ICRA

INDIAN GAS UTILITIES

Revised allocation policy should partly mitigate impact of high spot gas prices for city gas distribution sector

JUNE 2022

Highlights

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Due to sharp increase in domestic gas prices and inadequate allocation of domestic gas to CGD sector, the companies had to increasingly depend on spot LNG procurement

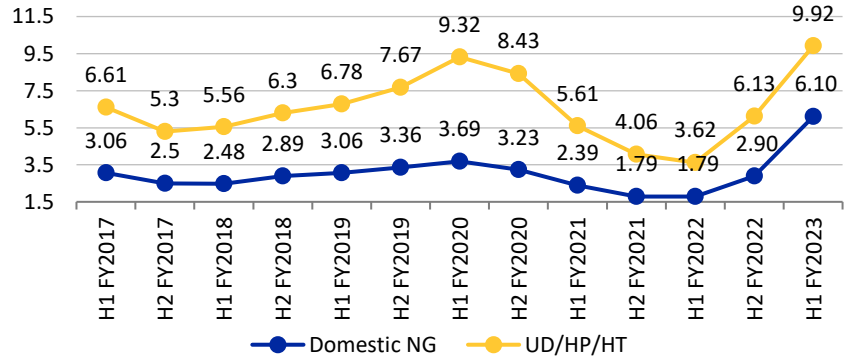
This necessitated increase in CNG and PNG(d) prices and while the cost economics remained competitive compared to alternate fuels, the advantage moderated

The revised gas allocation policy should be favorable for players facing high shortfall

- Sharp increase in natural gas prices in last one year due to various factors including Covid-19 related disruption, odd weather patterns, lower renewable and hydro power generation and increase in crude oil prices. The Russia-Ukraine conflict has further added pressure and prices are expected to remain elevated in the near to medium term
- Due to the increase in prices at international hubs, the prices for domestic gas governed by the modified Rangarajan formula also witnessed a sharp upward revision for H1 FY2023 from $ 2.9/mmbtu to $ 6.1/mmbtu. Prices are expected to increase substantially in the next revision.
- Due to sharp recovery in demand in FY2022, there was shortfall in domestic gas allocation for CNG and domestic PNG sector, as per the existing allocation guidelines of MOPNG
- The CGD companies had to rely on high cost spot RLNG or long term RLNG if available to meet the shortfall. The high spot LNG plus upward revision in APM prices, necessitated price revisions by CGD player, with CNG prices (in Delhi) witnessing ~59% overall increase between Nov 2021 to May 2022
- While, CNG and PNG domestic prices still remain competitive compared to alternative fuel, due to increase in petrol, diesel and LPG prices, the advantage has witnessed moderation. Any further increase in CNG and PNG prices compared to alternate fuels will further reduce the advantage. This may also impact the conversion momentum
- To address the issue of allocation shortfall, MOPNG has revised the guideline to ensure requirement assessment on a quarterly basis and GAIL will pool in any domestic gas shortfall with high pressure/high temperature (HPHT) domestic gas and RLNG and supply at uniform prices
- The revised allocation will ensure better availability of pooled gas for CGD players and should be favorable for players facing high shortfall, since this will partly mitigate the impact of higher spot LNG prices and result in moderation in average gas procurement prices. The revised allocation policy would ensure uniform base price for gas supply across all entities though differences in pipeline transportation costs would have a bearing on the delivered price

Gas prices witness sharp increase

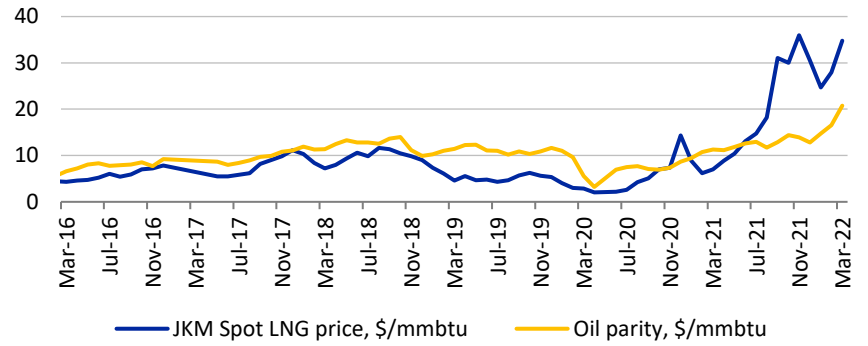
Exhibit: Trend in domestic NG and HPHT prices ($/MMBTU)



