



ICRA

Indian Oil and Gas Industry

**Increase in domestic gas prices:
Consumption in industrial and
power sectors may be adversely
impacted; CGD sector may witness
some margin pressure**

OCTOBER 4, 2022





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The sharp increase in domestic gas prices, coupled with high term and spot LNG prices, will adversely impact consumption in the power and industrial segments

CGD sector may witness some margin pressure in the near term depending on the extent of pass-through of cost escalation. Although the CNG segment will remain competitive compared to alternative fuels with the cost escalations fully passed on, the conversion momentum may adversely be impacted



- Domestic gas price has increased by 40% to \$8.57/mmbtu (GCV basis) during H2 FY2023 from \$6.1/mmbtu in H1 FY2023. The price increase was driven by a significant run-up in the prices of gas at the global gas hubs.



- The increase in gas prices should be favourable for the upstream sector. Further, higher prices for deep water, ultra-deep water, high temperature and high-pressure fields at \$12.36/mmbtu in H2 FY2023 against \$8.57/mmbtu in H1 FY2023 will improve the economics of such projects.



- With the current revision in domestic gas price, the pool price for the fertiliser sector will witness an upward push of \$1.0/mmbtu. The subsidy requirement for the urea sector will rise by ~Rs. 2,000-2,500 crore in H2 FY2023 owing to the rise in domestic gas price.



- For the power sector, the sharp increase in variable cost of generation for gas-based plants has resulted in a moderation in PLF and share of gas-based plants in all-India electricity generation. The demand from the power sector is expected to remain subdued in the near to medium term.



- The city gas distribution sector may undertake price escalations in a graded manner. However, in case the companies do not fully pass on the price increase, there may be some margin pressure in the near term.



- While the CNG segment will remain competitive compared to alternative fuels with the cost escalations fully passed on, there may be moderation in the conversion momentum.



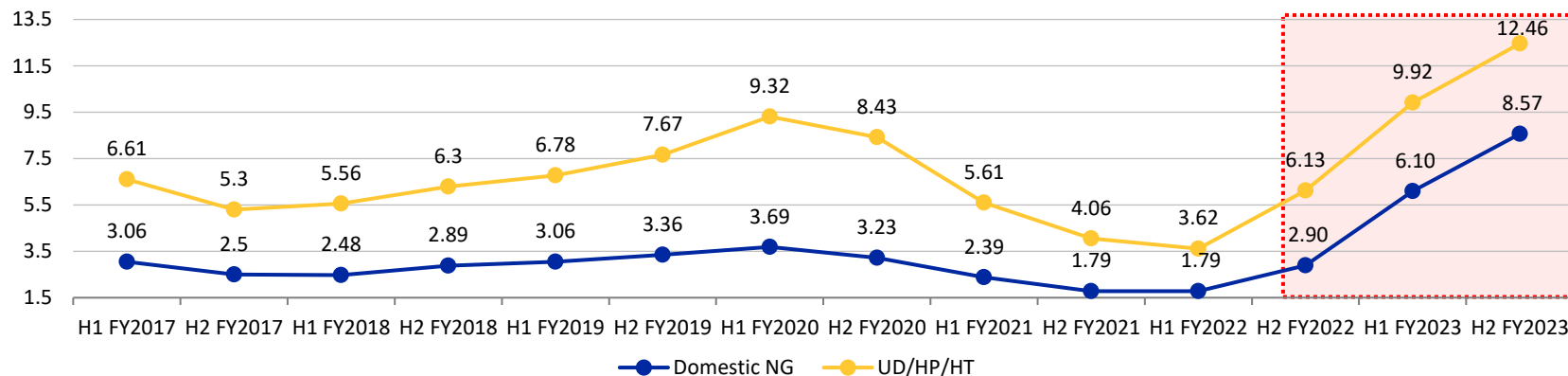
- The outcome of the Kirit Parikh Committee on gas pricing review is a key monitorable

A photograph of a large, white, elevated natural gas pipeline stretching across a grassy field under a blue sky with scattered clouds. The pipeline is supported by white concrete pillars. In the background, there are green trees and another lower pipeline. The image is framed by a yellow diagonal shape in the top-left corner and a blue diagonal shape in the bottom-right corner.

