

BLUE FUEL

Gazprom Export Global Newsletter

2018/ Issue 47

"From Russia to Europe. Gazprom's Export Strategy to Europe." Speech by Elena Burmistrova at Flame Conference

Page 5

History of a Close Friendship: 50 Years of Gas Supplies to Austria!

Page 9

The First LNG Cargo under the Long-Term Contract between Gazprom Marketing and Trading and GAIL Arrived to India

Page 25

The Hermitage is the Guest of the Kunsthistorisches Museum, Vienna

Page 26

www.gazpromexport.com | newsletter@gazpromexport.com
+7 (812) 646-14-14 | comm@gazpromexport.com
© Gazprom Export



BLUE FUEL

Gazprom Export Global Newsletter

In this issue

2018/ Issue 47

To Our Readers....4

"From Russia to Europe. Gazprom's Export Strategy to Europe." Speech by Elena Burmistrova at Flame Conference....5

History of a Close Friendship: 50 Years of Gas Supplies to Austria!....9

«Mistaking the Instrument for Target: it Is Time to Reconsider Outdated Postulate of EU Energy Policy»,by Sergei Komlev....13

Eurogas Finds Gas Can Help Overachieve EU's Climate Targets at Lower Costs....17

IEA Forecasts Global Gas Consumption Pass 4 Trillion Cubic Meters Mark by 2022....18

The Nord Stream 2 Project Progresses as Planned....19

Nearshore Works for the TurkStream Gas Pipeline Started in Turkey....21

European Commission Has Decided to End Antitrust Investigation into Gazprom....23

Survey: Most of Germans Believe Natural Gas Is an Inalienable Partner to Renewables, Russia Remains a Preferred Source of Supply....24

The First LNG Cargo under the Long-Term Contract between Gazprom Marketing and Trading and GAIL Arrived to India....25

The Hermitage Is the Guest of the Kunsthistorisches Museum, Vienna....26

Unforgettable Trip along the Magic Mile: a Charitable Event for Children Held in St. Petersburg....29

Cover photo Pipe transshipment in the German port of Mukran © Nord Stream 2 / Axel Schmidt

Publishers Contact Info:
www.gazpromexport.com I newsletter@gazpromexport.com
+7 (812) 646–14–14 I comm@gazpromexport.com

To Our Readers

Europe of today is often described as a 'green pioneer', a role model for other nations in terms of implementing the energy transition policy. From Norway to the Netherlands, policy-makers sound categorical – by the mid-century there would be no room for fossil fuels anymore. Big energy companies are trying to catch the tailwind by introducing more renewables into their business, and rebranding themselves by taking such words as 'oil' or 'gas' away from their names. But should our pursuit of a greener world demand such measures towards gas? We at Gazprom are confident – natural gas will continue playing a major role in European energy balance and will accelerate, not slow down the implementation of the Continent's climate goals.

Today, the natural gas market in Europe feels healthy and strong. Gas consumption is stable and is projected to grow in coming years. Europe has a wide choice of suppliers and invests into interconnection infrastructure pursuing the policy of creating a better integrated internal market. Hub trade evolves, adding to flexibility and strength. Open to new suppliers, Europe casts eye beyond the seas and oceans. And Europe invests billions into importing infrastructure, from pipelines to LNG terminals. These investments will be only paid back in decades. And the very fact that they are done proves that natural gas will be in demand in the EU even after psychological point of 2050. It will become greener indeed, perhaps thanks to the options of adding higher hydrogen content or biogas. But it still will be gas – a natural partner to renewables; an established, flexible and clean fuel for a variety of industries; and a market that is working well.

Imagine what would be the European energy system without natural gas today. It would be something more vulnerable, less competitive and paradoxically less eco-friendly. During cold days of winter, and early spring or hot summer of this year, offshore wind and solar power stations in Germany were not able to meet the demand spikes, and in some days, even underperformed their own daily averages. Supply gap was compensated by lignite power stations, a very stable but eco-damaging solution. At the same time, German media reported that there is enough spare gas generation capacity in Germany to substitute coal plants. The solution is here, already at our side. Just recently, the 'Carbon Tracker', calculating the impact of potential CO2 price growth, came to conclusion that if CO2 prices reach 35 to 40 Euro, the Energiewende will happen on its own – Germany will switch from coal to gas without any additional effort from politicians, or money from taxpayers.

Rhetoric is different across the Atlantic. While President Trump takes efforts to undermine the clean air regulation of his predecessor, the market does its own job against coal. Bloomberg has recently calculated that since 2010, operators have closed or announced plans to close altogether 270 coal power plants in the USA. A natural replacement – gas – comes instead. And at the end of the day this results in cleaner air, again, without additional political push in this direction. When business is free from political considerations it does the right things.

By setting itself ambitious climate goals, Europe has not just established as the 'green pioneer'. Being a pioneer means a double responsibility – not just accomplishing a brand new task for your own voters, but also being an example for those who will follow your path. Today its gas industry and gas market are the things Europe can be proud of. And for the future, let us imagine the tomorrow's world with gas. It will be the more technologically developed and environmentally responsible world. Sharing a dream of a better world, we believe that having a word 'gas' in a company's name is honourable and lines up with the spirit of the times.

From Russia to Europe. Gazprom's Export Strategy to Europe: Ensuring Security of Supply vs Challenges from US LNG – Where Does Asia Fit in and How High can Exports Go?

Elena Burmistrova, Gazprom Export Director General
Flame Conference, 15 May 2018, Amsterdam



The past heating season brought some good news for the European gas industry. In the first quarter of 2018, natural gas consumption in Europe reached the highest point in 5 years – 190 bcm. Economic activity in the Eurozone is an important factor behind the growth in gas consumption.

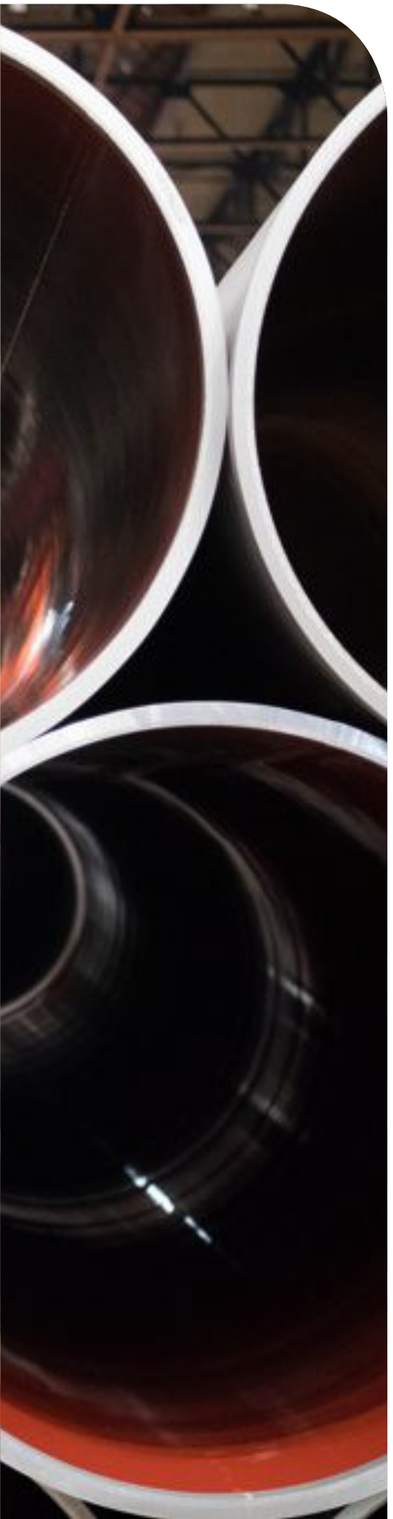
Gazprom has shown the biggest growth of exports among natural gas suppliers to Europe. Domestic natural gas producers didn't increase supplies in response to growing demand.

