EUROPEAN GAS MARKETS

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At the turn of the century, the European Union launched a vigorous liberalisation agenda in a bid to open up its national gas markets – aiming for lower prices, a greater range of suppliers and energy security. EURACTIV takes stock of progress made and the challenges lying ahead.
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Gas market liberalisation: An unsung EU success story?

By Frédéric Simon | EURACTIV.com

The liberalisation of European gas markets is widely recognised as a major success by industry analysts. But EU politicians are reluctant to celebrate it because liberalisation on its own has failed to deliver on another key objective – supply diversification. Ironically, Europe is now more dependent on Russian gas than ever.

Since the first Russia-Ukraine gas crisis broke out in 2006, the European Commission has pursued a vigorous liberalisation agenda in a bid to open up what still very much looked like a patchwork of national gas markets.

Twelve years later, policy analysts agree that EU gas markets have changed radically – and for the better. “A huge amount has been achieved, particularly in North West Europe, and to a lesser extent in Central Europe and Italy,” said Jonathan Stern, head of gas programme at the Oxford Institute for Energy Studies. “Essentially, the further south and east you go, the less the integration of markets, but in general I would say there has been a huge amount of progress,” Stern told EURACTIV in an interview.

Today, gas markets are much more liquid. About 60-70% of all gas sold in Europe is being traded openly on competitive markets, with the figure approaching 80% if Italy is added, Stern said. “We now have a real gas market in North West Europe and other parts of the continent, where prices are set by supply and demand. And that has an effect on the whole of continental Europe,” he explained.

The assessment is shared by ACER, the Agency for the Cooperation of Energy Regulators in Europe, which draws attention to legal changes that have helped fluidify gas markets.

“Since the entry into force of the so-called Third Energy Package in...”

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2009, major improvements have taken place,” said Dennis Hesseling, head of the gas department at ACER. Most industrial consumers and many households can now freely choose their gas supplier, he pointed out.

And “most gas incumbents have been unbundled, creating independent Transmission System Operators to facilitate market liberalisation and integration without discrimination between different suppliers, traders and shippers,” he told EURACTIV in e-mailed comments.

TRADING HUBS

Trading hubs of various sizes have been established across Europe, on which gas is exchanged freely and “where gas price discovery takes place,” Hesseling explained. The most advanced hubs have good liquidity and act as a benchmark for European gas prices, which have now “converged across a large part of the EU,” he pointed out.

This has helped markets work better, with the volume of gas traded in competitive gas hubs increasing by 20% from 2015 to 2016, ACER said in its latest gas monitoring market report, published in October.

Politicians deserve some praise for laying the policy groundwork, Stern admits. But a bigger driver of change came from outside events, when the financial crisis hit Europe in 2008. “That was what I call a perfect storm for the gas industry – with recession, collapsing demand, massive increases in oil prices, and hence gas prices that were linked to oil prices,” he told EURACTIV.

The immediate consequence of the 2008 crisis was that energy companies were forced to renegotiate established long-term contracts with gas suppliers. “And this is when the whole world changed, particularly for the big gas markets in Europe,” Stern pointed out.

Much of the credit goes to the emergence of a liquid gas hub in the Netherlands – the TTF – alongside Britain’s established NBP. The Dutch trading hub, combined with Austria’s smaller Central European Gas Hub, have placed countries like the Czech Republic, Slovakia and Poland within range of a market price, Stern said.

These hubs also show good forward liquidity, meaning they can be used for hedging. Across most European markets, gas prices at the hub were on average less than €1 per MWh more expensive than the benchmark TTF price, Hesseling points out. And the area within such a close price range has expanded consistently over the last years, showing more and more price convergence over time, he said.

DEALING WITH DISRUPTION

In essence, this means big suppliers like Russia cannot dictate their terms anymore. And that markets in Central and Eastern Europe have now gained access to lower, competitive prices set by market forces.

That is good news for countries that were vulnerable to perceived Russian blackmail. “The possibilities for suppliers to discriminate against certain customers have decreased,” Hesseling said. “Long-term contracts are more and more renegotiated based on hub prices, and nowadays often contain a (partial) price indexation to hub prices,” he told EURACTIV.

With more liquid markets, European countries are also better prepared to deal with potential supply disruptions.

A number of policy initiatives have undeniably helped. For instance, gas pipelines are now obliged to operate at “reverse flow” in case of emergency, allowing neighbouring countries to help each other in case of supply disruption.

Pipeline interconnectors have been built and more are being planned to link up markets in Central and Eastern Europe that were once out of reach. And nearly all European countries have built Liquefied Natural Gas (LNG) terminals which enables them to import gas from anywhere in the world in case of need.

What’s more, energy companies can no longer hoard capacity booked months in advance under long-term contracts with LNG tankers and gas pipeline operators, which incumbents used as a convenient way to keep competitors at bay. With the so-called “use-it-or-lose-it” rule, transport capacity booked but not used has to be made available to other network users.

Although the rule has never been applied in practice, “the fact that the market knows that is important in itself,” Stern says.

SUPPLY SECURITY “GREATLY IMPROVED”

All in all, these initiatives have considerably improved Europe’s resilience to potential supply disruptions.

“The security of supply situation has improved significantly, through the construction of selective new infrastructure and through enabling so-called reverse flows,” Hesseling underlines, saying reverse flow measures have “greatly improved the security of supply situation in large parts of Central and Eastern Europe, including in Ukraine, at a limited cost”.

The worst-case scenario is a repeat of the 2009 crisis, when Russia and Ukraine failed to agree a tariff for the transit of Russian gas to Europe, leaving more than a dozen European countries in the cold in the middle of the winter.

“If there were to be another Russia-Ukraine gas crisis today or tomorrow, would Central and Eastern European countries do better than 2009? The
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answer is definitely yes,” Stern said. “Today, we are in a much better position to deal with a gas crisis – thanks to new infrastructure, liberalising infrastructure, allowing for two-way flows of gas, facilitating storages and new LNG import capacity,” he pointed out.

DIVERSIFICATION

So does that mean Europe is now out of the cold? Not quite. Despite those breakthroughs, the EU has broadly failed on another flagship policy objective, which is to diversify its gas supply sources.

That has mainly to do with collapsing domestic production in the North Sea as well as complications in getting hold of gas from other regions. Plans to build a Southern Gas Corridor to pipe natural gas from the Caspian region have yet to materialise. And production from Norway, the EU’s second biggest supplier after Russia, has remained stable and is not expected to increase significantly in the future.

That leaves Europe with no other alternative than to increase imports from Russia or take in bigger amounts of LNG, which are currently sold at higher prices than pipeline gas.

“What has happened, totally counter-intuitively, is that Europe has become steadily more dependent on Russian gas,” Stern explains. “And the big irony is that this happened against all the policy statements and ideological commentary that were made since the last two Russia-Ukraine crises, the 2009 gas crisis and the 2014 political crisis,” he remarked.

Despite these setbacks, liberalisation remains a cornerstone of the EU’s gas policy. “The key drivers of energy security remain the completion of the internal energy market and more efficient energy consumption,” said Maroš Šefčovič, the EU Commission Vice-President in charge of the Energy Union, in a 2016 speech in front of the European Parliament.

“But events over the past years have also shown that diversification of energy sources, suppliers and routes are crucial for ensuring secure and resilient energy supplies to European citizens and companies,” Šefčovič said, referring to the controversial Nord Stream 2 pipeline aimed at bringing more gas from Russia directly to Germany.

Two years later, not much has happened on the diversification front, which might explain the Commission’s reticence to brag about its liberalisation policy. Although it does sometimes indulge in celebrating successes, like the recent liberalisation of the Latvian gas market, the EU executive prefers keeping a low-profile. Perhaps tellingly, it declined EURACTIV’s invitation to comment for this special report.
As Europe’s domestic production of natural gas is steadily declining and demand is projected to remain stable, import requirements will rise in the coming decades.

There are only two options to meet the increasing demand for gas imports – pipeline gas and liquefied natural gas (LNG).

The shares these two options will have in Europe’s energy mix are ultimately determined by consumers, based on factors that include prices, global competition, flexibility of supply and climate considerations.

INFOGRAPHIC

PROMOTED CONTENT

How to meet Europe’s growing gas import demand

By Nord Stream 2

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Factors that determine customers’ choice

1. Prices
   LNG is currently sold at a premium compared to pipeline gas

2. Global competition
   LNG will go to where demand is highest – i.e. Asia

3. Flexibility
   Pipeline gas can respond quicker to sudden spikes in demand

4. Emissions
   LNG imports have a much bigger CO2 footprint

As a result of these factors...

