National Electric Power Regulatory Authority

Islamic Republic of Pakistan

Registrar

2nd Floor, OPF Building, G-5/2, Islamabad,
Ph: 051-9206500, 9207200, Fax: 9210215
E-mail: registrar@nepra.org.pk

No. NEPRA/R/LAG-223/10081-83

August 22, 2013

Mr. Mohammad Shomail Ghalib
Chief Executive
Access Solar (Private) Limited
C/o Horwath Hussain Chaudhry & Co.
25-E, Main Market Gulberg
Lahore-54660

Subject: **Generation Licence No. SPGL/03/2013**
Licence Application No. LAG-223
Access Solar (Private) Limited

Reference: Your application vide letter No. nil, dated January 29, 2013

Enclosed please find herewith Generation Licence No. SPGL/03/2013 granted by National Electric Power Regulatory Authority (NEPRA) to Access Solar (Private) Limited, pursuant to Section 15 of the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of 1997). Further, the determination of the Authority in the subject matter is also attached.

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

Enclosure: **Generation Licence (SPGL/03/2013)**

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
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(Syed Safeer Hussain)

Copy to:

1. Chief Executive Officer, Islamabad Electric Supply Company (IESCO), Street No. 40, G-7/4, Islamabad
2. Director General, Pakistan Environmental Protection Agency, House No. 311, Main Margalla Road, F-11/3, Islamabad.

National Electric Power Regulatory Authority (NEPRA)
Islamabad – Pakistan

GENERATION LICENCE

No. SPGL/03/2013

In exercise of the Powers conferred upon the National Electric Power Regulatory Authority (NEPRA) under Section 15 of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997, the Authority hereby grants a Generation Licence to:

ACCESS SOLAR (PRIVATE) LIMITED

Incorporated under the Companies Ordinance, 1984
Cooperate Universal Identification No. 0077327, dated October 07, 2011

for its Generation Facility/Solar Power Plant/Solar Farm Located Near Village Hattar, Tehsil Pind Dadan Khan, District Jhelum in the Province of Punjab

(Installed Capacity: 11.52 MW Gross ISO)

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

Given under my hand this 22nd day of August Two Thousand & Thirteen & expires on 30th day of March Two Thousand & Forty Four.

Registrar

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Article-1
Definitions

1.1 In this Licence

(a). "Act" means "the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997";

(b). "Authority" means "the National Electric Power Regulatory Authority constituted under section 3 of the Act";

(c). "CPPA" means "the Central Power Purchasing Agency of NTDC" or any other entity created for the like purpose;

(d). "IESCO" means "Islamabad Electric Supply Company Limited and its successors and permitted assigns;

(e). "Licensee" means "Access Solar (Private) Limited";

(f). "NTDC" means "the National Transmission and Despatch Company Limited or any other entity created for the like purpose";

(g). "Policy" means "the Policy for Development of Renewable Energy for Power Generation, 2006 of Government of Pakistan" as amended from time to time;

(h). "Power Purchaser" means the CPPA of NTDC purchasing power on behalf of XW-DISCOs or IESCO;

(i). "Rules" mean "the National Electric Power Regulatory Authority Licensing (Generation) Rules, 2000";

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(j). "Solar Farm" means "a cluster of photovoltaic cells in the same location used for production of electric power";

(k). "XW DISCO" means "an Ex-WAPDA distribution company engaged in the distribution of electric power".

1.2 Words and expressions used but not defined herein bear the meaning given thereto in the Act or in the Rules.

Article-2
Application of Rules

This Licence is issued subject to the provisions of the Rules, as amended from time to time.

Article-3
Generation Facilities

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

3.2 The net capacity of the generation facility/Solar Farm of the Licensee is set out in Schedule-II hereto.

3.3 The Licensee shall provide the final arrangement, technical and financial specifications and other specific details pertaining to its generation facility/Solar Farm before its commissioning.

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Article-4
Term of Licence

4.1 The Licence is granted for a term of thirty (30) years after the Commercial Operation Date (COD).

4.2 Unless suspended or revoked earlier, the Licensee may within ninety (90) days prior to the expiry of the term of the Licence, apply for renewal of the Licence under the National Electric Power Regulatory Authority Licensing (Application and Modification Procedures) Regulations, 1999 as amended or replaced from time to time.

Article-5
Licence fee

After the grant of the Generation Licence, the Licensee shall pay to the Authority the Licence fee, in the amount and manner and at the time set out in the National Electric Power Regulatory Authority (Fees) Rules, 2002.

Article-6
Tariff

The Licensee shall charge only such tariff which has been determined, approved or specified by the Authority in terms of Rule-6 of the Rules.

Article-7
Competitive Trading Arrangement

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

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

Article-8
Maintenance of Records

For the purpose of sub-rule (1) of Rule 19 of the Rules, copies of records and data shall be retained in standard and electronic form and all such records and data shall, subject to just claims of confidentiality, be accessible by authorized officers of the Authority.

Article-9
Compliance with Performance Standards

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

Article-10
Compliance with Environmental Standards

The Licensee shall comply with the environmental standards as may be prescribed by the relevant competent authority from time to time.

Article-11
Power off take Point and Voltage

The Licensee shall deliver power at the outgoing bus of its 11 KV grid station. The up-gradation (step up) of generation voltage up to 11 KV will be the responsibility of the Licensee.

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Article-12
Performance Data of Generation Facility/Solar Farm

The Licensee shall install properly calibrated automatic computerized solar radiation recording device(s) and a compatible communication/SCADA system both at its generation facility/Solar Farm and control room of the Power Purchaser for transmission of solar radiation data and power output data to the control room of the Power Purchaser for recording of data.

Article-13
Provision of Information

13.1 The obligation of the Licensee to provide information to the Authority shall be in accordance with Section 44 of the Act.

13.2 The Licensee shall in addition to 13.1 above, supply information to NTDC/IESCO regarding solar data specific to the site of the Licensee and other related information on a regular basis and in a manner required by NTDC/IESCO.

13.3 The Licensee shall be subject to such penalties as may be specified in the relevant rules made by the Authority for failure to furnish such information as may be required from time to time by the Authority and which is or ought to be or has been in the control or possession of the Licensee.

Article-14
Emissions Trading /Carbon Credits

The Licensee shall process and obtain emissions/Carbon Credits expeditiously and credit the proceeds to the Power Purchaser as per the Policy.

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Article-15
Design & Manufacturing Standards

Solar photovoltaic cells shall be designed, manufactured and tested according to the latest IEC standards or other equivalent standards. All plant and equipment shall be unused and brand new.