Natural Gas Prices

Domestic gas prices have witnessed sharp increase in the last three revisions

Exhibit: Trend in domestic gas prices (\$/mmbtu) GCV basis



- The domestic gas price has increased by 40% to \$8.57/mmbtu (GCV basis) during H2 FY2023 from \$6.1/mmbtu in H1 FY2023 .
- The domestic gas price increase was driven by a significant run-up in the prices of gas at the global gas hubs.
- The ceiling on gas price has been announced at \$12.46/mmbtu (GCV basis) for H2 FY2023, up from \$9.92/mmbtu (GCV basis) for H1 FY2023.
- Since H1 FY2022, domestic gas prices have increased by 379%, while UD/HP/HT gas ceiling prices have risen by 244%.

MOPNG has set up a committee under Mr. Kirit Parikh to review the gas pricing formula to ensure a fair price to the end consumers. The outcome of the committee and any impact on prices for H2 FY2023 remains a key monitorable.

A photograph of an oil pumpjack (jackal) in an open field during sunset. The pumpjack is a large mechanical structure with a blue frame and a yellow counterweight. The sky is a mix of orange, yellow, and blue. In the foreground, there is a blue rectangular overlay with rounded corners. The text "Upstream Sector" is written in white on this overlay. A thin white horizontal line is positioned below the text.

Upstream Sector

Exhibit: Impact on profits and capex

Company	Impact on PBT for \$1/mmbtu change in gas prices (Rs billion)	Capex (Rs billion)
ONGC-Standalone	43	300-320 per annum
Oil India Limited	7	40 per annum
Vedanta Limited	4	\$4-5 billion (to increase total production to 500,000 kopd in three years)
Reliance Industries	14	350 (KG basin block) over 4-5 years
ONGC Videsh Limited	9	50-90 per annum

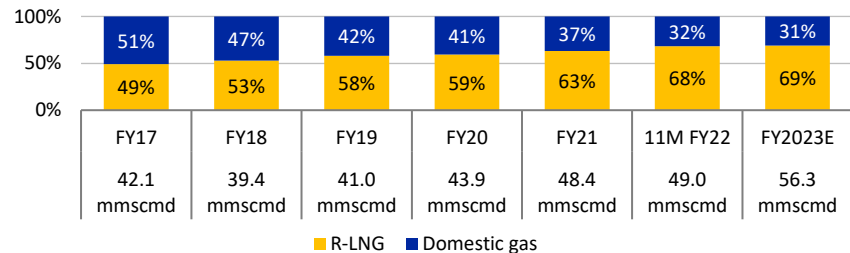
- The domestic gas price notified by the GoI was low for many years and gas production was a loss-making proposition for most fields for the Indian upstream producers. However, the domestic gas prices were increased to \$6.1/mmbtu for H1 FY2023 and now \$8.57/mmbtu for H2 FY2023. The gas business of PSU upstream companies turned profitable after the gas prices were increased from H1 FY2023; with the further hike in gas prices for H2 FY2023, the EBITDA of upstream companies would be positively impacted.
- The ceiling on gas price has been announced at \$12.46/mmbtu (GCV basis) for H2 FY2023, up from \$ 9.92/mmbtu (GCV basis) for H1 FY2023. Higher prices for deep water, ultra-deep water, high temperature and high-pressure fields will improve the economics of such projects.
- High crude and natural gas prices would invigorate the capex programmes of upstream companies.

Fertiliser Sector



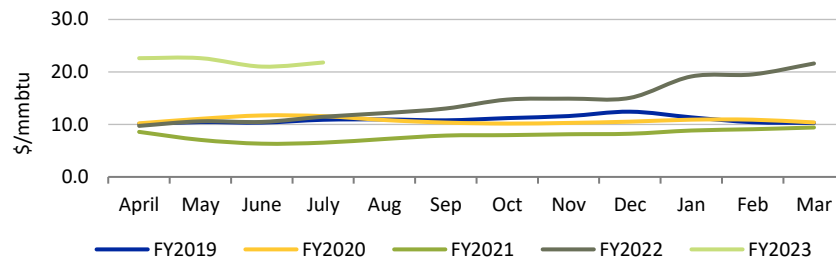
Working capital requirements to rise for urea players; additional budgetary allocation towards urea subsidy imperative

