



## ICRA Rating Feature

### Rating Methodology for City Gas Distribution Companies

This rating methodology updates and supersedes ICRA's earlier methodology note on the sector, published in November 2014. While this revised version incorporates few modifications, ICRA's overall approach to rating entities in the sector remains materially similar.

The methodology note aims to help issuers, investors and other interested market participants understand ICRA's approach to analysing risks that are likely to affect rating outcomes in this sector. The list of rating drivers covered in this methodology note is not exhaustive by itself, but provides an overall perspective on the most important rating considerations. For analytical convenience, the key factors are grouped under the following broad heads—Business Risk Assessment, Financial Risk Assessment and Management Quality & Corporate Governance Assessment.

- **Business Risk Assessment**
  - Gas pipeline connectivity
  - Availability and Price of gas
  - Size of operations
  - Scale-up in demand
  - Consumer mix
  - Statutory approvals and support from State administration
  - Performance and competitive risks involved in recently bid projects
  - Regulatory risk
  
- **Financial Risk Assessment**
  - Operating profitability and Return on capital employed
  - Gearing
  - Leveraging and Debt service coverage ratios:
  - Working capital intensity
  - Cash flows and Liquidity
  - Foreign currency related risks
  - Tenure mismatches, and risks relating to interest rates and refinancing
  - Accounting quality
  - Contingent liabilities/Off-balance sheet exposures:
  - Financial flexibility
  
- **Management Quality & Corporate Governance**

#### Overview

City Gas Distribution (CGD) companies provide piped natural gas (PNG) to commercial and industrial establishments for heating and power generation purposes and to households for cooking and heating purposes. CGD companies also retail compressed natural gas (CNG) for use as auto fuel. For distribution of PNG to consumers, CGD companies set up a network of steel and medium density polyethylene pipelines across its geographical area (GA) that transports the gas from its City Gas Station (where gas is received from the supplier) to the consumer; for retailing CNG, companies sets up dispensers either at their own exclusive stations or at the fuel pumps of Oil Marketing Companies (OMCs). As large upfront capex and multiple approvals are required for setting up the pipeline network and CNG stations, the credit risk

profile of CGD companies depends on the size of capex, means of funding, extent of approvals already obtained and the stage of operations, among other factors.

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. The PNGRB invites bids for different GAs and seven such rounds have been conducted till date<sup>1</sup>. However, the attractiveness of a particular GA is dependent upon the potential for gas sales and the mix of industrial, commercial, domestic and CNG segments. Additionally, aggressive bidding by companies may make them vulnerable to competition from third-party marketers once the exclusivity period (typically five years) is over. Accordingly, the credit risk profile of a CGD entity depends upon the current gas consumption, demand growth potential in its GA, the user mix and the bid parameters.

In the initial years, the regulatory mandate was the real demand driver for CGD business growth; however, subsequently the improved cost economics of gas vis-a-vis alternate fuels spurred the former's demand growth. In February 2014, the GoI mandated provision of domestic gas for the consumption of the CNG and PNG (domestic) segments, which being cheaper than imported Re-gassified Liquid natural gas (RLNG) made the economics of switching to gas more attractive for the end consumers. On the other hand, the gas demand from the commercial and industrial segments continues to be met currently by the relatively costlier RLNG wherein the economics of using gas vis-a-vis alternate fuels varies with the type of the competing fuel. Hence, the assessment of credit risk profile of CGD companies also involves a study of volume growth and gross margins achievable which in turn is a function of price competitiveness relative to alternate fuels.

## Business Risk Profile

**Gas pipeline connectivity:** Availability of gas is crucial to the operations of the CGD companies as there have been several instances in the past where connectivity with the national grid or trunk pipeline has been delayed by months or years as compared to the initial estimates. Delay in connectivity in turn leads to delays in start-up of the project leading to stretched economics and cash flow mismatch. For grid/ trunk pipeline connectivity, a 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 the trunk pipeline owner remains limited, given the much larger size of the latter. This apart, once the pipeline project commences, laying of new pipelines might get delayed because of several reasons including delays in securing right of use (ROU), delays in approvals, local activism etc.