Article-16
Power Curve

The power curve for the individual solar photovoltaic cell provided by the manufacturer and as mentioned in this Generation Licence shall form the basis in determining the cumulative Power Curve of Solar Farm/Complex.

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SCHEDULE-I

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

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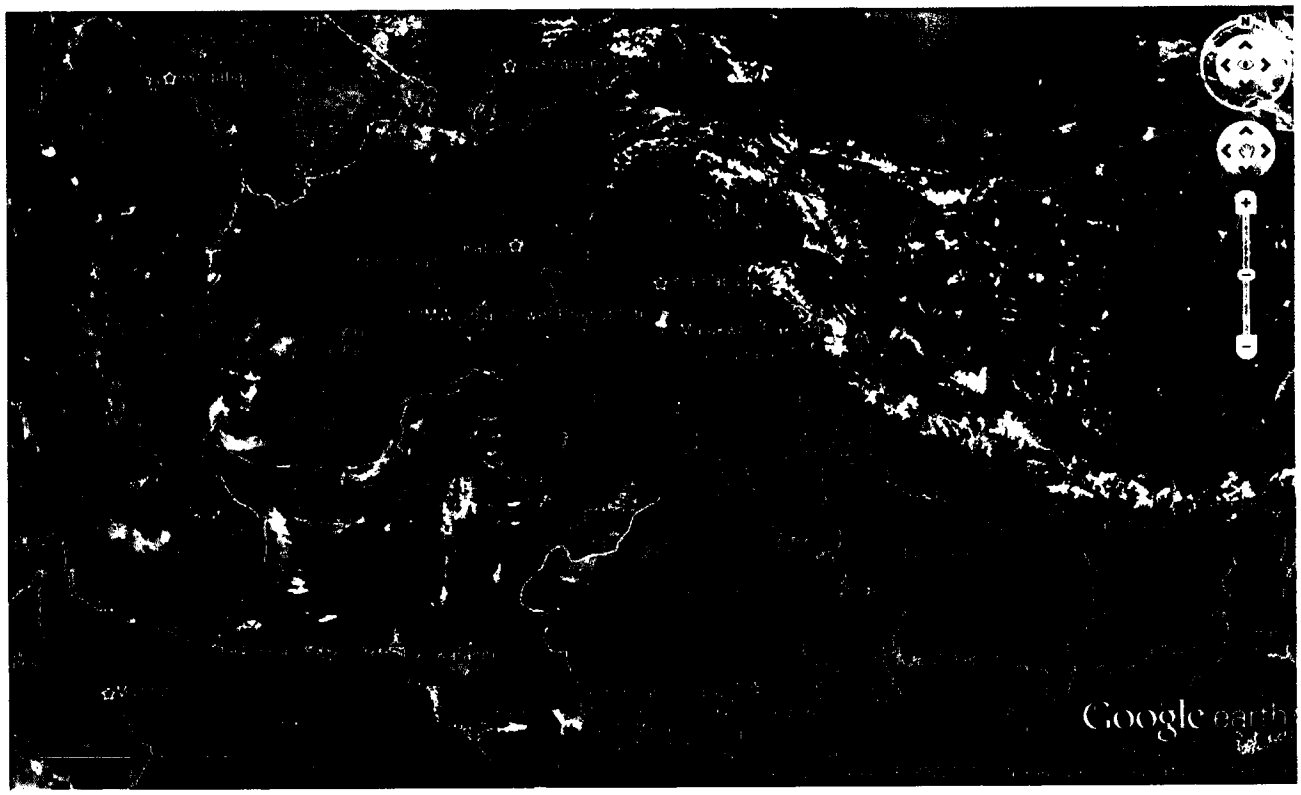
Location of the Generation Facility/Solar Power Plant/ Solar Farm



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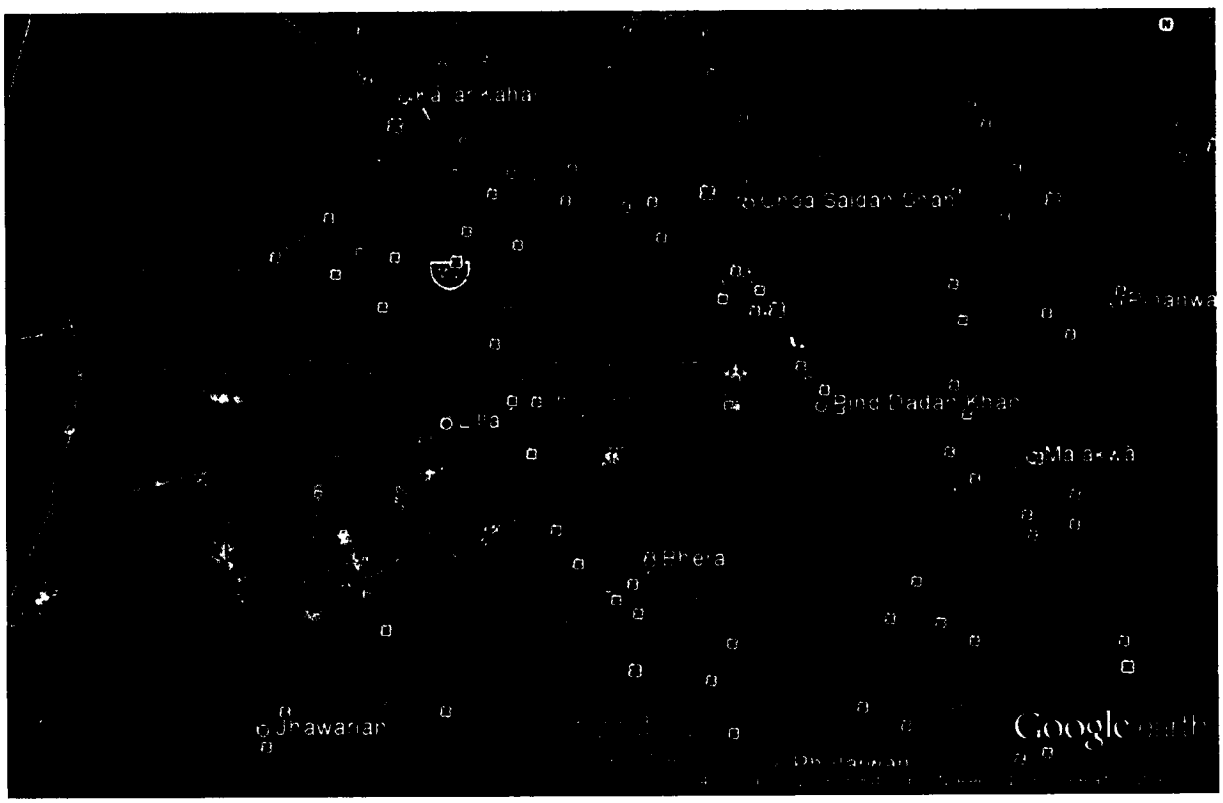
Location of the Generation Facility/Solar Power Plant/ Solar Farm



