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POLICY BRIEF

The EU's gas relationship with Russia: solving current disputes and strengthening energy security

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Abstract This article analyses the current state of the gas relationship between the European Union (EU) and Russia and assesses its future prospects. It highlights that Russia has been an important supplier of gas to the European Union for more than four decades. However, the EU-Russia gas trade currently faces uncertainty over the regular transit of Russian gas via Ukraine, the construction of new pipelines and the implementation of EU legislation concerning the Union's gas market. As the EU and Russia will remain interdependent in the gas sector at least for the next decade, it is in both sides' interest to resolve these issues. The EU should both strengthen the security of its import routes for Russian gas and reduce the vulnerability of individual member states to supply shocks. Simultaneously, the EU would do well to increase the production of renewable energy and boost energy efficiency, which would reduce its dependence on external suppliers of fossil fuels.

Introduction

Energy trade is the chief economic driver of European Union (EU)-Russia relations. Russia is the main supplier of oil, gas and coal to the European Union as well as one of its main providers of uranium. With the start of the conflict in Ukraine, fears about possible disruptions in energy trade with Russia have increased, most notably with respect to natural gas. Approximately half of EU gas imports from Russia flow through Ukrainian territory. Moreover, the EU and Russia have been locked in several disputes concerning the infrastructure through which Russian gas will be channelled to Europe in the near future, the commercial practices of Russia's state company Gazprom (which

This work is based on a study conducted at the Finnish Institute of International Affairs on August–September 2015 (see Siddi 2015a). The analysis has been revised and expanded; statistics have been updated based on developments in the fall of 2015 and in the winter of 2016.

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has a legal monopoly of Russia's pipeline gas exports) and European legislation liberalising the EU energy market.

This analysis reviews the main issues in EU-Russia gas trade as of early 2016 and attempts to identify key upcoming developments. It argues that the EU and Russia will remain strongly interdependent in the gas sector for at least another 10–15 years. It is therefore in the interest of both sides to resolve outstanding issues. Meanwhile, the EU can reduce the vulnerability of its member states that are most exposed to supply disruptions. Most importantly, it must strive for the decarbonisation of its economy, as this will allow it to both tackle climate change and reduce its dependence on imported fossil fuels, including Russian gas.

EU-Russia energy relations: history and figures

Gas and oil trade has been a key feature of relations between (Soviet) Russia and several European countries for over four decades (Högselius 2013). In the 1960s, the Soviet Union started to export large quantities of gas and oil via pipeline, first to Warsaw Pact states and then to West European countries, including members of NATO and of the European Community. Against the background of détente in East-West relations in the late 1960s and in the early 1970s, Italy, Austria, West Germany, Finland and France became key customers for Soviet fossil fuel exports.

The oil crisis in 1973–1974 increased the strategic relevance of Soviet oil and gas in Europe. In 1983, the Soviet Union inaugurated the Urengoy-Uzhgorod pipeline, shipping Siberian gas to West European markets; between 1980 and 1990, Soviet gas exports nearly doubled. The East-West gas trade kept growing after the dismemberment of the Soviet Union. Russia inherited the role of Europe's main gas provider, as most existing extraction facilities and reserves were located on its territory. In 2013, Russia supplied 39 % of the gas, 33 % of the crude oil and 29 % of the solid fuels imported by the EU (Eurostat 2015). These figures acquire particular significance in the context of the EU's overall dependency on foreign energy sources. In 2013, the Union imported over half of the energy it consumed. Due to the declining domestic production of fossil fuels and the phasing out of nuclear power in some member states (notably Germany), this dependency is expected to grow in the coming decades. This is true in particular for the gas sector. Here, demand is forecast to remain stable in the long run, reaching 572 billion cubic metres (bcm) in 2030 (compared to 569 bcm in 2010). However, EU domestic production of gas will decline, and the decrease will be covered only in part by the rise in production of renewable energy (Dickel et al. 2014, p. 71; IEA 2014, p. 139).

