



## Bids for New City Gas Distribution Projects: Case for Cautious Approach

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### SUMMARY OPINION

- ICRA believes the recent bids for city gas distribution (CGD) projects have been aggressive, and could expose the bidders to serious competition once the bidding exclusivity period is over; besides meeting the quoted operations-related targets would be a challenge.
- Given the anticipated deficit in domestic gas, most companies would have to rely on sourcing Regassified Liquid Natural Gas (RLNG) for their operations. With RLNG prices currently at US\$9.5/MMBTU<sup>1</sup> for the long term and at US\$16/MMBTU in the spot markets, ICRA is of the view that gas users in segments such as buses and domestic households may not find it economical to shift to natural gas, which in turn would adversely impact sales volumes.
- Within various natural gas consumers, the industrial and large commercial offer the advantages of large volumes, pricing power, low operating cost, and low customer management effort. The domestic customer segment, on the other hand, has the disadvantages of low volume per customer, high last-mile connectivity expense and high customer management effort, given the large number of customers. CNG volumes, though profitable, may not be large enough in a typical Tier-II city, given its small vehicular population and short travel distances. Accordingly, cities with high demand potential and balanced consumer mix are likely to witness the most aggressive bidding.
- CGD projects are exposed to high execution risks because of the long construction period involved, the extensive approvals required, and the State support needed in terms of land allocation and legislative thrust for mandatory use of natural gas by industry and the public transport system.
- Apart from the long time taken to develop CGD infrastructure, scaling up of sales is also time consuming and typically takes three to four years to reach a commercially viable level. Thus the marketing exclusivity period of five years provided to CGD entities for a Geographical Area (GA) may not be adequate in many cases.
- Overall, considering the challenges facing the new entrants, ICRA feels that a cautious approach may be called for during bidding for CGD networks.

**Website**  
[www.icra.in](http://www.icra.in)

<sup>1</sup> MMBTU: Million Metric British Thermal Units

- There are six entities with ICRA-assigned ratings outstanding in the CGD space. For them, the key challenges are ability to source gas at competitive costs, and manage project risks. While some of the ICRA-rated companies have announced their pan-India growth strategy by participating in the CGD bids, the move might constrain their risk profile in case the bids turn out to be aggressive.

**Table 1: ICRA's Portfolio of CGD Companies**

Company	Rating(s) Outstanding*
Mahanagar Gas Limited	[ICRA]AAA (Stable)
Indraprastha Gas Limited	[ICRA]AAA (Stable) and [ICRA]A1+
Sabarmati Gas Limited	[ICRA]A+ (Stable) and [ICRA]A1+
Adani Gas Limited	[ICRA]BBB+ (Stable) and [ICRA]A2+
Siti Energy Limited	[ICRA]BB- (Stable) and [ICRA]A4
Saumya DSM Infratech Limited	[ICRA]B+

\*As on January 4, 2012

## BACKGROUND

The CGD business in India dates back to 1857 when Calcutta Gas Company (formerly Oriental Gas) and Bombay Gas Company commenced operations in Calcutta (now Kolkata) and Bombay (now Mumbai) respectively, with coal gas as the primary input. Subsequently however, the industry remained by and large dormant, until Oil and Natural Gas Corporation Limited (ONGC) and Assam Gas Company Limited (AGCL) entered the business in the mid- to late-1980s. The real impetus to the sector came from the establishment of Gujarat Gas Company Limited (GGCL), Mahanagar Gas Limited (MGL), and Indraprastha Gas Limited (IGL), which began operations in the late 1980s to mid-1990s. While these companies struggled in the initial years because of a host of reasons, regulatory intervention in the form of a Supreme Court order on conversion to gas and States' support for environmental pollution abatement came as a shot in the arm for the CGD business. In 2007, the Government of India (GoI) set up a regulator, the Petroleum and Natural Gas Regulatory Board (PNGRB), which has, among other mandates in the hydrocarbon sector, the mandate of regulating the CGD business. PNGRB has outlined its vision of expanding the CGD network to over 300 cities in India, as part of which bidding has been initiated through four rounds for 28 cities. Although some of these cities are yet to be awarded to the successful bidders and the fourth round has been cancelled recently, the bidding has elicited enthusiastic participation even as several challenges exist. This paper focuses on the challenges for the new entrants in the CGD sector—one that appears lucrative at first glance.

