

Gas in India: The Transition Challenge

ANIL JAIN reflects on India's growing reliance on natural gas imports

India is 70 percent import dependent for crude oil, but imported gas (LNG) accounts for just 28 percent of its total gas consumption. With the former comprising 30 percent of India's primary commercial energy supply against 11 percent of gas (*BP Statistical Review of World Energy, 2011*), it is evident that unlike oil, imported gas has not featured predominantly in the country's energy mix. There are several reasons for the limited role to date of natural gas imports on the Indian market – most prominently the difficulty of establishing a transnational gas pipeline and the absence of a long-term pricing policy in Indian gas user industries, which is necessary to support LNG supply contracts. Consequently, and in spite of the proximity of India to large gas deposits in the Gulf, the country is not an important player in the world gas market at present.

This is, however, set to change. In May 2012 an Indian government gas company (GAIL) and its counterpart in Turkmenistan, signed an agreement for the supply of gas through the overland TAPI gas pipeline. LNG imports are likely to treble in the next four years, with new contracts

being signed up from Australian and US gas fields. These developments are a result of a conscious policy decision to encourage gas consumption in the country, including under the government's objective to help India diversify its energy supply sources.

The Supply Trigger

India's policy review that envisions a greater role for natural gas – both domestically produced and imported – was catalysed by a large exploratory success under a new E&P regime, the New Exploration Licensing Policy (NELP). The first major gas find under NELP came from the KG-D6 block, which supplied 63 million metric standard cubic metres per day (mmscm/d) of gas in 2010. With this, private production overtook NOC production, with the latter dropping from 70 percent of total production in 2007, to a little over 40 percent by 2009 (Jain, *Natural Gas in India*, 2011). The start of this new source of supply has been hailed as a significant development, because in addition to the environmental benefits of gas, it may help check India's rising oil import dependence.

The ramp up in domestic gas is being supported by activity on the LNG front

as well. The first LNG receiving terminal went live in 2004, and total supplies have since risen to 12 mmtpa, which are likely to triple by 2016, thus significantly increasing its importance on the Indian market. The initial LNG purchase agreement was supported by back-to-back sale contracts for a limited volume with government fertiliser and power units. This deal notably succeeded despite including substantially higher prices for gas than charged by domestic Indian NOCs whose gas prices remain administered by government. The reasoning behind the agreement was that if the price of urea and power were to be kept low for the agriculture sector, the higher price for gas would have meant a higher subsidy outgo.

Domestic Policy Areas: Pricing and Gas Allocation

India's new domestic production by private companies and its new import deals, have triggered a series of policy changes. The first set consists in pricing policies. The earlier supplies of NOCs were priced by the government on a cost plus basis, allowing a normative post-tax rate of return. Under the subsidy policy

of the government in the urea and power sectors, fuel (and feedstock) prices have historically been a pass-through in price fixation, with the final price being further discounted by grant of subsidy as well as cross-subsidisation from industrial and commercial consumers (in the power sector). However, the new source of gas coming from private sources could not be priced at a discount. After considerable debate, the KG-D6 gas was priced in 2007 at \$4.20/mmBtu. This was a major departure from the existing gas pricing regime, wherein the NOCs were getting \$1.79/mmBtu. The NELP price approval came as a boon for NOCs too, with the government approving \$4.20/mmBtu for NOC gas in 2010.

The second set of changes is taking place in the subsidy policy. While so far both input and output subsidies have been in existence in fertiliser and power sectors, there is now a change. With a higher gas price, the government has had to shift the gas price burden entirely to the output stage. As it has not raised the retail price of urea, the enhanced subsidy is being financed entirely through the budgetary process. Total central government expenditure on subsidies to fertilisers in 2010–11 amounted to almost 1 percent of GDP (Jain, 2011). An old recommendation of several government committees to make subsidies direct, has found acceptance due to the trigger of a higher gas price, and a shift away from input subsidy. Secondly, it is also notable that a higher gas price has meant a higher price for electricity, especially for traded power as opposed to base load supply, as well as for non-agricultural electricity users. Since urea is an important input in agriculture, its prices have been kept static however. The adoption of merit-based subsidy reflects a change in the overall subsidy policy outlook and is the second change in the subsidy policy. The acceptance of higher priced non-NOC gas (even LNG) in the urea and fertiliser sectors is evident from Table 1.

The third set of changes belongs to the broad category of gas allocation. Any scarce resource would naturally generate large demand, especially if the price is administratively fixed below what the market can bear. India has had a long history of prioritised gas allocation, which has strongly influenced planning and execution in the main gas-consuming

Table 1: Gas Consumption by Sector 2011 (mmscm/d)

Sector	NOC Gas	Private Gas	R-LNG	Total
Fertilisers	14.36	15.34	8.18	37.88
Power	22.75	33.41	4.26	60.42
Others	19.17	15.66	33.93	68.76
Total	56.28	64.41	46.37	167.06

Source: Ministry of Petroleum and Natural Gas, Government of India

sectors. The objectives of this system were (a) to 'manage' shortages in gas availability (b) provide gas at subsidised prices and (c) to play an integral part in the planning process. With stagnant domestic supply, which was allocated to prioritised consumers by the government, gas markets failed to evolve. Consequently, in the absence of a vibrant market mechanism, the new gas supply was distributed by the government as per a priority order. This allocation is quite different from the system that prevailed for NOC gas in the nineties, and while not entirely market friendly, is nevertheless, for the following reasons, an important step towards the evolution of free markets. The new gas has been allocated across all consumer categories – urea, power, city gas, refineries, steel and petrochemicals, and it is expected that enhanced supplies will lead to inclusion of yet more categories. Already, a liberal pipeline policy has been announced, wherein private sector investment has been allowed for the first time. Expanded pipeline infrastructure has, in turn, promoted new LNG terminals (as discussed earlier, supplies to rise substantially). The setting up of a Joint Venture by BP/Reliance Industries for gas marketing marks the arrival of big corporates in this business.