If Russia is an important energy supplier for the EU, the EU is a vital market for Russian energy sales. In 2013, crude oil, petroleum products and natural gas sales accounted for 68 % of Russia's total export revenues; the EU was the destination of most of these exports (EIA 2014). Crude oil and petroleum products constituted over half of Russia's export revenues, while the share of gas was 14 %. Despite its lesser economic role in the broader EU-Russia energy relationship, gas trade has been the main source of controversy and the most politicised topic. This is due to the technical difficulties of EU member states in East-Central Europe (notably Latvia, Estonia, Bulgaria and Slovakia) to import gas from other suppliers and their subsequent vulnerability to disruptions in the flow of Russian gas. Most East-Central European

member states have little or no backups to Russian gas in the sectors where it is used, notably household heating. Their vulnerability to technical disruptions is compounded by their mistrust of Russia as a geopolitical actor, which is grounded in a long history of Tsarist and Soviet domination (Grigas 2013).

However, it must be noted that the bulk of Russian gas exports to the EU is destined to Western European countries (Germany, Italy, France and the UK), which have a diversified portfolio of suppliers, are better interconnected with global gas markets and—thanks to long-standing cooperation—place more trust in energy trade with Russia than East-Central European states. Hence, the core of the EU-Russia gas relationship is not controversial, neither in technical nor in geopolitical terms (Yafimava 2015, pp. 3–4). The problematic component of the relationship, namely the vulnerability of East-Central European countries, can be addressed by linking their gas markets to global markets and strengthening interconnections with the energy systems of neighbouring EU member states. Although doing this would have a cost for both national and European taxpayers, it would reduce the dependence of East-Central European members on a single supplier and remove a source of tension from EU-Russia relations.

Gas trade and the conflict in Ukraine

Russian gas is shipped to Europe via pipelines. There are three main routes: the Ukrainian pipeline network (built during the Cold War), the Yamal-Europe pipeline (via Belarus and Poland, built in the 1990s) and the Nord Stream pipeline (inaugurated in 2011 and providing a direct link between Russia and Germany via the Baltic Sea). In addition, Finland and the Baltic countries have their own, direct pipeline connections to Russia. Between 2003 and 2013, the share of Russian gas in total EU gas imports oscillated between 30 and 45 % (Table 1).

Until the mid-2000s, the flow of Russian gas to the EU took place without major disruptions. However, the scenario changed in 2004, when the Orange Revolution took place in Ukraine, resulting in Kiev's adoption of a pro-NATO and pro-EU foreign policy stance. While Ukraine had previously benefitted from discounts for Russian gas (a Soviet-time legacy), Gazprom started to demand higher prices, even if still lower than those it charged in Western European markets (Yafimava 2015, p. 7). In 2006 and 2009, disagreements between Moscow and Kiev over the price of gas resulted in

Table 1 Main gas import partners of the EU, percentage of total gas imports, 2004–2013

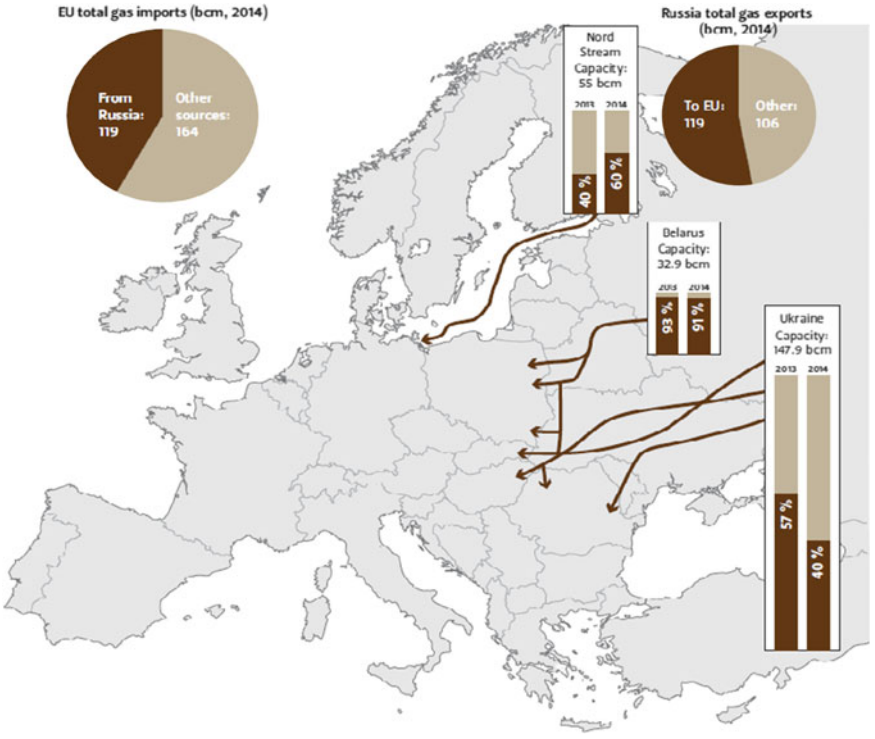
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Russia	44.4	41.3	40.0	39.2	38.2	33.7	30.1	32.0	32.3	39.3
Norway	24.2	24.0	25.9	28.3	28.5	29.5	27.6	27.6	31.3	29.8
Algeria	18.0	17.6	16.3	15.3	14.7	14.2	14.0	13.0	13.6	12.8
Qatar	1.4	1.5	1.7	2.1	2.3	5.4	9.5	10.9	8.4	6.6
Libya	0.4	1.7	2.5	3.1	3.0	2.9	2.7	0.7	2.0	1.8

