

Gas strategies post-Crimea

Russia has been adapting its energy strategy to changes in European gas markets since the mid-2000s, a process that has crystallized since 2009. The Russia-Ukraine gas transit crises of January 2006 and 2009 were significant, but not the most important triggers for that adaptation. The reunification of Crimea with Russia and its potential economic consequences will serve to reinforce Russia's post-2006 gas strategy. **Andrey Konoplyanik**

Russia and the EU are interdependent parties of what might be called 'the Broader Energy Europe'. This includes the increasing number of EU member states and many other countries in the Western Hemisphere united with the end-use EU market through fixed, immobile, capital-intensive cross-border energy infrastructure in the form of pipelines and grids.

This means that the whole of geographical Europe, irrespective of political borders, as well as Northern Africa, Western Siberia and Central Asia are already part of the Broader Energy Europe. The gas-rich countries of the Middle East could become part of this in the future.

The infrastructure in place creates cross-border energy value chains for both pipeline gas and LNG. This infrastructure is particularly capital intensive and long term. This means that any changes, including in energy regulation, in any part of this interlinked geographical area, have consequences on the other parts of the gas value chains. Changes in the EU or in Ukraine, therefore, have unavoidable consequences for Russia and the rest of the Broader Energy Europe.

EU gas market

In 2009, the Broader Energy Europe woke up to a new world. Quantitative changes in different areas – demand, supply, regulation and politics – had given the EU gas market new qualities, with new risks, uncertainties and challenges for market participants.

Demand for gas in the EU fell, owing to depressed economic activity following the 2008 economic and financial crisis and improved energy efficiency. This latter effect was the intermediate results of long-standing EU energy policy and, inter alia, of its "20-20-20" climate change mitigation program.

Intensive gas substitution began to take place. The primary 'victim' was oil-indexed contractual gas from major pipeline suppliers like Russia, Norway and Algeria. This gas started to be uncompetitive, owing to heavily-subsidized must-run electricity generated by renewables and to coal imported from the US, one of the domino effects of the US shale gas revolution.

On the supply side, gas competition within the EU had increased. First from the redirection of Qatari LNG from the US, a market effectively closed to LNG imports by the rapid increase in domestic gas production, another US shale gas domino effect. The effect of this

competition was later lessened by the Fukushima disaster in Japan, which saw a redirection of Qatari LNG from Europe to Japan.

Nevertheless, Qatari LNG can be sold at much lower prices in the EU than imported pipeline gas. Discounts can be compensated for by the sale of associated liquids in the oil market, providing adequate returns in aggregate for both Qatari products.

At the same time, radical changes took place in the institutional sphere within EU markets. In September 2009, the Third EU Energy Package came into effect, providing for a totally new architecture for the EU gas market, including "entry-exit" market zones and Virtual Trading Points in each zone intended to become liquid gas trading hubs. This occurred concurrently with the oversupply of gas, creating the conditions for further EU gas market liberalization, without the risk of steeply rising prices.

Finally, the political dimensions of the gas market changed as a result of the Russia-Ukraine gas transit crises of January 2006 and January 2009. They had consequences for all three parties involved – the EU, Ukraine, Russia – and indeed for the whole Broader Energy Europe.

Transit crises

Ukraine is an integral element of the Russia-EU gas supply chain since most Russian gas transits Ukraine to reach the EU. The two transit crises had both 'matrix' and 'domino' effects on Russia-EU gas relations and the supply chain.

Twenty two days of interrupted gas supplies via Ukraine – three days in January 2006 and 19 days in January 2009 – managed to outweigh in European public opinion more than 40 previous years of stable supply, since Soviet gas first arrived in Baumgarten, Austria in 1968. These 22 days have changed the perceptions of all three parties in the cross-border Russia-EU gas supply chain, regarding the stability and non-interruptible character of future gas supply through Ukraine. Each has developed its own perception of and response to the perceived challenges.

Political statements in response to the events were summarized into political decisions, which were incorporated into the corresponding legal documents. These in turn impacted investment decisions, which were aimed at reaching a new perceived equilibrium between

the parties as viewed by each of them individually as there has so far, unfortunately, been no trilateral dialogue. These investment decisions represented 'points of no return' for the new policy directions.

