive Officer of National Bank of Abu Dhabi Investment Management. Prior to NBAD he was Managing Director at the global investment bank Calyon in New York. He spent the earlier part of his career at Credit Suisse and JPMorgan. He holds a Bachelor's degree in Electrical Engineering from Massachusetts Institute of Technology and an MBA from Columbia University's Graduate Business School.

AAMER ABDULLAH, DIRECTOR

Aamer is a business professional with over 20 years experience of financial markets. He currently is a partner at MI Ventures, a New York based early stage fund that makes investments in seed stage technology companies. Previously, he was a Managing Director & Portfolio Manager at a hedge fund and prior to that held senior roles at Deutsche Bank and Credit Suisse in New York City. He holds a Bachelor's degree in Electrical Engineering and Economics from Yale University and an MBA from Columbia University's Graduate School of Business.



SHAZIM CHHAPRA, DIRECTOR

Shazim is a business professional with over 20 years of experience running his family industrial holdings in Pakistan and South Africa. He is credited in turning around two businesses. He holds a Bachelor's degree in Mechanical Engineering from Columbia University and an MBA from NYU's Stern School of Business.

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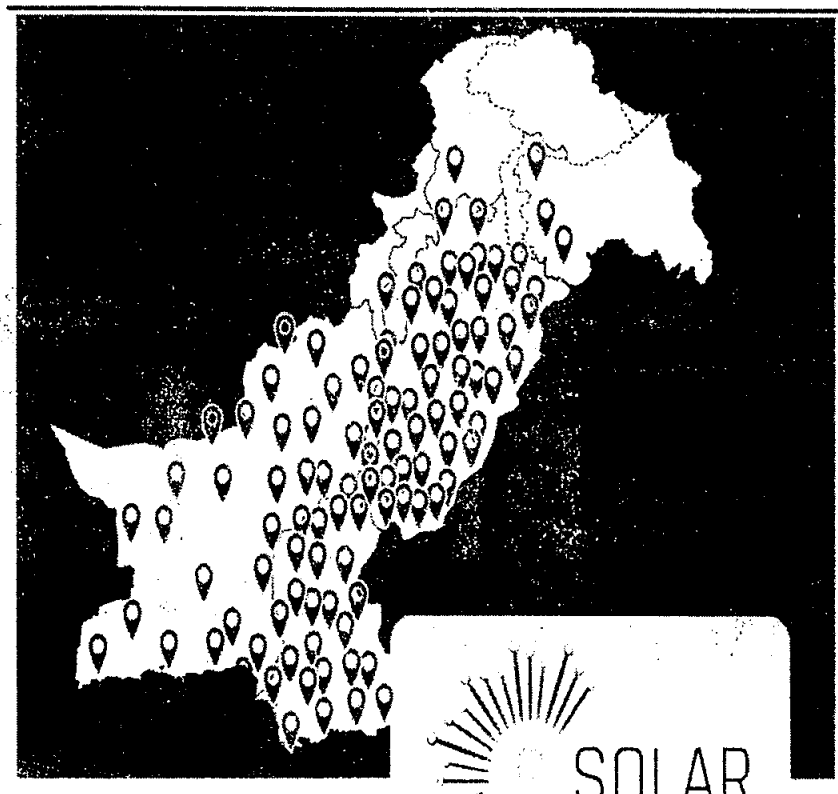
GSolar's Network



GSolar has an extensive network, spread across the nation of blue chip clientele, including renown brands and institutions of the country.