In the first four months of 2018, Gazprom increased natural gas exports to Far Abroad countries to an unprecedented 70.3 bcm. In particular, gas supplies to our biggest market – Germany – grew by 12.4%; to Austria – by 76.4% and to the Netherlands – our host country today – by almost 100%, or by 1.4 bcm.

It would appear natural to ask: why has Europe not filled its growing demand and supply gap through alternative sources, other than Russia? In my view, there are two reasons behind this.

The first reason is fundamental. Domestic production in Europe isn't growing. The Netherlands is imposing more and more production cuts on the Groningen gas field and the UK is consuming more and more domestically produced gas in its own market. Last year, the Netherlands became a net gas importer on an annual basis and this trend is expected to last. LNG, once perceived as a silver bullet that would help to balance supply and demand, is still being diverted to premium markets, especially Asia.

The second reason is all about the ability to compete on the evolving market. It's no secret to all the guests in this room that Europe's gas market has significantly changed over the last few years. And so has Gazprom. We have added more market-based instruments to our core portfolio of long-term contracts, offering our clients more flexible pricing and delivery conditions. At Gazprom Export, we are actively developing our trading business. Additional agreements within the actual contracts, gas auctions and implementing trading practices



allowed us to sell in the last two years some 10-15 bcm of gas annually above our contract obligations. Gazprom is increasing its share on the growing market, and this is further proof that the synergy in natural gas trade between Russia and Europe is stronger than ever, and continues to serve the best interests of both sides.

Now I would like to turn to more technical issues and speak about the security of the gas supply chain. In the first quarter of this year, the most prominent factor that influenced the European gas supply balance was gas withdrawal from storage. In January-March, Europe withdrew more than 50 bcm of gas from underground storage facilities, which is more than the combined annual gas consumption of the Netherlands and Belgium. The role of gas storage during abnormal frosts in February and March was immense. Several years ago everyone on the market was talking about gas storage as if it was a thing of the past. Many industry players said that traders would be the ones to balance rapid gas demand fluctuations. The experience of the two past winters has proved the opposite. Physical gas volumes that are securely stored underground are still needed. Over the last several years, Gazprom and its western partners have invested heavily in the development of gas storage in Europe. Before the latest heating season, in addition to its own storage capacities Gazprom booked additional capacities on the market, and increased the company's gas reserves in storage to 8.5 bcm. The cold snap in Europe nicknamed "The Beast from the East" proved at the end of February that our approach was right. And now we hear more calls from the industry to strengthen the gas supply chain by building new storage capacities.

European gas storage facilities were almost empty at the end of the heating season. This fact allows us to expect that this summer demand for Russian gas will continue to grow due to the necessity to fill storage capacities.

Now I would like to turn to the broader, long-term picture of the development of the European gas market. In the longer term, we still expect that natural gas demand in Europe will grow. According to the latest consensus forecast, Europe will need 77 bcm of additional gas imports by 2030, and 88 bcm by 2040. What's remarkable is that following the leading analytical agencies, we have also improved the resulting consensus forecast. IHS consultants expect that natural gas consumption in Europe will remain at current levels, and PIRA consulting agency forecasts that gas demand will grow in the mid-term perspective.
It's true that increasing energy efficiency is bearing fruit. We expect that gas consumption in the industrial and residential sectors will stagnate, but gas will return to power generation and new bright spots like gas for transport will develop.

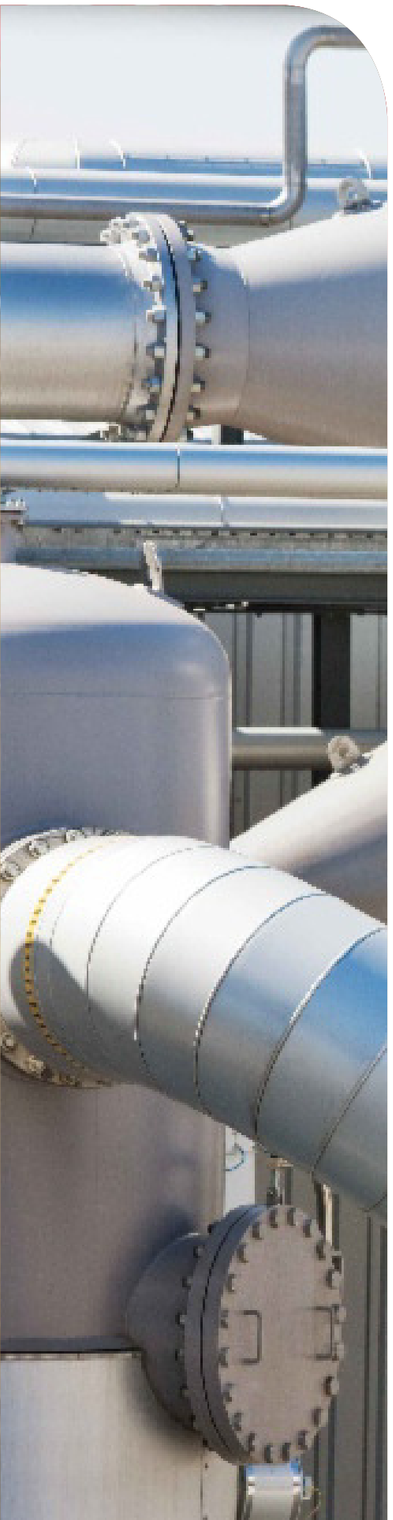
How will Europe satisfy the growing demand? On the supply side, we see that the project of establishing Caspian gas supplies to Europe is going smoothly. There are several projects of gas supplies from the Eastern Mediterranean which are still in their infancy. New and ambitious LNG producers are entering the global market. Among these are the USA, Australia, and Mozambique. Some of the new volumes may land in Europe. But most of them will definitely go to energy-hungry Asia. Last year, Asia accounted for 73% of global LNG imports. And it was Asia that made up three-quarters of global LNG demand growth.

That's one of the reasons why Gazprom's business isn't only about the European gas market. Our business in Asia is developing steadily, and we have high expectations for it. I want to highlight that this in no way means we are giving Europe the cold shoulder. Gazprom's vast resource base and its unique geographical allocation give us a chance to fully satisfy the demand of gas consumers in both regions.

