

OVERCOMING PAKISTAN'S ENERGY CRISIS



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THREE NECESSARY REFORMS

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Policy Recommendations

1. Use Existing Resources More Efficiently

- Launch a major new project, drawing on political and commercial efforts, to boost local exploration and production of gas.
- Implement a gas reallocation plan that discourages heavy use of compressed natural gas and encourages more use of liquefied natural gas, which is experiencing production increases. Gas allocations to fertilizer production should be reduced by 50 percent, and fertilizer producers should be given incentives to shift to coal.

2. Implement Pricing and Sectoral Changes

- Reduce energy production costs by making regulation and control an exception and market and competition a norm. Where appropriate, introduce auctions and tendering in

Recommendations continued on next page

This policy brief series seeks to share with a wider audience the proceedings of a July conference at the Woodrow Wilson Center that explored Pakistan's energy crisis. The Wilson Center's Asia Program takes great pleasure in acknowledging support provided by the Fellowship Fund for Pakistan for the conference, this policy brief series, and the longer volume of essays to be published in the coming months.

place of cost-plus projects. Keep a 10 cent-per-kilowatt-hour ceiling on tariffs for all new power projects, and a ceiling of \$10 per million British thermal units on gas prices, imported or local.

- Inject more competition, transparency, and openness into the energy sector by encouraging more consumer choice and market-friendly tariff pricing regimes.
- Reorganize and ease burdens on overstretched distribution companies by dividing them into smaller units and organizations, to include establishing 8 to 10 new companies for both the electricity and gas sectors.

3. Address Structural Challenges

- Resolve the political and constitutional challenges that constrain the energy sector. These include disagreements over how to distribute hydro and coal royalties among provinces, and also the energy investment-imperiling uncertainty and confusion arising within provinces following recent constitutionally mandated decentralization.

Pakistan's energy crisis is both real and huge. It faces a deficit of more than 5,000 megawatts of electricity and 2 billion cubic feet per day of gas. This has cut economic growth by 2 percent. More supplies are essential—either by boosting local production capacities, by importing more supplies, or both. However, adding resources and capacity takes time and money. At least five years are typically required to implement a single project.

Given the dire nature of Pakistan's energy crisis, immediate action is required. The country must minimize further losses to the economy and reduce further hardship for the masses by using existing resources more efficiently. Additionally, pricing and sectoral reform is of the essence. Finally, the political and constitutional constraints to the energy sector's development must be resolved as soon as possible. This policy brief explains how all three objectives can be achieved.

USING EXISTING RESOURCES MORE EFFICIENTLY

The use of compressed natural gas (CNG) in the transport sector is notoriously excessive. There is a 50 percent differential between CNG and gasoline retail prices—which causes

consumers to flock en masse to CNG. A more reasonable price differential is 25 percent. This would somewhat reduce CNG demand, and allow for some supply to be diverted to other potential uses. Command measures—such as forbidding large vehicles to use CNG—would also be useful.

Meanwhile, liquefied petroleum gas (LPG) is an underexploited resource. At present, there is virtually no use of LPG in Pakistan's transport sector. Fortunately, Pakistan's government has suggested it could reduce LPG prices by 25 to 30 percent. Given increased LPG supplies, this would be a wise and market-friendly measure.

Another useful policy change would be discontinuing the supply of cheap gas for fertilizers. This would facilitate switches to alternative energy sources and discourage waste. China, an important and competitive fertilizer producer on a global scale, generates more than 75 percent of its fertilizer through the use of coal. The fertilizer sector in Pakistan is rich and well-organized. For this reason, it should be able to engineer a conversion of gas to coal—so long as a requisite policy framework is introduced.

IMPLEMENTING PRICING AND SECTORAL REFORM

Gas price reform is overdue. In Pakistan, there is currently a gas price regime of \$4 to \$5 per million British thermal units. These prices need to be raised in order to discourage wasteful consumption and to encourage investments (low tariffs, it should be noted, lead to lower wellhead prices, which in turn impedes exploration and the development of local resources). In Europe, prices are considerably higher than in Pakistan (around \$8 to \$10 per million British thermal units). India and China, traditionally low gas price countries, are also moving toward higher prices. The United States, by contrast, has kept gas prices low—but this is because abundant shale discoveries have made it economically wise to do so.

