

## RATING METHODOLOGY

# Natural Gas Pipelines

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This rating methodology replaces "Natural Gas Pipelines", last revised on November 6, 2012. We have updated some outdated links and removed certain issuer-specific information.

### Summary

This rating methodology sets forth our approach to assessing credit risk for gas pipeline companies whose credit profiles are influenced by their rate regulation and contractual arrangements. This methodology is intended as a reference tool to use when evaluating credit profiles within this sector, helping issuers, investors, and other interested market participants understand how key qualitative and quantitative risk characteristics are likely to affect rating outcomes. This methodology does not include an exhaustive treatment of all factors that are reflected in our ratings but should enable the reader to understand the qualitative considerations and financial information and ratios that are usually most important for ratings in this sector.<sup>1</sup>

This report includes discussion of the four factors and sub-factors included in the scorecard. The purpose of the scorecard is to provide a reference tool that can be used to approximate credit profiles within the pipeline sector. The scorecard provides summarized guidance for the factors that are generally most important in assigning ratings to these entities. The scorecard is a summary, and as such, does not include every rating consideration. The weights shown for each factor in the scorecard represent an approximation of their importance for rating decisions but actual importance may vary significantly. As a result, the scorecard-indicated outcome is not expected to match the actual rating of each entity.

**1** THIS RATING METHODOLOGY WAS UPDATED ON OCTOBER 18, 2019. WE HAVE UPDATED SOME OUTDATED REFERENCES AND ALSO MADE SOME MINOR FORMATTING CHANGES.

**1** THIS RATING METHODOLOGY WAS UPDATED MARCH 24, 2022. WE HAVE CORRECTED THE AAA CATEGORY THRESHOLDS FOR THE THREE FINANCIAL STRENGTH SUB-FACTORS IN THE FACTOR TABLE ON PAGE 12 AND THE APPENDIX ON PAGE 18 BY REPLACING THE ">" SIGNS WITH "≥" SIGNS.

<sup>1</sup> This update may not be effective in certain jurisdictions until certain requirements are met.

The scorecard contains four key factors that are important in our assessment for ratings in the gas pipeline sector. The first three are qualitative factors while the fourth is a quantitative factor:

1. Market Position
2. Quality of Supply Sources
3. Contract Quality
4. Financial Strength

Certain factors also encompass a number of sub-factors or metrics that we explain in detail. An issuer's scoring on a particular scorecard factor sometimes will not match its overall rating.

This rating methodology is not intended to be an exhaustive discussion of all factors that our analysts consider to be pertinent for ratings in the gas pipeline sector. Our ratings incorporate qualitative considerations and factors that do not lend themselves to a transparent presentation in a scorecard format. The scorecard represents a decision to avoid greater complexity that would result in scorecard-indicated outcomes that map more closely to actual ratings, in favor of a simpler and more transparent presentation of the factors that are most important for ratings in this sector most of the time.

This report includes the following sections:

- » About the Rated Universe: an overview of the gas pipeline sector;
- » About This Rating Methodology: a description of our rating methodology;
- » Discussion of the Key Scorecard Factors: a detailed explanation of each of the factors;
- » Limitations of the Scorecard and Other Rating Considerations: comments on the rating methodology's limitations, including a discussion of other considerations that are not included in the scorecard;
- » Appendix: an exhibit of the full scorecard.

## About the Rated Universe

Gas pipelines are a relatively homogeneous group in terms of business model (single-asset operating company engaged in gas transmission) and regulatory framework (many pipelines typically operate under stable and well-established regulatory regimes). The group includes holding companies, but comprises primarily single-asset operating companies. For holding companies, actual ratings may be lower than methodology scorecard-indicated outcomes because of the structural subordination of the holding company debt to the operating company debt.

Pipelines covered under this global methodology transport natural gas over long distances, crossing state, provincial, or international borders, and as such, are regulated at the federal level. They can be of national importance. Many of the pipelines operate in stable regulatory frameworks that have been liberalized, with a history of operating under private ownership. Unlike the regulated utilities or networks we cover in our other methodologies, the pipelines in this methodology typically do not hold a monopoly franchise and could be subject to some competition. Although regulators oversee the rates pipelines charge, their revenues are determined more by commercial contracts with customers, rather than by revenue requirements set by regulators.

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on [www.moodys.com](http://www.moodys.com) for the most updated credit rating action information and rating history.

### Other Gas-Related Rating Methodologies

The natural gas industry is not a single, homogenous sector, but rather comprises a large collection of companies performing a range of different functions, further differentiated by regulation and ownership. Some entities are vertically integrated to perform the full range of natural gas activities, while others have 'unbundled' to capture only a portion of the gas value chain or otherwise conduct gas-related operations as part of a wider diversified business.

Accordingly, we have developed several different methodologies to address the range of natural gas-related businesses and credits, of which this methodology is just one.<sup>2</sup>

## About This Rating Methodology

Our approach to rating gas pipelines, as outlined in this methodology, incorporates the following steps.

### 1. Identification of the Key Scorecard Factors

The scorecard in this rating methodology focuses on four broad scorecard factors. Certain broad factors are comprised of sub-factors that provide further detail.

