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Rating Methodology by Sector

City Gas

1. Business base

City gas is an important energy source used across very large areas. City gas companies purchase raw materials, and then produce and supply gas, and as such serve an important public interest. The rating considers this public interest and government regulations in place to protect it, the economic environment, and trends in demand in the operating areas, and differences in the earnings and financial bases of individual companies.

In line with full liberalization of retail city gas market in April 2017, the previous business categories including "general gas utility," "community gas utility," "gas pipeline service provider" and "large-volume gas supplier" under the Gas Business Act were abolished, and the following 4 categories were established by function: "gas retail utility," "general gas pipeline service provider," "specific gas pipeline service provider," and "gas manufacturing utility." This rating methodology is assumed to be applied to city gas suppliers which are engaged in retail, pipeline and manufacturing businesses. JCR will reflect in its ratings for these city gas suppliers in an appropriate manner an impact from progress of gas system reform (including full liberalization of retail city gas market in April 2017 and legal unbundling of pipeline service scheduled for April 2022 for major 3 city gas suppliers) on the competitive environment and earnings bases.

(1) Characteristics of the industry

(i) Market overview

The primary use of city gas includes hot-water supply and cooking in households as well as heat demand in the industrial sector, and demand is consequently stable. Sales volumes have been rising in general, led by industrial uses. Natural gas, the major raw material for city gas, is environmentally superior to other fossil fuels, with lower CO_2 and other emissions. For this reason, the use of natural gas and fuel conversion is being encouraged in the industrial sector as measures against global warming, suggesting that demand for city gas still has room for expansion.

(ii) Competitive situation

While the city gas system's framework based on the Gas Business Act changed, its industrial characteristics as a process industry constitute a high barrier to entry. While competition with other energy sources such as electric power, LP gas, and kerosene does exist, essentially monopolistic supply has been possible in service areas, which limited competition among companies in the same industry and ensures basically stable customer bases. Consequently, there has been no consolidation of companies, and approximately 200 companies, including government enterprises, operate in the industry.

Although amendments to the Gas Business Act in the past prompted a gradual expansion of deregulated areas, there have been few new entrants that have taken away market share and the direct impact on revenues has been negligible. It is necessary to examine changes to the competitive environment brought by full liberalization of retail city gas market and the consequent impact on earnings and financial structure.

(iii) Cost structure

City gas companies need to make considerable investments, including those for raw material purchases and production and supply system development, with manufacturing and pipeline businesses being a process industry. The pipeline business (general gas pipeline service) that requires the largest capital investment is a business in regulated areas, where pricing based on full-cost principle, under which an appropriate profit is added to an appropriate cost, is possible, allowing this business to ensure certainty of investment recovery and a stable earnings level.

Fluctuations in the prices of raw materials affect profits. A fee structure in which a gas rate adjustment system that separately adjusts for changes in the cost of raw materials is incorporated is a mainstream structure in the deregulated area. Impact on city gas companies' profitability of fluctuations in raw material prices, therefore, is neutral in the long run, and the fluctuations are considered manageable for city gas companies and will not significantly affect their business foundations.

(2) Important factors in market position and competitiveness

(i) Market position

Status as an essentially monopolistic supplier and stable demand allow even those gas companies with a small business to operate generally stable businesses. However, it is necessary to pay attention to trend of new entry to the service areas along with a progress of the gas system reform.

On the other hand, prompt action against all-electric homes for competition primarily in household-use gas and investment in fuel conversion for industrial use, expansion of business areas, and other activities are important. These measures require financial strength, technical capabilities, the ability to make proposals, and other attributes, and such factors basically increase depending on the size of the business. In view of raw material purchasing power, the efficient transportation of raw materials, and building production and supply systems, the scales of business and customer base are considered important.

(ii) Demand composition and potential demand

Purchasers of city gas are broadly divided into households, industry, commerce, and others.

Demand for household gas often used for hot-water supply is basically expected to remain stable, despite some fluctuations due to air and water temperatures. Since household gas consists of small buyers, the gas rate is higher than that for industrial use, constituting the core of the income base of gas companies.

