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EUROPEAN ENERGY REVIEW

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TOP STORY
Lowering the Price of Russian Gas: A Challenge for European Energy Security

NEW IN OUR FILES

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A complete monthly survey of our new publications

EVERYTHING IS ON THE MOVE

By Ben Warner - editor-in-chief

Energy sources, sectors and systems, whether it concerns markets, volumes, technology, prices or politics nothing displays a standstill. The world of energy is like energy itself. Actual activities cast their shadows on the future, long term scenarios touch today's decisions. It seems as if all time zones interfere. Our March features form an impression of this whirlpool or should I write worldpool.

Paul Hockenos interviewed Caudia Kemfert, who reacted more or less furious on the direction the debate concerning die Energiewende in Germany is going. An analyst returns fire in the War of Words is an adequate title of this energy havoc. Rainer Baake showed us The true challenges the German transition is facing. The time is saying in this case: It is now or ever!

Confrontation in this European country is neighboured by harmonisation in the north of Europe, where Finland, Sweden and Norway strive after an integration of systems in the electricity sector. And Danmark stands on the treshold. Reiner Gatermann opens a window on The Nordic Balance Settlement, cornerstone on the way to a common Nordic power retail market.

A two-piece essay was necessary to describe the fierce problem Russia encounters, because low pricing of coal, shale gas and tight oil , to name a few of rather new developments. Lowering the Price of Russian gas: A Challenge for European Energy Security and An uphill battle on the Russian gas prices on the horizon show that today's changes ask for tomorrows decisions. Adnan Vatansever and David Koryani make this clear in their detailed analysis – our top story of the month that you can can read from page 2.

And if this is not enough Rudolf ten Hoedt zooms in on a troublesome situation on Russia east flank. Japanese utilities may snub Putin's plan to feed Asia with LNG present us the growing hesitation in Japan concerning a steady development of this trade and delivery plan.

Gert van Wijland makes you an insider by his article on Offshore Power Supply: caught in a chicken and egg situation. Is it better that ships get their power on high seas or in 'onshore' harbour? As vessels sail around the globe this item touches the worldpool in every corner of our beloved Earth every time again.

Lowering the Price of Russian Gas: A Challenge for European Energy Security

Europe's energy discourse has been unjustifiably preoccupied with concerns about potential physical disruptions of Russian gas. The real challenge for European-Russian energy relations, and in fact, for European energy security, lies in settling on a price that leaves both sides content. While Europe will come under increasing pressure to acquire affordable energy resources to enhance its competitiveness, Gazprom may find it increasingly difficult to deliver gas at lower prices in the coming years.

By Adnan Vatansever and David Koranyi

Narratives about energy security in Europe often focus on worries about Russia using its energy as a weapon. Such analyses are misleading, however, as they misread current European gas market realities.

On balance, for more than four decades, Moscow has been a fairly reliable gas partner in Europe. Gas relations with Western Europe started to flourish already during the Cold War - despite strong initial opposition from the United States. During the 1980s, the USSR's drive for developing West Siberia's gas coincided with a rapidly expanding market share for Soviet gas in Europe, generating vital foreign currency revenues for Moscow.

Gazprom and Russia carry a fair share of the blame for the misguided fixation on cuts of gas flows to Europe. The disruptions in relation to Ukraine in the winters of 2006 and 2009 had a dramatic impact on several countries in Central and Eastern Europe, severely damaging European perceptions about Russian gas supplies. This is true even if these disruptions need to be viewed in the context of a complex pricing and payment dispute between Moscow and Kiev, as it would be unfair to define Gazprom as the party with the sole responsibility for the predicament created in Central and Eastern Europe in the immediate aftermath of these crises.