Source: PPAC, ICRA Research

- With the increase prices at various international hubs, the domestic NG prices have also witnessed sharp revision
- The domestic prices are expected to witness substantial increase in the next revision also owing to high prices at various international hubs

Exhibit: Trend in LNG spot prices ($/MMBTU)

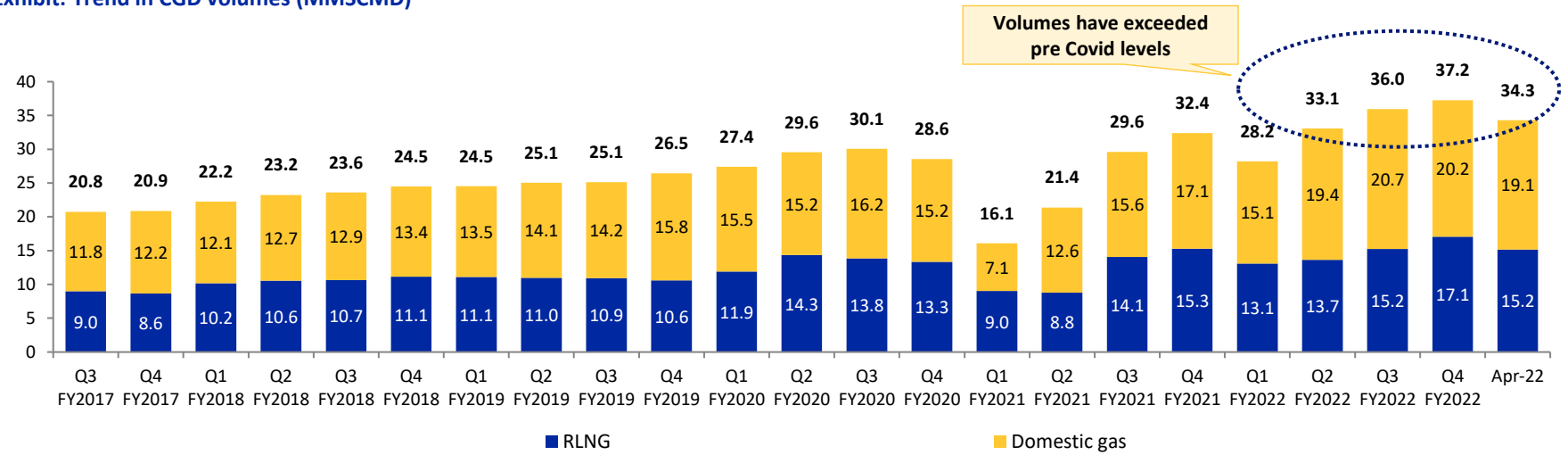


Source: Bloomberg and ICRA Research

- Spot prices of LNG have witnessed very sharp increase and are at decadal highs
- Prices have soared to an all-time high owing to strong regional demand. The armed conflict between Russia and Ukraine has led to gas prices spiking as Russia is a large producer of gas and serves about a third of the gas demand of Europe

CGD volumes saw sharp recovery in last three quarters

Exhibit: Trend in CGD volumes (MMSCMD)