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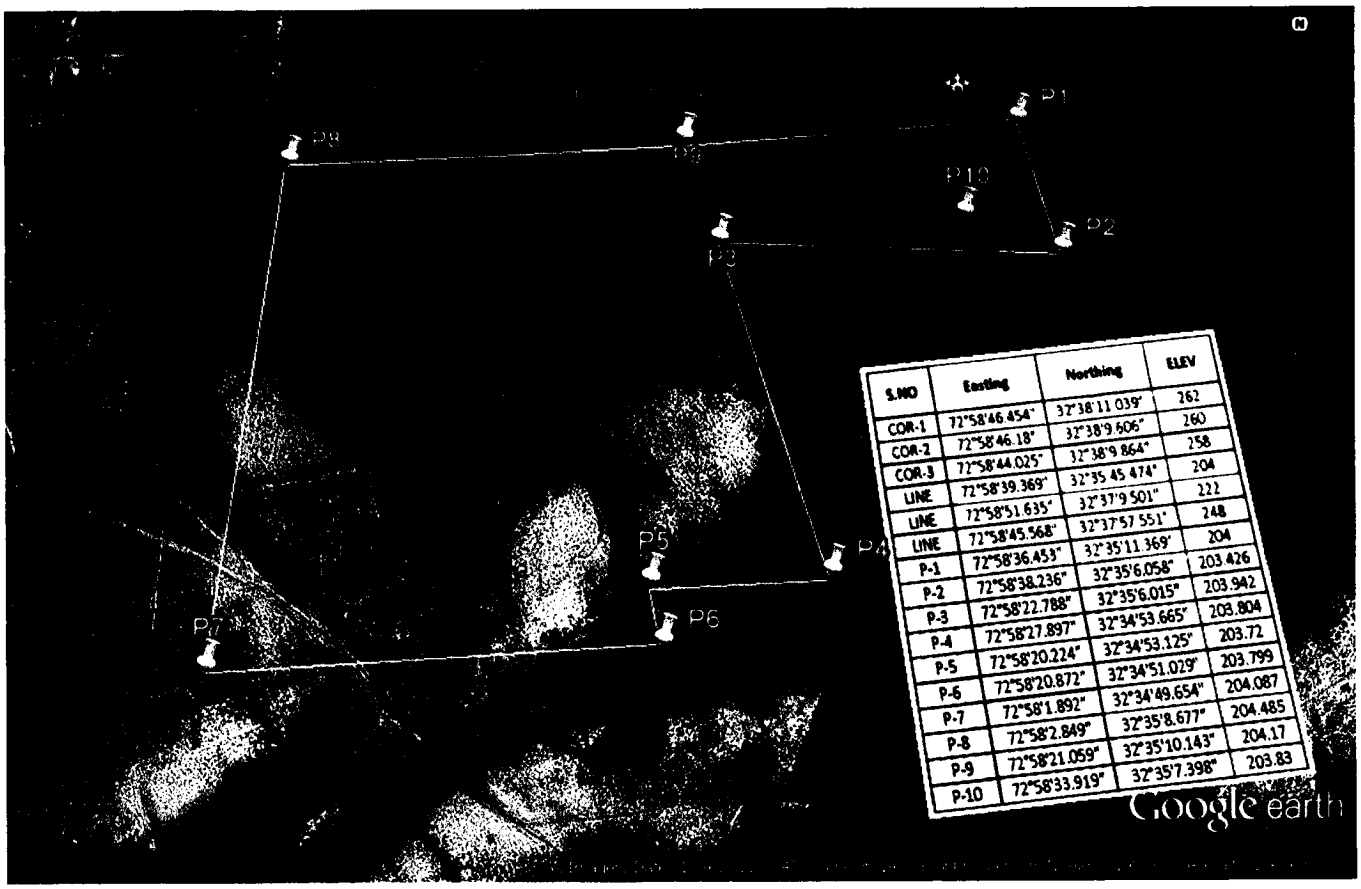
Location Coordinates of the Generation Facility/Solar Power Plant/ Solar Farm



S.NO	Easting	Northing	ELEV
COR-1	72°58'46.454"	32°38'11.039"	262
COR-2	72°58'46.18"	32°38'9.606"	260
COR-3	72°58'44.025"	32°38'9.864"	258
LINE	72°58'39.369"	32°35 45.474"	204
LINE	72°58'51.635"	32°37'9.501"	222
LINE	72°58'45.568"	32°37'57.551"	248
P-1	72°58'36.459"	32°35'11.369"	204
P-2	72°58'38.236"	32°35'6.058"	203.426
P-3	72°58'22.788"	32°35'6.015"	203.942
P-4	72°58'27.897"	32°34'53.665"	203.804
P-5	72°58'20.224"	32°34'53.125"	203.72
P-6	72°58'20.872"	32°34'51.029"	203.799
P-7	72°58'1.892"	32°34'49.654"	204.087
P-8	72°58'2.849"	32°35'8.677"	204.485
P-9	72°58'21.059"	32°35'10.143"	204.17
P-10	72°58'33.919"	32°35'7.398"	203.83

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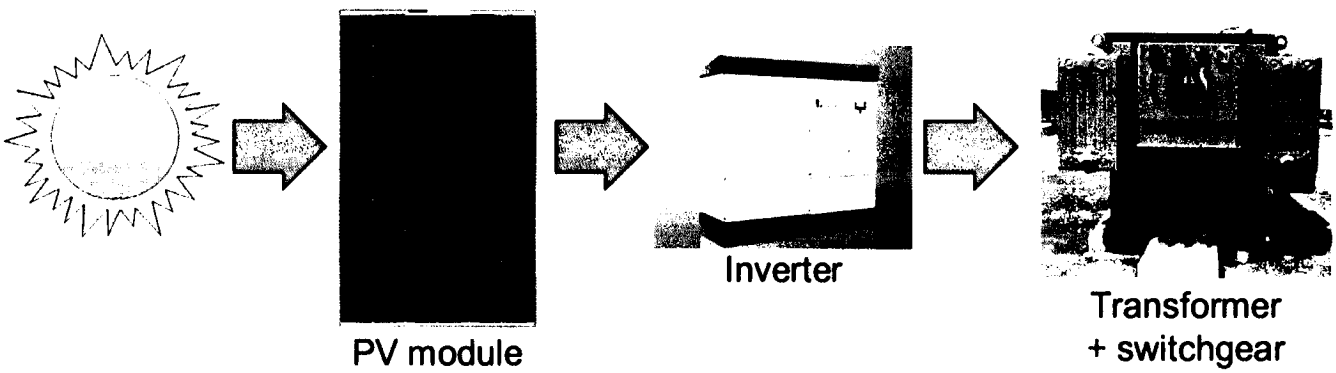
Process Flow Diagram of the Generation Facility/Solar Power Plant/ Solar Farm