FIGURE 1

#### Natural Gas Pipelines

| Broad Scorecard Factors             | Factor Weighting | Sub-Factors                          | Sub-factor Weighting |
|-------------------------------------|------------------|--------------------------------------|----------------------|
| Factor 1: Market Position           | 15%              | Demand Growth                        | 5%                   |
|                                     |                  | Competition                          | 5%                   |
|                                     |                  | Volume Risk & Throughput Trend       | 5%                   |
| Factor 2: Quality of Supply Sources | 10%              |                                      | 10%                  |
| Factor 3: Contract Quality          | 30%              | Firm Revenues                        | 10%                  |
|                                     |                  | Contract Life                        | 10%                  |
|                                     |                  | Shipper Quality / Recontracting Risk | 10%                  |
| Factor 4: Financial Strength        | 45%              | FFO / Int (1 yr)                     | 15%                  |
|                                     |                  | FFO / Debt (1 yr)                    | 15%                  |
|                                     |                  | RCF/ Debt (1 yr)                     | 15%                  |
| <b>Total</b>                        | <b>100%</b>      | <b>Total</b>                         | <b>100%</b>          |

### 2. Measurement or Estimation of the Key Scorecard Factors

We explain below how we generally calculate or estimate the sub-factors for each scorecard factor and also weigh each of these individual sub-factors. We also provide a rationale for using each sub-factor. The information used in assessing the sub-factors is generally found in or calculated from information in financial statements, derived from other observations, or estimated by our analysts.

Our ratings are forward-looking and incorporate our expectations for future financial and operating performance. We use both historical and projected financial results in the rating process. Historical results help us understand patterns and trends for a company's performance as well as for peer comparison. We

<sup>2</sup> For more information, see our methodologies for regulated electric and gas utilities, electric and gas networks, and midstream energy. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

use historical data (in most cases, the last 12 months of reported results) in the scorecard. All of the quantitative credit metrics incorporate Moody's standard adjustments to the financial statements.

### 3. Mapping Factors to the Rating Categories

After estimating or calculating each sub-factor, we map the outcomes for each of the sub-factors to a broad Moody's rating category (Aaa, Aa, A, Baa, Ba, B, or Caa, also called alpha categories).

### 4. Determining the Overall Scorecard-Indicated Outcome<sup>3</sup>

To determine the overall scorecard-indicated outcome, we convert each of the sub-factor scores into a numeric value based upon the scale below.

FIGURE 2

#### Scorecard-Indicated Outcome

| Aaa | Aa | A | Baa | Ba | B  | Caa |
|-----|----|---|-----|----|----|-----|
| 1   | 3  | 6 | 9   | 12 | 15 | 18  |

The numerical score for each sub-factor is multiplied by the weight for that sub-factor with the results then summed to produce a composite weighted-factor score. The composite weighted factor score is then mapped back to an alphanumeric rating based on the ranges in the table below. For example, an issuer with a composite weighted factor score of 8.2 would have a Baa1 scorecard-indicated outcome.

| Scorecard-Indicated Outcome | Aggregate Weighted Total Factor Score |
|-----------------------------|---------------------------------------|
| Aaa                         | $x < 1.5$                             |
| Aa1                         | $1.5 \leq x < 2.5$                    |
| Aa2                         | $2.5 \leq x < 3.5$                    |
| Aa3                         | $3.5 \leq x < 4.5$                    |
| A1                          | $4.5 \leq x < 5.5$                    |
| A2                          | $5.5 \leq x < 6.5$                    |
| A3                          | $6.5 \leq x < 7.5$                    |
| Baa1                        | $7.5 \leq x < 8.5$                    |
| Baa2                        | $8.5 \leq x < 9.5$                    |
| Baa3                        | $9.5 \leq x < 10.5$                   |
| Ba1                         | $10.5 \leq x < 11.5$                  |
| Ba2                         | $11.5 \leq x < 12.5$                  |
| Ba3                         | $12.5 \leq x < 13.5$                  |
| B1                          | $13.5 \leq x < 14.5$                  |
| B2                          | $14.5 \leq x < 15.5$                  |
| B3                          | $15.5 \leq x < 16.5$                  |

<sup>3</sup> In general, the scorecard-indicated outcome is oriented to the Corporate Family Rating (CFR) for speculative-grade issuers and the senior unsecured rating for investment-grade issuers. For issuers that benefit from ratings uplift due to parental support, government ownership or other institutional support, the scorecard-indicated outcome is oriented to the baseline credit assessment. For more information, see our cross-sector methodology for government-related issuers. Individual debt instrument ratings also factor in decisions on notching for seniority level and collateral. The documents that provide broad guidance for such notching decisions are the rating methodology on loss given default for speculative-grade non-financial companies, the methodology for notching corporate instrument ratings based on differences in security and priority of claim, and the methodology for assigning short-term ratings. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

| Scorecard-Indicated Outcome | Aggregate Weighted Total Factor Score |
|-----------------------------|---------------------------------------|
| Caa                         | $x \geq 16.5$                         |

## 5. Limitations of the Scorecard and Other Rating Considerations

This section discusses limitations in the use of the scorecard to map against actual ratings and additional factors that are not included in the scorecard that can be important in determining ratings.

