The quest for natural gas pipelines

EU and Eastern Partner energy policies: Security versus transit benefits
This publication aims to provide an overview of the European Union's efforts to maintain gas supply security especially vis-à-vis its main gas supplier, Russia. In that context, Eastern Partnership (EaP) countries, serving either as gas suppliers (Azerbaijan) or transit/corridor countries (all the others except Armenia), have an undeniable role for the EU. Security of gas supply depends on close EU cooperation with its EaP partners and interconnections between them. There are some welcome developments, such as the Southern Gas Corridor that transports Caspian gas to the EU, which reflects the importance of the EaP partners and also contributes to EU energy security and the ambitious Energy Union project. On the other hand, a project aiming to double the capacity of the gas pipeline directly connecting Germany and Russia under the Baltic Sea has raised some criticism.

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EXECUTIVE SUMMARY

The EU is highly dependent on imported energy sources, in particular imports of natural gas, a hydrocarbon that plays a crucial role in environmental policies. The EU’s main gas suppliers, Russia and Norway, accounted respectively for 40% and 37% of total gas imports in 2015, underlining the need to enhance the diversification of routes, suppliers and energy sources. This objective is embedded in the Energy Union’s goals and is being pursued with new projects, such as the Southern Gas Corridor (SGC). Nonetheless, the planned doubling in capacity of the Nord Stream pipeline (NSP) has raised concerns in European Parliament debates, and also uncovered an underlying interest in bypassing the Ukrainian route, which proved unstable during the gas crises of 2006 and 2009.

Some EU Member States may benefit from this new infrastructure by re-exporting Russian gas to the EU and to the Ukrainian market. So far, Nord Stream pipeline 2 (NSP-2) has not been officially rejected by any of the EU institutions and its complex legal and political features remain central in the current energy debate. The NSP-2 project is backed by the energy companies involved (two Germans, one French, one Austrian and one Anglo-Dutch, as well as Gazprom) and by the German government, and is opposed by nine Member States (Croatia, the Czech Republic, Estonia, Hungary, Latvia, Poland, Romania and Slovakia and Lithuania), backed by the USA and by some MEPs. Partly owing to their high dependence on Russian gas and the possibility of losing transit fees, eastern and central European states are challenging NSP-2 as being incompatible with the objectives of the Energy Union. The political and military conflict in Ukraine, which has strained EU-Russia relations, is another factor shaping the debate over NSP-2.

The EU’s Eastern Partners play a key role in the transit of gas to the EU since, with the exception of Armenia, they host the largest part of a vast pipeline network. Furthermore, an in-depth energy analysis shows their considerable dependency on Russian gas (except for Azerbaijan and Georgia) but also, in the case of Belarus, Moldova and Ukraine, the benefits of receiving transit fees for their transit service. NSP-2 may result in reducing this rent-seeking position and there are various possible scenarios for the future of gas transit in Ukraine. Gazprom first announced in January 2015 that it would stop using the Ukrainian route after 2019 on the basis of a parallel project in the Black Sea. However, following the suspension of the Turkish Stream project, it declared its intention to continue gas exports to the EU through Ukraine. This is likely to happen even after the completion of NSP-2.

As the NSP-2 consortium continues working towards building the project, the political opposition is becoming more visible. Although the supporters of NSP-2 stress that it is a commercial project financed by private companies without any government involvement, it has triggered political controversy. In addition to the governments of the EU Member States mentioned, the two largest political groups in the European Parliament (the European People’s Party (EPP) and the Group of the Progressive Alliance of Socialists and Democrats (S&D)) have voiced their concerns over NSP-2, sending letters to the President of the European Commission.