Meanwhile, ongoing development of large-scale industrial and commercial demand is important in increasing sales volume and expanding the business. The scale of potential demand is identified based on the demographic and economic conditions of development areas, the competitiveness of corporate customers, the expansion capacity of business development areas, and other aspects. If sales concentrate in specific industries or companies, the volatility of sales volumes associated with business fluctuations increases. Imbalances in demand composition, therefore, also require attention.

(iii) Resistance to other energy sources

City gas competes against other energy sources such as electric power, LP gas, and kerosene. Competitions with electric power for household use (all-electric homes) varies among suppliers, depending on geographical factors, including the number of condominiums with limited space for equipment installation that prevents electrification, and likely effect of measures such as cooperation with home builders, sale of ENE FARM (household fuel cell cogeneration systems) and other strategic equipment products, and improvements in relations with business partners based on increased connection with their customers. JCR therefore monitors the progress and effectiveness of each company's measures. The competitiveness of city gas to meet demand for heat in high-temperature zone is high, and competition with electric power is unlikely in gas for industrial use mostly for such purposes.

(iv) Ability to procure raw materials

Raw materials are procured through various channels, including direct procurement from overseas markets, purchases from other city gas suppliers, or a combination of the two. Contract terms are examined in view of whether amounts to match medium-term demand are obtained while diversifying the risk of relying on specific suppliers and whether the fluctuations in procurement costs are successfully controlled, among other criteria. Even when purchasing from other companies, signing appropriate contracts with companies with a solid business base should enable a company to avoid being at a significant disadvantage to its peers in terms of stable supply and cost. Companies with a strong business base and raw material purchasing power, however, are capable of using diversified purchase methods, participating in upstream interests, and carrying out raw material trading, which increases the degree of strategic freedom. This is something that may be assessed separately.

(v) Investment strategy for infrastructure development

Demand for city gas, supported by the promotion of fuel conversion and the expansion of development areas, has room for expansion over the medium and long terms. To encourage the increased use of natural gas, which effectively reduces CO2 emissions, the government in some cases extends its policy support for infrastructure development, including pipelines and LNG terminals. Rapid infrastructure development is not just important for the public interest; it is also critical for the growth of gas companies. While investment is basically viewed positively as contributing to the strengthening of the business base and future growth, JCR confirms in the rating the purposes of the investment, such as cost cutting or improvement of supply capacity and stability, as well as the expected results. Subsequently, demand is observed and business and fund plans are examined to assess the possibility of recouping the investment.

As for major 3 city gas suppliers, legal unbundling of pipeline service is scheduled for April 2022, but unbundling in terms of capital and financing is not required. In cases where a separated pipeline service provider after the unbundling remains as a pipeline service provider under control of these 3 city gas suppliers' groups, JCR will check the group's unity and incorporate such unity into creditworthiness of the group or the pipeline service provider.

2. Financial base

(1) Earnings strength

Periodical profit and loss inevitably changes with fluctuations in raw material prices. JCR attempts to identify the effective earnings strength that takes this effect into account. Maintaining a household income base that is a core profit earner and ensuring appropriate margins from large customers who have relatively strong bargaining power, among other factors, are considered important in improving earnings strength.

Key financial indicators:

- Ratio of ordinary profit to sales
- Ratio of business income to total capital employed

(2) Cash flow

In preparation for medium- and long-term growth in demand for natural gas in addition to the constantly required capital investments for business continuation including maintenance of manufacturing and supply facilities, companies in some cases conduct new investments in LNG terminals and large natural gas pipelines. While the certainty of investment recovery based on demand forecast is thought to be high, the amount being invested in each project is large and a considerable financial burden is expected. Efforts to improve the ability to generate cash flow are therefore important.

Key financial indicators:

- EBITDA
- Cash flow from operating activities

■ Ratio of interest-bearing debt to EBITDA

(3) Safety

The gas supply business has comparatively large capital expenditure requirements and a long period of investment recovery, which tends to mean a large amount of interest-bearing debt. While the industry enjoys a stable income base and ease of external financing, it is vital to maintain a financial base that can withstand natural disasters or sudden changes in demand, even during a temporary increase in investment.

Key financial indicators:

■ Shareholders' equity

■ Equity ratio

■ Debt equity ratio

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