Source: Eurostat

disruptions of the flow of gas towards European markets, which seriously affected the economy and society in several Eastern and Southern European countries (Pirani et al. 2009). Although these crises subsided and the regular flow of gas resumed, the vulnerability of several EU member states had been exposed.

In 2014, despite the escalation of the Ukraine crisis, Russia provided approximately 42 % of EU gas imports. On the other hand, nearly 53 % of Russian gas exports went to the EU (Fig. 1). However, Russia appears to be reorienting its exports more and more towards the Nord Stream route and the Belarusian transit corridor, away from Ukraine. As shown in Table 2, the reorientation started before the Ukraine crisis. From 2012 on, volumes of gas shipped through Nord Stream grew considerably, while volumes transiting Ukraine decreased. To understand this process, it is important to note that, due to the current conflict with Ukraine, Russia has an interest in diminishing Kiev's leverage as a transit country for its gas exports to the EU. Furthermore, Gazprom owns majority stakes of both the Nord Stream and the Yamal-Europe pipelines, whereas the Ukrainian state company Naftogaz controls the Ukrainian transit pipelines and demands payments from Gazprom for using them. Hence, Gazprom has an interest in becoming less dependent on the Ukrainian corridor.

The current gas transit agreement between Gazprom and Naftogaz expires in 2019. After that, Gazprom would like to end reliance on Ukraine's gas transit system and use different routes (Gazprom 2015). The old age and high maintenance costs of the Ukrainian pipelines, which were built in Soviet times and have not been subject to



Source: Finnish Institute of International Affairs, 2015

Fig. 1 Main export pipelines and flows of gas from Russia to the EU

Table 2 Transit routes and volumes of Russian gas exports to the EU, 2011–2014

Transit route	EU entry points	Capacity (bcm/year)	Actual total flow (bcm/year)			
Nord Stream	Germany	55	0.5	10.6	22.1	32.8
Yamal-Europe	Poland	32.9	22.8	25.0	30.6	29.8
Ukraine	Slovakia, Hungary, Poland, Romania	147.9	101.1	81.2	83.7	59.4

The table does not show Russian gas exports to the Baltic countries and Finland; volumes of gas via Ukraine shown include those exported to Turkey and other non-EU countries in the Balkans (source: European Commission, Quarterly Report on European Gas Markets 7/4 2014, Naftogaz Ukraine)

comprehensive repairs since then, reduce the economic and security rationale for continued reliance on them. However, the phasing out of the Ukrainian gas transit system will only be possible if new routes become available: in 2014, Russia sold nearly 147 bcm of gas to Europe and Turkey, and the current capacity of pipelines bypassing Ukraine is at 104 bcm.

As of 2015, the Ukrainian transit pipelines remain essential for EU-Russia gas trade. Their capacity is much larger than those of Nord Stream and Yamal-Europe, and it is boosted by an additional 30 bcm of storage capacity in Western Ukraine. Even if Nord Stream and Yamal-Europe were used at full capacity, they would be insufficient to channel the entire amount of gas that the EU imports from Russia. Moreover, several Southern and Eastern European countries (Austria, Bulgaria, Croatia, Hungary, Romania, Slovakia and Slovenia) are entirely dependent on the Ukrainian corridor for their imports of Russian gas. The energy security of Bulgaria and of most other Balkan countries is further complicated by the fact that they do not have the infrastructure to import gas from elsewhere in emergency situations.