Meanwhile, work on the SGC project is progressing well and the EU is going to receive Caspian gas from an Eastern Partnership country, Azerbaijan, after 2020. Supported politically by the EU, the SGC receives financial assistance from European institutions (i.e. EBRD) as well. Possible involvement in the SGC of another Caspian coastal state, Turkmenistan, is also on the EU’s agenda so as to increase the initially small quantities of gas and to further diversify its sources, as a move to increase the EU’s energy security and decrease its dependence on its largest supplier.
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<th>Full Form</th>
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<tbody>
<tr>
<td>bcm</td>
<td>billion cubic metre</td>
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<tr>
<td>bcm/a</td>
<td>billion cubic metre per annum</td>
</tr>
<tr>
<td>EaP</td>
<td>Eastern Partnership</td>
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<tr>
<td>EBRD</td>
<td>European Bank for Reconstruction and Development</td>
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<td>EE</td>
<td>Energy efficiency</td>
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<td>EIB</td>
<td>European Investment Bank</td>
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<td>EnC</td>
<td>Energy Community</td>
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<tr>
<td>GHG</td>
<td>Greenhouse gas</td>
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<tr>
<td>GWh</td>
<td>Gigawatt-hours</td>
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<tr>
<td>LNG</td>
<td>liquid natural gas</td>
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<tr>
<td>Mcm</td>
<td>million cubic metres</td>
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<tr>
<td>MoU</td>
<td>Memorandum of understanding</td>
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<tr>
<td>Mtoe</td>
<td>Million tonnes of oil equivalent</td>
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<td>NPP</td>
<td>Nuclear Power Plant</td>
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<td>NSP-2</td>
<td>Nord Stream Pipeline 2</td>
</tr>
<tr>
<td>PCI</td>
<td>Project of Common Interest</td>
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<tr>
<td>RES</td>
<td>Renewable energy supply</td>
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<tr>
<td>SCP</td>
<td>South Caucasus pipeline</td>
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<tr>
<td>TANAP</td>
<td>Trans-Anatolian pipeline</td>
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<tr>
<td>TAP</td>
<td>Trans-Adriatic Pipeline</td>
</tr>
<tr>
<td>TTOE</td>
<td>Thousand tons of oil equivalent</td>
</tr>
<tr>
<td>TPC</td>
<td>Total primary consumption</td>
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<tr>
<td>TPES</td>
<td>Total primary energy supply</td>
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<tr>
<td>TWh</td>
<td>Terawatt-hours</td>
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1. Introduction

Natural gas and oil constitute around 60% of EU's primary energy supply. Since the domestic reserves of these two forms of energy are diminishing, imports have soared rapidly in recent years, increasing import dependency and rendering it necessary to address security of supplies. Securing stable energy imports is among the priority policies of the EU.

With the exception of Armenia and Azerbaijan (an actual energy producer), the six Eastern Partners – Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine – all play a significant transit role in meeting the EU’s energy needs. Based on the idea that energy security requires a collective approach through deeper cooperation, the EU has stepped up its efforts to enhance its energy relations with its neighbours.

Gas transit disruptions in 2006 and 2009 in Ukraine raised alarm bells in the EU. Bilateral disagreements on gas prices between Ukraine and the Russian Federation prompted Ukraine to siphon off gas in transit, halting the flow of gas from Russia to the EU and creating shortages for some central EU Member States, including Germany. This hastened the construction of Nord Stream, a pipeline declared to be a 'Project of Common Interest' in 2009 and activated in 2011. The Ukrainian crisis of 2014 once again exposed the EU’s energy dependency, prompting the European Commission to launch gas stress tests to identify EU Member States’ vulnerabilities. The tests showed that any disruption of Russian gas to the EU would have a substantial impact, especially on the Eastern members. No gas disruptions followed the crisis of 2014. Russia is heavily dependent on energy exports and would have suffered worse effects had it halted its gas exports; it has been trying to assert itself as a reliable energy supplier for the EU.

Developing new policies to ensure that energy flows are not disrupted has become a major concern at EU level. In response to these concerns, the EU has taken a number of noteworthy steps, including the adoption of the Security of Gas Supply Regulation in 2010, the Energy Security Strategy in May 2014 and, most remarkably, the ambitious Energy Union project, which stresses the importance of identifying and building new routes to increase EU security by diversifying energy sources, suppliers and routes.