**Availability and Price of gas:** In a positive development for the CGD sector, the GoI in November 2013 and February 2014 mandated provision of the entire domestic gas for the consumption of the CNG and the PNG (domestic) segments. Provision of the same solely for the consumption of these segments has made the economics of switching to gas more attractive for the end consumers which in turn has driven growth in consumption. Gas demand of the commercial and industrial segments continues to be met by the costlier RLNG and both segments continue to remain under pressure to maintain their profitability against LPG and liquid industrial fuels respectively. Conversion to gas and accordingly volume growth remains dependent on the cost economics and convenience of use of gas vis-a-vis alternate fuels. Players also have to tie-up their LNG requirements on spot or long term basis to ensure gas supply to customers.

**Size of operations:** The returns from the GA of a CGD company needs to be ascertained from its current and potential scale of operations or gas volumes. The other factors that need to be considered include, among others, distance travelled by the average commuter, population density, and supporting infrastructure in the GA. The initial cost of setting up the pipeline network and other infrastructure may make the project economics un-remunerative in case the market potential is low. Additionally, many cities being bid for do not have many multi-storey buildings as is the case with big cities which pushes up the cost of providing PNG (domestic) connections. Also, in comparison with the bigger cities, the distances travelled by commuters are shorter in the smaller ones, which implies that CNG volumes per vehicle per day are low. These factors impact the viability and returns of rolling out CGD networks in smaller towns.

---

<sup>1</sup> Round 1 invited bids from participants in 2009, while the most recent – Round 7 had invited bids in 2016

Moreover, project economics need to factor in the volatility and escalation in the prices of steel and other commodities, given the long construction and project execution time (typically 3-5 years) that a CGD project typically requires.

**Scale-up in demand:** Even as setting up a CGD network is a capital intensive activity, scale-up of volumes remains slow and even a reasonable level of 50-60% customer penetration level is achieved only after nine to ten years after the start of operations in most cities. PNG (domestic) has low profit margins as lack of competitiveness vis-a-vis subsidized LPG (domestic) limits the ability of the CGD companies to increase the prices of PNG (domestic) beyond a certain level. Additionally, the fixed costs incurred for the extensive network to be established in residential areas has a long payback period due to the low billing per household and low conversions in the initial years, even though part of the fixed costs are recovered as deposits. In case of PNG (industrial) and CNG segments, there is strong competition from competing liquid fuels and coal resulting in muted volume growth. Thus, overall slow scale-up in demand, low customer penetration, high cost of connectivity, low sales volume per customer and high customer management efforts indirectly exert pressure on PNG (domestic) profitability.

**Consumer mix:** The credit risk profile of a CGD entity depends upon the current gas consumption and consumption mix. While the PNG (domestic) segment is the least profitable segment, 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), higher efficiency, low maintenance costs and operational convenience. The industrial and large commercial customers act as anchor customers 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.

**Statutory approvals and support from State administration:** 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 board. 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 commencement or break-even achievement.

**Aggressive bidding for new projects:** Some of the incumbent 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 potential of its GA, consumption mix, size of capital expenditure, means of finance and bid parameters, in relation to existing operations.

**New entrants could have high risk profile as selection is based on bids and performance guarantee quantum:** According to the PNGRB Regulations, the 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 are evaluated against a specific set of criteria. The bidding criteria since September 2013 are as listed below:

Bidding 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)	70%
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)	30%

Several of the bidders have made aggressive bids, with reference to network & compression tariff (at nearly nil rates). 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.

While the players who had adopted such an aggressive bidding approach could be banking on: (a) cross-subsidy from the gas trading margin (b) creation of entry barriers and/or (c) deficit in the availability of domestic gas vis-à-vis demand. However, there are uncertainties associated with each of these assumptions. For example, the ability to achieve sufficient marketing margin is uncertain, given the slow scale-up of volumes. Also, the regulator could disallow creation of any entry barriers for third-party marketers, while the availability of domestic natural gas could improve over the longer term although being in deficit for now.