What is more, for many years Gazprom itself played on Europe's sense of insecurity by repeatedly emphasizing, and often overstressing the potential threat of physical disruption of its gas sales to Europe -in this case due to troubled transit countries Ukraine and Belarus. It readily endorsed Europe's energy security narrative that puts the emphasis on the risks of a physical disruption, though with different culprits in mind: the transit states. This helped to justify its two grand pipeline projects, and in fact, to secure significant support among European capitals to implement them.

An additional problem with the narrative fixated on the risks of a physical disruption is that it overestimates the benefits allegedly accruing to the supplier, while underestimating the potential harm that suppliers

would typically like to avoid. The act of deliberately interrupting the supply of gas is very much prone to backfire even with a "reasonable" justification and eventually hurt the supplier. It is an incident that cannot escape the public eye. In fact, even the mere threat to cut off gas supplies can hardly remain hidden, as the importing country can immediately secure international support by exposing the supplier's "plot" and impair its hard-earned credibility. The disruptions in the last decade helped galvanize a more common stance on European energy security that could eventually erode Russia's market position even in Central and Eastern Europe: hardly an outcome Moscow wanted. Not then, not in the future.

Neither Gazprom nor the Russian state appear willing to further risk Russia's credibility as a reliable supplier. Not only is the Russian state heavily dependent on gas export revenues, but Gazprom also remains largely locked-in into the European market. To date, the gas behemoth's failure to diversify its pipeline exports to Asia and its late entry into the international LNG market have solidified its dependence on sales to Europe.

Additionally, Europe is headed towards improved capability to deal with the challenge of short-term disruptions in gas supply. Significant efforts are under way for constructing new cross-border connections and storage facilities. In the near future, countries in Central and Eastern Europe are likely to overcome a gas crisis of the magnitude of the one witnessed in 2009 with substantially less damage. Gazprom's two grand pipeline projects, Nord Stream and South Stream, could also minimize the risk of disruption caused by a third party (transit country), enhancing Europe's sense of energy security.

> *For many years Gazprom itself played on Europe's sense of insecurity by repeatedly emphasizing, and often overstressing the potential threat of physical disruption of its gas sales to Europe*

The price of gas - a key element for energy security

It has become more common today to adopt a broader definition of energy security that goes beyond the traditional emphasis on the physical reliability of supply. The ability to acquire energy at reasonable prices is increasingly recognized as an important aspect of energy security.

The importance of the price of energy is yet to be fully acknowledged in Europe's gas relations with Russia. Why is it so important? First, in an increasingly competitive global economy, the price of energy can be a significant part of economic competitiveness for a country and even a whole region. With Europe bearing the extra cost of staying ahead of the pack in promoting greener forms of energy, the last thing Europeans need is overpaying for gas to its single most important supplier - Russia. The problem has the potential to be particularly acute for the new members of the European Union in Central and Eastern Europe (see below).

Second, it is in negotiations over the price of gas where Russia holds substantial leverage which could have potential implications for broader policy choices in European countries. Russia's options to either placate or punish its European partners remain wide. It is these levers that in reality could matter more than any theoretical possibilities of Moscow abruptly cutting its gas shipments to Europe.

Troika Dialog has put Gazprom's European clients roughly into two categories: the "price takers" (nearly all former communist countries in Eastern Europe) and the "price breakers" (Germany, Italy, France and Turkey)

Moscow has an array of options to approach negotiations with European clients: providing ad hoc price cuts; consenting to revise an existing price formula for a few years or for the duration of the contract; agreeing to exempt gas sales from export taxes (which could mean an immediate 30 percent more revenues for Gazprom and more room for maneuvering); flexibility over the portion of gas indexed to spot market prices; flexibility on "take or pay" obligations etc. Each of these options accord Gazprom a substantial clout in Europe.

Notably, in contrast to physical disruptions of Russian gas, negotiations over the price of gas are neither very rare nor are they generally exposed to public view. There are nearly constant negotiations over gas contracts between Moscow and European capitals, and their terms mostly remain proprietary. Due to the nature of these negotiations, it is difficult to find evidence that price negotiations provide a channel for Russia to impact foreign policy and economic choices made in European countries. But such a possibility cannot be ruled out, depending on the size of the stick or carrot Russia could put on the table.