Geo-political developments in Eastern Europe in 2014 and the potential for disruption to energy supplies sowed the seeds for the above-mentioned Energy Security Strategy and the creation, in the Junker Commission, of a specific Energy Union portfolio. Russia has long been the biggest gas resource for the EU while Ukraine has been serving as a major transit country between the source (Russia) and destination (EU) of energy. Russia will remain one of the key players in the EU energy market for the foreseeable future, although new players like Azerbaijan and Turkmenistan are increasing their presence, and alternatives to gas pipelines such as the creation of a significant liquid natural gas (LNG) market are challenging the predominance of Russia.

This study aims to explore how gas interconnections between the EU and its Eastern Partners have evolved in recent years in the light of EU energy market conditions. A country-by-country analysis of the Eastern Partners and the impact of main gas projects (Nord Stream 2 and the Southern Gas Corridor) on EU energy security and Ukraine will complete the analysis.
1.1. Natural gas in the EU energy mix

The total primary energy supply (TPES) of the EU in 2014 was around 1 800 Mtoe. The share of natural gas in the EU energy mix is almost one quarter. According to the European Commission’s long-term scenario, the share of natural gas in the EU energy supply is almost stable, and will stay at around 24% until 2050.1 The share of solids and oil in the energy mix will decrease while renewable energy sources will rise significantly from 6% in 2010 to 27% in 2050. However, the EU's primary energy production is on a decreasing trend and the natural gas share in total energy production is expected to decrease from 17% in 2020 to 9% in 2050, reflecting the depletion of domestic gas reserves in the EU Member States.

Gas is the main source of energy for EU manufacturing industries and household heating. It is also the main back-up for renewables, since it is a relatively clean source of energy and can potentially contribute to a reduction in greenhouse gas emissions. Two-thirds of EU demand is covered by imports, however, marking a high level of dependency.

Changes in energy production and supply are also reflected in imports, as seen in Figure 3. Since natural gas remains one of the dominant energy forms, diminishing domestic reserves will cause an increase in gas imports. Although oil reserves are also depleting, oil imports to the EU are expected to fall, reflecting lower use of oil and coal in primary energy supply, replaced by renewables to reduce GHG emissions. In the coming decades, gas imports will be even higher than they are today. Therefore, ensuring secure and affordable gas supplies is likely to continue to be the major concern for the EU that it is today.

Forecasts for future dependence on natural gas imports are based on different policy mix scenarios, combining greenhouse gas (GHG) reduction, enhanced use of renewable energy resources (RES) and energy efficiency (EE). According to the International Energy Agency (IEA), under the current policies scenario, which takes account of formally adopted policies as of mid-2015, (30% GHG reduction, 23% RES increase, 19% EE

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increase), EU gas demand will increase by more than 25% compared with the 2015 level. Under the IEA's new policies scenario (40% GHG, 27% RES, and 24% EE), which considers announcements as well as current policies, demand for gas in the EU is predicted to remain almost the same after 2020.2 Other policy options may result in lower demand, in particular the PRIMES scenario (32.4% GHG reduction, 24.4% RES increase, 21% EE increase). Here, EU demand for gas is expected to decrease slightly over the next decade and then to stabilise at around 450 bcm/a after 2030. As domestic gas production is on a decreasing trend and current policies are expected to increase total demand for gas in the EU, energy efficiency is likely to play a significant role in EU energy security. The EU has a target of 20% energy efficiency by 2020.

The Energy Efficiency communication of July 2014 acknowledged that the expected energy savings by 2020 would be around 18-19%, falling short of the target. Nonetheless, the Commission proposed more ambitious targets in its proposal for a 2030 energy policy framework, RES target of 27% and an EE target of 30%.3 They were approved by the European Council on 23 October 2014 with slight modifications: GHG 40%, RES 27% and EE of at least 27% (to be revised in 2020).

2. Natural gas diversification and interconnection for the EU

2.1. EU gas import dependence

More than half the energy (around 53% of the total) consumed in the EU is imported, costing more than €1 billion per day. Dependence on natural gas imports is even higher, around 66% of consumption, a critical level. High dependency on energy imports and the GDP level explain why the EU is world’s biggest importer of natural gas.

