

FAZAL SOLAR ENERGY

Date: 18th October 2023

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

Subject: Application for Generation License for 1,000. kWp

Dear Sir,

I, Nadeem Ellahi Shaikh Director, being the duly authorized representative of Fazal Solar Energy (Private) Limited by virtue of Board Resolution has to be dated 15 August 2023 hereby apply to National Electric Power Authority for the Grant of Generation License to Fazal Solar Energy(Private) Limited pursuant to section 14B 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, Modification & Cancellation Procedure) Regulations, 2021 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 PKR 504,000/- Rupees Five Hundred four thousand only being the non-refundable license application fee calculated in accordance with Schedule II to the National Electric Power Regulatory Authority Licensing (Application Modification& Cancellation Procedure) Regulations, 2021 is also attached herewith.

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

Director



Fazal Solar Energy

THE GENERATION LICENSE APPLICATION

1. Applicant's Company Profile

1.1. Fazal Solar Energy (Private) Limited (the "Applicant Company"), is registered vide Registration No. 0098132 dated 3, March 2016 under the Companies Act, 2017. The copy of certificate of incorporations 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 Plot 6 Sector 25 Korangi Industrial Area Karachi. The applicant is a specialized company set up by its parent Ali Asghar textile mills (AATML) as a 100% wholly owned subsidiary to set up a solar generation facility for supplying power to Getz pharmaceutical, a BPC.
- 1.3. The Applicant Company is required to submit the annual return to the Registrar of Companies pursuant to section 130(1) of the Companies Act, 2017 on the date of AGM. The 7th AGM of the Applicant Company will be held by the end of October 2023 since June is the first financial year end of the Applicant Company.
- 1.4. The Applicant Company has financial strength to meet with the requirements of the Project due to financial commitment by its parent aatml. The summarized audited financial statements for 2022 & unaudited financial statements of 2023 of the applicant company Fazal Solar energy (Private) Limited and its parent company aatml is presented as **Annexure - C**. The **Cash & Balance Certificate** of Fazal Solar energy (Private) Limited is presented in **Annexure 0**.

1.5. Directors

1.5.1. Mr. Nadeem Ellahi

1.5.2. Mr. Naveed Ellahi

1.6. Auditors

Sajid and Co Chartered Accountants are the statutory auditors of the Applicant Company.

1.7. Form 2

Form 2 of the company is attached herewith as **Annexure — D**.

1.8. The	Designation
Nadeem Ellahi	CEO
Naveed Ellahi	Director

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

1.9.1. Naveed Ellahi . Experienced Director with a demonstrated history of working in the textile industry and financial sector for 25 years . He graduated from Boston University Massachusett, USA with a BA in finance IN 1994. He is a strong business development professional skilled in Business Planning, Analytical Skills, Risk Management, Managerial Finance, and Entrepreneurship.

1.9.2. Nadeem Ellahi .The CEO of Fazal Solar Energy (Pvt) Limited and the parent company aatml has 26 year of experience running industry and setting up power plants. He Setup a 2MW Gas Fired power plant compromising of Caterpillar generators in 2004 He graduated from Boston University with a BBA in finance – economics in 1994. He has lead aatml in various business endeavours and negotiations with banks and other financial institutions

1.10. The curriculum vitae of key personnel are given in **Annexure .E** while the profile showing Experience of the Applicant Company and its parent is attached as **Annexure .F**.

Annexure E
Plant Manager

Ghulam Abbas started his career at allied engineering as their resident power plant Manager for their nooriabad fleet. He joined Ali Asghar textile mills in 2003 as General Manager Power house and under his watch he set up a 2 MW power house with gas fired generators based on caterpillar USA. IN 2022 he set up a 245kw solar power plant based on jinko P type panels at Ali Asghar textile mills. He and his team take care of all the Maintance of inverters, panels and their periodic cleaning. He will be assisted by a team of five electric operators who have five years of actual experience.

Technical Team

Mohmmad Ali

Electrician with a diploma from Pak Swedish council. Has 2 year experience in monitoring and cleaning of solar power plant at aatml.

Zubair Ali

Electrician with 5 year of experience in generator trouble shooting and electrical systems

2. Rationale& Business Model

2.1. Rationale

- 2.1.1. It is a common knowledge that availability of electricity in any country has direct effect on its economic and social factors and therefore, in order to measure the affluence of a society, the per capita energy consumption is used as an index to determine its energy sufficiency.
- 2.1.2. Pakistan is a country where more than 144 million people have unreliable power, and the rest have no electricity connection at all. Pakistan's cost of electricity is one of the highest in the region at 12.56 cents per unit as opposed to comparable nations such as Bangladesh and Vietnam where the rate is 5.49 or 6.89 cents per unit respectively.
- 2.1.3. Although Pakistan has set up natural gas plants recently, a large part of these are based on imported LNG which is expensive. In these circumstances, the use of solar power in Pakistan is quite an attractive alternative mode of generation of electric power. Further, its use does not require refining, transporting and conveying fuels and power over long distances. Moreover, solar power does not 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, industrial and 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 Facilities at sites of the generation facilities.
- 2.2.3. The Applicant Company shall provide product of the Generation Facility 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 the generation facility on roof top space owned by getz pharma through long term lease and understands that the activity of generation and sale of electricity shall take place within the same premises without crossing any other public property or requiring the use of transmission or distribution lines.
- 2.2.5. The electricity generated through the Generation Facility 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 distribution system of a utility company.
- 2.2.6. The electricity generated through the Generation Facility of the Applicant Company shall be less than the total demand of the Buyer hence it will not be a replacement for the relevant utility company but only a partial augmentation.

3. Technical Overview

3.1. Technology

- 3.1.1. The electricity shall be generated by use of PV Panels to be installed at the premises of the Buyer and will be supplied directly to the Distribution Panel of the Buyer(s).
- 3.1.2. The Solar PV system will operate in grid interactive / grid tied mode. The grid-tie inverter will be used that will convert direct current (DC) electricity into alternating current (AC) with built in ability to synchronize with a utility line to supplement the electricity required by the buyer from the distribution company.
- 3.1.3. Grid-tie inverters are also designed to quickly disconnect from the grid if the utility grid will go down and it will ensure that in the event of interruption of electricity from utility, the grid tie inverter will shut down to prevent the energy flow back in the distribution system of the utility. Grid interactive system will supplement utility supplied energy to building or facility.
- 3.1.4. The PV System output will be designed in a manner that it will always be less than the Premises load and there will be no export to the utility company's grid.

Arrangement, then the Applicant Company, on behalf of the Buyer, may provide requisite services.

- 3.1.6. The PV Panels shall convert the solar irradiation into DC electricity and by using inverters; DC supply will be converted into AC supply of 220/400 Volts. In the process, the Applicant will use equipment including:

- PV Modules including structure for their installation;
- Inverters
- Surge arrestors
- PV / AC Electrical Board
- Main Distribution Panel
- Safety & Protection devices (Automatic with manual override)
- Wires
- Breakers
- Meters
- Online monitoring devices / data loggers for remote sensing and monitoring
- Internet access devices / connects
- Water taps for panels washing
- Aluminum Structure / Hot Dipped Galvanized Steel Structure
- Screws, **Nuts/Bolts**

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

3.1.7. The configuration, technology, model, technical details and design of the Generation Facility to be acquired, constructed, developed and installed at the site shall be on a standard module but may have slight variations in installation on case to case basis. However, a general overview (on the basis of a model site) has been provided in **Annexure G** (Equipment and Technical Details) and supplemented by the **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 Facility of the Applicant Company to the Buyer.

3.2. Capacity

3.1.1. The Applicant will deploy solar PV facilities totaling 1000kWp at **generation site** which means all the parcel of land and buildings and rooftop located at plot 1, and 6 korangi industrial area, Sector No. 25, Korangi Karachi The will be referred to as "**generation site**" in the application

3.1.1. The Generation Facility to be offered by the Applicant Company shall be at the generation site. The Applicant Company does not require purchasing or acquiring a particular site. Moreover, since the electricity generated by the Generation Facility 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 to

site as required under the provisions of NEPRA Licensing (Application, Modification and Cancellation Procedure) Regulations, 2021 is not relevant in this case.

However, the initial site (the Model Site) is at plot 1 and 6 sector 25 Korangi Industrial Area, Karachi, Sindh, Pakistan.
3.1.2. Latitude: 24°50'19.9"N Longitude: 67°08'11.4"E

3.4. Interconnection

Since the Generation Facility of the Applicant Company shall be installed at the generation site and shall provide electricity to that premises in order to supplement the electricity requirement of the Buyer. The Applicant Company shall deliver electricity to the Buyer's distribution box/panel at buyer LT panel

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 Facility 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 Facility Installed at the generation site.

3.7. Environmental

The Generation Facility by the Applicant, as visualized, will be without emissions and chemical usages; rather, shall be close to natural environment therefore may not involve environmental hazards. 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 a single site of the consumer who will mainly be in Urban areas where there is little natural flora or fauna to be Affected hence a IEE is not required. 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. Refer to **Annexure N** for Environmental & Social Soundness Assessment (ESSA).

3.8. Monitoring Facilities

The Applicant shall develop, install and maintain a remote monitoring facility at its premises for overall monitoring of the Generation Facility to be installed at site. The Applicant will hire trained staff to carry out maintenance activities on the installed facility at the Buyer's site. 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**.

3.9. Eligible Site / Buyer

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

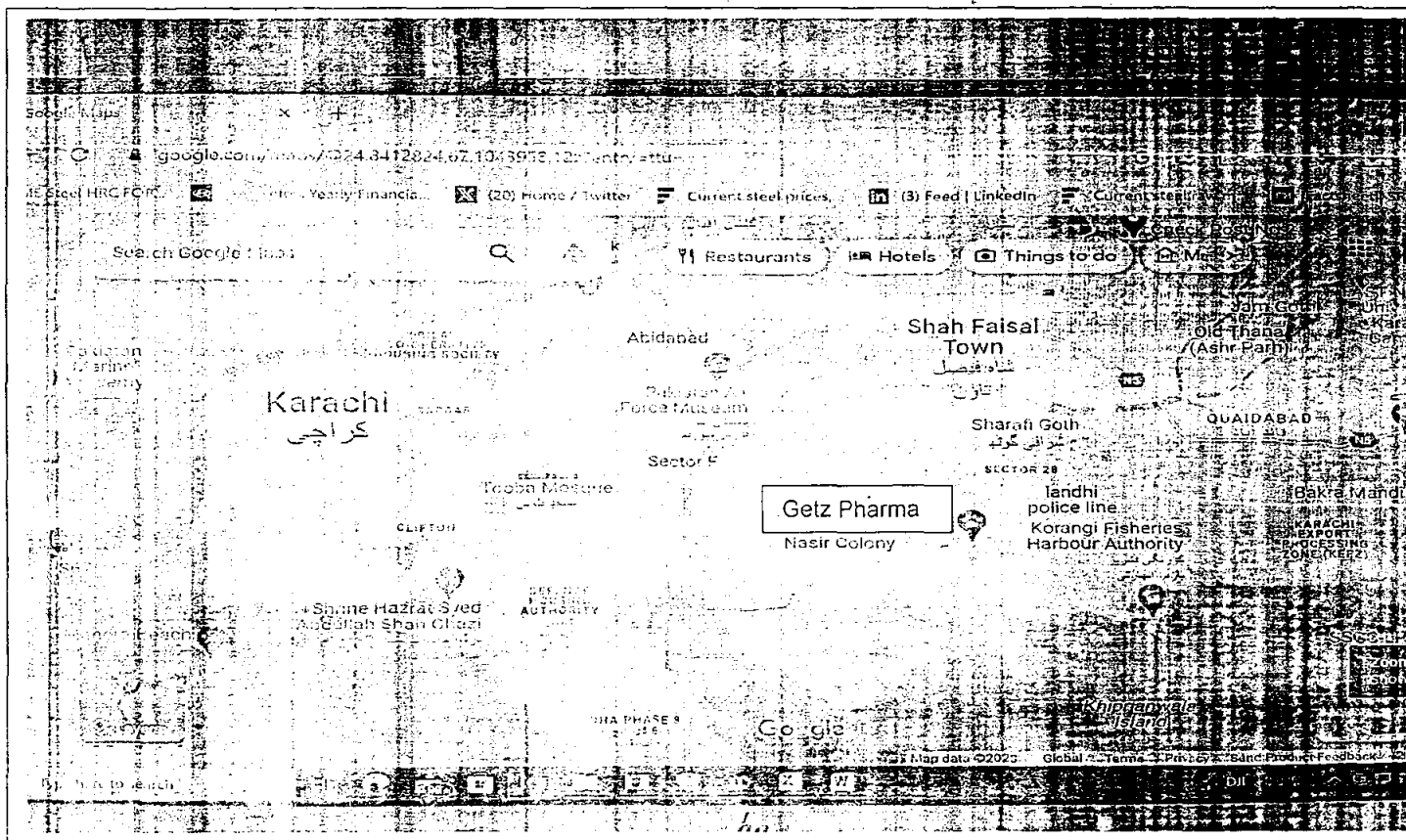
- Generation Facility to be setup should be within the generation site

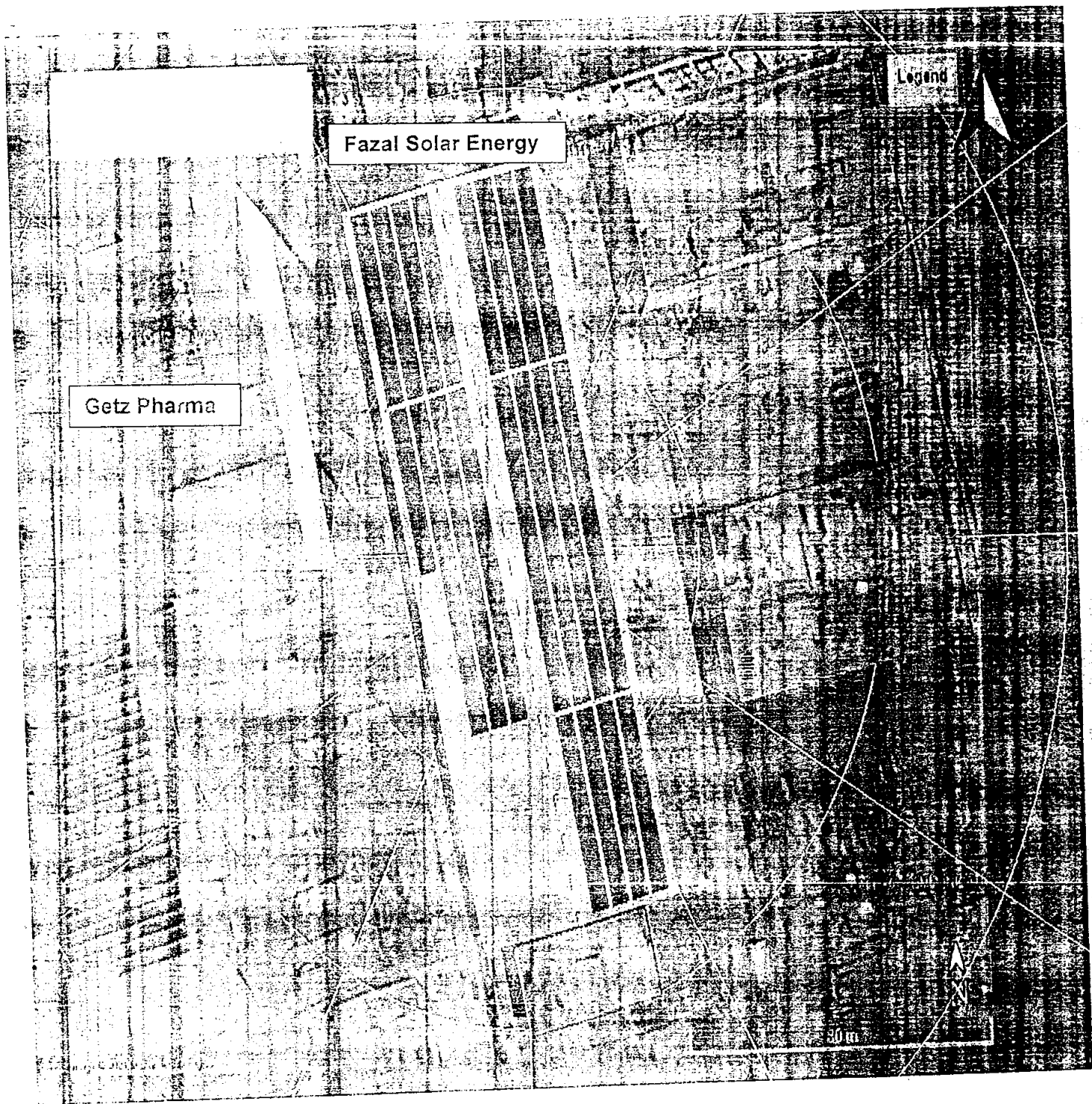
- Electricity generated through the Generation Facility should not be provided to any premises other than the generation site
- Electricity from the Generation Facility should be in addition and supplemental to the electricity being obtained from the electric utility company
- Interconnection point should be within the premises/site where the Generation Facility is installed
- Generation Facility installed should ensure no back flow of electricity to the distribution system of the utility
- 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
- The buyer should not be a defaulter of dues of electricity obtained from electric utility company

3.10. Site Description

1	Name of Licensee	Fazal Solar Energy (Private) Limited
2	Registered/Business	Plot #6 Sector 25 Korangi Industrial Area Karachi.
3	Plant Location	Korangi Industrial Area Karachi, Sindh, Pakistan
4	Type of Generation	Solar Photovoltaic (PV)
5	Type of Technology	Photovoltaic (PV) Cell
6	System Type	Rooftop Solar
7	Plant Capacity	1,000.0kWp
8	Buyer of 100% of the KW/Units Produced	Getz Pharma (Pvt) Limited

3.11. Google Image of the Site





4. Financial Overview

4.1. Capital Cost

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

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 Facility.

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 Facility of 1000.0kWp 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\$0.543 / Wp(PKR/USD rate of 300). This cost does not include cost of land as facility shall be installed at the generation site on Pre owned land .

Description	USD/Wp
E PC Cost	
• Panels/Inverters/Ms/DC & AC Cables/Freight/Clearing Charge	
• HDG Steel/Aluminum Structure	
• Installation Cost	0.527
Insurance during construction	0.001
Nepra fees and lawyers	0.005
Administrative and Development Costs	0.010
Total Costs	0.543

4.1.6. The applicant will deploy its projects in Single phase, with total of 1,000.0kWp and will be financed in ratio of 30-70debt equity ratio.

5. Profile of Subcontractor

5.1. Reputed contractor has been selected for the construction of the project and their name is Adaptive Technologies Pvt Limited. Their profile is attached as **Annexure L**.

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 generation site 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 hence a IEE is not required. 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 M**.

7. Project Timelines (Annexure N)

The project timelines are added in Gantt Chart form as Annexure N.

	Days	Expected date
Contract signing	01	September 2023
Approval of drawing	07	
Submission at Nepra	10	October 2023
Processing at Nepra	120	February 2024
Procurement phase	60	March 2024
Installation	90	May 2024
Commissioning	30	June 2024

8. Proof of Funds

Cash and Balance Certificate of Company is attached as Annexure 0. And parent's letter of commitment is also attached

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 Facility) for which the Application for grant of Generation License is being submitted before the Authority in terms of Section 14B of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 read with the relevant Rules and Regulations.
- 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 Fazal Solar Energy (Private) Limited for generation of 1,000kWp through Solar PV Modules, of the prospective buyer who are eligible in terms of the criteria and parameters mentioned above in this application

Fazal Solar Annexure		
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ANNEXURE A



A008341

SECURITIES AND EXCHANGE COMMISSION OF PAKISTAN

COMPANY REGISTRATION OFFICE, KARACHI

CERTIFICATE OF INCORPORATION

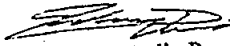
[Under section 32 of the Companies Ordinance, 1984 (XLVII of 1984)]

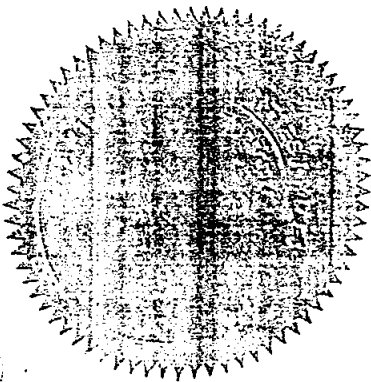
Corporate Universal Identification No. 0098132

I hereby certify that FAZAL SOLAR ENERGY (PVT.) LIMITED is this day incorporated under the Companies Ordinance, 1984 (XLVII of 1984) and that the company is limited by shares.

Given under my hand at Karachi this Third day of March, Two Thousand and Sixteen.

Incorporation fee Rs. 7,000/= only


(Sidney Custodio Pereira)
Additional Registrar of Companies
Karachi



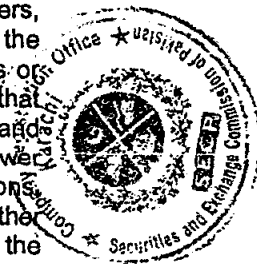
Annexure B

Memorandum

**THE COMPANIES ORDINANCE, 1984
(PRIVATE COMPANY LIMITED BY SHARES)**

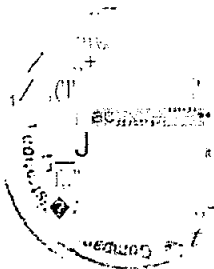
**Memorandum of Association of
FAZAL SOLAR ENERGY (PRIVATE) LIMITED**

- I. The name of the Company shall be "FAZAL SOLAR ENERGY (PRIVATE) LIMITED".
- II. The Registered Office of the Company shall be situated in the Province of Sindh, in the Islamic Republic of Pakistan.
- III. The objects for which the Company is established are all or any one or more of the following:-
 1. To carry on, primarily, the business of power generation, as independent power producer of thermal, hydel, nuclear, solar, wind, steam, and/or any other alternative / renewable energy sources, and bio-energy.
 2. To generate, produce and sell power to utility companies, power distribution networks and organizations in the power sector, within and outside the country.
 3. To set up, operate and manage one or more Power Plants in order to generate, sell and supply electricity to industrial and other consumers, through distribution networks established owned and operated by the company itself or by any other person corporate body, autonomous or semiautonomous corporation or authority or local body, and for that purpose to acquire land, whether freehold or leasehold, machinery and equipment, and construct, install, operate and maintain thereon power houses, civil and mechanical works and structures, grid stations, transmission towers, power lines, buildings, workshops and other facilities as may from time to time be necessary for the attainment of the objects of the company.
 4. To take over, acquire, renew, unitize and hold any exploration, prospecting, development and production concessions of whatever nature or otherwise acquire any estate or interest, develop resources of work, dispose of or otherwise turn to account land or sea beds in from, and to search for or participate in the exploration for petroleum or any other oil in any from, asphalt, bitumen or similar substances, or natural gas, or any substance, used, or which may be capable of use, and to organize, equip and employ expeditions, experts and other agents and to carry out drilling and other exploratory operations, and to establish, and operate oil and gas wells and other undertakings to estimate the reserves of oil and gas and for the extraction of any of the aforesaid substances.
 5. To produce, refine, sell, supply, market, distribute, transport and otherwise dispose of crude oil, condensate LPG, NGL and Natural Gas



mentioned in this Memorandum for domestic, commercial or industrial uses or for lighting, heating power generation or any other purpose whatsoever.

6. To carry out construction, installation, erection of hydel, Steam, thernal, nuclear, geothermal power station, solar energy projects and wind farms.
7. To undertake business in the areas relating to hydel, thermal, solar, energy & wind power installations, controls, protection, communication and instrumentation system for power plants, substations, industrial installation and pumping compressor stations, energy conversation system.
8. To offer and to engage in supply, implementation and installation of EHV and HV transmission lines, medium and low voltage overhead and underground distributions network, high voltage underground cables, and low voltage AC and DC installations, rectifier, capacitor installations and consumer services.
9. To carry out complete electrification of industrial units, municipal electrifications, seaport and airport lighting systems, cathode and lightning protection installation.



To act as contractor, sub-contractors, advisors, designers, supervisors, purchasers, project managers with regards, to turnkey construction, development, improvement of Hydel, Wind, Steam, thermal and Nuclear Power Stations, Grid-stations, Transmission and Distribution Lines, Civil Works and work of every description connected with power related ss ctor in general, and to act as contractors, agents, estimators, evaluators, appraisers, surveyors other than Insurance surveyors for any other electrical and mechanical work of any kind, whatsoever, anywhere in the world, subject to the approval of authority.

