

CREDIT OPINION

14 December 2020

Update

✓ Rate this Research

RATINGS

NET4GAS, s.r.o

Domicile	Czech Republic
Long Term Rating	Baa2
Type	LT Issuer Rating - Fgn Curr
Outlook	Stable

Please see the ratings section at the end of this report for more information. The ratings and outlook shown reflect information as of the publication date.

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NET4GAS, s.r.o

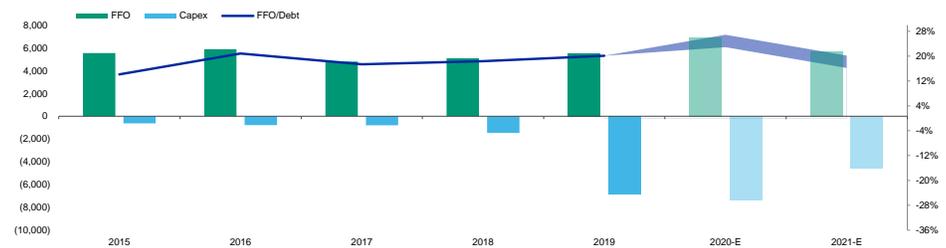
Update to credit analysis

Summary

The credit quality of [NET4GAS, s.r.o](#) (N4G, Baa2 stable) is underpinned by the company's position as the monopoly provider of gas transmission and transit services in the Czech Republic; its strategic location along the preferred route for shipping Russian gas to Western Europe; and its stable and predictable cash flows generated from long-term capacity ship-or-pay contracts, which underpin around 75%-80% of revenue, as well as regulated tariffs for domestic transmission activities, which account for the remaining 20%-25% of revenue.

N4G's credit quality is constrained by its significantly higher leverage than that of other European gas transit peers, in particular the Slovak pipeline owner [eustream, a.s.](#) (eustream [Baa2 stable]); partly funded through [SPP Infrastructure Financing B.V.](#), also rated Baa2 stable); significant customer concentration and associated geopolitical risks; and large capital investment projects to extend N4G's domestic transport as well as transit capacities through 2023. However, we note positively the shareholder commitment to provide equity support to the two main investment projects, leading to reduced funding risk, which in turn supports the current credit quality.

Exhibit 1  
**Stable credit metrics despite significant capital spending programme, supported by shareholders' equity commitment**  
FFO and capex in CZK millions (left-hand scale); FFO/debt (right-hand scale)



Forecast reflects Moody's estimates and not the view of the issuer.  
Sources: N4G's annual financial statements and Moody's Investors Service

## Credit strengths

- » Monopoly provider of gas transmission and transit services in the Czech Republic, with strategic location, among others, along the preferred routes for shipping Russian gas to Western Europe
- » Stable and predictable cash flow generation under long-term capacity ship-or-pay arrangements as well as regulated tariffs for domestic transmission activities
- » Prudent capital structure and leverage management aligned to investment life cycles

## Credit challenges

- » Relatively high leverage compared with other European gas transit peers
- » Significant customer concentration and associated geopolitical risks
- » Large capital investment projects over the next three years to build grid capacity, mitigated by significant equity injections from its shareholders

## Rating outlook

The stable outlook reflects our expectation that N4G's business and financial profiles will evolve in a relatively predictable fashion because of the stability of cash flows generated under long-term ship-or-pay capacity contracts as well as from monopoly-regulated domestic transmission network operations. It also takes account the supportive approach that shareholders are taking in the context of significant ongoing and upcoming capital investments.

## Factors that could lead to an upgrade

N4G's Baa2 ratings could be upgraded if the company's financial profile improved, with funds from operations (FFO)/debt in the mid-20s in percentage terms, while maintaining a business risk profile underpinned by stable and predictable cash flow; or the company were able to diversify its revenue base across a portfolio of strong counterparties.

## Factors that could lead to a downgrade

Downward pressure on the ratings could develop if N4G's credit metrics deteriorated below our expectations, in particular FFO/debt remaining below the midteens in percentage terms; geopolitical tensions affect the Russian main shipper's ability or willingness to comply with its ship-or-pay obligations; or there was a general shift towards a more aggressive financial policy.

## Key indicators

Exhibit 2

**NET4GAS, s.r.o**

The company exhibits stable and predictable metrics, underpinned by long-term ship-or-pay contracts

	Dec-16	Dec-17	Dec-18	Dec-19	12-18 months forward view
(FFO + Interest Expense) / Interest Expense	6.8x	8.6x	8.9x	8.7x	6x - 7x
FFO / Net Debt	21.2%	18.0%	19.3%	21.9%	17% - 20%
FFO / Debt	20.8%	17.4%	18.4%	20.1%	17% - 20%
RCF / Net Debt	9.7%	8.1%	18.1%	17.0%	-10% - -5%
RCF / Debt	9.6%	7.8%	17.2%	15.6%	-10% - -5%

All ratios are based on 'Adjusted' financial data and incorporate [Moody's Global Standard Adjustments for Non-Financial Corporations](#). Periods are financial year-end unless indicated otherwise. For definitions of Moody's most common ratio terms, please see the accompanying [User's Guide](#). Forward view reflects Moody's estimates and not the view of the issuer.

Source: *Moody's Financial Metrics*™

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.moody's.com](http://www.moody's.com) for the most updated credit rating action information and rating history.

## Profile

NET4GAS, s.r.o (N4G) is the owner and operator of the Czech gas transmission system. The company's core business consists of transporting gas, primarily sourced from Russia, to Western and Southern Europe under long-term contracts, generating around 77% of its CZK8.3 billion (around €310 million) revenue in 2019. It is also the regulated domestic gas transmission network operator under an unlimited licence, which accounts for the remaining revenue. Management expects the share of revenue generated from gas transit to remain relatively stable between 75% and 80% over the next five years, given the long-term nature of the gas transit contracts.

The company operates a network of more than 3,800 kilometres (km) of pipelines with a total capacity of up to 55 billion cubic metres (bcm) per year (in the East-West direction).

N4G's network serves flows not only along the East-West corridor, which had been the traditional route for Russian pipeline gas to Europe before the opening of Nord Stream, but also along the North-South corridor (N4G's wholly owned subsidiary BRAWA, a.s. owns the Gazelle pipeline, which provides the primary route for gas flows through the Czech transit network since its opening in 2013) and reverse West-East, with the following total capacities in each direction:

- » North–South (Brandov–Waidhaus) = around 1,070 giga-watt hours (GWh) per day, at around 34 bcm per annum
- » East–West (Lanzhot–Hora Sv. Kateriny + Waidhaus) = around 1,600 GWh per day, at around 52 bcm per annum
- » West–East (Brandov + Hora Sv. Kateriny–Lanzhot) = around 1,246 GWh per day, at around 40 bcm per annum

Exhibit 3

### Overview of the company's network and entry/exit capacities



The numbers in the map indicate the maximum daily capacity at each border station, and arrows indicate the direction of flow.