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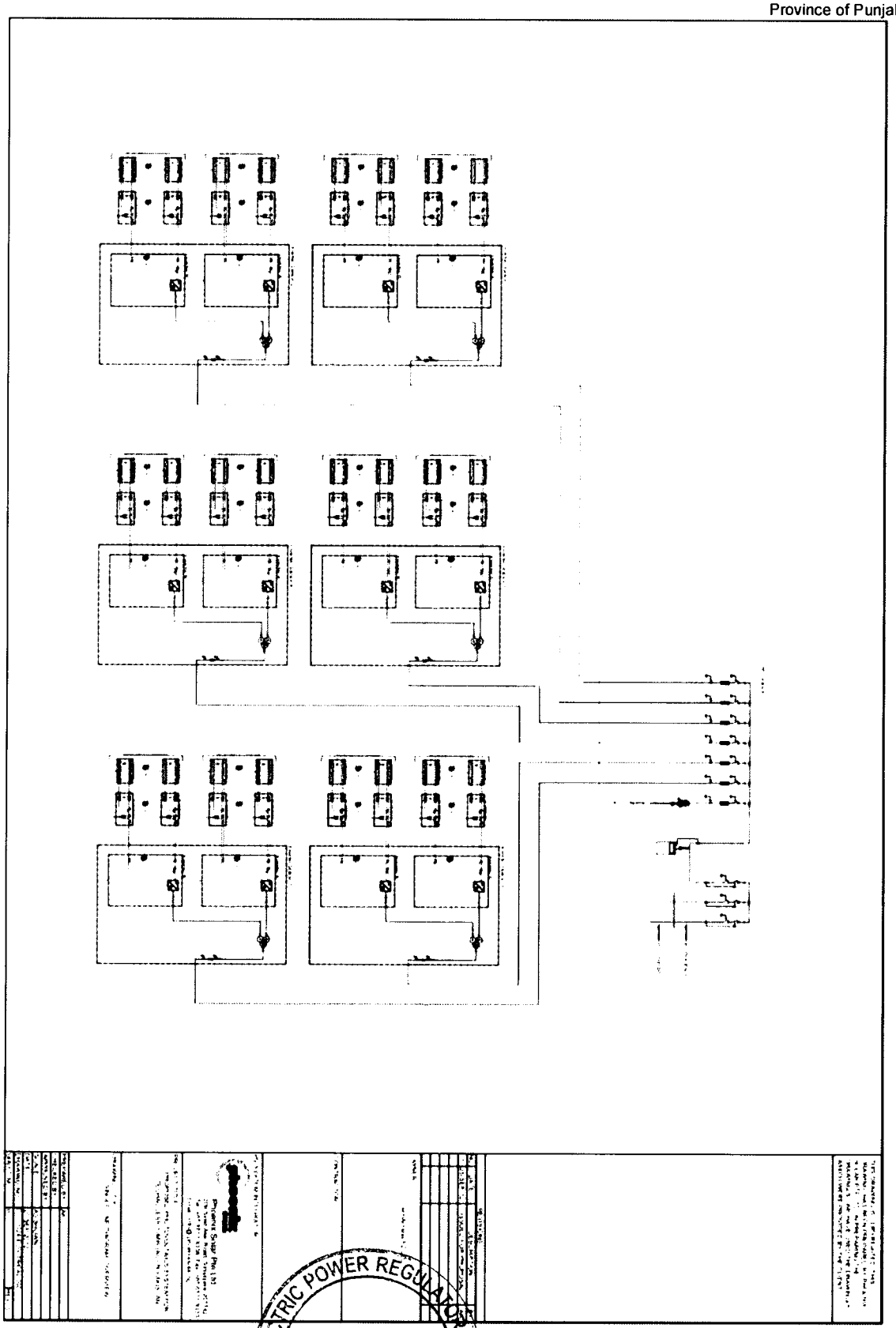
Single Line Diagram of Electrical System of the Generation Facility/Solar Power Plant/ Solar Farm



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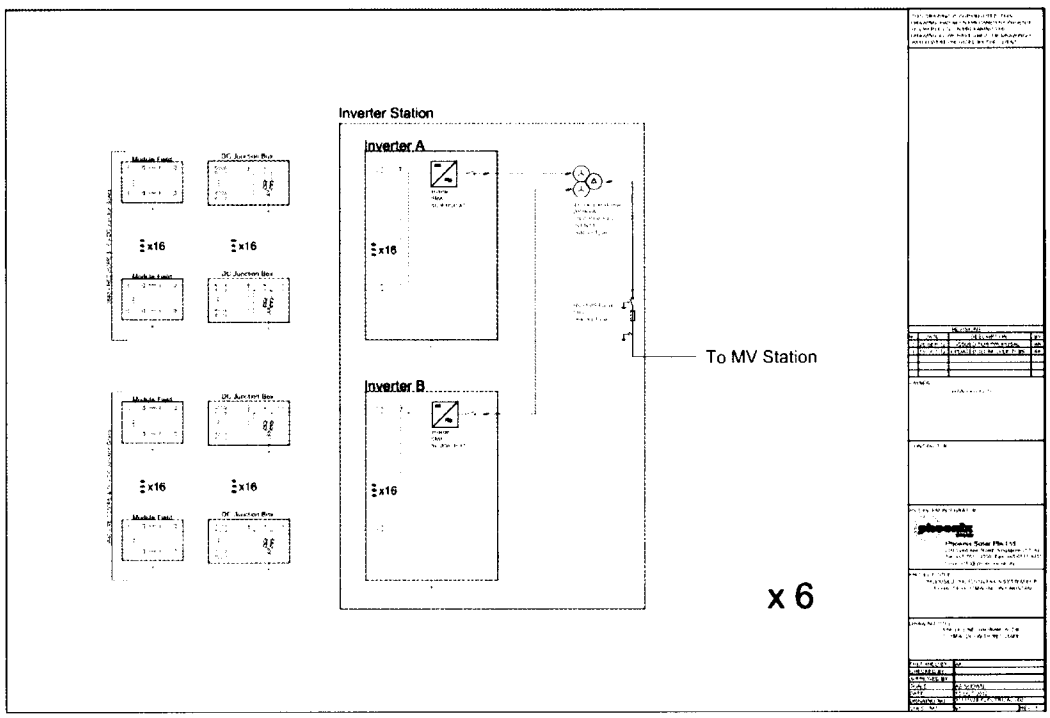
Single Line Diagram of Inverter Station of the Generation Facility/Solar Power Plant/ Solar Farm