11. To act as electrical/mechanical/civil work contractors to local and foreign Governments, agencies other than managing agency authorities, municipalities, autonomous corporations, private and public companies in power sector.
12. To represent deal and trade in all kind of power and energy related plants, turbines, equipments, products, cables, termination equipment, tools, accessories, technologies and services.
13. To apply for and obtain necessary consents, permissions and licenses from relevant government, state, local and other authorities for enabling the Company to carry on any of its objects into effect as and when required by law.
14. To enter into any arrangements or agreements with any authorities, Central or any Provincial Government, Municipal, Local or otherwise and to obtain from any such authority any rights, privileges, rebates, licenses, Permits and concessions which the Company may consider desirable to

obtain and to carry out exercise and comply with such arrangements, agreements, rights, privileges, rebates and concessions.

15. To manufacture construct, equip, maintain, erect, lay, repair, alter remove pressure control, metering stations, gas works and works connected therewith, with all necessary machinery and apparatus, pipes, mains meters, conduits, services pipes, lamps posts, and other materials and apparatus for supplying gas for heating, motive power, industrial, commercial, domestic, pre-stressed concrete products, structures, beam, pillars, girders and structural materials to be used in the building of power plants and to carry out civil work for the construction of power plants and any other purpose whatsoever.
16. To construct, erect, equip, maintain, improve and work or aid in, contribute or subscribe to the construction, erection, equipment, maintenance, improvement and working of any railways, tramways, piers, jetties, wharves, docks, roads, canals, waterways, waterworks, reservoir tanks storage installations, pipe-lines, mills, factories, refineries, laboratories, electric works, gasworks, hydraulic and other works, telegraphs, telephones, plant, machinery, appliances, dwelling houses and other buildings.
17. To acquire, work and dispose of, and deal in any mines, metals, minerals, clay and other like substances and to acquire, refine, prepare, for market, produce, manufacture, deal in or otherwise turn to account any mineral, animal or vegetable substances or products.
18. To carry on the business of estimation, drawing up of specifications of works relating to mechanical and electrical engineering.
19. To carry on the business of electrical engineers, electricians, engineers, contractors, consultants, agents and manufacturers of electrical plant, machinery, equipment and apparatus, and of generating, producing and supply light, heat, sound and power by electricity, galvanism, magnetism or otherwise, suppliers of electricity whether for the purpose of light, heat, motive power, telephonic, telegraphic, industrial or other purposes and generally to install, execute, provide, work and maintain all necessary plant, machinery, equipment, cables, wires, accumulators, lamps exchange's, telephones and apparatus.
20. To carry on the work of heavy steel fabrication for power plants transmission lines and other steel structures within the scope of the object of the Company.
21. To undertake engineering, design, erection, installation testing / commissioning and maintenance of electrical power, communication and mechanical works as well as certain civil engineering and environmental projects related to power based industry.
22. To purchase or otherwise acquire, produce, manufacture, refine, treat, purify, blend, reduce, distill, store, transport, market, distribute, supply, sell and otherwise dispose of and generally trade in any and all kinds of

petroleum and petroleum products, oils, gas, hydrocarbons, petrochemicals, asphalt, bituminous substances and the products and by-products which may be derived, produced, repaired, developed, compounded, made or manufactured there from and or acquire and take over the running or likely to be running business of alike nature with or without assets, liabilities, rights, privileges, goodwill, registration, trade mark, import and export registration, or any other facilities.

23. To carry on the business of oil and petroleum, fabricate, contract, erect, lay, and manufacturers of plant, machinery and apparatus for oil and petroleum, gas and chemical installations and to purchase or otherwise acquire, produce, manufacture, refine, treat, purify, blend, reduce, distil, store, transport, market, distribute, supply, sell and otherwise dispose off and generally trade in any and all kinds of petroleum and petroleum products.

24. To buy, sell, manufacture, repair, alter, improve, or otherwise treat, exchange, hire, let-out on hire, import, export and deal in all works, plant, machinery, tools, engines, tanks, cylinders, valves, regulators, testing equipment, tools, utensils, appliances, equipment, stoves, heaters, apparatus, utensils, substances, raw materials, chemicals, natural gas, liquefied petroleum gas, fuel oil, coal, lubricants, articles and things and to manufacture, experiment with render marketable and deal in all products, appliances, equipment, apparatus, products, materials, substances, articles and things capable of being used in any such business as aforesaid or required by any customers of, or persons having dealing with the Company, or any such other company or body as herein mentioned, or commonly dealt in by, persons engaged in any such business, or which may seem capable of being profitably dealt with in connection with any of the said business and to manufacture, experiment with, render marketable and otherwise treat and deal in all Products and residual and bye-products incidental to, or obtained, or capable of being made use of, in any of the business carried on by the Company or any such other company or body herein mentioned.

25. To carry on the business as petroleum engineers, providing consultancy services, preparation of feasibilities for all sorts of petroleum related industries and to manufacture, buy, sell, import, export and to deal in all sorts of oil field equipments.

26. To refine, process, formulate, produce, buy, sell, export, import, indent or otherwise deal in all types of chemicals, petrochemicals and petroleum industry or any material used or capable of being used in the petrochemical industry, industrial chemicals or any mixtures, derivatives and compounds thereof.

27. To set up, install, erect, establish, run, control, manage and operate an industrial undertaking for the manufacture, production, formulation and blending of lubricating oils any where in Pakistan:

28. To own prospect for, explore, acquire by lease, license or otherwise, open work, develop and maintain natural deposits of gas, petroleum and

other mineral and chemical substances of all kinds and to carry on and conduct the business of working, obtaining and supplying to other persons such gas, oil, petroleum, and other substances.

29. To buy, import, export, indent, stock, contract, tender, distribute, acquire, secure and grant agency, other than managing agency, distribution rights, representations and trade in or deal in any manner in gases of all kinds and gas plant, machinery, instruments, implements, appliances, equipments, tools, dies, presses and apparatus.
30. To carry on the business of contractors, suppliers and manufacturers of gas regulators and component parts of gas appliances and all other buildings and works, meters, pipes fittings, machinery, apparatus, convenient or necessary for the purposes of the Company, and connection with power generating plant for the generation of electric power and or in connection with supply, transmission and distribution of electric power.
31. To manufacture, sell, deal in, let for hire, fix, repair and remove natural gas apparatus, appliances and fittings, engines, meters, indices, apparatus for testing and measurement, stoves, cookers, gassings, ranges, pipes, mains for lighting, heating, motive power, ventilating, cooking, refrigerating or any other purpose.
32. To carry on the business of natural gas engineers, contractors, agents, manufacturers of plant, machinery, gas apparatus and works for the sale, supply, distribution, storage, use, regulation and measurement of gas.
33. To carry on all or any of the business of storing, transporting, transmitting, distributing, supplying and exporting natural gas for lighting, heating, motive power, generation of electricity, or any other purpose whatsoever.
34. To establish, provide, maintain and conduct or otherwise subsidize research laboratories and experimental workshops for scientific and technical research, experiments and tests of all kinds; and to promote studies and research, both scientific and technical investigations and inventions by providing, subsidizing, endowing or assisting laboratories workshops, libraries, lectures, meetings and conferences and by providing or contributing to the scientific or technical professors or teachers and by providing or contributing to the award of scholarships, prizes, grants to studies or otherwise and generally to encourage, promote and reward studies, researches, investigations, experiments, tests, and inventions of any kind that may be considered likely to assist any business which the Company is authorized to carry on.
35. To carry on in all or any of the branches of the Company all or any of the business of dealers in natural gas and any component, constituent, product or bye-product thereof, wharfingers, merchants, carriers, shipowners and charterers, lightermen, berge owners, factors and brokers and all other kind business usually carried on by gas companies

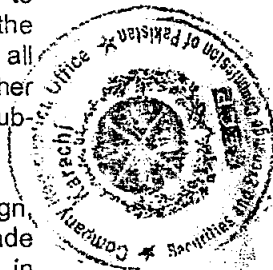


and to treat and turn to account in any manner whatsoever natural gas or any component, constituent, product or bye-product thereof.

36. To carry on business and obtain licenses for shipping agents, clearing and forwarding agents, purchasing and indenting agents, selling agents, (except managing agent) on such terms and conditions as the Company may think proper, subject to any permission as required under the law.
37. To carry on and undertake trading business of all sorts and to act as indenters, importers, exporters, traders, suppliers, and commission agents of products, commodities and materials in any form or shape manufactured or supplied by any company, firm, association of persons, body, incorporated, individuals, Government, Semi- Government or any local authority.
38. To apply for, tender, offer, accept, purchase or otherwise acquire any contracts and concessions for or in relation to the projection, execution, carrying out, improvements, management, administration or control of works and conveniences and undertake, execute, carry out, dispose of or otherwise turn to account the same.
39. To carry on the business of general order suppliers including Government, Semi-Government Agencies, Armed Forces, Army, Military or Defence and to act as commission agents, indenters, traders, general merchants, wholesalers, retailers, dealers, distributors, stockists in any goods or products or within the scope of the object of the Company and subject to any permission required under the law.
40. To carry on in or outside Pakistan the business of manufacturers, importers, exporters, indenters, transporters, dealers in all articles and commodities akin to or connected with any of the business of the Company capable of being conveniently carried on or necessary for the promotion of the objects herein contained, as permissible under law.
41. To invest and deal, from time to time, with the surplus moneys of the Company not required for its main business in any manner and in particular to accumulate funds or to acquire or to take by subscription absolute or conditional, purchase or otherwise howsoever and to hold, and dispose of shares and other securities of any other company, association, undertaking in Pakistan or abroad.
42. To invest and deal with the moneys of the Company in such new projects, companies, works and research as may be directed by the Government of Pakistan.
43. To carry on agency business (except managing agency) and to acquire and hold selling agencies and to act as selling agents, commission agents, but not to act as insurance agents insurance brokers managing agents and stock brokers manufacturers' representatives and distributing agents of and for the distribution of all kinds of merchandise, goods, commodities, products, materials, substances, articles and things whether finished, semi-

finished, raw, under process, refined, treated or otherwise pertaining to trade and commerce and for that purpose to remunerate them and to open and maintain depots and branches.

44. To purchase, take on lease or in exchange, hire, apply for or otherwise acquire and hold for any interest, any rights, privileges, lands, building, easements, trade marks, patents, patent rights, copyrights, licenses, machinery, plants, stock-in-trade and any movable and immovable property of any kind necessary or convenient for the purposes of or in connection with the Company's business or any branch or department thereof and to use, exercise, develop, grant licenses in respect of or otherwise turn to account any property, rights and information so acquired, subject to any permission required under the law.
45. To acquire by concession, grant, purchase, barter, license either absolutely or conditionally and either solely or jointly with others any lands, buildings, machinery, plants, equipments, privileges, rights, licenses, trade marks, patents, and other movable and immovable property of any description which the Company may deem necessary or which may seem to the Company capable of being turned to account, subject to any permission as required under the law.
46. To act as representatives, for any person, firm or company and to undertake and perform sub-contracts, and also act in the business of the Company through or by means of agents, sub-contractors and to do all or any of the things mentioned herein in any part of the world and either alone or in collaboration with others and by or through agents, sub-contractors or otherwise.
47. To go in for, buy or otherwise acquire and use any patent design, copyright, license, concession, convenience, innovation, invention, trade marks, rights, privileges, plants, tools or machinery and the like in Pakistan or elsewhere, which may for the time being appear to be useful or valuable for adding to the efficiency or productivity of the Company's permissible under the law.
48. To acquire and carry on all or any part of the business or property and to undertake any liabilities of any person, firm, association or company's possession of property suitable for any of the purposes of the Company or carrying on any business which this Company is authorized to carry on and in consideration for the same, to pay cash or to issue shares of the Company.
49. To purchase, build, charter, affreight, hire and let out for hire or for chartering and affreightment, and otherwise to obtain the possession of, and use, operate and dispose of, and employ or turn to an account ships, lighters, barges, tugs, launches, boats and vessels of all kinds (including tankers and tank vessels), marine equipment, automobiles, lorries, motor trucks and tractors, airplanes, locomotives, wagons, tanks, cars and other rolling stock and otherwise to provide for and employ the same in the conveyance of petroleum and other minerals, movable properties and merchandise of all kinds, and the transportation of

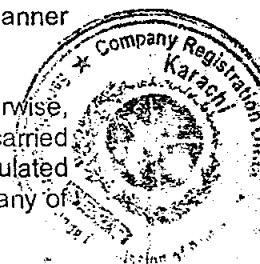


personnel, employees, customers and visitors and to purchase or otherwise acquire any shares or interests in any ships or vessels, airplanes, railways, motor transportation, or in any companies, possessed of or interested in any ships, vessels, airplanes, railways and motor transportation.

50. To enter into partnership, to amalgamate or merge movable with immovable and / or to buy on all interests, assets, liabilities, stocks or to make any arrangement for sharing profits, union of interests, co-operation, joint-venture, reciprocal concession or otherwise with any person, firm or company carrying on or proposing to carry on any business which this Company is authorized to carry on or which is capable of being conducted so as directly or indirectly to benefit this Company and to have foreign collaborations and to pay royalties / technical fees to collaborators, subject to the provisions of the Companies Ordinance, 1984.
51. To establish, promote or assist in establishing or promoting and subscribe to or become a member of any other company, association or club whose objects are similar or in part similar to the objects of this Company or the establishment or promotion of which may be beneficial to the Company, as permissible under the law.
52. To open accounts with any Bank or Banks and to draw, make, accept, endorse, execute, issue, negotiate and discount cheques, promissory notes, bills of exchange, bills of lading, warrants, deposit notes, debentures, letter of credit and other negotiable instruments and securities.
53. To arrange local and foreign currency loans from scheduled banks, industrial banks and financial institutions for the purpose of purchase, manufacture, market, supply, export and import of machinery, construction of factory, building and for the purpose of working capital or for any other purpose.
54. To sell or otherwise dispose of the whole or any part of the undertaking of the Company, either together or in portions for such consideration as the Company may think fit and in particular, for shares, debenture stock or securities of any Company purchasing the same.
55. To borrow money by means of loans or other legal arrangements from banks or other financial institutions, or Directors in such manner as the Company may think fit and in particular by issue of debentures, debenture stock, perpetual or otherwise convertible into shares and to mortgage, or charge the whole or any part of the property or assets of the Company, present or future, by special assignment or to transfer or convey the same absolutely or in trust as may seem expedient and to, purchase, redeem or payoff any such securities.
56. To pay all costs, charges, and expenses preliminary or incidental incurred in formation or about the promotion and establishment of the Company and to remunerate any person, firm or company for services

rendered or to be rendered in or about the formation or promotion of the Company or the conduct of its business.

57. To remunerate any person, firm or company rendering services to this Company, under a contract of employment, management or otherwise, whether by the payment of cash or by the allotment of shares or securities of the Company, during the continuation of such services, the furtherance thereof, or termination of such services howsoever.
58. To give any servant or employee of the Company commission in the profits of the Company's business or any branch thereof and for the purpose to enter into any agreement or scheme of arrangement as the Company may deem fit and to procure any servants or employees of the Company to be insured against risk of accident in the course of their employment by the Company.
59. To establish and support or aid in the establishment and support of associations, institutions, funds and conveniences calculated to benefit persons who are or have been Directors of or who have been employed by or who are serving or have served the Company or any other Company which is a subsidiary or associate of the Company or the dependents or connection of such persons and to grant pensions, gratuities, allowances, relief and payments in any other manner calculated to benefit the persons described herein.
60. To carry on any other business, whether manufacturing or otherwise, which may seem to the Company capable of being conveniently carried on in connection with any of the objects specified herein, or calculated directly or indirectly to enhance the value of, or render profitable, any of the Company's property or rights.
61. To distribute any of the Company's property and assets among the members in specie or in any manner whatsoever in case of winding up of the Company.
62. To guarantee the performance of contract and obligations of the Company in relation to the payment of any loan, debenture-stock, bonds, obligations or securities issued by or in favor of the Company and to guarantee the payment or return on such investments.
63. To carry out joint venture agreements with other companies or countries within the scope of the objects of the Company.
64. To cause the Company to be registered or recognized in any foreign country.
65. To do and perform all other acts and things as are incidental or conducive to the attainment of the above objects or any of them.
66. To accept, design, display, publish, transmit, distribute or reproduce in any form whatsoever, advertisements and publicity and promotional material of the Company; to acquire, dispose of, and use advertising



and space in any media, to develop, produce and undertake advertising, publicity and promotional campaigns and competitions for itself; to undertake, promote and sponsor any product, service event, individual or publications which in the opinion of the Company will promote, advance or publicize any activity of the Company; and generally to carry on the business of advertising, public relations and publicity consultants and agents, but not to indulge into business of radio and television broadcasting/ transmission.

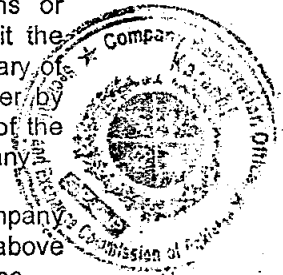
67. To accept securities of any person or any property or interest therein of whatsoever nature, in payment or part payment for any services rendered, or for any sale or supply made to, or debt owing from, any such person.
68. To represent persons at meetings of local, national and international organizations, and bodies concerned with business activities connected or associated with any of the business of the company, to provide services of all kinds to such organizations and bodies and to negotiate and enter into national and international agreements, and standards relating to matters of concern or interest of the company or persons represented by, or having dealings with the company.
69. To borrow money or secure or discharge any debt or obligation of the Company in such manner as may be thought fit by the Company and in particular, but without prejudice to securities of any kind or mortgages or charges (fixed or floating), founded or based upon all or any part of the undertaking, property, assets and rights (present and future) of the Company, or without any such security and upon such terms as to priority or otherwise as the Company shall think fit, and to receive money on deposit and advance payments with or without allowance of interest thereon, subject to the conditions/restrictions imposed under any law.
70. To apply for purchase or otherwise acquire any patents, patent rights, brevets d'invention, licenses, secret marks, commercial names and designs, copyrights, trade marks, service licenses, concessions, and the like, conferring any exclusive or non-exclusive or limited right to use, or any secret or other information as to any invention which may seem capable of being used for any of the purposes of the Company, or the acquisition of which may seem calculated directly or indirectly to benefit the Company, and to use, exercise, develop, or grant licenses in respect of, or otherwise turn to account the property, rights or information so acquired as permissible under law.
71. To carry out joint venture agreements, with other companies or countries within the scope of the objects of the Company.
72. To distribute any of the property of the Company in specie among the members in the event of winding up or otherwise.
73. To open any current, overdraft, cash credit account, fixed account with any banker.

74. To adopt such means of making known the business and/ or services of the Company as may seem expedient and in particular by advertising in the press, or in the other media or by of participation in exhibitions.
75. To employ or appoint any persons, experts, consultants, advisers other than financial adviser, contractors (including O & M contractors), brokers other than insurance brokers and stock brokers in connection with the business of the Company.
76. To employ and remunerate officials and servants of the Company, or any person or firm or company rendering services to the Company.
77. To provide engineering, construction, consultancy and design services and radio and other communication systems and services, and any facilities, equipment and installations whether related to such services and systems or otherwise.
78. To create any reserve fund, sinking fund, insurance fund, or any other special fund, whether for depreciation or for repairing, insuring, improving, extending or maintaining any of the property of the Company, or for any other purpose conducive to the interests of the s;ompany.
79. To capitalize such portion of the profits of the Company as are not distributed among shareholders of the Company in the form of dividends, and as the directors of the Company may think fit and to issue bo us shares, as fully paid up, in favor of the shareholders of the Company.
80. To advance, lease or deposit money to any person with or without t] g 'J...-r... any security therefore and upon such other terms as may be thou : I by the company, but only in furtherance of objects of the company.' - e:\
81. To insure any property, asset, matter or interest and againstQy... potential liability or loss of the company or of any other person and tR'e% J -¥... life or health of any person for the benefit of the company.
82. To apply for, secure, a.cquire by grant, legislative enactment, assignment, transfer, purchase or otherwise, and to exercise, carry out and enjoy any license, and to exercise, carry out and enjoy any license, franchise, concession, right, privilege, authority, grant; and to pay for, aid in, and contribute towards carrying, the same into effect and do all things required of the company there under.
83. To apply for, promote and obtain (alone or with others) under any statue order, by-law, charter, rule, regulation or other authorization or enactment which may seem calculated, directly or indirectly, or benefit the company and (alone or with others), to oppose any bills, proceedings or applications which may seem calculated or likely, directly or indirectly, to prejudice the interests of the company or persons having dealings with the company.
84. To sell, dispose of or transfer the business, property and undertaking of the company or any asset or part thereof for any consideration which the

company may see fit to accept, and in particular (but without prejudice to the generality of the foregoing), to sell or otherwise dispose of any of the debts due or to become due to the company, to factors or others for collection, and to enter into any obligations or recourse or otherwise in connection therewith.

85. To promote, establish, acquire, subscribe to, or take any interest in, alone or with others, any company, body corporate, fund, trust, or other person or body of persons, whether incorporated or not, and having objects similar to those of the company.
86. To purchase or otherwise acquire all or any of the business, property and liabilities of any person carrying on a business, including all or any part or the purposes within the objects of the company, or a business which in the opinion of the company, may be conveniently or advantageously carried on by the company, or a business having rights in assets, the acquisition of which is in the opinion of the company likely to be in its interest, and to conduct, carry on and expand or liquidate and wind up any such business.
87. To establish, purchase, maintain and contribute to any pension, provident, gratuity, superannuation, retirement, redundancy, injury, death benefit or insurance funds, trusts, schemes, entities, or policies for the benefit of, and to give or procure the giving of pension, annuities, allowances, gratuities, donation, emoluments, benefits, of any description (whether in kind or otherwise), incentives, bonuses, assistance (whether financial or otherwise) and accommodation in such manner and on such terms as it thinks fit to, and to make payments for or towards the insurance of, any individuals who are or were at any time in the employment of or directors or officers of (or held comparable or equivalent office in), or acted as consultants or advisers to, or agents for the company or any company which is its holding company, or is a subsidiary of the company or any such holding company, or any person to whose business the company or any subsidiary of the company is, in whole or in part, a successor directly or indirectly, or any person which is otherwise allied to or associated with the company, and to other individuals whose service has been of benefit to the company, or who the company considers have a moral claim on the company, and the spouses, widows, widowers, families and dependents of any such individuals as aforesaid; and to establish, provide, manage and maintain and provide financial assistance to welfare, sports and social facilities, associations, clubs, funds and institutions which the company considers likely to benefit, or further the interests of any of the aforementioned individuals and spouses, widows, widowers, families and dependents of any such aforementioned individuals, and to manage, maintain, support and provide financial assistance to any such facility, association, club, fund or institution which has been established, provided for, managed, maintained, supported or subscribed to by any person to whose business the company or any subsidiary of the company is in whole or in part a successor.

88. From time to time to subscribe or contribute (in cash or in kind) to, or to promote, any charitable, benevolent or useful object of a public character, or any object which may in the opinion of the company be likely, indirectly, to further the interests of the company, its employees or its employees or its members.
89. To do all or any of the matters hereby authorized in any part of the world, either alone or in conjunction with, or as factors, contractors, principals, and to act as or secretary, or adviser other than financial advisers or consultant to, undertake and execute any trust.
90. To apply for, assist in, process, procure and obtain the listing of any of the securities of the company, or of any derivative securities of the company, or of any Global Depository Receipts pertaining to the securities of the company, on any stock exchange in any part of the world; and to engage advisors, consultants or agents, other than insurance agents and to do all acts and things necessary or incidental for the same.
91. To enter into any guarantee, contract of indemnity or surety ship, in order to secure the performance of any contracts, obligations or commitments, with or without consideration, calculated to benefit the Company or the holding company of the Company or any subsidiary of the holding company or any subsidiary of the company, whether by personal obligation, or by mortgaging or charging all or any part of the undertaking, property and assets (present and future) of the Company.
92. Generally to do all such other things as in the opinion of the company are or any be incidental or conducive to the attainment of the above objects or any of them; provided same are not contrary to law in force.
93. To do all or any of the above things in any part of the world as principals, agents, contractors, sub-contractors, otherwise and by or through trustees, agents, subsidiary company or otherwise and either alone or in conjunction with others.
94. To do all and everything necessary, suitable or proper or incidental or conducive to the accomplishment of any of the purposes or the attainment of any of the objects or the furtherance of any of the powers hereinbefore set forth, either alone or in association with other corporate bodies, firms or individuals or with any Government authority or public or quasi-public authority or any other authority, and to do every other act or thing incidental or appurtenant to or arising out of or connected with the business or powers of the Company or part thereof, provided the same be lawful.
95. To do all such other things as are incidental or conducive to the attainment of the above objects, this general statement of objects being deemed as enabling and not in any way as restrictive of the foregoing objects.