Exhibit: Share of LNG rising in fertiliser sector's gas consumption



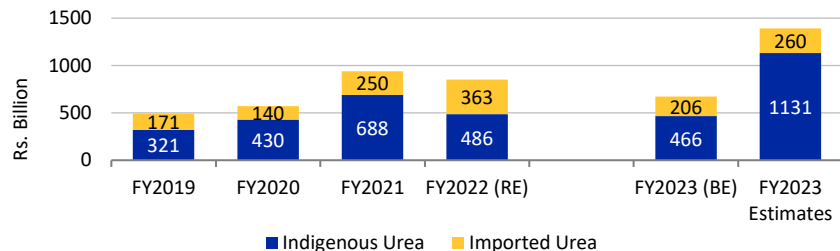
Source: PPAC, ICRA research

Exhibit: Pool price to rise by around \$1/mmbtu due to this domestic gas price rise



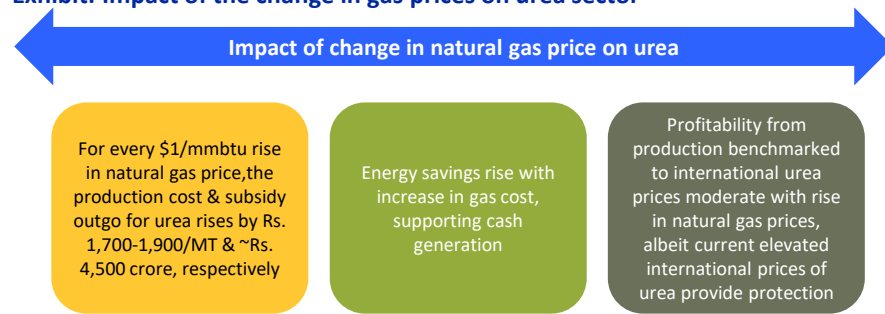
Source: ICRA research

Exhibit: Subsidy requirement for urea to outstrip budgetary allocation



Source: DoF, ICRA research

Exhibit: Impact of the change in gas prices on urea sector



Source: ICRA research

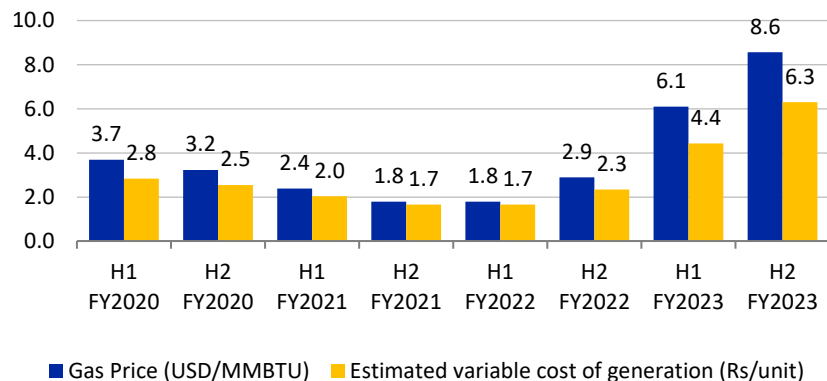
- With the current revision in domestic gas price, the pool price for the fertiliser sector will witness an upward push of around \$1.0/mmbtu. With the pool price already reaching \$22-23/mmbtu, this will put further pressure on the input price and hence the subsidy outgo for the sector.
- As per ICRA's estimates, the subsidy requirement for the urea sector will rise by ~Rs. 2,000-2,500 crore (for the balance half of the fiscal) owing to this rise in domestic gas price.
- ICRA expects GoI to make additional allocations to meet the subsidy outgo for the urea sector, given the steep rise in the cost of production for domestic manufacturers as well as elevated prices of imported urea in FY2023 as the budgetary allocation is expected to remain inadequate in the light of the significant input price inflation.



