

# Executive Summary

## Executive Summary

Natural Gas (NG), one of the cleanest, safest and most useful of fossil fuels is being increasingly used in various sectors like fertilizer, power, city gas, steel and other heavy industries. Primary consumers of NG in the country are in the power and fertiliser sectors (62 *per cent*) which are critical to economic development of the country. The Working group on Petroleum and Natural Gas for the XI and XII Plan anticipated increase in requirement of NG in the fertilizer sector to meet expected increase on account of conversion of liquid fuel based plants to NG/re-gasified LNG (R-LNG) based plants, expansion of plants, revival of closed units, setting up of new plants etc. Similarly, increase in requirement of NG was expected to meet the projected power generation.

Demand for NG in the country was far in excess of its supply from domestic as well as imported sources taken together and gap between demand and supply was 77 Million Metric Standard Cubic Metre per day (mmscmd) in 2009-10. Consequent upon reduction in production from domestic fields from 2011-12, this gap between demand and supply widened further to 250 mmscmd in 2013-14. As domestic demand was far in excess of indigenous production and there were very few new domestic sources available to cater to additional demand, options available to meet the demand were import of NG through transnational pipelines and import of Liquefied Natural Gas (LNG). Government of India (GoI) initiated steps for import of gas through Trans-National pipelines (1989) and for import of LNG (1995) anticipating shortfall in domestic production.

With a view to having a long term policy on Hydrocarbons, a Group of Ministers (GoM) was set up in 1999 for working out a specific framework for developing “India Hydrocarbon Vision- 2025”. The report submitted by GoM (2000), *inter alia*, set objectives for NG sector which included steps to ensure adequate availability of a mix of domestic gas, gas imported through pipelines and Re-gasified Liquefied Natural Gas (R-LNG). It suggested various initiatives for import of gas from neighbouring and other countries, expedite setting up of a regulatory framework and encourage domestic companies to participate in LNG chain.

Further, to provide adequate infrastructure for supply of NG, GoI conceptualised (2000) a National Gas Grid to facilitate supply of NG to remote areas of the country. Subsequently, considering the need to provide a policy framework for the future growth of pipeline infrastructure to facilitate involvement of a nationwide gas grid, GoI notified a Pipeline Policy in 2006. In order to provide regulatory and legal framework for downstream activities, GoI enacted (March 2006) the Petroleum and Natural Gas Regulatory Board (PNGRB) Act and established PNGRB (October, 2007).

## Report No. 6 of 2015

Coming to the sale of products that use NG, the selling price of Urea is controlled by GoI which bears subsidy on the difference between the sale price and the cost of production. Similarly, the price of power is regulated by Electricity Regulatory Commissions.

Against this background, a Performance Audit on "Supply and Infrastructure Development for Natural Gas" was conducted with a view to ascertaining:

- Whether GoI has played its wider role in providing adequate pipeline and R-LNG infrastructure to cope with emerging demand in the country;
- The impact of non-availability of NG/R-LNG on Fertilizer/Power Sector and pipeline infrastructure providers; and
- Whether NG allocation and utilization policies of GoI were effective to meet the requirement of NG across the country.

Significant audit findings which emerged from the Performance Audit are narrated below:

### I. **Infrastructure Development:**

#### A. **Pipeline infrastructure:**

- a. GoI set up PNGRB in October 2007 as a regulator but notified Section 16 of PNGRB Act (the Act), empowering PNGRB to issue authorisations for new pipelines, only in July 2010. This delay of 33 months acted as a hindrance in development of cross-country pipelines and associated infrastructure, as in the intervening period neither GoI nor PNGRB was able to authorize any project despite demand. This is evident from the fact that even as GSPL/GAIL expressed interest between November 2008 and September 2009 for laying four pipelines, PNGRB was not in a position to issue authorisation on account of non-notification of Section 16 of the Act till July 2010. These projects were subsequently authorised by PNGRB between July 2011 and April 2012, after notification of Section 16 of the Act.

*(Para 3.3.5)*

- b. Till the time PNGRB became fully operational with adequate legal mandate, GoI issued authorisations in 2007 for nine pipeline projects. In respect of five out of these nine pipeline projects, respective entities did not commence execution even after lapse of more than six years since authorization. Audit analysis revealed that authorisations were given without setting a definite start and target date for completion. There was considerable delay in taking administrative decisions (five projects by GAIL) to go ahead with the project as there was delay in determining availability of gas source. In respect of

remaining four projects, Reliance Gas Transmission Infrastructure Limited (RGTIL) did not speed up execution of project, citing non development of City Gas Distribution projects and non availability of NG. Thus pipeline infrastructure which is a prerequisite for development of gas market was not taken up for development.