Europe’s LNG ports currently use only 25% of their total capacity – but they remain an important backup

Ultimately, the future role of LNG and pipeline gas imports will be decided by European customers

Conclusion

Europe has become a buyers’ market, thanks to the development of a functioning internal energy market that ensures a level playing field for competing suppliers, the existence of more import options than ever before, and the free flow of gas in all directions - wherever it is needed.
For the first time, the Netherlands became a net importer of gas last year, reflecting the inexorable decline in production from Europe’s North Sea fields – an issue EU policymakers are only starting to come to terms with.

Although the decline of Dutch gas production was long anticipated, the abruptness of the fall came as a surprise to industry observers.

“We did not realise until relatively recently that, in the Dutch gas sector, [production] would decline very quickly,” said Jonathan Stern, head of the Natural Gas Research Programme at the Oxford Institute for Energy Studies in the UK.

“The only question is to the speed of the decline,” he told EURACTIV in an interview.

How Europe eventually replaces Dutch production will probably redefine the fundamentals of the EU gas market in the coming decade or so. In fact, the effects are already being felt in a market where consumption is propped up by a gradual switch from coal to gas resulting from the pressure to decarbonise energy.

**DEMAND ON THE RISE**

Natural gas consumption in Europe last year reached its highest level since 2010, according to EU figures released in April. And the vast majority of it was imported, representing a whopping 360 billion cubic meters (bcm) of the 491bcm consumed in Europe, up 10% from 2016.

This resulted in an estimated import bill of €75 billion, the European Commission said in its latest quarterly report on European gas markets.

“Recently, gas volumes have risen again, driven by factors such as economic growth and the replacement of coal-fired power generation by gas,” said Dennis Hesseling, head of the gas department at the Agency for the Continued on Page 10
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Cooperation of Energy Regulators in Europe (ACER). “Next to that, seasonal gas demand for heating is highly temperature-dependent,” he said referring to the cold 2017-18 winter, which fuelled higher demand for gas.

For the Netherlands, the combination of these factors was spectacular. For the first time, the country became a net importer of gas on an annual basis last year, reflecting the steady decline in supplies coming from North Sea fields. On 29 March, the Dutch government announced it will cut production at the Groningen gas field to 12 billion cubic meters (bcm) per year by 2022, and to zero by 2030.

Russia, meanwhile, maintained its role as Europe’s dominant supplier, at 43% of EU imports. Pipeline gas from Norway came a distant second, at 34%, while the combined share of Algerian and Libyan supplies stood much lower, at 10% of EU imports in 2017, down from 11% in 2016.

“The general trend is that the domestic EU production is declining and the import need of gas is increasing. And that’s a trend we’ve seen coming for years,” said Jannik Lindbaek, the head of EU office at Statoil, the Norwegian energy company.

FILLING THE GAP: LNG AND RUSSIA

With domestic production falling inexorably, no country other than Russia seems in a position to raise its production significantly – at least in the short to medium term.

For different reasons, imports from Algeria and Libya are projected to erode slightly. And Norwegian imports aren’t expected to grow much either: “We have the capacity to supply the European gas market from the Norwegian Continental Shelf at the current level towards 2030,” said Statoil’s Lindbaek.

This leaves policymakers in Brussels grappling with an uncomfortable reality: Despite their best efforts to liberalise gas markets and diversify supplies, Russia is likely to remain Europe’s dominant supplier for many years.

“The key development that nobody outside the gas industry recognises is the collapse of Dutch production at the Groningen field,” Stern told EURACTIV.

“This is what is absolutely unbelievable for me: when politicians and media commentators speak about gas security problems, they only talk about Russia and nothing else. Whereas when gas industry people speak about security of supply, what they speak about is the decline of production in the Netherlands, the UK and, further in the future, Norway,” Stern said.

Imports of Liquefied Natural Gas (LNG) will undoubtedly fill some of the gap left by falling Dutch production.

In 2017, LNG imports covered 14% of total extra-EU gas imports, up from 13% in 2016, a share which is only projected to grow. Research by Bloomberg New Energy Finance (BNEF) shows LNG demand in Europe is expected to jump to 23.1% in 2030, on the back of falling domestic production in the North Sea and reluctance to import more gas from Russia.

But in the short term, the liquid and well-connected Northwest European market was not very attractive for LNG supplies: There, LNG has to compete with cheaper indigenous production and pipeline imports from Norway and Russia, notes the Commission report. As a result, LNG carriers sailing off from the US, Australia or elsewhere make more money shipping supplies to Asian markets, where consumers are ready to pay a higher price.

That could change if consumers in Europe are ready to pay more. Otherwise, there is no reason why European markets should go for anything else than Russian gas, which is cheaper, more abundant, and essentially more competitive.

“In terms of pure economics, pipeline gas should win hands down,” said Spencer Dale, the chief economist at British oil and gas company BP. “Particularly Russia has very large reserves and very low-cost gas. And it has very big pipelines going to Europe.

It has a huge competitive advantage relative to imports of LNG from anywhere else in the world,” Dale told EURACTIV in a recent interview.

Russia’s position will only strengthen when the Nord Stream 2 pipeline is built, roughly doubling Gazprom’s capacity to export gas to Europe directly to Germany via the Baltic Sea.

For EU policymakers bent on diversifying supplies away from Russia, this is perceived as a slap in the face. But “the problem is that there isn’t any other gas,” Stern said. “At least not in the short term. And that’s what people can’t accept”.

What’s more, Russia has skillfully navigated through Europe’s changing regulatory landscape, taking advantage of more competitive market conditions imposed at EU level.

Last year, Europe received its first cargo from Novatek’s new Yamal LNG facility which means that, for the first time, a company other than Gazprom supplied Russian gas to the EU, the Commission said in its report. Switching to more flexible “hybrid” contracts – combining hub prices and long-term price commitments – has also allowed Russia to increase its market share from 42% in 2016 to 43% in 2017.

According to BP’s Dale, Europe shouldn’t feel nervous about this. Most EU countries now have LNG terminals, which are currently used at around 25% of their maximum capacity. Should supply disruptions

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happen, Europe would now be in a position to import LNG at world prices, he pointed out.

"With the growth of LNG, there is increasingly a globally integrated gas market now, just as there is a globally integrated oil market," Dale said. He remarked that Europe is nowadays more dependent on Russian oil than gas, which doesn’t seem to bother anyone because oil is a globally traded commodity where suppliers can easily be replaced. "Have you ever heard anybody in Brussels telling you this poses an energy security problem?" Dale asked.

**SOUTHERN GAS CORRIDOR?**

Still, the diversification of suppliers has remained at the centre of the EU’s gas policy since the 2009 crisis when Russia and Ukraine failed to agree a tariff for the transit of Russian gas to Europe.

For instance, the European Union hasn’t given up on its pet project of importing large amounts of gas from the Caspian region, through the so-called Southern Gas Corridor. The first gas from this complex network of pipelines is expected to be delivered to Turkey in June or July this year, said BP’s Spencer Dale.

However, the completion of the Southern Gas Corridor has suffered delays because of political and commercial complications. And the current, scaled-back version of the project, which is planned to run through Turkey, doesn’t look politically attractive to Europe as it grapples with Ankara’s authoritarian regime.

"I don’t want to be too negative about this because I still think the Southern Gas Corridor could be a bigger success. But it’s already taken a long time and it’s going to take quite a lot longer," Stern said.

This is probably why the European Commission is so keen to place the emphasis on demand-side reduction, while massively converting Europe’s energy mix to electricity produced from indigenous renewable sources, in line with the bloc’s broader climate objectives.

“We have to have a frank and objective discussion about how much gas we really need in the future in the post-CoP21 context and against the background of the 2030 climate and energy framework,” Maroš Šefčovič, the EU Commission Vice-President in charge of the Energy Union, told the European Parliament in 2016.

However, these are long-term transitions which imply a deep transformation of how energy is produced and consumed. Until this happens, imported gas is likely to remain a significant part of the European energy mix.
Widely accepted as a "transition fuel" until 2030 to help wean Europe from coal, gas is also positioning itself as a clean fuel in its own right beyond that date. But meeting the EU’s 2050 climate goals will require a deep transformation of the sector, amid growing competition from solar and wind power.