Source: PPAC and ICRA estimates

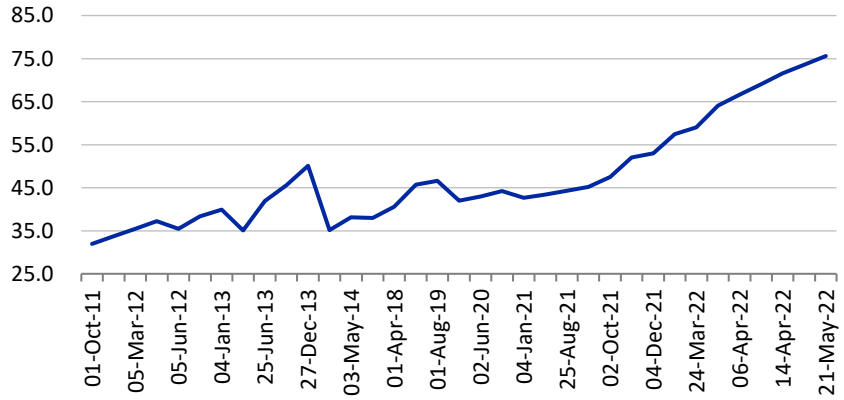
- The demand had witnessed a sharp moderation during H1 FY2021 due to stringent containment measures adopted in the wake of Covid-19
- Subsequently, while there was recovery, there was moderate impact in Q1 FY2022 due to the second wave of pandemic
- However, the demand has exceeded pre-Covid levels since Q2 FY2022 and demand has witnessed a sharp increase in Q4 FY2022
- Going forward CGD volumes are expected to grow at a healthy pace owing to a large number of GAs bid out in the 9th and 10th round ramping up sales as the initial infrastructure building phase is completed

Sharp demand recovery has led to shortfall in domestic gas allocation in FY2022

- As per the erstwhile guidelines of MoPNG, domestic APM gas is to be allocated to the CGD sector for CNG and PNG (domestic) segments as a priority and the allocation is done on a six-monthly basis, based on actual demand in the preceding six months period
- However, volatile and high international gas prices have rendered the preferential allocation to CGD sector a drain on GoI's budget as the additional allocations to the CGD sector were made by reducing gas to other sectors such as fertilisers. The pooled price for the fertiliser sector has risen sharply and is upwards of $22/mmbtu. As prices of fertilisers are controlled, an increase in pooled gas price by $1/mmbtu increases the subsidy by Rs 4500 crore.
- Due to sharp increase in demand in FY2022, there was shortfall in allocation of domestic gas and the shortfall was met by CGD entities from high-cost spot RLNG or long term RLNG contracts. Many of the CGD entities had to meet ~15-20% of their demand from RLNG at high prices, in last two quarters
- High LNG prices coupled with increase in domestic gas prices, had necessitated revision in CNG and PNG(d) prices by CGD players
- Based on inputs from stakeholders, in May 2022, the gas allocation methodology was modified by GoI

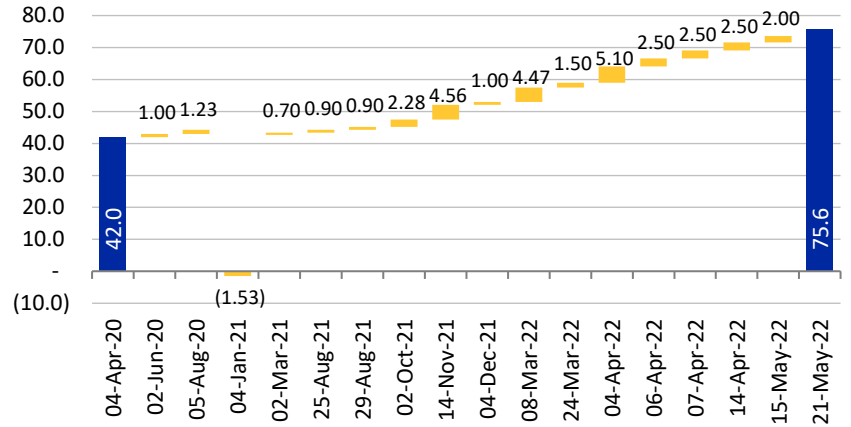
CGD entities had to undertake multiple price revisions

Exhibit: Trend in CNG prices in New Delhi (Rs./Kg)



Source: ICRA estimates and industry sources

Exhibit: Trend in CNG price revisions in New Delhi since April 2020 (Rs./Kg)



Source: ICRA estimates and industry sources

- Due to increase in procurement prices the CGD entities had to undertake periodic price revisions
- Between April 2020 to May 2022, the CNG prices at Delhi have increased by ~80%

Key highlights: Revised allocation policy (May 2022)

Pooled natural gas to be allocated to all CGD entities at uniform base price arrived in consultation with PPAC. GAIL will charge marketing margin as per existing guidelines

To meet growing demand, GAIL will supply pooled natural gas at 2.5% over the 100% requirement (based on consumption in previous quarter) of CNG and PNG (domestic) of each GA in quarterly allocation period. The calculation will be done for each GA separately

To meet shortfall in domestic gas availability for supply of pooled gas allocated as per revised guidelines, GAIL will source domestic HPHT gas at ceiling/market price (whichever is lower) and any further requirement to be met from long term RLNG or spot RLNG.