Further, in case of a tie in tariff bid by players, the winner is selected based on the value of the bid bond submitted. Once the company which submits the highest bid bond wins the bid, as per guidelines, it has to submit a performance bank guarantee (PBG) valid for five years equivalent to four times the value of the bid bond (which has to be renewed every five years till the end of the authorisation period). As a result of the higher competition for some GAs, the performance guarantees required to be submitted have been significantly high in the last few rounds. While the willingness to submit a large bid bond indicates the higher commitment of the players to carry out operations, this also impacts the players by way of guarantee charges and margin money for facilities. Also, PNGRB prescribes an annual Minimum Work Programme (MWP) for the bid winners to achieve in terms of steel pipeline laying and PNG (domestic) connections set-up in each of the first five years<sup>2</sup>. PNGRB may consider carrying forward the annual target from one year to another within the period of the first five years, if the delay in implementation is on account of valid reasons. Moreover, the CGD companies are expected to meet certain minimum service standards while dealing with its customers. The high quantum of PBG also exposes the bid winners to a significant contingent liability in case of any delay/default on the Minimum Work Programme (MWP) and inability to meet the service standards. In a worst case scenario of the guarantees being fully or partially encashed for non-fulfilment of MWP and/or service standards, the same amount in effect would add to the project cost for setting up the network in a particular GA, which could affect the project's viability.

**Regulatory risk:** The entities operating in different cities are exposed to regulatory risks, which can emanate in the form of authorisation of their operations. While most of the PSU CGD companies have obtained authorisation from PNGRB as they were approved by MoPNG before the PNGRB Act came into being, authorisation is awaited for few cities as there are multiple operators or alternate operators in those cities. As PNGRB Act envisages a single entity which will provide network access for each city, the regulator has to decide how multiple operators will be accommodated. Companies whose presence is deemed unauthorised run the risk of stranded investments. As regards the network/compression tariff, as per PNGRB act, the same had to be approved by the regulator following a tariff petition by the CGD concerned, which should include multi-year forecasts of cash flows (until the end of balance license period). The regulator could adopt different assumptions on capex, opex and volumes for forecasts, which could end up resulting in lower tariff than petitioned for by the CGD companies. Indraprastha Gas Ltd (IGL), the operator in NCT and NCR experienced such a risk, and was under litigation. The litigation also involved the powers of PNGRB to regulate the tariff for incumbents for sales to their customers, as the earlier High Court verdict entailed that the regulator can only fix tariff for 3<sup>rd</sup> party access. On July 1, 2015, IGL won the case against PNGRB in Supreme Court and resultantly, the regulatory risk for the CGD sector eased significantly. CGD companies can now fix tariffs freely for their end consumers and there would be no regulation of PNGRB on the network/compression tariffs for the CGD companies having a captive network. PNGRB's role will be limited to determining tariffs for third parties selling gas to their end customers using CGD companies' network.

**Payback period and limited marketing exclusivity period:** 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

---

<sup>2</sup> PNGRB may consider carrying forward the annual target from one year to another within the period of the first five years, if the delay in implementation is on account of valid reasons.

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. Although the marketing exclusivity is for five years, the actual operating period works out to be much shorter as network construction itself takes two to three years. 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. Further, for any third party marketer wanting to utilize an incumbent's infrastructure for CNG/PNG sales there will be practical issues associated like constraints over the infrastructure at the point of gas inflow into GA, operational issues related to retail management set-up/expertise (billing, collection & metering along with after-sales/repair related services), regulatory issues related to lack of regulations by PNGRB over the estimation of excess capacity available for marketing and unattractiveness of returns particularly in case of low sales volume for PNG (domestic). However the PNG segment, particularly industrial/commercial, with its large volumes and lower operational issues due to bulk customer management could be open to competition post marketing exclusivity, especially if gas availability was to improve significantly.

**Taxation by States:** The competitiveness that CNG and PNG enjoy over substitute fuels also derives from the supportive taxation structure that these fuels enjoy in most states. However, as these fuels gain 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 are levying very high tax on CNG and PNG impacting the competitiveness of these fuels vis-a-vis substitutes.

