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Towards an alternative gas scenario

Ogra has issued its annual report for the year 2017-18, titled 'State of the Regulated Petroleum Industry'. Gas demand, supplies, shortages and overbillings have occupied headlines in media and heads have rolled in the gas sector. We have solved our electricity capacity problems to a great extent, but a storm is gathering around gas.

LNG has opened a viable option that was not available earlier. Other pipeline projects could not be implemented largely due to political issues which continue to mar prospects. And now in the short to medium terms, current account deficit issues will militate against unrestricted gas imports. In this context, Ogra's report and its forecast should be be examined, which in my view, is full of inadequacies.

Based on the Ogra forecast, it is widely believed that gas demand would double from 4 BCft to 8 BCft in less than ten years. Ironically, the report itself states that it would be difficult to meet the demand despite LNG, IPP and Tapi. The current gap (2018) between demand and supply has been estimated at 403 MMCFD which has projected to reach a level of 2208 MMCFD by FY2019 (current year). This would be despite the induction of IPI and Tapi. Would that mean additional imports of LNG of 2208 MMCFD, beyond the planned 1800 MMCFD totalling 4 BCFD? And what happens if IP and even Tapi do not materialize due to the complexities of regional and international politics?

Here I present and analyze an alternative scenario whereby net effective gas demand is maintained at 4000 MMCFD. Assuming local gas production to go down to 1800 MMCFD, with supplies from IP (750 MMCFD) and Tapi (1325 MMCFD),total supplies would come out to be around 3800 MMCFD by FY2028, which almost balances the proposed demand figures. Any slippage of the two pipeline import projects are to be supplied by LNG.

Gas supplies increased from 4131 MMCFD in 2016-17 to 4357 MMCFD in 2017-18 with LNG share of 754 MMCFD (17 percent).It appears that local production has decreased to 3600 MMCFD. Local production has been forecast to come down to 1600 MMCFD by FY 2028, something that many would not have thought would occur so early. This need not be so, if our E&P sector is reorganized and streamlined (more on it later). However, what is not understandable is Ogra's prediction that the gas demand would abruptly go up to 7000 MMCFD with the demand and supply gap increasing to 2800 MMCFD What is so new as to cause such an abrupt increase in demand?

Contrary to Ogra's outlandish forecast, if local production goes down, and assuming demand to remain constant, another 400-600 MMCFD of LNG would have to be added sooner. This means requirement of another LNG terminal, which reportedly the GoP is trying to fast track and increased supplies from Qatar have been negotiated; so one need not be scared by the Ogra report and its forecast. The following may be noted:

First, the residential sector's demand (constrained) in previous years has grown at a rate of 2.1 percent, which is stated to be lower than real demand due to lack of supplies. Ogra has assumed a growth rate of 9 percent which takes the demand from a level of 797 MMCFD in 2017 to 1788 MMCFD in 2028. If a more reasonable rate of 5 percent RoG is assumed, residential demand would be more reasonable and realistic. Due to low tariff issues, it may be not be advisable to expand residential supplies at a very high rate.

Second, Ogra has included the cement sector in its estimates, although the sector is not eligible to get gas supplies. Almost all of the cement plants are currently working on imported coal. As I advised elsewhere, even imported coal is not desirable to be used in the cement sector and should be replaced by local Thar coal. This reduces gas demand by 200 MMCFD.

Third, similarly, Ogra estimates include 577 MMCFD for 'captive power', which again is undesirable and low efficiency usage resulting in gas wastage. The textile industry makes a case for captive usage in integrated plants where gas usage is more efficient. However, such cases are limited. Eventually, captive power will have to be very significantly used and certainly Ogra's inclusion of 577 MMCFD is uncalled for and its elimination would significantly reduce estimates.

Fourth, CNG sector consumption has been enhanced from 184 MMCFD to 583 MMCFD in the report, which is again unreasonable. At best, it should remain stable at the current level. There is controversy regarding the CNG sector being involved in gas theft.

Fifth, a more radical solution – but quite feasible – is to produce fertilizer out of Thar coal gasification, which I have elaborated elsewhere. It is reasonable and realistic. China is doing it and even in the US in North Dakota, they have started producing urea from lignite deposits. Existing fertilizer plants can be converted from natural gas to Syngas produced through Thar coal gasification. If this is done, another 822 MMCFD can be removed from Ogra's estimates.

Sixth, the power sector is another opportunity which has already been utilized by installing four RLNG-based combined cycle power plants which are 60 percent efficient. This is in addition to the Guddu Power Plant, which is also 58 percent efficient. As the power supplies are available from coal, gas consumption from less efficient power plants (IPP & Genco) would have to be withdrawn. In this context, Ogra's projections for the power sector will have to be adjusted down from a grotesque 2902 MMCFD to a more realistic level. The NTDC has come out with an Indicative Power Generation Capacity Expansion Plan (IPGCEP), which has allocated a very low number to natural gas and LNG – under which gas consumption peaks at 628 MMCFD and goes down to 302 MMCFD by FY 2028. To be conservative, one can keep natural gas consumption in the power sector at 500 MMCFD. Even then, there is a major adjustment requirement in Ogra's estimate of some 240 MMCFD.

Seventh, there is no efficient substitute to natural Gas in three sectors only – residential, commercial and industrial. These three would require only 2.5 BCFD by FY 2028.There are many ways power can be produced from solar, wind, hydro sources at cheaper rates. This sets the minimum local production requirement as opposed to the forecast production of 1.8 BCFD. It would be nice if our E&P companies are able to provide this extra by FY 2028.

Eight, if all planned gas import projects (LNG, IP, and Tapi) are implemented, it would add 4 BCFD, costing annually $14 billion – which would be a new component to Pakistan's import composition. It is an open question if the current account would have that much capacity. This establishes possibly an upper limit to gas imports. Adding 2 BCFD of local production, in view of no further discovery, the upper gas supply limit would be 6 BCFD by FY 2028 (preferably less) which is more than the demand numbers suggested in the above. Kekra-1, if successful, would reduce pressure on our foreign exchange significantly with expected input of 400 MMCFD – the more the better.

Ogra should organize a serious study keeping in mind the foregoing. And the GoP would be well-advised to create a focal organization for looking after these gas issues.

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