In Europe, gas-powered electricity has emerged as the main winner from the decarbonisation agenda imposed by climate change policies – at the expense of coal.

“Gas is 50% less carbon-intensive than coal when combusted, so switching between coal and gas in the power sector is the easiest way of reducing emissions at scale in the short-to medium term,” said Mark Lewis from Carbon Tracker, a financial think tank based in London. Meeting the EU’s decarbonisation objectives for 2030 “is likely to see a major switch from coal to gas in Italy, Spain, Germany and the Netherlands,” Carbon Tracker said in a recent report, noting that Britain had already largely achieved its own switch thanks to domestic policies.

That should ensure stable demand for gas until at least the end of the next decade, analysts say, despite efforts to reduce energy consumption and better insulate buildings.

“The role for gas in Europe, particularly North West Europe, will not diminish significantly before 2030, and in some countries even beyond that date,” said Jonathan Stern, head of gas programme at the Oxford Institute for Energy Studies.

“I would suggest that qualifies gas to be defined as a transition fuel,” he told EURACTIV in an interview.

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BEYOND 2030

Projections beyond 2030 are less clear however, except for one point – gas will either have to come clean or follow coal to the dustbin of history.

“The initial priority has to be to remove coal from the mix by 2030 or very shortly after,” Lewis said. “And then, as renewables and storage are ramped up, to remove gas as well.”

Such a doomsday scenario is precisely what gas companies are trying to avoid. And they are busy charting pathways towards near zero-emission gas to make their point.

A recent scenario study commissioned by Eurogas, an industry association, found that switching from coal to gas would help exceed the EU’s 2030 decarbonisation goals by 5 percentage points – allowing a 45% cut instead of the 40% the EU committed to under the Paris Agreement.

“This is why we say, gas can help over-achieve the EU’s emissions targets,” said Anne Braaksma from Dutch gas wholesaler GasTerra, who led the study on behalf of Eurogas.

The different scenarios in the study were obtained from a modelling tool called PRIMES (Price-Induced Market Equilibrium System), which is used by the European Commission for analysing policy options in the energy and climate field.

What Eurogas obtained from the “conventional wisdom” scenario is the most widely accepted: Gas consumption remains stable until 2030 and declines slightly afterwards, due to energy efficiency measures and a partial switch to wind and solar in power generation.

But the longer term projection towards 2050 was not the slow death expected by some.

“Interrestingly, full electrification was not possible according to the model,” said Braaksma, stressing that Eurogas had no influence on the PRIMES model, which is “often referred to as a black box”. Even the “conventional wisdom” scenario, which is the most conservative, found a relevant role for gas in 2050.

“Don’t get me wrong, I don’t think we should have a discussion on a full-gas versus full-electric society – the PRIMES model did show electrification is increasing in all scenarios to a certain extent,” Braaksma said. “But even in the most far-reaching electrification scenario, it still projected substantial demand for gas,” he added.

The reason behind that boils down to costs: If electrification is pushed to its limits, much more investment in power grids will be needed, Braaksma pointed out, saying the transition would be €335 billion more expensive with full electrification than in other scenarios where gas plays a stronger role.

“And that is an important point,” Braaksma said – especially during winter when demand for energy is at its highest. “It’s not only volume-wise, it’s also capacity-wise, to keep houses warm when there is a winter peak,” Braaksma said.

In fact, heating is one of the main reasons why gas retains a key role in the PRIMES projections, even in scenarios where large amounts of renewables-based electricity are added to the system.

“On some days or weeks, you can run a huge amount of wind and solar power. But in the cold, dark winter months in Northern European countries, you will need something to fill those gaps. And that will probably be gas,” said Jonathan Stern, from the Oxford Institute of Energy Studies.

THE 2050 CHALLENGE

That said, even Eurogas admits that “the bigger challenge is what’s happening next, after 2030”.

If Europe is serious about meeting its commitments under the Paris Agreement, EU emissions will need to be brought to “net-zero” by 2050. And that rules out burning gas for energy, heating or industrial uses in the way it’s done currently.

“I believe that on CO2 grounds – we could also talk about methane leakage – it will not be possible to represent gas as a clean fuel beyond 2030 unless carbon capture and storage can be developed on a large scale,” Stern told EURACTIV. “And potentially, even in the 2020s, there will be pressure to phase-out gas if possible on the basis of CO2 and possibly methane emissions,” he added.

That pressure is already being felt in the power sector. In November 2016, the European Commission proposed setting an Emissions Performance Standard that would effectively rule out state aid for power stations emitting more than 550g of CO2 per kilowatt hour. If the proposal goes through (Poland is fiercely resisting the idea), this would exclude subsidies for coal-fired power stations, but also some of the less efficient gas-powered ones.

“The issue today is who will build a new gas power plant. That is the hard question now,” said Francesco Starace, the CEO of Enel, the Italian energy utility. “And if you ask that question, many companies will say they’re not doing that either,” he told EURACTIV in a interview last year.

“Gas also is being phased out, just like coal,” Starace said.

Environmental NGOs have sensed the winds of change and are pushing to eliminate gas from the energy mix as quickly as possible.

A recent report by the WWF said the UK has no need to build new large gas-fired power stations to replace the coal plants that the government has pledged to switch off by 2025. The gap can instead be filled by...
renewables, battery storage and flexible technologies, allowing the UK to go from “coal to clean” and skip new gas completely, according to the report.

“RENEWABLE” GAS AND HYDROGEN

While closures are to be expected in the power sector, the industry says “renewable gas” can become a clean source of energy in its own right, complementing wind and solar as part of a 100% renewable energy mix.

French energy company Engie says biogas from agricultural waste can offer an additional source of income for farmers, allowing them to produce organic fertilisers while avoiding to pollute land and groundwater with nitrogen.

“The best way to use gas is through injections into the network” in the form of previously purified gas – or biomethane – says Jean-Marc Leroy, Gas Chain Managing Director at Engie. “Concerning farmers remote from gas networks, cogeneration solutions enable farmers to produce at the same time fertilisers, heat, their own electricity and to sell the surplus to the power grid,” he says.

In the long term, the industry sees potential in a wide range of renewable and decarbonised gases, such as biogas, hydrogen or synthetic gas from power-to-gas processes, said Beate Raabe, the Secretary General of Eurogas.

Looking ahead to 2050, the PRIMES scenario study done by Eurogas reckons that 70% of gas could come from renewable sources, instead of fossil-based “natural” gas.

HYDROGEN AND CCS

Meanwhile, other solutions like hydrogen offer decarbonisation perspectives in heavy industries like steel, cement, or chemicals where electrification is not straightforward.

But hydrogen is only as clean as the source of power that is used to produce it. And the process is energy-intensive, which makes the solution uneconomical, unless there are vast amounts of renewable power close at hand, like in Northern Sweden.

Another option beyond 2030 is to take the CO₂ out of fossil-based natural gas using carbon capture and storage (CCS) to obtain hydrogen as a gas.

Equinor, the Norwegian energy company formerly known as Statoil, sees great potential in that technology, which it has pioneered since 1996 in its Sleipner field in the North Sea. The technique involves stripping the CO₂ form natural gas and burying it underground. At Sleipner, this is done in a sandstone formation 1,000 metres beneath the seabed where the CO₂ gradually replaces old gas deposits.

“Then you’re left with hydrogen. And we see that hydrogen might have a very strong potential, particularly in the sectors that are difficult to electrify” such as cement and steel, said Jannik Lindbaek, the head of the EU office of Equinor in Brussels.

The technology is available now and has already allowed producing 170bcm per year of hydrogen obtained from natural gas, Lindbaek points out, saying 23 million tonnes of CO₂ have been stored underground in the Norwegian Continental Shelf using this technique. “And we’re looking at how to develop that part of it, in combination with hydrogen value chains, to obtain an integrated energy system,” he explains.

Over time, Lindbaek says hydrogen could represent “the bulk” of Equinor’s gas production. If sufficient amounts of hydrogen can be produced, those efforts could culminate in the large-scale conversion of existing gas-fired power plants into hydrogen-fired power plants.

“One of the projects we’re involved in at the moment is how to convert one of the trains at the Magnum power plant in the Netherlands to run on hydrogen,” Lindbaek says. However, he acknowledges that this is “a big endeavour” that will require more research. “Learning how to bring down cost is obviously part of the scope for research and development in order to qualify hydrogen as a long-term decarbonised solution,” he says.