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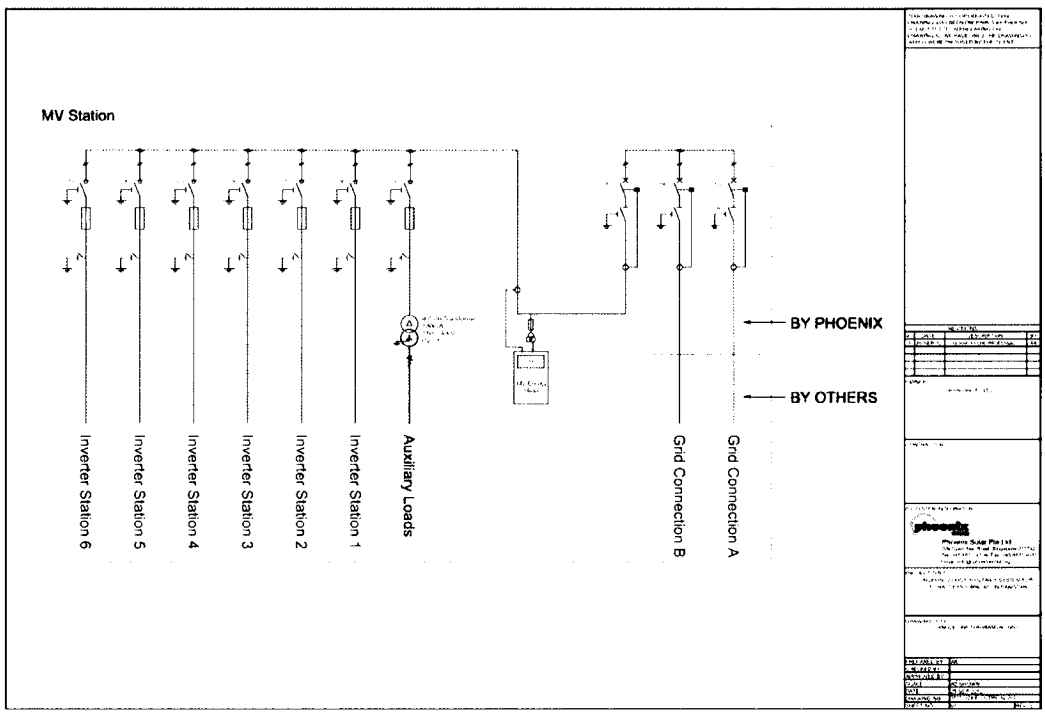
Single Line Diagram of MV Station of the Generation Facility/Solar Power Plant/ Solar Farm



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Interconnection Arrangement/Transmission Facilities for Dispersal of Power from the Generation Facility/ Solar Power Plant /Solar Farm of Access Solar (Private) Limited (ASPL)

The power generated from the Generation Facility/Power Plant/Solar Farm of ASPL shall be dispersed to the load center of IESCO.

(2). The proposed Interconnection/dispersal arrangement for the project will be consisting of two (02) 11 KV Feeders using ACSR OSPREY Conductor connecting the Generation Facility/Power Plant/Solar Farm with 132 KV Dandot Grid Station located in the service area of IESCO.

(3). Any change in the above Interconnection Arrangement/Transmission Facilities duly agreed by ASPL, NTDC and IESCO, shall be communicated to the Authority in due course of time.

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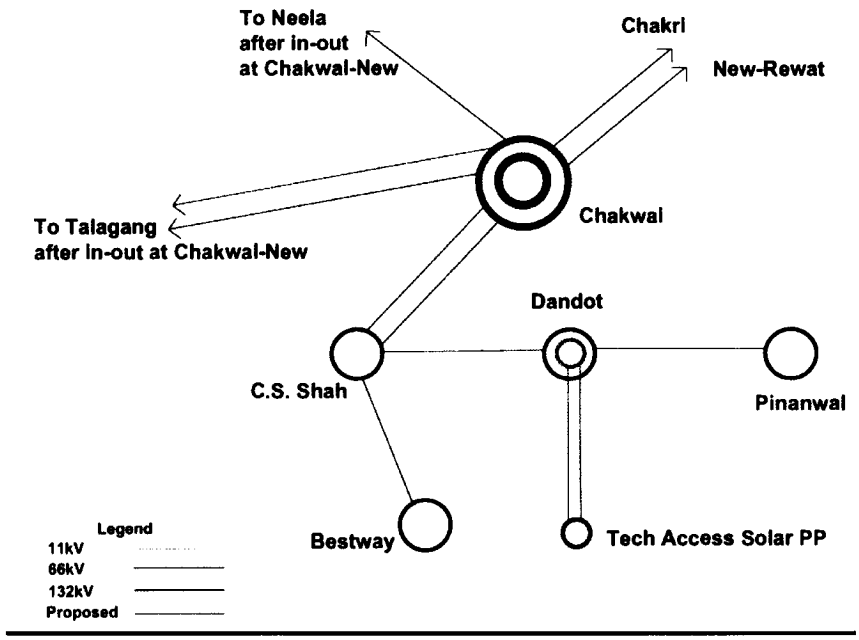
SCHEMATIC DIAGRAM FOR INTERCONNECTION ARRANGEMENT/TRANSMISSION FACILITIES FOR DISPERSAL OF POWER FROM ASPL



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Detail of Generation Facility/Solar Power Plant/ Solar Plant

(A). General Information

(i).	Name of Licensee	Access Solar (Private) Limited.
(ii).	Registered Office	C/O Howath Chaudhary & Co. 25E, Main Market, Gulberg, Lahore.
(iii).	Principal Office	Unit No. 2, 17 Aziz Avenue, Canal Bank, Lahore.
(iii).	Plants Location	Near Village Hattar, Tehsil Pind Dadan Khan, District Jhelum in the Province of Punjab.
(iv).	Type of Generation Facility	Solar Photovoltaic (PV).