EU gas production continued its declining path: output fell by 10% in 2014 and a further 9% in 2015. EU net imports of gas declined by 8% in 2014 compared with 2013. After a sharp decline in the first half of

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2014, the third and fourth quarters were relatively stable and gas consumption in EU decreased by 11% year-on-year, from 428 bcm in 2013 to 382 bcm in 2014, a decline mainly due to mild winter temperatures. In the first half of 2015, consumption was around 218 bcm, 9% more than in the same period of 2014. In spite of that increase, consumption in the first two quarters of 2015 was lower than in any year in the 2009-2013 period.\(^4\)

Many EU Member States are heavily reliant on a single gas supplier, including some that rely entirely on Russia for their natural gas.\(^5\) Russia's export of gas to the EU increased by 7% in 2015 year on year.\(^6\) This heavy reliance may affect some Member States' energy security when no other infrastructure exists to (even potentially) import gas from alternative sources. This is the case, for instance, for Slovakia and the Czech Republic, which have sufficient infrastructure to import from the West and curb supply concentration. Storage capacity also increases energy security and provides higher resilience to potential disruption that may be caused by political or commercial disputes, infrastructure failure, terrorist attacks or natural disasters. For instance, a 2009 gas dispute between Russia and Ukraine following the Ukrainian decision to siphon off gas in transit destined for the EU, left many EU countries with severe shortages. In response to disruption concerns following new political tensions, the European Commission released its Energy Security Strategy in May 2014. This aims to ensure a stable and abundant supply of energy for EU citizens and the economy.

**Figure 6 – EU Member States’ dependence on Russian gas**

![Diagram showing EU Member States' dependence on Russian gas](source: ECFR)

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While the EU gas market is not yet completely interconnected, mainly because of the domestic policies of EU Member States, national energy companies have developed their contracts with different suppliers. Broadly speaking, western Europe shows a prevalence of LNG and Norwegian gas, southern Europe imports from north Africa (including Italy, but with a much larger Russian gas component) and central and eastern Europe depend to a varying extent on Russia. Central and south-eastern Europe is vulnerable to potential gas supply disruptions. Developing infrastructure, enhancing market integration and facilitating the

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7 See Improving the security of energy supply by developing the internal energy market: more efforts needed, European Court of Auditors 2015.

8 On 9 February 2015, representatives of Austria, Bulgaria, Croatia, Greece, Hungary, Italy, Romania, Slovenia and Slovakia, as well as the Commission Vice-President for the Energy Union, Maroš Šefčovič, and the Commissioner for Climate Action and Energy, Miguel Arias Cañete, held the first meeting of the High Level Group on Central and South Eastern Europe Gas Connectivity (CESEC) in Sofia. See the Joint Press Statement by Ministers and Representatives of Austria, Bulgaria, Croatia, Greece, Hungary, Italy, Romania, Slovenia and Slovakia and the European Commission, 9 February 2015.
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diversification of gas supplies to central and south-eastern Europe has become a major issue at EU level.

The main sources of natural gas remain Russia, Norway and Algeria. Russian predominance in supplying the EU depends on its large reserve availability and on the extensive pipeline network capacity. Russia and Norway together provided 77% of total EU gas imports in 2015, a significant increase from the 2010 level of 64%. In 2014, Norway's share in EU imports increased to 38% from 34% in 2013. Russia remained the main gas exporter to the EU but its share of total imports decreased from 43% in 2013 to 40% in 2015.

Overall, 277 billion cubic metres (bcm) of natural gas (around two-thirds of total consumption of 399 bcm) were imported in 2015 while the EU's gas production – which has been on a downward trend – stood at 118 bcm.