### Incumbents have demonstrated their ability to pass on gas price increases to consumers

CGD networks are now operational or under implementation in 77 geographical areas (GAs) and the consumption is estimated at 14 million metric standard cubic metres per day (MMSCMD; as of June 2011), which is around 8.4% of the overall natural gas consumption in India. In terms of volume handled, Gujarat State Petroleum Corporation (GSPC) Gas, GGCL, IGL and MGL have been the four major players accounting for around 88% of the total CGD volumes in India. While in the initial years, the regulatory mandate<sup>2</sup> was the real demand driver for business growth, the sheer cost economics of gas has spurred demand growth subsequently, which in turn has enabled the incumbents to scale up volumes. Besides scale-up of volumes, the financial performance of MGL (rated [ICRA]AAA by ICRA) and that of IGL (rated [ICRA]AAA by ICRA) have also benefited from the allocation of relatively cheaper Administered Pricing Mechanism (APM) gas<sup>3</sup> for their CGD operations. In June 2010, the GoI raised the price of APM gas from US\$1.96/MMBTU to US\$4.2/MMBTU. Despite the sharp rise in gas prices, the incumbents have been able to successfully pass on the increase to consumers, albeit at a few months' lag, so that the contribution margins<sup>4</sup> per unit volume of gas remain intact. However, the

<sup>2</sup> The Supreme Court in its 2002 and 2003 orders identified 17 cities, viz. Delhi, Mumbai, Agra, Lucknow, Kanpur, Varanasi, Pune, Faridabad, Patna, Ahmedabad, Sholapur, Hyderabad, Bangalore, Kolkata, Chennai, Jharia and Jodhpur, as the most polluted because of vehicular emissions, and wanted clean fuels to be introduced in these cities to contain vehicular emissions. Among these 17, Jharia and Jodhpur have been subsequently found to have mostly industrial and noise pollution.

<sup>3</sup> Gas produced by ONGC and Oil India Limited from the nominated fields

<sup>4</sup> Differential between selling price and cost price of gas

margins for MGL and IGL have declined slightly in the recent past, while still remaining robust in absolute terms (IGL and GGCL's returns on capital employed, or RoCE, were at 47% and 52% in 2010-11 and calendar 2010, respectively). Moreover, with dwindling domestic gas supplies and increasing reliance on the expensive RLNG, all the four majors have had to periodically revise the price upwards. As a result, CNG prices have risen sharply, and today rule in the band of Rs. 33.75 to Rs. 50/kg in different cities, depending on the gas mix and local taxes.

### Regulators' road map for greater CGD penetration

To accelerate deployment of the CGD network in the country PNGRB had invited bids in 2009 for 13 cities in two rounds. The results of the first two rounds of bidding are summed up in *Table 2*. The third round of bidding was opened in July 2010 and concluded in February 2011 (after extension), but final awards are yet to be made because of certain litigation involving PNGRB and a few other parties.

**Table 2: Results of First Two Rounds of Bidding**

First Round of Bidding		Second Round of Bidding	
Geographical Area	Successful Bidder	Geographical Area	Successful Bidder
Sonepat	GAIL Gas Limited	Allahabad	IOC-Adani
Kakinada	Bhagyanagar Gas Limited	Chandigarh	IOC-Adani
Dewas	GAIL Gas Limited	Ghaziabad	IOC-Adani
Meerut	GAIL Gas Limited	Jhansi	Central UP Gas Limited
Mathura	DSM Infratech	Rajahmundry	Reliance Gas
Kota	GAIL Gas Limited	Shahdol	Reliance Gas
		Yanam	Reliance Gas

