

PRIVATIZATION OF QAID-E-AZAM SOLAR POWER (PVT.) LIMITED

INTRODUCTION TO THE CONSORTIUM & EVOLUTION OF PAKISTAN'S POWER SECTOR

AUGUST 2017



In collaboration with

HAIDERMOTABNR

EY

Building a better
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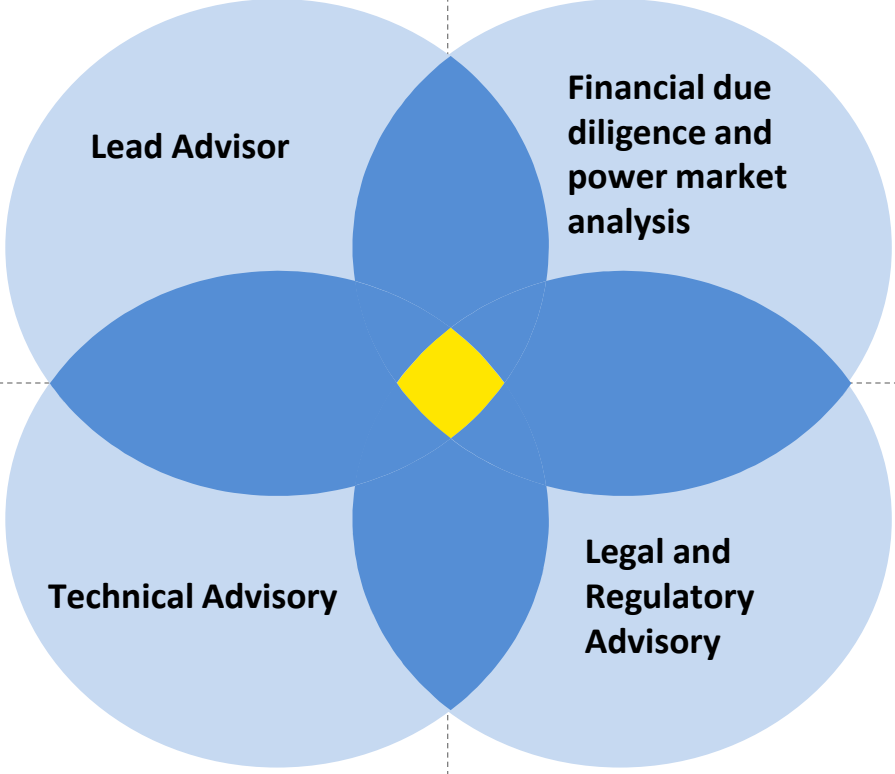
TRANSACTION ADVISORS



Lead advisor on transactions worth over US\$ 5.0 billion; involved in **financing for over 4,500 MWs of power projects translating into financing of over US\$ 5.0 billion** since the advent of the 2002 Power Policy.

With professionals having combined **PV industry experience of 25 years**, ensibo is an independent firm providing technical services to solar plants in Germany's growing solar power market.

ensibo



- **EY audit and/or advise 18% of all power & utilities companies on the Fortune 500**
- More than 9,000 transaction professionals
- EY has been instrumental in formulating tariff frameworks for various fuel sources.

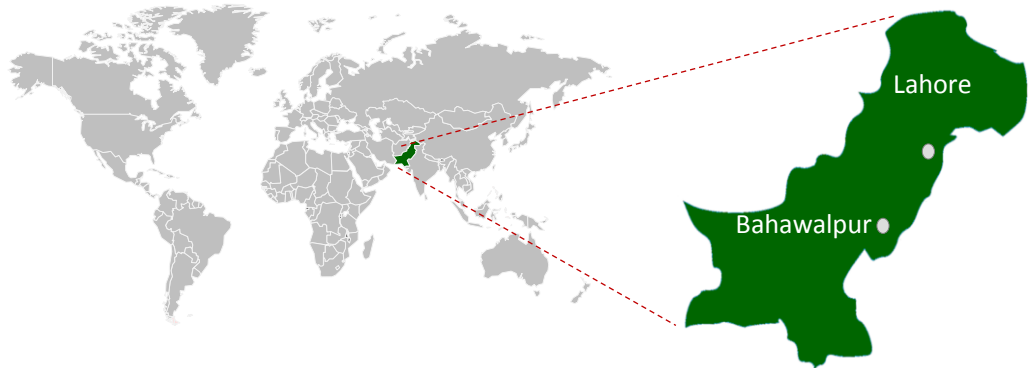
Pakistan's prominent law firm with extensive experience in **advising onshore and offshore clients (including the PC) on restructurings, asset sales, privatizations, and financings.**