The decline in the Russian share of total imports has been accompanied by an increase in imported gas volumes, from 120 bcm in 2013 to 160 bcm in 2015, with an increase of 33% in two years. In 2015 these quantities came via three different routes: Ukraine (39%), North Stream (30%) and Belarus (29%). In 2014 the Ukrainian route declined and the European Commission argued that Russia was limiting supplies to Europe in an attempt to minimise reverse flows to Ukraine.9 In the last quarter of 2015, with reverse flow to Ukraine gaining momentum, volumes arriving through Ukraine (which includes the Brotherhood Pipeline and the Balkan route), became 76% higher than in the same period of 2014. In the first quarter of 2016, the year-on-year increase was even higher, reaching 94%. Gas flows through the North Stream also increased by 23% in the last quarter of 2015 and by 66% in the first quarter of 2016. In contrast, transit through Belarus has been relatively stable.10

2.2. Diversification and interconnection in the EU energy strategy

On 25 February 2015, the Vice-President of the European Commission, Maroš Šefčovič, announced the creation of an Energy Union, a project aimed at 'increasing EU's energy security by diversifying supplies (sources, suppliers and routes) and by creating a more integrated, mutually-supportive and transparent European energy market'.11

The Energy Union incorporates aspects of energy security, energy efficiency goals and CO2 reduction objectives. It also confirms the Russian Federation's status as an indispensable source of energy for Europe – though its companies must comply with EU

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legislation. In a speech on 24 March 2015 to the European Parliament Delegation to the EU-Russia Parliamentary Cooperation Committee, Vice-President Šefčovič said, 'energy plays a pivotal role in our relations with Russia, and Russia plays an important role in our energy policy'. Nonetheless, following the publication of the EU’s first list of Projects of Common interest (PCIs) and the European Energy Security Strategy (EESS), it was clear that the Energy Union supports projects such as the Trans-Anatolian Pipeline (TANAP) and Trans-Adriatic Pipeline (TAP), which expand the variety of energy suppliers rather than creating new supply routes for existing sources such as the Nord Stream 2 (NSP-2).

Twenty-seven projects facilitating network interconnection, supply and storage of natural gas are considered to be more urgent priorities in the original EESS (2014): in the short term (2016) it was suggesting the completion of three interconnectors, one pipeline, two liquid natural gas (LNG) terminals, three reverse flow technologies and a plant designed to increase storage capacity. In the medium term (2017-2020), seven interconnectors, four pipelines (including the completion of the TAP-TANAP system from Azerbaijan to Italy), four LNG terminals, one compressor and one reverse flow system are envisaged.

- Six projects (two short-term and four medium-term) concern the Baltic States, to improve connections among themselves, and with Poland, Finland and with the new LNG terminal in Lithuania.
- Seven projects concern the Balkan states and Hungary, for a better connection among themselves and with Bulgaria, a country with total dependence on Russian gas imports.
- Five projects concern Poland and aim to connect it with Lithuania, to create a LNG terminal with Slovakia and Czech Republic.

On 18 November 2015, the Commission published the 'State of the Energy Union package' in parallel with the 'Review of the European Neighbourhood Policy'. These documents are connected as regards energy security issues in neighbouring countries, in particular when it comes to gas. The State of the Energy Union 2015 communication registers major progress on interconnection of the electricity market, while on gas it takes note of the completion of the Lithuanian LNG terminal in Klaipeda (bringing diversification to the Baltic market). The latter resulted in the lowering of the Russian gas price and forced Lithuania to renegotiate the agreement with Norway.

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12 The state of play of EU-Russia energy relations, European Commission speech, 24 March 2015.
15 TAP and TANAP are aimed at importing natural gas from Azerbaijan and in the future to open up to possible Turkmen and Iranian exports through the new 'Southern Gas Corridor' formed by the TAP, TANAP and South Caucasus (SCP) pipelines.
18 Lithuania’s shift to importing LNG subsequently proved more expensive than importing gas from Russia via pipeline. Russia’s Gazprom offered Lithuania reduced prices after it started to import LNG from
The list of priority projects is updated in a delegated regulation\(^{19}\) amending Regulation 347/2013, adopted in 2016 as part of the State of the Energy Union package. The new list defines 195 PCIs in total, 77 of which relate to gas infrastructure. The latter are grouped in four geographic areas:

- Priority Corridor North-South Gas Interconnections in Western Europe (NSI West Gas)
- Priority Corridor North-South Gas Interconnections in Central Eastern and South Eastern Europe (NSI East Gas)
- Priority Corridor Southern Gas Corridor (SGC)
- Priority Corridor Baltic Energy Market Interconnection Plan in Gas (BEMIP Gas)

According to the Commission, the level of preparedness and resilience of the gas system has significantly improved since 2010, mostly owing to the Gas Security of Supply Regulation. Nevertheless it envisages improving regional cooperation and harmonisation (e.g. protected customers and supply standard). Therefore, the Commission proposed a revision of the Gas Security of Supply Regulation (994/2010)\(^{20}\) on 16 February 2016, introducing:

- a solidarity principle according to which neighbouring Member States will help ensure gas supplies to households and essential social services, such as healthcare and security services, in the case of a severe crisis;
- a shift from a 'national approach' to a 'regional approach' when designing security of supply measures;
- reinforced cooperation with EU neighbours: Energy Community countries will be involved in ensuring a more effective prevention and management of gas crises;
- additional transparency measures for relevant gas contracts to be automatically notified by gas companies to the Commission and the Member States upon their conclusion or modification.

In particular, the latest measure has been considered by some commentators as targeting Germany and its project of expanding the Nord Stream pipeline.\(^{21}\) The proposal, if approved, would require Member States to share details of forthcoming energy agreements with non-EU countries on sensitive, secret elements such as prices, maximum daily volumes and conditions for suspending deliveries. It would provide the Commission with greater power to issue enforceable 'recommendations' to prevent Member States from passing the threshold of 40% of imports from a single non-Member State supplier.

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\(^{20}\) The Commission proposes a new security of supply regulation, European Commission, 16 February 2016.

\(^{21}\) EU executive targets energy contracts with non-bloc nations, Deutsche Welle, 16 February 2016; EU seeks oversight powers on energy security, EU Observer, 17 February 2016.
2.3. Impact of Nord Stream 2 and the Southern Gas Corridor on EU energy security

2.3.1. Nord Stream 2 – political aspects

Almost half of Russian gas supplied to the EU transits through Ukraine and the capacity of pipelines crossing the country (estimated in a range between 143 to 175 bcm) is higher than non-Ukrainian routes (between 113 to 134 bcm). The major gas supply route to the EU is the Urengoy-Pomary-Uzhgorod (Brotherhood) pipeline, built in 1982-84. Following this one, another supplementary pipeline was built on Ukraine soil, bringing Ukrainian transit capacity to its current level. (See Annex for the capacity of major gas export pipelines, p. 42)

The Ukrainian supply route, however, has not proven entirely reliable: in 2006 and 2009, Ukraine siphoned off gas in transit to the EU market after its own gas supply was cut following a price and debt controversy with Russia. This urged some EU Member States to envision alternative routes from Russia: and the Council of the EU to exert pressure on both parties declaring that: 'At the first signs of a reduction in the supplies of gas at the beginning of January 2009 the EU joined forces and tried to create a dialogue between Russia and Ukraine. So far the two parties have failed to show sufficient determination to solve the problem, which damages their credibility. Nevertheless, the EU expects that the current negotiations will lead to a solution shortly. The EU urges Russia and Ukraine to fulfil their respective obligations as supplier and transit country and immediately restore the supplies to the European market.'

- Nord Stream, aimed at reaching Germany via the Baltic Sea (a project Gazprom has undertaken with BASF, E.ON, Gasunie and GDF).
- South Stream, designed to bypass Ukraine from the south, (reaching southeast Europe via the Black Sea – a project involving Gazprom, Italy's ENI, Électricité de France and Germany's Wintershall).

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22 The Reagan administration, which sanctioned the German and French companies involved in the project, raised opposition to the pipeline from Russia to Europe. President Reagan reportedly said 'Well, they can have their damned pipeline... But not with American equipment and not with American technology.' The inside story of the Soviet downfall, RenewAmerica, 23 April 2007.