The transition occurring in India's gas sector is part of the larger movement of the economy from a centrally planned and administered system to one based more on the operation of market principles. Situations of economic transition cannot be understood simply in terms of the conventional paradigm of demand and supply being brought into balance by prices. That is why, although the NELP PSC provides for marketing freedom, it also has provision for government's possible role in gas allocation, which was invoked when the new gas supply started. The gas producers from the KG-D6 fields, probably with a view to facilitate the transition of the gas market, themselves

proposed a moderately high price for their supply, whereas the prices of imported gas supplies were ruling much higher. With the government-owned PSUs being the biggest consumers (especially in the fertiliser and power sectors), this has helped in re-aligning the pricing and subsidy policies, without a gas 'price shock'. Towards this end, the government announced a gas consumption priority order, which because of the gas price being kept uniform across the consuming sectors did not put the producers to any loss. While this new allocation system may not be market determined, it has nevertheless set the process in motion for the evolution of a diversified gas market.

Importance of this Change

India's annual per capita electricity consumption was 778 kWh in 2009, against world average of 2782 kWh in 2008 (Press Information Bureau, Government of India, 12 August 2011). An official Indian Government document (Integrated Energy Policy) acknowledges that 'energy security' is not only about supply, it also ought to come at affordable prices. The gas supply trigger, and the accompanying set of changes in pricing and growth of markets, may be the first step towards liberalising the entire energy sector. Not that there are no policy developments in the other energy sub-sectors, but the NELP gas success will perhaps have far-reaching effects in all fuel sectors. For example, although changes in coal policy are being driven by the opening up of power generation, production is still primarily in the hands of a government company with the coal being priced administratively. Therefore, even after reforms in the power sector, status quo exists on coal prices. Consequently, policy change in natural gas is the first bold attempt to price energy commercially. This is a tall order for a fuel that meets only 10 percent each of the primary energy demand of the country and power generation capacity by fuel. On

a positive note, there is a re-think in the government on natural resources allocation policies and coal blocks are now set to be auctioned on a premium basis.

The recent exploratory successes in gas assume a lot of importance and could be the solution to the energy security problem of the country – not only in view of the country's continued import dependence for nearly-two thirds of its crude oil supply. Since only half the sedimentary area has been fully explored so far, if India were to step up investments in the oil and gas E&P, looking to NELP successes, there is the likelihood of vast hydrocarbon resources being found. A favourable pricing and market based allocation policy would be the pre-condition for the above happy event to happen. As of now, energy supply in India may be coming from diversified fuel sources, but the energy market is not well segmented by price. Hence, gas faces competition from other fuels, and a successful gas supply policy pre-supposes a dynamic overall energy policy, which this gas supply trigger may help usher in.

Resistance to Change

The interests of gas-consuming sectors should not normally be contrarian to those of gas producers. But, if there be a rent seeking paradigm, it would be difficult for anybody not to desire a share in it. The existing regime of administered pricing, subsidies and government-mandated allocations in many commodities, has created vested interests and lobbies, leading to resistance to change. It has also discouraged investors from taking an active interest in the country's natural resources, with the result that India is still importing coal while at the same time, oil and gas basins remain underexplored. Since domestic supplies are not rising,

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and imports come at market price, it is becoming increasingly difficult for the government to supply affordable energy to the common people.

The change in gas policy is also being resisted by the urea and power sectors, which while being desirous of free pricing in their segments are nevertheless cautious when it comes to gas. It would be easier if there were a common demand to open up pricing along the entire value chain – at least, there would be no challenge to the economic rationale, and less interest groups to contend with.

In addition to stakeholder resistance, another difficulty is change management. An overhaul of the existing system needs the right policies, and acknowledgment of the fact that transition takes place over time, not over night. For pricing to be opened up, all the stakeholders, including the government have to make compromises. We have seen that higher fuel price means higher subsidy. Therefore, resistance to change is coming from both within and without.

Way Ahead

As discussed in the preceding paragraphs, gas policy in India is changing, albeit slowly. In 2007, when NELP gas supply was around the corner, the producers wanted market price, an entirely new concept for the country. But, in spite of resistance, policy makers went ahead and gave their approval. However, there

is again fresh uncertainty on both the pricing of additional supplies, and the price revision of the earlier one due in 2014. There is also no long-term gas supply policy outlook. The government cannot go on allocating private gas. It can at best prioritise sectors, and let the market processes take over, while building safeguards to ensure that price discovery is not thwarted in this exercise. The crude price having risen from \$65/barrel in 2007 (when the NELP gas price of \$4.20/mmBtu was approved) to around \$100/barrel presently, there is a huge demand for domestic gas, making allocation a sensitive subject. Therefore, while gas price needs to reflect present day market reality, supply priorities need a firm policy plank. The most vital issue is linking the price discovery with the consumers – given the fact that for many (urea and power), gas price is a pass-through. It remains to be seen what would be the price discovery process in the long run – who will comprise the universe from where the future gas prices will be discovered.

The current situation can be seen as a ‘half way house’ – a stage on the way to a fuller reform. The good news is there is realisation in the government that competitive markets can help bring more investment into E&P, and LNG infrastructure. Natural gas is now, constitutionally and popularly, regarded as part of the whole country's inherited wealth. That might encourage the thought that it should be fully brought into production and used in such a way that it diminishes other less desirable parts of the country's heritage – underdevelopment and inequality. ■

Note: This article reflects the views of the author and does not in any way convey the official view of the Government of India.