In the end, it all boils down to costs. “We need to make more progress on technologies before we can say that renewable gas actually can be a commercial success,” Stern cautions. “Because at current costs, there are more economic sources of energy”.

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The integration of European gas markets has made strides over the last fifteen years, bolstering energy security in Eastern EU countries as a result, says Jonathan Stern. But the collapse of Dutch production means Russia will probably remain at the centre of the game for years to come, he cautions.

**INTERVIEW HIGHLIGHTS:**
- “Huge progress” made since start of gas liberalisation process
- “Near-total” price convergence in North-West Europe, less in east

Jonathan Stern is the head of the Natural Gas Research Programme at the Oxford Institute for Energy Studies. He spoke to EURACTIV’s energy and environment editor Frédéric Simon.
and south
- Despite new interconnections, Europe is more dependent on Russian gas than ever
- “Collapse” of Dutch production a major source of concern
- The role of gas in Europe “will not diminish significantly before 2030”
- Carbon constraint means it will be “very difficult to build any new natural gas assets after 2025”

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The European gas market looked very much like a patchwork of national markets when the first gas directive was adopted, in 1998. How much progress has been achieved since then? What were the main milestones?

A huge amount has been achieved, particularly in North West Europe, and to a lesser extent in Central Europe and Italy. Essentially, the further south and east you go, the less the integration of markets, but in general I would say there has been a huge amount of progress.

The first big milestone was the European Commission’s sector investigation of 2007, when the competition directorate concluded that too little progress had been achieved on the liberalisation of gas markets in Europe and told energy utilities what they needed to do. They basically said what we knew already: the gas market was segmented, prices were not competitive, etc. And they told utilities they should do much better.

The next major milestone happened the following year, in 2008. And that was what I call a perfect storm for the gas industry – with recession, collapsing demand, massive increases in oil prices, and hence gas prices that were linked to oil prices.

That essentially led to the main utilities losing loads of money, and having to renegotiate their contracts. And this is when the whole world changed, particularly for the big gas markets in Europe.

The third milestone was the development of a liquid gas hub in the Netherlands, the TFF. There was already the NBP in the UK. But to have a continental European gas hub was a critical development. It had been in existence already in the mid-2000s, but starting from 2011 it became a serious gas hub.

And from 2014 onwards, its liquidity meant that there was now a real rival to the NBP. And it has since become in many metrics a bigger hub than the NBP.

And what did that change?

What it changed is that we now have a real gas market in North West Europe and other parts of the continent, where prices are set by supply and demand. So we have a liquid market which means that we have real competition and a very good progress towards a single gas market in North West Europe – meaning approximately 60 to 70% of the gas sold in Europe, and if you add Italy approaching 80%.

And that has an effect on the whole of continental Europe.

Price convergence and market liquidity are the two key indicators the European Commission looks at when assessing its liberalisation policy. How much of that has actually taken place over time?

In North West Europe, I would say we are more than 90% towards price convergence. We have done studies on this, showing that price convergence in that region is near-total.

You can find little periods where the prices diverge a little bit, like when some pipelines and interconnectors undergo maintenance. But essentially you have almost complete price convergence in North West Europe.

In Central Europe, you have a good degree of price convergence but not to the same extent as North West Europe. And in Southern Europe, with the exception of Italy, you have much less convergence.

So that means gas suppliers there can set their own terms?

That’s right. It means that you do not yet have enough interconnection and competitive conditions in a lot of the smaller gas markets, especially in South East Europe. And you don’t have the connectivity between Spain and the rest of Europe to ensure that you have meaningful price convergence with North West Europe.

For these regions, does that mean they are essentially dependent on Russia as a single gas supplier?

You can’t generalise, you have to look at individual countries.

- Hungary and Poland have made significant progress, same for the Czech Republic and Slovakia.
- In some former Yugoslav Republics, Bulgaria and Romania, there is much less progress.
- In Spain, there is a different type of progress because they have their own market for LNG and pipeline gas – they’re still an LNG island in some ways.
- Italy is very close to being fully integrated with North West Europe, via Austria, although it’s not completely the case yet. But in Southern Europe, Italy is the beacon of competitive gas markets.

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**So the regulators are right to push for further liberalisation because this will mean a more diverse range of suppliers...**

It will. But there are still issues to be resolved: Interconnections are gradually getting built. Which means these markets will eventually have a direct connection to a liquid gas hub, whether it’s in the Netherlands or Austria – they will be within range of a market price. And that will have a big impact on their markets.

The problem in many of these markets is that they are still dominated by a single, often state-owned, domestic player. And that means there are limits to the amount of competition that can be expected. But they will have access to a more diverse gas supply than simply Russia. And they will also be able to negotiate potentially more advantageous terms.

**You say “will”, can you say when?**

It depends on when interconnections will be finished. Virtually every country in Europe, except some of the very small former Yugoslav republics, these pipeline links are either underway or in advanced planning stage.

**One of the main objectives of the EU’s liberalisation policy was to improve security of supply, especially after the first gas crisis between Ukraine and Russia in 2006. How successful has the EU been in that respect?**

Moderately, I would say 7 out of 10.

**….which is not so bad.**

Not so bad at all. The problem here is that interconnectors allow these countries to get hold of other gas. The question is, will other gas be available? But if there were to be another Russia-Ukraine gas crisis today or tomorrow, would Central and Eastern European countries do better than 2009? The answer is definitely yes.

**But they would still be in deep trouble.**

Yes and no. What has happened, totally counter-intuitively, is that Europe has become steadily more dependent on Russian gas. And the big irony is that this happened against all the policy statements and ideological commentary that were made since the last two Russia-Ukraine crises, the 2009 gas crisis and the 2014 political crisis.

Today, we are in a much better position to deal with a gas crisis – thanks to new infrastructure, liberalising infrastructure, allowing for two-way flows of gas, facilitating storages and new LNG import capacity.

But that is not the same as saying that Europe has diversified its gas supplies.

**And that is probably getting worse with North Sea gas production having passed its peak...**

The key development that nobody outside the gas industry recognises is the collapse of Dutch production at the Groningen field. This is what is absolutely unbelievable for me: when politicians and media commentators speak about gas security problems, they only talk about Russia and nothing else.

Whereas when gas industry people speak about security of supply, what they speak about is the decline of production in the Netherlands, the UK, and further in the future Norway. Although in general things are much more positive in Norway, we have questions about some day-to-day reliability issues.

**On the UK and Netherlands side, the state of North Sea reserves is probably beyond repair...**

The only question is to the speed of the decline. And the problem is that we did not realise until relatively recently that in the Dutch gas sector it would decline very quickly.

**The gas market is closely linked to infrastructure, and you underlined some of the efforts currently underway. Broadly speaking, what major improvements have been made over the past ten years on the infrastructure side?**

The big improvement is that more European countries now have LNG import terminals. Let’s leave Spain aside because it is still much more dependent on LNG than any other European country. Many European countries which ten years ago or even five years ago did not have an LNG import terminal, now have one.

However, the actual utilisation of EU LNG terminals over the past few years has been only around 25% of capacity. So despite the fact that we have the infrastructure to import, we haven’t been importing LNG over the last few years, for commercial reasons.

Now, in terms of pipeline infrastructure, the big initiative over the last ten years has been the Southern Gas Corridor.

**….which hasn’t happened.**

Exactly. The Southern Gas Corridor was such a big initiative, so much emphasis was placed on it.

So why has it not happened? If you’re optimistic and charitable, you’ll say it needs more time, it could well happen in the 2020s or the 2030s. If you’re less charitable, you’ll say that, although there is an awful lot of gas in the Caspian, Central Asia and the

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Middle East, it’s been impossible to actually get it out of those countries and into Europe, for political and commercial reasons.

And also maybe because of falling demand and improved energy efficiency?

No. It’s due to the fact that although we’ve got rising imports of gas, Caspian gas cannot compete with Russian gas in particular, or gas from other sources. Caspian gas has to come from a very long way, and from countries that many importers do not consider as secure sources of supply, or transit.

Are you saying the Southern Gas Corridor is a kind of white elephant?

I think it would be too harsh to say that. What I would say is that it’s proved to be much more difficult than was initially thought.

And it’s been unlucky as well. The Southern Gas Corridor started being developed as liberalisation started to happen in Europe. If it had been developed in the 1990s, it would have been much easier: The big monopolists were still in place, they still had their financial power, they could sign long-term contracts, and they could sell gas at oil-linked prices – which would have made the creation of a southern corridor so much easier.