Source: PNGRB

**Table 3: Bidders for Third Round of Bidding**

Geographical Area	No. of Bids	Name of the Bidders
Asansol-Durgapur	7	Hindustan Petroleum Corporation (HPCL), Great Eastern Energy City Gas (GEECL), GAIL Gas, Essar Projects (India), Lanco Infratech, Rohan Builders (India) and LMJ Energy Infralogistics
Bhavnagar District	2	Gujarat Gas Company (GGCL) and GSPC Gas Company
Kutch (East)	8	HPCL, GAIL Gas, GSPC Gas Company, Indian Oil-Adani Gas, Onelife Gas Energy and Infrastructure, PSL Gas Distribution, Everest Kanto Cylinder and Jay Madhok Energy
Kutch (West)	4	GSPC Gas Company, JSIW Infrastructure, Indian Oil-Adani Gas and PSL Gas Distribution
Jamnagar District	2	GSPC Gas Company and Lanco Infratech
Ludhiana	16	HPCL, Indraprastha Gas (IGL), JPM Gas, GAIL Gas, Indian Oil-Adani Gas, Welspun Infratech, Siti Energy, Ambience, Gujarat State Petronet (GSPL)-Gujarat State Petroleum Corporation (GSPC) Gas, Jay Madhok Energy, HCC Infrastructure Company, Everest Kanto Cylinder, LMJ Energy Infralogistics, Bharat Petroleum Corporation (BPCL), Oil and Natural Gas Corporation (ONGC) and Oil India (OIL), Rohan Builders (India) and Lanco Infratech
Jalandhar	12	HPCL, IGL, Indian Oil-Adani Gas, Siti Energy, Ambience, BPCL, ONGC and OIL, Lanco Infratech, Consortium of GSPL-GSPC Gas, HCC Infrastructure Company, LMJ Energy Infralogistics, Jay Madhok Energy and GAIL Gas

Source: PNGRB

The fourth round of bidding was initiated in Oct 2010 in which eight cities had been offered. However, this round has been cancelled recently by PNGRB.

Going forward, PNGRB has planned the development of CGD networks in over 300 GAs by 2015. Additionally the regulator has laid emphasis on the development of a country-wide network of pipelines and creation of a National Natural Gas Grid. However, because of a decline in production of KG-D6 and APM gas and lack of progress in some of the inter-State gas transmission projects, the plans to roll out CGD networks on a pan-India basis may have to be revisited.

### Bidding experience so far

According to PNGRB Regulations 2008, award of CGD networks for new areas has to be done through a competitive bidding process, under which along with technical and financial parameters, the bidders would also be evaluated against a set of criteria as listed in *Table 4*.

**Table 4: Bidding Criteria**

Criteria	Weightage
Lowness of the present value of the overall unit network tariff (Rs./MMBTU) over the economic life of the network project (25 years)	40%
Lowness of the present value of the compression charge (Rs./kg) for dispensing CNG at the CNG stations over the economic life of the network project (25 years)	10%
Highness of the present value of the inch-kilometre of steel pipelines during the period of marketing exclusivity	20%
Highness of the present value of the number of domestic consumers proposed to be connected by PNG during the period of marketing exclusivity	30%

Source: PNGRB

Compression charge (Rs./kg) shall be collected only from CNG consumers, while network tariff (Rs./MMBTU) shall be collected from all consumers.

The robust profitability of the early entrants (MGL, IGL and GGCL), besides the strong demand growth (spurred by the favourable cost economics of gas versus competing fuels), has attracted a large number of companies, including several from sectors other than oil & gas (refer *Table 3*), to the CGD business. The first two rounds of bidding saw modest competition for a few cities with good potential, with a few bidders quoting either zero or a nominal network tariff to win bids (refer Annexure for comparison of bids for Ghaziabad GA), thereby diluting the network-investment returns available to the incumbents. In response to this, PNGRB has made the following changes in the bidding criteria for the third and fourth rounds:

- Each bid shall accompany a techno economic feasibility report (FR), which shall result in an IRR of not less than 6% (Pre-Tax) on capital employed from the regulated tariffs (network tariffs and compression charges)
- The quoted numbers in the financial bid shall be up to +/- 20% variation as compared to figures in FR
- Yearly network tariff and compression charges to be bid from sixth year onwards (as the first five years have marketing exclusivity and it is meaningless to evaluate bids including this period)

Despite these criteria, bids for the third and fourth rounds (now cancelled) are reported to have been aggressive, with reference to tariff, steel pipelines to be laid and PNG (domestic) connections. ICRA believes the strategy of quoting low tariff could expose the aggressive bidders to competition once the exclusivity period is over; any third-party marketer could use the network of the successful bidder at a nominal cost and sell gas to current or new customers in the region.

ICRA understands that the players who had adopted such an aggressive bidding approach could be banking on: (a) cross-subsidy from the gas trading margin, which is not regulated; (b) creation of entry barriers; and/or (c) deficit in the availability of domestic gas vis-à-vis demand. However, in ICRA's opinion, there are uncertainties associated with each of these assumptions. For example, the ability to achieve sufficient marketing margin is uncertain, given the lack of control over the prices of gas and alternative fuels and the slow scale-up of volumes. Also, the regulator could disallow creation of any entry barriers<sup>5</sup> for third-party marketers, while the availability of domestic natural gas could improve over the longer term although being in deficit in the medium term.