Since allocations will be for specific GA, no reallocation or diversion of pooled natural gas allocated for supplies in particular GA to a different GA of same authorized entity will be allowed

The allocation methodology will be reviewed quarterly by the ministry as per existing demand supply scenario of natural gas

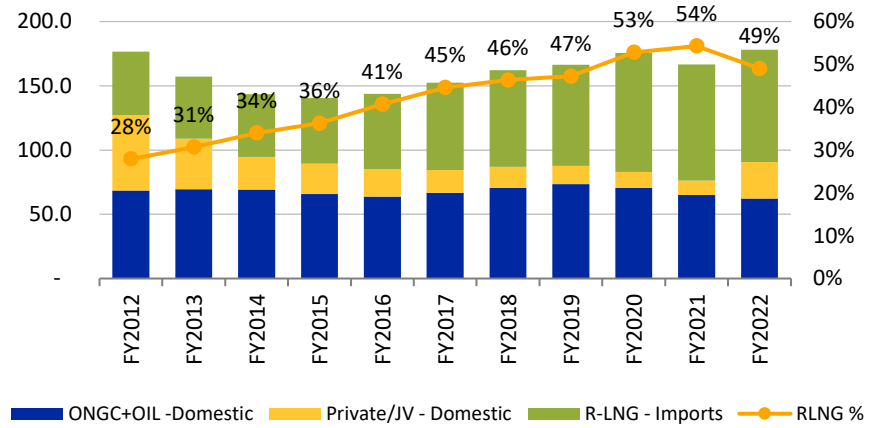
Key Changes: Revised allocation policy

	Existing	New	Implications
Allocation Mix	Allocation of domestic gas to be done for CNG and PNG (d) on priority basis with cuts for other sectors in case of shortfall. Further any shortfall requirement may be supplemented through RLNG	To procure HPHT gas for meeting shortfall and RLNG to be used for meeting any shortfall over and above that	Currently the shortfall in allocation was met directly by CGD players from spot or LT RNLG. Pooling of HPHT gas and LT RLNG by GAIL will reduce the average procurement price for players with high reliance on spot RLNG for shortfall
Frequency	On six monthly basis	On quarterly basis	This will reduce supply demand gap
Quantum	110% of prior six months average	102.5% of prior quarterly average	Neutral

The new guidelines should partly mitigate the impact of high RLNG spot prices in the near term

Dependence on RLNG may increase if domestic production lags demand

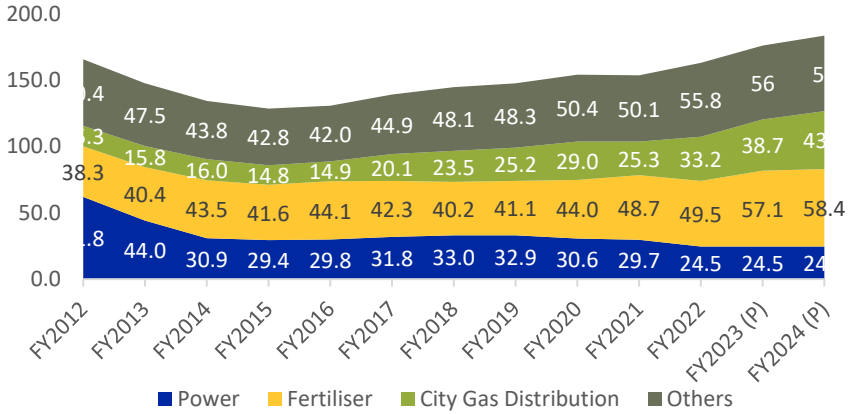
Exhibit: Trends in gas supply (MMSCMD)