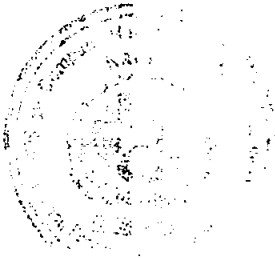
96. it is, hereby, undertaken that the Company shall not engage in Banking Business or Forex, illegal brokerage, or any business of Investment Company or Non-Banking Finance Company or Insurance or Leasing or business of managing agency or in any unlawful business and that nothing contained in the object clauses shall be so construed to entitle it to engage in such business directly or indirectly and the Company shall not launch multi-level marketing (MLM), pyramid and ponzi scheme.

Notwithstanding any thing stated in any object clause, the company shall obtain such other approval or license from competent authority, as may be required under any law for the time being in force, to undertake a particular business.

It is hereby declared that the word "Company" save when used in reference to this Company shall be deemed to include any partnership or other body of persons whether incorporated or not incorporated, whether domiciled in Pakistan or elsewhere and that in the interpretation of this clause, the powers conferred on the Company by any paragraph shall not be restricted by reference to any other paragraph and that in the event of ambiguity, this clause and every paragraph hereof shall be considered independent and.

- IV. The liability of the members is limited.

- V. The authorized capital of the company is Rs.1,000,000/- (Rupees One million only) divided into 100,000 (One hundred thousand) ordinary shares of Rs.10/- each with power to enhance, reduce or consolidate the shares capital and to divide the shares of the company into different classes and kinds to the provisions of the Companies Ordinance, 1984.



We the several persons, whose names and addresses are subscribe as under, are desirous of being form into a company in pursuance of this MEMORANDUM OF ASSOCIATION, and we respectively agree to take the number of shares in the capital of the Company as set opposite our respective names:

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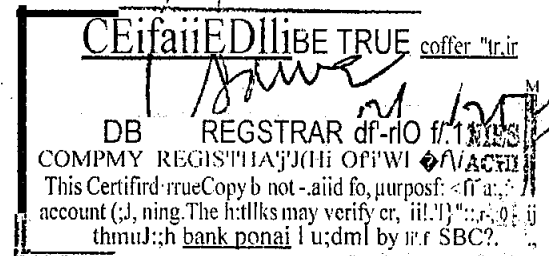
Sr. No.	Name and Surname (Present & Former) in full (in block letters)	Father's/Husband's Name in full (in block letters)	Nationality with any former Nationality	Occupation	Residential Address in Full	Number of shares taken by each subscriber	Signature
1.	Mr.Naveed Ellahi NIC: 42000-0532641-3	Humayun Ellahi	Pakistani	Business	H.No.1/A-II, Street# 13 th , Phase 2, DHA, Karachi.	5,000/- (Five Thousand)	
2.	Mr. Rehman Naseem NIC:36302- 5348796- 1	Sheih Naseem Ahmed	Pakistani	Business	H.No.28 Tapu Sultan Road Multan Cant District Multan	5,000/- (Five Thousand)	<i>l.f/c</i>
					Total Number of Shares	10,000	

(Ten Thousand)

Dated the 11 day of February 2016

Witnesses to the above Signatures

NAME: NATIONAL INSTITUTIONAL FACILITATION TECHNOLOGIES (PVT) LTD NATIONALITY PAKISTANI. ADDRESS: 5TH FLOOR, AWT PLAZA I.I CHUNDRIGAR ROAD KARACID.



THE COMPANIES ORDINANCE, 1984
PRIVATE COMPANY LIMITED BY SHARES
ARTICLES OF ASSOCIATION
OF
FAZAL SOLAR ENERGY (PRIVATE) LIMITED

1. The regulations contained in Table "A" in the First Schedule to the Companies Ordinance, 1984, ("the ordinance") shall not apply to the Company, except in so far as the same are expressly made applicable by the said Ordinance, or these Articles. The regulation for management of the Company, and for the observance thereof by the members of the Company, and their representatives shall, subject as aforesaid and to any exercise of the statutory power of the Company in reference to the repeal or alteration of or addition to its regulations by Special Resolution as prescribed by the said Ordinance; be such as are contained in these Articles.

INTERPRETATION

2. In the interpretation of these Articles, the following expressions shall have the following meanings, unless repugnant to or inconsistent with the subject Articles.
 - 2.1: "The Ordinance" means the Companies Ordinance, 1984, or any statutory modification or re-enactment thereof for time being in force in Pakistan;
 - 2.2: "Board" means a Board of the Directors being the first Directors of the Company under the Ordinance and thereafter as elected by the shareholders, to act on their behalf in the management of the Company affairs;
 - 2.3: "The Company" or "This Company" means **FAZAL SOLAR ENERGY (PRIVATE) LIMITED**;
 - 2.4: "The Directors" means the Directors and Alternate Directors for the time being of the Company, or as the case may be the Directors and Alternate Directors assembled at a Board;
 - 2.5: "Dividend" includes bonus shares;
 - 2.6: "Month" means a calendar month;

- 2.7 : "The Office" means the Registered Office for the time being of the Company;
- 2.8 : "Persons" includes corporation as well as individuals firm, association of persons, etc.;
- 2.9 : "The Register" means the Register of members to be maintained kept pursuant to the Ordinance;
- 2.10 : "In Writing" means written or printed, or partly written and partly printed or lithographed or typewritten, or other substitute for writing;
- 2.11 : Words importing singular number include the plural number and vice versa;
- 2.12 : Words importing masculine gender include the feminine gender;
- 2.13 : Subject as aforesaid, any words or expressions defined in the Ordinance; shall, except where the subject or context forbids, bear the same meaning in these Articles.

PRIVATE COMPANY

3. The Company is a "Private Company" within the meaning of sub section 2(1) (28) of the Ordinance and accordingly:

(1) No invitation shall be issued to the public to subscribe for any shares 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 a single member; and

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

BUSINESS

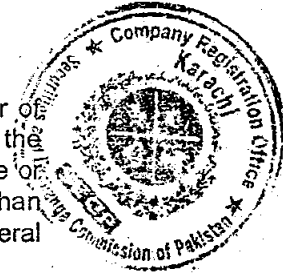
4. The Company is entitled to commence business from the date of its incorporation. The business of the Company shall include all or number of the objects enumerated in the Memorandum of Association. The business of the Company shall be carried out at such place or places anywhere in Pakistan, or elsewhere as the Directors may deem proper or advisable from time to time.

SHARES AND CAPITAL

5. The authorized share capital of the Company is Rs. ,1,000,000/- (Rupees One million only) divided into 100,000/- (One hundred Thousand) ordinary shares of Rs. 10/- (Rupees Ten) each with powers of the Company to increase or reduce the same and to divide the shares into several classes.
6. The shares shall be under the control of the Board of Directors, who may allot or otherwise dispose off the same to such persons, on such terms and conditions and at such times, as the Board of Directors think fit. Shares may also be allotted for consideration otherwise than the cash.
7. Fully paid shares shall be allotted to all subscribers in the first instance and the Company shall not be bound to recognize any equitable, contingent, future or partial claim to, or interest in a share on the part of any person other than the registered share holder, save as herein provided, or saves as ordered by some Court of competent jurisdiction.
8. The certificate of title to shares shall be issued under the common seal of the Company.
9. Every member shall be entitled to one certificate for the shares registered in his name, or at the discretion of the Directors, to several certificates, each for one or more of such shares.

TRANSFER AND TRANSMISSION OF SHARES

10. Every person whose name is entered as a member in the Register of Members shall without payment, be entitled to a certificate under the common seal of the Company specifying the shares held by the one or several persons. The Company shall not be bound to issue more than one certificate and delivery of a share certificate to any one of several joint holders shall be sufficient delivery to all.
11. The Directors may decline to register any transfer of shares to transferee of whom they do not approve, and shall be bound to show any reasons for exercising their discretion subject to the provisions of Section 77 and 78 of the Ordinance.
12. No share can be mortgaged, pledged, sold, hypothecated, transferred or disposed off by any member, to either member or non-member, without the prior sanction of the Board of Directors.
13. The legal heirs, executors or administrators of a deceased, holder shall be the only persons to be recognized by the Directors as having title to the shares. In case of shares registered in the name of two or more holders, the survivors and the executors of the deceased shall be the



only persons to be recognized by the Company as having any title to the shares.

BORROWING POWERS

14. Subject to the provision of the Ordinance, the Directors may from time to time at their absolute discretion raise or borrow any sum, or sums of money for the purpose of the Company from banks, firms or companies, particularly a person holding the office of the Director, and may secure the payment of money in such manner and upon such terms, and conditions in all respects as they think fit particularly by the issue of debentures of the Company, or by making, drawing, accepting or endorsing on behalf of the Company any promissory note or bills of exchange, or giving, or issuing any other security of the Company.
15. Debentures and other securities may be made assignable free from any equities between the Company and the persons to whom the same may be issued.
16. Any debentures or other security may be issued at a discount, premium or otherwise, and with any special privilege as to redemption, surrender, drawing, allotment of shares, attending and voting at general meeting of the Company or subject to compliance of the provisions of the Ordinance.

RESERVES

- H. The Directors may, from time to time, before recommending any dividend, set aside out of the profit of the Company, such sums as they think fit, as a reserve for redemption of debentures, or to meet contingencies for equalization of, or for special dividends, or for rebuilding, repairing, restoring replacing, improving, maintaining or enforcing any of the property of the Company, or for such other purpose as the Directors may in their absolute discretion think conducive to the interests of the Company.

GENERAL MEETINGS

18. A General meeting, to be called annual general meeting, shall be held, in accordance with the provisions of section 158, within eighteen months from the date of incorporation of the Company, and thereafter once at least in every year within a period of four months following the close of its financial year, and not more than fifteen months after the holding of its last preceding annual general meeting, as may be determined by the Directors.
19. The Directors may, whenever they think fit, call an extra ordinary general meeting of the Company, whereby also be called on such requisition, or

in default may be called by such requisitionists, as is provided by section 159 of the Ordinance.

NOTICE AND PROCEEDINGS OF GENERAL MEETING

20. Atleast Twenty-One days' for a general meetings (inclusive of the day on which the notice is served or deemed to be served, but exclusive 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 Ordinance, to such persons as are under the Ordinance, or the regulations of the Company, entitled to receive 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.
21. All businesses shall be deemed special if is transacted at an extraordinary general meeting, and also are transacted at annual general meeting, with the exception of declaring dividend, the consideration of the accounts, balance sheet and the reports of the Directors and auditors, the election of the Directors, the appointment of, and the fixing of the remuneration of the auditors.

QUORUM

22. 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: save as herein otherwise provided, members having fifty percent of the voting power present in person or through proxy and two members personally present will comprise quorum of the Company's meeting.
23. If within half an hour from the time scheduled 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, quorum is not present within half an hour from the time scheduled for the meeting, the members present being not less than two, shall be a quorum.
24. 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 scheduled 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 the Chairman for a meeting.

25. The Chairman may, with the consent of any meeting at which the 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 the meeting is adjourned for ten 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 of the business to be transacted at an adjourned meeting.
26. At any general meeting, a resolution put to the vote of the meeting shall be decided on a show of hands unless a poll is (before or on the declaration of the show of hands) demanded. Unless a poll is so demanded, a declaration by the Chairman that a resolution has, on a show of hands, being carried, or carried unanimously, or by particular majority, or lost an entry to that effect in the book of the proceedings of the Company, shall be conclusive evidence of the fact, without proof of the number or proportion of the votes recorded in favour of, or against that resolution.
27. A poll may be demanded only in accordance with the provisions of section 167 of the Ordinance.
28. If a poll is duly demanded, it shall be taken in accordance with the manner laid down in section 168 of the Ordinance, and the result of the poll shall be deemed to be the resolution of the meeting at which the poll was demanded.
29. A poll demanded on the election of Chairman or on a question of adjournment shall be taken at once.
30. In the case of an equality of votes, whether on a show of hand or on a poll, the Chairman of the meeting at which the show of hands take place, or at which the poll is demanded, shall have, and exercise, a second or casting vote.

VOTES OF MEMBERS

31. Subject to any rights or restrictions for the time being attached to any class or classes of shares, on a show of hands every member present in person shall have one vote except for election of Directors, in which case, the provisions of section 178 of the Ordinance shall apply. On a poll every member shall have voting rights as laid down in section 160 of the Ordinance.
32. A member of unsound mind, or in respect of whom an order has been made by any Court having jurisdiction in lunacy, may vote, whether on show of hands, or on a poll, by his committee or other legal guardian, and any such committee or guardian may, on a poll vote by proxy.

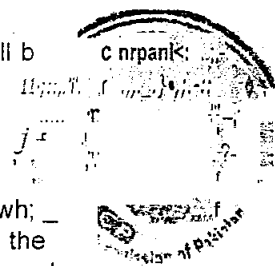
33. On a poll votes may be given either personally or by proxy.
34. (1) The instrument appointing a proxy shall be in writing under the hand of the appointer or of his attorney duly authorized in writing. A proxy must be a member.
- (2) The instrument appointing a proxy and the power of attorney or other authority (if any) under which it is signed, or a notarily 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.

DIRECTORS

35. The number of Directors shall not be less than four. The following persons shall be the first directors of the Company and shall hold the office up to the date of the First Annual General Meeting unless earlier removed by the members in a General meeting:
1. Mr. Naveed Ellahi
 2. Mr. Rehman Naseem
36. The remuneration of the Directors shall from time to time be determined by the Company in Board of Directors meeting subject to the provisions of the Ordinance.
37. Save as provided in Section 187 of the Ordinance, no person shall be appointed as a Director unless he is a member of the Company.

POWERS AND DUTIES OF DIRECTORS

38. The business of the Company shall be managed by the Directors, who may pay all expenses incurred in promoting and registering the Company, and may exercise all such powers of the Company as are not provided by the Ordinance or any statutory modification thereof for the time being in force, or by these regulations, required to be exercised by the Company in general meeting, subject nevertheless to the provisions of the Ordinance or to any of these regulations, and such regulations being not inconsistent with the aforesaid provisions, as may be prescribed by the Company in general meeting, but no regulations made by the Company in general meeting shall invalidate any prior act of the Directors which would have been valid if that regulation had not been made.
39. The Directors shall appoint a chief executive in accordance with the provisions of sections 198 and 199 of the Ordinance.



DISQUALIFICATION OF DIRECTORS

40. No person shall become the Director of the Company if he suffers from any of the disabilities or disqualifications mentioned in section 187 of the Ordinance 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 had 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

41. The Directors may meet together for the dispatch of business, adjourn and otherwise regulate their meetings, as they think fit. Questions arising at any meeting shall be decided by a majority of votes. In case of an equality of votes, the Chairman shall have and exercise a second or casting vote. The Chief Executive shall, at any time, summon a meeting of Directors. It shall not be necessary to give notice of a meeting of Directors to any Director for the time being absent from Pakistan.
42. The Directors may elect the 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.
43. A resolution in writing signed by seventy five percent majority of Directors for the time being entitled to receive notice of a meeting of the Directors shall be as valid and effectual as if it had been passed at a meeting of the Directors duly convened and held.

FILLING OF VACANCIES

44. At the first annual general meeting of the Company, all the Directors shall stand retired from office, and new Directors shall be elected in their place in accordance with section 178 of the Ordinance for a term of three years.
45. A retiring Director shall be eligible for re-election.
46. The Directors shall comply with the provisions of sections 174 to 178 and sections 180 and 184 of the Ordinance relating to the election of Directors and matters ancillary thereto.

47. Any casual vacancy occurring on the board of Directors may be filled up by the Directors, but the person so chosen shall be subject to retirement at the same time as if he had become a Director on the day on which the Director in whose place he is chosen was last elected as Director.
48. The Company may remove a Director but only in accordance with the provisions of the Ordinance.

DIVIDENDS AND RESERVE

49. The Company in general meeting may declare dividends, but no dividend shall exceed the amount recommended by the Directors. No dividends shall be paid otherwise than out of the profits of the Company.

THE SEAL

50. The Directors shall provide for the safe custody of the Company 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 one Director or Company Secretary; and such Director or the Company Secretary shall sign every instrument to which the seal of the Company is so affixed in his/her presence.

ACCOUNTS

51. The Directors shall cause to be kept, proper books of account as required under section 230 of the Ordinance.
52. 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.
53. The Directors shall, under sections 233 and 236 of the Ordinance, cause to be prepared, and laid before the Company in general meeting, such profit and loss accounts or income and expenditure accounts and balance sheets duly audited, together reports as are referred to in those sections.

AUDIT

54. Once at least in every year, the accounts of the Company shall be audited and the correctness of profit and loss accounts, or income and expenditure accounts and balance sheet ascertained by an auditor or auditors and the provisions of the Ordinance in regard to audit, and the appointment and qualification of auditors, shall be observed.
55. Auditors shall be appointed and their duties regulated in accordance with sections 252 to 255 of the Ordinance.

DISPUTE RESOLUTION

56. In the event that a dispute, claim or controversy arise between the Company, its management or its shareholders, or between the shareholders inter-se, or the directors inter-se, all steps shall be taken to settle the dispute and resolve the issue through mediation by an accredited mediator before taking recourse to formal dispute resolution such as arbitration or litigation.

WINDING UP

57. If the Company is wound up, whether voluntarily or otherwise, the liquidator may, with the sanction of a special resolution, divide amongst the contributories, in specie or kind, the whole or any part of the assets and liabilities of the Company, subject to the section 421 and other provisions of the Ordinance, as may be applicable.

INDEMNITY

58. Every Director, and other officer or servant of the Company shall be indemnified by the Company against, and it shall be the duty of the Directors to pay out of the funds of the Company, all costs, losses and expenses, which any such officer or servant may incur or become liable to, by reason of any contract entered into or thing done by such officer or servant as such in any way in the discharge of the duties of such officer or servant, including traveling expenses.

59. Every Director or other officer of the Company shall be liable for the acts, receipts, neglect or default of any other Director or officer, or for joining in a receipt or other act for conformity, or for any loss or expenses happening to the Company through the insufficiency or deficiency of title to any property acquired by order of the Directors for, or on behalf of the Company, or for the insufficiency or deficiency of any security or investment in, or upon which any of the money of the Company shall be invested, or for any loss or damage arising from bankruptcy, insolvency or tortious act of any person with whom any money, securities or effects shall be deposited, or for any loss occasioned by any error of judgment or oversight on his part, or for any other loss, damage or misfortune, whatever which shall happen in the execution of his office, or in relation thereto, unless the same happens through his dishonesty.

NOTICES

60. (i) A notice may be given by the Company to any member either personally, or by sending it by post to him to his registered

address or (if he has no registered address in Pakistan) to the address, if any, within Pakistan, supplied by him to the Company for the giving notices to him.

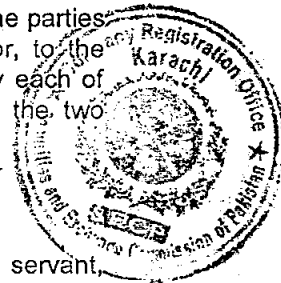
- (2) Where a notice is sent by post, service of the notice shall be deemed to be effected by properly addressing, prepaying and posting a letter containing the notice, and unless the contrary is proved, to have been effected at the time at which the letters would be delivered in the ordinary course of post.
61. A notice may be given by the Company to the joint-holders of the share by giving the notice to the joint-holder named first in the register in respect of the share.

ARBITRATION

62. Whenever any difference arises between the Company on the one hand, and any of the members, their executors, administrators or assignees on the other hand, touching the intent or construction, or the incidence or consequences of these presents, or of the statute or touching any thing then or thereafter done, executed, omitted, or suffered in pursuance of these presents, or of the statute or touching breach or alleged breach, or otherwise relating to the premises, or to any statute effecting the Company, or to any of the affairs of the Company, including the fixing of the fair value of the shares of the Company; every such difference shall be referred to the decision of an arbitrator to be appointed by the parties in difference, or if they cannot agree upon a single arbitrator, to the decision of two arbitrators of whom one shall be appointed by each of the parties in difference, or any umpire to be appointed by the two arbitrators.

SECRECY CLAUSE

63. Every Director, manager, member of the committee, officer, servant, accountant or other person employed in the business of the Company shall, if so require by the Directors before entering upon his duties, sign a declaration pledging to observe a strict secrecy respecting all transactions of the Company with the customers and the state of accounts with individuals, matters relating thereto, and shall by such declaration pledge himself not to reveal any of the matters which come to his knowledge in the discharge of his duties, except when required to do so by the Directors, or by a Court of Law, and except so far as may be necessary in order to comply with any of the provisions in these presents contained.



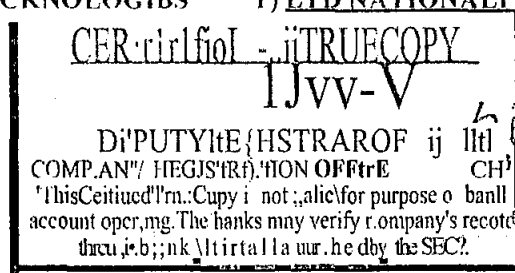
We the several persons, whose names and addresses are subscribed as under, are desirous of being formed into a company in pursuance of this ARTICLES OF ASSOCIATION, and we respectively agree to take the number of shares in the capital of the Company as set opposite our respective names:

Sr. No.	Name and Surname (Present & Former) in full (in block letters)	Father's/Husband's Name in full (in block letters)	Nationality with any former Nationality	Occupation	Residential Address in Full	Number of shares taken by each subscriber	Signature
1.	Mr. Naveed Ellahi NIC: 42000-0532641-3	Humayun Ellahi	Pakistani	Business	H.No. 1/A-II, Street# 13 th , Phase 2, DHA, Karachi.	5,000/- (Five Thousand)	
2.	Mr. Rehman Naseem NIC: 36302-5348796-1	Sheikh Naseem Ahmed	Pakistani	Business	H.No. 28 Tapu Sultan Road Multan Cant District Multan	5,000/- (Five Thousand)	
						10,000 Ten Thousand	

Dated the 11th day of February 2016

Witnesses to the above Signatures

NAME: NATIONAL INSTITUTIONAL FACILITATION TECHNOLOGIES LTD NATIONALITY: PAKISTANI. ADDRESS: 5TH FLOOR, AWT PLAZA II CHUNDRIGAR ROAD KARACHI



Form A

Form A
THE COMPANIES ACT, 2017
THE COMPANIES (GENERAL PROVISIONS AND FORMS) REGULATIONS, 2018
(Section 130(1) and Regulation 4)
ANNUAL RETURN OF COMPANY HAVING SHARE CAPITAL



PART-I

(Please complete in typescript or in bold block capitals)

1.1 CUNARAF Number: 0098132

1.2 Name of the Company: FAZAL SOLAR ENERGY (PVT.) LIMITED

1.3 Fee payment details: 1.3.1 Chetan No: E-2023-1582998 1.3.2 Amount: 4000.0

1.4 Form A made upto: 27/10/2022

1.5 Date of AGH: 27/10/2022

PART-II

Section A

2.1 Registered Office Address: 309 309, U.I. Tower II Chudigar Road Karachi Karachi Sindh 74000

2.2 Email Address: suleman@fazalcapital.com

2.3 Office Tel. No: 32416060

2.4 Office Fax No: 32416063

2.5 Principle line of business: ALTERNATE ENERGY

2.6 Mobile No. of Authorized officer (Chief Executive/ Director/ Company Secretary/ Chief Financial Officer): 03008248084

2.7 Authorized Share Capital

Classes and kinds of Shares	No. of Shares	Amount	Face Value
Ordinary Shares		1,500,000.00	

2.8 Paid up Share Capital

Classes and kinds of Shares	No. of Shares	Amount	Face Value
Ordinary Shares		100,000.00	

2.9 Particulars of the holding /subsidiary company, if any

Name of Company	Holding/Subsidiary	% Shares Held

2.10 Chief Executive

Name: Nadeem Esahi

Address: House No. 1A/II, 13TH SOUTH STREET, DHA KARACHI, Karachi

NIC No: 4230109932173

Next Page

2.11 Chief Financial Officer

Name: Muhammad Sulman
 Address: House No C10 SADAT COLONY SHAH FAISAL KARACHI
 NIC No: 7120173104793



2.12 Secretary

Name: Abdullah Moosa
 Address: house no c119 al mustafa pride beempura karachi
 NIC No: 4200004702307

2.13 Legal Advisor

Name: [Redacted]
 Address: [Redacted]
 NIC No: [Redacted]

2.14 Particulars of Auditors

Name: Said and Company
 Address: NP 2 10 3RD FLOOR HAN ABDULLAH STREET SARAFI BAZAR KARACHI

2.15 Particulars of Shares Registrar (if applicable)

Name: [Redacted]
 Address: [Redacted]
 Email: [Redacted]

Section-B

2.16 List of Directors on the date Annual return is made

Sr	Name of Director	Residential Address	Nationality	NIC (Passport No. if foreigner)	Date of appointment / election	Name of Member/Creditors nominating/appointing
1	Fayeed Ellahi	House no 1 A II 13th South street DHA Karachi Sindh Pakistan 7400	Pakistan	4200005326413	30/06/2020	
2	Masoom Ellahi	House No. 1A/II, 13TH SOUTH STREET, DHA KARACHI, Karachi	Pakistan	4230109932173	30/06/2020	

2.17 List of members & debenture holders on the date upto which this Form is made

Sl. No.	Name	Address	Nationality	No. of shares	Percentage	Passport # (foreigner)
Members						
1	Harveed Ellahi	House No. 1/A-II 13th South Street DHA Kar	Pakistan	5000	50%	5326413
2	Harveed Ellahi	House No. 1/A-II 13th South Street DHA Kar	Pakistan	5000	50%	4230108932173
Debenture Holders						

In case the member or debenture holder is holding shares or debentures on behalf of other person(s), the name of such other person(s) shall be mentioned in parentheses along with the name of the member or debenture holder.