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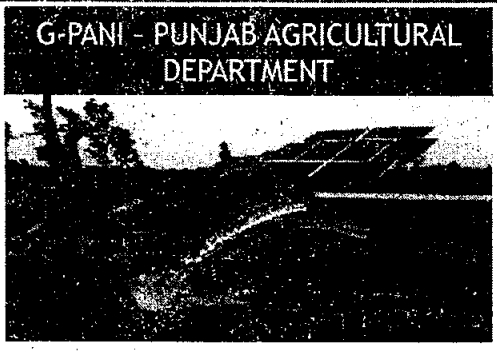
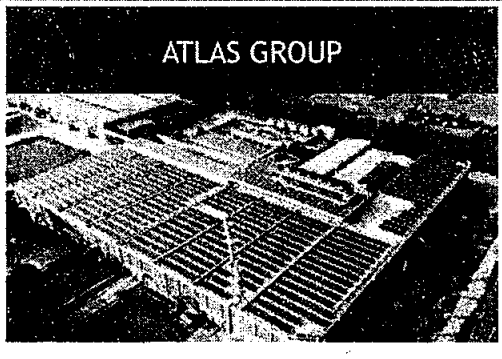
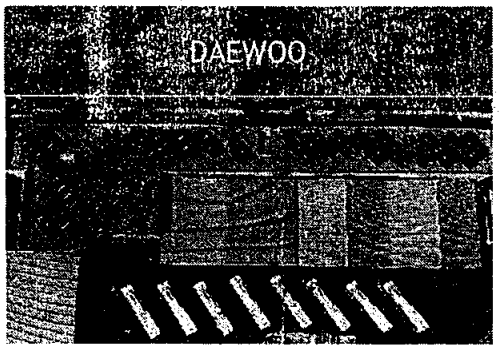
Reference Install Base



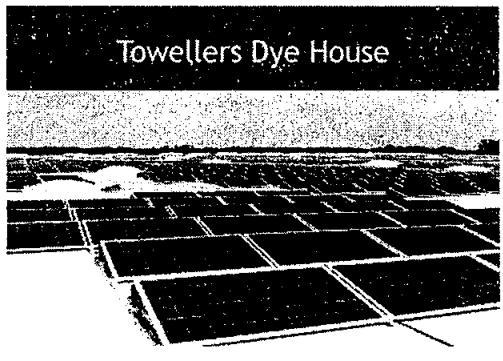
Project size: 4 MWp
Commissioned: 2017-18



Project size: 1.1 MWp - Sheikhupura & Karachi
Commissioned: 2016, 2020



Project size: 500 kWp
Underway: 2017-2020



Project size: 332 kWp
Commissioned: 2020

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Burj DG (Private) L

GSolar Consortium

GSolar is one of the largest solar companies in Pakistan with a nationwide presence of 150+ employees & over 4 years of experience. Our shareholders include VITOL. Additionally, we have an exclusive technology partnership with BELECTRIC.

Vitol is the world's largest independent energy trader, with daily trade volumes equivalent to over 10% of global oil demand. In the USA and Europe they trade over 1000 TWh of electricity per year. Their 2018 revenues were in excess of 235 Billion USD.

BELECTRIC (German HQ) is one of the world's largest Solar EPC companies with 15 + years of experience & 2 + GW global installation base spread over 300+ solar PV plants.

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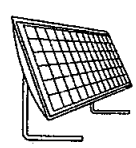
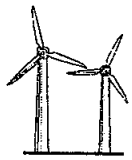
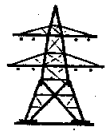
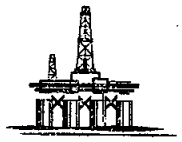
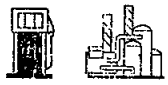
Vitol The World's Largest Independent Energy Trader

Vitol sits at the heart of the global energy flows. For over 50 years we have served world's energy markets, trading seven million barrels of crude oil and products a day and delivering energy products to countries worldwide.

Logistics:
250 vessels making 6,800+ ship journeys undertaken in 2018

Storage:
16m m^3 terminal storage and infrastructure of storage across seven continents.



Distribution:
6,500+ service stations globally

Refining:
480,000 bpd refining capacity across 6 locations.

Investing strategically:
We are invested in a growing portfolio of energy assets that complement our business.

Revenue:
2018: USD 231 billion.

Trading Energy:
Over 9 million tons of jet fuel at 140+ airports worldwide.

7.4 million barrels of crude oil & products traded everyday.

1,000 TWh power traded annually across Europe and the US.