In today’s environment, it’s very difficult. Basically, what we’re telling these suppliers is that they can only sell gas to Europe at hub prices. And that they’ll have to operate in a competitive environment, so it will be up to them to take the price risk.

And from a transit point of view, Erdoğan’s Turkey is becoming a more challenging partner for Europe. So offering Ankara further leverage on Europe at the moment doesn’t look very attractive politically.

That’s right.

Returning to European gas markets as such, the so-called “use-it-or-lose-it” rule has been in place for some years now. It requires transport capacity booked but not used by energy companies to be made available to other network users. How much change has this brought to the market?

I think it’s brought a certain amount of change. But the change has been more in relation to the fact that people know it exists, rather than actual gas flows.

The point about use-it-or-lose-it is that it provides protection against hoarding of gas capacity by incumbents, who cannot claim anymore that they have a long-term ship or pay a contract which takes up all of the capacity. The fact that the market knows that is important in itself.

But the rule has only been operational on many markets for a relatively short time. We haven’t seen it in action everywhere. But I haven’t heard any complaints about use-it-or-lose-it, except in some Central European countries, where the incumbents still dominate. There, you do hear complaints, but not in the liberalised liquid markets.

What does that tell us about these Central European countries?

It tells us that many of them complain loudly about their positions but are not willing to liberalise their markets. Basically, they want the best of both worlds: They don’t want to change their market structure by privatising their companies and encouraging new entrants. But they want the benefits of liquid and competitive markets at lower prices.

That sounds contradictory. Liberalisation has improved security of supply in Western Europe, which is the big worry of Central and Eastern European countries. So they should be interested in doing the same, shouldn’t they?

Yes, but many Central and Eastern European countries want to maintain security of supply through control by government.

How much of the infrastructure is now capable of running with “reverse flow” capacity? Has this been a significant element in improving the fluidity of EU gas markets?

All of it should be capable of running reverse flow because that was part of the regulation on gas security, which should now be fully operational. And I don’t know anywhere where it’s not operational.

I believe this has been very significant in terms of market fluidity. But it’s the same story as with general competition: The further east and south you go, the more problematic it becomes.

That said, this is one of the issues which should be resolved by the Gazprom case with DG Competition, which should ensure that Gazprom is required to allow reverse flow wherever it’s requested.

And how is that process going?

The investigation has been running for seven years now but it’s been held up by the threat of a legal challenge from Poland. The last we’ve heard is that it’s very close to concluding.
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**Turning to LNG and shale gas – they’ve both gained importance in recent years, and are seen by policymakers as a new way of diversifying supplies. Have they had a significant impact on the EU market yet?**

This is actually a very complicated question.

Let’s dispose of shale gas immediately – shale gas in Europe has failed, I don’t expect it to succeed now, even in the UK where the government still seems very keen on it.

LNG has been a success in potential diversification – a lot of countries now have a receiving terminal. In some countries where the receiving terminal was specifically to diversify away from Russian gas – like Poland and Lithuania – it’s had a big impact in diversification because they went from a single supplier to being able to import from a range of LNG suppliers.

In many countries, receiving terminals have been running at very low capacity since they were created in the early to mid-2010s. But what’s important is that they could receive a lot more LNG if there was a problem with pipeline gas, or if there was a price signal suggesting that LNG was cheaper than pipeline gas. At the moment, LNG is more expensive and is being shipped to markets other than Europe that are ready to pay a higher price.

**On shale gas, you didn’t mention Poland as a potential developer but I remember they had big plans at some point…**

You remember correctly. They drilled 50 wells but the big international companies concluded there was no serious commercial opportunity there and almost all of them pulled out. What remains is a few smaller companies doing a little bit of production but nothing much.

**Shale gas can also be imported, via LNG…**

Yes, but although many people want to look at US LNG as the saviour of Europe from Russian gas, actually very little US LNG has arrived in Europe so far. More may arrive later but again, this is a commercial issue: is it more profitable for Americans to export their LNG to Europe or export to South America and Asia? They will, of course, look for the highest bidder.

**Looking forward, how do you see the evolving share of LNG, shale and piped gas in Europe?**

I think it’s almost impossible to answer that question, to be honest. Because it depends on so many different global dynamics.

Let me give you an example: The dynamics of global LNG depends on Asian countries import somewhere around two thirds to three-quarters of global LNG. Much of it goes to countries which do not have any pipelines alternatives. So when they need gas, they will take the LNG because they will always be prepared to pay higher prices than European countries which have a pipeline alternative.

So the general consensus is that for the next few years – until 2019, possibly 2022, 2023 or even 2025 – there will be a global surplus of LNG and Europe will be the beneficiary. And we will see more LNG in Europe. Exactly how much more is not possible to say.

**Regional gas trading hubs were pushed by policymakers in Brussels as a way of strengthening the resilience of markets in Central and Eastern Europe. How successful has this been so far?**

It’s been a great success, I would say. But it is not clear how much of that success is due to policymakers and how much is due to market forces.

In other words, I don’t think that TTF in the Netherlands became a big success because policymakers said ‘We need a liquid hub’. It became a big success because the market needed a price reference once it became absolutely clear that there was no basis for continuing to price gas in relation to oil.

Having said that, the fact that the Third Gas Directive and the subsequent Gas Target Model mandated that there should be a hub in each country was clearly important. So I think policymakers can take some credit. But if we hadn’t had the 2008 recession, I think the whole process would have been much slower, despite the policies.

**Do you see a regional trading hub emerging in Central Europe, maybe in Austria, of the same magnitude as the British or the Dutch one?**

No. Because basically, hubs are about first mover advantage. There is a good example with the US and Canada. Once you have a dominant hub, creating an additional one of equal dominance simply doesn’t happen.

TTF is now the euro-hub. It’s not to say that you can’t have other relatively strong hubs like NCG in Germany, PSV in Italy or the VTP in Austria, but they are not going to rival TTF.

**Can they be strong regional hubs nevertheless?**

They can be strong national or small regional hubs. But they will always a strong relationship to TTF because this is where the liquidity is.

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**Have minimum storage requirements imposed at EU level made a difference to supply security?**

Probably but they haven’t been tested out yet. If we had another 2009 situation with Russian gas – and it really is only Russian gas we’re talking about – would Europe do better? I would say absolutely yes. But part of that is storage, part is reverse flow and part is because the markets are more liquid.

**Natural gas consumption in Europe last year reached its highest level since 2010, according to EU figures published in April. What conclusions do you draw from this? Does it show that European markets are still not functioning as they should?**

It shows they are functioning properly. This is the result of basic economics. One of the reasons why demand went down so dramatically was that prices in 2010-2014 were disastrously high due to some extraordinary conditions that we will not see again. Since 2014, prices have fallen dramatically and demand has gone back up again.

Another reason is the extraordinary strength of coal prices that nobody expected, and the phasing out of coal and some nuclear stations in North West Europe. So it’s not a single reason but it does show that basic economics apply to the gas industry.

**How do you see the evolving dynamics between domestic gas production and imported gas in Europe in the coming years? With falling production in the North Sea and complications with the Southern Gas Corridor, that doesn’t leave Europe with many other options than Russia, right?**

Again, these are complicated dynamics. On domestic gas, what we have is rapidly falling availability from the Netherlands, slowly falling availability in the UK, flat or slightly increasing production in Norway (at least for a few years), and then a whole range of other suppliers, apart from Russia.

North African gas supplies are a serious problem because we just don’t know how much gas is going to be available from those countries. And that’s a big issue in Southern Europe, which is not often talked about. In Libya, there is a serious political situation. And in Algeria, there are plenty of reserves but they are not developing them quickly enough. So we should not be expecting more gas coming out of North Africa and in a worst case situation, there could be less gas coming from there.

**Does import dependency makes the case for liberalisation even more urgent? Does it help in a way?**

Yes, liberalising access to markets does help and is the right thing to do, as long as there is gas and LNG available. But what people have not got their heads around is the gas availability situation as opposed to liberalisation conditions.

**That speaks in favour of the Southern Gas Corridor, then?**

If you look back to the mid-2000s, you will find people from the Commission saying that by 2020, there will be 100 billion cubic meters (bcm) of gas flowing through the Southern Corridor via three pipelines.