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2.18 Transfer of shares (debentures) since last Form A was made

S#	Name of Transferor	Name of Transferee	No of Shares Transferred	Date of Registration of transfer
Members				
Debenture Holders				

PART-3

3.1 Declaration:

I do hereby solemnly, and sincerely declare that the information provided in the form is:

- (i) true and correct to the best of my knowledge, in consonance with the record as maintained by the Company and nothing has been concealed; and
 (ii) hereby reported after complying with and fulfilling all requirements under the relevant provisions of law, rules, regulations, directives, circulars and notifications whichever is applicable.

3.2 Name of Authorized Officer with designation Authorized Intermediary

Naveed Ellahi

Director

3.3 Signatures

Electronically signed by Naveed Ellahi

3.4 Registration No of Authorized Intermediary, If applicable

3.5 Date

Day Month Year

18/08/2023

Previous Page

Next Page



THIS IS DIGITAL CERTIFIED COPY AND NEEDS NO STAMP/SIGNATURE. CFC ISSUED DATE: 12-09-2023 (VALIDITY 01 MONTH).

Original Certified True Copy:-
This Certified True Copy is not valid for purpose of bank account opening.
The Banks may verify company's record through bank portal launched by the SECP

[Previous Page](#)

THE COMPANIES ACT, 2017
THE COMPANIES (GENERAL PROVISIONS AND FORMS) REGULATIONS, 2018
[Section 197 and Regulations 4 and 20]
PARTICULARS OF DIRECTORS AND OFFICERS, INCLUDING THE CHIEF EXECUTIVE,
SECRETARY, CHIEF FINANCIAL OFFICER, AUDITORS AND LEGAL ADVISER OR OF
ANY CHANGE THEREIN

FORM 29



PART-I

1. CUN (Incorporation Number) 0028132

2. Name of Company FAZAL SOLAR ENERGY (PVT.) LIMITED

3. Fee Payment Details

3.1 Challen Number 15-2023-1591493 1.3.2 Amount 4000.0

PART-II

Particulars:

1. New Appointment/Election

Present Name in Full (a)	Passport No. in case of Foreign National (b)	Father / Husband Name (c)	Usual Residential Address (d)	Designation (e)	Nationality** (f)	Business Occupation** (g) (if any)	Date of Present Appointment or Change (h)	Mode of Appointment / change / any other remarks (i)	Nature of directorship (nominee/indepen- dent/additional/ other) (j)
3rd Line Company			P 2 10 3RD FLOOR HAJI ABDULLAH STREET SARAFI BAGH KARACHI	Auditor	Pakistan	Business	25/10/2022	Re- Appointment /	

2. Cessing of Office/Retirement/Resignation

Present Name in Full (a)	Passport No. in case of Foreign National (b)	Father / Husband Name (c)	Usual Residential Address (d)	Designation (e)	Nationality** (f)	Business Occupation** (g) (if any)	Date of Present Appointment or Change (h)	Mode of Appointment / change / any other remarks (i)	Nature of directorship (nominee/indepen- dent/additional/ other) (j)

3. Any other change in particulars relating to columns (a) to (g) above

Present Name in Full (a)	Passport No. in case of Foreign National (b)	Father / Husband Name (c)	Usual Residential Address (d)	Designation (e)	Nationality** (f)	Business Occupation** (g) (if any)	Date of Present Appointment or Change (h)	Mode of Appointment / change / any other remarks (i)	Nature of directorship (nominee/indepen- dent/additional/ other) (j)

* In the case of a firm, the full name, address and above mentioned particulars of each partner, and the date on which each became a partner.

** In case the nationality is not the nationality of origin, provide the nationality of origin as well.

*** Also provide particulars of other directorships or offices held, if any.

**** In case of resignation of a director, the resignation letter and in case of removal of a director, member's resolution be attached

***** In case of a director appointed by a member or creditor the name of such nominating or appointing body shall also be mentioned in column (i), and a copy of resolution from the nominating or appointing body be attached.

PART-III

3.1 Declaration:

(a) hereby solemnly, and sincerely declare that the information provided in the form is:

(b) true and correct to the best of my knowledge, in consonance with the record as maintained by the Company and nothing has been concealed and

(c) hereby reported after complying with and fulfilling all requirements under the relevant provisions of law, rules, regulations, directives, circulars and notifications whichever is applicable.

3.2 Name of Authorized Officer with designation/ Authorized Intermediary

Naveed Elahi Director

3.3 Signature

Electronically signed by Naveed Elahi

3.4 Date (DD/MM/YY)

17/09/2023

FINANCIAL STATEMENTS

OF

FAZALSOLAREENERGY
(PRIVATE) LIMITED

For the Year Ended June 30, 2023



SAJID & CO

Chartered Accountants

Suit# 204, 2ND Floor, Amber Estate Extension,
Baloch Colony, Shahra-e-Faisal, Karachi, Pakistan

Phones: (+9221) 34320685

Mobile: (+92) 332-3146394

Email: sajid_yunus@yahoo.com

FAZAL SOLAR ENERGY (PVT) LTD

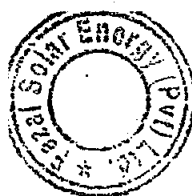
Statement of Financial Position

As on 30 June 2023

	2023 RUPEES	2022 RUPEES
<u>ASSETS</u>		
<u>CURRENT ASSETS</u>		
Cash in Hand	100,000	100,000
TOTAL ASSETS	100,000	100,000
<u>LIABILITIES AND EQUITIES</u>		
<u>Shareholders Equity</u>		
No of Shares: 10,000 (10000 x 10)	100,000	100,000
<u>Liabilities</u>		
LIABILITIES AND EQUITIES	100,000	100,000

Nadeem Ellahi

Nadeem Ellahi
Chief Executive/Director



Naveed Ellahi

Naveed Ellahi
Director

Karachi

SAR

FAZAL SOLAR ENERGY (PVT) LTD
Statement of Profit or Loss Account
For the year ended 30 June 2023

	2023 RUPEES	2022 RUPEES
Revenue	-	-
Less: Operational Expenses	-	-
Gross Profit	-	-
Other Expenses	-	-
Profit Before Tax	-	-
Less: Tax	-	-
Net Profit After Tax	-	-



Nadeem Ellahi
Chief Executive/Director



Naveed Ellahi
Director

Karachi



Annexure K

Project Feasibility

Contents

- 1. Executive Summary**
- 2. Introduction**
- 3. Current Energy Demand & Supply Situation**
- 4. Technical Analysis**
 - 4.1. Site Conditions**
 - 4.2. Technology Review and Selection**
 - 4.2.1. Technology Selection**
 - 4.2.2. Plant Characteristics**
 - 4.2.3. Design Parameters**
 - 4.3. Layout**
 - 4.4. Electrical Design**
 - 4.5. Energy Yield Estimation**
- 5. Financial Analysis**
- 6. Safety and Emergency Plans**
- 7. Training and Capacity Development**
- 8. Environmental Aspects**
- 9. Socio-Economic Aspects**
- 10. Conclusion**

1. Executive Summary

The feasibility study examines the costs, practicality, and likely outcome of a solar photovoltaic (PV) installation on the rooftop site at Latitude: 24°50'19.9"N Longitude: 67°08'11.4"E

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" (1.4 gwh/year). Rooftops are optimized azimuth (1 degree), panel tilt (15 degree) and satisfactory roof condition and structure also assumed.

Anticipated System Information: The project will accommodate a 1000 kWp solar PV system with a projected annual production of 1.4GWh/year. Use of JINKO Solar (575 Watt) PV panel as a basis for design will result in an acceptable system weight density. The system will offset approximately 676 tons of carbon annually.

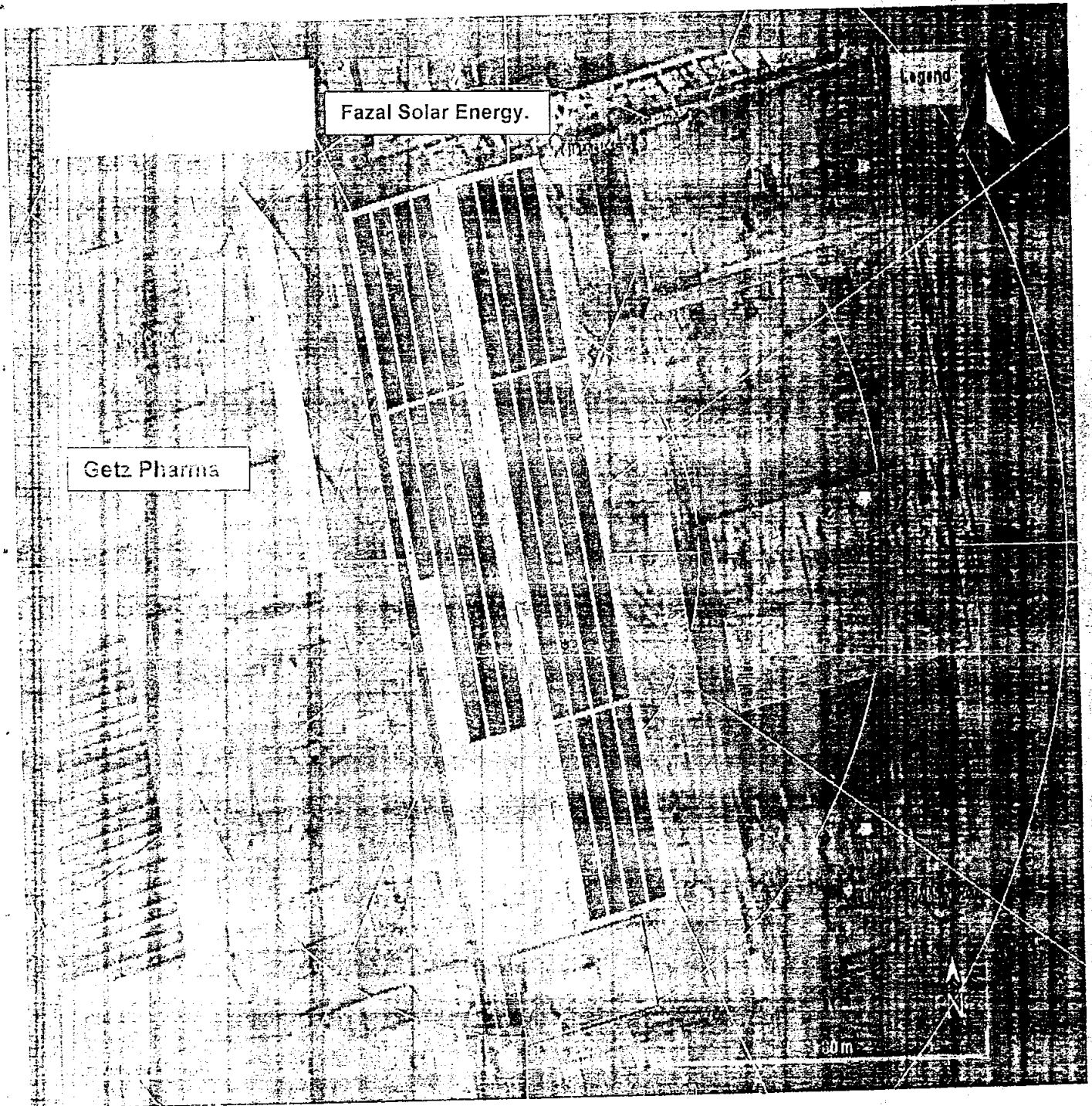
Financial Analysis: The project will be financed on a 30-70 debt equity model. The total estimated project cost is USD 543000(PKR/USD rate: 300).

Eased on the technical and financial analysis, the installation of a 1000 Solar PV System on the rooftop generation site is deemed to be feasible.

The average efficiency of the panel will be 16.5 % per year with a annual .7% degradation

Introduction

The project site is the rooftop of the generation facility. The exact coordinates of the project site are: Latitude: 24°50'19.9"N Longitude: 67°08'11.4"E. A bird's eye view of the project site is given in the figure below:



2.

Current Energy Demand and Supply Situation

As per the historical consumption data, the total electricity consumption during last one-year Jul 2022 - Jun 2023 was 72.07 GWh from the grid (KE).

3. **Technical Analysis**4.1. **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 under section 3.5.1.

4.2. **Technology Review and Selection**4.2.1. **Technology Selection**

1	Type of Module	Mono Crystalline
2	Type of Cell	N Type
3	Dimensions of Each Module	2278x1134x35mm
4	Weight	28Kg

5	No. of Modules	1740Nos
6	Total Land Area Used	6300m ²
7	Module Frame Anodized	Anodized Aluminium Alloy
8	Nominal Max. Power (P Max)	575W
9	Opt. Operating Voltage (Vmp)	42.22V
10	Opt. Operating Current (Imp)	13.62A
11	Open Circuit Voltage (Voc)	50.88V
12	Short Circuit Current (ISC)	14.39
13	Module Efficiency	22.26%
14	Operating Temperature	-40°C + 85°C
15	Max. System Voltage	1000/1500VDC
16	Module Fire Performance	

Panel wattage and brand may be changed to another equivalent Tier 1 brand depending upon availability.

S No.	Specification of Strings	
1	No. of Strings	87Nos
2	Modules in Strings	20Modules/string

PV Capacity

S No.	Specification	Data
1	Total Site	1000 KW
2	Net Capacity Factor	1000 KW

Inverters

S No.	Specification	Data	
1	Manufacturer	Huawei	

2	Capacity of each Unit	100KW	
3	No. of Inverters	9	
4	MPPT Input Voltage Range	200V – 1,000V	
5	Rated Input Voltage	600v@400Vac	
6	Max Input Voltage	1,100V	
7	Total Power	900KW	
8	Max Input Current for each MPPT	26A	
9	Max Output Current	160.4A@ 400V	
10	Output Electrical System	Operate @ 400V	
11	AC Nominal Voltage	480/400/380V	
12	Rated Power Frequency	50/60Hz	
13	Efficiency	98.6%@ 380/400V	
14	Relative Humidity (Non-Condensing)	0 – 100%	
15	Weight	90Kg	
16	Degree of Protection	IP66	

Junction Boxes

S No.	Specification	Data
1	Number of J Boxes	N/A
2	Input Circuits in each box	N/A
3	Max. Input Current for each circuit	N/A
4	Protection Level	N/A
5	Over Current Protection	N/A
6	Surge Protection	N/A

PV Mounting Structure

S No.	Specification	Data
1	Structure 1	Aluminum Structure Portrait single stack
2	Tilt of Array Frame	3°

Foundation Pillars

S No.	Specification	Data
1	Foundation Structure	N/A

Data Collecting System

S No.	Specification	Data
1	System Data	Huawei (Fusion Solar)
2	Weather Station	Seven solar

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.

4.2.2. 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.

4.2.3. 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".

4.3. Plant Layouts

PV layouts of the site are given in the following section.

Layout Figure 2: 2D Layout of rooftop of the generation

facility



PV Mounting Structure

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2	Tilt of Array Frame	3°

Foundation Pillars

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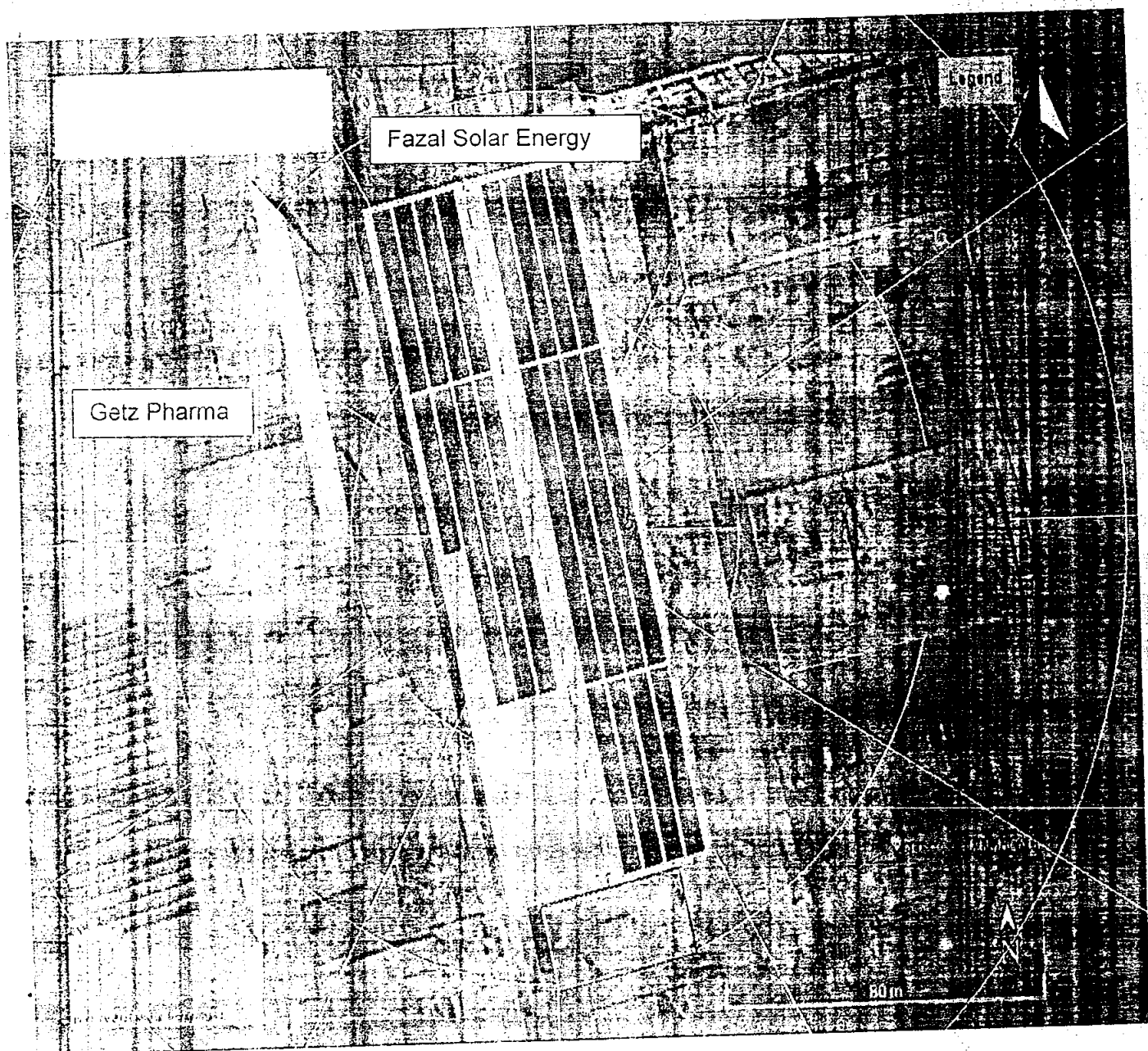
Fazal Solar Energy

Legend

Getz Pharma

0m

Figure 3: 2D Layout of rooftop of the generation facility plot 1,5 and 6 at Karachi showing solar panel locations.



4.4. 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, breakers**
- **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 (built-in)

AC Side: MCBs, Main Breaker

4.5. 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. PVsyst software has been used for energy yield prediction for this site and its results are given below.

5. Financial Analysis

Cost/watt: USD 0.543 (Capex)

Total Project Cost for 1,000 kWp Solar PV System: USD \$543,000 (Capex) Equity:

70% equity

Debt: 30%

PKR/USD rate: 300rs

6. 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.

7. 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.

- Collection of Resource Data
- Variability and uncertainty of resource data
- Site evaluation

- Crystalline and Thin film technology comparison
- Rooftop solar system components
- Module mounting structure selection
- Inverter selection
- Design of PV Array
- Shadow Analysis
- DC cable sizing
- DC cable layout
- Protection and Metering
- Installation and testing standards for solar PV plants
- Solar Module testing standards
- Economy of Rooftop Solar System
- Detailed Project Report
- Operation and maintenance of rooftop solar system
- Safety and fire-fighting training

8. 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, NO_x) and prevention of toxic gas emissions (SO₂, particulates)
- Reduction of the required transmission lines of the electricity grids

9. SocioEconomic 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 1000 kW rooftop PV system installation. Installation of the PV system will result in annual power generation of 1.4GWh. 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.

ANNEXURE C

11. FAZAL SOLAR

Accounts

Statement of Financial Position As on 30 June 2023

	2023	2022
ASSETS		
<u>Short Term Assets</u>		
Cash in Hand	100,000	100,000
<u>Long Term Assets</u>	-	-
TOTAL ASSETS	100,000	100,000
LIABILITIES AND EQUITIES		
Shareholders' Equity		
No of Shares: 10,000 (10000 x 10)	100,000	100,000
<u>Liabilities</u>	-	-
LIABILITIES AND EQUITIES	100,000	100,000



Nadeem Ellahi
Chief Executive/Director



Naveed Ellahi
Director

Ali Asghar Textile Mills Limited

AUDITED FINANCIAL STATEMENTS FOR THE YEAR ENDED 30TH JUNE 2023

MUSHTAQ & CO.
CHARTERED ACCOUNTANTS

KARACHI OFFICE
437 Commerce Centre,
Violet Mahan Road,
Karachi-74200.
P: 35695571-3
Email: gm@mushtaqandco.com

LAHORE OFFICE
19-B, Block-G,
Gulberg III
Karachi-54660
P: 35656634-6
Email: info@mushtaqandco.com

ISLAMABAD OFFICE
Apartment No. 437,
Second Floor, Millennium
Sector F-11/1, Islamabad.
PH: 051-2224670

ALI ASGHAR TEXTILE MILLS LIMITED
STATEMENT OF FINANCIAL POSITION
AS AT JUNE 30, 2023

	Note	2023 Rupees	Rupees
ASSETS			
NON-CURRENT ASSETS			
Property, plant and equipment	4	953,094,760	968,946,069
Long Term Deposits	5	2,630,217	2,650,247
Long Term loans and advances	6	3,608,084	4,071,009
		959,333,061	975,667,325
CURRENT ASSETS			
Loans and advances	7	3,666,190	3,577,137
Investments	8	255,132,710	267,395,192
Trade deposits and short term prepayments	9	20,950,639	20,182,639
Other receivables	10	-	369,433,862
Tax refunds due from Government	11	12,346,494	8,685,532
Cash and bank balances	12	402,764,296	564,520
		694,860,329	669,838,883
TOTAL ASSETS		1,654,193,390	1,645,506,208
EQUITY AND LIABILITIES			
SHARE CAPITAL AND RESERVES			
Authorized share capital			
50,000,000 (2022: 50,000,000) ordinary shares of Rs. 5 each		250,000,000	250,000,000
Issued, subscribed and paid-up capital	13	222,133,470	222,133,470
Loan from directors and others	14	15,639,785	2,837,047
Surplus on Revaluation of Fixed Assets	15	682,474,489	682,474,489
Unappropriated Profit		706,435,548	692,927,915
Un-realised loss on Investment		(72,103,832)	(67,650,656)
		1,554,579,460	1,532,722,265
NON-CURRENT LIABILITIES			
Long term financing	16	18,770,615	58,508,315
Long term Deposits		287,000	287,000
Staff retirement benefits	17	1,935,401	2,108,173
		20,993,016	60,903,488
CURRENT LIABILITIES			
Trade and other payables	18	72,854,679	30,304,647
Unclaimed Dividends	19	239,589	239,589
Accrued Mark-up	20	4,930,250	4,941,393
Bank overdrafts	21	596,396	7,842,378
Current portion of long term borrowings	16	-	8,552,448
		78,620,914	51,880,455
CONTINGENCIES AND COMMITMENTS	22	-	-
TOTAL EQUITY AND LIABILITIES		1,654,193,390	1,645,506,208

The annexed notes form an integral part of these financial statements.