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PAKISTAN – A LAND OF OPPORTUNITIES

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POPULATION

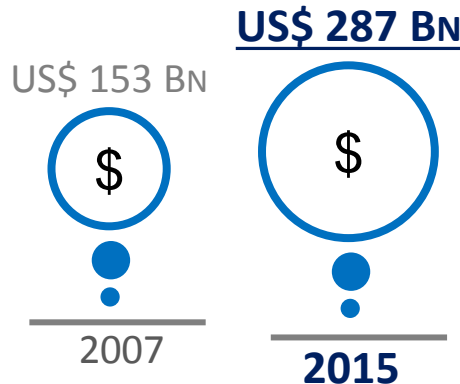
 **4TH LARGEST** POPULATION IN ASIA – 196 MN

- The population consists largely of working-age Pakistanis with more than 30% falling in the 15-30 years age bracket.

LOCATION

- Pakistan is situated right at the junction of Central Asia, China, the Middle East and South Asia.
- Pakistan has the potential to become one of Asia’s premier trade, energy and transport corridor.
- It serves as the lowest cost land route to Central Asian countries.

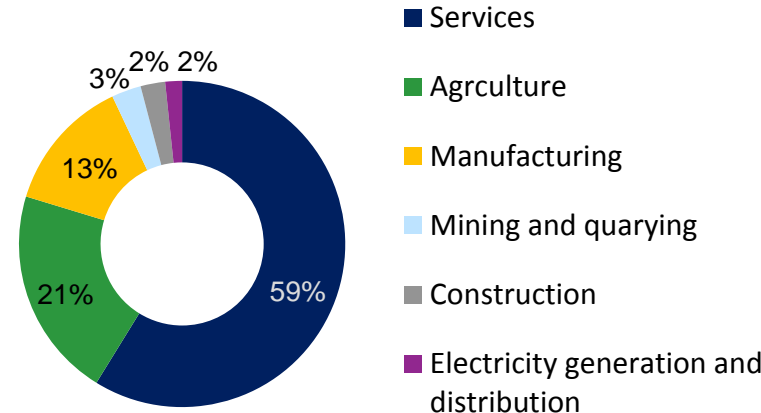
GDP Size



Source: Asian Development Bank Statistics

- GDP grew by **4.2% in 2015** & 4.7% in 2016 and is poised to grow by **5.2% in 2017**, making it one of the fastest growing economies in Asia.

GDP Mix



PUNJAB & BAHAWALPUR



- ▶ Punjab is Pakistan’s most populous province with largest economy
- ▶ Punjab is also the most industrialized province of Pakistan; its manufacturing industries produce textiles, sports goods, heavy machinery, electrical appliances, vehicles, auto parts, metals, cement
- ▶ Bahawalpur is the 12th largest and one of the most historic cities in Punjab
- ▶ Bahawalpur is mainly recognized as an agricultural city

HISTORY OF SUCCESSFUL PRIVATIZATIONS IN PAKISTAN

ENERGY SECTOR

The logo for KAPCO, featuring the letters 'KAPCO' in white on a green rectangular background.The logo for K-ELECTRIC, featuring a stylized leaf icon in blue and orange to the left of the text 'K-ELECTRIC' in orange, with the tagline 'Energy That Moves Life' in green below it.

BANKING SECTOR

The logo for HBL, featuring the letters 'HBL' in white on a teal square background.The logo for UBL, featuring the letters 'UBL' in blue with a swoosh above them, and the tagline 'where you come first' in blue below.The logo for MCB, featuring a green stylized book icon above the letters 'MCB' in blue, with the tagline 'Bank for Life' in blue below.The logo for Allied Bank, featuring a stylized blue 'A' with an orange square above it, and the text 'Allied Bank' in blue below.