*(Para 3.3.4)*

- c. Out of total 23 corridors identified (2000-2011 under National Gas Grid) for completion till 2013-14, seven pipelines were completed, six were at different stages of construction and 10 pipelines were yet to be taken up (October 2014).

*(Para 3.3.6)*

## **B. R-LNG Terminals**

GoI created (1997) Petronet LNG Limited, a public limited company, with a mandate to set up LNG terminals for import and regasification of LNG. Twelve other entities also obtained clearance (1997-2000) from Foreign Investment Promotion Board (FIPB) for setting up LNG terminals across the country. A regulatory framework as envisaged in the "India Hydrocarbon Vision 2025" was lacking to authorise entities to set up facilities. Though PNGRB was set up in 2007, GoI took more than five years in taking an executive decision (October 2012) for fixing eligibility conditions of entities to apply for registration to establish and operate LNG terminals. In the absence of regulatory framework and a mechanism to review the progress of LNG projects, progress in this regard was very slow and MoPNG was not able to monitor the LNG projects, for which clearance was given.

*(Para 3.2.1 and 3.2.2)*

### **We recommend that:**

1. MoPNG should develop a mechanism, with clearly defined responsibility centres, in coordination with implementing agencies and authorities, to ensure and assess timely completion of NG pipeline and R-LNG projects across the country and cut down delays so that the desired growth in the NG sector is achieved.

**II. Impact of Non-availability of NG/R-LNG on fertilizer sector**

- Sale price of Urea products is controlled by GoI which bears subsidy. NG is considered the most suitable feedstock for producing urea. Urea production in the country remained by and large stagnant during XI Plan. To enhance domestic production capacity, GoI formulated various schemes envisaging new plants, expansion of existing units and revival of closed units through which production capacity of urea was to be enhanced by approximately 122 Lakh Metric Tonne Per Annum (LMTPA) in different stages from 2010-11 to 2012-13 through NG based urea plants.

*(Para 4.1.1)*

- Non availability of NG, however, remained one of the main constraints in increasing indigenous production capacity of urea. Out of envisaged enhancement of production capacity of 122.25 LMTPA of urea during XI Plan, achievement was negligible, at only 3.30 LMTPA. Though it was evident that subsidy on import of urea was higher than subsidy on domestic production, action taken by GoI to facilitate import NG/LNG and produce urea through NG was not adequate. This was mainly due to shortfall in materialisation of plans for LNG terminals, re-gasification facilities, construction of pipelines and facilitating long term agreements to make available NG/RLNG. Such a situation led to non-enhancement of urea production capacity and consequently led to import of urea to meet the gap between demand and availability. Thus, the objective of enhancement of production capacity of urea production through use of NG as feedstock could not be achieved. During the period 2011-12 and 2012-13, the actual domestic production was only 445.58 LMT against the requirement of 604.36 LMT. The shortfall of 158.78 LMT was imported. Accordingly, due to non-expansion of urea production capacity as envisaged, GoI lost an opportunity of saving subsidy by ₹ 4202.12 crore for the same period even after taking into account Capital Related Charge taken on basis of estimated investment in expansion, revamp and revival projects.

*(Para 4.1.1)*

- GoI in its policy for stage III of new pricing scheme for urea manufacturing units (2007) targeted conversion of all existing (nine units) naphtha and FO/LSHS based units to NG/RLNG based within a period of three years (by 2009-10) with a view to reducing the cost of production and subsidy burden. Uninterrupted supply of NG at affordable price to the plant is a prerequisite for such conversion. Owing

to absence of adequate pipeline connectivity and non-availability of gas, there was delay in conversion of all units planned. Out of the nine units planned for conversion, five units converted to gas during 2012-13 and one unit was converted in 2013-14. Resultantly, urea units continued production by using costlier feedstock. This resulted in loss of opportunity to reduce subsidy burden by ₹ 7673.82 crore on the exchequer during 2010-11 to 2012-13, by the units which were not converted, even after taking into account Capital Related Charge taken on the basis of estimated investment required for planned conversions.

*(Para 4.1.2)*

**III. Impact of non availability of NG/R-LNG on Power Sector**

- As per National Electricity Policy, use of NG as fuel for power generation depends on its availability at reasonable price. It was envisaged that new power generation capacity based on indigenous NG at reasonable price could emerge. The existing power plants using liquid fuel were to shift to use of NG or R-LNG at the earliest to reduce cost of generation. During XI Plan, the actual capacity addition of gas based plants was 5936 MW including projects carried over from X Plan. Against the total requirement of 90.70 mmscmd NG for operating these plants at 90 per cent PLF, actual availability was 40 mmscmd only. Steps taken to meet shortage of NG viz. import of NG/R-LNG at affordable rate were inadequate and led to a situation where gas based power plants suffered generation loss of 66,129 Million Units during 2008-09 to 2012-13. Financial impact on account of above loss of generation could not be worked out by Audit as cost of production as well as supply price of electricity varies from state to state.