Tensions between Moscow and Kiev have increased dramatically since February 2014. The conflict has had an impact on Russian gas deliveries to Ukraine, which are essential for winter heating and the functioning of the Ukrainian economy. Following disputes on the price of gas and the repayment of Naftogaz's debts to Gazprom, the Russian company suspended gas deliveries to Ukraine in the summers of 2014 and 2015.[1] However, contrary to what happened during the gas crises of 2006 and 2009, the flow of Russian gas to the EU through Ukraine has not been affected significantly so far. This was also thanks to the EU's success in mediating a deal and providing financial guarantees for the resumption of Russian gas deliveries to Ukraine both in the autumn of 2014 and in that of 2015.

Future infrastructure of EU-Russia gas trade: Ukraine, Nord Stream II or Turkish Stream

Although the transit of Russian gas via Ukraine has not been affected by the current crisis, uncertainty remains over the infrastructure through which Gazprom will export methane to the EU in the next decade. Gazprom's plan to phase out gas transit to the EU via Ukraine after 2019 faces two main obstacles. It has to overcome the scepticism

[1] For a summary of the 2014 gas dispute, see Loskot-Strachota and Zachmann 2014.

of the European Commission, which believes the plan will have negative consequences for Ukraine. For both political and regulatory reasons, the Commission is keen on integrating Ukraine in the EU energy market. Ukraine is already a contracting party of the EU's Energy Community, which aims at expanding EU legislation and policies to neighbouring countries. Gazprom's plan would divest Ukraine of its current strategic role in EU-Russia gas trade. It would also weaken Kiev's negotiating position vis-à-vis Russia and deprive it of the substantial revenues (around 3 billion dollars in 2014) that it earns from the transit of Russian gas on its territory. Most importantly, additional infrastructure would have to be built in order to reroute the gas that currently flows through Ukraine. In 2015, Gazprom considered two options: Turkish Stream and Nord Stream II.

Until the end of 2014, Russia advocated the construction of South Stream, which would have taken Russian gas to Italy and Austria via Serbia, Hungary, Slovenia, Bulgaria and the Black Sea, thereby supplying the South-Eastern flank of the EU (the most dependent on Ukrainian gas transit) while circumventing Ukraine. However, the EU Commission argued that the pipeline did not abide by the EU law. On December 2014, Putin decided to cancel the project and replace it with Turkish Stream. The latter envisaged a pipeline reaching the Greek-Turkish border via the Turkish territory and the Black Sea. From there, European member states were expected to build and manage additional infrastructure, thereby sparing Gazprom the legal challenges that hampered South Stream, notably the EU's Third Energy Package (unbundling the ownership of energy production from that of energy distribution). If built in its entirety, Turkish Stream would have a total capacity of 63 bcm/year and deliver gas to both Turkey and the EU.

However, the project was stopped on late November 2015, after Turkish fighter jets shot down a Russian bomber close to the Turkish-Syrian border. The incident has provoked a drawn-out crisis between Moscow and Ankara, which makes the construction of Turkish Stream unlikely in the short and medium runs. Moreover, the EU's response to the project has been negative. The main reasons for this are that Turkish Stream would require large infrastructural investments in South-Eastern Europe, weaken Ukraine's strategic position and further EU dependence on Russian gas. However, the pipeline may still be built (even if, most likely, with a lower capacity than originally planned) if Russian-Turkish relations improve. Supplies of Russian gas to Ankara through already existing pipelines have continued despite the bilateral crisis, and Turkey remains one of the few growing markets for Gazprom (Demirmen 2016). Turkey cannot end its dependence on Russian gas in the short or medium term and would benefit from becoming a regional gas hub.

Nonetheless, at the moment, the expansion of the Nord Stream pipeline, bringing its capacity from 55 to 110 bcm/year, appears to be the more probable option for Gazprom. In early September 2015, the Russian company signed a shareholders agreement with its European counterparts BASF, E.ON, ENGIE, Shell and ÖMV at the Eastern Economic Forum in Vladivostok. While East-Central European countries oppose the project, several Western EU member states, such as Germany, the Netherlands, France and Austria, support the pipeline or consider it a commercial venture that should not be stopped by politics. After its initial opposition to the project, Italy has also become more supportive of Nord Stream II, most likely following reassurances that Italian companies (notably Saipem) will get some of the building contracts (Galluzzo 2016).