Source: Net4Gas 2018 bond prospectus

Annual transportation of natural gas amounts to around 45 bcm, including around 8-9 bcm for domestic use, and this gas is primarily shipped along the North-South and West-East routes.

N4G is directly wholly owned by NET4GAS Holdings, s.r.o., which in turn is owned 50% by Allianz Infrastructure Czech Holdco II S.a r.l., part of the wider Allianz group, and 50% by Borealis Novus Parent B.V., a subsidiary of OMERS Administration Corporation. The consortium of Allianz and OMERS acquired N4G from RWE AG in August 2013, and have since developed a track record of stable and supportive shareholding.

## Detailed credit considerations

### Strategic intermediate gas transit route for shipping Russian gas to Southern Europe

N4G's geographical location means that the company's network is in a key strategic location to ship Russian gas to its main customer base in Central, Western and Southern Europe. Specifically, the company's network connects the gas shipped through Nord Stream via Germany on the North-South route towards Southern Europe, and also allows for reverse flow to supply Ukraine, which has not taken any gas directly from Russia since 2016.

In comparison with its Slovak peer eustream, N4G is much less reliant on the East-West gas route through Ukraine and, with the opening of the first Nord Stream pipeline, started to see actual flows switching from the East-West route towards the North-South route in its network.

The planned addition of Nord Stream 2 (NS2) would increase flows along the company's West-East route from Germany (via the EUGAL onshore pipeline) through the Czech Republic via Slovakia into Austria and Italy. The construction of NS2, which was 94% completed at the time, came to a halt in late 2019 after the US government threatened sanctions on suppliers, leading to a withdrawal of the Swiss pipe-laying vessel operator Allseas. While the project is subject of an intense political debate within the European Union (EU) and between Germany and the US, we expect the pipeline to be completed over the next 12-18 months.

### Long-term ship-or-pay contracts underpin stability of cash flow ...

Most of N4G's revenue is generated from its international gas transit activities. Transit tariffs are subject to price cap regulation by the Czech Energy Regulatory Office (ERO), but volumes are contractually negotiated and depend on supply and demand requirements as well as geopolitical developments. Under long-term contracts, the tariffs determined at the outset will apply for the entire period of the contract and escalate annually by inflation.

N4G's current transit contract portfolio also includes fully negotiated tariffs, in particular, the long-term North-South flow contract on the Gazelle pipeline, running until December 2034.

The company's main transit contracts consist of the following:

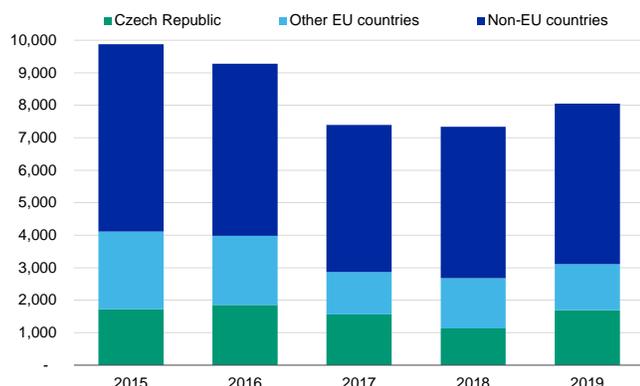
- » a contract for gas transit from Eastern Europe to Western Europe, expiring on 1 January 2022;
- » a contract for transit of Russian gas through the Gazelle Pipeline (north to south), expiring on 1 January 2035 (the Gazelle Contract); and
- » two contracts for gas transit from Western Europe to Eastern Europe, including one related to shipments of Russian gas through EUGAL in Germany via the Czech Republic towards Slovakia, which commenced in 2020 and will expire on 1 October 2039, and the second, smaller contract will expire on 1 October 2021.

With the exception of the Gazelle Contract, all of N4G's contracts are on a full ship-or-pay basis, with a capacity-weighted average remaining contract life of nearly 16 years as of December 2020. The long-dated nature of contracts underpins the company's stable and predictable cash flow, and has also insulated N4G from demand fluctuations resulting from the coronavirus pandemic.

### ... but customer concentration exposes N4G to geopolitical risks

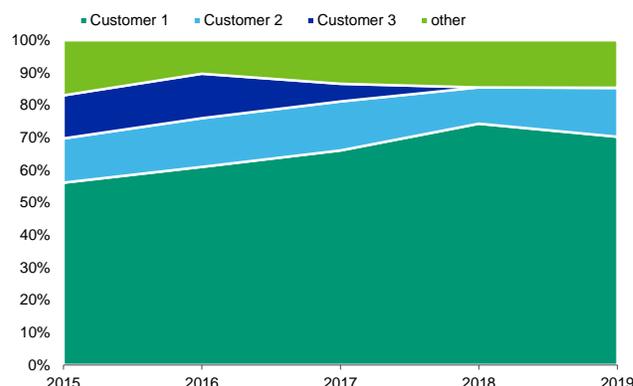
Most of N4G's revenue is generated from non-EU countries and is primarily concentrated in a single customer, namely Gazprom Export LLC, a 100% subsidiary of [Gazprom, PJSC](#) (Baa2 stable).

Exhibit 4  
Revenue split per geography  
Amounts in CZK millions



Source: N4G's annual financial statements

Exhibit 5  
Revenue split per customer



Source: N4G's annual financial statements

In 2019, Gazprom Export supplied a total of 199 bcm of gas to European countries. Western European countries and Turkey accounted for around 77% of the company's exports from Russia, while Central European states accounted for the remaining 23%.<sup>1</sup>

With the planned completion of the C4G project at the end of 2020, and assuming that international transit contracts with expiry dates through 2022 are not renewed or replaced with other short-, medium- or long-term contracts, N4G's exposure to a single customer will remain around 75%.

N4G's overall credit quality is thus constrained by counterparty concentration and the associated geopolitical tension. We do not believe that the core counterparty's credit quality should act as a direct cap on N4G's credit quality, given that alternative shippers could step in to use the company's transit networks. However, the shipment of gas is predicated on Russia's supply meeting Europe's demand, and the geopolitical risk resulting from this is reflected in our assessment of N4G's credit quality.

While ongoing tensions between Russia and Ukraine have, in contrast to the Slovak peer eustream, had limited impact on N4G's transported volumes to date, any future global sanctions on Russia may hurt the company's interactions with Russia and its companies.