### Discussion of the Key Scorecard Factors

Our analysis of gas pipelines focuses on four broad factors:

1. Market Position
2. Quality of Supply Sources
3. Contract Quality
4. Financial Strength

#### Factor 1: Market Position

##### Why It Matters

Market Position gauges the level of diversity in a pipeline's demand markets and the potential for internal growth. A strong economy and population growth increase demand for natural gas and for additional pipeline infrastructure, which would generate incremental revenues. Customers in such markets are more likely to renew their contracts. Access to a number of substantial markets reduces a pipeline's vulnerability to a downturn in the economy in a particular region as well as sensitivity to the basis differential between any two points, improving the value of a pipeline's capacity.

Market Position is important because unlike regulated electric and gas utilities and networks, pipelines can be exposed to a measure of competition with other pipelines. They typically do not hold a regulated monopoly position or a license to serve a particular franchise, and may exist in a region served by one or more other pipelines.

The level of competition could rise where gas flow patterns and throughput are shifting due to new supply basins and pipeline expansions. In this regard, pipelines with a large, diverse system with access to multiple alternative markets have more flexibility to navigate the competitive landscape. Additionally, owning storage facilities and providing premium ancillary services could help a pipeline maintain its market position.

##### How We Measure Demand Growth For the Scorecard

We measure Demand Growth by the scale, diversity, and the economic health of the end-markets served. A strong economy coupled with population growth create the need for more natural gas and pipeline infrastructure. In addition, government policies and existing gas delivery infrastructure could enable or hinder gas consumption. The population in the end-market is one proxy of Demand Growth.

##### How We Measure Competition For the Scorecard

Pipelines face varying degrees of competition in the markets to which they deliver. A pure monopoly could conceivably score a Aaa, but a government-owned monopoly pipeline could be ranked as Aa or lower depending on whether it faces competition in serving international gas markets. Nevertheless, the high

costs and logistical infeasibility of connecting to an alternative pipeline make many customers and markets captive to certain pipelines.

#### How We Measure Volume Risk & Throughput Trend for the Scorecard

The Volume Risk & Throughput Trend sub-factor is measured in terms of variability in annual throughput volumes. Sustaining exceptional throughput growth that would merit a Aaa would typically be unusual, since pipelines have a finite capacity, and would entail an extraordinary type of expansion.

## FACTOR 1

**Natural Gas Pipelines**

| Factor 1              | Sub-Factor                        | Weight | Aaa  | Aa  | A   | Baa   | Ba   | B  | Caa   |
|-----------------------|-----------------------------------|--------|--|---|---|---|--|--|---|
| Market Position (15%) | a) Demand Growth                  | 5%     | Exceptionally large, diverse, developed economic base and end-market, e.g., population >25,000,000                           | Exceptionally large, diverse, developed economic base and end-market, e.g., population >20,000,000                      | Very large, diverse, developed economic base and end-market, e.g., with population >15,000,000                          | Large, diverse economic base and end-market that is either developed/ mature or developing/growing, e.g., population >5,000,000     | Medium-sized economic base and end-market that is either developed/ mature or undeveloped/growing, e.g., population >1,000,000 | Small economic base and end-market that is either developed/ declining or undeveloped/growing, e.g., population >500,000 | Very small economic base and end-market that is declining or undeveloped, e.g., population <500,000 |
|                       | b) Competition                    | 5%     | No competition; no change in foreseeable future.   | Very limited competition; no change in foreseeable future.  | Well-established and stable competitive environment; little change in foreseeable future.                               | Stable competitive environment, but competition may intensify over the long term with gradual impact.                               | Competitive environment; may intensify over the medium term with gradual impact.   | Changing competitive environment; likely to decrease margins over the medium term.                                       | Rapidly changing competitive environment; likely to decrease margins over the short term.           |
|                       | c) Volume Risk & Throughput Trend | 5%     | Nil long-term volume risk; exceptionally strong commercial outlook, e.g., sustainable 50% increase in throughput over 3 yrs. | Modest long-term volume risk; strong commercial outlook, e.g. sustainable 30% to 50% increase in throughput over 3 yrs. | Modest medium-term volume risk; good commercial outlook, e.g. sustainable 10% to 30% increase in throughput over 3 yrs. | Limited medium-term volume risk; good commercial outlook; pipe full or moderately increasing throughput, e.g. 0% to 10% over 3 yrs. | Material medium-term volume risk; steadily decreasing throughput, e.g. 0% to -25% over 3 yrs.                                  | Significant near-term volume risk; rapidly decreasing or uncertain throughput, e.g. -25% to -50% over 3 yrs.             | Extraordinarily decreasing or uncertain throughput, e.g. -50% or more over 3 yrs.                   |

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## Factor 2: Quality of Supply Sources

### Why It Matters

Access to large, diverse, and growing gas supplies is important in reducing a pipeline's vulnerability to a downturn in drilling activity in a particular region or by a particular producer, to supply disruptions caused by extreme weather, and to the natural declines in gas reserves over time.