Gazprom's failure to diversify its pipeline exports to Asia has solidified its dependence on sales to Europe (c) Russia Beyond the Headlines

that it is paying more than Greece for Gazprom's gas, even though the gas for the Greek market has to cross its own territory. Notoriously, Ukraine, geographically closer to Russia, has continued to pay more than many other Gazprom clients in Europe. A recent report by Russia's Izvestia highlights the substantial differences in the price of gas across Europe (see Table 1 (source: Izvestia)).

In a comprehensive study about Gazprom's pricing in Europe, a Russian investment bank, Troika Dialog (now integrated with Sberbank), has put Gazprom's European clients roughly into two categories: the "price takers" (nearly all former communist countries in Eastern Europe) and the "price breakers" (Germany, Italy, France and Turkey). Eastern Europe has had to pay not only relatively higher prices to Gazprom, but has also faced a greater difficulty in renegotiating the terms of their contracts. For instance, Poland was able to secure a modest reduction in the price of Russian gas in November 2012, but unlike several German and Italian companies, it failed to get Gazprom's consent to index part of the sales to spot market prices.

> *Gazprom may still have significant room for maneuvering (with regard to pricing its gas abroad) left in the near future*

The presence of such a dichotomy should not be a surprise. Access to alternative sources of gas, LNG or piped gas from a non-Russian source, remains the principal path for European companies to negotiate on better terms with Gazprom. As Table 2 illustrates (source: BP), Gazprom's key clients in Western Europe (including Turkey), continued to diversify their sources of supply during the past decade. All six countries listed managed to reduce the share of Russian gas in their imports. By contrast, in Eastern Europe, with the partial exception of the Czech Republic which invested in access to Norwegian gas, the level of dependence on Russian gas imports has remained nearly the same since 2000. And in fact, not much has changed for them since their days as members of the communist bloc.

It is notable that in the past few years, the share of Russian gas has been declining in countries with access to alternative sources of gas (generally cheaper gas indexed to spot prices). Gazprom's loss of market share to Statoil in Germany has been especially troubling for the Russian major, prompting it to accept several revisions in its contracts. By contrast, Gazprom has retained its market share nearly intact in most Central and Eastern European countries, despite some drop in total sales due mainly to the economic crisis.

In the meantime, it is worth recognizing that Gazprom's selective pricing policy is not always an outcome of its ability to exercise its market power. Evidence suggests that Moscow's foreign policy considerations also have an impact on Gazprom's pricing. For instance, in 2012, Armenia continued to pay less than half of what Ukraine paid per cubic meter of gas.

An uphill battle on Russian gas prices on the horizon

Europe's energy discourse has been unjustifiably preoccupied with concerns about potential physical disruptions of Russian gas. The real challenge for European-Russian energy relations, and in fact, for European energy security, lies in settling on a price that leaves both sides content. While Europe will come under increasing pressure to acquire affordable energy resources to enhance its competitiveness, Gazprom may find it increasingly difficult to deliver gas at lower prices in the coming years.

Europe's stagnant gas demand, an ongoing antitrust investigation against Gazprom by the European Commission, and the surprisingly rapid growth of lower priced spot-market gas sales in recent years spell trouble for the Russian major's market position in Europe.

For many, this is a cause for optimism that Gazprom would yield to pressures and adopt a more flexible stance in its gas contracts. Indeed, in December 2012, Gazprom announced its intention to cut its long-term contract prices in the European market in 2013.

And yet, pricing disputes with Gazprom are far from over. In fact, an uphill battle may well be on the horizon for years to come. This is because Gazprom may genuinely face growing constraints in response to requests for lower prices, endangering its market position. Also, in certain sub-markets (Eastern Europe), it may not perceive an immediate reason to substantially revise its pricing policy.