<sup>5</sup> Such as denying access at vantage points in the network and allowing access only in un-remunerative areas

## Key Challenges for New Entrants

### Availability of cost competitive gas

In 2011-12, natural gas supply has been adversely impacted by the fall in KG-D6 production to 46.6 MMSCMD in the first half (H1) from 55.9 MMSCMD in 2010-11. KG-D6 gas production is likely to remain at subdued levels over the next couple of years even as the other major sources are not likely to materially contribute towards supply increase. Considering the scenario of limited incremental supply of domestic gas, ICRA believes that the sector would have to increasingly rely on the costlier RLNG.

The Empowered Group of Ministers (EGoM) set up by GoI for allocation of KG-D6 gas had initially allocated 5 MMSCMD of gas on a firm basis but the actual supplies are much lower currently, owing to the dip in KG-D6 production. The GoI has prioritised allocation of KG-D6 gas (refer Box alongside), assigning a major share to the fertilizer and power sectors and only a minuscule to the CGD sector.

#### Box: Order of Priority for Allocation of KG-D6 Gas

1. Existing gas-based fertilizers plants.
2. Existing gas-based LPG plants
3. Existing gas-based power plants
4. CGD entities for supply to domestic & transport sectors
5. Existing gas-based steel & petrochemicals plants and existing refineries
6. CGD entities for supply to commercial & industrial sector customers up to 50,000 standard cubic meters per day
7. Captive power plants

As for gas allocation and pooling, an inter-ministerial committee has recently recommended (i) preferential allotment of available domestic natural gas to the core sectors of fertilizer and power while reserving a certain amount for the CGD/CNG sector, and (ii) use of inferred gas price<sup>6</sup> as benchmark for domestic gas pricing. The committee has suggested placing a cap on domestic gas allocation at 6 MMSCMD for the CGD/CNG sector. If the recommendations are accepted all incremental requirements of the CGD sector will have to be met by RLNG and domestic gas prices (such as APM, KG-D6 gas) could increase more than 50% over the prevailing levels. Pricing of RLNG that Petronet LNG Limited (PLL) sources is linked to Japan Customs Cleared (JCC) for the period January 2009-December 2013 with the prices becoming fully indexed to the previous 12-month JCC from January 2014 onwards. Given the current scenario of persistently high crude oil prices, RLNG is set to get costlier with current term prices in the vicinity of US\$9.5/MMBTU and spot prices in the range of US\$16/MMBTU ex terminal. However, at such elevated prices, the cost economics of using natural gas vis-à-vis other competing fuels in the CGD sector may suffer.

**Chart 5: Conversion Economics at Current Fuel Prices in Delhi**

	Running Cost (Rs./km)			Break-even Period (months)		
	Cars	Auto	Bus	Cars	Auto	Bus
Motor Spirit	4.43	2.66				
High Speed Diesel	2.56		11.69			
CNG-Current Price	1.61	0.96	9.64	8.2	4.9	14.5
CNG-Term RLNG	3.74	2.25	22.46	33.6	20.0	*
CNG-Spot RLNG	5.44	3.26	32.62	*	*	*

\*Negative value for break-even months is achieved because of higher operating cost with CNG vis-à-vis other fuels.  
 Note: Mileage assumed for cars on MS is 15 km/litre, cars on HSD 16 km/litre, buses on HSD 3.5 km/litre, autos on MS 25 km/litre; RLNG prices (ex terminal): Term: US\$ 9.5/MMBTU, and Spot: US\$ 16/MMBTU. Price considered for various fuels are HSD Rs. 40.91/litre, MS Rs. 66.42/litre, CNG Rs. 33.75/kg  
 Source: ICRA Analysis

<sup>6</sup> The procedure for arriving at an *inferred price* is to take the **average** of (i) the 12-month trailing Henry Hub price and (ii) the 12-month trailing producer net back price (computed as Japan Korea Marker (JKM) price or equivalent Asian LNG price less liquefaction and shipping charges). The committee has suggested the average to reduce the impact of the large disparity between the two prices, that is, (i) Henry Hub prices prevailing in the United States, the largest gas market, and currently at US\$ 4-4.5 /MMBTU and (ii) Asia Pacific Prices (which are highly dependent on LNG and LNG prices, being traditionally linked with crude oil prices, and have ranged between US\$10 and 14/MMBTU over the last few months).