- ❑ Since the late 90s, Pakistan embarked upon successful privatization of government owned entities, specifically within banking and energy sector
- ❑ As a result, the Government privatized four banking entities which are now Pakistan's four largest private sector banks with successful operations around the world
- ❑ In the energy sector, Government of Pakistan privatized KAPCO (which is one of Pakistan's largest Thermal IPPs) and K-Electric, which is Pakistan's only vertically integrated electricity company

PUNJAB PRIVATIZATION

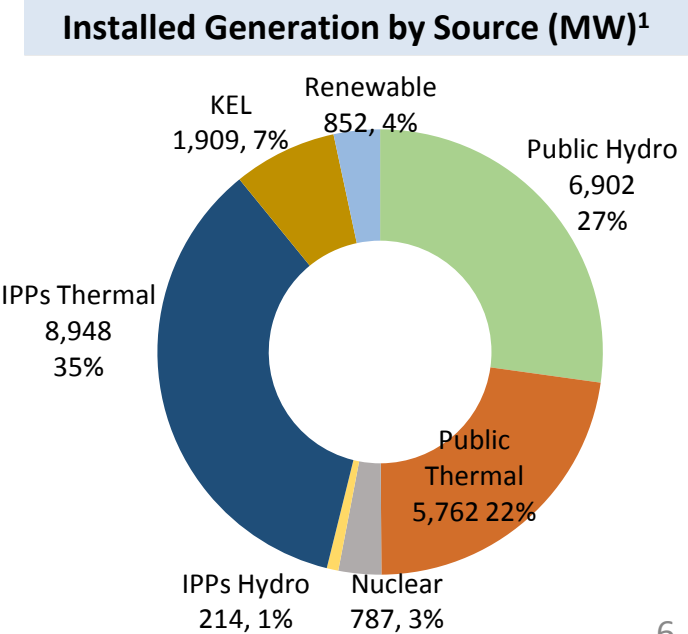
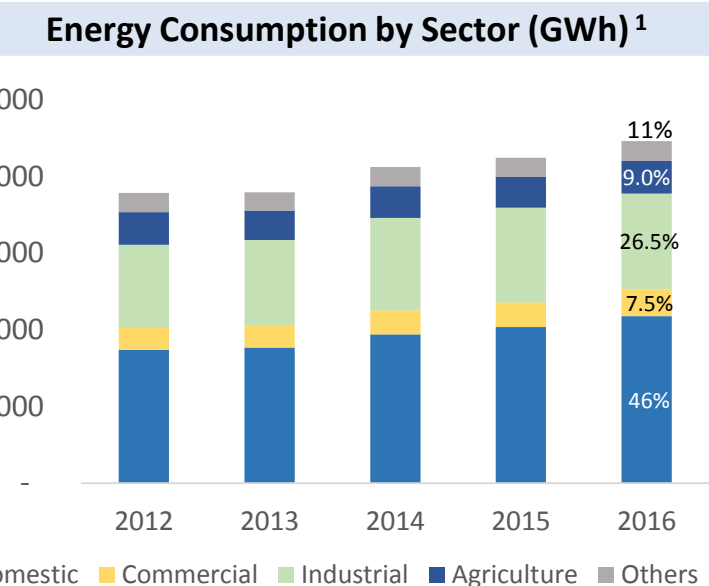
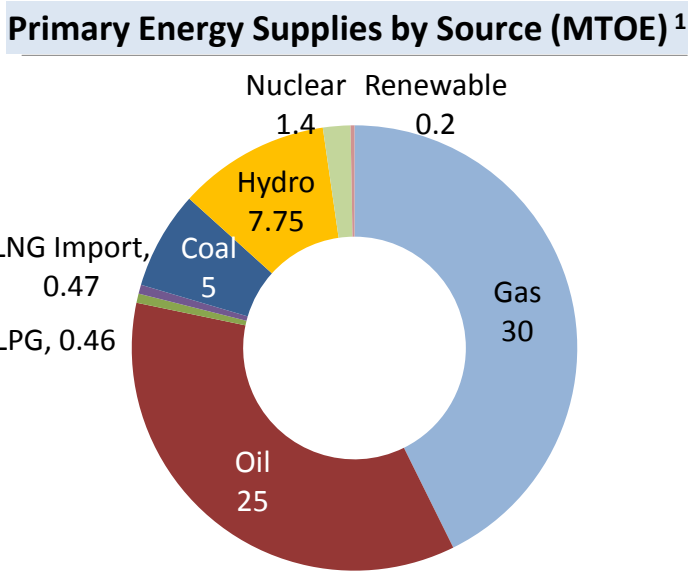
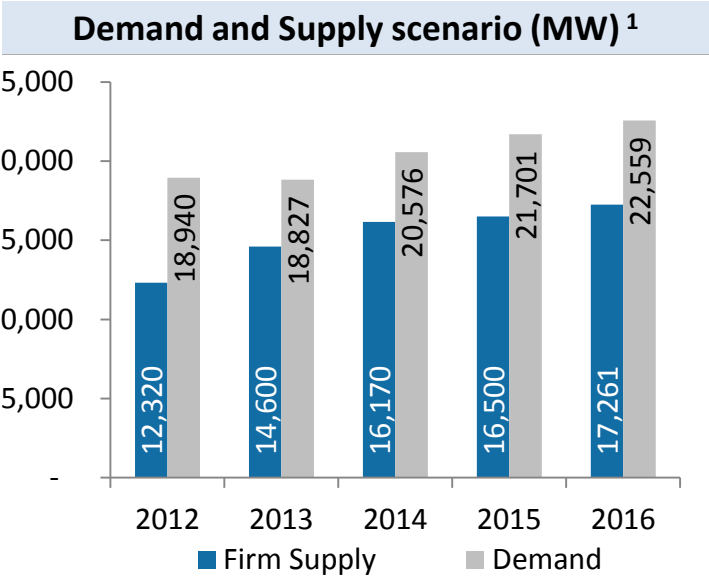
- ❑ Punjab Privatization Board ("PPB") carried out three successful transactions within Sugar industry in 1998
- ❑ This is PPB's first privatization within energy sector
- ❑ PPB is governed by the Punjab Privatization Board Act 2010 and Punjab Privatization Board (Sale of Shares) Regulations 2015

