

## Inter Solar Middle East Conference

### PV Sector Status and Government Goals - Key Note Speech

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Honorable Guests, Ladies and Gentlemen,

Good Morning,

I am honored to be the key note speaker for this auspicious occasion in Inter Solar Middle East 2017. On behalf of Government of Punjab, Pakistan I will like to extend note of thanks and congratulate the Management Team for arranging this conference and bringing all stakeholders together to share their experience, expertise, and lessons learnt.

Before sharing the status of solar power generation in Pakistan, allow me to highlight some global trends. Last few years have witnessed tremendous increase in solar power generation around the world. Seventeen years ago the total amount of PV installed in the year 2000 was only 170\_Megawatt. In the next sixteen years, total generation exceeded 303 GW which corresponds to 1.8% of the total electricity demand. In 2016 alone, 75 GW was installed which was almost twice the size of solar power generated in 2015. What will be the size in 2017? Trends reveal that total installations will easily surpass the generation in 2016.

What is the underlying message here - for developing countries such as Pakistan and others in South Asia and Africa? **Invest in solar and secure Country's energy future.** Solar panel prices which were around \$50 per Watt-in 1970s have been reduced to around \$0.40 per Watt. These declining prices have set the stage for swift growth in solar power generation.

While environmental concerns were largely responsible for catalyzing Solar power generation growth in the developed countries acute power shortages and need for a quick fix propelled growth in the developing countries.

**Let me put this into Pakistan's perspective:**

Electricity demand began to lead firm supply in the summers of 2005 and this gap began to widen in successive years. The shortfall increased to around 6000 MW in 2011. If the Government initiatives in the power sector had not reached fruition, the shortfall would have been around 8,000 MW in 2017 and 13,000 MW by 2020. The energy crisis was having a crippling impact on the economy. Power Generation became a major issue in 2013 Elections. Present government was voted into power on the promise of zero load shedding. While the government took steps towards base load power generation through development of hydel, nuclear, coal and LNG based power plants it also moved towards installation of wind and solar power plants. Wind and solar power plants enabled the government to install reliable power at a faster rate to reduce the power deficit.

I will now briefly share the journey of solar power development in Pakistan. Pakistan has been having a huge potential to generate energy from renewable resources. This potential, primarily because of costs and technical constraints, remained focused on hydel energy. Solar and wind potential remained untapped.

Pakistan's Government manifested its strategic need for injecting power from renewable energy resources by establishing Alternative Energy Development Board (AEDB) in 2003 with the main objective to facilitate, promote and encourage development of Renewable Energy in Pakistan at an accelerated rate. The government promulgated the **"Policy for Development of Renewable Energy for Power Generation"** in 2006 to provide the policy frame work for development of renewable energy power projects. The four key objectives of this policy are Energy Security, Economic Benefits, Social Equity and Environmental Protection. The policy provided significant financial and fiscal incentives for the investors. Though this policy was a major milestone no major interest was shown by the investors in developing solar power projects. There was a need to "Do More".

Reliable data on solar irradiation was needed without which investors were not yet confident to invest in solar power. Punjab Government took the initiative, developed Solar Park with a capacity to support 1000 MW in Bahawalpur and established public sector company Quaid-e-Azam Solar Power (Pvt) Limited to establish 100 MW solar power plant. This plant was completed in 2015 in record time and became the trailblazer. QASP has been a great success. It has an investment grade credit rating of AA- and has paid \$16 M dividend in last two years. The company is producing power which is 5.5% higher than the Regulator's requirement. Meanwhile, with the help of World Bank's Energy Sector Management Assistance Program (ESMA), high precision Solar Resource Mapping of Pakistan was completed in 2015. Solar Resource Mapping provided a bankable irradiation data to investors in solar power sector.

Success of QASP 100 MW project and availability of reliable data catalyzed investor interest in development of solar power projects. Chinese Company

Zonergy signed an agreement to do 900 MW under CPEC framework. The Company's subsidiaries have successfully commissioned 300 MW in the Solar Park in Bahawlpur and the Park is now contributing 400 MW of solar power to the Grid.