**Chart 6: Cost Competitiveness of Various Industrial Fuels at Current Fuel Prices**

	Selling Unit (SU)	Rs./SU	Rs./Mkcal
Bulk LPG	Rs./Cylinder	1,156.5	5,636
Low Sulphur Heavy Stock	Rs./kg	40.69	4,195
Light Diesel Oil	Rs./litre	46.47	5,281
Furnace Oil	Rs./kg	39.29	3,993
Naphtha	Rs./kg	49.74	4,737
PNG (I&C)—Current	Rs./m <sup>3</sup>	31.74-36	3,527-4,000
PNG (I&C)—Term RLNG	Rs./m <sup>3</sup>	53.74	5,971
PNG (I&C)—Spot RLNG	Rs./m <sup>3</sup>	78.74	8,749

*Note: All prices as in Delhi in November 2011. Prices of alternative fuels as in the websites of the OMCs, and for gas, according to IGL*

*Source: ICRA Analysis*

**Chart 7: Cost Competitiveness of Various Domestic Fuels at Current Fuel Prices**

	Rs/scm	Rs/cylinder	Rs/Mkcal
LPG		399.26	2,603
PNG(D)-Current	22.00		2,444
PNG(D)-Term RLNG	53.53		5,947
PNG(D)-Spot RLNG	78.53		8,725

*Note: All prices as in Delhi in November 2011. Prices for LPG as in the websites of the OMCs, and for gas, according to IGL*

*Source: ICRA Analysis*

Considering the high price of gas prevailing, the volumetric sales projections of several CGD companies that have already been awarded licences may turn awry and lead to cash flow mismatches. Accordingly, ICRA believes that access to cost-competitive gas will hold the key to profitability for CGD players. In this regard, ICRA believes companies with strong parents involved in gas production and/or marketing are better placed to source gas at competitive rates and ride out the occasional volatility associated with gas trading margins.

#### **Availability of trunk pipelines in the near to medium term**

India's current gas transmission pipeline length is estimated at 11,900 km (GAIL: 8,000 km; GSPL: 2,000 km; Reliance Gas Transportation Infrastructure Limited: 1,400 km; OIL/AGCL: 500 km) and it has a capacity of 283 MMSCMD. Although the capacity per se appears high in relation to the current gas availability in India, several bottlenecks and the disparate development of the pipeline infrastructure have left some potential end-users gas starved. The two largest pipelines, HVJ and DVPL of GAIL (accounting for around 30% of India's capacity), have been operating at almost full capacity in the recent past, while at the same time, GAIL's regional pipelines (in regions like Gujarat, Rajasthan, Mumbai, the Cauvery basin, and Assam) have been operating at sub-optimal levels because of limited gas supply. Further, the pipeline network in India currently covers mainly the western, central and northern parts, and has a limited presence in southern and eastern India. Even within western, central and northern India, there are several cities waiting to be connected. As a result, the market has developed only in areas that are in proximity to the existing pipeline network. Thus, a key project risk for CGD companies is connectivity with the gas trunk pipeline. For such connectivity, the CGD company has to depend on the trunk pipeline owner, who may however have several competing projects of much larger scope and scale to execute. Further, the bargaining power of the CGD entity with respect to the trunk pipeline owner remains limited, given the much larger size of the latter. However, the delays in pipeline project execution notwithstanding, ICRA expects pipeline connectivity to improve over the long term, considering the fact that the incumbents have announced large projects to expand their coverage. Besides, the regulator PNGRB has also called for bids for some new pipelines in regions hitherto not served.

**Statutory approvals and lack of requisite support from States**

The implementation and operation of a city gas distribution network requires a host of approvals from a number of agencies, such as the National Highways Authority of India, municipal corporations, public works departments, and pollution control boards. Obtaining multiple approvals from various civic and governmental agencies and authorities calls for extensive liaison work, besides time, and may stretch the manpower resources of smaller companies. Moreover, local administration and State Governments play a crucial role in facilitating statutory approvals from various agencies. At times it is the State development authority that allots land for CNG stations at heavy vehicular traffic areas of cities. The State pollution control board encourages the industry to switch from cheaper but polluting fuels like coal to natural gas and the regional transport authority mandates conversion of public transport vehicles to CNG. However, these initiatives require strong political will and administrative machinery to implement, and if lacking could well delay a CGD player's project.