### The regulatory regime governing domestic gas transmission for the period starting from 2021 continues to underpin the segment's solid revenue contribution

Domestic gas transmission activities account for around 20%-25% of N4G's revenue (compared with less than 5% for eustream) and are subject to a regulatory revenue cap, designed to provide an allowance for a return on the regulated asset base (RAB), regulatory depreciation and operating expenditure (with the last item being subject to adjustments for efficiency assumptions and price inflation).

The ERO was established on 1 January 2001 as the independent national regulator for energy networks. The regulator has set allowed returns under an RAB model for the past 10-15 years (since the start of the second regulatory period in 2005 for electricity transmission, and 2010 for gas transmission and energy distribution, as discussed below), a period similar to that for most of its mainland European peers.

Exhibit 6  
The fifth regulatory period for Czech electricity and gas networks will begin on 1 January 2021

Regulatory Period	1st Period	2nd Period	3rd Period	4th Period	5th Period
Timeline (original)	2001-2004	2005-2009	2010-14	2016-18	2021-2025
Timeline (extended)			by one year 2010-15	by two years 2016-20	

The ERO's decision, published on 11 January 2018, to extend the current regulatory period for Czech network operators by two years (until 31 December 2020), with all key parameters unchanged, was in line with its draft decision, which we view as credit positive.

Source: ERO

The Czech regulatory regime has established a track record of supportiveness, in particular with respect to cost and investment recovery and the level of allowed returns, compared with most other European regulated networks. The regulatory principles for the fifth period (RP5), published in June 2020 (see Exhibit 8), confirm the ERO's supportive approach and include various credit-positive adjustments for N4G:

- » The company's current RAB results from a revaluation back in 2009, with a starting value of 50% of the book values of the then-existing assets. These have been adjusted over time by adding actual investments and subtracting depreciation. Over the course of RP5, and in addition to the period's net growth through investments and depreciation, the RAB will be gradually adjusted upward to reach the assets' net book value by year-end 2025.
- » Operating expenses (Opex in Exhibit 8) within tariff decisions will be based on three-year rolling averages and include a profit-sharing mechanism as a new incentive (adjustments for efficiency targets and inflation remain).
- » Allocation of costs between transit and domestic transmission activities will be based on a capacity-weighted division of assets. Flow-based costs, namely for energy, will be subject to cost neutrality. Both changes contribute to transparency and revenue stability.

Exhibit 7

#### Summary comparison of key regulatory parameters for the fourth and fifth regulatory period

	Current period (2016-20)	Next period (2021-25)
Method	Revenue cap	Revenue cap
Length of period	5 years	5 years
RAB and depreciation	RAB adjusted for investment and depreciation; transit subject to allocation key	In addition to nominal investment, the RAB value will be gradually increased to match the book value under CZGAAP at the end of the 2025
Work-in progress and working capital	For transmission only, work in progress project in excess of CZK 500m can be included if construction >2 years and negative status of Development Fund (which compares long-term depreciation allowance and investment value over a period of 15 years from 2010); working capital not included	For transmission only, work in progress project in excess of CZK 500m can be included if construction >2 years and negative status of Development Fund (which compares long-term depreciation allowance and investment value over a period of 15 years from 2010); working capital not included
Opex	Base years 2012-13 average costs, adjusted by inflation and efficiency factor	Rolling three-year moving average (2017-19 reference years for 2021 allowance) updated for inflation and efficiency factors, with 50/50% profit sharing mechanism on a difference between actual and allowed costs.
Market factor	Adjusted for unexpected costs	To be maintained unchanged, but given three-year rolling average base is expected to be used less frequently.
Efficiency factor	General efficiency factor of around 1%, no company-specific factor	General efficiency factor set at 0.511% p.a., no company-specific factor
Quality incentives	Currently not used for gas	Currently not used for gas
WACC	Fixed for the entire period at 7.94% Marginal difference between gas and electricity (7.95%)	Fixed for the entire period at 6.43% Marginal difference between gas and electricity (6.54%)

Source: ERO

The allowed return, which is calculated as the weighted average cost of capital (WACC) multiplied by the year-average RAB, will be reduced in RP5 to 6.43% from the current 7.94%. This rate is at the upper end of our expectations and therefore credit positive. The main driver for the reduction is the updated cost of debt, as the calculation in Exhibit 9 shows.

With the determination of the new WACC, which is applicable throughout RP5, the Czech framework continues to provide an allowed return above the European average (see Exhibit 34 in our [Outlook 2021 on Regulated Networks in EMEA](#)), reflecting the ERO's legal obligation (under the Energy Act) to provide incentives to network companies to realise their investment plans.

Exhibit 8

The lower risk-free rate is a key driver for the lower WACC rates in the fifth period, compared with the current fourth period

	4th period (2016-20)		5th period (2021-25)	
	Electricity	Gas	Electricity	Gas
Risk-free rate	3.82%	3.82%	2.04%	2.04%
Asset beta	0.536	0.532	0.51	0.49
Equity beta	0.901	0.801	0.90	0.87
Market risk premium	5.00%	5.00%	6.54%	6.54%
Debt ratio	45.75%	38.48%	48.92%	48.89%
Equity ratio	54.25%	61.52%	51.08%	51.11%
Credit risk margin	1.38%	1.38%	1.09%	1.09%
Tax rate	19%	19%	19%	19%
Cost of debt (pre-tax)	5.20%	5.20%	3.13%	3.13%
Cost of debt (post-tax)	<b>4.21%</b>	<b>4.21%</b>	<b>2.54%</b>	<b>2.54%</b>
Cost of equity	8.32%	7.83%	7.94%	7.76%
<b>WACC (post-tax)</b>	<b>6.44%</b>	<b>6.43%</b>	<b>5.30%</b>	<b>5.21%</b>
WACC (vanilla)	6.89%	6.81%	5.59%	5.50%
<b>WACC (pre-tax)</b>	<b>7.95%</b>	<b>7.94%</b>	<b>6.54%</b>	<b>6.43%</b>

The 5th period risk-free rate is based on the median of the monthly average yields of Czech government bonds with a residual tenor of 10 years over the period 2010-19.  
Source: ERO