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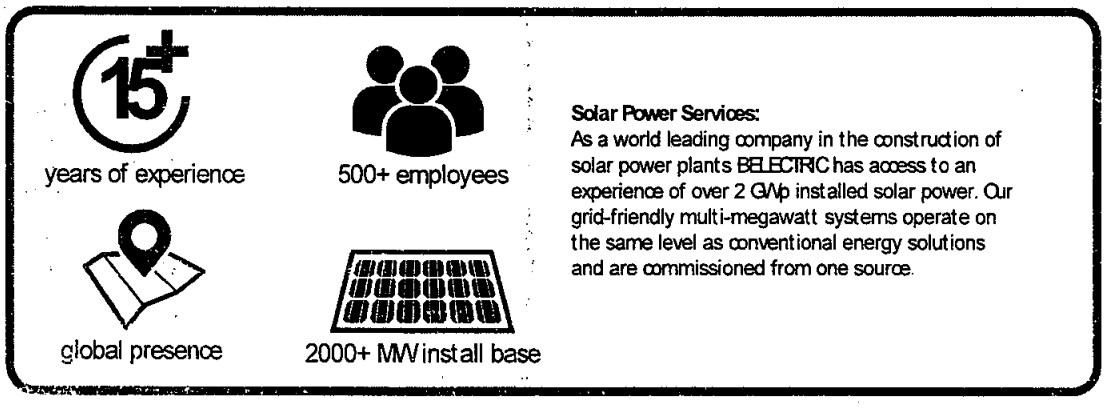
BELECTRIC® One of the World's Largest EPC Companies



Solar Power Services:
As a world leading company in the construction of solar power plants BELECTRIC has access to an experience of over 2 GWp installed solar power. Our grid-friendly multi-megawatt systems operate on the same level as conventional energy solutions and are commissioned from one source.

EPC:
One of the world's largest solar EPC company with an install base of 285 plants in 24 countries totaling 2+ GW. Recently commissioned 800 MW solar plants in Australia & India.

Services:
Full spectrum of services from R&D, product development, components manufacturing, site preparation and system design to full service EPC & O&M.

Intellectual Property:
At the cutting edge of emergent solar technology and trends, BELECTRIC has been granted 100+ patents since 2001.

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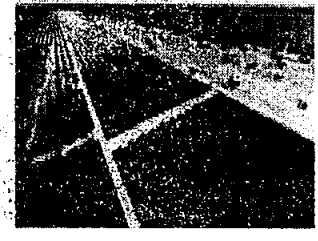
BELECTRIC® Worldwide 300 plants, over 3+ GW

TEMPLIN



Project size: 128.4MWp
CO2 reduction: 74,300t/p.a.
Country: Germany

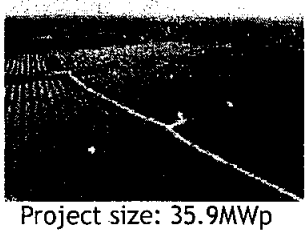
ALT DABER

Project size: 67.8MWp
CO2 reduction: 39,000t/p.a.
Country: Germany

LANDMEAD

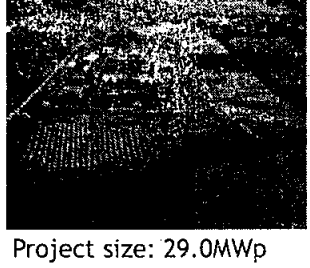
Project size: 45.9MWp
CO2 reduction: 23,800t/p.a.
Country: United Kingdom

RECKAHN I+II



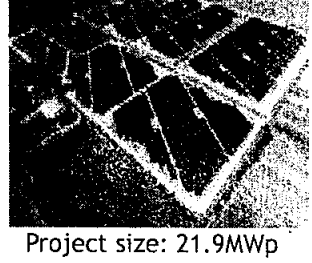
Project size: 35.9MWp
CO2 reduction: 20,700t/p.a.
Country: Germany

MARYLAND SOLAR (USA)



Project size: 29.0MWp
CO2 reduction: 37,000t/p.a.
Country: USA

BRUCEVILLE (USA)



Project size: 21.9MWp
CO2 reduction: 28,000t/p.a.
Country: USA

For reference, open https://belectric.com/wp-content/uploads/2018/06/BEL_SKW_Referenzliste_2017-10-11_www.pdf
Discover BELECTRIC'S latest reference projects at www.belectric.com/projects