Gazprom already has a well-established LNG business in Asia. Our 'Sakhalin 2' project ranks among the most efficient LNG production facilities in the world, with the shortest n leg to the most prominent LNG importers, like Japan, South Korea, China, and Taiwan. Within several weeks, our first cargo under a long-term supply contract will arrive to India, becoming another landmark in Gazprom's presence on one of the most promising gas markets in the world. At the same time, we are interested in entering other emerging markets in the Asia-Pacific region. Currently we are working on expanding our production facilities, including the construction of the third train of the Sakhalin-2 project.

One of the most anticipated events in the gas industry is the start of pipeline deliveries of Russian gas to China. The Chinese market is a strategic growth point for Gazprom. Following last year's dramatic increase in gas consumption, China continues to support this trend in the first quarter of this year, generating 17% growth compared to the same period of 2017. Together with many other experts, we at Gazprom believe that the Chinese market will become a real driver pushing the global gas market forward. Relevant government policies, like the coal to gas switch, give strong support for the expansion of gas consumption. It's obvious that China's thirst for gas cannot be satisfied only by indigenous production. The latest export growth figures remain impressive. Export flows in first three months of 2018 surged by more than 41%, demonstrating the huge potential of the Chinese gas market for suppliers.

Regarding gas infrastructure development, when compared to Asia, Europe is in an extremely privileged position with its huge capacities of regasification terminals and an extended network of import pipelines. From the security of supply side, Europe is protected better than any other region in the world. The debate over whether LNG is able to displace Russian gas in Europe is more political rhetoric, and not a well-grounded and pragmatic analysis. For years, LNG and pipeline gas have successfully complemented each other in Europe. Discriminating against one energy source in favour of another means depriving



oneself of crucial competitive advantages. Can anyone afford this in times of growing global economic competition? It would seem not.

In order to improve the European energy system and monetize giant Russian gas reserves, Gazprom is building new gas pipelines to Europe. Two weeks ago Gazprom completed a deepwater pipelay of the first line of the TurkStream pipeline. Preparatory works for the construction of the Nord Stream 2 pipeline have started in Germany. These new pipelines will bring to Europe much-needed volumes of natural gas, and will reduce the import bills of European importers. The German think-tank "ewi Energy Research & Scenarios" has calculated that from 2020 on, European end consumers will save €7.9 billion per year when Nord Stream 2 is built and if global LNG demand is low. And if global LNG demand is high, this figure would grow to €24.4 billion. This isn't something Europe can afford to sacrifice.

For instance, currently in Germany, 30% of the population spends more than 10% of their income on energy. The International Energy Agency describes such a situation as 'energy poverty'. Today consumers pay to subsidize renewables. When new pipeline projects are built, Europe will be able to direct saved money to renewables and ease the burden of European taxpayers.

Speaking about the global race for green energy, our position is that natural gas supports two elements of a clean and sustainable energy system. Natural gas and renewables are destined to work in tandem in the post-industrial world, just like coal and oil did in the past. The main risk is that all the media hype around "going all electric" will spread uncertainty among investors. In order to enhance security of supply, to develop new fields, to build new pipelines and to improve interconnections, the gas industry needs clear long-term investment predictability. In our industry investment cycles last for decades. Loud news headlines or blind populism discourage people from investing in new gas infrastructure. What we can and should do is explain to policy-makers in European capitals that gas can be green and that natural gas infrastructure will remain in demand for many years to come.

In our view, natural gas has plenty of opportunities ahead. Natural gas can displace a large part of coal generation, bringing Europe closer to the targets of the Paris climate agreement. In some countries such as the UK, where a CO2 tax is in place, natural gas is successfully squeezing out coal. But in Germany, coal-fired generation is still much cheaper than gas power plants. At the same time, gas plants come online much faster and better address air quality concerns. In our view, natural gas is much better suited to be the back-up fuel of the future than coal or much-criticized nuclear power.

Natural gas isn't just a transition fuel. It's a self-sufficient, permanent element of the new global energy system. It's remarkable that, despite the growing share of renewables, our gas exports are growing as well. For our part, knowing that our gas is competitive and in demand in Europe, and having vast resources available, we at Gazprom are able and ready to provide Europe with as much gas as it needs.

I'm confident that natural gas is a fuel of choice for Europe today, and in the years to come. It secures reliable, eco-friendly and commercially-efficient supplies of energy. What should we do to make this future arrive? In my view, all we need is pragmatic and unbiased treatment from policy-makers and regulators. Our record export results and joint investment projects show that business has already made its choice. Time has come for all the stakeholders of the energy industry to combine efforts to bring to life all the opportunities for natural gas.

History of a Close Friendship: 50 Years of Gas Supplies to Austria!



First gas in Baumgarten. Photo by OMV

June 2018, marks the 50th anniversary of the first contract to supply natural gas from Russia to Austria. The oil and gas group OMV was the first company in Western Europe that signed the long-term contract to purchase the 'blue fuel' from USSR. On 1 June, 1968, the contract was signed, and already on 10 September, 1968, first gas started to flow to Austria.

Since then, the gas cooperation between our countries has been successfully expanding and embracing new frontiers for five decades. Over these years, the volumes of Russian gas supplies have increased more than tenfold. When in 1969, the year following the year of the gas supplies launch, 782 million cubic meters were supplied, in 2017 Gazprom exported 9.1 billion cubic meters. This is a historical record, 50.3% (3 bcm) above the result of 2016



(6.1 bcm), and 33.7% (2.3 bcm) higher than the previous record of 2005 (6.8 bcm). 2017 has been a record-breaking year for consumption of Russian gas in Austria, and today, the demand for 'blue fuel' keeps growing. From 1 January till 15 May 2018, supplies to the country increased by 70.3% (1.9 bcm) compared to the same period of the last year.

Overall, over 50 years of cooperation Gazprom has exported more than 215 bcm of natural gas to Austria. The country also



Signing of contract for natural gas supplies from USSR to Austria. 1968. Photo by OMV

plays an important role in the transit of Russian gas, ensuring annual ion of about 30 bcm of gas to Italy, France, Germany, Hungary, Slovenia and Croatia.

Over the years of successful work, Gazprom and its Austrian partner companies have implemented projects reaching beyond the gas trade, thus contributing to the energy security of Europe. This work included establishing of new gas transport routes that allow to increase supply volumes, as well as development of Baumgarten, one of the largest gas hubs in Europe. The implementation of a joint gas storage project is also of utmost importance for reliable gas supplies.

More than 10 years ago, the Gazprom Group and RAG put into operation the Haidach underground gas storage facility, the largest

UGS in Austria and one of the largest in all Europe. This UGS, with its active storage volume of 2.89 bcm, is located close to the Baumgarten hub, and together they form the primary element of the whole Central European gas market. The operation of this storage contributes to reliability of gas supplies to consumers in several European countries – Austria, Germany, Italy, Hungary, Croatia, Slovenia and Slovakia.