However, the pipeline consortium may have to face the challenge posed by the Third Energy Package. Another exemption from the package will be necessary for additional volumes of gas (the existing lines of Nord Stream already have one). Moreover, Gazprom is still waiting for a decision from the European Commission concerning the full use of the OPAL pipeline, an onshore extension of Nord Stream that transports gas from the Baltic coast to Central Europe. At the moment, due to the rules of the Third Energy Package, Gazprom can only use 50 % of OPAL's 36 bcm/year capacity.

It is highly unlikely that Gazprom will fully implement both Nord Stream II and Turkish Stream. With Yamal-Europe and Nord Stream already operational, either project will suffice to cover the whole EU demand and end reliance on the Ukrainian transit corridor. Implementing both would require large investments and result in significant overcapacity.[2] However, if Gazprom opts for Nord Stream II, it is possible that one line of Turkish Stream (namely, one fourth of the overall project) will be built: it would channel Russian gas to the Turkish market and allow Gazprom to end its reliance on Ukrainian and Balkan transit for gas sales to Turkey. Gazprom may have advocated both projects to promote competition between its Northern European and Turkish partners, thereby increasing the chances that at least one is implemented (Tagliapietra and Zachmann 2015).

If the Russian company does not manage to mobilise sufficient political and financial support from its foreign partners, it may well end up without either Turkish Stream or Nord Stream II and having to rely on the Ukrainian transit corridor for longer. Putin himself has stated that this remains an option (Tsvetkova 2015). As sufficient infrastructure for gas trade with Russia already exists, the EU has little incentive to actively support new pipelines. In the long run, however, Brussels would take a financial and security risk by remaining dependent on the Ukrainian gas transit system, which is in need of overhauling. Given Naftogaz's financial problems, money for this would most probably have to come from the EU.

Hence, if external or corporate funding is available for alternative pipelines, they may still be built. Even so, the consequences for EU energy security should not be exaggerated. With the increasing integration of the European gas market and the diversification of suppliers, access routes will become less relevant: gas will be bought where it is cheaper and then channelled to the countries that need it.

The EU's Third Energy Package and antitrust investigation

Another key challenge to EU-Russia gas trade comes from EU legislation on the liberalisation of the internal energy market. In 2009, the EU adopted a set of directives and regulations, cumulatively referred to as Third Energy Package, that aim at the liberalisation and integration of national gas markets. The requirement of unbundling the ownership of gas production from that of gas distribution is arguably the most contentious issue in EU-Russia gas trade, particularly with regard to Gazprom's modus operandi.

[2] Gazprom is under financial pressure also due to parallel infrastructural projects in the Russian Far East, notably the Power of Siberia and Altai pipelines, which aim at carrying Russian gas to China.

The business strategy of Gazprom includes both the extraction of gas and its shipment to markets via pipelines in which the company holds a majority stake. As this conflicts with the legislation of the Third Energy Package, Gazprom has sought exemptions from the relevant EU rules. This strategy worked when a decision had to be made on granting an exemption to Nord Stream, in 2011–2012, mostly thanks to the better state of EU-Russia relations and German lobbying in the EU. However, the strategy faced much stronger opposition from the European Commission when the issue became relevant for South Stream (2013–2014). Between 2008 and 2010, Russia had signed intergovernmental agreements with the countries which were meant to host South Stream infrastructure (Bulgaria, Serbia, Hungary, Greece, Croatia, Austria and Slovenia). However, in December 2013, the European Commission stated that the agreements had to be renegotiated because they were in breach of the EU law, notably of the provisions concerning state aid and competition and those preventing energy producers from simultaneously owning energy transmission networks. Furthermore, as the Ukraine crisis escalated, the EU became more reluctant to support another Gazprom-owned pipeline.

In an attempt to challenge the Third Energy Package, in April 2014, Russia filed a dispute at the World Trade Organization (WTO), the institution that governs the global rules of trade between nations. Moscow argues that the package discriminates against Russian natural gas pipeline transport services and service suppliers. In particular, Russia objects to the requirement on granting access to natural gas and electricity networks to different operators, which forces Gazprom to cede stakes of the infrastructure it owns and market shares. The case is now subject to WTO arbitration.[3]

The confrontation between the European Commission and Gazprom intensified when, in September 2012, Brussels decided to go ahead with an antimonopoly investigation against the Russian company. Gazprom is suspected of breaching Articles 101 (restriction or distortion of competition) and 102 (abuse of dominant position) of the Treaty on the Functioning of the EU. After the investigation was launched, negotiations took place between Gazprom and the European Commission, with the objective of settling the matter without bringing it to court.