You could say that, even then, these expectations were a bit of an exaggeration. But nobody expected that there would be a corridor carrying so little gas by 2020. I don’t want to be too negative about this because I still think the Southern Gas Corridor could be a bigger success. But it’s already taken a long time and it’s going to take quite a lot longer.

**What do you tell those – usually environmentalists – who argue more pipelines aren’t needed because the demand can be met with things like efficiency improvements or electricity.**

I’d say fantastic news, but you’d better be right. All those people in North West Europe who say we don’t need any more gas, we’ve got efficiency, we’ve renewables, battery storage, etc. – fine. But please be sure that you’re right. Because if you’re not right, the pipelines will not be there and there will be no time to build them.

The consequences of that may not be disastrous – they may just be that we will be paying more for our energy – but it’s important that customers and governments understand this.

**A fourth gas directive was tabled by the European Commission in November last year, which proposed extending so-called “ownership unbundling” requirements to third country pipelines – which is mainly seen as an attack on Nord Stream 2. Do you see this move as being justified from a market liberalisation perspective or a security of supply perspective?**

No, I don’t. And I think it brings regulation into disrepute. In other words, we’re doing what we often accuse other governments of doing – basically making rules on the hoof: you see something you don’t like and you make a regulation to stop it.

We’ve had 30 years of gas regulation in Europe. We’ve created a framework and told countries that they need to stick to it. And when the Russians respect that framework, the Commission then makes new regulations to stop those pipelines. I’m against that because it is impacted by political views, which is exactly what we said we didn’t want.

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**Has Gazprom really complied with the EU regulatory framework? They've been trying to resist it too, haven't they?**

Of course they have. I spent three years sitting on an EU committee with the Russians telling us not to introduce this regulatory framework. They were telling us that we were going to stop Russian gas coming into Europe and that it was a stupid thing to do because we should be encouraging gas coming into Europe.

We kept saying to them was that we were going to make our rules and that they would have to live by them. So we did make our rules, which was the third gas directive. And, with some struggle, they agreed to live by them.

Now, we’re saying that this hasn’t done what we wanted, which is to stop Nord Stream 2. So we’re going to introduce new rules.

**The goal here is to decrease the amount of gas imported from Russia...**

That’s right. But the problem is that there isn’t any other gas. At least not in the short term. And that’s what people can’t accept. I do have sympathy for those who question Europe’s need for more gas and say there are alternatives to balance supply and demand. But you then have to accept that energy may end up costing more as a result.

**One of the arguments for Nord Stream was to accompany Germany’s nuclear phase-out and avoid a capacity shortage being filled with coal, which emits more CO2. Do you see gas as a necessary “transition fuel” away from coal – a kind of lesser evil in a way?**

I’ve written a lot on this. And you need to be very clear on the definitions. People bandy around this phrase ‘transition fuel’ as if they know what it means but they don’t give us a precise definition.

I have defined it as follows: The role for gas in Europe, particularly North West Europe, will not diminish significantly before 2030, and in some countries even beyond that date. I would suggest that qualifies gas to be defined as a transition fuel.

Looking at the 2040s and the 2050s is a different story. But if countries are going to meet carbon reduction targets, they cannot retain coal in their energy balances. Now, in some countries, like the UK for example, we have a lot of very old coal-fired power stations that we should have retired many years ago because they’re so inefficient. And we’ve made a big fuss about the fact that we’re retiring them now when they should have been phased out long ago anyway.

That’s not the same in countries like Germany where you have relatively new and efficient coal-fired power stations. But you can’t resolve the CO2 problem without retiring at least some of these stations. Maybe you can fill some of that gap with renewables and efficiency but you can’t fill all of it. And therefore you will need more gas.

But you can’t make broad sweeping generalisations either across countries or even across time frames within the same country. You have to be specific about the countries and the periods under consideration.

**In the case of Germany, the role of gas in the transition phase is to fill the gap left by the nuclear phase-out because there are no guarantees that other sources of energy will be available to fill that gap.**

Again, you need to be careful about what kind of gap you’re talking about. Because on some days or weeks, you can run a huge amount of wind and solar power. But in the cold, dark winter months in Northern European countries, you will need something to fill those gaps. And that will probably be gas.

**In the long run – say 2030 and 2050 – do you see gas as a clean fuel in its own right?**

I believe that on CO2 grounds (we could also talk about methane leakage), it will not be possible to represent gas as a clean fuel beyond 2030 unless carbon capture and storage can be developed on a large scale. Elsewhere in the world, it will, but not in Europe, and particularly not in North West Europe. And potentially, even in the 2020s, there will be pressure to phase-out gas if possible on the basis of CO2 and possibly methane emissions.

**So you seem to agree in a way with environmentalists who warn against building new gas infrastructure because it could remain unused.**

That’s a very difficult judgement to make. Because there are two types of risks. One is to build assets that will be stranded before they’re paid off. And the other risk is not building assets which will provide us with the energy we need. And the difficulty is to know what those assets should be and how quickly we need to pay them off.

But assuming that North West Europe is going to meet carbon reduction targets, it’s going to be very difficult to build any new natural gas assets after 2025.

**Do you think Nord Stream 2 is a project that is driven by market demand?**

Yes, now it is. This is an important point: When Nord Stream 1 was first presented, it was put forward as four lines. They only built 2, which came online in 2012. Now, think about what would have happened if they hadn’t been built given the problems we’ve experienced with supply since 2014.

When the next two lines were proposed after 2012, people questioned whether they were really needed.

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And then in 2014, with Ukraine and Crimea, everyone said ‘No, we don’t want Russian gas’. And then, people suddenly began to see what was happening with North West European supply. And the moment you see the drop in exports from the Netherlands, you realise the market case for Nord Stream 2.

But even if Nord Stream 2 is needed in the early 2020s, you might question whether it will still be needed in the 2040s. It’s an interesting question and one which is much more difficult to answer.

To conclude, policymakers in Brussels are looking at ways to encourage different varieties of “green gas” coming from renewable energy sources — whether biogas produced from agriculture, synthetic gas or hydrogen produced from renewable electricity. Gas industry representatives say these could represent up to 76% of gas in Europe by 2050. What do you make of that?

What I didn’t get from that report is what they thought European demand would be in 2050. Because if it’s 76% of a relatively small market, I agree. What I question is the Ecofys report which said there could be 100bcm of renewable gas in Europe by 2030. Yes, there could, but I wonder who is going to pay for it because it’s very expensive. We can do it but that would be mainly biogas or biomethane.

Hydrogen is more complicated. Because you either have to produce it through steam reforming methane but then you have to store the CO2. Or you have to produce it through electrolysis.

Now, we don’t have any large scale electrolysis going on in Europe, we have a megawatt here and a couple of megawatts there. But no large-scale electrolysis projects. There is quite a bit of hydrogen produced around the world but not with carbon sequestration and storage.

So we need to make more progress on technologies before we can say that renewable gas actually can be a commercial success. Because at current costs, there are more economic sources of energy.

Hydrogen is often put forward nowadays as a way of decarbonising the so-called hard-to-abate sectors of industry, like steelmaking. Is that something you’ve been looking into?

Hydrogen is great, but if you’re going to store the CO2 (which you need to do for it to be really renewable gas), then you need structures in which to store the CO2. For political reasons those structures generally have to be offshore. And all of that adds to costs.

In the UK, we have the best structure of industry and opportunities for storage to test that out. But we still don’t have ongoing projects. We have proposals but not ongoing projects.
Almost ten years after the implementation of the Third Energy Package, the risk of backtracking on liberalisation looks very real as policymakers seem increasingly frustrated at having “given away” power to the market, writes Luca Franza.

Luca Franza is a researcher on international gas markets at the Clingendael International Energy Programme (CIEP) in The Hague.

Almost a decade after the Third Energy Package has come into force, time is ripe to draw conclusions on gas market liberalisation. This assessment is timely as the temptation of bringing politics back into gas seems to have reached an all-time high.

To be sure, breaking up incumbents has not been a painless undertaking, but the industry has now adapted to the “new normal” in most EU countries. New ways of doing business, commercial opportunities and professional profiles have emerged. Young executives operate with a post-liberalisation mindset. Alongside traditional players, new ones have come to the scene, such as trading companies, TSOs and DSOs.

The number of active players on the NBP (National Balancing Point, the British hub) and TTF (Title Transfer Facility, the Dutch hub) is

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now approaching 200 and annual traded volumes in each of them exceed 1.8 Tcm – three times the amount of gas consumed in entire Europe.