Impact on Power Sector

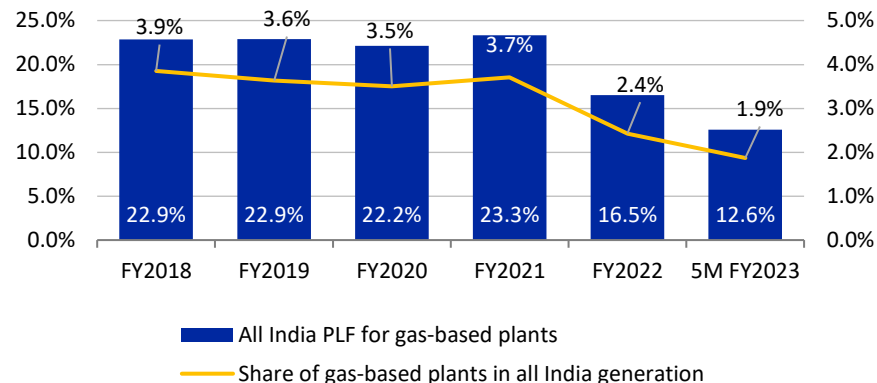
Domestic gas price revision to increase cost of supply for discoms by 5 paise per unit

Exhibit: Trends in domestic gas price and variable cost of generation for domestic gas-based plants



Source: ICRA Research, PPAC, Central Electricity Authority

Exhibit: Trends in PLF for gas-based plants and share of gas-based plants in all-India electricity generation



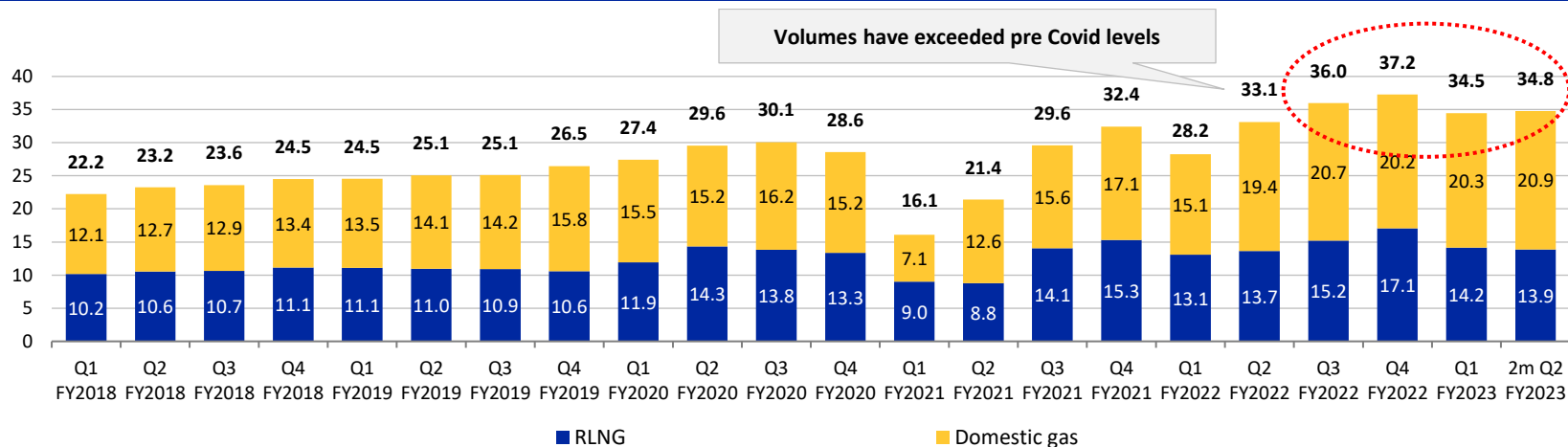
- For the power sector, the increase in the notified domestic gas prices for H2 FY2023 would increase the variable cost of generation for domestic gas-based power generation projects by close to Rs. 2.0 per unit compared to the cost of generation at the earlier notified price. Given the cost-plus nature of the PPAs tied-up by the gas-based power projects, the increase is expected to be passed on to the customers, mainly the state distribution utilities.
- The extent of the impact is likely to be limited for the discoms, given the subdued utilisation of gas-based power plants in the country amid the inadequate supply of domestic natural gas. In FY2022, the contribution from gas-based units to all-India electricity generation remained low at ~2.4%, which declined to 1.9% in 5M FY2023. On the basis of the share of gas-based units in power supply, the cost of supply for the discoms is estimated to rise by 5 paise per unit at the all-India level. A timely pass-through of the cost increase under the fuel & power purchase cost adjustment framework remains important for the discoms.