## Financial Risk Profile

In order to assess the rated entity's current financial position, trends in profitability, gearing, coverage and liquidity are also analysed. These are discussed below:

**Operating profitability and Return on capital employed:** The analysis here focuses on determining the trend in the entity's operating profitability and how do they compare versus the peers in other cities. Barring few exceptions, the incumbents have demonstrated the ability to pass on the increase in gas costs to consumers, albeit with some time lags. Accordingly while analyzing CGD companies, a key metric to analyse is the gross margin (Gas Sale Price - Gas Purchase price) on a per scm basis. CGD companies strive to maintain the gross margin on a per scm basis even though the operating profitability may decline due to higher base effect (on account of increase in gas cost). Besides gross margin on an overall blended basis, the same is also analysed on a segmental (PNG, CNG) basis with the objective to detect any pressures on profitability in any of these segments due to resistance of consumers to price pass through. Further, the Return on Capital Employed (RoCE) needs to be analysed to measure the efficiency with which an entity utilises the capital deployed in its business. An entity's ability to consistently generate RoCE over and above its cost of capital would reflect well on its long-term business viability.

**Gearing:** A CGD project entails large upfront capex besides which CGD entities incur large capex on a regular basis in order to expand network and thereby grow sales; accordingly the objective here is to ascertain the level of debt in relation to the entity's own funds and is viewed in conjunction with the business risks that the entity is exposed to. Long maturity profile of the loans can partially offset the risk associated with high financial leverage, as the payback period for CGD business can be long. For higher rated CGD companies, inter-alia, ICRA expects these companies to have low financial leverage in order to offset the high business risk associated with slow build-up in volumes, slow pace of approvals, high regulatory oversight etc.

**Leveraging and Debt service coverage ratios:** Here, the trends in the entity's leveraging – Debt/OPBDITA as well as key debt service coverage ratios like Interest Coverage and Net Cash Accruals/Total Debt are examined.

**Working capital intensity:** The analysis here evaluates the trends in the entity's key working capital indicators like receivables, inventories and creditors, again with respect to industry peers. ICRA notes that working capital intensity as measured by NWC/OI is either low or negative in the CGD business, because of large cash sales in retailing, negligible inventories and moderate creditor days.

**Cash flows and Liquidity:** As CGD companies incur large capex on a regular basis with the benefits accruing from the same with a lag of a few years, cash flows are analysed for upcoming capex requirements and term loan repayments. Liquidity is measured by way of available cash on hand/liquid investments and access to unutilised bank credit facilities to understand the company's access to cash in order to meet its obligations. In the case of project stage CGD Companies dependence on group and their ability for servicing of term loan repayments is also seen.

Some of the other aspects that are also analysed include the following:

- **Foreign currency related risks:** Generally the CGD companies have back to back foreign currency pass through clauses in contracts with large commercial and industrial consumers. However for the PNG (domestic), CNG and small commercial segments, impact of depreciation in Rupee vis-a-vis the US dollar are passed through periodic price increases. Additionally for any imports (of compressors etc) the CGD Company may avail buyer's credit for which the hedging policy needs to be assessed.
- **Tenure mismatches, and risks relating to interest rates and refinancing:** Large dependence on short-term borrowings to fund-long term investments can expose an issuer to significant re-financing risks, especially during periods of tight liquidity. The existence of adequate buffers of liquid assets/bank lines to meet short-term obligations is viewed positively. Similarly, the extent to which an issuer would be impacted by movements in interest rates is also evaluated.
- **Accounting quality:** Here, the Accounting Policies, Notes to Accounts and Auditor's Comments are reviewed. Any deviation from the Generally Accepted Accounting Practices is noted and the financial statements of the issuer adjusted to reflect the impact of such deviations.
- **Contingent liabilities/Off-balance sheet exposures:** In this case, the likelihood of devolvement of contingent liabilities/off-balance sheet exposures and the financial implications of the same are evaluated.
- **Financial flexibility:** As the CGD business is capital intensive, ability to raise resources from the banks at competitive rates will be a key rating strength. Accordingly, the issuer's financial flexibility—as reflected by it unutilised bank/credit limits, liquid investments, and the nature of its relationship with banks, financial institutions and other intermediaries—is assessed.

