

Pakistan's Energy Crisis From Conundrum to Catastrophe?

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Pakistan is mired in an acute energy crisis—one with immense implications for both the nation's floundering economy and its volatile security situation. According to some estimates, energy shortages have cost the country up to 4% of GDP over the past few years.¹ They have also forced the closure of hundreds of factories (including more than five hundred alone in the industrial hub city of Faisalabad), paralyzing production and exacerbating unemployment. Additionally, they imperil much-needed investments in development and infrastructure. Meanwhile, the nation has been convulsed by energy riots. Protestors, angered by unscheduled outages, have often resorted to violence. They have blocked roads and attacked the homes and offices of members of both the ruling Pakistan Peoples Party and the Pakistan Muslim League, the chief opposition party. Significantly, in February 2013 Pakistan's minister for water and power warned that the energy crisis has become a national security issue. For all these reasons, energy poses one of Pakistan's most critical challenges.

Resolving this crisis will require far more than power-generation expansion and other supply-side quick fixes,

the de facto policy of the country's political leadership. Pakistan's energy problems are deep and complex, and are rooted more in shortages of governance and political will than of pure supply. If the nation is to overcome this crisis, it will need to begin with whole-scale institutional energy sector reform—a politically unwelcome, yet utterly essential, prerequisite for energy relief. Necessary reforms can then follow. The success of such efforts, however, will hinge on the existence of leaders willing to prioritize long-term national development and well-being over short-term political considerations.

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¹ Annabel Symington, "Pakistan Opposition Take Aim at Energy Crisis Ahead of Elections," *Christian Science Monitor*, February 1, 2013, <http://www.csmonitor.com/World/Asia-South-Central/2013/0201/Pakistan-opposition-take-aim-at-energy-crisis-ahead-of-elections>; and "Pakistan's Energy Shortage: Lights Out," *Economist*, October 8, 2011, <http://www.economist.com/node/21531495>.

Origins and Nature of the Current Crisis

The origins of Pakistan's energy crisis can be traced back to the 1990s. A major energy crisis was actually averted in the 1970s, when the government launched the massive Mangla and Tarbela dams, leading to a short-lived period of robust hydro-driven energy generation that ably responded to demand. However, after a period of strong economic growth in the 1980s, energy demand soared, and supply and infrastructure could not keep up. The government sought to ramp up generation but was unable to satisfy demand. As Pakistan's population has risen, and as urbanization has spawned the rise of new industries and other corporate energy customers, the situation has continued to worsen to the present day. Electricity shortfalls reached a peak of 8,500 megawatts (MW) in June 2012—more than 40% of national demand.²

With this in mind, it is important to emphasize that Pakistan's current energy quandary is rooted in paucities that go well beyond those of power supply. In fact, Pakistan is blessed with ample indigenous energy resources; it is especially rich in natural gas, hydroelectricity, and coal. However, in the case of the two most utilized sources of energy—oil and gas—consumption levels are so high that these domestic resources are being rapidly depleted. Pakistan's national oil and gas company, Oil and Gas Development Company Limited (OGDCL), predicts indigenous oil reserves will be exhausted by 2025, and that Pakistan will run out of domestic sources of natural gas by 2030.³ Meanwhile, hydroelectricity supply is imperiled by climate change, with less rainfall reducing river flows.

At the same time, governance shortfalls (and not just of the corruption variety) are a key challenge for the power sector. Pakistan's energy policies come under

the purview of several government ministries and agencies, but coordination is lacking, clear lines of authority are absent, and interagency turf wars are legion. The sector also suffers from gross inefficiencies (including 30% transmission and distribution losses), and electricity theft is rife; Pakistanis can regularly be seen hooking onto power lines.

Yet one of the most critical deficiencies plaguing the energy sector is money. With Pakistan's economy struggling, liquidity is dangerously low. In effect, energy consumers, private producers, the national transmission agency, distribution companies, and even the government itself cannot pay their power bills. Of note, according to figures provided by Pakistan's water and power ministry, "influential defaulters" owe about \$1 billion in overdue energy bills.⁴ As a result, the energy sector is deprived of desperately needed revenue to pay for generation, transmission, and distribution, as well as operating and administrative costs. This gap between revenue

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and expenses—often referred to as "circular debt"—has approached a whopping \$4.5 billion and is worsened by the fact that, thanks to generous government-funded subsidies, energy end-costs for consumers are always lower than the actual cost of production.⁵ Consequently, the country cannot afford to provide a regular supply of power.