The partnership of Russia and Austria in the gas sphere keeps progressing. Today, Gazprom's main partner in Austria, the OMV, actively participates in financing of a large gas transport project – Nord Stream 2, aimed at securing Russian gas supplies to Western as well as to Central Europe. On June 5, 2018, Alexey Miller, Chairman of the Gazprom Management Committee, and Rainer Seele, Chairman of the Executive Board of OMV, signed in Vienna an Agreement to extend until 2040 the existing contract between Gazprom Export and OMV Gas Marketing & Trading GmbH for Russian gas supplies to Austria. The contract was valid until 2028. The new document was signed in the presence of Vladimir Putin, President of the Russian Federation, and Sebastian Kurz, Federal Chancellor of Austria, as part of the celebrations marking 50 years of supplies of Russian gas to Austria.



Foreground: Alexey Miller and Rainer Seele at signing ceremony on June 5, 2018. Background: Vladimir Putin and Sebastian Kurz. Photo by OMV

Also, Gazprom and OMV are planning to complete an asset swap soon. As a result of this deal, the Russian company will get 38.5% in OMV Norge, which is engaged in exploration and production in Norway, and OMV, in turn, will receive 24.98% interest in IV and V phase development in the Urengoy gas and condensate field.

Along with their partnership in energy, Gazprom and OMV also cooperate in the cultural sphere. Over many years, supported by Gazprom and OMV, a number of important cultural and social projects have been implemented. They include the performance by the Tchaikovsky Symphony Orchestra led by Vladimir Fedoseev in Wiener Musikverein, the cultural and educational project "Russian seasons in Austria. Vienna classics in Russia", the concert of the Moscow Soloists chamber orchestra within the project "Stradivari in the world's capitals". For many years, the companies supported the large-scale international Open World project for children implemented by the Austrian social foundation Energy for Life.



Since 2016, within the Memorandum of Understanding on the implementation of a joint cultural project, Gazprom and OMV have been organizing the large-scale gala performance "Imperial Capitals: St. Petersburg – Vienna". Over the past two years, the concerts given by Russian and Austrian artists took place in the Dmitry Shostakovich St. Petersburg Academic Philharmonia. The performances became the central cultural event of the St. Petersburg International Gas Forum.

Furthermore, in autumn 2017 a large exhibition of Peter Paul Rubens paintings in the Museum of Art History in Vienna was organized. Three works of the painter had been brought from St. Petersburg State Hermitage to Vienna, with support of Gazprom and OMV.

Over half a century, Russian and Austrian companies managed to establish a true strategic partnership covering different spheres, from natural gas supplies to social projects. This foundation based on mutual trust and respect will continue to develop with new natural gas volumes, joint infrastructure projects and cultural initiatives, for the decades to come.



Gas processing plant in Aderklaa, Austria. Photo by OMV

Mistaking the Instrument for Target: it Is Time to Reconsider Outdated Postulate of EU Energy Policy

Sergei Komlev
Head of Contract Structuring and Price Formation Directorate, Gazprom Export



Nearly ten years ago when Russian gas accounted for nearly a quarter of the European gas market, EU Commission assessed this share as excessively high and declared as one of the cornerstones of its energy policy a need to decrease its dependence on Russia. Mr. Günther Oettinger, who was the first EU Commissioner in charge of energy to proclaim this aim, mollified it with a statement that "EU should not back out of the mutual partnership".

Russia was considered a problem in those parts of Europe where it was the only supplier. It was a common view that Gazprom's monopoly position could invalidate reforms aimed at enhancing gas-on-gas competition. Just to mention that in the past there was no anxiety over a single supplier's role as oil indexation and review clauses in the long-term gas supply contracts perfectly protected buyers from any price manipulation.

How to cope with the new problem? The solution was LNG receiving terminals, Southern Corridor, West-East led pipelines, and the interconnections of various type. There were visionaries who claimed that with supply options available there will be no need for Russian gas.

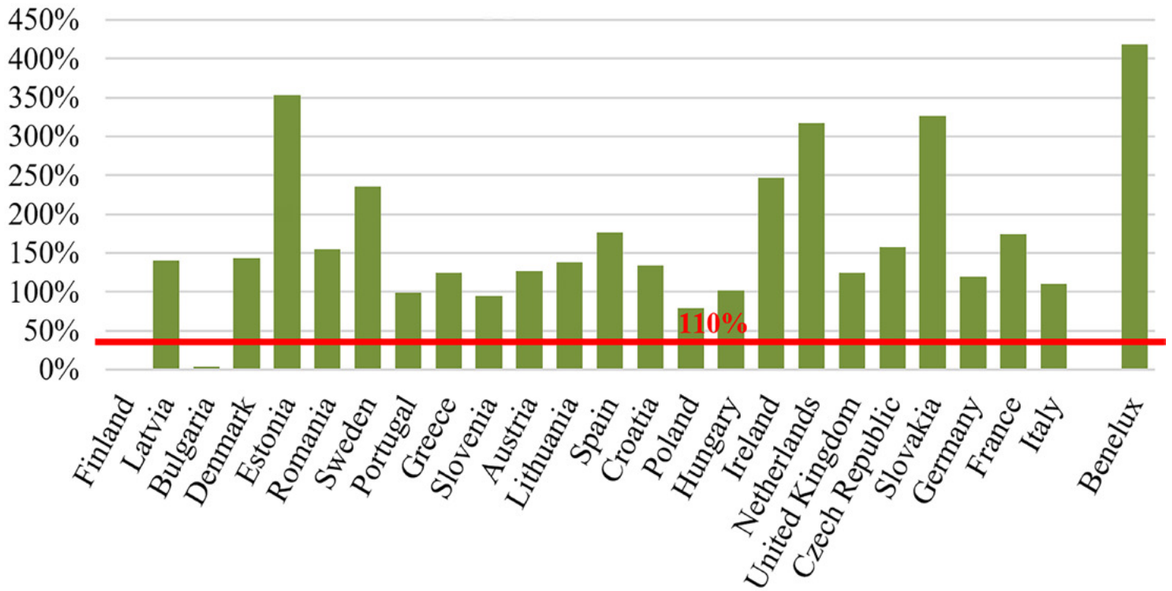
This radical view was voiced up by Vaclav Bartuska, Ambassador-at-large for Energy Security in the Czech foreign ministry, a post that he still occupies. His approach was one-sided: you are either part of the solution or you are part of a problem: "Time and time again, the clear feeling from Russia is that they are irreplaceable and can do what they want…We can get away from you; we can live without gas from Russia. It will be costly, difficult; it will take ten years. But we can do it", he claimed in 2009.

Ten years after, share of Russian gas augmented to 34% with 40% viewed a distinct possibility, see Chart 1. One may feel a patriotic delight quoting these numbers, but my point is not that. Russia owing to geographical proximity, huge and low cost resources is well positioned

to meet the growing European demand for gas. Dutch and British production falls, Norway's production growth slows, LNG supplies remain modest, expensive and mostly heading to Asia.