NADEEM ELAHI SHAIKH
Chief Executive


ABDULLAH MOOSA
Director

MUHAMMAD SULEMAN
Chief Financial Officer

AL MASCHAR TEXTILE MILLS LIMITED
STATEMENT OF PROFIT OR
LOSS
FOR THE YEAR ENDED JUNE 30, 2023

		2023	2022
	Note	Rupees	Rupees
Revenue-Logistic Center Service		63,796,495	52,585,949
Logistic Center Service Charges	24	(32,470,676)	(34,378,314)
Gross Profit		31,325,819	18,207,635
Administrative expenses	25	(19,747,733)	(18,976,047)
Other Operating expenses	26	(36,319,870)	(216,734)
		(56,067,603)	(19,192,781)
(Loss) from operations		(24,741,785)	(985,146)
Other income	27	35,641,553	61,625,942
Finance cost	28	(211,036)	(200,132)
Profit before taxation		10,688,732	60,440,664
Taxation			
Current		(5,677,274)	(18,773,791)
Prior Year Tax		9,224,024	(8,637,619)
Profit after taxation		14,235,482	33,029,254
Earnings per share - basic and diluted	29	0.32	0.74

The annexed notes form an integral part of these financial statements.



NADEEM E. SHAIKH
CHIEF EXECUTIVE



ABDULLAH MOOSA
Director



M.SULEMAN
Chief Financial Officer

Fazal Solar Energy.

Plot No.6 Sector No. 25 Korangi Industrial Area, Karachi. Ph # 021-35059726,021-35062796.

RESOLUTION OF THE BOARD OF DIRECTORS OF FAZAL SOLAR ENERGY Dated 15 Aug,2023

A meeting of the Board of Directors of M/s. Fazal Solar Energy (the Company) was held on Plot No.6 Sector No. 25 Korangi Industrial Area, Karachi. I its office, at 10.00 am to discuss the procurement of a Generation License by the Company from the National Electric Power Regulatory Authority (NEPRA). The Meeting was attended by all the directors of the Company and the following resolutions were unanimously passed:-

1. RESOLVED THAT the Company would file an application, for obtaining generation License for setting up a 1.0 MW solar power generation project, to NEPRA.
2. RESOLVED THAT in respect of submitting an application for the Generation License (including any modification thereto) to NEPRA, Mr. Nadeem Ellahi, Director would be authorized to do the following acts for and on behalf of the Company:
 - i) To review, execute, submit and deliver the generation License application (including any modification thereto) for the To represent the company in all generation License along with all related documents required by NEPRA for the grant of the Generation License including any contract, affidavits, statements, documents, powers of attorney, letters, forms, applications, deeds, guarantees, undertakings, approvals, memoranda, amendments, communications, notices, certificates, requests, statements and any other required document/instrument of any nature;
 - ii) negotiations, representations, presentations, hearings, conferences, and/or meetings of any nature whatsoever with any entity (including but not limited to NEPRA, any private parties, companies, partnerships, individuals, governmental and/or semi-governmental authorities and agencies, ministers, boards, departments, regulatory authorities and/or any other entity of any nature whatsoever);
 - iii) To sign and execute the necessary documentations, pay the necessary fee, appear before the NEPRA as needed, and do all acts necessary for completion and processing of the generation license application (including any modification thereto) and procuring the generation license;

Fazal Solar Energy.

Plot No.6 Sector No. 25 Korangi Industrial
Area, Karachi. Ph # 021-35059726,021-
35062796

- iv) To appoint or nominate any one or more officers of the Company or any other person or persons, singly or jointly, in his discretion to communicate with, make presentations to and attend the NEPRA hearings;
- v) To delegate all or any of these powers to any other officials of the Company as deemed appropriate by him;
- vi) To do all such acts, matters and things as may be necessary for carrying out the aforesaid purposes and giving full effect to the Resolutions contained herein.

IT WAS FURTHER RESOLVED THAT the Company, through its Board of Directors, would validate and ratify all the actions taken by the duly authorized director, Mr. Nadeem Ellahi, under the authority granted herein.

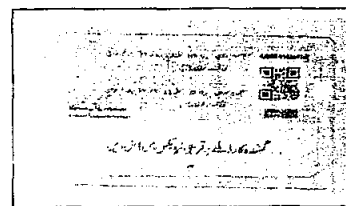
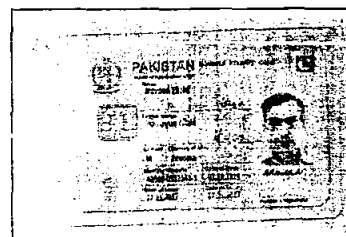
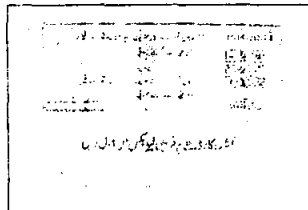
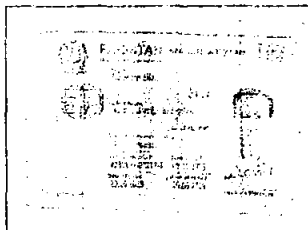
CERTIFIED TO BE A TRUE COPY OF THE RESOLUTION OF THE BOARD OF DIRECTORS OF THE COMPANY
PASSED IN ITS MEETING DATED 15 Aug, 2023


CEO/Director

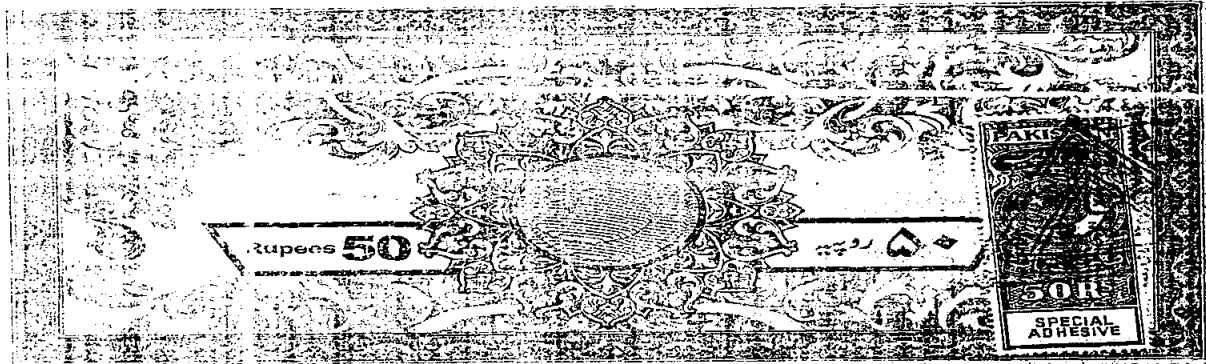
Nadeem Ellahi

Director


Naveed Ellahi



AY005001



KAMRAN ALI SHAHID STAMP VENDOR
 Lic. # 12 Court No. 33 Special-A City Court Karachi
 S. No. 1033
 Issued to: Kamran Ali Shahid
 Thru: [blank]
 Purpose: [blank] Attested: [blank]
 Value: [blank]
 Stamp Vendor's Signature: [blank]

18 AUG 2021

OFFICE STAMP ONLY
(NO FEE MAY ONLY)**AFFIDAVIT**

I Nadeem Ellahi S/O Humayun Ellahi, Chief Executive Officer Of Fazal Solar Energy (Pvt) Ltd., the duly authorized representative of the Applicant Company Solemnly Affirms and declare that the contents of the accompanying application for grant of generation license is true and correct to the best of my knowledge and belief and no material has been concealed there form.

I also affirm that all future documentation and information to be provided by me in connection with the accompanying application for the grant generation license will also be true to the best of my knowledge and belief.

DEPONENT**Verification**

This Affidavit is verified on this 18 October, 2023 at Karachi that the contents of the affidavit are true and correct to the best of my knowledge and belief and that nothing material and relevant, has been kept concealed therein.

Chief Executive Officer



Oct 17th, 2023

M/s. Fazal Solar Energy Pvt Ltd
Office Plot 6, Sector 25,
Korangi Industrial Area,
Near Vita Chowrangi,
Karachi.

ACCOUNT MAINTENANCE CERTIFICATE

This is to certify that M/s. Fazal Solar Energy Pvt Ltd is maintaining a Current Account 2309045 in JS Bank, Karachi Stock Exchange Branch since 21st Sep 2023, at our entire satisfaction.

This letter is being issued on the request of the customer without any risk and responsibility, whatsoever arising on the part of the bank or any of its officers.

***This is the system Generated Letter and does not require any signature**

Annexure M

ESSA (Environmental and Social Soundness Assessment)

Executive Summary

Fazal Solar Energy (Private) Limited intends to develop a 1,000kWp rooftop solar photovoltaic (PV) at the site this document presents the results of an initial environmental examination (IEE) analyzed 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 getz pharma. 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

It is subtropical climate in Karachi, rain, monsoon ravaging and hot in summer and autumn.

Temperature:

The month with the lowest average high temperature is January (19°C). The month with the highest average low temperature is June (32°C). The coldest month (with the lowest average low temperature) is January (14°C).

Rainfall:

The wettest month (with the highest rainfall) is August (283.5mm). The driest month (with the lowest rainfall) is November (5.1mm).

Humidity:

The average annual relative humidity is 55.92% and average monthly relative humidity ranges from 29.5% in May to 71.3% in August.

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
- 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. Gant 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 NO_x, SO_x and CO_x) and no objectionable odors 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.

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 be for once or twice in 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/malls, 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. **Impact on Flora/ Fauna**

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. Contractor responsibility is to bring labor, 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

There will be a minimal impact on the use of energy as this phase is for short term period say e.g. 5-6months and the only solution is to use these energy resources in conservation mode (i.e.

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

There will be a minimal impact on the use of energy as this phase is for short term period say e.g. 5-6months 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 labor etc. that will increase their income. Therefore, this project will surely enhance socioeconomic welfare

e.g. health and employment (of labor, 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

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 Fazal Solar (Private) Limited.
- 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.

ANNEXURE F

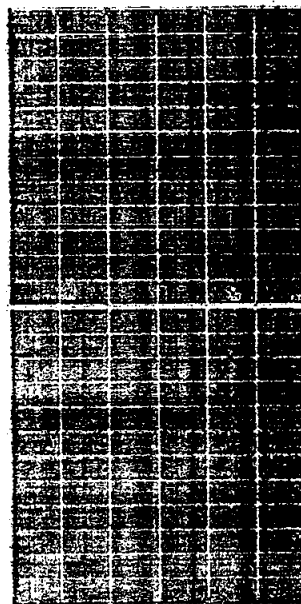
Ali Asghar textile mills established in 1968 the parent company of the applicant has a 30 year experience in installing and running textile machines and generators and training and hiring the relevant staff for these machines. AATML set up a 2.5mw gas fired power plant in 2003 imported from caterpillar USA and ran it successfully with minimal down time . The parent company also put a 250 kw solar power plant in 2022 and has been running it successfully since then. The applicant company will draw from the common director experience and implement this 1 mw solar project

- www.jinkosolar.com

Tiger Neo N-type 72HL4- (V)

• **555-575 Watt**

- MONO-FACIAL MODULE
- N-Type



- Positive power tolerance of 0~+3%
- IEC 61215(2016), IEC 61730(2016)
- ISO 9001:2015: Quality Management System
- ISO 14001:2015: Environment Management System
- ISO 45001:2018
- Occupational health and safety management systems

Key Features



- SMBB Technology
- Better light trapping and current collection to improve module power output and reliability.



Hot 2.0 Technology

The N-type module with Hot 2.0 technology has better reliability and lower LID/LETID.

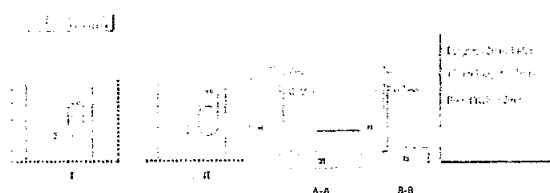
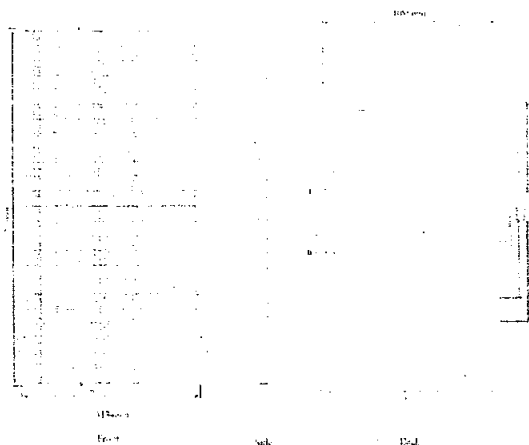


- PID Resistance
- Excellent Anti-PID performance guaranteed via optimized mass-production processes and materials control.

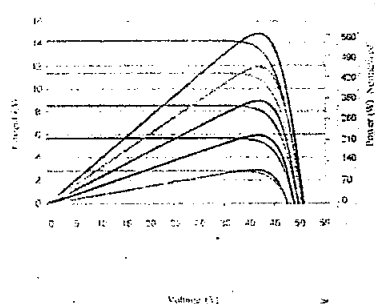


Enhanced Mechanical Load

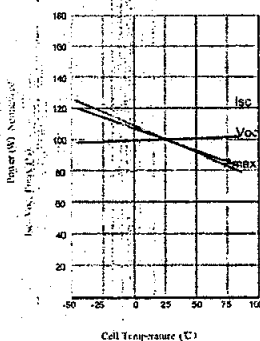
Certified to withstand wind load (2400 Pascal) and snow load (5400 Pascal).

[illegible]

Current-Voltage & Power-Voltage Curves (565W)



Temperature Dependence of I_{sc} , V_{oc} , P_{max}



Mechanical Characteristics

Cell Type	N type Mono-crystalline
Size of Cells	156mm x 156mm
Dimensions	425mm x 240mm (60W, 440W, 55W, 60W)
Weight	1.5kg
Front Glass	3.2mm, Anti-Reflection Coating, High Transmission, Low Iron, Tempered Glass
Frame	Aluminum Extrusion IP68 Rated
Output Cable	100V, 20mm (+): 400mm, (-): 200mm or Customized Length

SECRET

Module Type	JKM555N-72HL4-V		JKM560N-72HL4-V		JKM565N-72HL4-V		JKM570N-72HL4-V		JKM575N-72HL4-V	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax)	555Wp	417Wp	560Wp	421Wp	565Wp	425Wp	570Wp	429Wp	575Wp	432Wp
Maximum Power Voltage (Vmp)	41.64V	39.12V	41.77V	39.25V	41.92V	39.38V	42.07V	39.71V	42.22V	40.05V
Maximum Power Current (Imp)	13.33A	10.67A	13.41A	10.73A	13.46A	10.79A	13.55A	10.85A	13.62A	10.92A
Open-Circuit Voltage (Voc)	50.34V	47.82V	50.47V	47.94V	50.60V	48.06V	50.73V	48.20V	50.85V	48.32V
Short-circuit Current (IsC)	14.07A	11.36A	14.15A	11.42A	14.23A	11.49A	14.31A	11.55A	14.39A	11.62A
Module Efficiency (STC %)	21.48%		21.63%		21.87%		22.02%		22.17%	
Operating Temperature (T _{op})	40°C~85°C									
Maximum system voltage	1000/1500VDC (IEC)									
Maximum series fuse rating	25A									
Power Tolerance	+0/-3%									
Temperature coefficient of Pmax	-0.30%/°C									
Temperature coefficient of Voc	-0.25%/°C									
Temperature coefficient of Isc	+0.04%/°C									
Optimal operating cell temperature	(NOCT) 45±2°C									

Surface 1.00 m²

Cell Temperature 25 °C

AM=1.5

Surface 1.00 m²

Air Temperature 30 °C

AM=1.5

Wind Speed 1m/s

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Specifications and data in this document are subject to change without notice.


KMUTS-STN-7TH (4-V)-T1-EN (IEC 2016)

ANNEXURE L

adaptive
technologies

**Sector
wise
selected
Project**

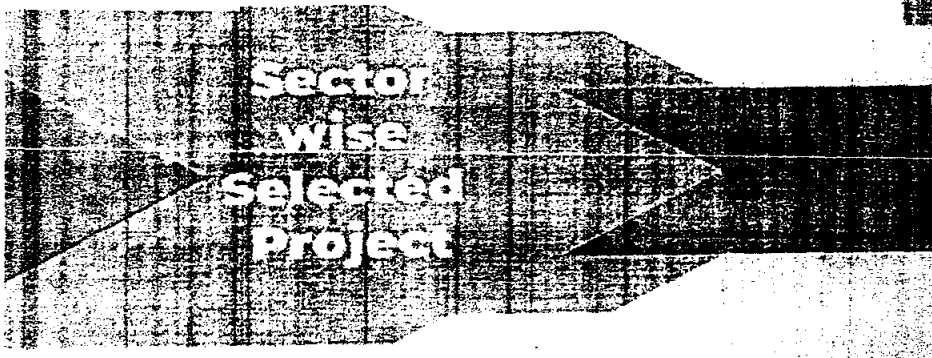
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adaptive

Our Clients



a da live



adaptive

1 MW Rooftop PV System (Denim Sector)

Project Profile: Soorty Enterprises Pvt Ltd

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hrr nt
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 Mo,1rh
 ih till



ALI ASGHAR TEXTILE MILLS LIMITED.

308-308, Unit Tower,
11, Chundrigar Road, Karachi.
Phone : (9221) 32416080-2
32487853-5
Fax : (9221) 32418063
Email : aatml@cybar.net.pk
Website: www.aatml.com.pk

Letter of commitment from Ali Asghar textile mills to Fazal Solar.

1. To consider and, if thought fit, pass with or without modification, the following special resolutions in terms of Section 199 of the Companies Act, 2017, and Companies (Investment in Associated Companies or Associated Undertakings) Regulations 2012 for authorizing investment amounting up to PKR 200,000,000/- (Rupees Two hundred million) including cost overrun being contingencies for interest and insurance in case of any delay during construction and considering expected fluctuation between PKR and USO parity and for maintenance of minimum shareholding ratio of 80% of the equity in the associated company, M/s. Fazal Solar private Limited:

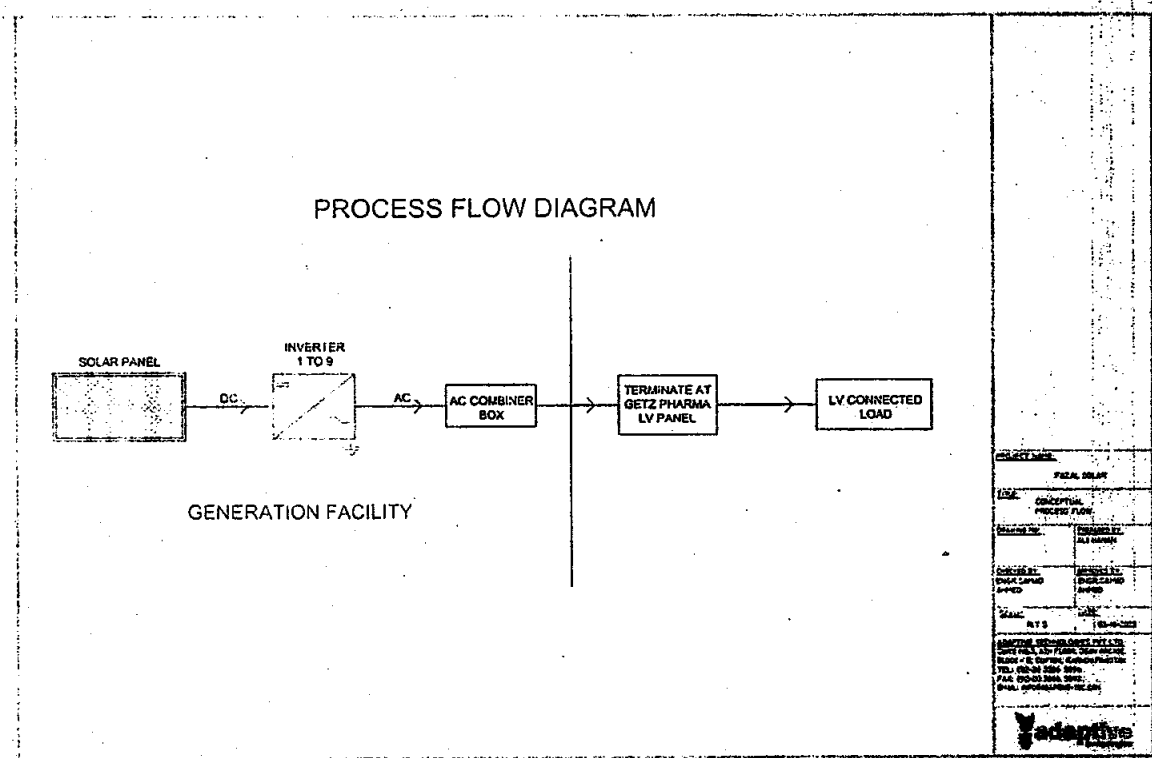
A) RESOLVED that the Company be and is hereby authorized to make advance investment amounting up to PKR 200,000,000/- including cost overrun being contingencies for interest and insurance in case of any delay during construction test run and operation of the project and considering expected fluctuation between PKR and USO parity in the associated company, M/s. Fazal Solar private Limited for a Solar Power Project of 1 MW.

(B) FURTHER RESOLVED that such investment be and is hereby made and retained by the Company initially for the life of the project, which is twenty five years after the date of commercial operations and as the Directors deem appropriate and/or modify the same from time to time in accordance with the instructions of the Board.

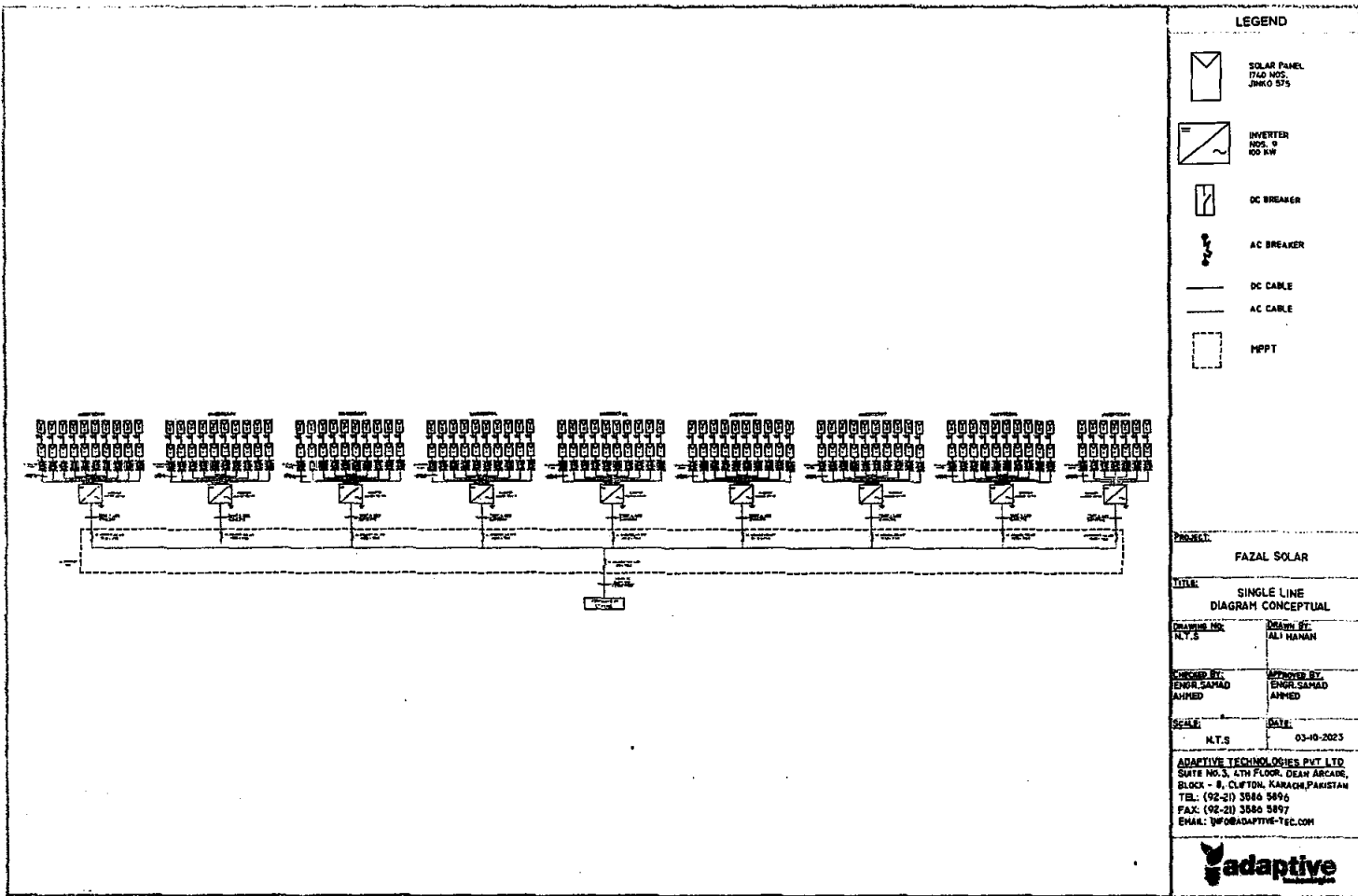
FURTHER RESOLVED that, for the purpose of giving effect to the above resolution, the Chief Executive Officer of the Company or such person or persons as may be authorized by the Chief Executive Officer of the Company being authorized to do all such acts, deeds and things and to execute and deliver all such deeds, agreements, declarations, undertakings, guarantees, standby letters of credit including any ancillary document thereto or provide any such documentation for and on behalf and in the name of the Company as may be necessary or required or as they or any of them may think fit for or in connection with or incidental to the proposed investment upto PKR 200,000,000 in M/s. Fazal Solar private Limited including without limiting the generality of the foregoing, the negotiation and finalization of the terms and conditions relating to such investment.