### Sizeable investment projects to be completed through 2023 lay the foundation for long-term income streams

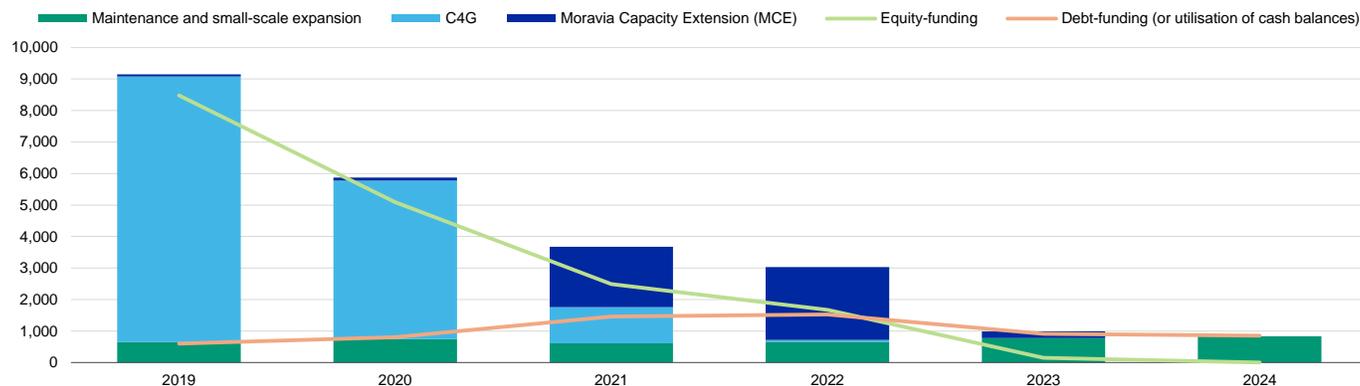
N4G's capital spending over the period 2020-23 of more than CZK14 billion includes about CZK11 billion for two main investment projects:

- » Project C4G, with a budget of €540 million over the main build-out phase to the end of 2020, will create additional capacity to facilitate the shipments of gas from Germany through EUGAL towards Slovakia. The project is scheduled for completion in early 2021, allowing for ramp-up to full capacity in the coming year. C4G is expected to lead to a significant increase of N4G's annual gas transportation capacities by about 50%, compared with 2019, to around 82 bcm.
- » Moravia capacity extension (MCE), the domestic expansion of N4G's grid, which originally formed part of the recently aborted Czech-Polish interconnector (CPI) project. MCE's budget of €185 million is slightly below 50% of N4G's planned outlays for the CPI project. MCE is aimed at creating enhanced security of supply for the Moravian region and is scheduled to be completed by year-end 2022.

Exhibit 9

**N4G's capital spending will gradually return to the level of maintenance spending by 2023**

Amounts in CZK millions



Source: Company

The demand for C4G has been confirmed during the European capacity auction held on 6 March 2017, in which up to around 40 bcm have been contracted on a ship-or-pay basis until 2039. The project comprises additional pipeline works and a new compressor station, as well as upgrades to existing infrastructure assets. The construction of C4G did not suffer a setback or delay because of the pandemic, and, thus, is on schedule for completion by the end of 2020.

The CPI cross-border pipeline project between Poland and Czechia was initiated to address security of supply concerns for Central-Eastern Europe, although it failed to meet the criterion of economic viability. As Poland shifted its focus to a new Slovak-Polish interconnector in 2019, the CPI project was removed from the list of the EU's Projects of Common Interest in November 2019 and thus ceased to be eligible for EU funding. The project has to some extent been replaced by a standard incremental capacity process under European network rules, which might result in a legally binding capacity auction in July 2021.

The remaining part of the CPI project is the MCE, which serves to stabilise supply for northeast Czechia, which is currently relying on balancing demand through extraction from storages. Given that the MCE project is predominantly serving the domestic market needs, the ERO approved 95% of the assets to be eligible for N4G's RAB, which is credit positive as it broadens the base for allowed returns. The funding structure for MCE remains unchanged from the plans for the entire CPI project, which means that 70% of the expenditure is financed through equity. MCE is planned for commissioning in late 2022.

### Financial profile characterised by higher leverage than main European pipeline peers, mitigated by prudent capital structure management

N4G has a relatively high EBITDA margin of around 80%-85%, supported by its long-term transit contracts and regulated network tariffs. The high earnings also support relatively stable credit metrics: Since 2016, FFO/debt has remained at least in the high teens in percentage terms, and we expect this trend to continue for the foreseeable future.

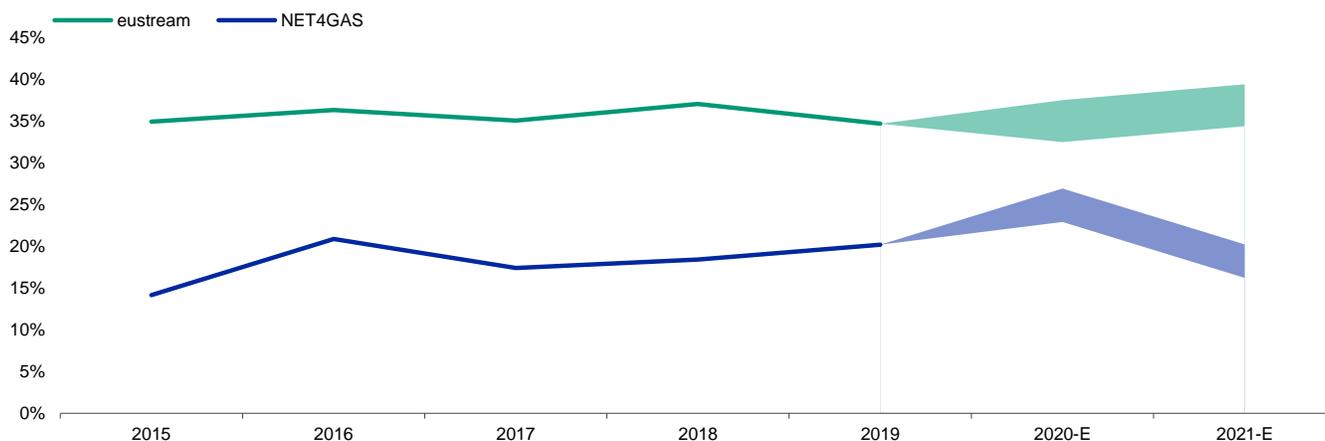
A further supporting factor is the strong commitment by N4G's shareholders, reflected in an agreement to provide equity funding for 100% of the C4G project and 70% of the CPI project (now the MCE project), which allows an alignment of leverage with the earnings profile originating from the investments. A well-managed capital structure with a stable leverage on an FFO/debt basis, further underpinned by a flexible approach to dividend payments, is credit positive. Against the backdrop of N4G's investment phase lasting through 2022, we expect some volatility in dividend payouts, reflected in a volatile ratio of retained cash flow to debt.

While leverage remains significantly higher than that of its main European peer eustream (see Exhibit 11), N4G is less exposed to the geopolitical tensions around the East-West route for Russian gas shipment through Ukraine, and benefits from more predictable cash flows under generally longer-term ship-or-pay transit contracts and a much larger portion of regulated transmission tariffs.