In search of a new post-2009 equilibrium, all three parties had different starting points, aims and responses. The EU's goal was to reduce its dependence on Russian gas supplies; for Ukraine, it was to escape the monopoly Russia held as the country's single gas supplier; and, for Russia, it was to end its dependence on Ukraine as its one dominant gas transit route.

These aims are totally different and left little common ground, so it should be no surprise that the task of finding a new equilibrium has been very difficult and so far not achieved. The common background for all three parties is that they all want to diversify. But for each diversification has different substance.

The EU perspective

Post-2009, the EU's perception is that future supplies from Russia via Ukraine are no longer reliable and that there are ways and means to escape this insecurity. EU policy aims not to improve the weakest link in the chain – the security of Ukrainian transit flows independent of Ukraine's supply relations with Russia – but to reduce its dependence on Russian gas. The instruments at its disposal surround a new internal EU gas market architecture with multiple supplies and high flexibility on both the supply and demand sides.

On the supply side, this includes the development of LNG terminals, domestic shale gas, underground gas storage and investment in grid flexibility and strengthening.

On the demand side, gas can be displaced through the implementation of EU climate change policy. The decarbonization of the energy mix through state-subsidized investment in renewables and energy efficiency will lead to a shrinking of gas' share in the energy mix. The primary loser would be the least competitive gas supplier, which is perceived to be the most distant and costly in production. In other words, non-associated and oil-indexed Russian contractual gas.

Flexibility within the internal EU gas market is to be achieved by eliminating barriers to cross-border gas flows and enabling their multidirectional contractual character within an enlarging EU and the area of the Energy Community Treaty.

This is to be fostered in the commodities market by further development of short-term and spot trade and by increasing customer demands for suppliers to soften the provisions of their Long-Term Gas Export Contracts, such as take-and/or-pay conditions or the incorporation of hub-based pricing into current LTGECs.

This would be backed by the development of interconnectors with obligatory physical reverse flows at

each interconnection point and the implementation of congestion management rules, for example "use-it-or-lose-it" and "ship-and/or-pay."

This is the new form of organization for the internal EU energy market established by the introduction in September 2009 of the Third EU Energy Package, which came in force in March 2011. It is this set of legal instruments which aims to provide multiple supplies and high flexibility of gas flows within the EU and Energy Community Treaty area, which includes the 28 EU member states and 8 countries of South East Europe, Ukraine and Moldova.

It will take a long time to prepare and implement all the new regulatory acts to supplement the Third Energy Package and make it fully operable. In addition, conditions vary across the EU. Today's density of gas infrastructure in Central and Eastern Europe corresponds to the same level in North Western Europe in the early 1970s. It will take time and money in CEE to raise the density of gas infrastructure to a level that enables the technical preconditions for competition and a level of liquidity of local hubs at least close to the relatively high liquidity of NWE hubs.

As such, it will not be possible to implement the EU's legally binding decisions on diversification in a synchronized manner throughout the whole EU. The further to the east within the EU (and, more generally, within the Energy Community Treaty area), the longer the process is likely to take. Nevertheless, the EU has passed a key point of no return in the development of its internal gas market aimed at diminished dependence on external gas supplies.

The Ukrainian response

It is still uncertain whether Ukraine will finally lean towards Euro or CIS integration throughout the entire economy. However, arguably, in the energy sphere, Ukraine passed a point of no return in 2004, when then presidential candidate Viktor Yushenko first requested a transition to "European formulas" for Russian-EU gas trade.

This shift started in 2006, first with gas originating from Russia, and was completed in 2009, to include gas originating from Central Asia. As a result, the 'Euro-integration' choice has effectively been in place in Ukraine's energy sector since the mid-2000s, and was further strengthened by the country's accession to the Energy Community Treaty in February 2011.

When, in May 2004, Ukraine first demanded the unbundling of supply and transit contracts with Russia and a move to European formulas in Russia-Ukraine gas trade, their expectation was that they would receive higher revenues for the transit of Russian gas supplies through Ukraine. In reality, they got much higher import prices. The move from cost-plus pricing to European formulas has meant in practice a transition to net-back replacement values based on EU end-user market prices.

In other words, prices based on petroleum-products-indexed gas pricing formulas within Groningen-type LTGECs (see *Energy Economist* 347, September 2010).

