

# SECTOR BRIEF

## Power Generation Sector in Pakistan

By ICMA Research and Publications Department

### Historical Background

In **1947**, Pakistan inherited 60 MW of Power Generation (PG) capacity for a population of 31.5 million people.

In **1952**, the Government took control of KESC which was established in 1913 as a private limited company.

In **1958**, WAPDA was created and the PG capacity was expanded to 119 MW by 1959 and to 636 MW by 1963.

In **1960**, Pakistan Atomic Energy Commission (PAEC) was established to contribute to power generation.

In **1970**, the PG capacity rose to 1,331 MW which further expanded to 3,000 MW in 1980 and 7,000 MW in 1990/91.

By the early 1990s, peak electricity demand fell short, leading to approx. 1,500 MW to 2,000 MW of load shedding.

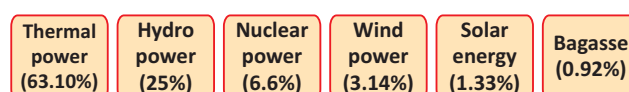
In **1994**, several Independent Power Producers (IPPs) were established that added 6,031 MW in generation capacity.

### Installed Power Generation Capacity

According to the NEPRA State of Industry Report 2021, the Installed Power Generation Capacity of the country [including

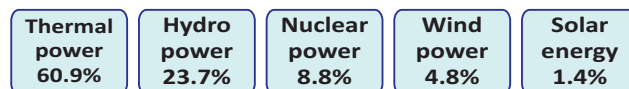
CPPA-G and KE Systems] as on **30th June 2021** was 39,772 MW against 38,719 MW on 30th June 2020 - showing a net increase of 1,053 MW. Out of this total capacity, the share of public sector power plants was 20,820 MW whereas the share of private sector power plants [including KE] was 18,952 MW.

### Shares of different sources in Power Generation [2021]



### Current Status

As per the Pakistan Economic Survey 2021-22, the power generation capacity of the country increased by 11.5% and reached 41,557 MW in July-April 2021-22 as against 37,261 MW in the same period of last fiscal year. During the first 10 months [Jul-Apr] of FY2021-22, the share of different sources in energy generation stood as under:



## SWOT Analysis of Power Generation Sector in Pakistan



### STRENGTHS

- Backbone of the Economy
- Developed infrastructure
- Players operate in a regulated environment
- Availability of resources to produce electricity
- high potential of renewable energy resources
- Largest coal reserves to produce electricity
- Third largest shale gas reserves in Asia
- Large market of potential consumers

### WEAKNESSES



- Demand and Supply Gap
- Poor management and inefficiency
- Old and obsolete power plants
- High per unit cost generation
- Low capacity utilization
- Off-grid thermal power plants
- Inefficiency of power plants due to lack of maintenance
- Power theft and technical losses
- Lack of investment in the generation sector



### OPPORTUNITIES

- Hydropower potential
- Production of electricity from coal
- Production of wind and solar power
- Huge market for private sector investors
- Potential to produce electricity from the LPG
- Implantation of smart grids
- Construction of small Dams

### THREATS



- Rising power demand
- Diminishing power generation resources
- Increasing Circular Debt
- Excessive reliance on imported fossil fuels
- Persistent Load shedding
- Financial constraints in public sector to install power plants
- Environmental restrictions on the use of coal
- Non-availability of RLNG to gas-based power plants