Is it time for Europe to admit that its diversification policy was a failure? Not at all. EU made good progress to diversify sources, routes and suppliers of energy. Gas infrastructure has become more resilient and better integrated in the most parts of Europe. Residual Supply Index, developed by ACER, which shows the ability to meet at least 110% of the domestic demand from sources other than the main supplier, indicates that with few exceptions there are no «gas islands» anymore.

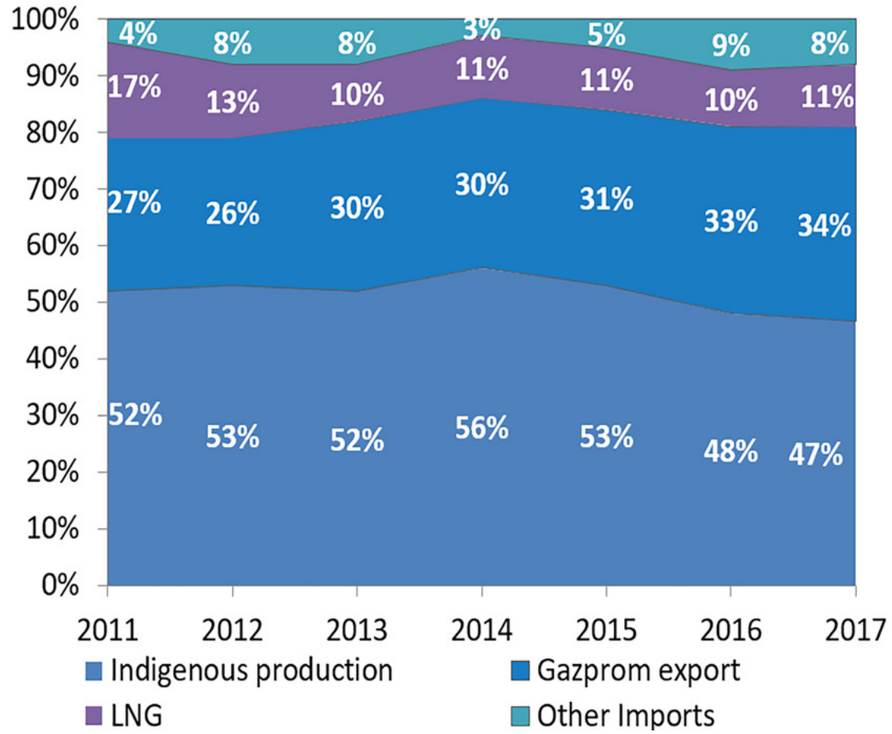
Residual Supply Index in 2016, %



Certainly, work on construction of alternative infrastructure is not yet completed. There were nearly 50 gas Projects of Common Interest (PCIs) in 2017, spread out over EU and non-EU countries. Nearly half of them will be completed in 2018.

What proved to be a failure, is a policy to decrease dependence on Russia. Do not mix up the two things. Decreased reliance on Russia is only an instrument of diversification, which, like gas-on-gas competition is a broader term having both real and virtual dimensions.

Chart 1. Gazprom's Market Share in Europe Is on a Rise Course



Source: PJSC Gazprom, Eurostat, National Statistics, IEA, IHS, Markit

Let me remind that North Stream 1 was on the priority project list of EU infrastructure projects. Starting from 2009 there were no PCIs involving Russian gas. Nonetheless Gazprom's share increased. Despite political pressure, with other supply options at hand, Europeans prefer to buy gas prom Russia. That means that Gazprom successfully passed an exam for consistency with a new configuration of the market. It is matching well with competition, energy security, transparency and a rule of law.

In May 2018 EU settled of antitrust case with Gazprom with no fines in return for legally binding obligations to enable cross-border gas flows not fully supported by the existing infrastructure at competitive prices in Central and Eastern European gas markets.





Table 1. LNG Deliveries to the European Market in Q1 2018 were Down

	Q1 2017	Q1 2018	change (*bcm*)	change (%)
Qatar	5.1	4.9	-0.2	-3.9%
Nigeria	3.5	3.7	0.2	5.7%
Algeria	4.0	3.7	-0.3	-7.5%
Russia (Novatek)	0.0	0.8	0.8	
Norway	1.3	0.8	-0.5	-38.5%
Trinidad and Tobago	0.2	0.7	0.5	250.0%
Peru	1.0	0.4	-0.6	-60.0%
USA	0.8	0.4	-0.4	-50.0%
Angola	0.3	0.1	-0.2	-66.7%
Equatorial Guinea	0.2	0.1	-0.1	-50.0%
Dominican Republic	0.1	0.0	-0.1	-100.0%
Lithuania (re-export)	0.0	0.0	0.0	-100.0%
TOTAL	**16.4**	**15.7**	**-0.7**	**-4.3%**

Source: IEA, ENTSOG

Capacity of the LNG receiving terminals is well in excess to the volume of sales by Gazprom but the consumers prefer its gas to LNG, see Table 1. LNG suppliers make their choice in favor of other markets to Europe too. It is hard to buy considerations of the American politicians, who has vested interests of their own, and their proxies in Europe that Nord Stream 2 project would undermine its overall energy security and stability. Role of Russian gas should be reconsidered. It is not a problem anymore but part to the solution to facilitate a better integration of the EU's gas markets.

**Views expressed in this publication are the author's sole responsibility and do not necessarily represent that of Gazprom Export*

Eurogas Finds Gas Can Help Overachieve EU's Climate Targets at Lower Costs

Gas – natural, decarbonised and renewable – can help to achieve more ambitious emissions reductions by 2030 in heating, power and transport, and can therefore win time for new options towards 2050. These encouraging findings are revealed in the recent scenario study, presented by Eurogas, an association headquartered in Brussels and representing 44 companies and associations engaged in the wholesale, retail and distribution of gas in Europe.

The study was commissioned by Eurogas and undertaken by E3MLab on the basis of the PRIMES economic model, widely used by the European Commission to guide the EU's energy policies. All scenarios assume that the EU's climate targets are fully met and examine the technologies applied to reduce emissions, the energy mix, and the costs of achieving the targets by 2030 and by 2050.

The study demonstrates that the versatile role of gas and the gas system enables a socially acceptable pathway to 2050, supporting higher shares of renewable energy, while limiting the cost increase for consumers.

"The Eurogas scenario study with PRIMES confirms the conclusions recently announced by multiple other studies: that gas – natural, decarbonised and renewable – has strong potential to play an integral role in reducing Europe's GHG emissions and achieving clean energy for all Europeans," Eurogas Secretary General Beate Raabe points out.

Specifically, the innovative gas scenario showed that switching from coal and oil to natural gas would exceed the EU's 2030 GHG reduction target by 5%. Moreover, this would provide time to develop new cost-efficient options for 2050. Innovative gas solutions, such as the development of renewable and decarbonised gas towards 2050, would enable a 7% higher share of renewable energy overall, compared with the conventional wisdom scenario.