*(Para 4.2)*

- Where there is provision for use of alternate fuel in gas based plants, generation loss on account of non-availability of NG was compensated by using Naphtha and HSD. As cost of these liquid fuels is comparatively higher, cost of power is proportionately increased. During 2008-09 to 2012-13, gas based plants had used 31.35 Lakh Kilo Litres Naphtha and 5.01 Lakh Kilo Litres of HSD to make up non-availability of NG/R-LNG. Based on the computation of cost of power by 'Expert Committee on Fuels for Power Generation', increase in cost of power due to using Naphtha instead of R-LNG at long term contract rate would work out to an estimated ₹ 2375.33 crore during 2010-11 to 2012-13 which was ultimately passed on to consumers.

*(Para 4.2)*

**We recommend that:**

2. MoPNG in coordination with DoF and MoP may consider setting up of Inter Ministerial Committee that could suggest:
  - i. A time bound action plan for synchronising implementation of NG pipeline projects and revival of fertilizer units so that benefit of NG as feedstock may be derived optimally besides reducing import of urea.
  - ii. Measures to create required infrastructure to provide NG/R-LNG to Power Sector at affordable price so that capacity created in the sector is adequately utilised.

**IV. Supply of Natural Gas**

**A. Absence of mechanism for monitoring end use of NG**

Power and Fertilizer sectors receive about 69 per cent of domestic gas at Administered Price Mechanism (APM) price through allocation.

- a. MoPNG directed (June 2006) that as far as power sector consumers were concerned, APM price would be applicable only for those quantities of gas which were used for generation of electricity for supply to the grid for distribution to consumers through public utilities/licensed distribution companies and market rate was to be charged for NG used for other than above purpose.

*(Para 5.3.2)*

- b. MoPNG directed (July 2006) that products other than fertilizers were not covered under supply of APM and the quantity of APM gas utilized for manufacturing products other than fertilizers should be charged at market price. However, there was no mechanism available to ensure compliance to above instructions either with MoPNG/DoF or GAIL, as a result of which there was under recovery in gas pool account to the extent of ₹ 630.60 crore in the cases of mis-utilisation of NG revealed in limited test check by Audit.

*(Para 5.3.1 to 5.3.3)*

- c. Cases of underutilization of available NG were noticed during test check in Audit which not only resulted in loss of production but also led to import of

more urea. This led to payment of extra subsidy (₹ 637.07 crore) as the subsidy paid on imported urea was more than the subsidy paid on indigenously produced urea.

*(Para 5.4)*

**B. Marketing Margin on supply of NG**

Marketing Margin on supply of domestic NG for GAIL was approved by GoI in Rupee terms, whereas the Contractor for KG D6 block was charging marketing margin in US dollar terms. DoF was not reimbursing marketing margin as demanded by the Contractor to the fertilizer units and subsidy claims on account of marketing margin on KGD6 gas were pending since 2009-10. If DoF decides to reimburse marketing margin as demanded by the Contractor and requested by fertilizer units, additional subsidy burden would be ₹ 201.40 crore from May 2009 to March 2014, being the difference between marketing margin demanded by the Contractor and marketing margin allowed to GAIL.

*(Para 5.5)*

**We recommend that:**

3. MoPNG may work out modalities by involving all the implementing agencies for implementing a control system/mechanism to detect and prevent diversion/mis-utilization of NG supplied at regulated price. The modalities so worked out may also include decision on rate at which recovery would be made for utilisation of such NG for other than specified purposes as there would be no difference between APM and non-APM price with effect from November 2014.
4. GAIL may critically review NG supply contract management system and put in place specific measures, such as incorporation of a clause in Gas Sales and Transmission Agreement enabling GAIL to verify end use of NG and reviewing Article 17 that permits buyer to use the NG for purposes other than those contemplated with mutual agreement between buyer and seller *etc.*, that would empower it adequately to track ultimate utilisation of NG supplies at regulated price and prevent its diversion towards unauthorised purposes.
5. MoPNG should ensure that same methodology, i.e. charging marketing margin in Indian Rupee, is adopted for supply of NG from domestic source for use in sectors where GoI bears subsidy burden.