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**Dealing with the gas crisis**

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Local gas production has finally started coming down in a significant way. There are slim chances that in the short term it may go up, although some improvement may be possible in the medium to long term.

Imported gas, either in the form of LNG or piped gas, may take two years. And there are transmission issues as well. New infrastructure in this respect will take 2-3 years to implement. Thus, consumers are in for a gas shortage crisis for the next two to three years. What options consumers have and how the government can facilitate those options is our subject in this space.

The rich (including the higher middle classes) have potentially many choices. Ironically, the rural poor are not affected by the gas crisis, as they are not the users or beneficiaries of piped gas. Only 20 percent or so of the households in Pakistan have access to piped gas as against electricity access of 80 percent. There may be questions in the numbers of electricity, though. The poor rely on biomass, tree shrubs or cow dung – and will continue to do so. The rural rich are installing solar and other technologies as will be discussed later. It is the urban poor and the lower middle classes that have a problem.

It can’t really be said that no one cares for the poor when it comes to this. Pakistan’s energy tariff (both electricity and Gas) is highly considerate to low income groups; in case of gas, even variable costs are not covered and in case of electricity, only variable costs are covered hardly. And energy theft is also tolerated – either by design or by default. Although some gradual tariff adjustments are needed to correct this, the IMF wants us to do away with it like their other fancy ideas. They want to institute a direct subsidy system for the poor.

Gas demand increases in the winter due to heating and international LNG prices also increase in this period and even go higher than the proverbially expensive Qatar LNG prices. This makes both gas and electricity expensive in the winter. However, electricity demand is lower in Pakistan in the winter, largely due to gas-based consumer preference. Cooking in Pakistan is almost 100 percent dominated by gas, either LPG or natural gas, contrary to the global trend.

Although LPG is the next option, it is many times more expensive, especially if the poor man’s concessional tariff is considered. For higher residential tariff, it is twice as expensive. LNG may also go into shortage when most people shift LPG when ordinary piped gas is not available. When there is shortage, prices go high. LPG is the fuel for the rich or at best the middle class.

For cooking, at least the rich have the option of switching to electricity, at-least partially. Electric Induction cookers, with a single burner, are available at Rs 7,000-10,000 per. Curries can be cooked easily and even faster on an induction cooker. It is also more energy efficient. In case of gas stoves, most heat is lost due to radiation. Microwaves and electric kettles are also options for meal heating and tea making and are already widely used.

But induction cookers emerge as a new option. For roti/chapaati, there are electric chapaati makers also. Those who have installed solar PV of 5 kW, again the rich class, are in an enviable condition of having much cheaper electricity. The government may consider options for introducing innovative electrical tariffs for diversion to electricity in the winter, when electric demand is low and the government has to pay fixed capacity charges for the under-utilized capacity. Some of this cost can be recouped through incentive measures.

Water heating for bathing and ablutions is the most interesting area for considerable and interesting alternatives. In the winter, gas is consumed most for space heaters and water geysers which are awful energy guzzlers. For space heating, electrical inverter ACs are the best option and a boon for Solar PV consumers. No new investment is required. Most people require or use ACs for summer cooling anyway.

Solar geysers are the best option for water heating. An average sized 200 Liters geyser costs Rs45,000 per unit; and a larger 300 Liter one may cost 50 percent higher. Unfortunately, it is not as popular as it should have been, especially when one compares to the relatively faster pickup of the rooftop solar PV installations. Solar geysers are provided with an electrical option as well for rainy days. Those who have installed Solar PV can divert extra capacity to solar geysers. This is an option that is emerging fast in replacing net metering. Excess solar PV output can also be diverted to pure electrical heaters as well by installing timers or mobile-based switches.

Technically, heat pumps, something similar to air-conditioning systems, are the most energy efficient and probably the cheapest in the long-run. Its market and supply chain is emerging. It has an upwards cost – over Rs2 lakhs – and is not generally available in the local market. Solar geysers are the next best option as has been indicated in the foregoing. Solar geysers are very popular in China, Turkey, Greece, and India and even in the US.

In Pakistan, people are still reluctant and have little awareness about solar geysers. There are supply chain issues as well. Solar geysers storage cylinders have lower quality and life than those available elsewhere. The typical life of a solar geyser exceeds 10 years but in Pakistan storage cylinders corrode away due to quality and maintenance issues. Currently, almost all solar geysers available in the market are imported from China. There are more than 1000 manufacturers in China of this product, including a large number of very small enterprises which compete in prices and quality.

The government can do a lot in this respect – gas companies, AEDB, NEECA, and PCRET etc. Almost all of these have done something with respect to facilitation of one form or the other. The Engineering Development Board may have to come forward as well. However, they need to get their act together. Perhaps, a working group for policy development may be required. Except for glass tubes, all other items – the storage cylinders and the structure – are simple steel fabrications which can be manufactured locally. Without local manufacturing, market, competition and quality are not established. Some kind of subsidy in the form of credit and leasing may be considered as well.

It is said that it is difficult to compete with poor quality Chinese products, which are not necessarily true. Neither is Chinese quality poor in all cases nor is the cost competition. Chinese companies may be encouraged to enter into having local JVs. It may require a policy as has been developed for mobile phones manufacturing. It would be highly unfortunate if such low technology and bulky items as solar geysers continue to be imported. The transport cost differential should be enough for price support. There are many engineering goods items in Pakistan which are competing effectively or have a potential to do so.

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