## Management Risk

All debt ratings necessarily incorporate an assessment of the quality of the rated entity's management, as well as the strengths/weaknesses arising from the entity being a part of a "group". Also of importance are the entity's likely cash outflows arising from the possible need to support other group entities, in case the entity is among the stronger entities within the group. Usually, a detailed discussion is held with the management of the entity to understand its business objectives, plans and strategies, and views on past performance, besides the outlook on the industry. Some of the other points assessed are:

- Experience of the promoter/management in the line of business concerned
- Commitment of the promoter/management to the line of business concerned
- Attitude of the promoter/management to risk taking and containment

- The entity's policies on leveraging , interest risks and currency risks
- The entity's plans on new projects, acquisitions, expansion, etc.
- Strength of the other companies belonging to the same group as the entity
- The ability and willingness of the group to support the entity through measures such as capital infusion, if required.

As CGD sector entails significant business risks, companies backed by strong sponsors, preferably with background in Oil & Gas business, can be better placed to navigate the risks involved. Operational support from sponsors can arise in several ways, notably competitively priced R-LNG tie-ups, co-location of CNG stations in their retail outlets and tap off access from adjacent gas transmission pipelines

## Summing up

The credit risk profile of CGD companies is evaluated considering the current stage of operations with respect to volume sales, gross margins, consumer mix and gas tie-ups in place; moreover future volume growth in sales is analysed vis-a-vis potential of the GA and competitiveness with alternate fuels. As project stage 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, the status of approvals and support from the State Administration are evaluated. Companies setting up operations in new GAs are also analysed in terms of their susceptibility to competition from third party marketers in the long run and their ability to complete the MWP on time, given the contingent liabilities (PBG) in case of delays in achieving MWP. Being a capital intensive industry, cash flows, capex plans, funding mix and debt repayment commitments are analysed wherein a low leverage and/ or long tenure of loan could act as a counterweight to the high business risk profile.

**CORPORATE OFFICE**

Building No. 8, 2nd Floor, Tower A, DLF Cyber City, Phase II, Gurgaon—122002  
Tel.: +(91 124) 4545 300; Fax: +(91 124) 4050 424

**REGISTERED OFFICE**

Kailash Building, 11th Floor; 26, Kasturba Gandhi Marg; New Delhi—110001  
Tel.: + (91 11) 2335 7940-50; Fax: +(91 11) 2335 7014, 2335 5293  
Email: [info@icraindia.com](mailto:info@icraindia.com) Website: [www.icra.in](http://www.icra.in)

---

Branches: **Mumbai**: Tel.: + (91 22) 24331046/53/62/74/86/87, Fax: + (91 22) 2433 1390 o **Chennai**: Tel + (91 44) 2434 0043/9659/8080, 2433 0724/ 3293/3294, Fax + (91 44) 2434 3663 o **Kolkata**: Tel + (91 33) 2287 0450, 2240 6617/8839, 2280 0008, Fax + (91 33) 2287 0728 o **Bangalore**: Tel + (91 80) 2559 7401/4049 Fax + (91 80) 559 4065 o **Ahmedabad**: Tel + (91 79) 4027 1500, Fax + (91 79) 2658 4924 o **Hyderabad**: Tel +(91 40) 2373 5061/7251, Fax + (91 40) 2373 5152 o **Pune**: Tel + (91 20) 2552 0194/95/96, Fax + (91 20) 2553 9231

---

© Copyright, 2016, ICRA Limited. All Rights Reserved.

Contents may be used freely with due acknowledgement to ICRA.

All information contained herein has been obtained by ICRA from sources believed by it to be accurate and reliable. Although reasonable care has been taken to ensure that the information herein is true, such information is provided 'as is' without any warranty of any kind, and ICRA in particular, makes no representation or warranty, express or implied, as to the accuracy, timeliness or completeness of any such information. Also, ICRA or any of its group companies, while publishing or otherwise disseminating other reports may have presented data, analyses and/or opinions that may be inconsistent with the data, analyses and/or opinions presented in this publication. All information contained herein must be construed solely as statements of opinion, and ICRA shall not be liable for any losses incurred by users from any use of this publication or its contents.