**Slow scale-up in domestic demand and lack of adequate profits in PNG (domestic) segment**

Even as setting up a CGD network is a capital intensive activity, scale-up of volumes remains slow and even a reasonable level of 50% customer penetration level is achieved only after nine to ten years after the start of operations. PNG (domestic) is the least viable segment because even in concentrated locations like colonies or flats in New Delhi, it costs almost Rs. 15,000 per connection, whereas CGD companies are allowed to collect only Rs. 5,000 as deposits per connection. With an average billing of Rs. 2,500-3,500 per customer per year, the payback period is very high. Additionally, while gas cost pass-through clauses are a standard feature in contracts with industrial consumers, gas costs are passed on in the PNG (domestic) segment generally with a lag. Also, LPG (domestic) being heavily subsidised, it limits the ability of CGD companies to increase the prices of PNG (domestic). Thus, overall slow scale-up in demand, low customer penetration, low cost of LPG, high cost of last mile connectivity, low sales volume per customer, price elasticity, and high customer management efforts make PNG (domestic) the least viable within the various CGD customer segments.

**Long payback period along with limited marketing exclusivity period**

Bidding of aggressive steel pipelines coverage is risky because it is impractical to implement within the stipulated timeframe, given the various approvals required, and could also lead to high capital intensity thereby impacting the project viability. It usually takes two to three years for a CGD company to develop the infrastructure, including, among others, the pipeline network, a city gas station, and CNG stations before commencing operations. After the start of operations, sales scale-up is typically slow and it takes three to four years to reach a commercially viable level. The slower scale-up of sales and the large upfront capital outlays also mean the payback period of a CGD project is seven to eight years.

Under the PNGRB Act, 2006, new entrants/incumbents will enjoy monopoly with regards to network provision for 25 years and marketing exclusivity for five years, both from the date of authorisation. ICRA notes that although the marketing exclusivity is for five years, the actual period works out much shorter as network construction itself takes two to three years. ICRA believes that the five-year marketing exclusivity for new entrants may not be adequate, given that the history of the CGD business in India points to the actual gestation period being longer. After the marketing exclusivity period is over, there is the risk that the CGD company's customers and several untapped consumers would migrate to a different gas provider. The impact of such a switch-over would be higher for CGD companies that bid zero or very low network tariff rates which would allow any third party marketer to sell the gas by paying negligible network tariff. However, this risk is partly mitigated by the lack of availability of gas currently. In case gas availability were to improve significantly, say over the medium to long term, third-party marketers could present a considerable threat to incumbent CGD companies.

**Lack of adequate market potential**

The GA being considered needs to be evaluated for market potential or the gas sales volumes achievable. The other factors that need to be considered include, among others, distance travelled by the average commuter, population density, and supporting infrastructure. To set up the CGD network the entire city needs to be dug up and in case the market size is low, the initial cost of setting up the pipeline network and other infrastructure may make the project unviable. Additionally, many cities being bid for do not have many multi-storey buildings as is the case with big cities pushing the cost of providing PNG (domestic) connections higher. Also, in comparison with bigger cities, the distances travelled by commuters in the smaller ones are shorter, which means the CNG volumes per vehicle per day are low. Moreover, project economics need to factor in the high volatility and escalation in the prices of steel and other commodities, given the long construction and project execution time that a

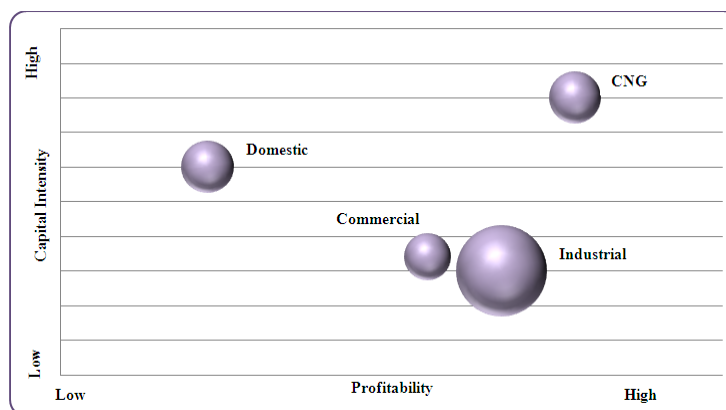
CGD project typically requires. It is against these factors that CGD companies need to assess the viability of rolling out CGD networks in smaller towns.