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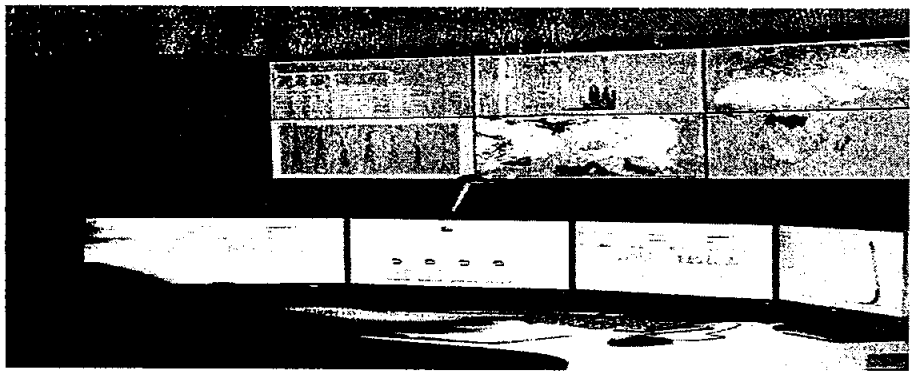
Burj DG (Private) Li... pa...

AlsoEnergy The World's Largest Solar Analytics Platform

- AlsoEnergy's platform is critical for solar asset management
- It tracks all project data across multiple systems down to the hardware level with diagnostics and analytics layered on to help all users minimize losses and optimize outcomes
- GSolar is AlsoEnergy's exclusive agent in Pakistan
- Key Features
  - Inverter Neutral
  - Unbiased reporting
  - Customized & scalable data analytics as per client needs
  - Flexible and robust management of multiple sites
  - 3rd Party Independent Carbon Credit Audit



More than **190,000 sites** worldwide

Over 30 GW of power monitored

Over $30 billion of assets under management

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Recent GSolar EPC Projects

Projects Completed

Client	kWP
Solarization of HEIS (Govt. Of Punjab; Jaffer Brothers Drip Irrigation)	4,500
Atlas Honda Limited Sheikhupura	1,000
Towellers Ltd. Karachi	332
Ugoki Metalware Sialkot	218

Projects Signed (In progress)

Client	kWP
Atlas Honda Limited Sheikhupura	5,000
Sialkot International Airport Sialkot	1,000
Pakistan Corrugated Karachi	900
Daewoo Pakistan Lahore, Multan, Islamabad	421
Others	300

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Annexure N

ESSA (Environmental and Social Soundness Assessment)

Executive Summary

Burj DG (Private Limited) intends to develop a 1 MWp (520 kWp in Phase I) rooftop solar photovoltaic (PV) at The Crescent Textile Mills Limited - Hattar Unit. This document presents the results of an initial environmental examination (IEE) analysed for the construction and operation of the proposed Project.

The project will be developed as a rooftop solar plant, connected to the internal grid of the Hattar unit which is one of the industrial units of Crescent Textiles. Conversion of solar panel electrical output from direct current (DC) to alternating current (AC) will be achieved by means of string inverter stations called 'power blocks'.

Description of Environment:

Physical Environment

The climate of Hattar is a humid subtropical climate (Köppen climate classification) with five seasons: Spring (March–April), Summer (May–June), Monsoon (July–September), Autumn (October–November), and Winter (December–February). The hottest month is June, where average highs routinely exceed 38 °C (100.4 °F). The wettest month is July, with heavy rainfall and evening thunderstorms with the possibility of cloudburst. The coolest month is January, with temperatures variable by location. In Hattar, temperatures vary from cold to mild, routinely dropping below zero. In the hills there is sparse snowfall. The weather ranges from a minimum of −3.9 °C (25.0 °F) in January to a maximum of 46.1 °C (115.0 °F) in June. The average low is 2 °C (35.6 °F) in January, while the average high is 38.1 °C (100.6 °F) in June. The highest temperature recorded was 46.5 °C (115.7 °F) in June, while the lowest temperature was −4 °C (24.8 °F) in January. On 23 July 2001, Hattar received a record breaking 620 millimetres (24 in) of rainfall in just 10 hours. It was the heaviest rainfall in 24 hours in Hattar and at any locality in Pakistan during the past 100 years.