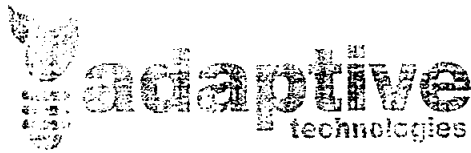
Milist: Plot No. S, Sector No. 25, Korangl, Karachi. Phont1: 35034C89, 35059728Fu: 35H27N

Annexure i single line diagram



Annexure H





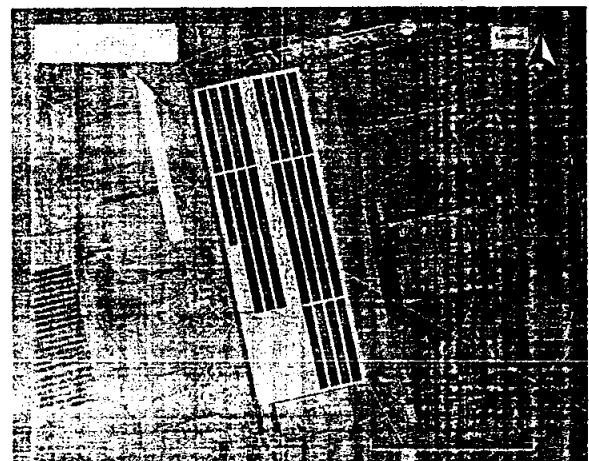
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9/20/2023

Your PV system from Adaptive Technologies

Address of Installation

Sector 25, Korangi Industrial Area, Karachi
City Karachi
Sindh, Pakistan



Project Description:

1000.5kWp On Grid Solar Solution

Project Overview

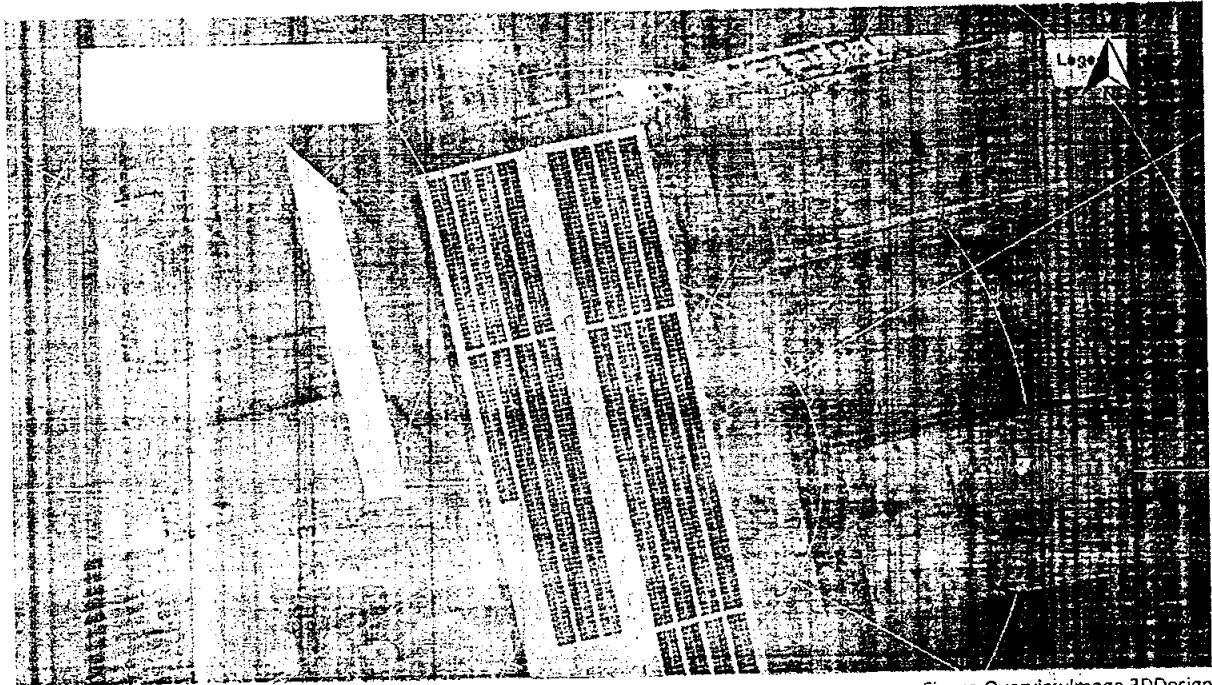


Figure: Overview Image, 3D Design

PV System

3D, Grid-connected PV System

Climate Data

Karachi, PAK (1991-2010)

PV Generator Output

1000.5 kWp

PV Generator Surface

4,494.9 m²

Number of PV Modules

1740

Number of Inverters

9

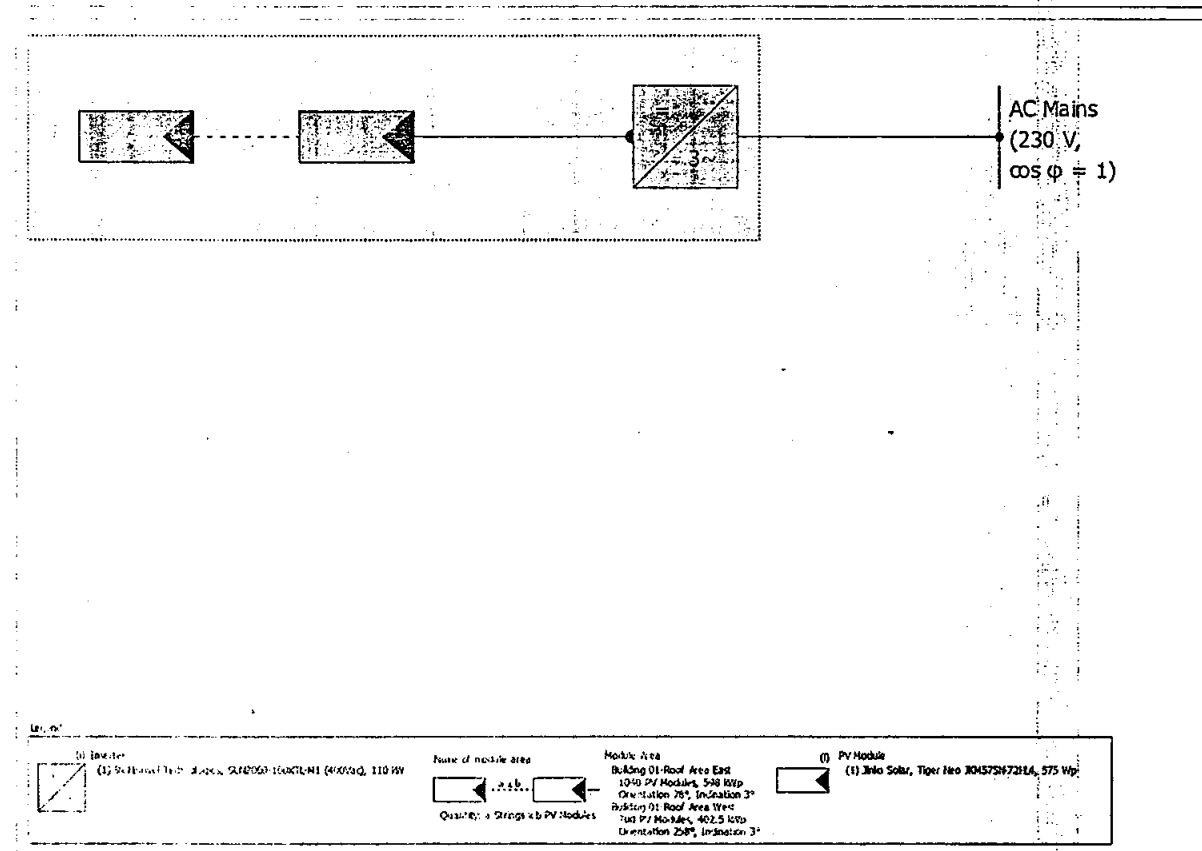


Figure: Schematic diagram

Theyield

Theyield

PVGeneratorEnergy(ACgrid)	1,440,412 kWh
GridFeed-in	1,440,412 kWh
Down-regulationatFeed-inPoint	0 kWh
OwnPowerConsumption	0.0 %
SolarFraction	0.0 %
Spec.AnnualYield	1,439.50 kWh/kWp
PerformanceRatio(PR)	80.2 %
YieldReductionduetoShading	3.4 %/Year
CO ₂ Emissionsavoided	676,905 kg/ year

FinancialAnalysis

YourGain

Totalinvestmentcosts	0.00 Rs
ReturnonAssets	299.80 %
AmortizationPeriod	More than 20 Years
ElectricityProductionCosts	0 Rs/kWh
EnergyBalance/Feed-inConcept	FullFeed-in

The results have been calculated with a mathematical model calculation from Valentin Software GmbH (PV*SQL algorithms). The actual yields from the solar power system may differ as a result of weather variations, the efficiency of the modules and inverter, and other factors.

Set-up of the System

Overview

System Data

Type of System	3D, Grid-connected PV System
Start of Operation	12/06/2024

Climate Data

Location	Karachi, PAK (1991-2010)
Resolution of the data	1 h
Simulation model is used:	
- Diffuse irradiation onto Horizontal Plane	Hofmann
- Irradiance on tilted surface	Hay & Davies

Module Areas

1. Module Area-Building01-RoofAreaEast

PV Generator, 1. Module Area-Building01-RoofAreaEast

Name	Building01-RoofAreaEast
PV Modules	1040xTiger NeoJKM575N-72HL4 (v1)
Manufacturer	Jinko Solar
Inclination	3°
Orientation	East 78°
Installation Type	Mounted-Roof...
PV Generator Surface	2,686.6m ²

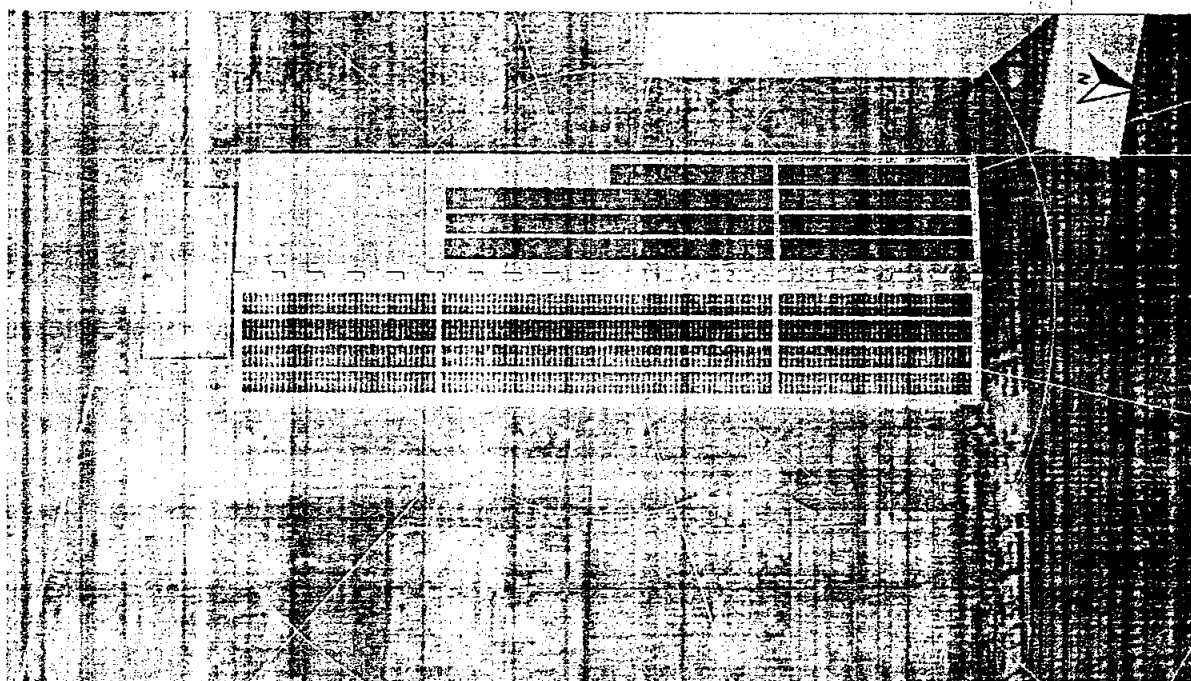


Figure: 1. Module Area-Building01-RoofAreaEast

Degradation of Module, 1. Module Area-Building01-RoofAreaEast

Remaining power (power output) after 1 year

96%

Remaining power (power output) after 25 years

84.8%

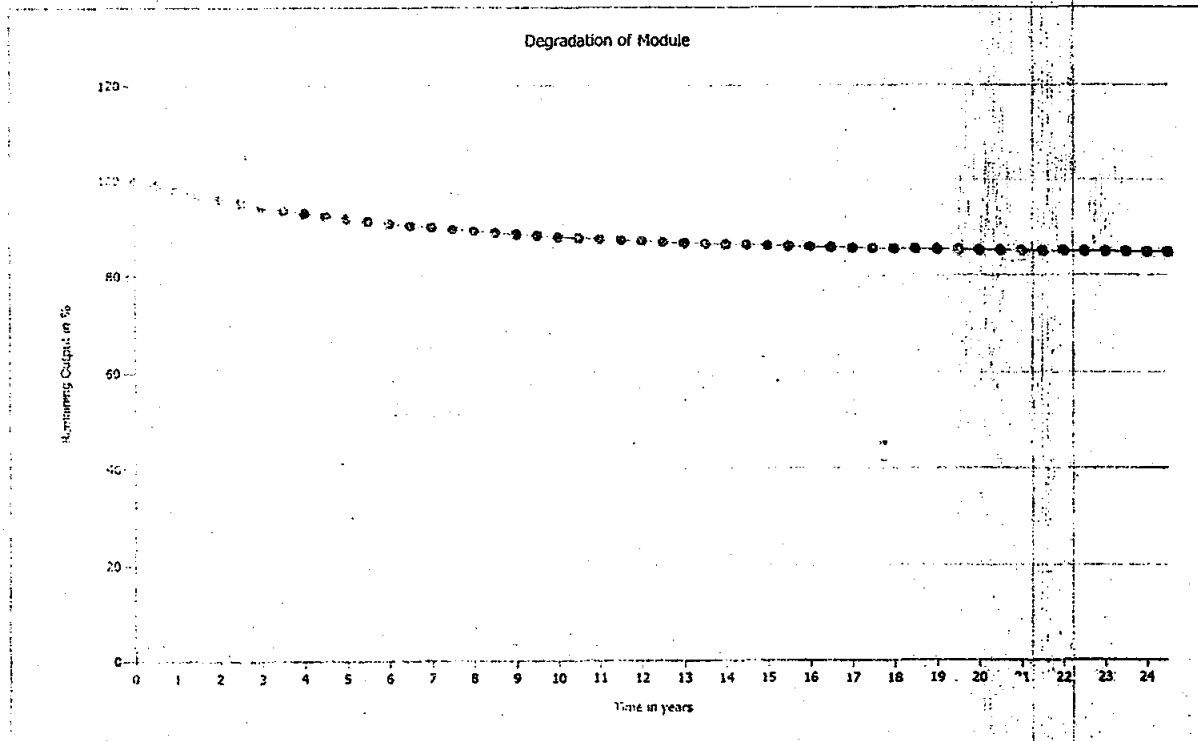


Figure: Degradation of Module, 1. Module Area-Building01-RoofAreaEast

2. ModuleArea-Building01-RoofAreaWest

PVGenerator, 2.ModuleArea-Building01-RoofAreaWest

Name	Building01-RoofAreaWest
PVModules	700xTigerNeoJKM575N-72HL4 (v1)
Manufacturer	JinkoSolar
Inclination	3°
Orientation	West258°
InstallationType	Mounted-Roof
PVGeneratorSurface	1,808.3m ²

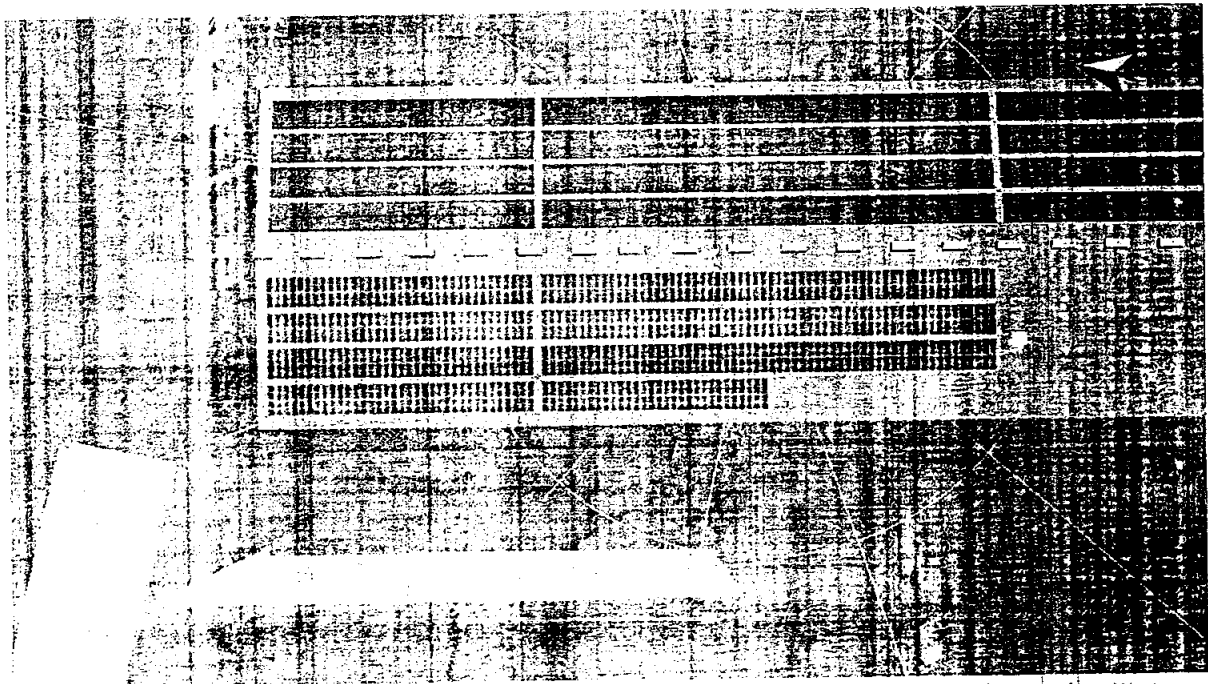


Figure:2.ModuleArea-Building01-RoofAreaWest

Degradation of Module, 2. Module Area-Building 01-Roof Area West

Remaining power (power output) after 1 year

98%

Remaining power (power output) after 25 years

84.8%

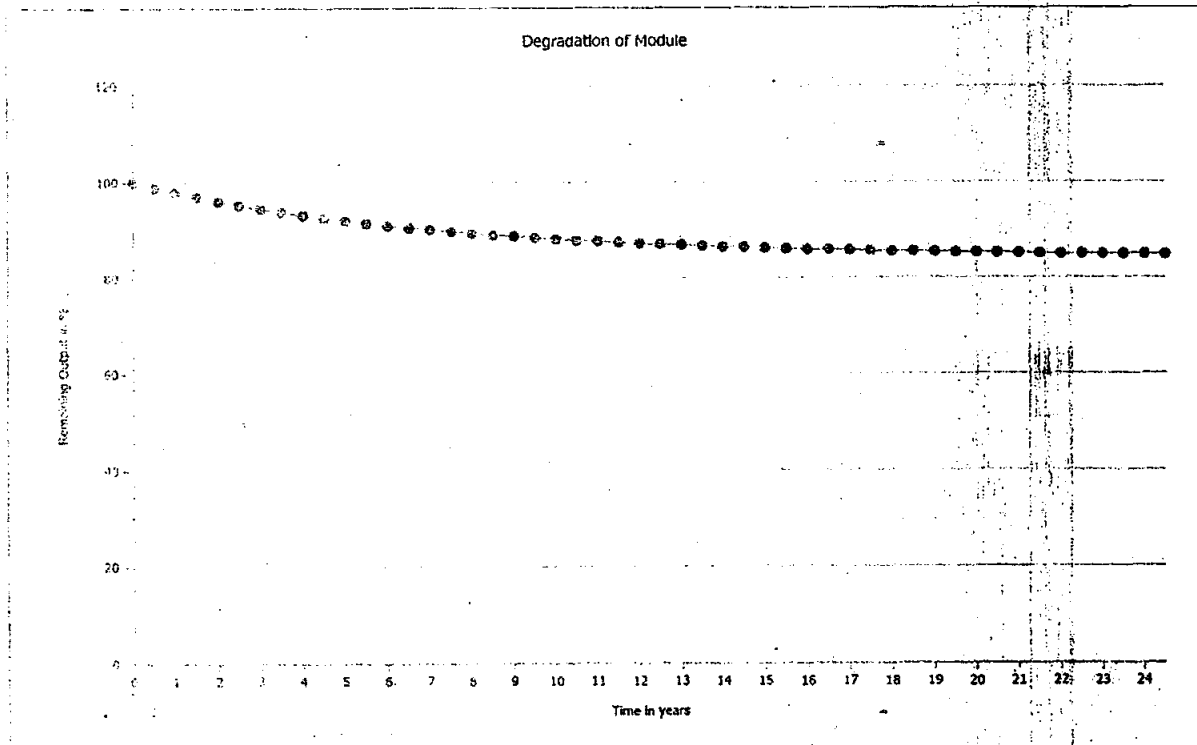


Figure: Degradation of Module, 2. Module Area-Building 01-Roof Area West

Horizon Line, 3D Design

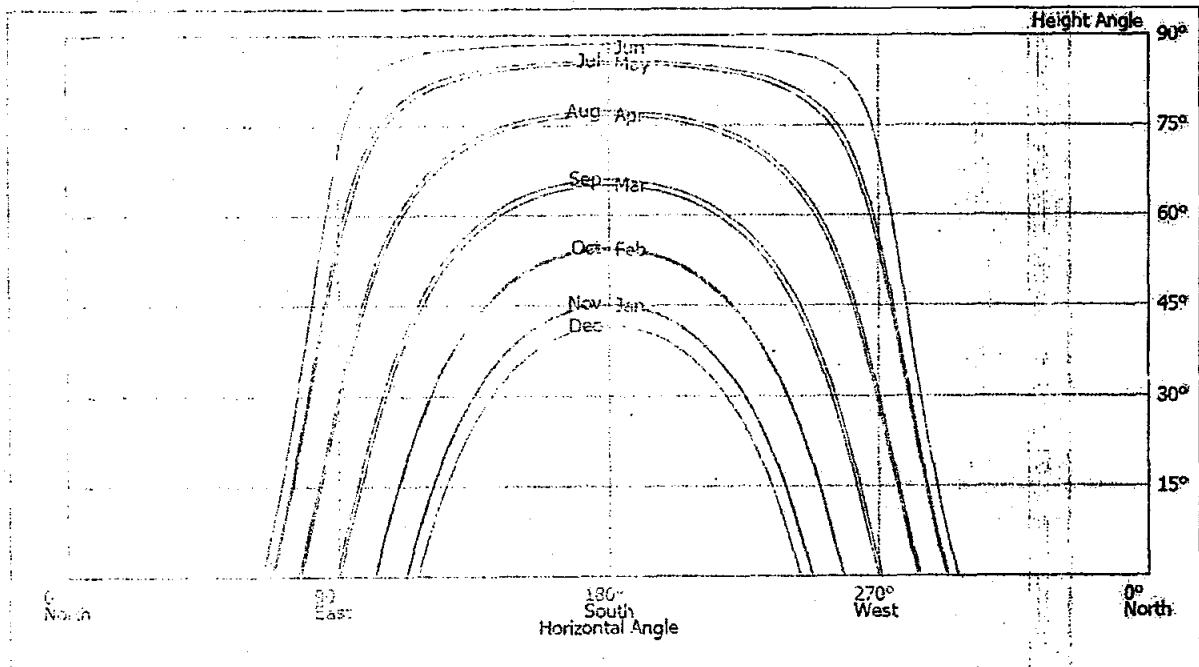


Figure: Horizon (3D Design)