(B). Solar Power Generation Technology & Capacity

(i).	Type of Technology	Photovoltaic (PV) Cell
(ii).	System Type	Grid Connected
(iii).	Installed Capacity of Solar Farm (MW)	11.52 MW_p

(C). Technical Details of Equipment

(a).	**Solar Panels – PV Modules**	
(i).	Type of Module	Polycrystalline PV Module Type Peak Energy 250; REC
(ii).	Type of Cell	Polycrystalline
(iii).	Dimension of each Module	1665mm x 991mm x 38mm
(iv).	Module Surface Area	1.65m^2
(v).	No. of Panel/ Modules	46,080
(vi).	Total Module Area	76,032m^2

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(vii).	Total Land Area Used	20 hectors (approximately)	
(viii).	Frame of Panel	Anodised Aluminium	
(ix).	Weight of one Module	18kg	
(x).	Module Output Warranty	For 1st year	For 2nd to 25th year
		97% or above	Not more than 0.7% Output Reduction Each Year
(xi).	Number of Solar Cells in each module	60 Cells	
(xii).	Efficiency of module	15.1%	
(xiii).	Environment Protection System	Encapsulation and sealing arrangements for protection from environment.	
(xiv).	Maximum Power (P_{max})	250W +5W and -0W	
(xv).	Voltage @ (P_{max})	30.2 V	
(xvi).	Current @ P_{max}	8.30 A	
(xvii).	Open circuit voltage (V_{oc})	37.4 V	
(xviii).	Short circuit current (I_{sc})	8.86 A	
(xix).	Maximum system open Circuit Voltage	1000VDC	
(b).	**PV Array**		
(i).	No. of Sub-arrays	192	
(ii).	Modules in a string	24	
(iii).	Total No. of Strings	1920	
(iv).	Modules in Sub-Array	240 modules (10 strings of 24 modules)	
(v).	Total Modules	46,080	
(c).	**PV Capacity**		
(i).	Total	11.52 MWp	
(d).	**Inverters**		

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(i).	Capacity of each unit	800kW (@50°C)	
(ii).	Inverter Model	Sunny Central SC800CP XT	
(iii).	Manufacturer	SMA Solar Technology, Germany	
(iv).	Rated Input Voltage	620 V DC	
(v).	Input Operating Voltage Range	DC 535V-850V	
(vi).	Number of Inverters	12 units	
(vii).	Total Power	9,600kW AC	
(viii).	Efficiency	98.6% (euro: 98.4%; CEC:98.5%)	
(ix).	Max. Allowable Input voltage	DC 1,000V	
(x).	Max. Current	DC 1,400 A	
(xi).	Max. Power Point Tracking Range	583-850V DC (@50°C)	
(xii).	Output electrical system	3-phase, 3-wire	
(xiii).	Rated Output Voltage	AC 360 V	
(xiv).	Rated Frequency	50 Hz	
(xv).	Power Factor	Adjustable 0.9 Induction to 0.9 Capacitance	
(xvi).	Power Control	MPP Tracker	
(xvii).	Environmental Enclosures	Operating Temperature Range	-25° C to 62° C
		Relative Humidity	15% - 95% non-condensing
		Audible Noise	<61 dB(A)
		Operating Elevation	<2000 m
		Warranty Period	5 Years
(xviii).	Grid Operation Protection	(a).	DC circuit breaker
		(b).	AC circuit breaker
		(c).	DC overvoltage protection
		(d).	Lightning protection level III

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		(e).	Grid monitoring
		(f).	Insulation monitoring
		(g).	Anti-Islanding
(e).	**Junction Boxes Installed and fixed on main steel structure in Array Yard.**		
(i).	Number of Junction Box units	192	
(ii).	Input circuits in each box	10	
(iii).	Max. Input current for each circuit	10 A	
(iv).	Max. Input voltage	1000 V	
(v).	Power at each box	60kW$_p$	
(vi).	Protection Level	IP 54	
(vii).	Over-Current protection	Fuse	
(viii).	Output switch	125A, 1000V disconnector	
(ix).	Surge protection	1000V, Type II	
(x).	Purpose of Junction Box	(a).	Combine groups of modules into sub-arrays that will be wired into the inverter.
		(b).	Provide arrangement for disconnection for each of the groups.
		(c).	To provide group array isolation.
		(d)	The current carrying ratings of the junction boxes shall be suitable with adequate safety factor to inter-connect the Solar PV array.
		(e)	10 protected inputs at 15A to prevent backflow of short circuit current

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(f).	**Data Collecting System**		
(i).	Weather Data	(a).	Pyranometer - 2 Sets (incline to record irradiation level)
		(b).	Thermometer - 2 Sets (to record ambient temp)
(ii).	System Data	(a).	DC input voltage (V) & current (A) of each Inverter (Phase, Line)
		(b).	Total DC power (kW) generated by PV array.
		(c).	AC output voltage(V) and current (A) of each Inverter (Phase, Total)
		(d).	AC output power (kW) and energy (kWh) of each Inverter
		(e).	Frequency (Hz)
		(f).	Power Factor (PF)
		(g).	Temperature inside inverter station
(g).	**Isolating Transformer**		
(i).	Rating	2,000 KVA x 6 No. (LV/MV)	
(ii).	Type of Transformer	ONAN	
(iii).	Input voltage	360V	
(iv).	Output Voltage	11kV	
(v).	Purpose of Transformer	Step Up Voltage, Galvanic Isolation and Eliminate DC Current Injection	
(vi).	Efficiency	98.8%	

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(h).	**Outdoor Cubicle Control Room**	
(i).	Data record	Continuous logging with data logging Software
(ii).	Control Room System	Computerized Data Acquisition System
(iii).	Control room System Detail	Interfacing Hardware & Software, Industrial Type PC, which will be robust & rugged suitable to operate in the Control Room Environment
(i).	**Mounting Structure**	
(i).	Structure	HDG steel / aluminium with concrete pile foundations
(ii).	Tilt of Array Frame	20°
(iii).	Array Specification	Certified for wind and seismic requirements
(j).	**Foundation Pillars**	
(i).	No. of Foundations	8,640
(ii).	Foundation Structure	Reinforced concrete

(D). Other Details

(i).	Project Commissioning date (Anticipated)	March 31, 2014
(ii).	Expected Life of the Project from Commercial Operation Date (COD)	30 Years