Because gas is a depleting resource, pipelines must have continual access to new supply as a means to offset natural declines in volume and to sustain demand for their services. In the supply area, substantial and growing production thus enhances the value of a pipeline's capacity. Ownership of numerous interconnects with other pipelines provides more supply (as well as market) options for shippers and raises the value of a pipeline's capacity. Attractive supply markets imply organic expansion opportunities and, by extension, revenue growth to mitigate rising costs.

With the surge in shale gas and oil development, assessments of future production growth and the potential size of those developments are more dynamic. Hydraulic fracturing and horizontal drilling techniques are being improved and successfully applied to a growing legion of unconventional resource plays. These new supply areas have relatively short operating histories, which makes it more difficult to gauge their long-term growth potential with any great certainty. In addition, improved technologies are accelerating shifts in drilling activity from one area to another, further casting uncertainty as to the trajectory in future production volumes.

### How We Measure Quality of Supply Sources for the Scorecard

The criteria we consider include the size and diversity of a pipeline's sources of supply and production volume trends. An indicator of Quality of Supply Sources is annual production volume in a supply region in terms of billion cubic feet per annum (BCF p.a.). Areas of substantial production that have superior access to markets are viewed more favorably as supporting future throughput on the pipeline and the value of its capacity.



## FACTOR 2

**Natural Gas Pipelines**

| Factor 2                       | Sub-Factor    | Weight | Aaa   | Aa   | A   | Baa  | Ba  | B   | Caa   |
|--------------------------------|---------------|--------|---|--|---|--|---|---|---|
| Quality of Supply Source (10%) | Supply Source | 10%    | Numerous supply areas with exceptionally high production e.g., >20,000 BCF p.a. | Numerous supply areas with very high production, e.g., >10,000BCF p.a. | Several supply areas with very high production, e.g., >5,000 BCF p.a. (or >1,000 BCF p.a. with very strong growth outlook); excellent access to markets | Some diversity in supply areas with substantial production, e.g., >1,000 BCF p.a. (or >500 BCF p.a. with very strong growth outlook); reasonable access to markets | Concentration in supply areas with moderate production, e.g., >500 BCF p.a. (or >250 BCF p.a. with strong growth outlook); some limitation in access to markets | Reliance on supply area with low/declining production, e.g., >250BCF p.a. | Reliance on supply area with very low/fast declining production, e.g., <250BCF p.a. |

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### Factor 3: Contract Quality

#### Why It Matters

Although regulators may set tariffs that pipelines can charge, it is up to the pipeline to secure contracts with customers in order to generate revenue. Contract Quality thus is a reflection of how customers value a pipeline's services, and consequently, carries the highest weighting among the three qualitative factors in the scorecard.

It is not unusual for a few shippers to account for a majority of a gas pipeline's revenues. Concentration risk can be mitigated, however, if those shippers are investment-grade utilities that are physically connected to the pipeline, thus effectively captive to it and more likely to renew. Some pipelines have been built for E&P companies that for the most part have had lower credit quality and a less certain long-term commitment to a pipeline than traditional utility shippers have had. Marketers typically have a short-term orientation and are less likely to commit long term under firm contracts.

Unless they benefit from some form of monopoly, pipelines could be subject to competition, so in order to maintain their market share and renew contracts at reasonable rates, they must innovate and provide reliable, cost-competitive services to suit their customers' needs. Contract renewal risk exists; however, pipelines typically have had successful records in getting their contracts renewed.

#### How We Measure Firm Revenues For the Scorecard

We measure the Firm Services sub-factor through the percentage of total revenues or capacity that is contracted for firm gas transportation and storage services. A positive indicator is a high proportion of revenues from firm services, rather than interruptible and other services that are paid only when used, therefore less predictable and more market-driven.

#### How We Measure Contract Life for the Scorecard

Contract Life is the weighted average number of years remaining on a pipeline's contracts.

#### How We Measure Shipper Quality / Re-contracting Risk for the Scorecard

We may use the weighted average rating of the top shippers as a proxy for Shipper Quality. These top shippers usually account for the majority of the revenues. The rest of the shippers may be numerous and individually comprise immaterial portions of revenues, so that the pipeline would be almost indifferent to a contract disruption among these smaller shippers.

We estimate Re-contracting Risk by assessing how reliant major customers are to the pipeline, whether any viable alternative pipeline exists, and what the customers' long-term strategic interest is in holding that capacity.