To maintain its current credit quality, we expect N4G to continue to exhibit a relatively stable financial profile, with FFO/debt at least in the midteens in percentage terms, underpinned by continuing stable and predictable cash flows from its transit and transmission activities and supported by a flexible approach to dividend payments, particularly in a period of higher investment requirements.

Exhibit 10

**N4G has a stable FFO-to-debt ratio, which, however, remains weaker than that of its Slovak peer eustream**



eustream changed its accounting year to July in 2018; thus, the company reported only for seven months until July 2018. The above represents Moody's estimate of the annual calendar year performance. The estimates for 2020 and 2021 represent Moody's forward view, not the view of the issuer.

Source: Companies' annual financial statements and Moody's Investors Service

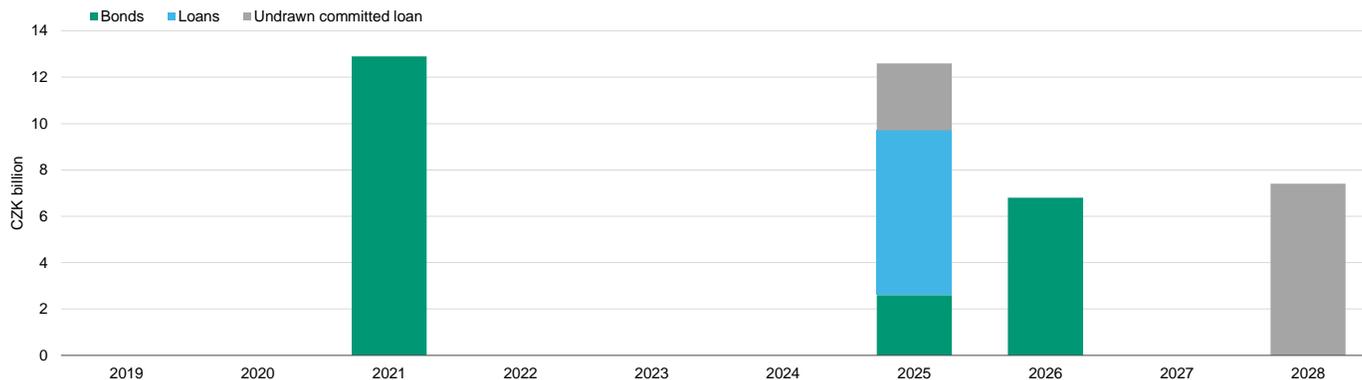
## Liquidity analysis

N4G's liquidity is strong, underpinned by cash reserves of CZK2.16 billion (about €80 million at the current exchange rate) as of 31 December 2019, and ongoing strong cash generation from its contracted gas transit and regulated gas transmission activities. The company also has access to a CZK2.6 billion (around €100 million) revolving and overdraft credit facilities, available until May 2022, with no restricting covenants or material adverse change (MAC) clauses. During the investment peak, liquidity has been and will continue to be supported by equity cash injections from the shareholders.

The next major debt maturity is in 2021, being CZK4.4 billion of notes (originally CZK7.0 billion, but partially refinanced from proceeds of the company's 2018 bond issue) and €300 million of notes, both issued in 2014 under a €5.0 billion EMTN programme. We understand that the company has concluded new medium-term loan facilities, designed to cover most of the refinancing needs for 2021.

Exhibit 11

**N4G's debt maturities have a weighted average term of just less than five years**



Source: Company

The company carries some of its debt in euro as well as US dollar to create a natural hedge against foreign-exchange revenue exposure, under specific transit contracts, the largest of which is Gazelle. Foreign-currency exposure will, however, decline as new capacity contracts are agreed, which tend to be denominated in Czech koruna.

## Methodology and scorecard

N4G's Baa2 ratings reflect the application of our rating methodology for [Natural Gas Pipelines](#), published in July 2018. The scorecard-indicated outcome based on our forward view is Baa1, one notch higher than the assigned ratings. However, the Baa2 ratings assigned to N4G also take into account the counterparty concentration and the associated geopolitical tension.

While ongoing tensions between Russia and Ukraine have, in contrast to its Slovak peer eustream, had limited impact on N4G's overall transit flows, any future global sanctions may hurt the company's interactions with Russia and its companies.

Exhibit 12

### Rating factors NET4GAS, s.r.o

Natural Gas Pipelines Industry Scorecard [1][2]	Current FY 12/31/2019		Moody's 12-18 Month Forward View As of Decemeber 2020 [3]	
	Measure	Score	Measure	Score
<b>Factor 1 : Market Position (15%)</b>				
a) Demand Growth	Aa	Aa	Aa	Aa
b) Competition	A	A	A	A
c) Volume Risk & Throughput Trend	Baa	Baa	Baa	Baa
<b>Factor 2 : Quality of Supply Source (10%)</b>				
a) Supply Source	Baa	Baa	Baa	Baa
<b>Factor 3 : Contract Quality (30%)</b>				
a) Firm Revenues	A	A	A	A
b) Contract Life	A	A	A	A
c) Shipper Quality / Recontracting Risk	Baa	Baa	Baa	Baa
<b>Factor 4 : Financial Strength (45%)</b>				
a) (FFO + Interest) / Interest	8.7x	Aaa	6x - 7x	Aa/Aaa
b) FFO / Debt	20.1%	Baa	17% - 20%	Baa
c) (FFO - Dividends) / Debt	15.7%	Baa	-10% - -5%	Caa
<b>Rating:</b>				
a) Indicated Outcome from Scorecard		A3		Baa1
b) Actual Rating Assigned				Baa2

(1) All ratios are based on 'Adjusted' financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations; (2) As of 31/12/2019; (3) This represents Moody's forward view of the issuer, and unless noted in the text, does not incorporate significant acquisitions and divestitures.