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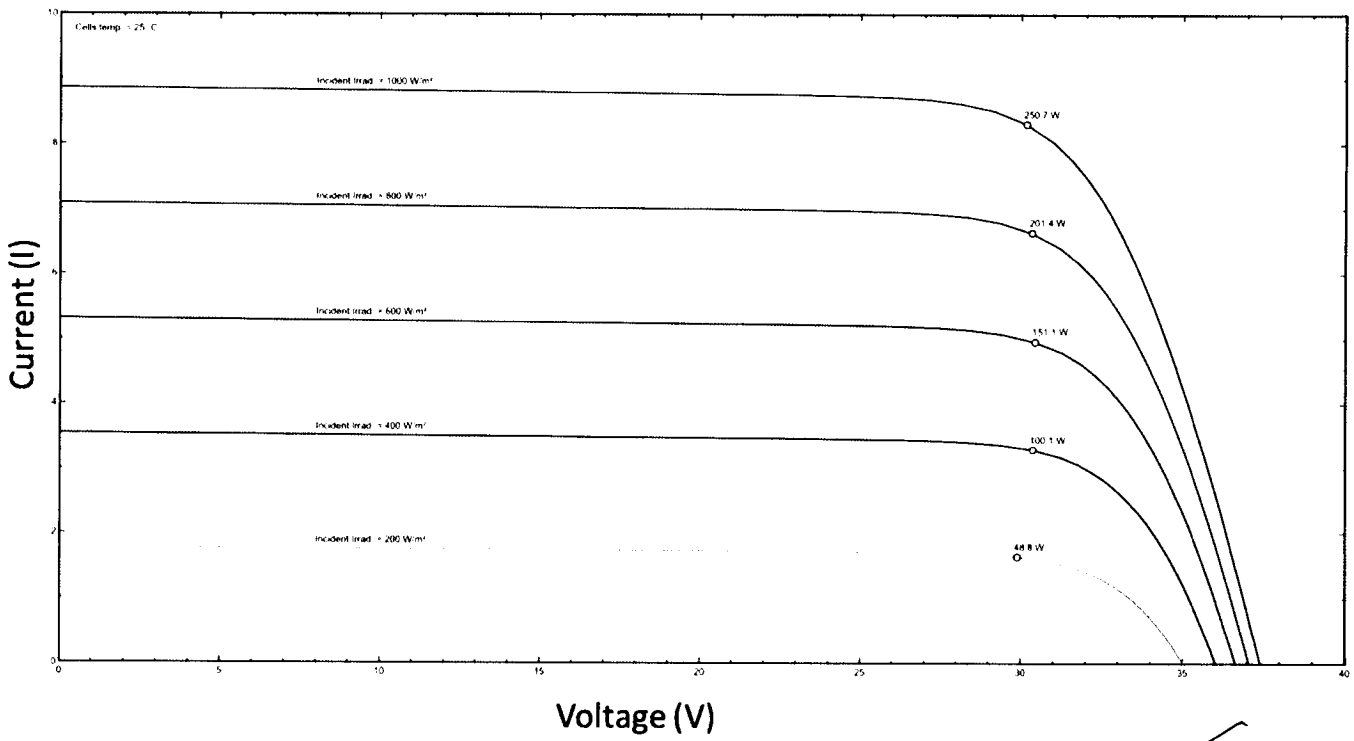
V-I Curve of Solar Cell



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SCHEDULE-II

The Total Installed Gross ISO Capacity of the Generation Facility/Power Plant/Solar Plant (MW), Total Annual Full Load (Hours), Average Sun Availability, Total Gross Generation of the Generation Facility/Solar Farm (in kWh), Annual Energy Generation (30 year Equivalent Net Annual Production-AEP) KWh and Net Capacity Factor of the Generation Facility/Power Plant/Solar Farm of Licensee is given in this Schedule.

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SCHEDULE-II

(1).	Total PV Installed Capacity of Generation Facility	11.52 MW_p
(2).	Average Sun Hour Availability/Day (Irradiation on Inclined Surface)	5.06 Hrs
(3).	Days per Year	365
(4).	PV Plant Generating Capacity Annually (As Per Simulation)	16,932 MWh
(5).	Expected Total Generation in 30 years Life Span	449,047 MWh
(6).	Generation per Year from plant keeping 24 Hours Working	11.52 x 24 x 365 = 100,915 MWh
(7).	Net Capacity Factor (4/6)	16.78%

Note

All the above figures are indicative as provided by the Licensee. The Net energy available to the Power Purchaser for dispatch will be determined through procedures contained in the Energy Purchase Agreement.

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National Electric Power Regulatory Authority (NEPRA)

Determination of the Authority in the Matter of Generation Licence Application of Access Solar (Private) Limited

August 19, 2013
Application No. LAG-223

(A). Background

(i). Government of Pakistan has set up Alternative Energy Development Board (AEDB) for development of Renewable Energy (RE) resources in the Country. AEDB has issued Letter of Intent (LoI) to various RE developers for setting up projects in the country.

(ii). AEDB issued two separate LOIs in favor of Tech Access FZ LLC Dubai (the Sponsors) for setting up two 5.00 MW Solar Photo Voltaic (PV) Power Generation Projects in the Province of Punjab. For the purpose of the implementation of the projects, the Sponsors incorporated a special Purpose Vehicle in Pakistan in the name of Access Solar (Private) Limited (ASPL) under the Companies Ordinance. Later on the Sponsors requested AEDB to combine the two LOIs issued earlier. AEDB acceded to the request of the Sponsors and combined the already issued LOIs to one LOI of 10.00 MW.

(iii). According the terms and conditions of the LOI, the sponsors were required to carry out a detailed Feasibility Study (FS) for the project. The Sponsors hired the services of DNV KEMA, U.K. ("the Project Consultant"). Accordingly, the Project Consultant carried out the FS of the project and submitted the same in September 2012 for the approval of AEDB. The AEDB appointed Panel of Experts reviewed the FS and accorded provisional approval. AEDB directed the Sponsors to approach NEPRA for the grant of Generation Licence and determination of Tariff.

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(B). Filing/Admission of Generation Licence Application

(i). In accordance with Section 15 of Regulation of Generation, Transmission and Distribution of Electric Power Act 1997 (the NEPRA Act), ASPL filed an application on January 30, 2013, requesting for the grant of Generation Licence.

(ii). The Authority admitted the same under Regulation 7 of the NEPRA Licensing (Application and Modification Procedure) Regulations, 1999 (the "Regulations") on April 17, 2013 for consideration of grant of a Generation Licence and approved the advertisement about the Notice of Admission (NoA) to be published in daily newspapers, seeking comments of the general public as stipulated in Regulation 8 of the Regulations.

(iii). The Authority also approved the list of interested/affected parties for inviting comments or otherwise assisting the Authority in the matter as stipulated in Regulation 9 of the Regulations. Accordingly, Notice of Admission was published in one Urdu and one English National Newspaper on April 19, 2013. Further, separate notices were also sent to Individual Experts/Government Ministries/Representative Organizations etc. on April 19, 2013 for submitting their views/comments in the matter.

(C). Comments of Stakeholders

(i). In reply to the above, NEPRA received comments from two (02) stakeholders. These included Islamabad Electric Supply Company Limited (IESCO) and Ministry of Water and Power (MoW&P).