² "Electricity Shortfall in the Country Reaches 8,500 MW," Dawn, June 17, 2012, <http://dawn.com/2012/06/17/residents-protest-prolonged-loadshedding-in-lahore>; and "Pakistan's Energy Crisis: Power Politics," *Economist*, Banyan Asia, web log, May 21, 2012, <http://www.economist.com/blogs/banyan/2012/05/pakistan-s-energy-crisis>.

³ Saleem Shaikh and Sughra Tunio, "Pakistan to Boost Renewable Energy to Meet Power Shortfall," AlertNet, July 6, 2011, <http://www.trust.org/alertnet/news/pakistan-to-boost-renewable-energy-to-meet-power-shortfall>.

⁴ Jon Boone, "Pakistan Power Cut Riots Spread as Politician's House Stormed," *Guardian*, June 19, 2012, <http://www.guardian.co.uk/world/2012/jun/19/pakistan-power-cut-riots>.

⁵ "For Pakistan, Everyday is a Blackout with No End in Sight," *Agence France-Presse (AFP)*, August 8, 2012, available at <http://dawn.com/2012/08/08/for-pakistan-everyday-is-a-blackout-with-no-end-in-sight>.

A Lack of Strategy and Political Will

A subset of the energy financing problem is an inability or unwillingness to muster the necessary political will to address the money shortage. More broadly, Pakistan has never developed a comprehensive, integrated energy strategy, and Islamabad's haphazard policies have failed to address the crisis's deep roots. The problem lies not with civil servants, bureaucrats, and technical experts who focus on developing energy policies (many of them reasonable and actionable), but rather with the non-expert, high-level political appointees spread across the energy sector and beyond who are charged with implementing them.

Pakistan announced a national energy plan in 2010, though it was dominated by much-mocked—and likely ignored—conservation measures, such as bans on all-night wedding parties and neon billboards, along with the required early closures of street markets. (A more realistic demand-management strategy, announced last year by the Asian Development Bank, calls for the distribution of twenty million low-energy light bulbs.) Other well-intentioned initiatives have likewise not produced results. Pakistan has established the National Electric Power Regulatory Authority (NEPRA), charged with ensuring fair energy competition and consumer

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protection, but political interference undermines its autonomy and effectiveness. Tariff decisions must be approved by Islamabad, and NEPRA's four members are all

selected by the government. Furthermore, government officials have been known to outright ignore the body's decisions.

Recent recommendations put forth by Pakistan's Planning Commission, however, offer some hope. In

2011, the commission released what it described as a "new framework" for economic growth, which calls for more focus on the private sector, cities, and youth. If implemented, the impact would be immense, as the plan would represent a paradigm shift in Pakistan's development philosophy.

In the context of energy, the document proposes some of the most far-reaching and comprehensive policy measures ever introduced in Pakistan—from full-scale sectoral deregulation to governance reform and the phasing out of many subsidies. Unfortunately, there are several problems. One is that while the Planning Commission is part of the government, it lacks implementation power, and no government entity has stepped up to embrace the commission's ideas and take on the mantle of implementation. (In fact, government agencies often spar with the Planning Commission.) Another dilemma is that the Planning Commission insists that such measures are only implementable after the country has established an integrated energy policy, which has still not happened. Moreover, Islamabad likely has little desire to authorize the Planning Commission's measures anyway, given that some of them (such as phasing out subsidies) are fraught with political risk—especially with national elections scheduled for spring 2013. On the subsidy question, in particular, while many experts accurately note that Islamabad's policies distort pricing, these measures are unlikely to change for political (and not systemic) reasons. This is because subsidies provide temporary relief to an impoverished mass population that often harbors antigovernment sentiment. It also bears mentioning that reducing subsidies could have an unintended effect: increasing the number of Pakistanis who do not pay their taxes (given that if the poor are asked to pay more for energy, they may not have enough money to pay their taxes).

