

BUSINESS**Fifth largest coal reserves, but still burning imported oil**

By Imran Lalani

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PAKISTAN faces an acute energy crisis; rolling blackouts continue to darken its skies, and state-run utilities are unable to pay their suppliers for the energy they consume. The system came close to complete paralysis in early January, when frustrated citizens took to the streets in a series of violent protests to demand better service after outages lasting over 18 hours a day.

The situation has forced the government to act, agreeing to bail out utilities and working to draft a comprehensive new energy policy. Bloomberg reported that the leadership is seeking to raise over \$10bln in overseas investment to plug the energy gap by adding new capacity and improving exploitation of existing assets.

It is therefore likely that we will soon see wholesale changes in the structure of Pakistan's power sector, but what does it currently look like and how has it contributed to the problems facing the country?

Structure of the Power Sector:

Prior to 1992, all the electricity in the country was supplied by two government owned monopolies; KESC (Karachi Electric Supply Corporation, responsible for power in Karachi) and Wapda (Water and Power Development Authority, responsible for the rest of the country). However, following a burst of legislative activity in 1992, Wapda was restructured and decentralized into eight distribution, four generation, and one transmission company. Pepco (Pakistan Electric Power Company) also came into being to act as a holding company for these 13 entities, according to Nepra's State of the Industry Report 2008.

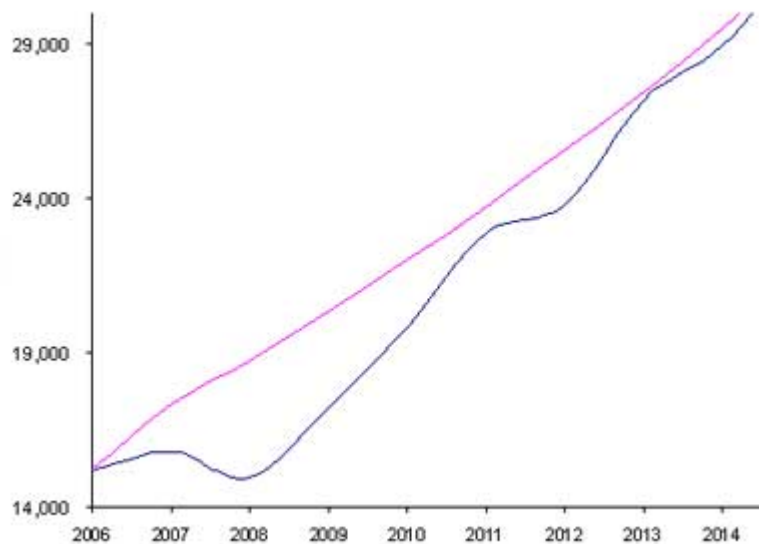
This restructuring was done to improve efficiency, reduce bureaucracy, and as a prelude to privatisation, but neither was possible.

In 2005, KESC was sold to a Private Equity group named Hassan Associates, in the hopes that its abysmal record could be improved upon. Due to the historic inability of the company to turn a profit, the government agreed to subsidize the company to the tune of \$200 million annually according to the EIA. Despite high hopes, the company was unable to turn around the power behemoth, and sold the KESC to another group of investors, who have enjoyed little success in

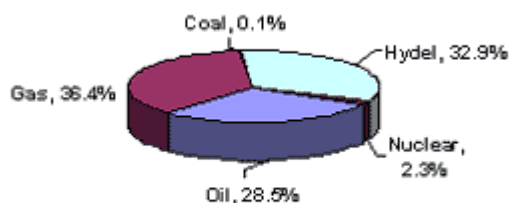
improving performance.

Generation Mix and Capacity:

Rapid economic development has meant high demand growth for electricity. Extremely volatile hydel capacity due to seasonal fluctuations in water supplies coupled with massive system losses (estimated at 30 pc by KESC, clearly pointing to widespread electricity theft), has left power supply unable to keep up with demand. This is shown in the graph below, where the red line shows the peak demand forecasted by Nepra in MW, and the blue line shows the generation capacity approved in MW. (Source: Nepra)



Pakistan's installed capacity as of June 2007 was around 19.68 gigawatts (GW), of which approximately 65 per cent comprised thermal generation (burning oil and gas), while 32 per cent was generated from hydel sources, and around 2 per cent from nuclear sources.



Source: NEPRA 2008 State of Industry Report

Since Pakistan possesses relatively small stocks of exploitable petroleum, almost all of this oil must be imported. This reliance on foreign oil has proved to be a huge problem – a surge in world fuel prices which saw oil reach close to 150 dollars a barrel in the past year translated into mammoth losses for the power sector.

In a bid to protect consumers from this price hike, the government mandated low electricity rates, meaning that the utilities could no longer afford to pay their generators, who could no longer pay their fuel suppliers. While the government was able to subsidize some of the losses, it was unable to cover all of them, and over time a wave of 'circular debt' – a system of linked loans between the various operators in the power sector – continued to build until it finally overwhelmed the system in January.

Pakistan is home to the world's fifth largest coal deposits, and has over 185 billion tones of proven reserves, the bulk of which are located in the Thar Desert in Sindh. This coal, a low-ash low-sulphur lignite, is not as efficient to burn as some richer coals, but does have the advantage of being relatively clean-burning, according to World Bank reports.

Ever since its discovery, efforts have been made to exploit this resource, most recently through a joint venture with a Chinese company (which fell apart after a tariff dispute). However the depth and moisture level of the lignite, coupled with a scarcity of fresh water, and lack of road and power infrastructure have doomed past efforts at development according to an EIA report. As a result coal accounts for less than one per cent of generation capacity.

Pakistan is also home to rich reserves of gas, estimated at 32.37 trillion cubic feet. Currently gas provides over a third of the total generation capacity, with domestic production accounting for half this volume. However domestic production increasingly competes to serve a well-developed CNG market serving an estimated 1.9 million vehicles in the country.

What the Future Holds:

According to its annual report, Nepra has granted ten licenses for generation during the year 2006-07, for a total capacity of 1,536 MW which will come online between now and 2010.

This includes 7 oil fired plants totaling 1,252 MW, a 226 MW gas plant, an 8 MW biogas plant and a 49 MW wind farm.

Hence it would seem that at least in the short term, Energy policy seems to be to continue to fund thermal power plants despite the bad experiences with that technology so far. If the government's statements are to be believed, then it would seem in the long-term the generation mix will be shifted towards coal and renewables (such as wind and hydel).

There is currently great debate over where oil prices are headed, with experts saying they could range from as low as \$30 per barrel to as high as \$200 per barrel – with the generation continuing to rely heavily on imported oil, it seems that volatility in prices and repeated outages are here to stay.

<http://www.dawn.com/wps/wcm/connect/dawn-content-library/dawn/news/business/fifth-largest-coal-reserves-but-still-burning-imported-oil--il>

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