(ii). The salient points of the comments offered by the above stakeholder are summarized in the following paragraphs: -

(a). IESCO remarked that ASPL has submitted to IESCO the draft FS and Interconnection Study for the project. IESCO has informed ASPL that the Interconnection Study is satisfactory however, the proposed tariff is on very high side and will disturb the Tariff

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Structure. It is worth mentioning that IESCO has not given any consent for acquisition of power from ASPL. Being, a customer friendly company, it is prime responsibility of IESCO to acquire and supply Electricity at affordable prices to its customers. It is requested that apprehensions of IESCO may be kept in view before granting Generation Licence to ASPL;

(b). MoW&P commented that it supports the request of ASPL for the grant of Generation Licence. However, IESCO be advised to add power in its system through a lower loss distribution feeder so that power purchase is benefited in terms of commercial bargain.

(iii). The perspective of ASPL on the aforesaid position of IESCO was sought. In its rejoinder, ASPL submitted that view of IESCO that the proposed tariff of the Project will disturb the tariff structure and make electricity unaffordable for its customers is unfounded. It can be proved that the introduction of solar power to the tune of the size of the proposed project of ASPL in the pool of electricity has a negligible cost impact when compared to the rise in fuel prices in a year. According to the determination of the Authority dated March 27, 2013 in the matter of IESCO, the annual Power Purchase Price (PPP) for FY-2012-13 is Rs. 88,070 million. With the projected purchase of 8,498 GWh for the same period the average PPP calculates to Rs. 10.3641/kWh (without T&D losses). In case of the expected purchase of 16,932,000 kWh of energy from the Applicant at the proposed 1st year rate of Rs. 24.64/kWh the weighted average cost to IESCO would increase from Rs. 10.309 to 10.36/kWh which results in a meager increase of Rs. 0.06/kWh or 0.27%. On a country wide basis, as per paragraph 17.3.2 of the IESCO Determination, the estimated PPP for 91,293 GWh of energy is Rs. 917,573 million (Energy Charge: Rs. 723,340 million; Capacity Charge: Rs. 194,233 million), which calculates to an average of Rs. 10.057/kWh. For example, an addition of 200 MW (293.4 GWh) produced by solar projects would at the 1st year rate increase the PPP of IESCO by Rs. 0.0467 to 10.104/kWh. The financial impact of 11.52 MW to be contributed by the Applicant is a negligible Rs. 0.002/kWh. This is equivalent to the effect of 0.8% increase in the furnace oil prices in a year. ASPL further stated that it would like to bring to the attention of the Authority the pertinent provisions of the Policy for

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Development of Renewable Energy for Power Generation 2006 (the "RE Policy"). According to Section 8.2.1 of the RE Policy, it is mandatory for the power distribution utilities to buy all the electricity offered by RE Projects. Therefore, IESCO is required to purchase all electricity offered to it by this Project. It is pertinent to mention that IESCO has affirmed that the feasibility of the Project and interconnection study are technically sound.

(iv). The Authority considered the above comments of the stakeholders and the rejoinder submitted by ASPL and decided to proceed further in the matter in terms of the relevant Regulations and NEPRA Licensing (Generation) Rules 2000 (the Rules) for the grant of Generation Licence.

(D). Grant of Generation Licence

(i). Energy, especially Electricity is considered the lifeblood for the Economy of any Country. The sustainable and affordable energy is a key prerequisite for socio-economic development of any Country. In fact, the Economic Growth of any Country is directly linked with the availability of safe, secure, reliable and cheaper supply of electricity. In view of the said reasons, the Authority is of the considered opinion that for sustainable development, all indigenous power generation resources including RE must be developed on priority basis.

(ii). The existing energy mix of the country is heavily skewed towards the costlier thermal power plants, mainly operating on imported furnace oil. The continuously increasing trend in fuel prices is not only creating pressure on the precious foreign exchange reserves of the country but is also an environmental concern. Therefore, in order to achieve sustainable development it is imperative that indigenous RE resources are given priority for power generation and their development is encouraged. The Energy Security Action Plan 2005 (ESAP) approved by the Government of Pakistan, duly recognizes this very aspect of power generation through RE and envisages that at least 5% of total national power generation capacity (i.e. 9700 MW) is to be met through RE resources by 2030. The Authority considers that the proposed project of ASPL is consistent with the provisions of ESAP. The project will help in diversifying the energy portfolio of the country. Further, it will not

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only enhance the energy security of the country by reducing the dependence on imported furnace oil but will also help reduction in carbon emission by generating clean electricity, thus improving the environment.

(iii). As regards to the concerns of IESCO regarding higher tariff from the generation facility of ASPL, it is stated that ASPL shall charge only such tariff which will be determined, specified or approved by the Authority, in view of the interest of the consumers. It is further observed that under the RE Policy the Distribution Companies are bound to purchase electricity from RE Projects subject to the plant meeting requirements of the NEPRA Act and applicable documents including the provisions of Distribution Code or Grid Code as the case may be.

(iv). The term of a Generation Licence under the Rules is to be commensurate with the maximum expected life of the units comprised in a generating facility. According to the information provided, the Commercial Operation Date (CoD) of the proposed Generation Facility/Solar Power Plant/Solar Farm of ASPL will be March 31, 2014 and will have a useful life of about thirty (30) years from its CoD. ASPL has requested that the term of the proposed Generation Licence may be fixed to thirty years in consistent with the term of the proposed Energy Purchase Agreement (EPA). The Authority considers that as per the International benchmarks available, the useful life of a typical PV Solar Power Plant is taken as 25 years. This is the basis on which the long-term PPAs are executed between the parties concerned. However, Solar Power plants can be operated beyond 25 years while producing a relatively lower output. Many Solar Panel manufacturers guarantee an output of 90% at the end of 10 years and 80% at the end of 25 years. In this particular case, ASPL has requested for fixing the term of Generation Licence to thirty (30) years. It is pertinent to mention that fixing the term to thirty (30) years may expose ASPL to operational risks and other penalties however, considering the fact that ASPL has decided to absorb the same, the term of the Generation Licence may be set to thirty (30) years from the CoD of the project. The Authority considers this beneficial for the consumers as increasing the term of the Generation Licence will result in lower tariff for the end consumer thus benefitting them. Accordingly, the Authority fixes the term of the Generation Licence of ASPL to thirty (30) years from CoD.

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(v). In view of this, the Authority hereby decides to approve the grant of Generation Licence to ASPL on the terms set out in the Generation Licence annexed to this determination. The grant of Generation Licence will be subject to the provisions contained in the NEPRA Act, relevant rules and regulations framed there under.

Authority

Habibullah Khilji
Member

20/8/2013

Maj. Retd Haroon Rasid
Member

21/8/13

Khawaja Muhammad Naeem
Member/Vice Chairman

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22.08.13