Source: Moody's Financial Metrics™

## Ratings

Exhibit 13

Category	Moody's Rating
<b>NET4GAS, S.R.O</b>	
Outlook	Stable
Issuer Rating	Baa2
Senior Unsecured	Baa2

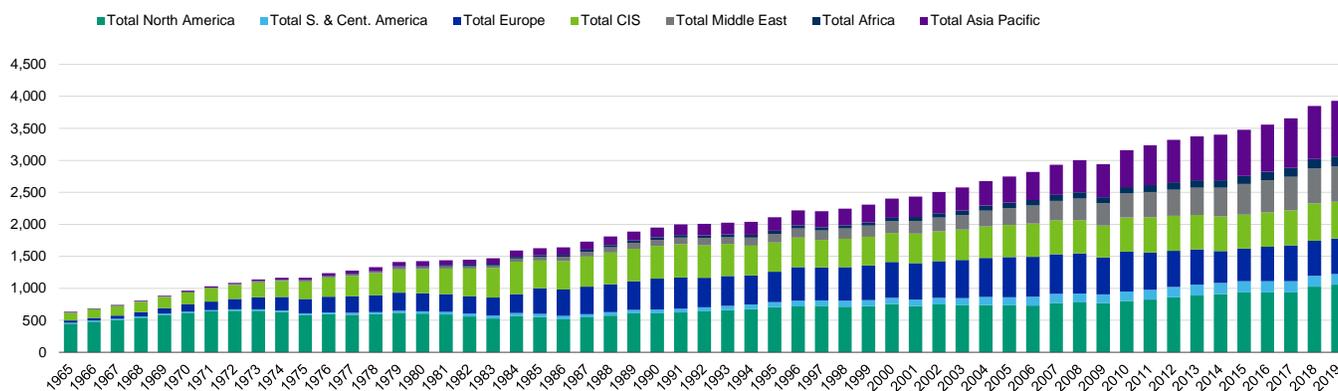
Source: Moody's Investors Service

## Appendix 1 - N4G's role in the European gas markets

Total gas consumption worldwide is driven by developed economies in the Northern Hemisphere as well as regions with vast natural gas reserves, specifically Russia. Evolving markets have seen growing demand over the last 20 years, with growth in consumption particularly pronounced in Asia (largely driven by China).

Exhibit 14

Global gas consumption per region (all amounts in bcm)

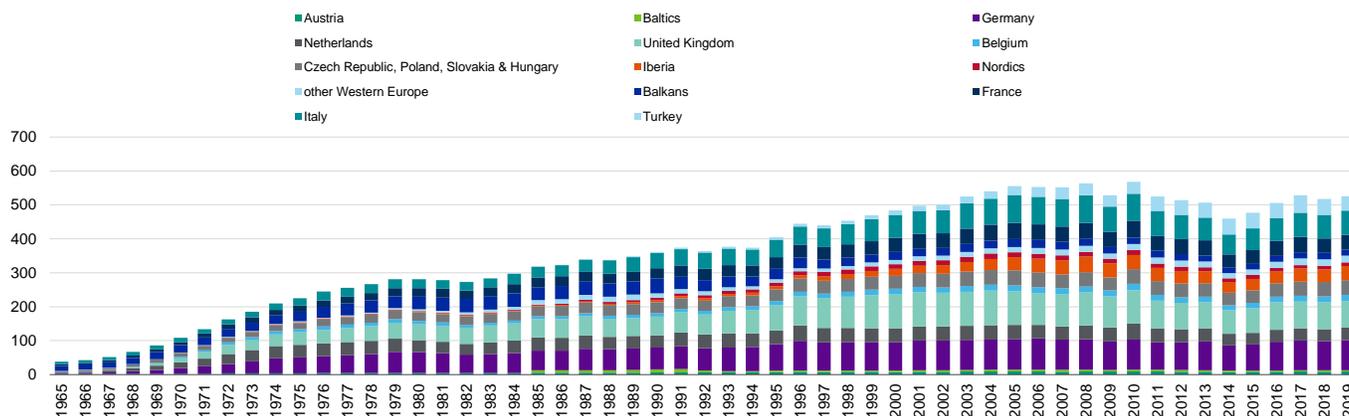


Source: <https://www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy.html>

Main consumers of natural gas in Europe are Central Europe, including France and Germany, Southern Europe, including Spain and Italy, as well as the Netherlands and the UK. Turkey's demand has also been growing over the last decade.

Exhibit 15

European gas consumption per region (all amounts in bcm)



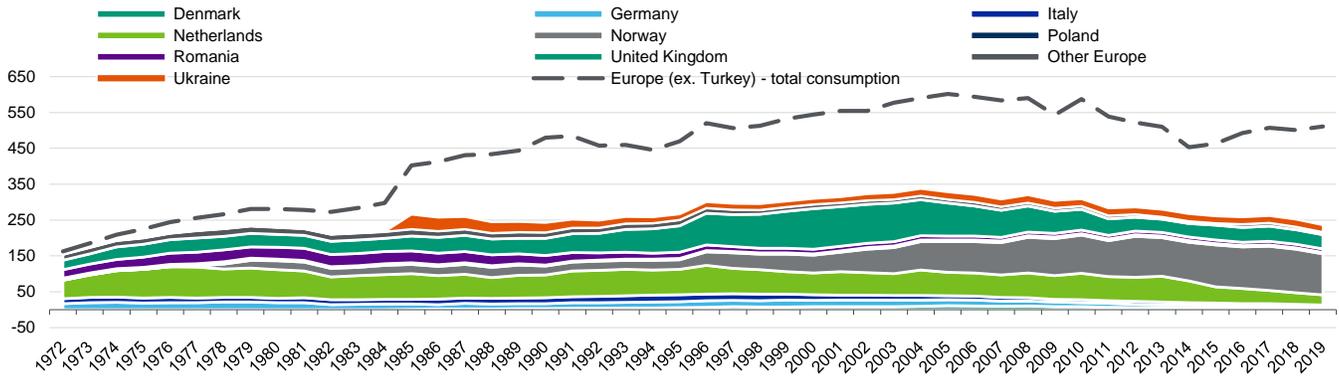
Balkans include Bulgaria, Croatia, Macedonia, Romania and Slovenia; Baltics include Estonia, Latvia and Lithuania; Nordics include Denmark, Finland, Iceland, Norway and Sweden; and other Western Europe includes Cyprus, Greece, Ireland, Luxembourg, Switzerland and others.

Source: <https://www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy.html>

Europe receives its natural gas from a variety of sources. With decreasing gas production in the Netherlands and the UK, European domestic production is now largely stemming from Norway.

Exhibit 16

European gas production per country compared with consumption (all amounts in bcm)



Source: <https://www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy.html>

To offset the mismatch of domestic production and consumption, pipeline gas, particularly from Russia, has grown in importance over the past 50 years. In 2019, European countries imported around 471 bcm of natural gas through pipelines, of which around 233 bcm came from sources outside of Europe. Liquefied natural gas (LNG) accounted for another 120 bcm, including around 113 bcm from outside Europe.