Inverter configuration

Configuration1

Module Areas	Building 01-Roof Area East + Building 01-Roof Area		
West Inverter1			
Model	SUN2000-100KTL-M1(400Vac)(v6)		
Manufacturer	Huawei Technologies		
Quantity			5
Sizing Factor			104.5 %
Configuration		MPP1: 1 x20	
		MPP2: 1 x20	
		MPP3: 1 x20	
		MPP4: 1 x20	
		MPP5: 1 x20	
		MPP6: 1 x20	
		MPP7: 1 x20	
		MPP8: 1 x20	
		MPP9: 1 x20	
		MPP10: 1x 20	

Inverter2

Model	SUN2000-100KTL-M1(400Vac)(v6)		
Manufacturer	Huawei Technologies		
Quantity			1
Sizing Factor			73.2 %
Configuration		MPP1: 1 x20	
		MPP2: 1 x20	
		MPP3: 1 x20	
		MPP4: 1 x20	
		MPP5: 1 x20	
		MPP6: 1 x20	
		MPP7: 1 x20	
		MPP 8: not	
		allocated MPP 9: not	
		allocated MPP10: not	
		located	

Inverter3

Model	SUN2000-100KTL-M1(400Vac)(v6)		
Manufacturer	Huawei Technologies		
Quantity			1
Sizing Factor			104.5 %
Configuration		MPP1: 1 x20	
		MPP2: 1 x20	
		MPP3: 1 x20	
		MPP4: 1 x20	
		MPP5: 1 x20	
		MPP6: 1 x20	
		MPP7: 1 x20	
		MPP8: 1 x20	
		MPP9: 1 x20	
		MPP10: 1x 20	

Inverter4

Model	SUN2000-100KTL-M1(400Vac)(v6)		
Manufacturer	Huawei Technologies		
Quantity			2

FAZAL

Adaptive Technologies
Office Number: 1112211588



SizingFactor	104.5 %
Configuration	MPP1: 1 x20
	MPP2: 1 x20
	MPP3: 1 x20
	MPP4: 1 x20
	MPP5: 1 x20
	MPP6: 1 x20
	MPP7: 1 x20
	MPP8: 1 x20
	MPP9: 1 x20
	MPP10: 1x 20

AC Mains

AC Mains

NumberofPhases	3
MainsVoltage(1-phase)	230V
DisplacementPowerFactor(cosphi)	+/-1

Simulation Results

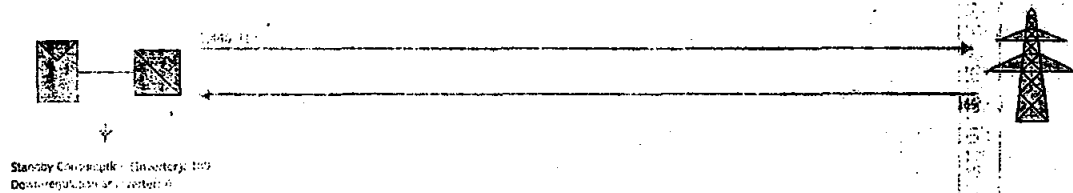
Results Total System

PV System

PV Generator Output	1000.5 kWp
Spec. Annual Yield	1,439.50 kWh/kWp
Performance Ratio (PR)	80.2%
Yield Reduction due to Shading	3.4%/Year
Grid Feed-in	1,440,412 kWh/Year
Grid Feed-in in the first year (incl. module degradation)	1,423,726 kWh/Year
standby Consumption (Inverter)	189 kWh/Year
CO ₂ Emissions avoided	676,905 kg/year

Energy Flow Graph

Project: FAZ/L SOLAR



Standby Consumption (Inverter): 189
Degradation (incl. inverter): 3.4%

All values in kWh
Based on the average 1000h of 1000h of 1000h
Based on 1000h of 1000h of 1000h

Figure: Energy Flow Graph

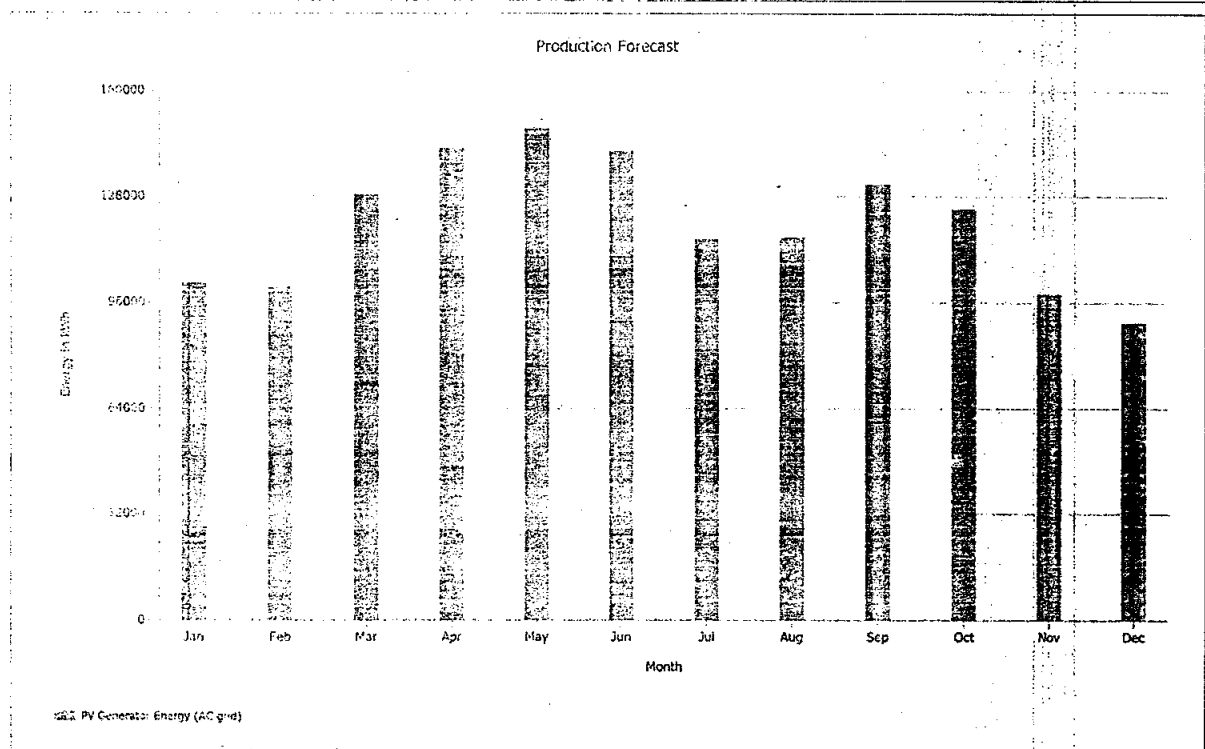


Figure: Production Forecast

Results per Module Area

Building01-RoofAreaEast

PVGeneratorOutput	598 kWp
PVGeneratorSurface	2,686.6 m ²
GlobalRadiationattheModule	1791.5 kWh/m ²
PVGeneratorEnergy(ACgrid)	872917.3 kWh/Year
Spec. Annual Yield	1459.7 kWh/kWp
PerformanceRatio(PR)	81.5 %

Building01-RoofAreaWest

PVGeneratorOutput	402.5 kWp
PVGeneratorSurface	1,808.3 m ²
GlobalRadiationattheModule	1798.8 kWh/m ²
PVGeneratorEnergy(ACgrid)	567494.9 kWh/Year
Spec. Annual Yield	1409.9 kWh/kWp
PerformanceRatio(PR)	78.4 %

PV System Energy Balance

PV System Energy Balance

Global radiation-horizontal	1,832.06 kWh/m ²	
Deviation from standard spectrum	-18.32 kWh/m ²	-1.00%
Ground Reflection (Albedo)	0.25 kWh/m ²	0.01%
Orientation and inclination of the module surface	-3.40 kWh/m ²	-0.19%
Module-independent shading	-16.15 kWh/m ²	-0.89%
Reflection on the module interface	-17.48 kWh/m ²	-0.97%
Global Radiation at the Module	1,776.96 kWh/m ²	
	1,776.96 kWh/m ²	
	x4494.858 m ²	
	= 7,987,192.70 kWh	
Global PV Radiation:	7,987,192.70 kWh	
Soiling	-159,737.97 kWh	-2.00%
STC Conversion (Rated Efficiency of Module 22.26%)	-6,085,049.52 kWh	-77.74%
Rated PV Energy	1,742,405.20 kWh	
Module-specific Partial Shading	-37,166.22 kWh	-2.13%
Low-light performance	-65,556.94 kWh	-3.84%
Deviation from the nominal module temperature	-99,777.58 kWh	-6.09%
Diodes	-649.27 kWh	-0.04%
Mismatch (Manufacturer Information)	-30,785.10 kWh	-2.00%
Mismatch (Configuration/Shading)	-4,396.98 kWh	-0.29%
PV Energy (DC) without inverter down-regulation	1,504,073.12 kWh	
Failing to reach the DC start output	-3.49 kWh	0.00%
Down-regulation on account of the MPP Voltage Range	-3.93 kWh	0.00%
Down-regulation on account of the max. DC Current	0.00 kWh	0.00%
Down-regulation on account of the max. DC Power	0.00 kWh	0.00%
Down-regulation on account of the max. AC Power/cosphi	0.00 kWh	0.00%
MPP Matching	-2,133.18 kWh	-0.14%
PV Energy (DC)	1,501,932.51 kWh	
Energy at the inverter input	1,501,932.51 kWh	
Input voltage deviates from rated voltage	-2,893.54 kWh	-0.19%
DC/AC Conversion	-29,230.65 kWh	-1.95%
Standby Consumption (Inverter)	-189.07 kWh	-0.01%
Total Cable Losses	-29,396.17 kWh	-2.00%
PV Energy (AC) minus standby use	1,440,223.08 kWh	
PV Generator Energy (AC grid)	1,440,412.16 kWh	

Plans and parts list

Circuit Diagram

Company Adaptive Technologies 3, Dren Arcade, Block 6 Clifton North 75000 Pakistani	Type of System 30, 40 connected PV System		System Output 1000.5 kWp	Supply/Feed Phases 3 phase
	Created by	Approved by		
Title PV20 SOLAR		System Address Khalid J. Khan Industrial Area, Dera Ghazi Khan 75000 Sindh, Pakistan		Document Type PV20 Circuit Diagram
				Date of Issue 19/07/2023
				Sheet 1

Figure: Circuit Diagram

Dimensioning Plan

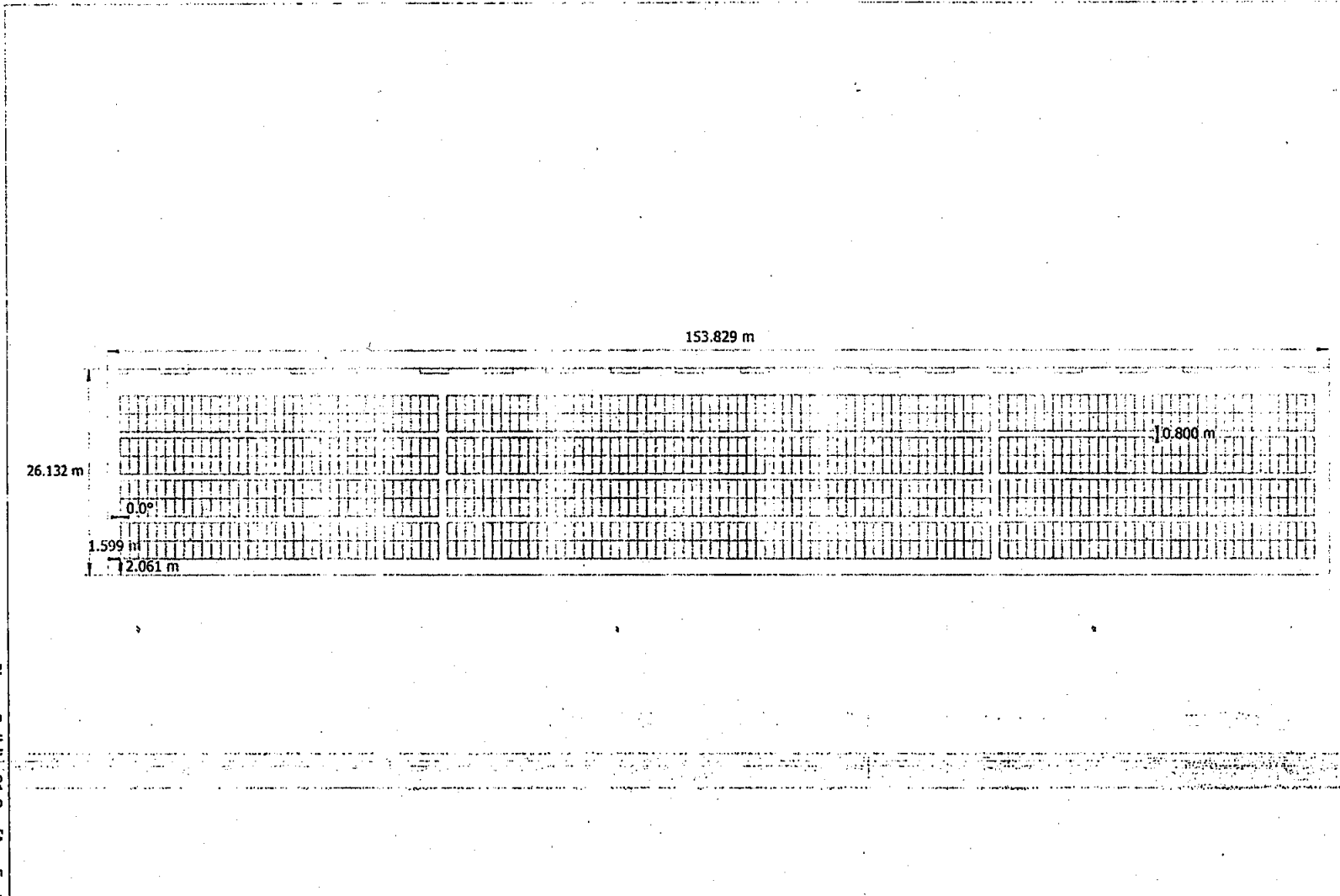


Figure: Building 001-Roof Area East

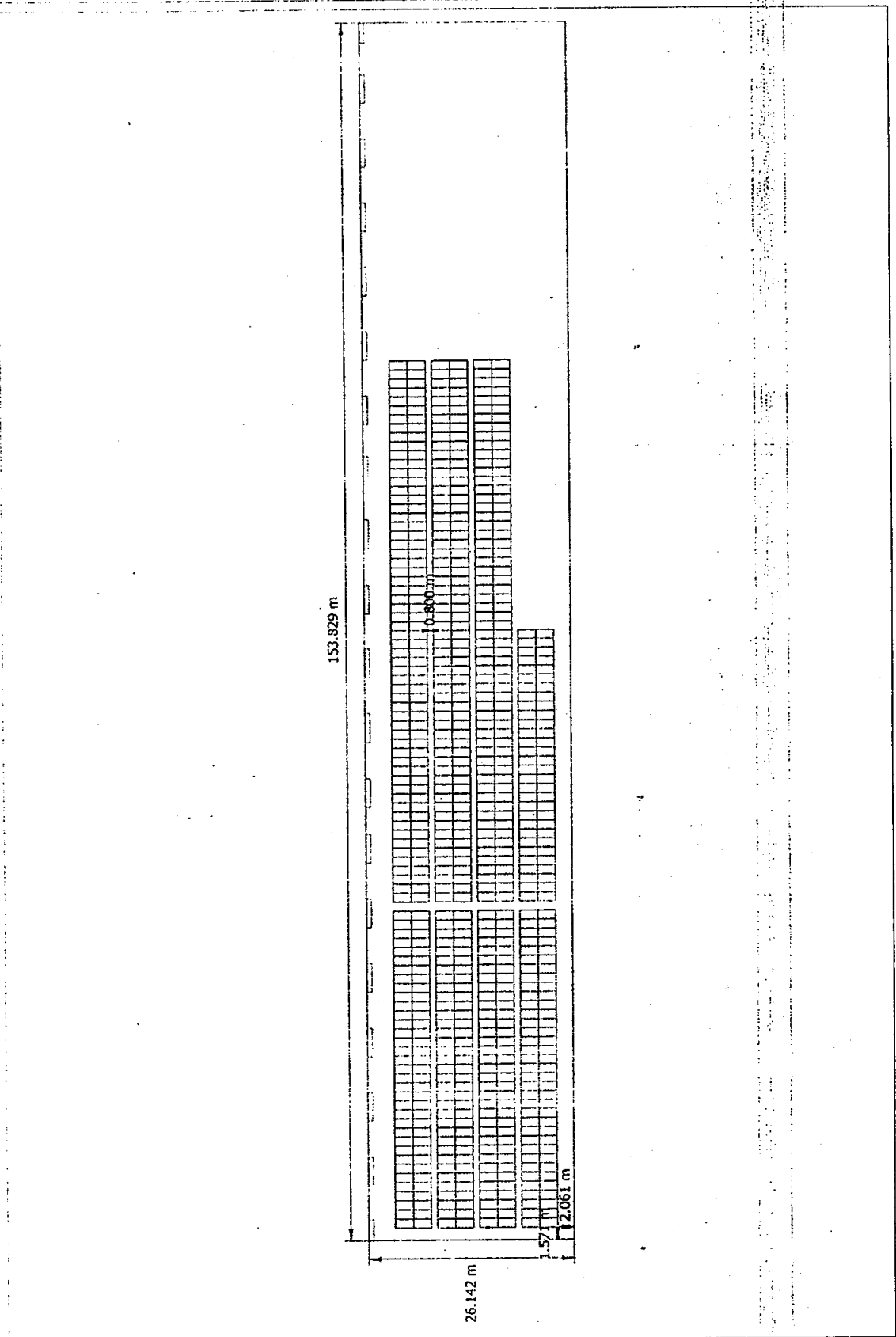


Figure: Building01-RoofAreaWest

StringPlan

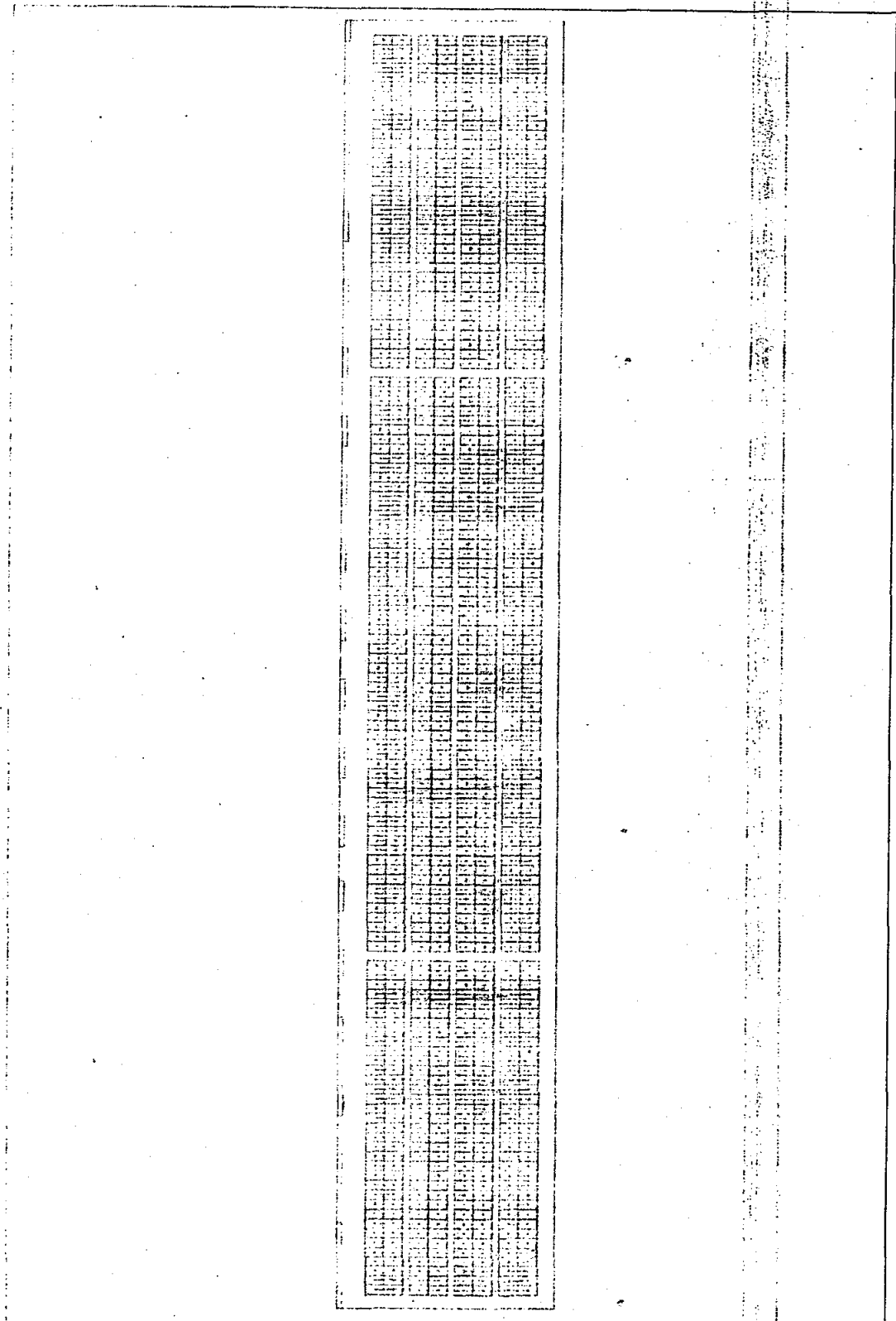


Figure: Building01-RoofAreaEast

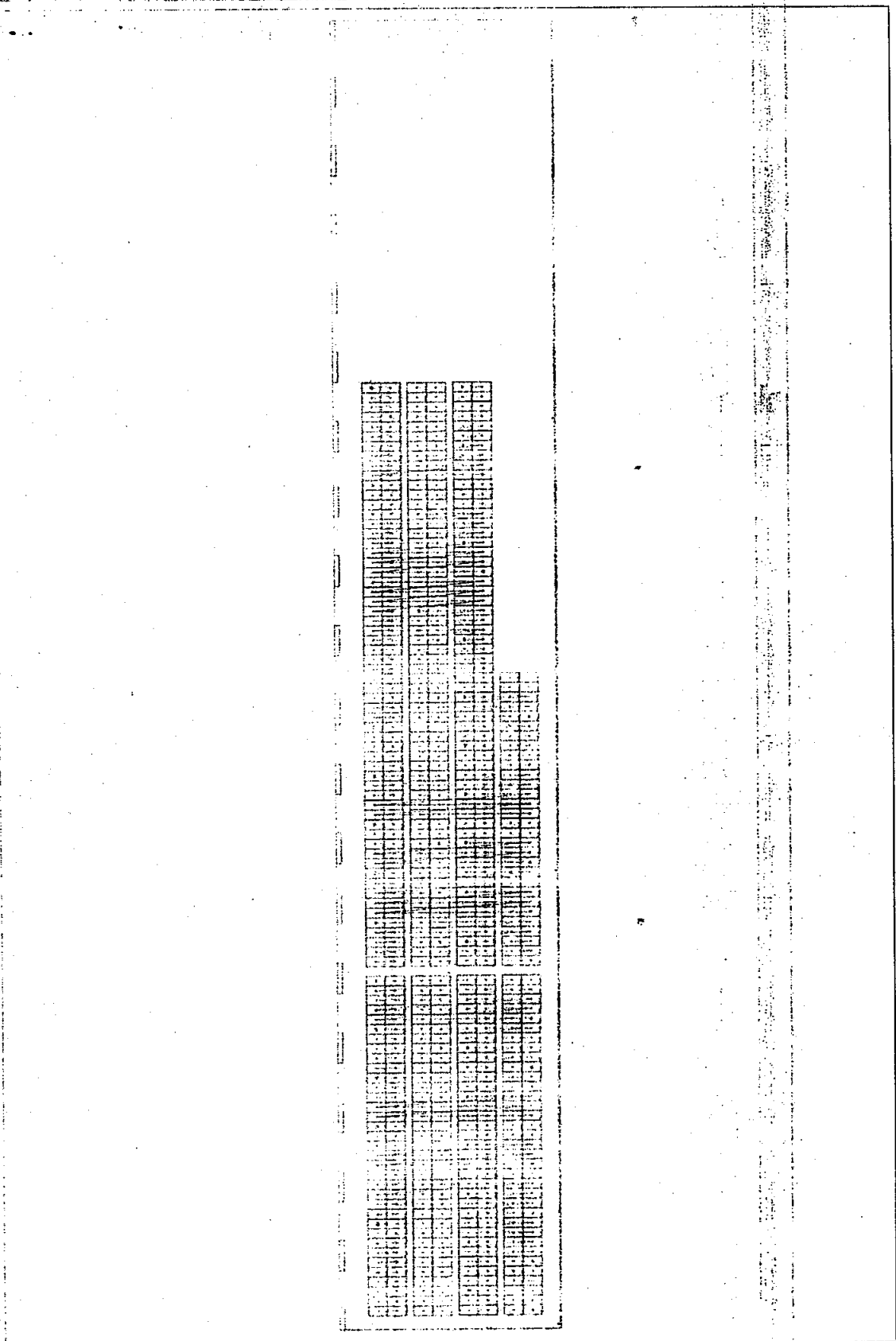


Figure: Building01-RoofAreaWest

Partslist

Partslist

#	Type	Itemnumber	Manufacturer	Name	Quantity	Unit
1	PVModule		JinkoSolar	Tiger Neo JKM575N-72HL4	1740	Piece
2	Inverter		HuaweiTechnologies	SUN2000-100KTL-M1(400Vac)	9	Piece