Source: MOPNG and ICRA estimates

- The domestic supply had moderated between FY2012 to FY2015 and while there has been increase in production subsequently, there has been increasing dependence on imported RLNG to meet the demand
- The proportion of RLNG in the overall gas mix declined in FY2022 owing to higher domestic gas production primarily for RIL-BP's KG-D6 block

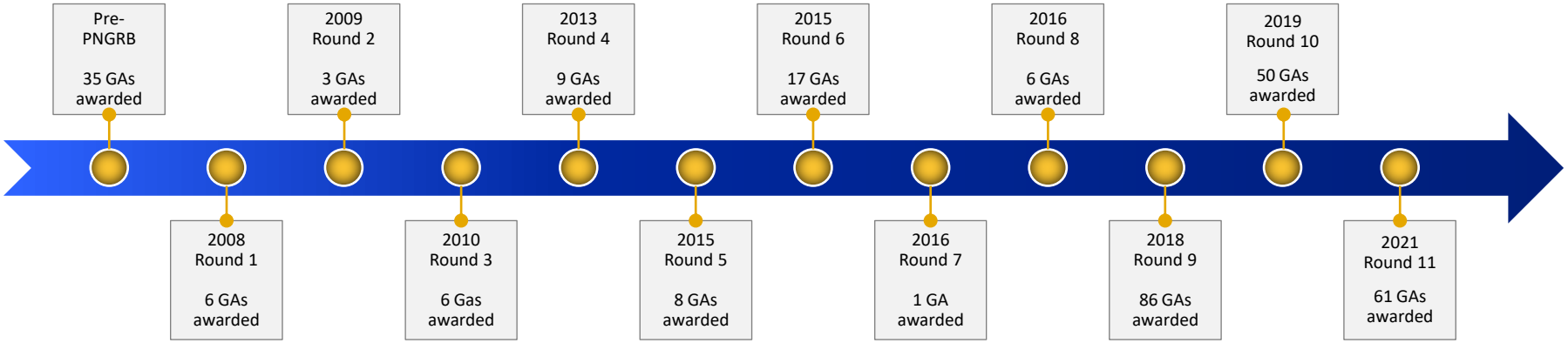
Exhibit: Trends in gas consumption (MMSCMD)



Source: MOPNG and ICRA estimates

- The demand is expected to witness sharp increase going forward driven by operationalization of additional GAs and start-up of new fertiliser units
- Going forward, while domestic gas production is expected to increase, the dependence on RLNG would remain high

With latest bidding round ~98% of population will be covered by CGD sector



- Prior to the 11th bidding round, there were 228 geographical areas authorised by PNGRB in 27 states and UTs covering approximately 53% of the country's geographical area and 70% its population
- The 11th bidding round covered 65 GAs spread over 215 districts in 19 states and 1 UT covering 26% of population and 33% of geographic area
- In the 11th round 61 bids were received and LOI for 52 GA was issued
- Subsequently for 5 districts and 1 UT, bidding round 11 A was conducted in 2022
- Post the latest round, upon competition of projects, ~98% of India's population and 88% of India's area would have access to CGD network

- The projects had witnessed delays in recent years due to various factors including Covid-19 related disruption
- While PNGRB had provided some Covid-19 related extensions, many companies have requested for additional exemption citing second wave and extended impact of pandemic, which is yet to be notified by PNGRB.
- PNGRB may levy penalty for delays in project execution and going forward any delays in meeting MWP target will expose the companies to penalty risk.