A higher share of renewables goes hand in hand with a 9% higher demand for gas to meet emissions reduction targets, in the innovative gas scenario. Gas demand levels in the EU would still be important in 2050, justifying the completion of an integrated EU gas network. Gas demand could be up to 460 bcm in 2050, 70% of which would be renewable gas.

The study also showed that strong electrification would meet system limitations and cause high overall costs. The PRIMES model calculated that more use of gas saves up to €335 bn in infrastructure investments between 2015 and 2050. It points to a mix of decarbonisation options as the better approach.

"The study confirmed that gas is not just an energy transition fuel, but a key part of the future energy system that should be based on partnership and fair competition with other energy sources," Beate Raabe concluded.

The findings of Eurogas study resonate with what Gazprom says to the gas industry stakeholders. As Alexander Medvedev, Deputy Chairman of Gazprom's Management



Committee said at European gas conference in Vienna: “Renewables have bright future indeed, but going all-in with them would be too dangerous for the security of supply. The best possible option to achieve the sustainable development of European energy sector is to combine renewable sources with natural gas. And for that, it is extremely important to preserve investment predictability in the gas industry”. Commitments on the future energy system in Europe require action. And this action should be smart, rational and balanced.

Key findings of the Eurogas study are available at:
https://gaswindandsun.eu/

IEA Forecasts Global Gas Consumption Pass 4 Trillion Cubic Meters Mark by 2022

The International Energy Agency (IEA) has published a gas market outlook through 2023. According to this forecast, global gas demand will grow with average annual growth rates of 1.6% over the reviewed period. Therefore, global natural gas consumption will grow to 4.1 trillion cubic meters in 2023, from 3.74 trillion cubic meters in 2017. The symbolic mark of 4 trillion cubic meters will be passed by 2022.

China will remain the main driver for global gas demand growth. By 2023, China’s gas consumption will have grown by 60%, which will correspond to 37% of the global gas demand growth. In 2019, China will replace Japan as the world’s largest gas importer.

IEA indicates that the role of LNG on the global gas markets is gaining momentum. Today, LNG corresponds to 1/3rd of the global gas trade and its share will grow to 40% by 2023. Asia will remain the key market for LNG supplies as the region in contrast to Europe doesn’t enjoy an extensive network of import pipelines. China together with such emerging markets as India and Pakistan will make up 90% of global LNG demand growth in the coming six years.

IEA analysts predict 40% of the global gas demand growth will fall on industry sector and 26% on electricity generation.

The Nord Stream 2 Project Progresses as Planned



Concrete weight coating in Kotka: Protective caps for storage © Nord Stream 2 / Axel Schmidt

The offshore installation barge “Castoro 10” (C10) has started preparatory works for future pipelaying for the Nord Stream 2 project at the German shore.

On 24 July, the C10 assumed its starting position with the help of its eight anchors in the shallow waters of Lubmin. Pipe segments are welded together on board the vessel and pulled ashore by a high-performance winch, to connect the landfall facilities of Nord Stream 2 with the new offshore pipeline.

Simultaneously, preparatory works for the subsequent pipelaying continue in the Bay of Greifswald. Five excavators are currently working on the 29-kilometer long pipe trench. Nord Stream 2 expects to complete works in the Bay of Greifswald by the end of this year.

In months preceding the start of the preparatory works in Germany Nord Stream 2 had received a set of necessary construction permits in Sweden and Russia.

On June 7, 2018, Nord Stream 2 AG obtained the permit to construct and operate its planned pipeline system in the Swedish Exclusive Economic Zone (EEZ). The 1,230-kilometres-long pipeline system will transport natural gas from Russia to the European Union. The permit was granted by the government, represented by the Ministry of Enterprise and Innovation, which is in charge of the application. The permit covers an approximately 510-kilometres-long route section in the Swedish EEZ.

“This is an important milestone for the Nord Stream 2 project. We are pleased to have obtained the Swedish government’s approval to construct and operate the Nord Stream 2 Pipeline,” said Lars O Grönstedt, Senior Advisor at Nord Stream 2. “We are now looking forward to continuing the productive cooperation and open dialogue with the Swedish authorities during the up-coming construction phase,” said Nicklas Andersson, Permitting Manager Sweden at Nord Stream 2. Preparatory seabed intervention works, such as pre-lay rock berms and concrete mattresses for cable crossings, will start at specific sections along the Swedish



route in the coming months, while pipe laying in the Swedish EEZ is scheduled to start later this year.

On June 7, 2018, Nord Stream 2 AG also received the construction permit for the Russian section of the planned pipeline. The permit has been issued by the Russian Ministry of Construction and Utilities in line with the established procedure. Practical implementation of the project under the terms of newly issued permit will begin in the nearest future, taking into account environmental aspects and in line with the conclusion of the State Environmental Expert Review.

"We are very pleased to have obtained this permit. This is the result of extensive and thorough teamwork that has been carried out throughout the comprehensive permitting process. This marks an important milestone for the Nord Stream 2 project," said Sergey Serdyukov, Chief Technical Officer at Nord Stream 2 AG.

In Russia, Nord Stream 2 needs to obtain two main permits. In addition to the permit issued today, a permit for construct of an underwater pipeline in the territorial sea of the Russian Federation will be obtained from the Russian Environmental Authority (Rosprirodnadzor). It is expected to be issued in the nearest future.

To date, Germany, Finland and Sweden have granted all the necessary permits for construction and operation of the planned pipeline. The national permitting procedure in Denmark is ongoing.



Pipe transshipment in the German port of Mukran © Nord Stream 2 / Axel Schmidt

In Turkey Nearshore Works Started for the TurkStream Gas Pipeline



Workers inspecting pipes for the TurkStream pipeline

On Sunday 22 July, nearshore works started for the TurkStream Offshore Gas Pipeline near the Turkish town of Kiyiköy. The nearshore component in Turkey involves constructing seabed trenches for around 2.4 kilometers length from the shoreline into the sea in order to bury the pipes for protection against wave action and avoidance of fishing interaction. The process of offshore trenching is expected to last 4 to 8 weeks.

According to the Environmental Impact Assessment (EIA) prepared by independent third party experts, the nearshore work will have small, temporary and localized effects for the local fishing industry. After a thorough consultation process with various Turkish stakeholders, including local community representatives and fishing groups, the Turkish Ministry of Environment and Urbanization approved the EIA in September 2017.

"We are pleased to be in line with our construction schedule to ensure that gas deliveries start by the end of 2019. We will try and make sure to minimize and mitigate the disturbance to the local residents during the nearshore works.» Sander van Rootselaar, TurkStream spokesperson, said.

TurkStream project company is engaging with local fishermen over a voluntary compensation scheme for potential loss of income during the period of nearshore works within the framework of its commitment to remedy any local impacts to be experienced. The compensation scheme is part of TurkStream's corporate responsibility and good neighborhood policy.