Gazprom may still have significant room for maneuvering (with regard to pricing its gas abroad) left in the near future. This is not least because, only two years ago, it still topped Forbes's list of the world's most profitable companies. Its profits stood at USD 44 billion in 2011. While a considerable opaqueness about the company's finances limits our ability to estimate Gazprom's precise room for maneuvering, our analysis suggests that, at least for three reasons, this room may be getting smaller in the coming years:

- a sub-optimal upstream strategy amidst a rapidly changing domestic and foreign market
- an expensive export infrastructure strategy
- the likelihood for increased tax pressure on Gazprom

Gazprom continues to carry out an upstream strategy that fails to take into account new realities in Russia's domestic market and abroad. This will come at a cost that could eventually curb its capacity to cut prices when needed.

Gazprom has invested in upstream capacity that does not look likely to be utilized in the near-term, and possibly by the end of the decade. Since 2007, it has ploughed in over $40 billion in the development of Yamal - its principal greenfield project. Before the Great Recession, such an investment decision was widely applauded, as the key concern at the time was its potential inability to meet both domestic and foreign commitments.

But market conditions have changed abruptly. European demand remains stagnant, and the IEA predicts that in 2020, the EU's total gas consumption will be only 4 bcm higher than in 2010 (540 bcm forecasted in the New Policies Scenario for 2020) [note 1]. Russia's CIS market is not performing any better, where Ukraine, Gazprom's largest market, remains determined to gradually reduce Russian gas imports.

Gazprom's biggest headache, however, may well turn out to be the Russian domestic market. On the one hand, demand growth has drastically slowed down since 2008. Energy efficiency measures, especially in power generation, are expected to curb further growth in gas demand. The IEA's most recent estimate is that Russia will consume only 4.6 percent more gas in 2020 compared to 2010 [note 2].

On the other hand, the Russian domestic market is getting increasingly crowded. Independents and oil companies have aggressively expanded their output in the past decade: their share in Russia's total gas output increased from a mere 10 percent in 2000 to about 24 percent in 2011. With no access to foreign markets, part of their growth is happening at Gazprom's expense.

> *If South Stream comes online, Russia will have a capacity to export well over 300 bcm of gas to the European market - a capacity that is about twice larger than its forecasted exports to Europe in the medium term*

Some of the gas is sold to Gazprom. But a growing portion is marketed through seizing on Gazprom's clients. Novatek's recent long-term sales contracts with two major Gazprom customers, the Russian arm of Germany's EON and Mosenergo, are indicative of a troubling trend for the

Russian major. Rosneft, Russia's largest oil company, has also announced plans for aggressively expanding its role in the gas business. Furthermore, non-Gazprom gas is set to grow rapidly through the end of this decade with optimistic estimates adding as much as 100 bcm of extra gas to the market by 2020.

What is striking is that non-Gazprom output has kept growing even when total Russian output has needed to be cut due to a lack of demand. Gazprom has taken the hit by cutting its own production to balance the markets. (Figure 1) With more gas expected to come from independents and Russia's oil companies, it appears highly unlikely that Gazprom will reach its pre-crisis (2008) peak output for many years to come, hurting its bottom line.

Figure 1: Gas Production in Russia (in bcm) - Source: Nefte Compass

In this context, Gazprom has opted for a costly upstream strategy with some potentially significant consequences. Every year since 2009, it has had to curb production below its annual target. What is even more troubling about Gazprom's practice has been its decision to cut production at Soviet legacy fields that produce gas at a relatively low cost, while putting vast sums of capital in greenfield development (Yamal) [note 3]. So far, Gazprom has demonstrated no intention for a restraint in its investment plans in Yamal despite market conditions. Instead, its cheap legacy fields remain as the major candidates for continued production cuts in the future.