Screenshots,3DDesign Environment

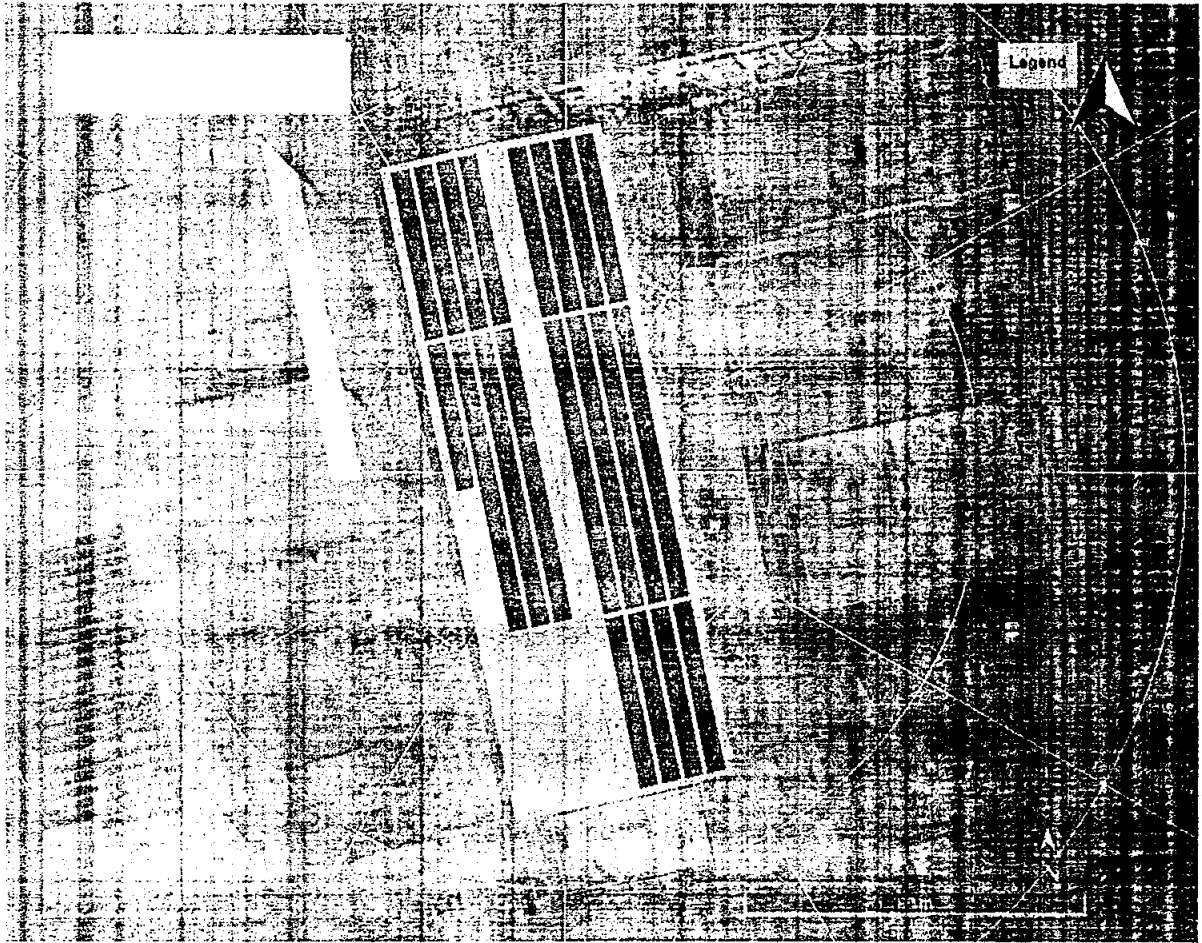


Figure:Screenshot01

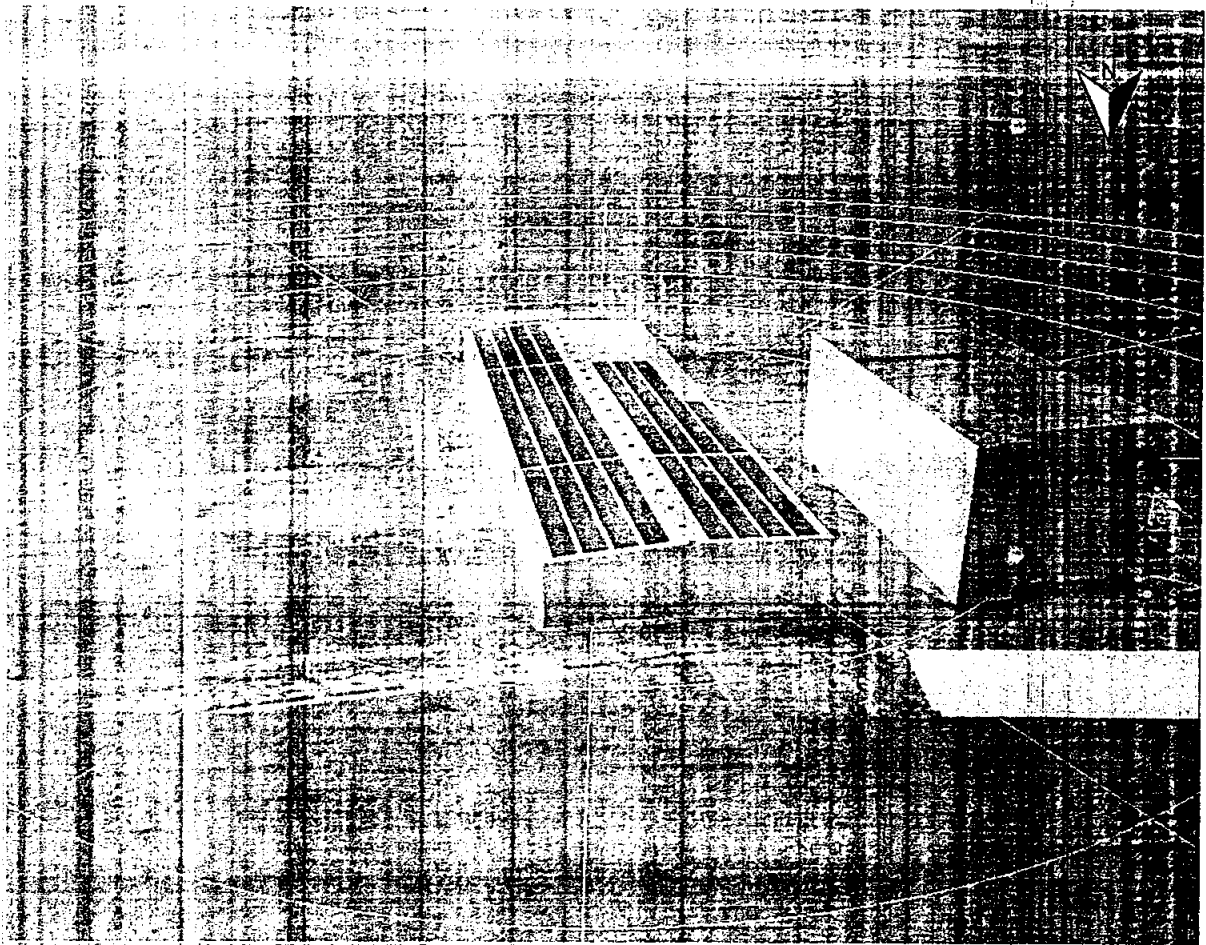


Figure: Screenshot02

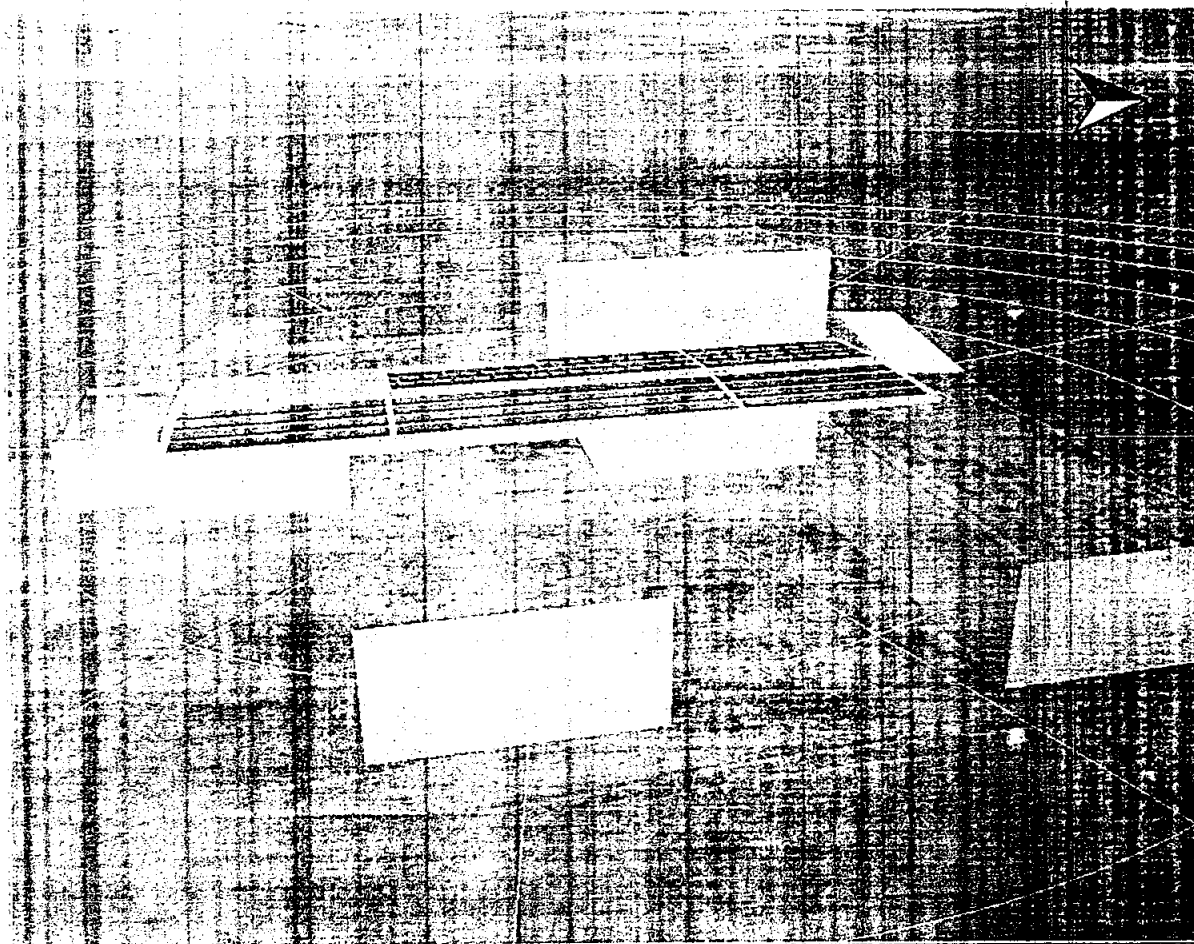


Figure: Screenshot03

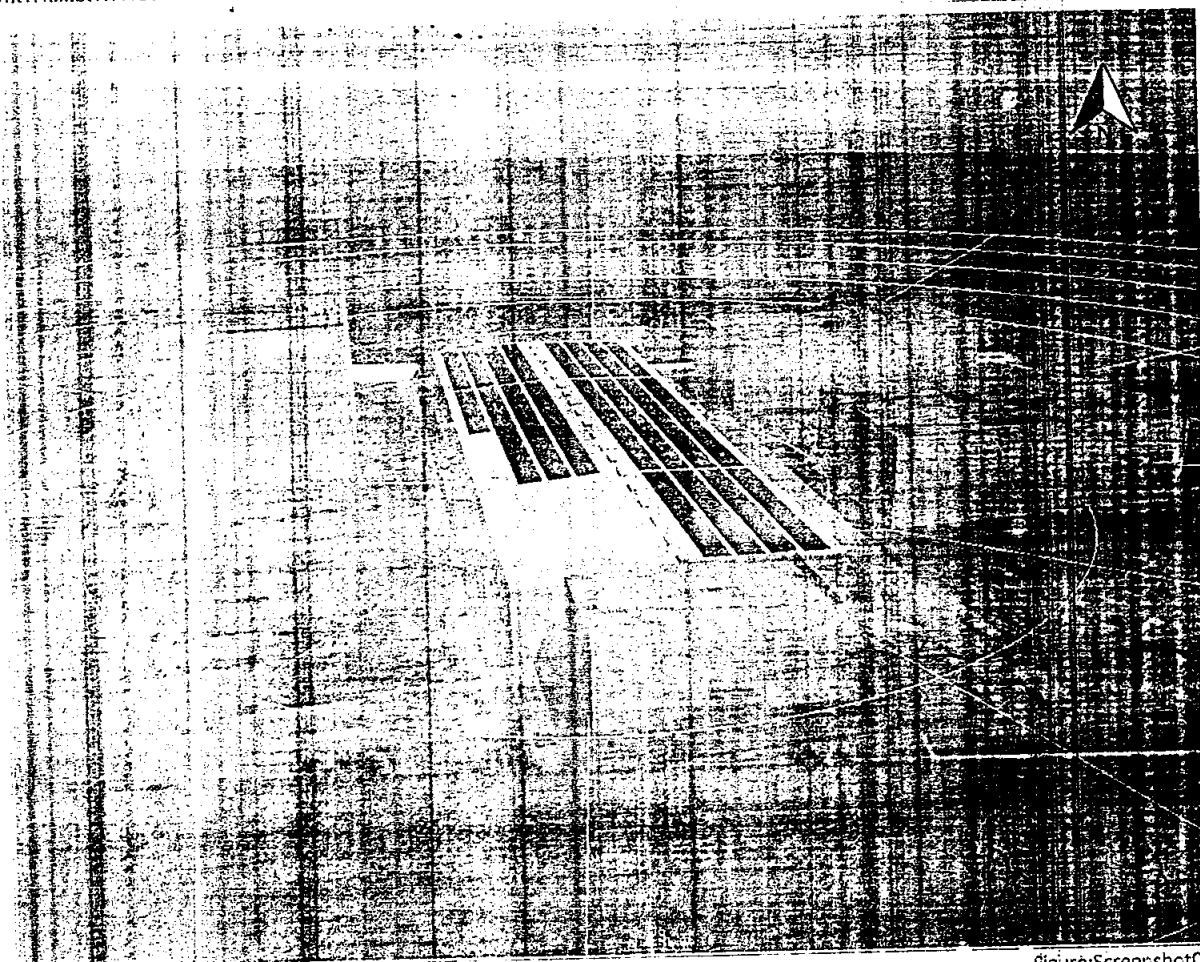


Figure:Screenshot04

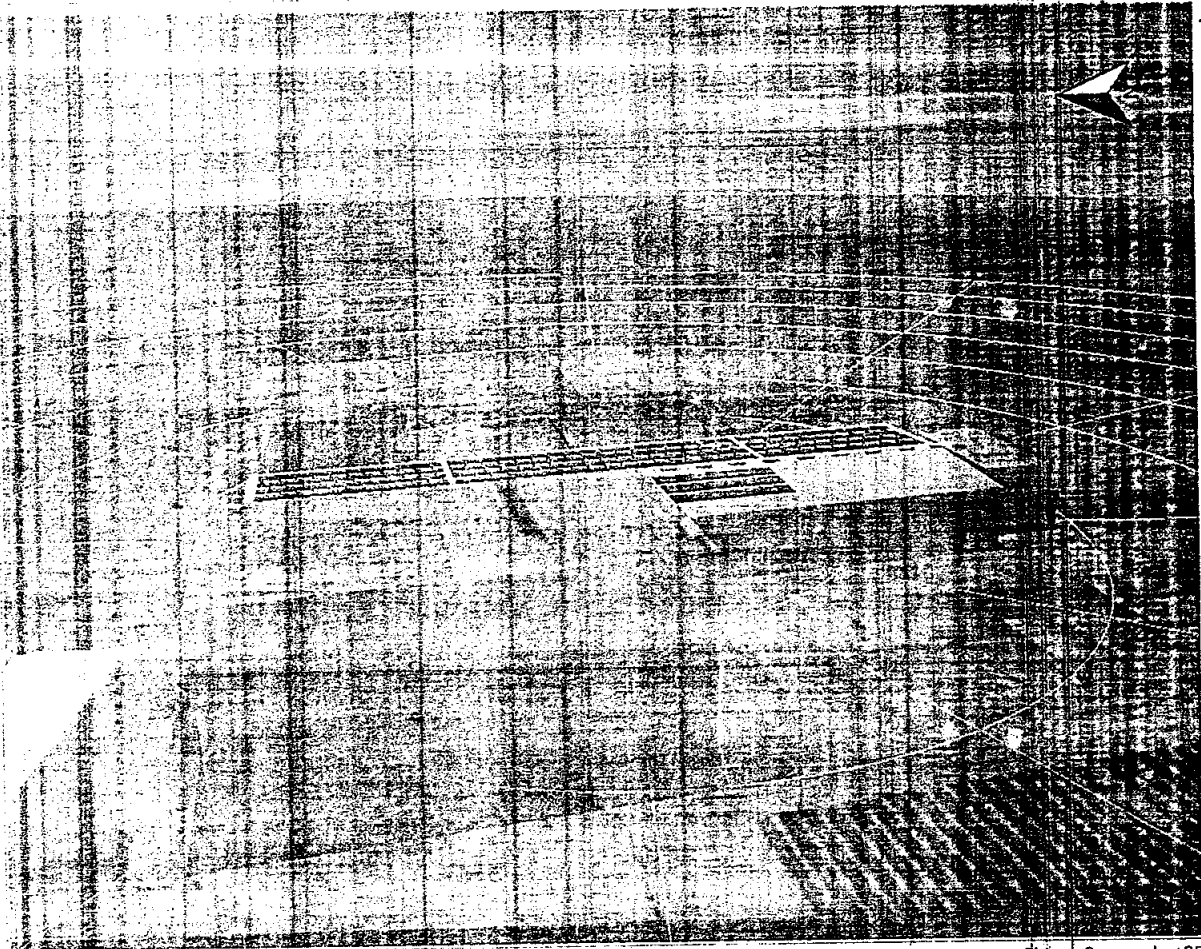


Figure:Screenshot05

Configuration

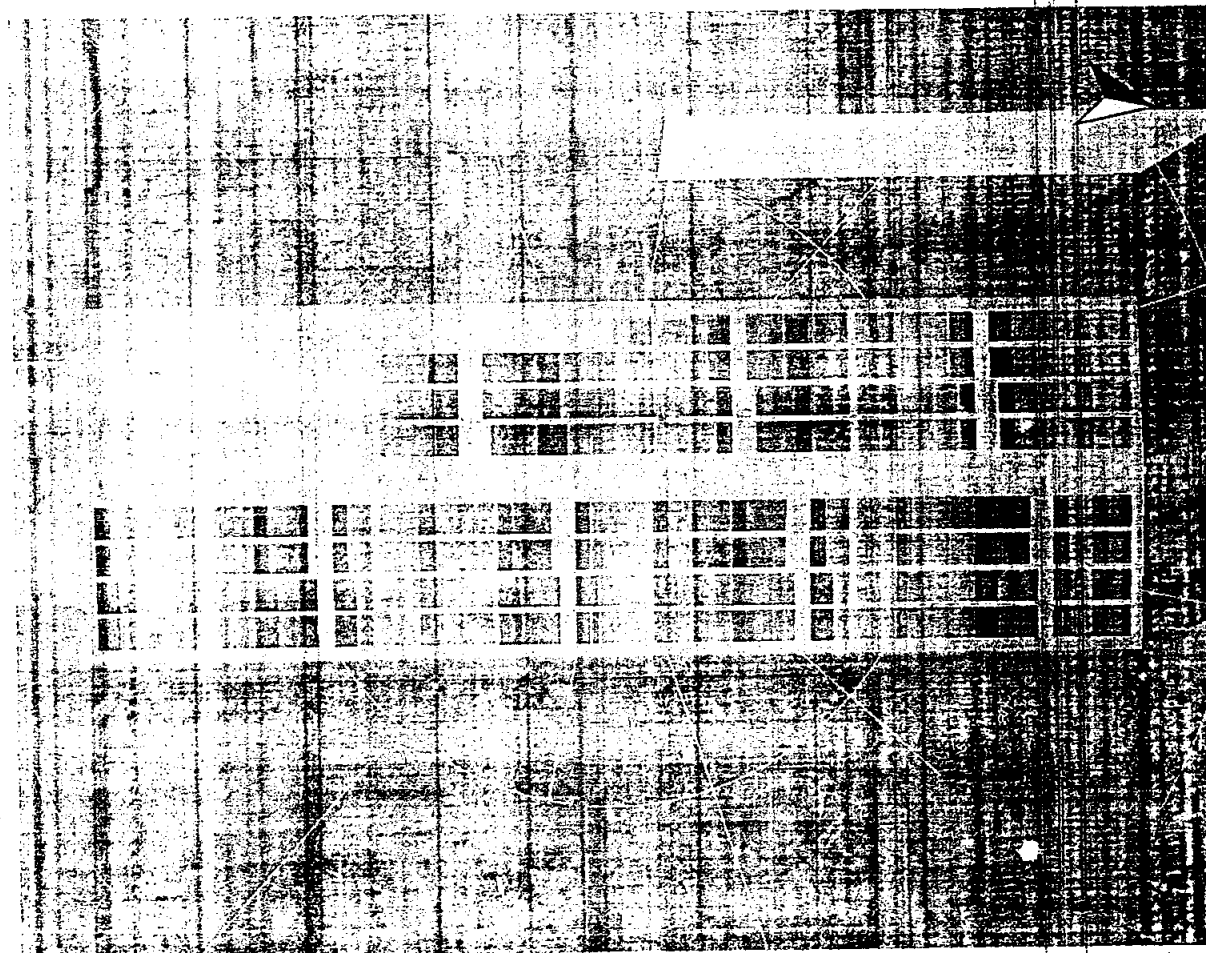


Figure:Screenshot07

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Shading

Figure: Screenshot06