City Gas Distribution Sector



Impact on profitability will depend on extent of pass-through

Exhibit: Trend in CGD volumes (MMSCMD)



- The increased domestic gas allocation from 85% to 94% in August 2022 for the CNG and PNG-d segment in Q2 FY2023 had partly mitigated the impact of high spot prices. However, for every \$1/mmbtu increase in domestic gas prices, assuming that the CGD players maintain their current absolute contribution margins in Rs/kg and Rs/scm terms, the CGD players could increase CNG price and PNG (domestic) prices by Rs. 4.5-4.7/kg and Rs 2.5-2.7/scm, respectively, in Delhi.
- While the CNG segment will remain competitive despite the full pass-through of cost escalations, the CGD companies may not fully pass on the hike in the short term to mitigate any impact on conversion momentum, which may put some pressure on the margins. The competitiveness of the other segments will be adversely impacted by the increase in prices
- Any changes in gas allocation policy for the sector in Q3 FY2023 also remains a monitorable.

CNG and PNG-D remain competitive compared to alternative fuels

Exhibit: Energy cost comparison with traditional fuels (assuming full pass on of cost escalations)

Traditional Fuels						City Gas				City Gas cheaper on energy terms by	
Fuel	Selling Unit	Selling Price	Gross Calorific Value (GCV)	GCV Unit	Energy Cost (Rs/million Kcal)	Fuel	Selling Price	Selling Unit	Energy Cost (Rs/million Kcal)^	With full pass through	As per existing prices
MS	Rs./litre	96.72	8419	Kcal/litre	11489	CNG	86.97	Rs./kg	6903	40%	48%
HSD	Rs./litre	89.62	9036	Kcal/litre	9919	CNG	86.97	Rs./Kg	6903	30%	39%
Auto LPG	Rs./litre	66.41	10800	Kcal/kg	11387	CNG	86.97	Rs./Kg	6903	39%	47%
LPG (subsidised)	Rs./Cylinder	1053	10800	Kcal/Kg	6866	PNG (d)	56.77	Rs./m3	6104	11%	21%
LPG (Unsubsidised)	Rs./Cylinder	1053	10800	Kcal/Kg	6866	PNG (d)	56.77	Rs./m3	6104	11%	21%

Source: Prices from websites of IOC at Delhi, petrobazaar.com, ICRA Research; Prices of MS, HSD, Auto LPG, LPG, CNG and PNG(d) are as on October 3, 2022

Note: (d): domestic, (I): industrial, @: commercial. ^GCV of gas assumed at 9300 Kcal/m3.

- If the full impact of cost escalations are considered, CNG will still remain competitive compared to MS, HSD and auto LPG although it will be lower than the current prices.
- However, sharp escalations may deter the conversions, and hence companies may choose to not fully pass on the impact. Further, the companies might also wait for the outcome of the Kirit Parikh committee to decide on the extent of the price escalations.

CNG economics, including conversion cost, remain competitive

Cost of ownership calculations for 4-wheeler	Petrol	CNG	Diesel	Electric
Purchase price	787406	887018	944910	1349994
Running & Maintenance Cost				
Fuel/Electricity Cost (Rs./L, Rs. Kg. Rs./unit)	96.7	87.0	89.6	5.0
Milage (Km/L, Km/kg or Km/Unit)	16	27	20	7
Cost per Km (Rs./Km)	6.05	3.22	4.48	0.71
Life of the vehicle (years)	10	10	10	10
Average distance travelled per year (Kms)	12000	12000	12000	12000
Running Cost (Rs.)	725400	386542	537720	85714
Maintenance Cost per annum (Rs.)	30000	30000	30000	30000
Battery replacement cost (Rs.)				514800
Salvage Value after 10 years (Rs.)	50000	35000	50000	200000
Cost of vehicle over useful life	1762806	1538560	1732630	2050508
CNG lower by, as against petrol		13%		
CNG lower by, as against diesel		11%		
CNG lower by, as against Electric Vehicle		25%		

- CNG economics, including conversion cost, still remains competitive
- However, the advantage for petrol and diesel will moderate from ~14-16% at current prices to ~11-13% for full pass-through of gas prices



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