In addition, the move to European formulas took place between January 1, 2006 and January 1, 2009. This meant that the reference periods for calculating the oil-linked contractual gas price – i.e. the initial starting price – which is updated automatically on a quarterly basis – corresponded to periods in 2005 and 2008, the first of which was one of intense growth and the second of which saw record oil prices. This has predetermined the high level of Russia's gas export price to Ukraine since.

As such, Ukraine's discontent with its gas import price levels is essentially discontent with European formulas, which they requested and which resulted in the transit crises of January 2006 and January 2009. Bearing in mind Ukraine's ailing economy, Russia provided a number of large unilateral discounts to the market-based contract export price to Ukraine, which today have all ended for a variety of economic and political reasons, while the accumulated debt for delivered gas even with the discounts now exceeds \$2.2 billion.

Ukraine's inability to persuade Russia to deviate from European formulas, or to provide price reviews of these formulas within the contract, resulted in Kiev searching for alternative supplies to escape from the monopoly of Russia as its one single external gas supplier.

Ukraine's plans include an increase in domestic production – both onshore and offshore. However, after the reunification of Crimea with Russia, Ukraine's offshore prospects have significantly diminished, while ExxonMobil has put its Black Sea offshore gas prospect in Crimean waters on hold.

This leaves the country with fewer options. Ukraine has signed a \$10 billion shale gas exploration and production deal with US major Chevron, intends to construct a 10 Bcm/year capacity LNG terminal near Odessa by 2018, despite Turkish opposition to the passage of LNG carriers through the Bosphorus, and plans to develop reverse gas flow capacity.

A framework agreement with Germany's RWE was signed for the supply of 10 Bcm/yr and some small flows have been announced across the Ukraine-Polish border. Other neighboring countries – Slovakia, Romania, Hungary – are not eager to provide physical reverse flows unless it is clear who will pay for and/or contract these reverse capacities long term, although a Memorandum of Understanding between Slovakia and Ukraine regarding reverse flows was signed in April.

On the demand side, multiple actions include switching from gas to domestic coal in power generation. A \$6 billion loan from China has been negotiated for this purpose. There are also programs

for nuclear power development and improved energy efficiency as Ukraine has one of the highest GDP energy intensities in the world.

In addition to the economic rationale provided by high Russian gas import prices, Ukraine has legal motivations and obligations for pursuing diversification. Through its membership of the Energy Community Treaty, Ukraine is obliged to implement within its territory provisions of the EU energy acquis communautaire, which include the Second and Third EU Energy packages. This means a commitment to unbundle the state gas company Naftogas, to implement mandatory third-party access to its infrastructure, and, further ahead, to move to an 'entry-exit' system with VTP.

Whether a point of no return has been reached by Ukraine remains unclear. Statements by Ukrainian politicians that the country can be self-sufficient in gas by 2020 look unrealistic and more of a bargaining tool, but the direction of travel away from dependence on Russian gas is clear and unlikely to change.

The open question is whether Ukraine will manage to pass final investment decisions on its planned projects in time to reduce its dependence on Russian gas before 2018, when the 2009-2019 contract will be approaching its expiration date and a new gas supply contract will need to be negotiated with Russia. The structure of a new gas supply contract, including its pricing components, will be highly dependent on what alternatives Ukraine has at that point.

The view from Moscow

In the post-2009 European gas world, Russia faces both supply and transit risks related to its gas value chain destined for the EU. One of the major risks relates to the non-fulfillment by Ukraine of its contractual obligations, i.e. Ukraine taking less gas than it has contracted to, which has negative upstream investment consequences for Russia.

To fulfill its supply obligations according to the 2009-2019 Russia-Ukraine gas supply contract, Russia has to make significant upstream investments to produce the gas to be delivered to Ukraine over the entire contractual period. This capital-intensive investment requires the certainty of a reliable off-take partner. In 2013, Naftogaz agreed to take at least 41.6 Bcm, but purchased only 12.9 Bcm, according to deputy CEO of Gazprom, Alexander Medvedev. The cumulative value of unreceived revenues as a result of lower off-take levels since 2009 is \$18.5 billion.

A second area of concern relates to transit through Ukraine. Here there are both material and potential risks. The material risks reflect the consequences of the unauthorized off-take of gas in transit. According to its LTGECs with EU buyers, Gazprom is fully responsible for

gas supply to delivery points within the EU regardless of transit problems. There is a risk of legal claims by EU customers against Gazprom in case of non-delivery, even if the reason for non-delivery is the violation of the transit contract by the transit state.