Exhibit 17

Europe - Natural gas imports, 2019

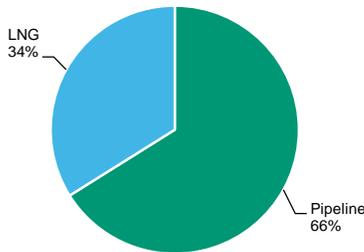
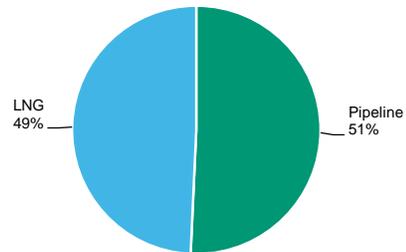


Exhibit 18

World - Natural gas imports, 2019



Source: <https://www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy.html>

The vast majority of pipeline gas is provided by Russia, which accounts for close to 80% of pipeline imports into Europe from external sources, while LNG is shipped primarily from Qatar, Russia and the US (among them around 62% of LNG imported, when excluding European sources). The US became a large supplier to Europe only in 2019, which was a result of new liquefaction capacities coming online, which were built on the back of long-term contracts with European off-takers; and a concurrent lower demand from Asia.

Exhibit 19  
Origin of 2019 European pipeline gas

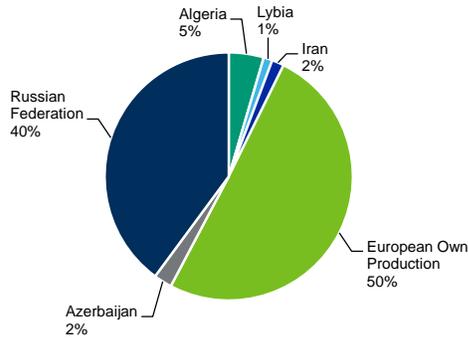
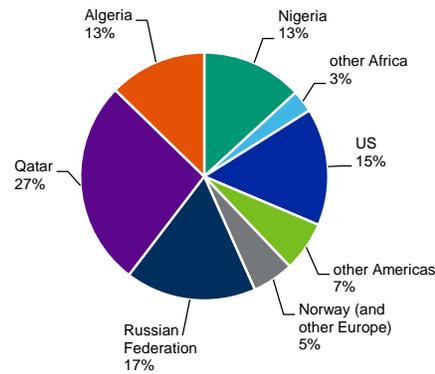


Exhibit 20  
Origin of 2019 European LNG imports



Source: <https://www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy.html>

Russian pipeline gas is primarily serving Central and Eastern Europe, with Germany in the North and Italy in the South being the main users, while LNG supplies principally serve Western and Southern Europe.

Exhibit 21  
2019 importers of pipeline gas

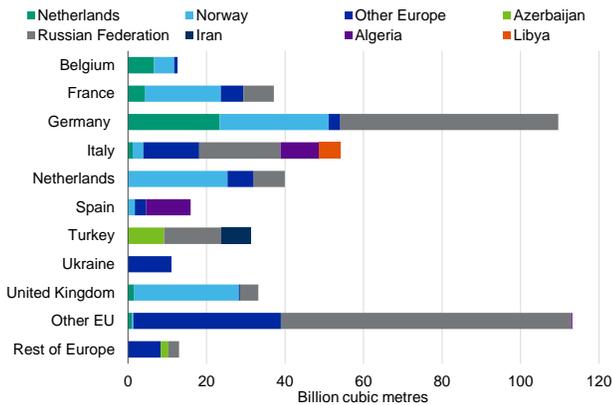
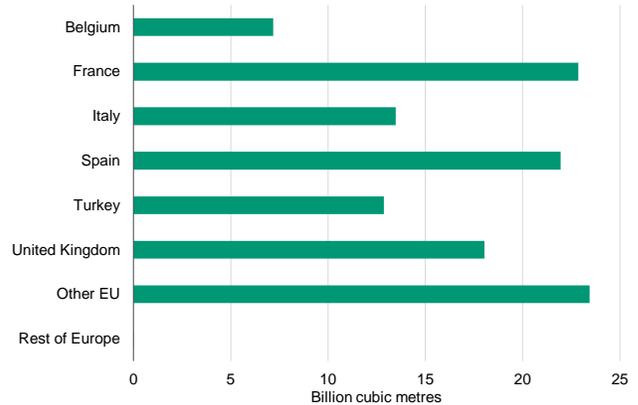


Exhibit 22  
2019 importers of LNG



Source: <https://www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy.html>

Global supply and demand balances and their influence on pricing as well as available and planned interconnections across the continent mean that LNG cannot easily replace pipeline gas and Russia remains a core supplier to European countries. However, LNG (also from Russia) is reckoned to remain a sizable contributor to European supply, as Norwegian and Dutch production is declining and will not be fully replaced with pipeline gas.

Exhibit 23

## European gas market map



Sources: International Energy Agency and Moody's Investors Service

According to Gazprom Export, the most important gas transit routes for Russian gas to Western Europe include:

- » "Brotherhood" (Urengoy-Pomary-Uzhgorod): This is the largest and longest-serving gas route, with a transport capacity of up to 100 bcm per year, via Ukraine and Slovakia (that is, the eustream network). In Slovakia, the route splits into two parts, with connections into the Czech Republic and Austria. eustream plays an important role in delivering Russian natural gas to Italy, Hungary, Slovenia and Croatia. Gas deliveries along this route started in 1967. At the end of 2019, Russia and Ukraine agreed on a new five-year transit contract with ship-or-pay volumes of 65 bcm in 2020 and 40 bcm per annum in 2021-24.
- » Yamal-Europe: This pipeline runs across Russia, Belarus and Poland, ultimately reaching Germany. The first sections of the pipeline were commissioned in 1996, with the Belarusian part becoming operational in 1997. Upon the commissioning of the last compressor station in 2006, Yamal-Europe reached its full capacity of 33 bcm per year.
- » Trans-Balkan pipeline (through Romania): This route carries Russian gas for the domestic market, transiting Ukraine and Moldova, and furthermore serves the Balkan countries and Turkey. Its significance has been greatly reduced by the commissioning of the first string of Turkish Stream (Turk Stream 1) in 2020.

- » Blue Stream: This line is intended for direct gas deliveries to Turkey, bypassing other transit countries, and started operations in 2003.
- » Nord Stream: This offshore pipeline, commissioned in 2012, has a capacity of 55 bcm per year and allows direct gas shipment to Western Europe. It consists of two lines with a throughput capacity of 27.5 bcm/year each. The core target markets for this line are Germany, the UK, the Netherlands, France and Denmark.

For delivery of gas to major Western European economies, Russia would firstly utilise available capacities of Nord Stream and Yamal, and only then the traditional East-West route through Ukraine.

Given Russia's strategy to increasingly diversify away from the Ukrainian route, any new alternative transit pipelines will likely lead to a reduction in flows and potentially lower capacity bookings along the East-West route over the medium to long term.