## FACTOR 3

**Natural Gas Pipelines**

| Factor 3               | Sub-Factor                               | Weight | Aaa   | Aa   | A  | Baa  | Ba   | B   | Caa   |
|------------------------|--|--------|---|--|--|--|--|---|---|
| Contract Quality (30%) | a) Firm Revenues                         | 10%    | Firm agreements comprise 100% of revenues or capacity.  | Firm agreements comprise 90 < 100% of revenues or capacity.  | Firm agreements comprise 80 < 90% of revenues or capacity.   | Firm agreements comprise 70 < 80% of revenues or capacity.   | Firm agreements comprise 60 < 70% of revenues or capacity.                     | Firm agreements comprise 50 < 60% of revenues or capacity.                  | Firm agreements comprise < 50% of revenues or capacity.                       |
|                        | b) Contract Life                         | 10%    | Average remaining life of contract of > 30 yrs.   | Average remaining life of contract of 15 to 30 yrs.  | Average remaining life of contract of 7 to 15 yrs.   | Average remaining life of contract of 5 to 7 yrs.  | Average remaining life of contract of 3 to 5 yrs.                              | Average remaining life of contract of 2 to 3 yrs.                           | Average remaining life of contract of < 2 yrs.                                |
|                        | c) Shipper Quality / Re-contracting Risk | 10%    | Well-diversified portfolio of longstanding shippers with a weighted average rating of Aaa; certain to renew contracts | Well-diversified portfolio of longstanding shippers with a weighted average rating of Aa; highly likely to renew contracts | Reasonably diverse portfolio of longstanding shippers with a weighted average rating of A; likely to renew contracts | Concentrations in some shippers with a weighted average rating of Baa; a few may not renew contracts | Shippers with a weighted average rating of Ba; several may not renew contracts | Shippers with a weighted average rating of B; some will not renew contracts | Shippers with a weighted average rating of Caa; many will not renew contracts |

## Factor 4: Financial Strength

### Why It Matters

Natural gas transmission is a regulated, asset-based business. Financial strength is necessary for a pipeline to attract capital at a reasonable cost to maintain competitive cost-of-service rates and to reinvest in the business. Older pipelines will need to make refurbishments to ensure their safety and to meet environmental requirements.

As single-asset businesses, the pipelines' financial statements tend to be straightforward; their capital structures, simple. Because they do not engage in the gas supply function, changes in working capital and regulatory assets and liabilities are less significant than they are typically for regulated utilities.

Once constructed, a pipeline needs little maintenance capital, so that they tend to generate excess cash flow absent any expansion projects. Generally, pipelines retain earnings to manage their capital structure within their targeted range and upstream free cash flow in the form of dividends and inter-company advances to their parent companies.

Many pipelines are privately-owned subsidiaries, so that their dividends can be irregular if, for example, they are self-financing a capital project. In the US, however, pipelines are typically owned by publicly traded master limited partnerships (MLPs), which promise high payouts to their equity holders. Consequently, a pipeline's dividends may become more of a set cash requirement under MLP ownership. This methodology update adds the retained cash flow (funds flow from operations minus dividends) to debt ratio to capture a pipeline's financial flexibility and its owner's financial strategy.

Because the North American pipeline industry has experienced a period of flux, the current last 12 months' financial results are typically a better measure of performance than when 3-year historical averages were sufficient to cover an industry in steady-state. We will factor into our ratings changes in circumstances that could have a material effect on a pipeline's future results, for example, a rate case, an addition or a loss of a significant contract, an expansion project, a new financing, or new ownership.

### How We Measure Financial Strength for the Scorecard

The funds flow from operations (FFO) interest coverage ratio is calculated by dividing annual FFO (net income plus non-cash items such as depreciation and deferred taxes excluding working capital changes) plus interest expense by interest expense.

The FFO to debt ratio is calculated by dividing annual FFO by total debt.

Retained cash flow to debt ratio is calculated by dividing annual FFO less dividends by total debt.

#### FACTOR 4

#### Natural Gas Pipelines

| Factor 4                 | Sub-Factor                          | Weight | Aaa   | Aa       | A        | Baa      | Ba       | B       | Caa  |
|--------------------------|-------------------------------------|--------|-------|----------|----------|----------|----------|---------|------|
| Financial Strength (45%) | a) FFO + Interest / Interest (1 yr) | 15%    | ≥ 7x  | 6 - 7x   | 5 - 6x   | 4 - 5x   | 3 - 4x   | 2 - 3x  | < 2x |
|                          | b) FFO / Debt (1 yr)                | 15%    | ≥ 60% | 40 - 60% | 25 - 40% | 15 - 25% | 10 - 15% | 5 - 10% | < 5% |
|                          | c) FFO - Dividends / Debt (1 yr)    | 15%    | ≥ 35% | 25 - 35% | 18 - 25% | 12 - 18% | 6 - 12%  | 0 - 6%  | < 0% |

## Limitations of the Scorecard and Other Rating Considerations

The rating methodology scorecard represents a decision to favor simplicity that enhances transparency and to avoid greater complexity that would enable the scorecard to map more closely to actual ratings. Accordingly, the four factors in the scorecard do not constitute an exhaustive treatment of all the considerations that are important for ratings of entities in the gas pipeline sector. In addition, our ratings incorporate expectations for future performance, while the financial information that is used for mapping in the scorecard is mainly historical. In some cases, our expectations for future performance may be informed by confidential information that we cannot publish or otherwise disclose. In other cases, we estimate future results based upon past performance, industry trends or other factors. In either case, predicting the future is subject to the risk of substantial inaccuracy.

Assumptions that may cause our forward-looking expectations to be incorrect include unanticipated changes in any of the following factors: the macroeconomic environment and general financial market conditions, sector trends, new technology, regulatory and legal actions, as well as management's appetite for additional debt to finance capital expenditures.