Fortunately, EU customers did not raise such claims in January 2006 or January 2009, but there is no certainty that this will remain the case if supply disruptions to the EU occur in future as a result of an unauthorized off-take of gas in transit through Ukraine.

Potential risks relate to Ukraine's accession to the Energy Community Treaty. The obligation to implement mandatory third-party access might negatively influence transit flows by creating a risk of contractual mismatch. The unbundling of Naftogas implies unilateral change of one contracting party (up to its full disappearance) to the existing 2009-2019 Russia-Ukraine transit contract, which accompanies the corresponding supply contract between the parties.

This could impact Gazprom's transportation economics. Its response has been to create alternative and direct transportation routes to major markets for Russian gas in Europe.

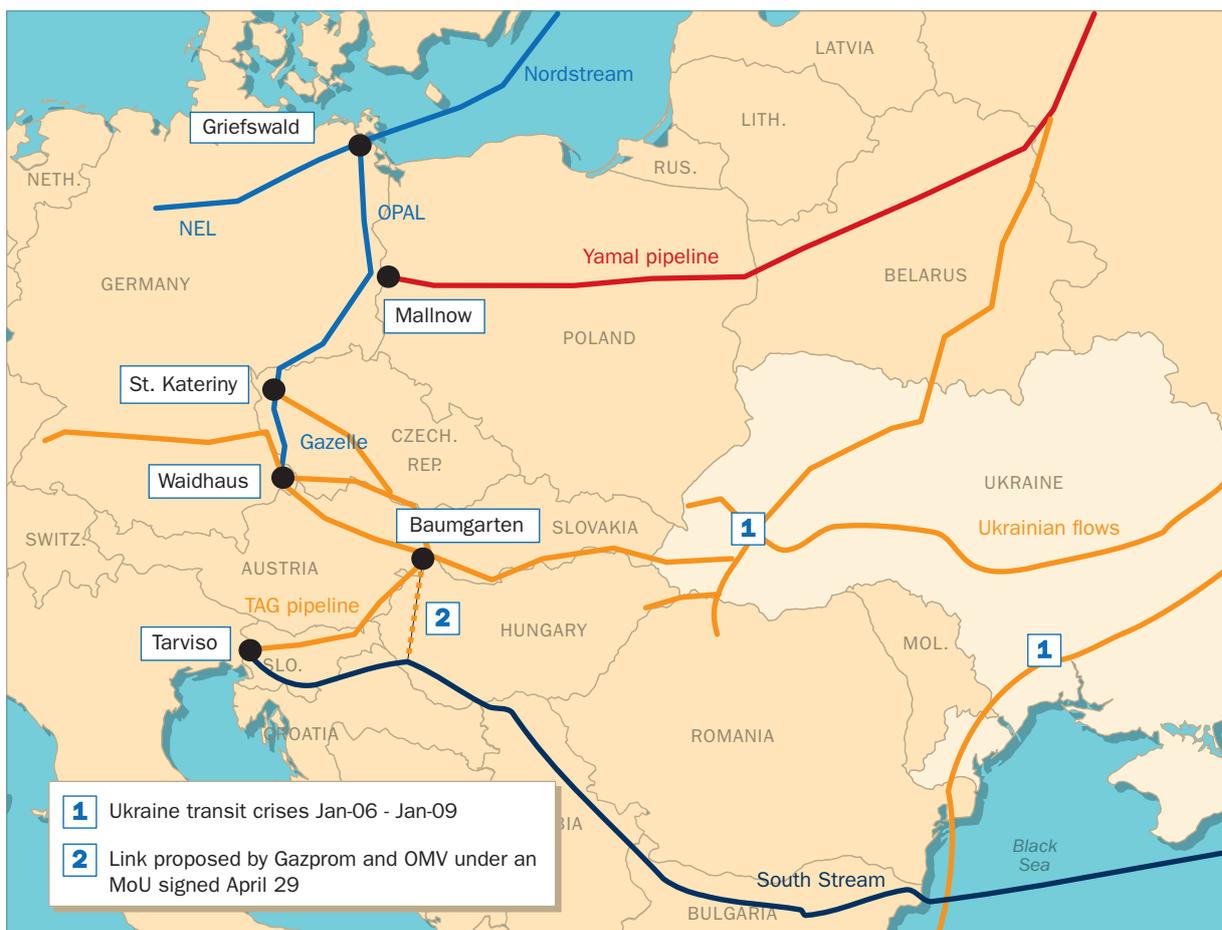
One market – two pipes

Historically, all Soviet/Russian gas supplies to the EU have been through domestic USSR territory and the politically and economically-controlled territories of the former COMECON states. The system was designed and developed under the principles of a centrally-planned economy, which means one pipe to each market.