Currently proposed new pipeline projects include:

- » Nord Stream 2 (capacity 55 bcm): This pipeline will run in parallel to the existing Nord Stream and enter into Germany. Preliminary capacity bookings indicate that flows would be routed through the Czech Republic and Slovakia on the West-East route (thus utilising the networks of N4G and eustream) into Austria and Italy. The NS2 pipeline was originally scheduled for commissioning in 2019, but will likely only be completed in 2021 or even early 2022, following the threat of sanctions from the US government. Its full utilisation will also be subject to completion of onshore connections, EUGAL in Germany and C4G in N4G's network area (C4G to be fully completed at the end of 2020), as well the clearance of some regulatory hurdles.
- » Turkish Stream 2 (capacity around 16 bcm): This may allow some of the gas shipped via Turkey to reach Italy and will affect transit through Ukraine to Turkey; however, additional transit infrastructure from Turkey via Bulgaria, Serbia and Hungary to Western Europe has yet to be completed.
- » TAP/TANAP link through Turkey (capacity 16 bcm): This is a relatively small pipeline, but could divert some of the Caspian Sea gas from Azerbaijan, particularly destined for Turkey (where some of the demand growth is expected).

Assuming European gas demand is maintained around current levels and there is full utilisation of existing and planned routes, Russia may no longer need to rely on the Ukrainian route for gas flow. However, supply and demand for natural gas remains in flux, and it may act as an interim fuel to support the decarbonisation plans of the European economies. Rapidly declining indigenous production in Europe, the delay in the commissioning of NS2 and the transit bookings for the Brotherhood pipeline will support continued flows via the East-West route at least over the next five years.

## Appendix 2 - Financial information

Exhibit 24

### Select peer comparison

NET4GAS, s.r.o

(in EUR million)	NET4GAS, s.r.o Baa2 Stable			eustream, a.s. Baa2 Stable			Alliance Pipeline L.P. Baa2 Negative		
	FYE	FYE	FYE	FYE	FYE	FYE	FYE	FYE	LTM
	Dec-17	Dec-18	Dec-19	Jul-17	Jul-18	Jul-19	Dec-18	Dec-19	Jun-20
Revenue	281	286	314	756	451	793	338	317	293
EBITDA	226	241	263	668	399	706	226	221	207
Total Assets	1,779	1,871	2,102	4,765	4,509	4,798	826	741	717
Total Debt	1,077	1,073	1,080	1,342	1,322	1,388	442	398	393
Net Debt	1,041	1,022	995	1,295	1,271	1,258	442	397	392
(FFO + Interest Expense) / Interest Expense	8.6x	8.9x	8.7x	11.4x	12.8x	11.8x	8.2x	8.8x	9.1x
FFO / Debt	17.4%	18.4%	20.1%	34.9%	23.4%	34.6%	44.7%	49.2%	47.1%
RCF / Debt	7.8%	17.2%	15.7%	-9.8%	-10.6%	16.6%	2.7%	2.6%	-0.6%

eustream changed its accounting year to July in 2018; thus, the company reported only for seven months until July 2018. All figures and ratios calculated using Moody's estimates and standard adjustments. FYE = Financial year-end. LTM = Last 12 months. RUR\* = Ratings under review, where UPG = for upgrade and DNG = for downgrade.

Source: Moody's Financial Metrics™

Exhibit 25

### Moody's-adjusted net debt breakdown

NET4GAS, s.r.o

(in CZK million)	FYE Dec-16	FYE Dec-17	FYE Dec-18	FYE Dec-19
<b>As Reported Total Debt</b>	28,047	27,287	27,397	27,462
Leases	208	256	260	0
<b>Moody's Adjusted Total Debt</b>	28,255	27,543	27,657	27,462
Cash & Cash Equivalents	(415)	(931)	(1,302)	(2,162)
<b>Moody's Adjusted Net Debt</b>	27,840	26,612	26,355	25,300

All figures are calculated using Moody's estimates and standard adjustments. FYE = Financial year-end.

Source: Moody's Financial Metrics™

Exhibit 26

### Moody's-adjusted EBITDA breakdown

NET4GAS, s.r.o

(in CZK million)	FYE Dec-16	FYE Dec-17	FYE Dec-18	FYE Dec-19
<b>As Reported EBITDA</b>	7,521	5,887	6,151	6,839
Unusual Items - Income Statement	(3)	0	(45)	(91)
Leases	52	64	65	0
<b>Moody's Adjusted EBITDA</b>	7,570	5,951	6,171	6,748

All figures are calculated using Moody's estimates and standard adjustments. FYE = Financial year-end.

Source: Moody's Financial Metrics™

Exhibit 27

## Select historical financials (Moody's-adjusted)

NET4GAS, s.r.o

	FYE	FYE	FYE	FYE
(in CZK million)	Dec-16	Dec-17	Dec-18	Dec-19
<b>INCOME STATEMENT</b>				
Revenue	9,280	7,397	7,335	8,054
EBITDA	7,570	5,951	6,171	6,748
EBITDA margin %	81.6%	80.5%	84.1%	83.8%
EBIT	5,446	3,883	4,227	4,746
EBIT margin %	58.7%	52.5%	57.6%	58.9%
Interest Expense	1,024	630	642	716
Net income	1,415	2,634	2,897	3,256
<b>BALANCE SHEET</b>				
Total Debt	28,255	27,543	27,657	27,462
Cash & Cash Equivalents	415	931	1,302	2,162
Net Debt	27,840	26,612	26,355	25,300
Net Property Plant and Equipment	44,591	43,403	42,964	50,025
Total Assets	46,160	45,490	48,231	53,473
<b>CASH FLOW</b>				
Funds from Operations (FFO)	5,891	4,789	5,084	5,532
Cash Flow From Operations (CFO)	5,745	4,337	4,593	5,797
Dividends	3,190	2,645	315	1,235
Retained Cash Flow (RCF)	2,701	2,144	4,769	4,297
Capital Expenditures	(772)	(799)	(1,459)	(6,869)
Free Cash Flow (FCF)	1,783	893	2,819	(2,307)
<b>INTEREST COVERAGE</b>				
(FFO + Interest Expense) / Interest Expense	6.8x	8.6x	8.9x	8.7x
<b>LEVERAGE</b>				
FFO / Net Debt	21.2%	18.0%	19.3%	21.9%
FFO / Debt	20.8%	17.4%	18.4%	20.1%
RCF / Net Debt	9.7%	8.1%	18.1%	17.0%
RCF / Debt	9.6%	7.8%	17.2%	15.6%
Net Debt / EBITDA	3.7x	4.5x	4.3x	3.7x
Net Debt / Fixed Assets	62.4%	61.3%	61.3%	50.6%

All figures and ratios are calculated using Moody's estimates and standard adjustments. FYE = Financial year-end.

Source: Moody's Financial Metrics™

## Endnotes

1 <http://www.gazpromexport.ru/en/statistics/>

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