With Yamal output rising, this is likely to raise the average cost of Gazprom's output. This comes on top of deteriorating quality at legacy fields, which is an additional cause for rising costs. As a consequence, Gazprom's upstream strategy may constrain its room for maneuvering in its pricing policy in the future [note 4].

Moreover, while Gazprom's average production costs are apparently headed on an upward trend, its export strategy is likely to further raise the cost of bringing Russian gas to the European market. Exports to Europe are not expected to grow significantly by the end of the decade. And yet, Gazprom keeps investing in export pipelines that far exceed its capacity needs. With the recently launched Nord Stream, Gazprom already has a substantial excess export capacity. If South Stream comes online, Russia will have a capacity to export well over 300 bcm of gas to the European market—a capacity that is about twice larger than its forecasted exports to Europe in the medium term. This implies that the average capacity utilization in Gazprom's export network will potentially remain low, raising the average cost of shipping Russian gas to Europe. Someone will eventually have to pay for the extra cost.

Finally, the Russian government has signaled an increasingly assertive stance on the relatively low level of taxation that Gazprom has been enjoying so far at a time, when Gazprom itself needs to

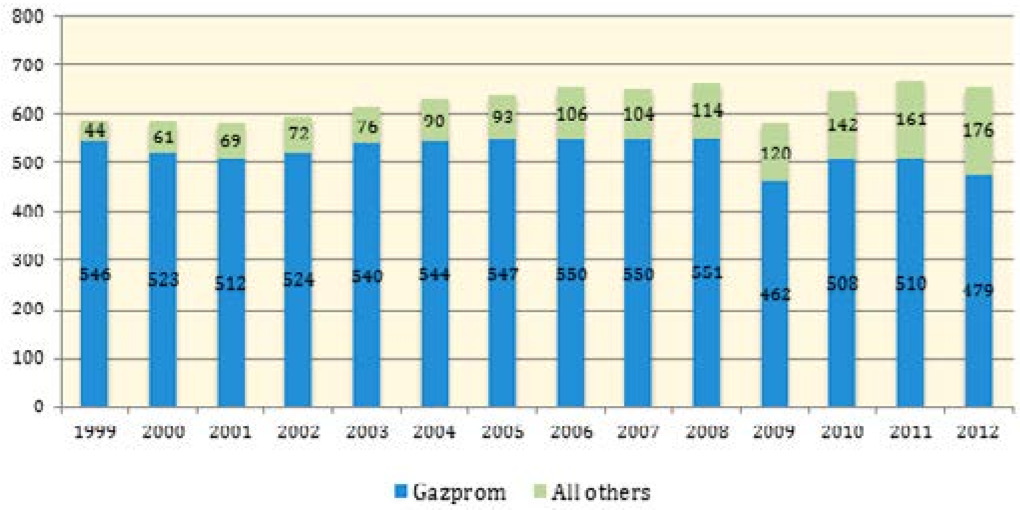

Figure 1: Gas Production in Russia (in bcm) - Source: Nefte Compass

maintain large capital expenditures just to sustain current production levels.

At the beginning of Putin's first presidency, the tax regime for the oil sector was fundamentally overhauled, resulting in a massive transfer of rents from the oil companies to the state throughout the following decade. Gazprom continued to enjoy lower taxes partly due to its role as a supplier of relatively underpriced gas to the domestic market. In the past few years, as domestic prices have been rising, Gazprom has finally been able to make significant profits from sales at home. But this has also attracted the ire of a growing number of government officials requesting a 'rebalancing' of Gazprom's tax burden.

As the Russian oil sector is about to reach its peak in the next few years, the relative importance of the gas sector as a source of revenues for the Russian state is likely to go higher. At present, the oil sector remains the largest source of government revenues. But, it faces a monumental upstream challenge as legacy fields are declining and new fields need to be urgently developed just to keep the current level of output. That is precisely why Rosneft is entering into deals with international majors, like Exxon, Eni, Statoil and BP: to lure in expertise and technology and enhance production from old (tight oil) and new (Arctic, Black Sea offshore) fields alike. But this necessitates the government to forsake substantial tax revenues from the oil sector to create a better investment environment and promote its further development.