• Turkish Stream\textsuperscript{24} was designed to substitute South Stream once the latter was declared non-compliant with EU law in December 2013.\textsuperscript{25}

Nord Stream was labelled a PCI by the EU in 2006, in the wake of the transit disruption through Ukraine.\textsuperscript{26} However it was not financed by the EIB as other PCs have been,\textsuperscript{27} but rather 30\% by shareholders\textsuperscript{28} and 70\% by project financing. Nord Stream line 1 and line 2 have both been operational since 2012 with a total capacity of 55 bcm. Nord Stream line 3 and line 4 (NSP-2), which are currently at planning stage, are expected to double this capacity, if they ever become operational.

**Figure 11 – Nord Stream Pipeline 1 and 2**

![Nord Stream Pipeline 1 and 2](image)

Data source: Gazprom.

The NSP-2 project has proved controversial in the light of the present situation of tension with Russia, and this time it has not applied to the European Commission to be granted the ‘priority project’ label as private funding is expected to be sufficient to cover the whole investment.\textsuperscript{29} Meanwhile, EBRD and EIB resources have been allocated to the renovation of

\textsuperscript{24} On an official visit to Turkey on 1 December 2014, blaming the European Commission, Vladimir Putin announced the cancellation of South Stream and its replacement with a new project, Turkish Stream. However, as Turkish-Russian relations deteriorated after Turkey downed a Russian jet for violating Turkish airspace on 24 November 2015, the Turkish Stream project was put on hold in December 2015, one year after its announcement. For more information, see: [Russia drops South Stream gas pipeline plan](http://www.bbc.co.uk/news/world/europe/25763884), BBC, 1 December 2014; [Turkish Stream pipeline construction project suspended — Russia’s Energy Minister](http://tass.ru/1910732), TASS, 3 December 2015; [Turkey has shelved Turkish Stream gas pipeline project, says President Erdoğan](http://www.hdn.com.tr/1364414171-2015/5), HDN, 5 December 2015.

\textsuperscript{25} The Commission concluded that the intergovernmental agreements between Russia and the countries through which the South Stream is to transit were not in compliance with EU law. [EC: Russia should apply for South Stream exemption](http://ec.europa.eu/dg-energy/doc/2013/dec13/dec13_11a_en.pdf), Natural Gas Europa, 7 December 2013.

\textsuperscript{26} At the time the project was called the 'North European gas pipeline', included as PCI No 9.3. in the [Decision No 1364/2006/EC of the European Parliament and of the Council of 6 September 2006](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:271:0035:0093:EN:PDF) laying down guidelines for trans-European energy networks and repealing Decision 96/391/EC and Decision No 1229/2003/EC.


the Brotherhood pipeline, to keep Ukrainian transit operational. Both lines remain active and both increased transit in 2015. As seen in Chapter 2.1. Russian gas transit through Ukraine to the EU increased by 94% year on year in the first quarter of 2016 while NSP transit increased by 23%. Possible explanations include declining EU production and increased reverse flow transit from the EU to Ukraine (see Chapter 3.7.1).

NSP-2 has not so far been declared inconsistent with EU law, unlike South Stream. The Commission referred to the NSP-2 project in the above-mentioned communication on the State of the Energy Union of 18 November 2015, where it: 1) took note of the project on building two further stretches of the Nord Stream pipeline; and 2) expressed the view that, if built, NSP-2 would not give access to a new source of supply. For this reason, the project is not considered to be in line with the objectives of the Energy Union.

Following this communication, an initiative was launched on 26 November 2015 to address the supposed legal inconsistency of the project in a joint letter addressed to the European Commission. The letter was submitted for signature to Bulgaria, the Czech Republic, Estonia, Greece, Hungary, Latvia, Lithuania, Poland, Romania and Slovakia. Slovenia, Bulgaria, Italy and Greece, while sharing the concern of re-routing Russian gas via Nord Stream, did not support the initiative. The letter was sent to the European Commission on 17 March 2016 and signed by the prime ministers of Croatia, the Czech Republic, Estonia, Hungary, Latvia, Poland, Romania and Slovakia and the president of Lithuania. These countries, backed by the USA, fear increasing energy dependency on Russian gas, zeroing gas transit through Ukraine (the Brotherhood pipeline grants Ukraine USD 2 billion per year in transit fees) and through the Belarus-Poland route (Yamal pipelines).