Government went a step further to facilitate the investors and with the help of World Bank's International Finance Cooperation (IFC) and its partners "**A Solar Developer's Guide**" was published in January 2016. Investors' interest in solar power projects increased manifolds. Solar Projects of over 3000 MW being sponsored by AEDB and PPDB are at various stages of project development. Besides the projects with valid LOIs, there are significant number of applications pending for issuance of new LOIs.

Investors' zeal to make investments in solar power generation precipitated a problem. How should the Government decide how much solar power can the Grid sustain and what projects can be given the green signal to move to their next stage of project development. This problem was addressed by conducting the US – Aid sponsored GOPA Study. The Study provided the extent to which solar power can be injected without and with Grid strengthening. The study also identifies the extent to which solar power can be safely evacuated in various areas across the country.

The Government has decided to allow renewable projects to the extent of 10 % of the total available power generation capacity. In the short term government aims to add 2.2 GW of renewable energy till 2017-18 and 9.4 GW by the end of 2022. The Grid Code has already been amended to allow injection of wind power to the extent of 5% and similar proposal for solar is in the pipeline.

Government in recognition of the technical limitation on the injection solar power to the Grid has come up with a policy framework to encourage distributed solar power generation. Distributed Generation/ Net-metering Rules have been notified by *National Electric Power Regulatory Authority (NEPRA)* in 2015. As per these regulations, any customer of the national grid (having three-phase connection) can avail net-metering facility for small-scale (1kW to 1MW) Renewable Energy installations. Under Section 8.4.2 of the RE Policy subject to technical considerations and without discrimination and upon request by distribution end-users, DISCOs shall enter into a net-metering agreement with qualified end-users, interested in installing the RE system.

AEDB for further facilitation has published “NET- Metering Reference Guide for Electricity Consumer.” The first Net-metering System of 1 MW was installed at the Parliament House, Islamabad. As of August 2017 a total of 147 solar installations with a cumulative capacity of approximately 4100 MW have been approved by NEPRA for net- metering. These installations are located in IESCO, LESCO, MEPCO, and FESCO. Government is targeting 1000MWp of Net-metering by 2020-21 and 4500MWp by 2025.

Government is also encouraging solar PV for irrigation tube wells and filtration plants across the country. AEDB with the help of IFC and other partners under the “Lightening Asia Pakistan” addresses the lightening needs of remote areas of Sind province. AEDB reports that 630,000 people have been so far reached. AEDB also intends to expand this program to other parts of the country.

Punjab Government has taken a lead in providing off-grid solar solutions to remote areas across the province. Under the “Ujala Program” in 2013-15, 310,000 units (30 watt solar panel, 28 ampere hour battery , three led lights )

were distributed among students across the province. Punjab Government with the help of Asian Development Bank is in the process of solarizing 20,000 schools in remote areas. In the first phase 10,861 schools will be solarized before the end of this year. The bidding process has completed and the contracts are about to be awarded.

In another initiative Punjab Government has decided to solarize around 85,739 government buildings. 10 public sector educational institutions are being solarized as pilot project. Energy Service Companies will make investments, install, and do operation & maintenance of the solar equipment installed on the rooftops of these institutions. The Institution will pay back in installments on the production and supply of electricity validated through third party. Punjab Government is also in the process of launching a program on “Energy Efficiency and Conservation” which will also make use of Solar PV technology to reach its objectives.

Indigenous production of Solar panels is dismal. Government, therefore, to support and encourage the initiatives in solar generation has exempted tax on import of solar panels.

The upshot of what I have said so far manifests the strong resolve of the Government to increase the share of solar power generation through Grid and Off-Grid-solutions. Solar PV by all means has a very bright future in Pakistan.

With this brief, I leave the floor to the organizers and will be happy to address any question you may have.

Thank you for your time.