**Kicking a cheap energy addiction: Part - I**

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istan’s economy rests precariously balanced between populist politicians and the IMF along with sovereign lenders impatient with a country addicted to huge energy subsidies.

With just weeks of foreign currency reserves left to buy fuel for power stations and other necessities, the State Bank of Pakistan has been forced to tightly control its dollar holdings.

The News reported Ishaq Dar’s comments at his long-awaited press conference, saying that the government is spending Rs3,000 billion generating electricity and revenue is only Rs1,800 billion. However, he is understating the real losses, which are closer to Rs90,000 billion. Perhaps it is this reluctance to accept reality that forced the IMF delegation to leave Pakistan without an agreement in place.

While ordinary people complain bitterly about energy price rises, like the 16 per cent rise in petrol prices last month, energy prices need to rise much more to cover import and operating costs. Decades of subsidized energy have boosted government and national debt, accelerating currency devaluation and inflation.

PM Shehbaz Sharif is now confronting a financial cliff edge, and the prospects are nightmarish, as he has acknowledged. However, few people in Pakistan seem to be aware just how much has to change. With most people paying around Rs20 for a kilowatt hour electricity unit (kWh), it may come as a shock to realize that the real cost of providing that power is more like Rs125, about $0.45.

There are several factors that contribute to the high cost of energy in Pakistan, particularly electricity. Many people don’t realize that low-income countries experience much higher real costs for essential engineered services like construction, water and electricity. It seems counter intuitive. And these high costs put the brakes on social and economic development.

First, about half of the nation’s 40,000MW electricity generating capacity is only used in the summer, for air-conditioning the wealthiest people in the country. That means a higher capital cost per unit of electricity. In Australia, with a similar peak demand from air-conditioning, the average kWh unit power cost for consumers is $0.25, compared with about $0.17 in the US. In southern Europe, the electricity cost is $0.27 in Spain, Portugal, $0.33 in Greece and $0.55 in Italy. Given that generation cost is typically $0.05–$0.08 per kWh, we can see that the electricity distribution in these markets represents most of the cost for consumers, $0.20–$0.40 per kWh. Pakistan has more generating capacity than it needs, and has under-invested in transmission infrastructure so an estimated 50 million people still have no access to electric power.

Second, Pakistan relies on substantial foreign investment and has to pay extra to persuade foreigners to invest here. That’s because of its poor record in making repayments and meeting capacity payment obligations, further raising the cost of power generation.

Third, a large proportion of state generating capacity lies idle because of inadequate maintenance, perhaps as high as 25 per cent.

Fourth, Pakistan still relies on fuel oil as its second largest source of fossil energy, more so than local gas or coal. Imported liquified natural gas provides the largest component. The fuel oil generators are old and inefficient. It is said that the fuel oil distribution industry still has sufficient political influence to resist phasing it out which might significantly reduce average generation cost.

Fifth, the absence of a wholesale electricity market in Pakistan, and manual scheduling of power production is estimated to increase the cost of electricity generation by about 17 per cent. Sixth, the Ukraine conflict and supply-chain congestion has recently forced up the prices for most imported fuels.

These five factors combined contribute to the $0.11 average generation cost of electricity in Pakistan, double the cost in high-income countries like Australia and the US.

Next, about 25 per cent of the energy generated is lost from the system due to line losses and non-payment. The 2022 Pakistan Economic Survey reported that of 122,000 GWh electricity generated, less than 90,000 GWh was sold, representing a loss of more than 25 per cent. Given that the average cost of electricity generation for the system is $0.11, the price of energy actually sold has to exceed $0.14 just to cover this loss.

This does not take the high cost of electricity supply connections into account. According to recently reported data, about 90 per cent of Pakistan connections supply less than 300 kWh monthly. In the US, the average connection supplies nearly 900 kWh, so the cost of the distribution infrastructure is smaller in proportion. Therefore, the Pakistan electricity distribution cost is likely to be at least $0.30, bringing the minimum required meter price to $0.45, or Rs135 per unit.

There is another factor that lifts the real cost of electricity even further than these estimates: intermittent power which is still a reality in Pakistan. First, the chronically overloaded electricity distribution system fails regularly, particularly in summer, leading to power interruptions lasting several hours at least. The entire country endured a full-day blackout in January and another in October last year.

Next, regular loadshedding interrupts the power for an hour or so, three or four times daily, because the government does not have enough foreign currency to keep power stations supplied with fuel. This means that backup power is essential for anyone requiring continuous power, increasing the real supply cost by 50–100 per cent. The roar and fumes from standby generators announce every power interruption to keep businesses, phone towers, hospitals and shops open. Fuel for inefficient small generators, typically two or three times more than would be burned in power stations to produce the same electrical energy, adds even more to Pakistan’s imported fuel bill.

We are fortunate enough to have a solar array and a large battery for which we paid about $20,000, including the cost to rewire our Islamabad home. The utility still buys our excess electricity at the standard supply price, so most of the year our bill is negligible, except for a cloudy winter January. Current estimates from the IEA suggest that our recurring electricity cost is at least $0.30 per kWh, taking the eventual replacement cost of batteries and solar panels into account.

To be continued…

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