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Gas route to fertiliser self-sufficiency

Considering the serious risks involved in increasing the dependence on imports, it would be prudent to maintain a high degree of self-sufficiency in the availability of fertilisers by augmenting domestic production. In this regard, the Sub-Group on Development and Utilisation of Natural Gas must take cognisance of the requirements of gas for the fertiliser sector while making the overall projections and formulating recommendations for its utilisation, says **Uttam Gupta.**

RECENTLY, the High-Level Group on India Hydrocarbon Vision-2025 — set up by the Prime Minister's Office (PMO) — constituted a Sub-Group on Development and Utilisation of Natural Gas. Against the backdrop of considerable flip-flop in the priorities for allocation of gas, it is imperative that apart from assessing the overall demand-supply situation, the Sub-Group urgently formulates a clear-cut and consistent policy for its utilisation among various sectors.

It may be recalled that priorities for gas allocation were initially laid down by two high-power panels — Lovraj Kumar Committee (1976) and Satish Chandran Committee (1979). Set up to examine the most desirable pattern of utilising newly-discovered reserves of gas in the Bombay High and South Bassein regions, these Committees recommended top priority for use of gas in the manufacture of fertilisers, as it maximises national economic benefit — primarily by way of using its chemical value — apart from helping to increase foodgrains production.

Pursuant to these priorities, bulk of the incremental capacity set-up in the 1980s was based on gas. This was primarily from setting up of two giant ammonia/urea complexes at RCF-Thal and Kribhco, Hazira, each of about 1.5 million tonnes per annum urea capacity and six plants along the HBJ pipeline each of 0.726 million tonnes capacity. As a consequence, the share of gas in the total installed capacity of nitrogen rose from 12.5 per cent in 1981 to 42 per cent in 1991.

Encouraged by increasing availability of gas, the Committee of Secretaries (1984) recommended its use for power generation as well. However, this was primarily to utilise only the surplus gas available after fully meeting the requirements of the fertiliser sector. The use of gas in fertiliser manufacture, thus, continued to receive top priority. This was also reiterated by the Eighth Plan Working Group on Fertilisers (1989) and the JPC (1992).

Until the end-1980s, thus, the trend in India was in harmony with the scene the world over, wherein natural gas has all along been the predominant feedstock for fertiliser manufacture. In major exporting countries — West Asia, and the former Soviet Union, the share of gas is almost 100 per cent. Even in the US, the share of gas in total ammonia capacity is 98 per cent.

In the early 1990s, however, these priorities were distorted and substantial quantities of gas were diverted to other industries — power, sponge iron — at the ment has not only denied supply of gas for new projects, since 1994, supplies to even existing units have been reduced drastically. For instance, supplies to plants along the HBJ pipeline were cut — as per the directive from the Ministry of Petroleum and Natural Gas (MPNG) — to the extent required for use in captive power and steam generation plants. Cuts were extended to cover even plants located at the landfall point — RCF-Thal and Kribhco, Hazira.