In April 2015, new EU Competition Commissioner, Margrethe Vestager, decided to bring the investigation forward. The European Commission sent its Statement of Objections to Gazprom. The Russian company is suspected of three anticompetitive practices. First, it may be hindering cross-border gas sales within the EU by imposing 'destination clauses' in its contracts with some energy companies. Destination clauses require the purchased gas to be used in a specific territory, thereby preventing the re-export of imported gas. While such clauses were removed from Gazprom's contracts with Western energy companies over the last decade, they still feature in agreements with East-Central European member states. The Commission suspects that destination clauses are functional to a 'divide and rule' policy through which Gazprom—as the dominant gas provider in the region—is able to charge different prices in East-Central European countries.

The second anticompetitive practice concerns unfair pricing. Thanks to the fragmentation of the EU's gas market, Gazprom has charged higher prices for some

[3] In July 2015, the Dispute Settlement Body of the WTO established a panel to investigate the dispute. See https://www.wto.org/english/tratop_e/dispu_e/cases_e/ds476_e.htm.

countries—in particular Poland, Bulgaria and the Baltic states—and lower ones for other EU member states that have similar or lower supply costs. In addition to this, Gazprom's price formulae linking gas price to that of oil products (a practice called oil indexation) seem to have favoured the Russian company much more than its customers. In the last few years, as the price of oil remained higher than spot prices of gas in the European market, Western European companies were able to negotiate discounts with Gazprom. Doing this proved much more difficult for East-Central European member states, which lacked the infrastructure to import cheaper gas from other sources. Thirdly, the Commission suspects that Gazprom may have made the supply of gas to Bulgaria and Poland conditional to obtaining concessions regarding pipeline projects. This involved the participation of Bulgarian state companies in the South Stream project and Gazprom's prerogative to control investment decisions regarding the Yamal-Europe pipeline.[4]

In late September 2015, Gazprom proposed formal talks with Brussels to settle the case. Most likely, Gazprom will attempt to find an agreement with the European Commission on outstanding issues before the case is taken to court. The Russian company has the resources to lower its gas prices in East-Central Europe and still make profit, while simultaneously avoiding a conflict that may have an impact on all its gas sales in the EU. If there is no settlement, the legal case may last several years. If Gazprom loses, it may be liable both to paying a large penalty (up to 10 % of its annual turnover) and to private compensation claims from European energy companies.[5] This prospect makes the legal avenue particularly unattractive for the Russian company. Therefore, the European Commission has sufficient leverage to negotiate an amicable solution in accordance with EU market rules and simultaneously maintain a viable business relationship with Gazprom.

Conclusion

The EU and Russia will remain highly interdependent in the gas sector for at least another decade. This is due mostly to Gazprom's reliance on the European market, the technical difficulty of replacing Russian gas imports for the EU and long-term contracts lasting until the 2030s, with very high penalties for the side that wishes to interrupt them earlier. Unless a major escalation takes place in the Ukraine crisis, energy trade will continue without large disruptions. Within this context, both sides have an interest in resolving outstanding disputes and in pursuing a viable business relationship. This would also have positive spillovers in the broader political relationship through the consolidation of commercial ties between the EU and Russia.

The EU will be more reluctant than in the past to support new pipelines involving Gazprom. However, it will have to balance this attitude with policies aimed at securing import routes for Russian gas. This can be done either by investing in the Ukrainian gas transit system or by agreeing to the building of new infrastructure. The first option requires considerable investments in the maintenance of Ukrainian pipelines and

[4] For a more detailed analysis, see Sharples 2015.

[5] The new EU Directive on Antitrust Damages Actions, agreed by the European Parliament and Council on April 2014, significantly increases the likelihood of such private claims.

continued dependence on a route that appears less secure at a time of deep crisis between Moscow and Kiev. It would, however, preserve gas transit revenues for Ukraine and allow the country to keep a strategically important role in EU-Russia gas trade.