Project Environmental Impacts and Mitigation Measures:

This section discusses the potential environmental impacts, assesses the significance, recommends mitigation measures to minimize adverse impacts, and identifies the residual impacts associated with the proposed activities of the project during the construction and operation phase of the proposed project at the proposed site and of secondary actions like potable, raw water and wastewater lines.

Identification of Potential Impacts

In the first step, potential impacts of the project are identified, using professional judgment, published literature on environmental impact of similar projects, environmental guidelines and checklists, and field visits.

- Impact on Occupational health and safety/ Public Health (of contractors, workers and nearby community. It includes safety at work, Fire, explosives, diseases etc)
- Ground water or surface water
- Impact on energy

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- Impact on natural resources
- Impact on aesthetics
- Impact on land use
- Impact on land form
- Impact on soils
- Impact on traffic and transportation
- Noise or vibration
- Air quality (ambient air quality and indoor air quality).
- Solid Waste Management (including domestic waste, construction waste)
- Impact on population
- Impact on utilities and infrastructure
- Socio-economic impact (people, their social, cultural values, and aspirations

Design Phase

Design phase is the phase that is meant for the preparations prior to the construction. During design phase, engineers (meant for construction) will come and visit the site. Necessary preparations will be started for construction. Gantt chart will be prepared. Visits by the engineers and contractors to check the site and structure to be build but there will not be routine or regular visits to the site but once in a week and design phase will last only for a month or so.

Impacts Prediction

Impact on Air

During design phase, air emissions that exceed federal or provincial limits or standards, will not be exceeded because during design phase, there would be lesser visits to the site, lesser would be the atmospheric emissions. And the source of these emissions would be the motor vehicles only (for personal use). There would be no hazardous emissions (e.g. high amount of NOx, SOx and COx) and no objectionable odours as well as alternation of air temperature.

Impact on Ground water/ surface water

There would be no utilization or alteration to the course or flow of water during design phase so there would be no impact on this component of environment.

Impact on Solid Waste

It may create only litter and trash waste (recyclables).

Noise Impact

It will not increase significant amount of noise during design phase of the proposed project and will be within acceptable limits or NEQs.

Impact on Soils

There would be no change in soils and land forms i.e. the construction activity is not going to occur on ground.

Impact on Land forms

Land forms will not change and this component is also having no impacts as there would be no change in ground contours. There are no unique physical features at the site so land forms will not be changed.

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Impact on Land use

The project will have a positive impact on land use but during design phase the land use is not going to be altered, so this impact would be neglected in this phase.

Impact on energy

Design phase is not going to alter or use the energy like electricity, gas, petrol etc. in excessive amount as there will not be routine or regular visits to the site but once or twice in a week and design phase will last only for a month or so.

Impact on transportation and traffic circulation

There will be few additions to the movement of additional vehicles but these will also for once or twice in a week during design phase. In this phase, there is no need for the additional parking facility. This would in turn lead to no traffic hazards.

Impact on natural resources

There won't be any increase in the rate of usage of any natural resource like any minerals, additional fuel for vehicles, oil, construction materials, and natural food products. But there would be increase in the amount of usage of paper for map-making, enlisting items (e.g. types of construction materials to be used), letter writing and receipts (e.g. of billing & quotations), etc.

Impact mitigation

- Try to recycle the paper and prevent throwing it in the ordinary bin.
- Use of computer technology i.e. E-mails instead of focusing on paper
- Lessen the paper use and conserve the natural resources.

Impact on population

This project is not going to disturb or relocate the existing community, so there would be no change in population.

Impact on utilities and infrastructures

There would be no alteration in the existing utilities like communication system, water courses, power transmission lines, electrical wirings, etc due to the project's design phase. There would be no impact on nearby infrastructure e.g. nearby shops/molls, residences, institutes, mosques, communication offices, banks etc. during design phase.

Impact on economy

The economy is having no adverse effects on local or regional income levels, land values, or employment etc. but there will be regional beneficiary impacts on income during design phase of the project in such a way that there will be hiring of consultants, engineers, contractors and labors etc that will increase their income.

Impact on Public health

The design phase will impart no adverse potential health effects to the people. Accidental Risk

Impact on Flora/ Fauna

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There will be no disturbance to the existing flora and fauna of the proposed design phase of the project.