### Lack of balanced consumer mix in most cities

The viability of a GA needs to be ascertained from its consumer mix. The industrial and large commercial segments offer the benefits of greater pricing flexibility, lower customer management efforts, and larger volumes. From the industrial and commercial customers' perspective, use of gas offers various benefits like cost savings, environment friendliness (gas being a cleaner fuel), better quality power (critical in continuous process-based industries), low maintenance costs, and storage and operational convenience, among others.

The domestic segment is the least profitable segment as discussed above. The relative profitability and volumes offered by various segments is brought out in the *Chart 1* alongside.

**Chart 1: Relative Profitability, Capital Intensity and Volume Intensity of Various Segments**



The industrial and large commercial customers act as anchor tenants for CGD companies and provide large volumes in the initial years even as the PNG (domestic) and CNG segments require several years to build commercially viable volumes.

Source: ICRA Analysis

### Risk of high taxation by States

The competitiveness that CNG enjoys over substitute fuels also derives from the supportive taxation structure that it enjoys in most states. However, as CNG gains popularity, there is no certainty that State Governments will not see that as an opportunity to earn additional tax revenues as has been the case with liquid transportation fuels such as motor spirit, high-speed diesel and aviation turbine fuel. Already, some States like Uttar Pradesh are levying very high tax on CNG, taking up the delivered cost of the fuel to around Rs. 40/kg (CNG at Agra costs Rs. 39/kg and in Lucknow Rs. 39/kg), which is close to the prevailing diesel prices.

**Table 8: Comparison of VAT on CNG and PNG in Select States**

State	CNG	PNG
Delhi	Nil	5%
Uttar Pradesh	13.5%	26%
Haryana	5%	5%
Gujarat	15%	15%
Maharashtra	12.5%	12.5%

Source: Industry

### Aggressive bids for new cities could weaken currently strong credit metrics of incumbents

Some of the ICRA-rated CGD companies have been participating in the bids for gas distribution projects in the "new" cities as part of their pan-India growth strategy. While entering the new cities could lower their geographical concentration risk, the same could also translate into higher credit risks, given the several challenges posed by the new cities (as discussed earlier). The impact on their credit profiles would be a function of the size of capital expenditure, means of finance and bid parameters, in relation to existing operations.

**Table 9: Actual and Projected Capital Expenditure of Some ICRA-rated Players**

Company	Projected Capex (Rs. crore) (Over period)	Actual Capex (Rs. crore) over FY09-FY11
IGL	2,415 (FY12-FY16)	1,333
MGL	1,257 (FY12-FY15)	464
Adani Gas	413 (FY12-FY16)	333
Sabarmati Gas	280 (FY12-FY16)	189

Source: Company

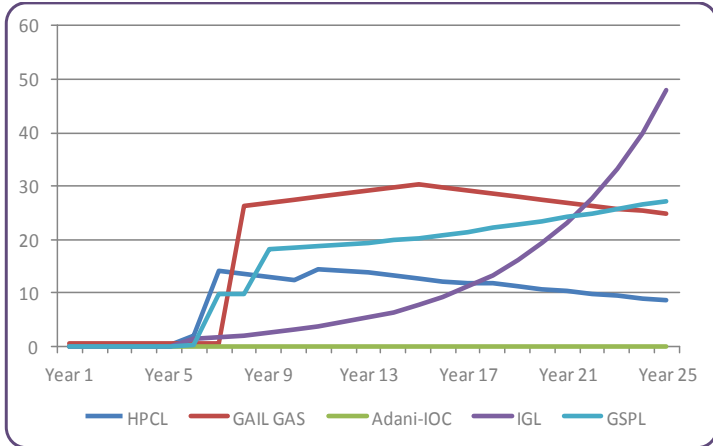
## CONCLUSION

The decline in the production of APM and KG-D6 gas and the low priority accorded to the CGD sector in the allocation of natural gas have left CGD companies relying increasingly on RLNG. However, with RLNG prices also moving up, the economics of conversion to natural gas has turned unfavourable in some segments like buses and domestic households. Considering the high prices of gas prevailing, the volumetric sales projections of some CGD companies already awarded licences may go awry and lead to cash flow mismatches, thereby affecting their debt servicing capability. The problem is aggravated by the small size of some of the cities; in these cities, the other constraints (besides the size) are limited market potential and lopsided consumer mix (i.e. higher proportion of low profitability consumers). Moreover, CGD companies have to contend with high project execution risks, given the long execution period involved and the multitude of approvals required from several agencies, factors that increase the projects' vulnerability to cost and time overruns. In this regard, support from State and district authorities in obtaining approvals and in the allotment of land for CNG stations assume high importance as such facilitation serves to lower both project risk and marketing risk. Additionally the five-year marketing exclusivity for new entrants may not be adequate as the history of the CGD business in India suggests that the actual gestation period is longer.