Yet herein lies a major dilemma, because Pakistan's government would significantly increase its revenue—and hence its ability to pay its energy bills—if more of the country paid its taxes. Former U.S. secretary of state Hillary Clinton has claimed that only 2 million of Pakistan's population of 180 million pay income

taxes, while Pakistan's Federal Board of Revenue estimates that 700,000 wealthy Pakistanis are not paying their returns.⁶ The latter figure, in particular, suggests that revenue gains from increasing the number of citizens paying taxes could be tremendous. However, the government refuses to pressure its most affluent citizens, because many of them are politically connected or politicians themselves. And admittedly, there is no guarantee that Islamabad would actually use this added tax revenue to cover its energy debt; it could well spend the revenue on the repayment of other debts, administrative costs, or even defense.

Scenarios for the Future

Given that Pakistan lacks the revenue to finance an energy recovery, future opportunities abound for international donors, including the United States. Washington, in fact, already provides a considerable amount of energy assistance to Pakistan. The Obama administration identifies energy as a priority area in its civilian assistance program to the country, and Congress released nearly \$300 million in new energy aid last summer alone. The U.S. private sector also contributes to Pakistan's energy sector, including in overtly political ways. Last summer, ConocoPhillips mediated talks between Pakistan and Qatar on a potential natural gas deal in an effort to discourage Islamabad from pursuing a pipeline project with Iran that is opposed by Washington.

Given the extent of Pakistan's energy woes, and especially its circular debt—which, at its highest point of nearly \$4.5 billion, far exceeded the value of Washington's \$1.5 billion in total annual civil assistance—it is folly to expect U.S. energy aid to make

a major dent in the crisis.⁷ Conversely, if U.S. civilian assistance to Pakistan were to be cut, the reduction of energy-intensive aid would be a significant loss for the country. This assistance includes a USAID infrastructure project, expected to be completed by this year, which adds nearly 1,000 MW to the national power grid—a fifth of Pakistan's energy shortfall.

This is not to say that indigenous solutions should simply be discarded. Consider the vast Thar coalfields in Sindh Province, where 200 billion tons of reserves have lay dormant since their discovery more than twenty years ago (Thar constitutes the world's sixth-largest coal deposit). Last year, Islamabad designated Thar as a special economic zone, hoping to lure investors with tax breaks and other incentives. Some, however, believe that the government must be more aggressive. Thar has been a common theme on the campaign trail for this year's elections, with opposition parties hailing Thar as an elixir for Pakistan's energy supply crunch and underscoring the urgency of tapping into its riches.

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However, what both the government and political opposition fail to articulate is how Pakistan will overcome the formidable challenge of developing the technological and labor capacity to exploit this potential bonanza. Another problem is purely political. Ever since the Thar coal was discovered, the central government has been locked in a disagreement with

⁶ Indira A.R. Lakshmanan, "Clinton Criticizes Low Rate of Tax Collection in Pakistan," Bloomberg, October 21, 2011, <http://www.bloomberg.com/news/2011-10-21/clinton-criticizes-low-rate-of-tax-collection-in-pakistan.html>; and Mehreen Khan, "Energy Subsidies Dilemma Expose Failings of Pakistan State," *Financial Times*, Energy Source, web log, August 5, 2011, <http://blogs.ft.com/energy-source/2011/08/05/energy-subsidies-dilemma-expose-failings-of-pakistan-state>.

⁷ "No End in Sight for Pakistan's Energy Crisis," AFP, August 8, 2012, available at <http://tribune.com.pk/story/419175/no-end-in-sight-for-pakistans-energy-crisis>; and "Aid to Pakistan by the Numbers: What the United States Spends in Pakistan," Center for Global Development, Study Group on a U.S. Development Strategy in Pakistan, http://www.cgdev.org/section/initiatives/_active/pakistan/numbers.

the Sindh provincial government about how to divvy up the spoils. Islamabad has proposed an 80/20 split, while Sindh has insisted that it retain full control of the coalfields. This 22-year-old disagreement has effectively put on hold the exploitation of Thar's resource treasures and crystallizes how Pakistan's energy woes are as much (if not more) a governance and political issue as one of supply and demand.