Impact on Aesthetics

No change would result in any scenic vista or aesthetics of the vicinity. No visual or temporary scenic blight during design phase.

Construction Phase

Construction phase is the phase that is meant for the construction by the hired contractor. Contractor responsibility is to bring labors, materials and equipment from suppliers. Then in the next step there will be commencement of the construction, construction vehicles & machines (concrete mixer machine and trolleys) and materials (course aggregate and fine aggregate, cement, bricks) and other equipment and tools (trolleys, cutters, hammers, saws, ladders, screwdrivers, wrenches, steel reinforcement, scaffolding etc.) will be assembled. This section is also focusing the potential impacts (both positive and negative) related to the construction phase along with the mitigation measures stepwise because it is likely that the new construction activities will surely affect the surrounding areas.

Impact on Air

The impact on air of this construction activity will be for short-term i.e. for construction phase only. Therefore, no high violation will be resulted.

Impact on Ground water/ surface water

There would be no drilling and boring holes in the groundwater for the construction activities. There would be no alteration to the course or flow of water during this phase so there would be less impact on this component of environment.

Noise Impact

The project site is located away from residential area. So, noise will not create any harmful impact.

Impact on Soils and landform

There will be change in soil condition. Soil erosion will decrease and it will positively impact by reducing carbon footprints.

Impact on Flora and Fauna

There will be no impact on Flora and Fauna because the construction is being done in an urban area.

Impact on Land use

This is a rooftop project so land use will not be impacted.

Impact on energy

Construction phase is going to use the energy like electricity, petrol or diesel in excessive amount as there will be routine or regular visits to the site (i.e. energy will be used for transport in the form of petrol or diesel) and for moving machinery.

Impact Mitigation

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There will be a minimal impact on the use of energy as this phase is for short term period say e.g. 5-6 months and the only solution is to use these energy resources in conservation mode (i.e. minimize the use but do not misuse like for example, keep turning on the machine even when it is not required.

Impact on transportation and traffic circulation

There will be additions to the movement of additional vehicles during construction phase but there are already existing alternating routes for traffic (street traffic) so no need to define alternating routes and parking facilities.

Impact mitigation

For transportation of the construction equipment, routes and duration must be defined.

Impact on population

This project is not going to disturb or relocate the existing community, so there would be no change in population during this phase as well.

Impact on utilities and infrastructures

There might be little disturbances to the existing utilities like communication system, water courses, power transmission lines, electrical wirings and nearby infrastructure e.g. nearby residences, mosques, communication offices, etc. during construction phase. But that is usually in terms of noise only and easily neglected.

Impact on economy

The economy is having positive impacts on local and regional income levels, land values, & employment in such a way that there will be hiring of consultants, engineers, contractors and labors etc that will increase their income. Therefore, this project will surely enhance socioeconomic welfare e.g. health and employment (of labours, contractors, environmentalists, equipment/ materials suppliers, nearby hotels).

Accidental Risk

There may be accidental risks like falls or slips; cuts or injuries during hammering, sawing and drilling; and electric failure or sudden short circuit during electrocution works. There will be no handling of such chemical, drugs, radiations or explosives during construction phase that leads to catastrophic events or accidents.

Impact mitigation

Trained workers must be hired for construction by the contractors.

First aid team must be assigned by the hospital management to provide aid to the workers during time of emergency.

Impact on Aesthetics

There will be visual, temporary scenic blight during construction phase due to the construction activity but as this will be temporary and only if there is no containment of the construction materials dumping and usage, so it is neglected and predicted that the current project will impart no negative impact on the aesthetics of the area.

Impact mitigation

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Containment or enclosure must be provided around the storage of construction materials.

Impact of Solid Waste

Solid wastes generated from construction include abandoned construction materials. These solid wastes are usually harmless but will affect environmental sanitation of the construction site and cause environmental damage if improperly dumped offsite.

Impact Mitigation

- Implement Solid Waste Management procedure of Burj DG.
- Construction waste must be collected separately with segregation and routinely.
- Multi-compartment collection bins should be installed to facilitate reuse, recycle of this kind of waste i.e. if the construction material is in such form that can be reused or recycled so put separate bins for that and they can either be reused or recycled at the current project or if it is not needed then sell and transport it to the local market in sealed containment.
- The solid wastes must be collected regularly by the solid waste management authority and cleaned up by the contractors in a timely manner.
- The construction activity should be taken place in containment, boundary and limits so that it does not create harm to any person, place or property.