The second option involves the risk of radicalising political clashes within the EU between member states that support and those that oppose projects such as Nord Stream II. It would also signal to Ukraine that the EU prioritises its energy security and trade with Russia over Kiev's economic and strategic interests. On the other hand, new infrastructure that ships Russian gas directly to the EU will end reliance over transit in third countries and the risks associated to the ageing Ukrainian pipelines. If this infrastructure is built by Gazprom and private stakeholders, there will be no costs for EU taxpayers. Under these financial conditions, it is possible that Brussels will eventually abandon its opposition to new Gazprom-led projects, especially if the Minsk-2 agreement is implemented and the Ukraine crisis subsides.

Whichever option it chooses, the EU should continue to promote the integration of its domestic gas market. Diversification is important too, particularly for East-Central European countries, which currently have limited alternatives to Russian gas and are suspicious of Moscow's intentions in foreign and energy policy. With the implementation of the Energy Union, the EU will further connect national energy markets and reduce the risk that individual member states are affected by supply shocks (Siddi 2015b). Better interconnections and market integration reduce the relevance of questions such as through which pipeline gas is imported to the EU. By becoming less vulnerable to disruptions of gas supplies, the EU will also preclude potential Russian and Ukrainian attempts to politicise gas trade.

While strengthening the security of gas supplies, EU leaders should bear in mind the Union's chief goal of reducing consumption of all fossil fuels (including gas), as declared in the EU's 2020 and 2030 frameworks for climate and energy and in the European Commission's Energy Roadmap for 2050. This means that EU investments and efforts should be directed primarily at boosting domestic sources of renewable energy and energy efficiency, rather than at expensive fossil fuel infrastructure.

References

Demirmen F (2016) 'Russian plane incident puts Turkey in a difficult position on energy', Natural Gas Europe, 14 January., **http://www.naturalgaseurope.com/russian-plane-incident-puts-turkey-in-a-difficult-position-on-energy-27608. Accessed 15 January 2016**

Dickel R et al (2014) Reducing European dependence on Russian gas: distinguishing natural gas security from geopolitics, OIES paper 92. Oxford Institute for Energy Studies, Oxford

EIA (U.S. Energy Information Administration) (2014) Oil and natural gas sales accounted for 68% of Russia's total export revenues in 2013., **http://www.eia.gov/todayinenergy/detail.cfm?id=17231. Accessed 17 January 2016**

Eurostat (2015) Main origin of primary energy imports, EU-28, 2003-13

Galluzzo M (2016) Nord Stream, un ruolo italiano nel gasdotto tra Russia e Germania Nord Stream. Corriere della Sera, 10 January

Gazprom (2015) Ukraine, Gazprom and transit issues—factsheet., **http://www.gazpromukrainefacts.com/ukraine-natural-gas-facts/ukraine-gazprom-and-transit-issues-%E2%80%93-factsheet. Accessed 15 Jan 2016**

Grigas A (2013) The politics of energy and memory between the Baltic states and Russia. Ashgate, Farnham

Högselius P (2013) Red gas: Russia and the origins of European Energy Dependence Palgrave, New York

Loskot-Strachota A, Zachmann G (2014) Rebalancing the EU-Russia-Ukraine gas relationship, Bruegel Policy Contribution. Bruegel, Brussels

International Energy Agency (2014) World Energy Outlook 2014. OECD/IEA, Paris

Pirani S et al (2009) The Russo-Ukrainian gas dispute of January 2009: a comprehensive assessment. OIES Paper 27. Oxford Institute for Energy Studies, Oxford

Sharples J (2015) Gazprom Monitor 47. European Geopolitical Forum, Brussels

Siddi M (2015a) The EU-Russia gas relationship: new projects, new disputes? FIIA briefing paper 183. Finnish Institute of International Affairs, Helsinki

Siddi M (2015b) The EU's Energy Union: towards an integrated European energy market? FIIA briefing paper 172. Finnish Institute of International Affairs, Helsinki

Tagliapietra S, Zachmann G (2015) The Russian pipeline waltz., **http://bruegel.org/2015/06/the-russian-pipeline-waltz/. Accessed 17 January 2016**

Tsvetkova M (2015) Putin doubts if gas transit via Ukraine should cease', Reuters, 17 December., **http://uk.reuters.com/article/russia-putin-turkey-nuclear-idUKL8N1462PP20151217. Accessed 16 Jan 2016**

Yafimava K (2015) European energy security and the role of Russian gas: assessing the feasibility and the rationale of reducing dependence, IAI working paper 15. Istituto Affari Internazionali, Rome