Encouragingly, Pakistan is also starting to explore other alternative energy sources. Officials have said several small-scale wind projects are under construction. The government has also announced that by 2030 it plans to have a minimum of 5.0% of total commercial energy supply provided by wind, solar, and biowaste, and that 2.5% of Pakistan's overall energy generation will come from renewables. Islamabad claims that by 2030 about 5,500 MW of Pakistan's projected 160,000-MW daily energy requirement will come from alternative and renewable sources.⁸ These are admittedly ambitious goals, given the miniscule role renewables play in the current energy mix.

Ultimately, it is the issue of implementation that prolongs Pakistan's energy crisis, making many experts pessimistic that the crisis can be resolved anytime soon. There is no shortage of research, conferences, and proposals offering policy solutions. However, these measures are not executed, because there is no political will to do so. This has long been the case at both federal and provincial levels, as well as with different political parties. While the ruling Pakistan Peoples Party has been the political face of the energy crisis since 2008, the previous government (led by Pervez Musharraf and the Pakistan Muslim League Quaid-e-Azam, or PML-Q) largely restricted its energy policies to supply-generation measures—the same politically safe bets made today. Then, as now, few efforts were made to strengthen energy governance or reform the energy pricing system. Tellingly, even in the rare cases when the government enacts politically risky measures to strengthen the energy sector and overall economy, it often reverses course. In 2011, for example, Islamabad

repealed an increase in fuel prices—instituted to raise desperately needed revenue—after a key coalition partner had withdrawn from the government to protest this price hike.

The Clock Is Ticking

With no end in sight, the implications of Pakistan's energy crisis are stark and go well beyond threats to the country's economic well-being and stability. Pakistan is currently in the midst of two major societal shifts that could worsen

the effects of its energy problems in the years ahead. One is urbanization. While today the majority of Pakistan's population is rural, estimates

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suggest that at least 50% could be concentrated in urban areas by the 2020s.⁹ Demand for electricity is particularly high in cities, because urban-area industries and homes tend to be more dependent than those in the hinterland on grid-connected energy sources. With droves of Pakistanis entering cities and becoming dependent on grids, pressures on supply will deepen exponentially.

Pakistan's other notable societal shift that could worsen the energy crisis is the devolution of governance from the federal level to the provincial and local levels. Thanks to the 18th constitutional amendment, which President Asif Ali Zardari signed in 2010, federal ministerial responsibilities and resources are being passed down to local authorities and agencies. This means that many new energy-related functions and duties are being foisted upon provincial and district

⁸ Shaikh and Tunio, "Pakistan to Boost Renewable Energy."

⁹ Shahid Javed Burki, "Historical Trends in Pakistan's Demographics and Population Policy," in *Reaping the Dividend: Overcoming Pakistan's Demographic Challenges*, ed. Michael Kugelman and Robert M. Hathaway (Washington, D.C.: Woodrow Wilson International Center for Scholars, 2011), 67.

governments, which suffer from even more capacity constraints, inefficiencies, and financial troubles than their federal counterpart. Local governments will likely inherit the ineffective policies of the federal government as well. Given the central government's inability to address the country's energy crisis, there is even less reason to expect that short-handed local-level authorities are up to the task.

How long can Pakistan ride out this storm? Today, many Pakistanis are getting by through their own resourcefulness, as they do on so many occasions when their government fails to provide basic services. This winter, some residents have coped with the nation's worst gas shortage on record by fashioning homemade pumps from old refrigerators and sucking gas out of distribution systems. Others have done their cooking only when gas stations are closed—the only time they receive any pressure.

Time is running out, however. Pakistan faces rapidly dwindling foreign reserves and a plunging currency that late last year fell to a record low, and double-digit inflation is projected to hit this year.¹⁰ There is the very real fear that Pakistan could soon find itself unable to afford to address its energy crisis—meaning that even stopgap, short-term measures to expand power generation could be eliminated. Such a scenario would presumably increase the frequency and violence of public protests and threaten the state's ability to maintain order. The consequences could be catastrophic for the country's economy and stability.