This is how the Ukrainian transit corridor is set up, bringing Russian gas first to Slovakia, with one stream (destined for Southern Europe) going to the delivery point at Baumgarten on the Austrian-Slovak border, and second stream destined for North Western Europe, going from Slovakia to the Czech Republic and the delivery point of Waidhaus on the German-Czech border. At these two points, Baumgarten and Waidhaus, ownership of the gas passes to EU customers for onward transportation to Germany and France in the north and Italy in the south.

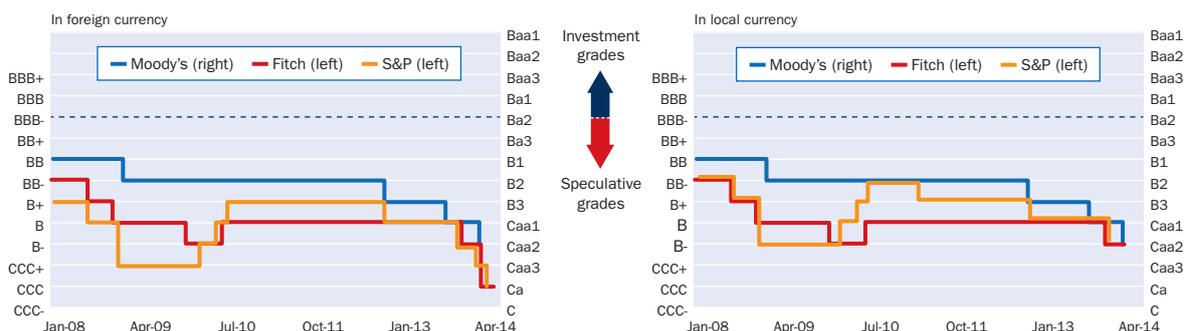
With the transit risk associated with the Ukrainian corridor rising, Russia made point of no return decisions some time ago. The Russian supply concept changed from 'one market, one pipe' with maximum utilization to 'one market – two pipes', with flexible load ratios between the two. The second option has higher capital and operational costs, but

Ukrainian bypasses: alternative pipelines (two routes for each market)



Source: Author

Ukraine: evolution of long-term credit rating



Source: M. Larionova, Gubkin State Oil & Gas University, based on credit rating agency data

may still be the better option when transit risk is taken into account.

For NWE, the Russian alternative has three elements, which should be viewed as part of an integral by-pass system. They are the offshore Nordstream pipeline, and the onshore OPAL and Gazelle pipelines, which together bring Russian gas to Baumgarten, the same delivery point as for Ukrainian transits. All three elements of this system are in place, but it does not operate properly, owing to 50% restrictions on the utilization of OPAL capacity by the European Commission. In the case of Southern Europe, the Russian alternative comprises two elements yet to be built: the offshore and onshore sections of the South Stream gas transportation system.

Russia's current dilemma is to find the best option within this new 'one market – two pipes' concept. The two options both for NWE and for Southern Europe are either to stick with two routes, the new non-transit system and the existing Ukrainian corridor, with supply volumes distributed flexibly between the two. Or have one direct non-transit route to each major market – following the construction of South Stream – and switch all former transit volumes away from the Ukrainian corridor. However, an MoU signed in late April between Gazprom and Austria's OMV implies even greater flexibility through the revival of the proposal for a link for South Stream to Baumgarten as well as Tarviso. The point of no return has not yet been passed regarding South Stream at least in terms of deciding its final configuration.

South Stream v Ukrainian GTS modernization

There are two main elements to the cost of major oil and gas projects and thus the relative attractiveness of different options: the technical price tag and the cost of finance. Most major oil and gas projects are developed using project financing tools, raising 60-80% of capital expenditure on international capital markets by project sponsors as debt finance. When comparing the modernization of the Ukrainian Gas Transportation System against South Stream, it is clear that the technical costs favor the former, but the financing costs favor the latter.