INSTITUTIONAL STRUCTURE

FEDERAL SETUP	FUNCTIONS
Ministry of Water & Power	<ul style="list-style-type: none"> □ Arm of the Federal Government for administrative oversight through its executive functions
NEPRA	<ul style="list-style-type: none"> □ Grant of licenses and tariffs for generation, transmission and distribution of electric power. Prescribes and enforces procedures and performance standards for the sector
PPIB / AEDB	<ul style="list-style-type: none"> □ Acts as a “one window facilitator” to promote private sector participation in the power sector. □ PPIB facilitates investors in establishing private power projects, which include negotiation of implementation agreements, Power Purchase Agreements (PPA), supply agreements (fuel and gas) as well as coordinating with concerned local and international agencies □ Responsible to facilitate, promote and encourage development of Renewable Energy in Pakistan
GENCOs	<ul style="list-style-type: none"> □ State owned power generation companies using thermal energy
WAPDA/Hydel	<ul style="list-style-type: none"> □ Planning and execution of hydro-electric generation Projects
NTDC / CPPA-G	<ul style="list-style-type: none"> □ Provides access to the national grid to all power producers through provision of transmission infrastructure and procurement of power on behalf of DISCOs through CPPA-G
DISCO / K-Electric	<ul style="list-style-type: none"> □ Distribution and retail supply of electricity to consumers in a pre-defined area including purchase of electricity from CPPA-G to meet the demand of consumers in their designated services area
PAEC	<ul style="list-style-type: none"> □ Nuclear Power Project planning and implementation including O&M of nuclear power plants

POWER SECTOR SNAPSHOT

- Pakistan’s **high dependence on imported oil** for electricity generation has contributed to high cost of electricity during the past decade.
- The **energy mix will change** in favor of hydel, coal, gas and renewable based power generation over the next 5 years due to increasing emphasis on RLNG, coal, hydel and renewable based power generation.
- Favorable power sector policies with equitable and time-tested concessionary framework incorporating **adequate lender protection** and **guaranteed USD based equity returns** have encouraged private sector participation in electricity generation since the 90’s.