*January 2012*

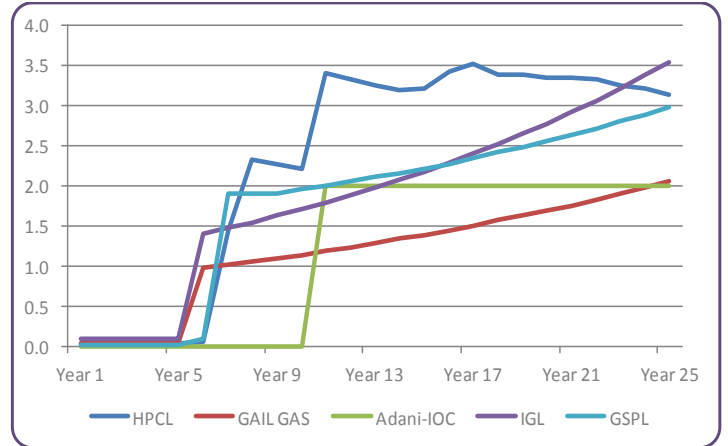
**ANNEXURE: Comparison of Bids for Ghaziabad GA in 2<sup>nd</sup> round**

**Chart 2: Comparison of Network Tariff (Rs./MMBTU)**



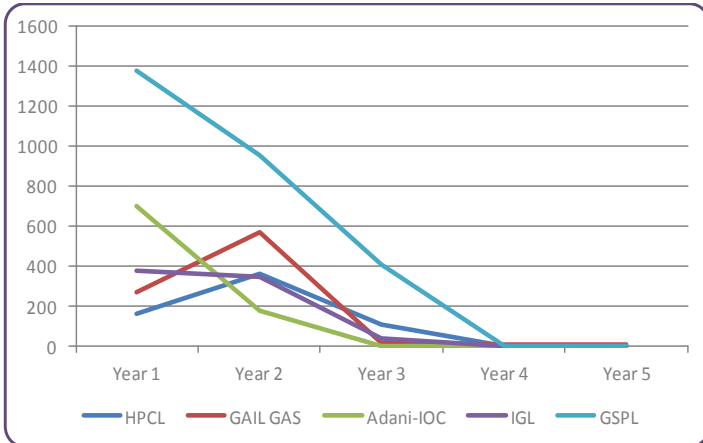
Source: PNGRB and ICRA Analysis

**Chart 3: Comparison of Compression Charge (Rs./kg)**



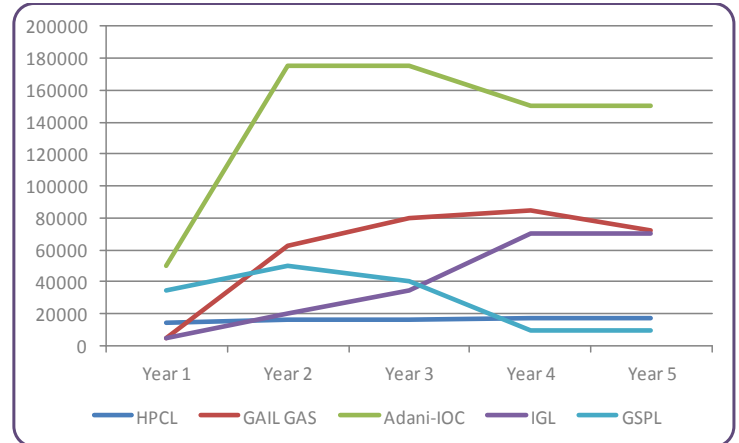
Source: PNGRB and ICRA Analysis

**Chart 4: Comparison of Inch-kilometre of Steel Pipeline**



Source: PNGRB and ICRA Analysis

**Chart 5: Comparison of PNG Domestic Connections (nos.)**



Source: PNGRB and ICRA Analysis



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