With the gas sector possibly headed towards excess supply capacity through this decade, the Russian government may well look at Gazprom and other gas players to compensate for the foregone revenues. While this outcome is not given, it poses a major risk for Gazprom, and could eventually further raise the cost of the gas it brings to consumers in Europe.

Implications for Europe

For Gazprom, its increasingly suboptimal upstream strategy, the needlessly expensive export infrastructure strategy and the risk of higher taxes on the horizon cannot but complicate its pricing policy in Europe. The key question is who will pay for the extra costs that the Russian major is going to face.

The answer will lie in how European clients improve their bargaining position in the upcoming years. This will necessitate enhancing access to

> *For Gazprom, its increasingly suboptimal upstream strategy, the needlessly expensive export infrastructure strategy and the risk of higher taxes on the horizon cannot but complicate its pricing policy in Europe*

alternative sources of supply that could undercut Gazprom's price. Alternative options for Europe include speeding up investment in larger capacity cross-border interconnections and storage, building new LNG terminals, securing progress in getting Caspian and Iraqi gas, and rapidly establishing a conducive ground for investing in unconventional gas. Some of these options could come at a cost of maintaining unnecessarily large spare capacity for imports. Thus, each country and the European Commission need to make a delicate assessment and select projects with benefits that are large enough to outweigh potential extra costs related to overpaying to Gazprom.

For many countries in Central and Eastern Europe, immediate access to an alternative source is not in the cards. However, taking credible steps in this direction can make a difference. This would particularly be the case when a long-term contract with Gazprom is close to expiration and awaits renewal. Increasing leverage by actively pursuing diversification strategies, like completing the Southern Gas Corridor, building LNG terminals in Poland, the Baltics and Croatia and developing domestic shale resources is essential. Lack of action, on the other hand, will most likely be a recipe for even more difficult negotiations over the price of Russian gas resulting in protracted loss of competitiveness - a luxury these countries can ill afford.

Moscow is increasingly faced with the need for a new approach towards its gas sector, and particularly towards Gazprom. The company's present strategy, modus operandi as well as its domestic and international pricing model are unsustainable in the longer run. Future shifts on the global gas scene, like the prospects of US LNG exports to Asia and possibly to Europe or large-scale exploitation of shale gas in China may put additional pressure on Gazprom and limit its room for maneuver. If Gazprom continues to lose market share in Europe, and, in the meantime, it remains unable to keep its prices high, action by Russia's leadership will become more urgent. The Kremlin will hardly be inclined to abandon the export monopoly for pipeline gas. Yet, it could enhance Gazprom's competitiveness in Europe by turning rhetoric about dealing with Gazprom's inefficiencies into real action.

notes

1. World Energy Outlook 2012, International Energy Agency
2. Ibid
3. Curiously, Gazprom has - so far - failed to at least measure up domestic shale and tight gas potential though these might easily be closer to the European markets and cheaper to exploit than Yamal.
4. To Gazprom's credit, in 2012, the company decided to postpone investment in another highly capital-intensive field (Shtokman), which could have further strained it financially.

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file

National Markets

In Germany the debate about energy transistion (Energiewende) flared. In the North-West of Europe a common power retail market arises.