In choosing metrics for this rating methodology scorecard, we did not explicitly include certain important factors that are common to all gas pipelines, such as the quality and experience of management, assessments of governance and the quality of financial reporting and information disclosure. The assessment of these factors can be highly subjective and vary over time. Therefore, ranking these factors by rating category in a scorecard would suggest too much precision in the relative ranking of particular issuers against all other issuers that are rated in various industry sectors. We note, however, these excluded factors do affect those that are included the scorecard (such as management experience affecting the revenue performance of a pipeline over time).

Ratings may include additional factors that are difficult to quantify or that have a meaningful effect in differentiating credit quality only in some cases, but not all. Such factors include substantial leverage at the pipeline's parent company or ownership by an MLP. Changes in regulation, affecting tariffs, safety and environmental requirements as well as changes to drilling technology and areas of natural gas production, changing gas flow patterns on competing pipelines, and macroeconomic trends also affect ratings. While these are important considerations, it is not possible to precisely express these in the rating methodology scorecard without making the scorecard excessively complex and significantly less transparent. Ratings may also reflect circumstances in which the weighting of a particular factor will be substantially different from the weighting suggested by the scorecard.

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## Other Rating Considerations

We consider other factors in addition to those discussed in this report, but in most cases understanding the framework presented herein will enable a good approximation of our view on the credit quality of issuers in the gas pipeline sector. We consider additional factors, including future operating and financial performance, that may deviate from historic performance, the quality of management, governance, financial controls, event risk, and seasonality. The analysis of these factors remains an integral part of our rating process.

### Management Quality

The quality of management is an important factor supporting the credit strength of a gas pipeline. We normally meet with the pipeline owner's senior executives to assess management's business strategies, policies, and philosophies, and evaluate management performance relative to performance of competitors and our projections as well as changes in technology and patterns of usage.

An established managerial record provides us with insight into management's likely future performance in stressed situations. This can be an indicator of management's tendency to stray significantly from what may be an effective current business philosophy, or conversely, to adopt changes where they are warranted by new sets of circumstances.

### Financial Controls

We rely on the accuracy of audited financial statements to assign and monitor ratings. Such accuracy is only possible when companies have sufficient internal controls, including centralized operations, and consistency in accounting policies and procedures.

Weaknesses in the overall financial reporting processes, financial report restatements or delays in producing audited financial statements can be indications of a potential breakdown in internal controls.

### Liquidity Management

Liquidity is usually not a concern for pipelines, which are typically stable generators of free cash flow, requiring little working capital and capital investment. Pipelines therefore often do not have their own bank lines, which would provide an alternative source of liquidity. Instead, they keep cash on hand and rely on money pool arrangements with their parent companies. Liquidity will be particularly important if the pipeline is undergoing a large, extended capital project, or if the parent company (oftentimes an MLP) has capital requirements of its own that make cash upstreamed from the pipeline, in form of both dividends and advances, a more fixed cash requirement.

### Event Risk

We also recognize the possibility that an unexpected event could cause a sudden and sharp decline in an issuer's fundamental creditworthiness. Typical special events include a change in ownership and in the credit quality of that owner, a recapitalization, or an unexpected change in tariffs or terms of a material contract.

### Notching Considerations

While the factors and sub-factors within the scorecard are designed to include the key rating drivers reflecting the fundamental risks of gas pipelines, the scorecard alone cannot capture some of the wide-ranging factors that may impact the credit rating.

The notching factors are designed to adjust, either upwards or downwards, a pipeline's scorecard-indicated outcome based on other considerations that are not fully reflected in the scorecard. Based on our analysis of an issuer's particular strengths and weaknesses, this may lead to notching, such that the rating differs from the scorecard-indicated outcome. Unless specifically provided for in this methodology, the extent of notching may in some cases exceed one notch since these considerations can encompass a wide range of potential credit impact.

### Project Finance: Rating Uplift from Structural Enhancements

Project finance may be a viable option for financing pipelines being developed currently or in the future. We believe that in the infrastructure sector in general, structural enhancements provided to financial creditors may provide valuable protection and be a source of rating uplift when compared to those issuers that do not grant such protections. These factors were recognized and articulated within a debt rating framework in our methodologies for regulated electric and gas networks, operational toll roads and operational airports outside the US.<sup>4</sup> We have employed the same factors in the same way within this rating methodology. The defined sources of ratings uplift, their potential characteristics and their measurement are identical in these methodologies and are as set out below.

We have classified the sources of rating uplift from creditor protection into three categories:

- a) Event Risk Protection
- b) Debt Structure and Liquidity Protection
- c) Control Afforded to Creditors

In each of these categories, we look at specific concessions made to creditors and score their effectiveness on a scale of five grades: "none"; "low"; "medium"; "high"; and "very high". Each grade is worth a fraction of or a whole rating notch ("none" = 0%; "low" = 25%; "medium" = 50%; "high" = 75%; and "very high" = 100%). In terms of the scorecard framework output, the sum of the scores of these categories is then rounded to produce 0 to 2 rating notches of uplift.

These categories of protection are fairly standard in project financings. Scoring the effectiveness of each of these protections for specific pipelines will be judged relative to comparable project financings. The effectiveness of these enhancements could also be re-calibrated over time, for example, giving more uplift during construction when the risks are higher, but less when the pipeline has established operations and is less distinguishable from corporate finance pipelines.

