

Developing a competent energy market

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Pakistan has been grappling with severe and persistent energy challenges for decades. These challenges have been further exacerbated by the country's severe economic difficulties, creating a pressing need for immediate reforms. Yet, no significant change can be expected if the sector continues to be governed in a similar manner, that is, centralised decision-making at the Power Division.

If professionals are not allowed to manage at the decentralised level, all power sector issues will remain and grow. Furthermore, if political compulsions are not kept away from the energy sector, it will not be possible to solve energy problems.

In Pakistan, the absence of a market for energy and the government's sole authority over future projects have led to misguided decisions over the years. Over 40 per cent of energy generation relies on imported fuels, exacerbating the country's energy problems, leaving it vulnerable to international fuel price fluctuations and currency devaluation.

Going further, over the years, the rise in urbanisation, a growing population, and an expanding middle class have increased energy demand during peak summers. The peak energy demands during summer and winter vary between 8,000 and 13,000MW. For example, as reported in the National Electric Power Regulatory Authority's State of Industry Report 2023, at midnight on June 29, 2022, the peak energy demand was 29,187MW, while the peak demand on December 12, 2022, at the same hour, was 12,280MW.

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The total installed capacity of 'take or pay' and must-run power plants is over 45,000MW. This capacity (although much higher than the summer peak) seems designed to meet the cooling demand during summer. More than half of this existing capacity, despite being inactive for four to five months of the year, is getting capacity charges. A higher installed capacity than the system demand strains the power sector. Capacity payments for 2024 are around Rs2.1 trillion.

Any capacity produced by these plants above the base load of around 12,000 to 12,500 MW (on average) reflects policy failure and wrong decisions. This failure is in sharp contrast to well-developed energy market systems where there is a distinction between baseload plants and peak-load plants.

For instance, in the US, the plants that cater to the summer peak demand are not must-run power

plants. However, they charge higher rates for producing electricity during peak hours. That additional expense is passed on to the consumer through time-of-use rates, which charge consumers more when they use electricity during peak hours.

In Pakistan, most power plants receive capacity payments, and the electricity tariff does not differentiate between peak and off-peak usage. Hardly 5pc of the domestic electricity consumers (three-phase meters) are charged peak and off-peak rates. Our electricity tariff policy is not designed to manage the existing capacity. We are still stuck in the decades-old tariff design, primarily introduced to suppress demand. This tariff design is pushing productive sectors away from the grid, increasing the capacity payment burden.

The inefficient tariff design and a sharp increase in tariff rate over the last year have decreased electricity demand among compliant consumers. In 2023, electricity demand decreased by 10pc compared to the previous year.

In addition, while capacity payments are being made, a shortage of electricity generation, even during winter months, is attributed to system inefficiencies leading to revenue-based load shedding and a scarcity of foreign exchange to import fuel. This situation underscores poor management and inefficient policies within the power sector.

The story does not end here; allocating cheap gas resources to inefficient power generation companies (Gencos) and keeping efficient LNG plants idle due to the shortage of imported LNG only reflects the sad state of managerial affairs and over-centralised decision-making.

Due to a lack of foresight and strategic planning, consumers are forced to switch to more expensive alternate fuels during load-shedding hours. Additionally, it is because of this lack of strategic planning (or centralised planning and decision-making) that our generation capacity is primarily located in the north, far from the load centres. This increases the transmission and dispatch costs and further impacts the efficiency and economic viability of Pakistan's power generation.

In winter, with a decrease in hydro output, the load centres in the north and the Centre become dependent on electricity from the south. This dependency and the outdated transmission infrastructure have become the reason behind nationwide blackouts in recent years.

The transmission network is critical in delivering electricity over long distances to load centres. But again, because of incapacity, tower collapses have become frequent in recent years, disrupting the power supply, posing safety hazards, and jeopardising the integrity of the entire network.

Furthermore, the higher tariff rates are increasing system leakages and reducing the money power distribution companies (Discos) can collect. The industrial sector, which is the main source of revenue for the electricity sector and has a recovery rate of over 97pc, is increasingly avoiding the national grid. A drop in electricity usage is worsening Discos' financial problems.

Discos are struggling to cover their daily expenses and make payments to power generation companies and other parties involved in the power supply chain, putting added pressure on the financial situation of the entire power sector. The decrease in electricity consumption and higher tariff rates create a cycle where Discos struggle to generate revenue and repay debt. This affects their ability to invest in infrastructure upgrades and maintenance, impacting the reliability and quality of electricity supply.

Additionally, the regulator's delay in determining quarterly adjustment rates in a timely manner compounds recovery inefficiencies, perpetuating this cycle of financial instability.

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