The British and Dutch hubs have in fact become fully fledged liquid hubs, serving as benchmarks for Europe. Gas-to-gas competition has risen and gas prices are increasingly set by supply and demand.

Importantly, liquidity has also reached satisfactory levels in the NBP’s and TTF’s far-curves. Apart from enabling supply hedging and price risk management, this is also a key condition for hub prices to be used as markers in long-term contracts.

Moreover, the borders of liberalised Europe are expanding. Liquidity in other Western hubs – particularly in Germany and Italy – has risen substantially in the last three years. The hubs of France, Belgium, Germany, Italy, Austria and Czechia are now all classified as “advanced” by the Agency for the Cooperation of European Regulators (ACER).

They display a good correlation with NBP and TTF and, with some exceptions, also increasing convergence with the leading hubs. This is in line with liberalisation’s ambition of allowing gas volumes to move freely across European borders, reacting to price signals. It shows that many physical and regulatory barriers to cross-border trade have been lifted.

As a result, a number of short-term security of supply challenges have been successfully met by markets in Western Europe. This has been proven by market responses to nuclear shortages in France; to British gas shortages provoked by outages at the Rough UK gas storage site, maintenance in Norwegian pipelines and cold snaps; and to the December 2017 Baumgarten explosion that threatened a vital supply line to Italy.

On these occasions, prices skyrocketed for short periods to signal scarcity, triggering market reactions (storage withdrawals, increased reverse flows) that soon brought prices back to normal.

**LOWER IMPORT BILLS IN A GLOBALISED MARKET**

Finally, liberalisation has allowed Europe to cut its gas import bill after last decade’s economic crisis. European hub prices have started to decline in 2008-2009, first reflecting oversupply (rooted in the rise of US shale production and Qatari LNG) and the decline in demand due to the economic crisis and then Norway’s and the Netherlands’ choice to sell gas on hub terms.

Oil-indexed prices did not follow this trend for a number of years, and a substantial gap between hub prices and oil-indexed prices remained until 2014-2015. As end-users were finally allowed to switch suppliers and source gas directly at the hub, EU midstreamers found themselves in a difficult position and asked suppliers to renegotiate long-term contracts.

Gas exporters were forced to change pricing mechanisms and introduced hub indexation.

In the old world of long-term oil-indexed contracts, vertical integration and captive end-users, it would not have been possible to translate oversupply into low prices. Prices would have remained artificially high, anchored to a high oil price.

But thanks to liberalisation (and not-always-private investment in redundant infrastructure), oversupply delivered competitively priced gas and plenty of optionality. Even if Russian gas imports soared in the last three years, European buyers have had the possibility to call on alternative gas in case of disruptions or price spikes. Russian market power is thus limited and head-to-head competition between LNG and Russian gas is proving a blessing for the EU.

Besides, a global LNG market is taking shape, with greater flexible volumes that arbitrage between a rising number of buyers across the globe and sizeable portfolio aggregation dynamics that are jolting the point-to-point nature of gas trade.

The Energy Union has indicated the establishment of a global liquid market for LNG as a strategic objective: this is rooted in the realisation that the “new model” will more easily work for Europe if it is exported to other importing markets.

Indeed, if Asian buyers lock large volumes in long-term contracts, the global LNG market will risk losing its flexibility and Europe will thus risk losing the optionality that is so essential to let the “new model” work.

**WHAT IF MARKETS TIGHTEN?**

This leads to the unveiling of the weakest point of this whole architecture: its reliance on oversupply. The truth is that the resilience of the new model has never been tested in a tight market.

European gas demand has been subdued for a decade: even when global gas markets were tight in the wake of Fukushima, Europe has never got close to experiencing real tightness.

In spite of its claim of neutrality, liberalisation does have a bias towards consumers: Europe has stopped feeling concerned about whether gas producers have the instruments to plan investments on
Indeed, as gas prices have fallen in 2014, final investment decisions on new capacity have been stalling. Nobody is excited to sign long-term contracts at the moment and, although some people don’t like to admit it, long-term contracts are still required to underpin the development of new fields (as Shah Deniz-2 and TAP reminded us).

Experts foresee a tightening market towards 2022-2025: how will “liberal Europe” fare then? Will it be exposed to very high hub prices? And with the Asians potentially locking in LNG, will dependence on Russian gas grow?

Liberalisation has broken the old consensus on long-term oil-indexed contracts and weakened the midstreamers’ leverage vis-à-vis export monopolists. It is legitimate to raise the preoccupation that in a tight market, swing suppliers may have the key to influence hub prices.

At the end of the day, sources of gas remain limited and diversification is complicated by the lack of appetite for long-term contracts. While Europe has been quite effective in obstructing unwanted pipelines, it has not been equally effective in attracting investments on the pipelines it wanted.

This feeling of having “given away” power to the market is met with frustration by some policymakers. As a result, already before 2014, the liberal regime has been profligate in derogations to general principles, socialised costs, targeted financing and selective use of regulation. This included for example Exemptions to third-party access (TPA) rules and other derogations granted on the grounds of “security of supply”.

As a result, the long-announced deregulation never came. Instead, regulation has proliferated – with corrections to market and regulatory failures piling up. After the 2014 Ukraine crisis, the temptation of bringing back politics has hit an all-time high, as proven by the Nord Stream-2 saga.

Almost ten years after the implementation of the Third Energy Package, the possibility of a backtracking on liberalisation looks very real.

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BACKTRACKING IN SIGHT?
The Nord Stream 2 gas pipeline project has come under intense scrutiny from the European Commission, which drafted a special directive last year to try and stop it. EURACTIV’s Frédéric Simon asked the awkward question to Nord Stream 2’s Chief Financial Officer, Paul Corcoran.

[Frédéric Simon] Joining me today in the studio is Paul Corcoran for Nord Stream 2. Thank you Paul for joining us for this show Under Pressure. There is already a pipeline bringing Russian gas directly to Germany via the Baltic sea, so why build a second pipeline using exactly the same route?

[Paul Corcoran] The answer is very straightforward. Repeat the success. Nord Stream 1 is a very successful project. It was implemented on time and within budget. It ramped up since 2011 to virtually its full capacity. Last

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year it operated at 93%. First quarter of this year it’s around 100%. It’s a tremendous success.

That is actually being disputed. I’m citing figures here about the capacity usage of Nord Stream 1: its rate was 70% in 2016 according to S&P Platts, and it’s being used at around 50% of the capacity according to figures cited - kind of unofficially - by the European commission.

Those figures of 50% by the European Commission are flatly wrong. They’re just inaccurate. The figure you reported for 2016 is correct. That’s part of the ramp up. 2017 was 93% and first quarter of 2018 it’s running at full capacity.

Now let me ask an awkward question. How often do you receive calls from Mr. Putin?

Me personally?

Or maybe some of your colleagues?

I’ve never met Mr. Putin, I’ve never received a call from Mr. Putin. Mr. Putin has visited the Nord Stream 1 project during its implementation – I think at least twice. But that’s the extent of the involvement. Mrs. Merkel visited the Nord Stream 1 project. Mark Rutter from Holland visited the Nord Stream 1 project. It’s not unusual for such major infrastructure projects as ours.

But there are direct links via Gazprom to the Russian state, so that means probably the foreign ministry or maybe other ministries are able to give instructions to this company which is based in Switzerland. Correct?

Not correct, no. We are a subsidiary of Gazprom and Gazprom is a listed company. There are many listed companies, also in Europe, whose shareholding is also partially owned by the state. [For example] Fortum in Finland, ENGIE...

And the states regularly get involved.

Not to my knowledge. To my understanding, if you are a listed company you have an obligation to all shareholders, not just state shareholders. So those obligations are very clearly laid down in law.

You probably know as well that diversification of supply is one of the main objectives of the Energy Union. Nord Stream obviously runs counter to this objective. So that doesn’t really help does it?

I think the objective is diversification of sources, supplies and routes. Nord Stream is an additional route.

It’s hardly an additional route – it’s using the exact same route as Nord Stream 1.

It’s another route. It’s another pipeline bringing gas into Europe. That’s a good thing. Nobody is forced to buy the gas. But if the possibility is there, like with LNG. Nobody complains that we have 75% of our LNG capacity that’s not utilised. “It’s not necessary, you should close it all down.” No. It’s a good thing because it gives supply security, it gives optionality around supply security, and the same is true for additional pipelines. Europe should welcome additional pipelines: TAP, Med Gas, Nord Stream 2. They should all be welcomed because it’s optionality for European consumers.