Debt structural features will be assessed in the context of the legal jurisdiction relevant to the issuer, as the value of certain contractual arrangements (e.g., security) may vary from jurisdiction to jurisdiction.

#### a) Event Risk Protection

In this category, we typically review restrictive covenants including:

- i. Restrictions on permitted business outside the core regulated business
- ii. Restrictions on acquisitions/disposals
- iii. Restrictions on investments
- iv. Restrictions on additional indebtedness

Project and other structured financings typically incorporate ring-fencing provisions designed to insulate the credit quality of the pipeline from that of its wider corporate family or shareholders. These provisions may be crucial in order for the rating of the pipeline to reflect exclusively its credit quality, assessed as described in this rating methodology. However, they do not enhance the pipeline's stand-alone credit quality (serving only to protect it) and therefore are not listed as a source of rating uplift.

#### b) Debt Structure and Liquidity Protection

Structural enhancements in this category address financial risks associated with liquidity, interest rate and refinancing risk. Typical arrangements include:

- i. Dedicated cash reserves to cover specific costs, for example liquidity facility covering scheduled interest payments, often for the next 6 months
- ii. No material refinancing risk (e.g., benefits of amortizing debt)

The different arrangements above may have different levels of bearing on our assessment of the effectiveness of creditor protection in this category, depending on the specific circumstances of the issuer. A fully amortizing debt structure, typical of project financings and typically associated with adequate reserving arrangements, is typically regarded as necessary to achieve a score of "very high" in this category.

### c) Control Afforded to Creditors

Among the most typical structural features, financial covenants and security arrangements are included in this category, as they provide creditors with a degree of control over the company's financial and business decisions in downturns, which are not enjoyed under typical corporate funding arrangements. Specific structural features that we classify in this category include:

- i. Remedies to delay insolvency (e.g., security and intercreditor agreements, etc.).
- ii. Restrictions on payments and distribution lock-ups (e.g., if metrics deteriorate below minimum required parameters).
- iii. Frequent and regular reports of creditors' technical advisers to sanction base case validity and compliance with contractual and financial obligations.

As for the previous category (Debt Structure and Liquidity Protection), the whole package of structural enhancements is assessed to gauge the overall effectiveness. For example, independent validation of compliance with financial ratio covenants may be an important consideration in assessing the effectiveness of such covenants. Creditor step-in rights should be specifically permitted under the legal framework as well as the finance documents.

We give value to security arrangements – typically in respect of the shares in a pipeline entity and project documents – as one albeit critical element of a wider package of concessions designed to improve creditors' ability to detect early potential problems and rectify them if possible (in the first instance by retaining cash surpluses within the company), or, if remedial action is not possible or fails, to maximize recovery prospects. As normally security is not allowed or is not enforceable on the regulated assets, a rating uplift is not generally achievable simply by granting security.

In conclusion, structural enhancements can deliver up to two notches of uplift from a fundamental rating if they are very comprehensive and effective. Sources of creditor protection can be regarded as very restrictive by management and shareholders as they can significantly constrain management's ability to pursue strategies and policies that they may perceive will enhance shareholder value, even though they may potentially result in higher risks for the company. Consequently, in many cases, protective arrangements granted to creditors are not as fully comprehensive as those required to obtain the maximum possible uplift.

<sup>4</sup> A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.



## Appendix: Natural Gas Pipeline Methodology Scorecard

### FACTOR 1

#### Natural Gas Pipelines

| Factor 1              | Sub-Factor                        | Weight | Aaa  | Aa  | A   | Baa   | Ba  | B   | Caa   |
|-----------------------|-----------------------------------|--------|--|---|---|---|---|---|---|
| Market Position (15%) | a) Demand Growth                  | 5%     | Exceptionally large, diverse, developed economic base and end-market, e.g., population >25,000,000                           | Exceptionally large, diverse, developed economic base and end-market, e.g., population >20,000,000                      | Very large, diverse, developed economic base and end-market, e.g., with population >15,000,000                          | Large, diverse economic base and end-market that is either developed/mature or developing/growing, e.g., population >5,000,000      | Medium-sized economic base and end-market that is either developed/mature or undeveloped/growing, e.g., population >1,000,000 | Small economic base and end-market that is either developed/declining or undeveloped/growing, e.g., population >500,000 | Very small economic base and end-market that is declining or undeveloped, e.g., population <500,000 |
|                       | b) Competition                    | 5%     | No competition; no change in foreseeable future.   | Very limited competition; no change in foreseeable future.  | Well-established and stable competitive environment; little change in foreseeable future.                               | Stable competitive environment, but competition may intensify over the long term with gradual impact.                               | Competitive environment; may intensify over the medium term with gradual impact.  | Changing competitive environment; likely to decrease margins over the medium term.                                      | Rapidly changing competitive environment; likely to decrease margins over the short term.           |
|                       | c) Volume Risk & Throughput Trend | 5%     | Nil long-term volume risk; exceptionally strong commercial outlook, e.g., sustainable 50% increase in throughput over 3 yrs. | Modest long-term volume risk; strong commercial outlook, e.g. sustainable 30% to 50% increase in throughput over 3 yrs. | Modest medium-term volume risk; good commercial outlook, e.g. sustainable 10% to 30% increase in throughput over 3 yrs. | Limited medium-term volume risk; good commercial outlook; pipe full or moderately increasing throughput, e.g. 0% to 10% over 3 yrs. | Material medium-term volume risk; steadily decreasing throughput, e.g. 0% to -25% over 3 yrs.                                 | Significant near-term volume risk; rapidly decreasing or uncertain throughput, e.g. -25% to -50% over 3 yrs.            | Extraordinarily decreasing or uncertain throughput, e.g. -50% or more over 3 yrs.                   |