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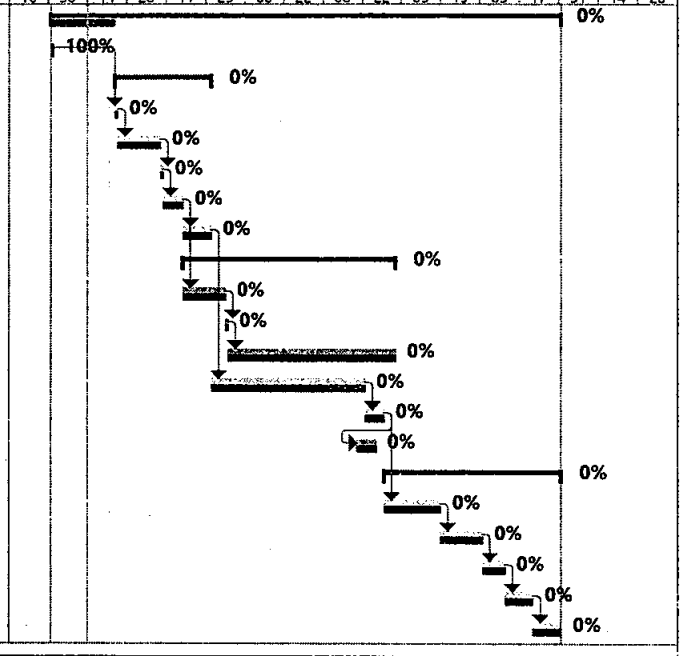
Annexure O

CTM - Timeline V1

ID	Task Name	Duration	Start	Finish
1	**520kWp Project at CTM Hattar**	**182 days**	**Tue 01/12/20**	**Mon 31/05/21**
2	EPA Sign off	1 day	Tue 01/12/20	Tue 01/12/20
3	**Design Finalizations**	**34 days**	**Thu 24/12/20**	**Tue 26/01/21**
4	Site Survey	1 day	Thu 24/12/20	Thu 24/12/20
5	Design Revision	15 days	Fri 25/12/20	Fri 08/01/21
6	Design Submisson	1 day	Sat 09/01/21	Sat 09/01/21
7	Go Ahead from Client	7 days	Sun 10/01/21	Sat 16/01/21
8	EPC and O&M Contract Signing	10 days	Sun 17/01/21	Tue 26/01/21
9	**Generation License (GL)**	**76 days**	**Sun 17/01/21**	**Fri 02/04/21**
10	Consultation with NEPRA & Application Draft	15 days	Sun 17/01/21	Sun 31/01/21
11	Submission of GL Application	1 day	Mon 01/02/21	Mon 01/02/21
12	Approval of GL Application	60 days	Tue 02/02/21	Fri 02/04/21
13	Ordering of Equipment	55 days	Wed 27/01/21	Mon 22/03/21
14	Delivery of Equipment	7 days	Tue 23/03/21	Mon 29/03/21
15	Site Preparation	7 days	Sat 20/03/21	Fri 26/03/21
16	**Installation**	**63 days**	**Tue 30/03/21**	**Mon 31/05/21**
17	Mechanical Structrue Deployment	20 days	Tue 30/03/21	Sun 18/04/21
18	PV Panels and Inverters Installation	15 days	Mon 19/04/21	Mon 03/05/21
19	AC & DC Cabling	8 days	Tue 04/05/21	Tue 11/05/21
20	Remaining BOS completion	10 days	Wed 12/05/21	Fri 21/05/21
21	System Commisioning	10 days	Sat 22/05/21	Mon 31/05/21



Critical	Finish-only	Manual Summary	
Critical Split	Duration-only	Project Summary	
Critical Progress	Baseline	External Tasks	
Task	Baseline Split	External Milestone	◇
Split	Baseline Milestone ◇	Inactive Task	
Task Progress	Milestone ◆	Inactive Milestone	
Manual Task	Summary Progress	Inactive Summary	
Start-only	Summary	Deadline	

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