1: NEPRA State of the Industry Report 2016

POWER SECTOR – ROAD AHEAD

Projected New Power Generation Capacity			
Sr No	Project Name	2017	2018/19
1	Coal-based power project at Sahiwal	1,320	
2	Imported Coal-based project at Port Qasim,		1,320
3	SSRL coal-based power plant		1,320
4	Neelum Jehlum	969	
5	Wind (Other than CPEC)		200
6	Solar	300	
7	Hydel(Tarbela IV and 2 others)	1,679	
8	LNG (3*1200)	1,200	2,400
Total		5,468	5,240

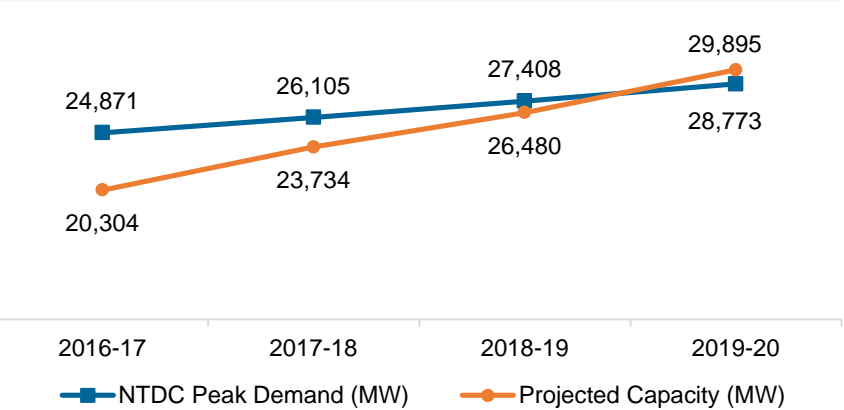
1. RLNG, Coal, Hydel and Renewable based power generation ensures lower tariffs
2. Reduced dependence on imported oil to ease up FX pressure

- Projects worth ~10,000 MW listed above are expected to achieve commercial operations by 2019
- Subsequently, Pakistan is expected to achieve power surplus by 2020 due to new additions to power generation under foreign & local investments.

Evolution of Tariffs in Pakistan



Demand and Supply Forecast



Dates	21 Jan' 14	22 Jan' 15	16 Dec' 15	Zorlu*
Solar (Levelized US cents/kWh)	17.00	14.15	10.73	6.00
Dates	6 Oct' 11	24 Apr' 13	Oct 19' 15	Jan' 17**
Wind (Levelized US cents/kWh)	14.66	13.52	10.45	6.75

* Zorlu's cost-plus tariff for 100 MW power plant at QASP
 ** Reference tariff for competitive bidding`