07/03 Battleground Energiewende, part II: German energy expert Claudia Kemfert about the “lies spread about the Energiewende”

Claudia Kemfert, Director of the Energy, Transportation, and Environment Unit at the prestigious Deutsche Institut für Wirtschaftsforschung in Berlin and one of the best-known energy experts in Germany, has had enough of the “Energiewende-bashing” that she feels has stymied the progress of the country’s energy transition and sullied its reputation. She has set out to explode the myths and lies that are being spread by Energiewende-sceptics. “When these myths are repeated again and again, they sink in,” she tells EER’s Paul Hockenos in Berlin. “Not so long ago Germans were extremely concerned about climate change and the dangers of nuclear power. Now they’re scared of the Energiewende.” Read the full story →

21/03

Two years after Fukushima the road to a renewable future is gradually becoming clear

The True Challenges Facing the German Energiewende

A new German expression is making its way into the English language, joining Kindergarten and Zeitgeist - Energiewende. Directly translatable as “energy transformation,” it refers to the broad effort underway in Germany to remake the country’s energy economy and transition to renewables. This effort has attracted international attention. And the adoption of the term in English reveals a certain sense of wonder. For indeed, if the phasing out of coal, gas, and nuclear in favour of wind and solar were an everyday affair, there would be little reason to memorize a cumbersome new German term.
Read the full story →

25/03 Nordic Balance Settlement, cornerstone to a common Nordic power retail market

The EU has many visions, more or less realistic ones. One vision is the creation and establishment of an European common retail market for electricity. On the way to this goal there are many obstacles to be removed. It begins with the insufficient political will, continues with fragmented legislation and ends with technical problems. Norway, Sweden and Finland however are convinced that all these barriers are surmountable. Their goal: To start in 2015 their own common power retail market with many positives (legal and technical harmonisation and long term savings) and a few negatives (high start up costs). And their hope: To present an effective and workable example to the up to now hesitant partners in the EU. Read the full story →

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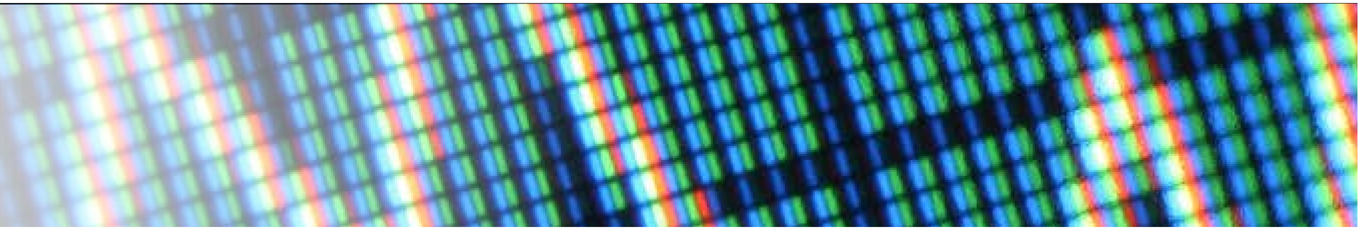

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Market Dynamics and Trade

What have the fast developments of shale gas and tight oil in store for Russia? And directly related to this European markets are also in the ball parc.

11/03 Lowering the price of gas: a challenge for European energy security Part 1

See page 2.

14/03 Lowering the price of gas: a challenge for European energy security Part 2 - An uphill battle on Russian gas prices on the horizon

See page 2.

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Geopolitics

LNG is very cold gas, but the Russian-Japanese agreement on delivery's from Vladivostok needs warming up.

18/03 Japanese utilities may snub Putin's plan to feed Asia with LNG

DISPATCH FROM TOKYO: "LNG from Vladivostok is no go -STOP- utilities not buying -STOP- Gazprom needs to change strategy." Friday February 22nd, this news dispatch from news agency Nikkei exploded in energy circles in Japan's capital Tokyo. Nikkei had just suggested that Russian gas export monopoly Gazprom had taken the final decision to build a liquefied natural gas plant (LNG) in Vladivostok on the Pacific coast of Russia's Far East. That morning telephone lines from Tokyo to Moscow were red hot. The LNG plant in Vladivostok is scheduled to start operations in 2018, Nikkei reported, and is meant for export to customers in Asia, including Japan. Read the full story →

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