### FACTOR 2

#### Natural Gas Pipelines

| Factor 2                       | Sub-Factor    | Weight | Aaa   | Aa  | A   | Baa  | Ba  | B  | Caa  |
|--------------------------------|---------------|--------|---|---|---|--|---|--|--|
| Quality of Supply Source (10%) | Supply Source | 10%    | Numerous supply areas with exceptionally high production e.g., >20,000 BCF p.a. | Numerous supply areas with very high production, e.g., >10,000 BCF p.a. | Several supply areas with very high production, e.g., >5,000 BCF p.a. (or >1,000 BCF p.a. with very strong growth outlook); excellent access to markets | Some diversity in supply areas with substantial production, e.g., >1,000 BCF p.a. (or >500 BCF p.a. with very strong growth outlook); reasonable access to markets | Concentration in supply areas with moderate production, e.g., >500 BCF p.a. (or >250 BCF p.a. with strong growth outlook); some limitation in access to markets | Reliance on supply area with low/declining production, e.g., >250 BCF p.a. | Reliance on supply area with very low/fast declining production, e.g., <250 BCF p.a. |

## FACTOR 3

**Natural Gas Pipelines**

| Factor 3               | Sub-Factor                               | Weight | Aaa   | Aa   | A  | Baa  | Ba   | B   | Caa   |
|------------------------|--|--------|---|--|--|--|--|---|---|
| Contract Quality (30%) | a) Firm Revenues                         | 10%    | Firm agreements comprise 100% of revenues or capacity.  | Firm agreements comprise 90 < 100% of revenues or capacity.  | Firm agreements comprise 80 < 90% of revenues or capacity.   | Firm agreements comprise 70 < 80% of revenues or capacity.   | Firm agreements comprise 60 < 70% of revenues or capacity.                     | Firm agreements comprise 50 < 60% of revenues or capacity.                  | Firm agreements comprise < 50% of revenues or capacity.                       |
|                        | b) Contract Life                         | 10%    | Average remaining life of contract of > 30 yrs.   | Average remaining life of contract of 15 to 30 yrs.  | Average remaining life of contract of 7 to 15 yrs.   | Average remaining life of contract of 5 to 7 yrs.  | Average remaining life of contract of 3 to 5 yrs.                              | Average remaining life of contract of 2 to 3 yrs.                           | Average remaining life of contract of < 2 yrs.                                |
|                        | c) Shipper Quality / Re-contracting Risk | 10%    | Well-diversified portfolio of longstanding shippers with a weighted average rating of Aaa; certain to renew contracts | Well-diversified portfolio of longstanding shippers with a weighted average rating of Aa; highly likely to renew contracts | Reasonably diverse portfolio of longstanding shippers with a weighted average rating of A; likely to renew contracts | Concentrations in some shippers with a weighted average rating of Baa; a few may not renew contracts | Shippers with a weighted average rating of Ba; several may not renew contracts | Shippers with a weighted average rating of B; some will not renew contracts | Shippers with a weighted average rating of Caa; many will not renew contracts |

## FACTOR 4

**Natural Gas Pipelines**

| Factor 4                 | Sub-Factor                          | Weight | Aaa   | Aa       | A        | Baa      | Ba       | B       | Caa  |
|--------------------------|-------------------------------------|--------|-------|----------|----------|----------|----------|---------|------|
| Financial Strength (45%) | a) FFO + Interest / Interest (1 yr) | 15%    | ≥ 7x  | 6 - 7x   | 5 - 6x   | 4 - 5x   | 3 - 4x   | 2 - 3x  | < 2x |
|                          | b) FFO / Debt (1 yr)                | 15%    | ≥ 60% | 40 - 60% | 25 - 40% | 15 - 25% | 10 - 15% | 5 - 10% | < 5% |
|                          | c) FFO - Dividends / Debt (1 yr)    | 15%    | ≥ 35% | 25 - 35% | 18 - 25% | 12 - 18% | 6 - 12%  | 0 - 6%  | < 0% |

## Moody's Related Publications

Credit ratings are primarily determined by sector credit rating methodologies. Certain broad methodological considerations (described in one or more cross-sector rating methodologies) may also be relevant to the determination of credit ratings of issuers and instruments. A list of sector and cross-sector credit rating methodologies can be found [here](#).

For data summarizing the historical robustness and predictive power of credit ratings, please click [here](#).

For further information, please refer to *Rating Symbols and Definitions*, which is available [here](#).

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