CNG and PNG-D remain competitive compared to alternate fuel

Exhibit: Energy cost comparison with traditional fuels

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)^	
MS	Rs./litre	96.7	8419	Kcal/litre	11489	CNG	75.61	Rs./kg	6001	48%
HSD	Rs./litre	89.6	9036	Kcal/litre	9919	CNG	75.61	Rs./Kg	6001	39%
Auto LPG	Rs./litre	78.5	10800	Kcal/kg	13453	CNG	75.61	Rs./Kg	6001	55%
LPG (subsidized)	Rs./Cylinder	1003	10800	Kcal/Kg	6540	PNG (d)	45.86	Rs./m3	4931	25%
LPG (Unsubsidized)	Rs./Cylinder	1003	10800	Kcal/Kg	6540	PNG (d)	45.86	Rs./m3	4931	25%
Bulk LPG	Rs./Kg	123.9	10800	Kcal/Kg	11472	PNG ©	65.00	Rs./m3	6989	39%
LDO	Rs./litre	103.2	8800	Kcal/litre	11722	PNG (I)	65.00	Rs./m3	6989	40%
Furnace Oil	Rs./kg	74.5	10440	Kcal/kg	7133	PNG (I)	65.00	Rs./m3	6989	2%

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 May 25, 2022
Note: (d): domestic, (I): industrial, ©: commercial. ^GCV of gas assumed at 9300 Kcal/m3.

CNG and PNG (d) segments competitive due to due to domestic gas allocation and although increase in prices have eroded the advantage to some extent, it remains competitive as petrol, diesel and LPG prices have also increased. However , PNG (i) to continue to face pressure owing to non-competitiveness against liquid fuels like furnace oil

CNG economics, including conversion cost, remains competitive

	Running Costs (Rs/km)				Conversion Costs (Rs)	Break Even Km	Avg km/day	Break Even Months
	CNG	MS	HSD	LPG				
Car on MS	3.60	6.45			45,000	15,803	50	10.4
Car on Auto LPG	3.60			5.81	30,000	13,566	50	8.9
Bus	15.12		25.61		300,000	28,616	200	4.7
Auto	2.16	3.87			30,000	17,559	100	5.8

Cost of ownership calculations for 4-wheeler	Petrol	CNG	Diesel
Purchase price	600000	645000	730000
Running & Maintenance Cost			
Cost of Fuel (Rs./ltr)	96.7		89.6
Cost of Fuel (Rs/Kg)		75.6	
Mileage (in Km/ltrs or Km/kg)	13	18	16
Cost per Km (Rs./Km)	7.44	4.20	5.60
Life of the vehicle (years)	10	10	10
Average distance travelled per year (Kms)	15000	15000	15000
Running Cost (Rs.)	1116000	630083	840188
Maintenance Cost per annum (Rs.)	10000	15000	15000
Salvage Value after 10 years (Rs.)	50000	35000	50000
Cost of vehicle over useful life	**1766000**	**1390083**	**1670188**
CNG lower by, as against petrol		21%	
CNG lower by, as against diesel		17%	

Fuel	Retail Price on May 2022	Mileage (Km/litre)		
	Rs/Litre	Taxi/Car	Bus	Auto
MS	96.7	15.0		25.0
HSD	89.6	16.0	3.5	
Auto LPG	78.5	13.5	3.0	22.5

- CNG economics including conversion cost still remains competitive
- However, the advantage has moderated from ~25-30% earlier to ~17-21% and further increase in gas prices may further erode the advantage

Further increase in prices may deter conversion

- Conversion economics remain advantageous despite the increase in gas prices, however any further cuts in taxes and duties leading to moderation in MS and HSD prices, while gas prices remaining at elevated level may moderate the advantage
- For every $1/mmbtu increase in gas procurement prices, the CGD players may have to increase prices by Rs. 4.5-4.7/kg for CNG and Rs. 2.5-2.7/scm for PNG to maintain the absolute contribution margin on per kg or per scm basis
- The domestic gas prices are expected to witness further increase in the next revision. With further increase in gas prices the competitive advantage considering conversion cost may further moderate, which may deter conversion to CNG and may have an adverse impact on new GAs coming online thereby impacting their returns
- Prior to the allocation policy some companies were relying on high price spot gas to meet their volume requirements and other players who had long term LNG tie-ups were better placed. Accordingly, the revised allocation policy would ensure uniform base price for gas supply across all entities though differences in pipeline transportation costs would have a bearing on the delivered price.
- The companies with high share of industrial customers are also expected to be adversely impacted by the current high price environment as the economic advantage is no longer there compared to certain alternate fuels. Also considering the high spot prices, companies with adequate LT sources may be at an advantage

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Thank You!