The basic rule of project financing is that the credit rating of the investment project cannot be better than the rating of the company/consortia which develops the project. This in turn cannot be better than the rating of the host state. So financing costs are a multiple function of both country, company and project ratings.

According to three major international rating agencies (Standard & Poors, Moody's and Fitch-IBCA), Ukraine's credit rating has been declining steadily within speculative grades towards default levels. It is currently just one level above default. Moody's stopped attributing ratings to Naftogaz in early 2010 and S&P did so in early 2014. By contrast, Russia's ratings have stayed at comparatively much higher levels at investment grade levels.

This means that the cost of raising capital for the modernization of the Ukrainian GTS, where Naftogaz or its legal successor – a party that does not yet exist and therefore has no ratings – will be part of the modernization consortia, will be extremely high, if financeable at all under current circumstances.

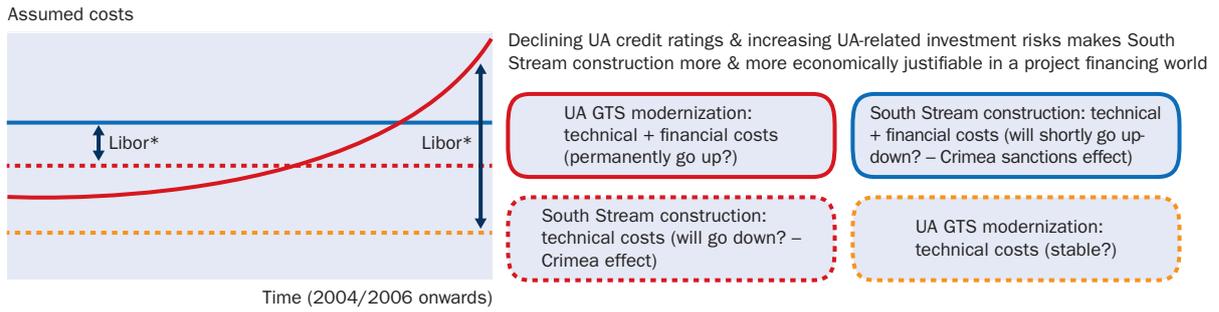
One-year LIBOR has diminished from 4% in early-2008 to 0.5% today. But, according to Project Finance magazine LIBOR-plus in the BBB ratings zone (Russia) is higher by up to 6%. In the CCC zone (Ukraine) it is higher by up to 19%.

In addition to this, Ukrainian transit risks have increased over time, which means an increasing risk of CAPEX non-return, which will only serve to drive financing costs higher. It could make it non-financeable at all through commercial banking sources.

Taking this into consideration, the gap in technical cost between modernizing the Ukrainian GTS and South Stream is diminished, if not eradicated. Particularly so as South Stream also delivers on the new export concept. The Crimea situation can change the parameters of this concept, but not the concept itself.

The impact of the Crimea situation on financial markets may well influence negatively the prospects of either South Stream or the modernization of the Ukrainian GTS.

South Stream construction vs Ukraine GTS modernization



*Trilateral effect: [R(country)xR(company)xR(project)]

Source: A. Konoplyanik

Firstly in terms of higher financing costs as Russia needs to be a partner in any configuration of Ukrainian GTS modernization. And secondly, if US and EU sanctions move up a gear to the level of trade restrictions because the offshore pipeline for South Stream is made in Russia from rolled iron imported from the EU. Such restrictions would hurt the EU first and foremost.

However, the reunification of Crimea with Russia might have some positive benefits for South Stream. A streamlined route through the now Russian Crimean offshore would be shorter and pass through shallower waters, which could in theory reduce the technical costs by as much as 30-40% for this section of the pipeline. A point of no return has been passed for South Stream in that a final investment decision has been taken and

construction started. Equally, however, international lenders will not provide external financing for a project developed in disputed waters.

As a result, overall the comparative attractiveness of South Stream is unlikely to be diminished by sanctions and its development will continue under the Russian concept of one market, two pipes. The current situation in Ukraine improves further the economic justification for diversification in order to mitigate the transit risks for both Russia and the EU.

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