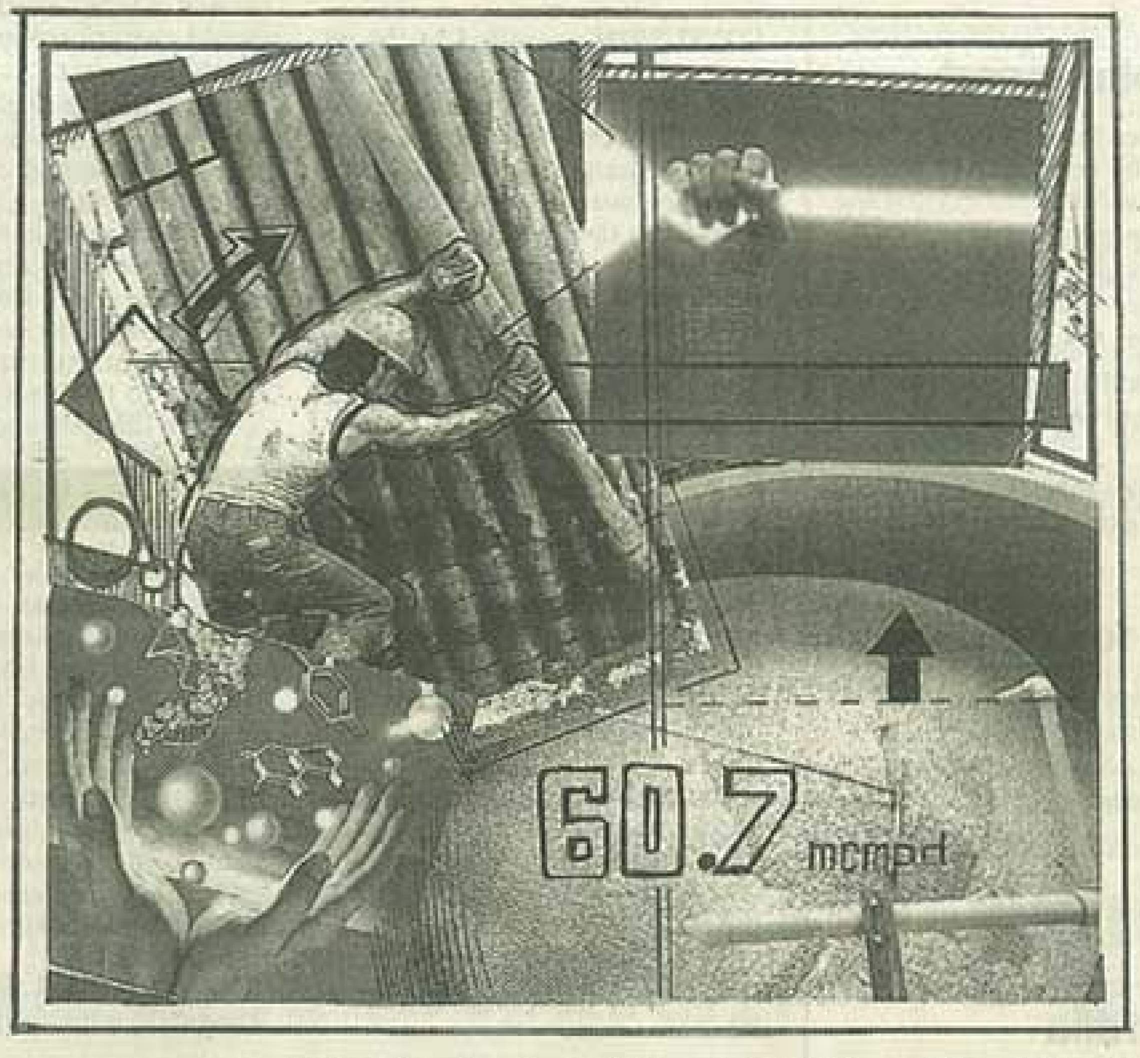
Ironically, to impart some legitimacy to these developments, interested groups even advocated a theory that fertilisers can be imported, but not power. This is not based on sound logic. Considering that the BoP position continues to be precarious, strategically, it would not be prudent to import fertilisers on a large and increasing scale. Moreover, increasing imports would push up the international price and, in turn, the cost of imported material, which gets aggravated by the depreciation of the rupee.

Power can be produced from coal for which technology has matured. In fertilisers, technically, it is difficult to use coal, apart from it being expensive. The experience of the Ramagundam and Tatcher units of FCI, which could not stabilise even after almost 20 years of commissioning, amply prove this point. The HPC (1998) has, in fact, recommended switchover of these plants to better and efficient feedstock.

Notwithstanding the above, if at all something has to be imported, then it could be fuel oil or good quality coal for power generation (for which, it is best suited) and ensure availability of domestic gas to fertilisers to the maximum extent possible. Even so, fertiliser is a value-added item and its import should be kept to the minimum.

It is also important to recognise that apart from the preponderance of methane, gas also contains higher fraction hydrocarbons and so on. While the former is well suited for use in the manufacture of fertilisers (due to high hydrogen-to-carbon ratio), the latter can be used in the petrochemical industries. These complementarities can be exploited fully if the gas is used in the manufacture of fertiliser. In sharp contrast, in power generation, wherein the use is primarily for heating, it would be a waste of the chemical value.

Due to abundant availability of gas in major exporting countries of West Asia at a price substantially lower than the cost of feedstock in India, the production of urea at plants located in these countries under the joint venture plans, and its buy-



appear an attractive option. The above is because, invariably, in all the buyback agreements, the payment is at the prevailing international price. This, in turn, is largely determined by global demand-supply balance in which imports by India and China play a major role. Thus, in case we decide to procure a sizeable share of our requirements from the JVs, the international price is bound to shoot up. This could be seriously detrimental to our interests by way of higher cost of imports and corresponding increase in the subsidy outgo. This is amply demonstrated by the Oman project, which is a JV between the Oman Oil Company, and RCF/Kribhco/IFFCO.