In parallel, Pioneering Spirit is progressing since the offshore construction of the second line resumed on 26 June. The landfall facilities on the Russian side of the Black Sea, near the city of Anapa, is in the final stages of construction and will be completed in 2018.

On April 30, 2018, at the Black Sea coast of Turkey, the deep-water pipelay for Line 1 of the TurkStream offshore gas pipeline has been completed.



Pipelay for the Line 1 of the TurkStream pipeline



The average rate of the deep-water pipelay carried out by the pipelaying vessel Pioneering Spirit was 4.3 kilometers per day. The maximum pipelaying rate – 5.6 kilometers per day – was reached twice in February 2018.

In accordance with the schedule, the project is being simultaneously implemented on shore in Russia and Turkey and in the Black Sea. The receiving terminal is being constructed near the settlement of Kiyikoy, Turkey.

TurkStream is the project for a gas pipeline stretching across the Black Sea from Russia to Turkey and further to Turkey's border with neighboring countries. The first line of the gas pipeline is intended for the Turkish consumers, while the second line is designated for the Southern and South-Eastern Europe. Each line will have the throughput capacity of 15.75 billion cubic meters of gas per year. South Stream Transport B.V., a wholly-owned subsidiary of Gazprom, is responsible for the construction of the gas pipeline's offshore section that started on May 7, 2017.

Turkey is Gazprom's second largest export market. Currently, Russian gas is delivered to Turkey via the Blue Stream gas pipeline and the Transbalkan Corridor. In 2017, Gazprom supplied the record 29 billion cubic meters of gas to the Turkish market. This is 4.3 billion cubic meters (17.3 per cent) more than in 2016 and 1.7 billion cubic meters (6.2 per cent) more than in 2014, when the previous maximum of 27.3 billion cubic meters was achieved.



Pioneering Spirit vessel

European Commission Has Decided to End Antitrust Investigation into Gazprom

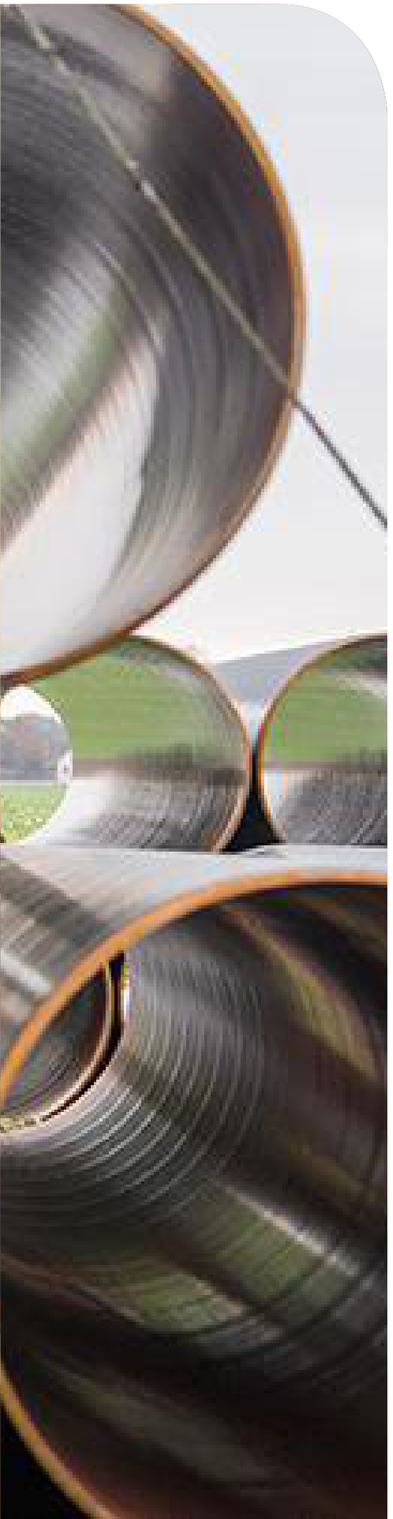
On May 24, 2018, in the context of the ongoing antitrust investigation and charges issued by DG Competition, the European Commission has announced that it finds Gazprom's latest post-market test commitments proposal acceptable. As a result, European Commission has decided to end its investigation into the company and will undertake no further action in this regard.

"We are satisfied with the commitments decision announced today by the European Commission in relation to the settlement of the investigation. We were always committed to cooperate in good faith in order to find a constructive, mutually acceptable solution in accordance with the established procedure. We believe that today's decision is the most reasonable outcome for the well-functioning of the entire European gas market.

Gazprom has always been honoring applicable provisions of the EU competition law and reaffirms its commitment to comply with them in future", said PJSC Gazprom's Deputy Chairman of the Management Committee Alexander Medvedev.



The European Commission, Brussels



Survey: Most of Germans Believe Natural Gas Is an Inalienable Partner to Renewables, Russia Remains a Preferred Source of Supply

In a representative survey conducted in May 2018, the independent forsa opinion research institute surveyed Germans' opinions on the energy transition and the importance of natural gas. The nationwide survey was conducted between 7 and 9 May 2018. 1,001 citizens aged 18 and over were selected in the Federal Republic of Germany by means of random sampling.

Some striking results are enlisted below.

Renewable energies need partner technologies to secure the energy supply. The majority of Germans (54%) are convinced that the best partner is natural gas. As the cleanest fossil fuel, natural gas is ahead of timber and oil (22% and 20% respectively) and well ahead of nuclear energy (17%).

The Germans' positive view of natural gas is also reflected in how they assess the development of the natural gas demand. A 52% majority believe that Germany will need more natural gas for its energy provision in the future, with another 23% expecting at least a stable level – which means that in total three-quarters of the respondents expect stable or even increasing demand. As this demand is facing a decline in domestic natural gas production in Germany and the EU, this means that the import requirement for natural gas is rising.

"Where should the natural gas for Germany come from?" asks forsa. Germans consider the most reliable energy partners to be Norway (71%), Canada (52%) and Russia (49%). Only about one in five (21%) consider the USA to be a reliable source of energy. Here, the value has declined significantly since summer 2015: at that time just under 40% considered the USA to be a good option. The scepticism about natural gas from the USA is also reflected in another question. Asked directly whether Germany and Europe should meet their natural gas needs from Russia or the USA, 61% of Germans voted for pipeline gas from Russia and only 13% for liquefied natural gas (LNG) from the USA.