Pakistan has a variety of undeveloped gas resources in the form of conventional, tight, and shale. The development of these resources will only be possible if market-based rates are available to exploration and production companies. Due to prohibitively low gas prices, however, existing production is currently in no position to receive a windfall.

Pakistan's energy sector on the whole suffers from pricing constraints. The government recently paid off its large circular debt, which led to increases in electricity production—albeit marginal increases, and much less than popularly expected. This was nonetheless an essential step required to maintain credibility and to illustrate the capacity to pay, given the need to attract much-needed investments. However, circular debt will simply accrue again so long as the government is unable to fund its promised subsidies, and so long as the differential between the cost of production and sale price remains high. The cost of production must be brought down; it has been on the rise due to more reliance on expensive oil and to continued waste and pilferage of both gas and electricity. Some of these high

production costs are attributable to technical losses—which fortunately are being reduced under a phased improvement program largely financed and managed by USAID. However, more administrative support is needed for these initiatives. Encouragingly, the Pakistani government has launched a campaign to collect receivables and to prosecute electricity and gas stealers. This must continue until the very end.

More competition and transparency are also essential to bring down the costs of production. Pakistan has the ability to tap into renewable energy in significant quantities in a matter of two years—but only if prices are brought under control. Consider that Pakistan's wind power tariff is more than 50 percent higher than that of India. This has left power purchasers unable to afford this promising resource. Fortunately, some market-enhancing measures—such as large consumer choice—are already in place. However, the scope of such measures must be broadened in order to produce more impactful outcomes.

Pending privatization, which appears to be a difficult and time-consuming process, large distribution companies may have to be divided into more manageable entities. In Punjab, with the exception of the Multan Electric Power Company and to some extent the Islamabad Electric Supply Company, Pakistani distribution companies (DISCOs) enjoy suitable geographical domain (in other words, they distribute power to a reasonably sized area, and they are not overburdened). Yet in the other three provinces, this is not the case, and electricity losses are high. Through bifurcation, six to eight more DISCOs could be added successfully. Organizing gas DISCOs into smaller companies—say 10 instead of the present 2—could make the sector's eventual privatization considerably easier. Indeed, such reorganization of gas and power DISCOs should occur before privatization efforts formally begin (privatization, in fact, lacks a critical mass of support from key

stakeholders).

ADDRESSING STRUCTURAL CHALLENGES

There are many political and constitutional obstacles that are hampering healthy activity in the energy sector. Pakistan's provinces are demanding a role in distribution, yet distribution currently falls under federal-level domain. Punjab has initiated energy projects of all sizes and types, which could create anomalies and frictions within the federation. Provincial political issues are largely to blame for the lack of development of coal in Thar, a region in Sindh province blessed with large (and unexploited) amounts of it. There are provincial disagreements over how to divide royalties from hydro power. Sindh complains that it should get more gas, given that it is a gas-producing province. Increased provincial autonomy, set in motion by the 18th Constitutional amendment of 2010, has created uncertainty and confusion within the provinces. This means that investment in natural resource development might be discouraged.

These various issues must be addressed. Perhaps successful examples of other countries in the region overcoming similar challenges can serve as a guide for Pakistan. India, for example, has resolved disagreements over hydro royalties by allowing producer states to receive 12 percent of its electricity for free. Somewhat similar measures have been introduced in India's coal sector.

CONCLUSION

The reform steps discussed in this brief would all help ease Pakistan's energy crisis. Gas pricing reforms would encourage increased investments in gas exploration and production, thereby boosting much-needed supplies. Electricity tariff ceilings would filter out uneconomic projects. CNG pricing reform would divert gas to the power sector, where it is much needed and would thus help reduce load-

shedding. Constitutional and political reforms would reduce or even eliminate provincial suspicions and uncertainties, thereby leading to more provincial buy-in and facilitating more access to provincial energy resources. This is certainly not all that is needed—far from it. Nonetheless, the measures highlighted here can make a significant impact toward resolving Pakistan's immense energy shortages.

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This policy brief is the second in a series on Pakistan's energy crisis. The first policy brief in the series can be accessed from the Asia Program webpage at <http://www.wilsoncenter.org/publication-series/overcoming-pakistans-energy-crisis>.

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