The agreement provides for purchase of urea at the prevailing international price. Also, there is a clause under which if the prevailing international price happens to be lower than the reasonable cost of production, then the Indian companies will be required to give a soft loan to the project equal to the differential. In a reverse situation — that is, the international price exceeding reasonable production cost — there is no corresponding obligation from the Omanese side. It is a typical case of 'Heads I win, tails you lose'.

In sharp contrast to sourcing supplies from JVs, wherein we do not set the benefit of lower cost of production, the most preferred option would be to set-up additional capacities in India based on reasonably priced domestic gas. Currently, the price of gas in India is artificially high, for instance, to plants along the HBJ, this is about $ 2.5 per million BTU as against less than $1 per million BTU in West Asia. Moreover, considering that due to shortfall in gas supply, plants are forced to use high cost liquid hydrocarbon — naphtha higher at about $3 per million BTU. The Government should bring down the price to internationally comparable levels by removing various anomalies in its fixation.

Against a total requirement of about 28.4 million cubic metre per day (mcmpd) needed to run all gas-based plants at optimum load, now, the actual supply is about 23 mcmpd (1998-99). The shortfall of 5.4 mcmpd is primarily faced by plants along HBJ (eight units in all), besides five others — Kribhco, Hazira; RCF, Thal; GSPC, Vadodara I/II; IFFCO, Kalol and NFCL, Kakinada I. This needs to be made up immediately to enable these plants to run at optimum load and reduce the cost of production.

There are five recently commissioned plants — IFFCO- Phulpur II; NFCL Kakinada II;Chambal Fertilisers Gadepan II; GSFC Vadodara III; and FACT Udyogamandal (Kochi) — which are all operating on naphtha due to non-availability of gas. All of them are designed to run on dual feed and can switch to gas, as and when it is made available. The requirement of these plants is about 7-6 mcmpd at optimum load.

The majority of vintage plants are based on naphtha, fuel oil/LSHS. Despite being fully depreciated, their cost of production is high primarily because of the high cost of the feedstock, on the one hand, and their inherent lower energy efficiency, on the other. The fact that plants are old also acts as a drag on the energy-use efficiency. The skyrocketing prices of these feedstock in recent months has correspondingly increased the cost of production.

Since April 1999, the ex-refinery price of naphtha has gone up by about Rs.

crease in the productionost of urea by about Rs. 1,800 per tonn(0.7 tonnes of naphtha for a tonne of ea). Likewise, the price of fuel oil has incased by about Rs. 2,300 per tonne leadirto increase in production cost from suchants by about Rs. 1,800 per tonne (0.8 toes fuel oil for one tonne urea). In view chis and if the plants continue to run onaphtha, fuel oil/LSHS, there will be a sous threat to their continued viability ihe long-run.

In view of all this, theris an urgent need for these plants to sich to gas to cut the production cost d, thus, improve their competitivenesin the eventual decontrolled regime. en the HPC (1998) recommended swihover of all naphtha, fuel oil/LSHS bad plants to gas. After the switchover, eir requirements will be 10.7 mcmpd d 7 mcmpd respectively.

Recently, the CCEA gaven principle' approval to the four projec— Kribhco, Hazira III; RCF, Thal III; IF;O, Nellore; and FCI, Gorakhpur (propod to be implemented by Kribhco utilisg the existing infrastructure). This is pursuance of the overriding need to adto domestic capacity to meet the rising mand. The gas requirements of these pects will be about 7 mcmpd.

Overall, to ensure producn from existing capacity at optimum lel and least cost, besides supporting the ir new projects, the total requirement gas will be 60.7 million cubic metre (28.4+7.6+10.7+7+7). Again this, the existing supply being 23 cmpd, the shortfall works out to 37.7 mmpd.

To feed the increasing population and improve the nutritional stanrds of the people, the production of foograins will have to be increased substanlly. In the face of virtually no scope to irease the land under cultivation, incremental production will have to come frocommensurate increase in the crop ylds. It is, therefore, imperative to bringabout the required increase in the consnption of fertilisers.

Considering the serious risl involved in increasing the dependence imports in terms of availability of thematerial, high prices and constraints of reign exchange and logistics, it would prudent to maintain a high degree of lf- sufficiency in the availability of feriisers by augmenting domestic productn to the desired level. This will be possie only if adequate supplies of gas are esured to not only make up for existing sort supply, but also support addition teapacity in the future.

Thus, the requirement of g in the long-term will be much more tan 60.7 mcmpd. The precise level wouldepend on the projected consumption of N', taking into account the foodgrains equirements and related factor The Sub-Group on Development andUtilisation of Natural Gas would do welo take due cognisance of the reasonale requirements of gas for the fertilisesector while making the overall projectins and formulating suitable recommenations for its utilisation.

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