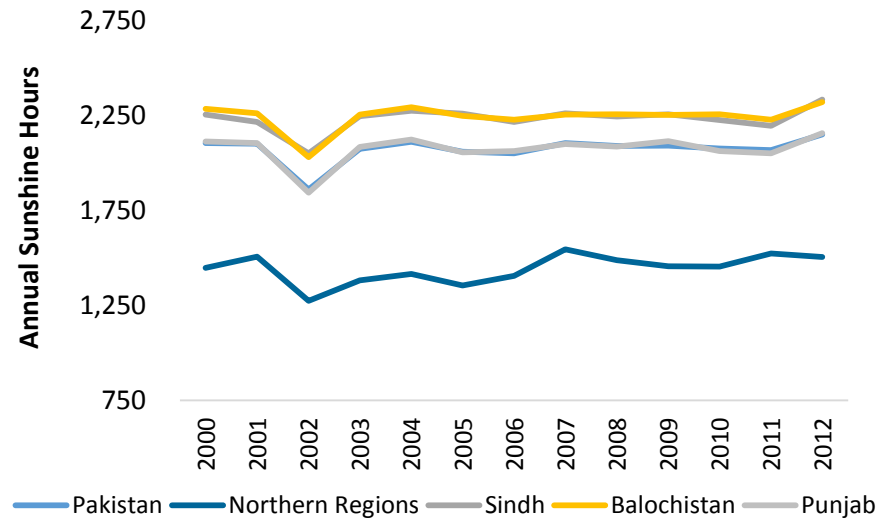
SOLAR POTENTIAL IN PAKISTAN

Pakistan has tremendous potential to meet its power demand needs from renewable energy sources and, in particular, solar.

Solar irradiance levels in parts of Pakistan, particularly in the southwest, are on par with the best in the world with minimum global horizontal irradiance (GHI) value over **1500 kWh/m²** in over 90% of the country's land area.

The annual mean value of GHI for whole Pakistan, based on preliminary analysis by The World Bank, is **2071 kWh/m²**.

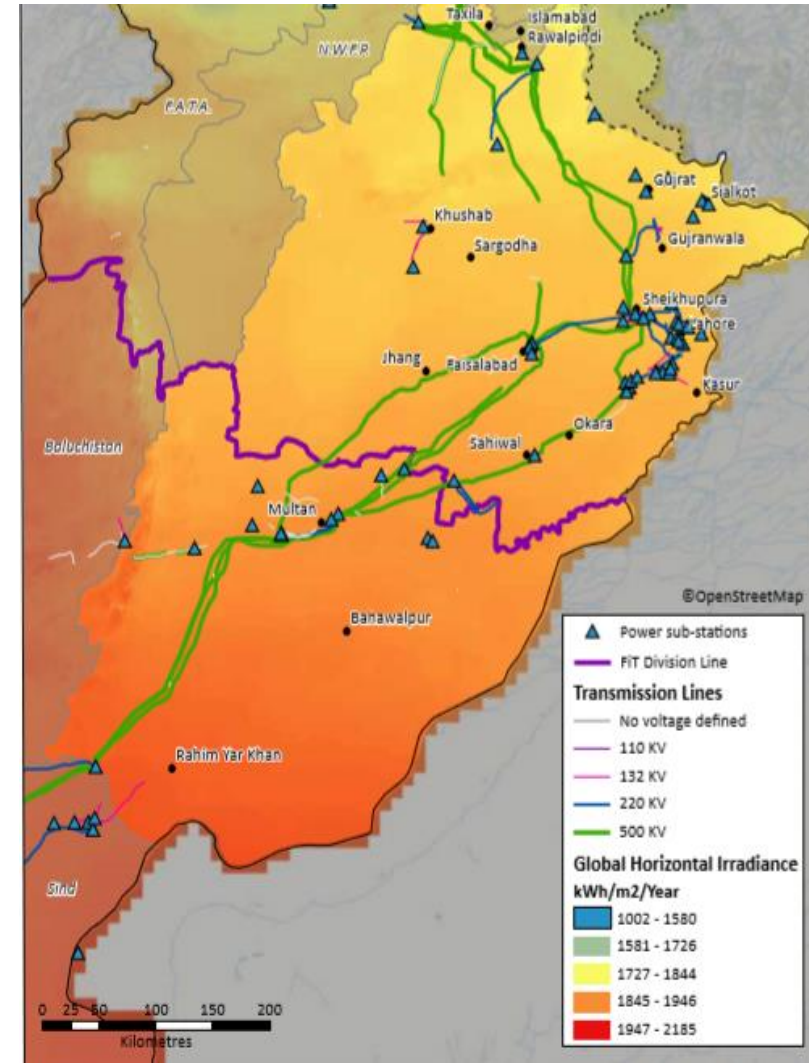
Annual sums of GHI based on satellite estimates



Source: World Bank Group (2015). Solar Modeling Report

Average Global Horizontal Irradiance Value for Punjab is **2,045 kWh/m²**

High Solar Irradiance in Punjab



Source: World Bank Group (2015). Solar Modeling Report