Recommendations and Conclusions

There are some short-term steps that Pakistan can and should take. One is to formally request a new loan from the International Monetary Fund (IMF) to bring both immediate relief to the economy and badly needed liquidity to finance solutions to the energy crisis. However, given that the IMF would probably

impose politically delicate conditions—including the phasing out of some energy subsidies—Islamabad is unlikely to make such a request until after this year's election. Even if the next government follows through, another loan would simply be another short-term fix.

Above all, Pakistan must bring some urgently needed order and efficiency to its chaotic and dysfunctional energy sector. A better coordinated and integrated energy sector can best be attained through the consolidation of the country's many energy-related institutions into a single ministry. A tighter institutional set-up would allow Pakistan's energy sector to enjoy better coordination of planning, decision-making, and above all implementation. This would in turn enable it to do away with the reactive, haphazard, and ad-hoc policy

environment that has characterized the energy sector for years. Although such a transformation will certainly be difficult to achieve, the seeds have already been planted. Back in the early 1980s, Pakistan

experimented with establishing a more coordinated system, but those efforts petered out due to capacity constraints. Today, some influential players in the energy scene—including policymakers—have indicated their support for revisiting the idea.

After a new institutional arrangement is in place, Pakistan could move on to policy reform. This should include new pricing measures that remove not all, but many, energy subsidies. Tax reform is another imperative—and should be designed to provide Islamabad with more revenue not just to address the

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¹⁰ “IMF Warns of Deteriorating Pakistan Economy,” AFP, October 5, 2012, available at <http://tribune.com.pk/story/447222/imf-warns-of-deteriorating-pakistan-economy>.

energy crisis but also to assist poor Pakistanis harmed by the phase-out of subsidies.

Pakistan should also make improvements on the energy-demand side—such as by aiming to reduce by half the 30% in losses arising from distribution and transmission (a goal that will entail crackdowns on energy theft). Both federal and provincial authorities should be more vigilant about keeping up with necessary maintenance and repairs at all generation, distribution, and transmission facilities in order to minimize leakage and other losses. Any efforts to improve energy governance will need to occur in tandem with measures to curb wasteful water consumption. Decades of water-intensive agricultural practices—including widespread and subsidized flood irrigation—have helped deplete surface water tables and prompted farmers to expend excessive electricity on tubewells to extract groundwater.

Finally, Pakistan should better diversify its energy mix. This can be done initially by importing clean coal, which is often cheaper than imported oil and gas. With time, if the political spats over Thar's reserves can be worked out, then the nation would ideally begin to focus on developing indigenous supplies—though a variety of challenges, such as transporting the coal across the nation and overcoming possible resistance to environmental costs, would remain. Pakistan is already making an effort to diversify by pursuing separate pipeline projects with Iran and with Turkmenistan, Afghanistan, and India. However, a variety of factors

(international sanctions—based with the former, and security-oriented with the latter) suggest that these projects are far from being consummated. In the meantime, Pakistan should take advantage of its enhanced commercial relationship with India to import energy from that country. Already, the two nations have concluded a deal to export electricity to Pakistan, and they have created a joint working group on petroleum to explore further possibilities for energy trade. Hypothetically, Pakistan-India energy trade could be expanded to feature more region-wide energy commerce, with organizations such as the South Asia Association for Regional Cooperation (SAARC) providing an institutional platform. However, the fractious political relations between South Asia's states make this prospect unlikely in the near term.

Ultimately, there is just one obstacle to the implementation of these measures, and that is leadership. For years, Pakistani officials have had promising policies at their disposal; yet they have been unwilling or unable to move forward. This spring, if Pakistanis elect leaders with a genuine desire to serve the interests of their country, then the end of its long energy struggles could conceivably be in sight. Yet if the election produces another governing dispensation concerned only about its own interests and political survival, then Pakistan's energy conundrum could well become an energy catastrophe. ∞



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