The First LNG Cargo under the Long-Term Contract between Gazprom Marketing and Trading and GAIL Arrived to India



Participants of the welcoming ceremony

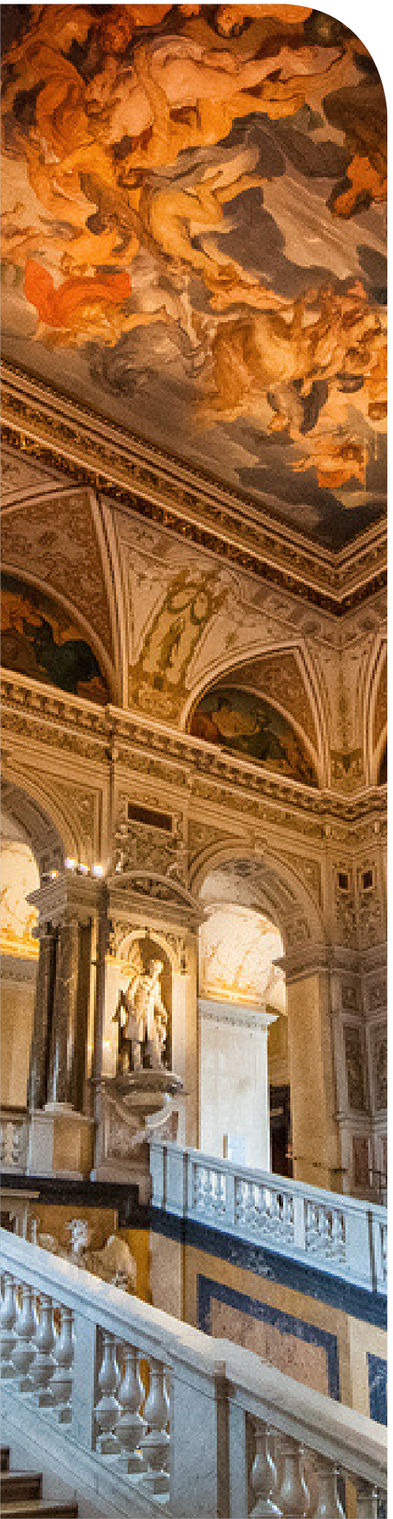
On June 4, the first tanker with LNG cargo arrived to the port of Dahej (Gujarat state in North-West India) under the long-term contract between Gazprom Marketing and Trading Singapore and GAIL. The official welcome ceremony was attended by the Minister of Petroleum and Natural Gas of India Dharmendra Pradhan, the Chairman and Managing Director of GAIL B. C. Tripathi, as well as representatives of Gazprom Group.





The start of long-term LNG supply will allow Gazprom to strengthen its presence in one of the most promising gas markets in the world. As for now, India is the fourth largest LNG importer in the world, and gas consumption there continues to increase. The government of India has set the goal of raising the share of gas in the energy balance of the country to 15% by 2030 from the current level of about 6.5%.

The agreement on LNG supply to India was signed by the parties on 29 August 2012. The contract provides the supply of 2.9 million tons per year for 20 years and an additional three-year period of reaching a plateau.



The Hermitage Is the Guest of the Kunsthistorisches Museum, Vienna



The exhibition "Old Masters from the Hermitage" opened on June 5, 2018 in the Kunsthistorisches Museum, Vienna. The gala opening of the exhibition was hosted by President of the Russian Federation Vladimir Putin, President of Austria Alexander Van der Bellen and Chancellor of Austria Sebastian Kurz. The Chairman of the Management Committee of Gazprom PJSC Alexei Miller, Chairman of the Board of OMV AG Reiner Seele, Director of the State Hermitage Museum Mikhail Piotrovsky and the General Director of the Kunsthistorisches Museum Sabine Haag also attended the opening ceremony. The exhibition opening coincided with the 50th anniversary of partnership between the two major energy companies of Russia and Austria, Gazprom PJSC and OMV AG.

The unique joint exhibition project between the Kunsthistorisches Museum and the State Hermitage Museum was arranged under the Memorandum on Mutual Understanding to Implement a Joint Cultural Project between Gazprom PJSC and OMV AG. Each museum provided with 14 pictures from its collections, which were united by the principle of juxtaposition. This showed the features of the museum collections at their best and the paintings represented in their masterpieces. Each pair was united by authorship of one painter, proximity of the subjects or common composition. The central part of the exposition was two monumental portraits of Empress Catherine II, who founded the Hermitage as an artistic collection, painting of the Danish painter and court portraitist of Virgilius Eriksen and Maria Theresa, who did a lot to classify the Austrian collection of paintings, in the rendition of one of the leading representatives of early Classicism, Anton von Maron. The represented pictures also included canvasses by such a prominent artists as Anthony van Dyck, Jacopo Tintoretto, Bernardo Strozzi, Peter Paul Reubens, Frans Hals, Jan Steen, Nicolas Poussin, and others.



"We are participating in the opening of a unique exhibition of selected masterpieces from two of the world's leading museums. This joint project by the State Hermitage Museum and the Kunsthistorisches Museum was made possible with support from the Russian Gazprom and the Austrian OMV. This is a type of gift for the anniversary of the energy cooperation between the two countries," Russian President Vladimir Putin noted in his opening remarks.

Vladimir Putin also expressed his sincere gratitude to the State Hermitage Museum, the Kunsthistorisches Museum and the exhibition organizers for the major and painstaking work on arranging it, and the consideration for the overall cultural and historical heritage.

The exhibition will come to the State Hermitage Museum in Russia in the fall of 2018, where it will be on display until January 2019.

OMV AG is the primary partner of the Gazprom Group in Austria. The companies cooperate in gas production and transportantion.

Gazprom Group and OMV have been conducting the joint cultural project "Imperial Capitals: St. Petersburg – Vienna" since 2016. It unites the art and history of Russia and Austria. In particular, within the project, in 2017, the D.D. Shostakovich St. Petersburg





Academic Philharmonia held a gala theatrical presentation. All proceeds from ticket sales were given to the charitable fund for aid to children with severe liver diseases. With the support of the companies, the Kunsthistorisches Museum in Vienna exhibited three works of Reubens from the State Hermitage Museum's collection. A Christmas charity ball was held "Energy for Life" in the Hofburg Palace with over 1,000 underprivileged children invited. A New Year's charity ball for children was also held in St. Petersburg in the Tavrichesky Palace.



Vladimir Putin and Alexander Van der Bellen at the opening ceremony

Unforgettable Trip along the Magic Mile: a Charitable Event for Children Held in St. Petersburg



St. Petersburg held a major charitable holiday on May 29, 2018. It was dedicated to the International Children's Day and was called "Unforgettable Trip along the Magic Mile!" The guests at the event were 100 children from the underprivileged strata of St. Petersburg and the Leningrad Region: orphans, children without guardians, and those with developmental disorders.

The holiday was organized by the Autonomous Non-Profit Organization "House of the Future" with financial support from Gazprom export LLC. It took place in the unique entertainment theme park "Magic Mile". Each child could plunge into an atmosphere of real trips and adventures, visit all parts of the park, dedicated to different continents, different periods of human history or geographical discoveries.

A special program was prepared for the young visitors on this day. Small groups of kids, accompanied by fairytale characters embarked on a fascinating trip through the park. They participated in games, contests, workshops and even acted in interactive theatrical performances. At the end of the main program, all the groups met at the main site to enjoy disco dancing, fireworks show and treats.













BLUE **FUEL**

www.gazpromexport.com | newsletter@gazpromexport.com
+7 (812) 646-14-14 | comm@gazpromexport.com

GAZPROM EXPORT