But Gazprom may have an objective like that. And they’re your main shareholder.

Why should they have an objective like that? And how would that be possible?

Well, they sell more gas, they make more money, they call competition and they have a dominant position, even greater than that they enjoy currently.

But, again, that’s to misunderstand the market rules. They can only sell more gas if they price it to attract customers. That’s competition, that’s good for the market. And there is nothing wrong with that.

You are actually denying that Gazprom has a dominant market position at the moment, in Europe, as the main supplier of natural gas.

I think it has a large market position, but that is in no means dominant. That market position is dependent on its reliability and its price.

Turning to some legal issues, the European Commission said Nord Stream cannot be exclusively operated according to Russian law. Do you agree with that principal?

Nord Stream is not operated exclusively according to Russian law. The statement is again simply incorrect.

You are saying the Commission has made incorrect statements about the legal aspects of Nord Stream.

Yes. I think the Commission has said that there is a legal void, or that there is a conflict of laws between Russia and the EU. Those are both statements which I’ve heard from...
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the Commission. Those are simply wrong. There is no legal void. There is a very clear legal framework. The Nord Stream 1 pipeline was permitted and built on that basis, within that legal framework. And the Nord Stream 2 pipeline has made applications to the Member States based upon the relevant legal framework – which is a combination of national law, international law (for example UN clauses), and EU directives as implemented into national law. The framework is absolutely clear. Nord Stream is a commercial company operating within the EU and in that sense has to follow the legislative framework. There is no other choice.

**Do you agree with the objective of ownership and bundling which states that essentially you cannot be a producer of energy on the one hand and also own the pipelines through which the energy actually runs? Are you ready to accept those rules for Nord Stream 2?**

That is an absolute clear principle that is applicable within the internal market. And the Commission itself wrote in a letter to the European Parliament in 2017 that the third Energy Package and the internal market are not applicable to pipelines supplying the European internal market. So, in that sense, the legal position for the Commission is clear, and the third Energy Package and the rules for the third Energy Package which include ownership on bundling etc. are not applicable to pipelines bringing gas in.

**That’s quite convenient because it allows Gazprom to be owner of the infrastructure and also owner of the energy that goes through it.**

But when that gas lands in Europe, that gas is absolutely subject to the rules of the third Energy Package. And its transmission to customers and its sale to customers is absolutely conform to the market rules. And Gazprom has to live by those market rules, as Mrs. Vestager has proven.

**You know There is a competition inquiry going on? It has been going on actually for a number of years at the European Commission, so they do seem to believe that there is an issue there.**

I think that Commissioner Vestager is a very independent Commissioner and I think she’s made some landmark decisions in the recent past. At least what I’ve seen from the press seems to be that she has achieved one or two concessions from Gazprom. And that she has looked into all of those issues. What I see from the press is that they are close to coming to a decision. We will see what Mrs. Vestager comes up with in the next weeks or months.

**There is a special directive that was written by the European Commission, one that was especially for Nord Stream 2 in fact. So once that goes through, the ownership structure of Nord Stream 2 will have to change.**

I think we have to see how that proposal develops. This is a law proposal which came at the very last moment, it was proposed in November of last year. It was attempted to be rushed through as a minor technical change – in an accelerated procedure, without proper governance. In the meantime, it’s been recognized, by the Council’s own legal service at least amongst others, that this proposal is very far-reaching; it conflicts with international law for example, it conflicts with the UN clause. There is a very clear industry assessment of what this means and how negative it is for legal certainty, and how it’s a deterrent for investment and a threat to energy security. What does that mean for those existing investments? What does it mean for new investments like Nord Stream 2 but also, for example, Med Gas or Galsi? It means complete uncertainty. How can you invest in a project which will contribute to Europe’s energy security when you don’t know what the legal framework will be?

**How much effort have you actually been putting into resisting this proposal? How much money have you spent here in Brussels, and maybe elsewhere, at trying to lobby people and politicians to block this proposal?**

We cannot resist this proposal. Member States, MEPs and the lawmakers have to decide this proposal – and they will. All that we can do is try to put our arguments forward and try to make the process a transparent one. Unfortunately, the Commission made it, or tried to make it, intransparent. They tried to rush it through on this accelerated procedure. This is not a technical adjustment to the wording; this is a major change to the legislative framework.

**You didn’t really answer my question. How much money have you actually put resisting this proposal?**

I can’t give you any kind of figure.

**Ball park?**

I have no clue to a figure.

**But you have spent quite a bit of money trying to influence in the European Parliament and also in the member States.**

No, we have a communications team whose job is to make facts about the project known to the public. We do that in all of our permitting countries. We make information available in public sources, and we make information available about issues of

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legality that would affect the pipeline. So, in the sense that there is some specific activity – I infer from your question that you think we may have spent millions and millions trying to influence lawmakers – no, that's not the case.

Let’s turn to the transit issues now, in Ukraine in particular. One of the key impacts of Nord Stream 1 has been to reduce Russian exports going through Ukraine which went down to around 50% or less in 2015, from 80% in 2009. How much lower do you expect this gas transit through Ukraine will be after Nord Stream 2 is built?

This is an interesting question and an interesting assumption. Again, the blame for reduction of Ukraine transit is somehow placed at the door of Nord Stream – Nord Stream 1 or Nord Stream 2.

Well that was clearly the intention of Nord Stream 1. To prevent the supply disruptions that happened in 2006, 2009.

No, absolutely not. What you have to remember with Nord Stream 1 is that the decision to invest in Nord Stream 1 was taken in an environment which was very different than the environment that we have seen in the past 6, 8 years. It was pre-financial crash and the focus for gas market growth was enormous. The investment in Nord Stream 1 was very much in the environment of additional volumes coming to Europe. What happened, however, unfortunately, is the world economic crash and that gas utilisation in Europe collapsed. So, in the end, the trends have been very different. However, the reality is what we see now is a growth again of the European economy. The future is also fairly clear: domestic production is going to halve in the next two decades. That means there is a need for more imports. From 2014 to 2017 Nord Stream 1 capacity went from 34 BCM to 51 BCM. That’s about a third of an increase. In the same time, 2014 to 2017, from the Ukrainian transit went from 64 BCM to 93 BCM. Which is about 50% increase. To make any kind of direct correlation between Nord Stream replacing Ukrainian transit is simply not correct.

Even though demand has been picking up in recent years, everybody seems to accept that demand for gas, generally in Europe after 2025 or 2030, will have to decline significantly because of the Paris Climate targets. That means you have got a pretty short window of opportunity there to make money out of Nord Stream 2.

Across the world, energy companies are strengthening their position in gas. This is true for Exxon, Chevron, and it’s true for Europeans: BP, Shell, Total. The reason for that is because the COP 21 goals mean that we will use less fossil fuel: that’s less coal and less oil. Gas has got 52% of the CO2 output of the fossil fuels. So as a fossil fuel, even though in the long term it’s not desirable, in the medium term [gas] much better than coal or oil. I think gas has a longer future than other fossil fuels. But in the end, the market will decide what that future is. The market will decide – is it indeed 2030 or is it 2050?

You are saying fossil fuels have a future, you are pretty happy polluting the planet?

It’s not a question of being happy or not being happy. There is a fundamental need for energy and what’s clear is that, at the moment, renewables are not going to fill that need fast enough. The need for energy is growing, so there will be a role for some fossil fuels for some period into the future. And if that is the case, then gas is by far the most environmentally friendly option.

Gazprom’s Chairman or Deputy Chairman Alexander Medvedev said, and I quote him: “Under no circumstances would the contract with Ukraine be extended, not even if the sun and moon trade places.” And then what do we have? Contract expires with Ukraine as a gas transit country, and all of a sudden Nord Stream comes up.

Ukraine transited 93 BCM.

It did. But it won’t in the future.

How is Gazprom going to get the gas to the customer?

Well, it’s going to get it via Nord Stream.

Naftogaz also said, [93 BCM], while Nord Stream 2 is 55 BCM. There is a big gap. Naftogaz have also said that they are going to more than double the price of transit for Gazprom after 2019. There is a negotiation to be had between those two companies, we hear from the press that the European Commission is also interested to support that negotiation. And let’s see.

Paul Corcoran, thanks for joining us and good day to you.