Figure 12 – Russian gas EU supply routes

Germany dismissed US interference in domestic affairs and reassured Poland over keeping the Yamal and Brotherhood pipelines in operation even after completion of

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30 Four sections of the Brotherhood pipeline needed to be replaced and the modernisation and upgrade project for the pipeline has been financed by two different institutions: the European Bank for Reconstruction and Development (by a sovereign loan of €150 million to Ukraine) Source: EBRD website, and the European Investment Bank (EIB), which also agreed a loan of €150 million to Ukraine.

31 Seven EU countries oppose Nord Stream, Euractiv, 30 November 2015.


33 Great northern gas war: Gazprom project worries the US and divides Europe, Politico, 10 February 2016.
NSP-2. The German-Polish controversy is mirrored in the attempt to provide the European Commission with stronger powers to veto Member States' bilateral intergovernmental agreements with third countries, a move allegedly supported by Poland and opposed by Germany.\(^{34}\) Reflecting the division between Member States, the European Council has so far simply declared that any new infrastructure should comply fully with the Third Energy Package and other applicable EU legislation as well as with the objectives of the Energy Union.\(^{35}\)

The European Parliament took a formal position against it in its resolution of 15 December 2015 on 'Towards a European Energy Union'.\(^{36}\) In addition, up to 9 March, 25 questions for written answer to the Commission had been lodged, highlighting a strong stance against the project from some MEPs. The Commission took note of the project, stated that this is not going to receive EU funding since it does not increase EU energy security, but that so far no formal position has been taken on its inconsistency with the Union law. EPP group chair Manfred Weber, recalling the EP plenary debates in October and December 2015 and the EP resolution of 15 December 2015, stressed the incompatibility of the project with objectives of diversification of energy imports routes and that it contradicted the EU's foreign, security and EaP goals.\(^{37}\)

MEPs, with the participation of Climate Action and Energy Commissioner Miguel Arias Cañete, discussed the impact on the gas market in central and eastern Europe in Strasbourg on 9 May 2016.\(^{38}\) Voicing their grave concerns, some MEPs argued that the NSP-2 did not comply with the aim of diversification of sources and routes, on the contrary it would increase dependency on one supplier.\(^{39}\) Following the plenary debate, the S&D group chair Gianni Pittella penned a letter to Vice-President Maroš Šefčovič and Commissioner Miguel Arias Cañete, reiterating 'the very strong political concerns' of his group regarding the NSP-2 project.\(^{40}\)

The European Commission is expected to deliver a legal interpretation on the compatibility of NSP-2 with EU law. It is likely to take into consideration the hypothetical routes of NSP-2, which is planned to cross the Exclusive Economic Zone (EEZ) of some Baltic coast countries. Some lawyers consider EU energy law as applying to the EEZ of EU Member States. Others contend that the EEZ is defined only by sovereign states, under the United Nations Convention on the Law of the Sea (UNCLOS) (considered part of international customary law). This debate is allegedly dividing two bodies of the Commission: the Directorate-General for Energy and the Legal Service.\(^{41}\)

Although objections have been raised in the European Parliament and uncertainties about the future of the NSP-2 remain, Gazprom and its European partners are continuing

\(^{34}\) Germany seeks to calm Polish concerns over Nord Stream-2, Reuters, 29 January 2016.

\(^{35}\) See the conclusions from the European Council meeting of 17-18 December 2015.

\(^{36}\) (The Parliament) 'Expresses concern at the proposed doubling of capacity of the Nordstream pipeline and the effects this would have on energy security and diversification of supply and the principle of solidarity between Member States;' http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+TA+P8-TA-2015-0444+0+DOC+PDF+V0 EN.

\(^{37}\) Weber writes to Gabriel and Cañete: Nord Stream II threatens EU security, EPP Group, 2 May 2016.

\(^{38}\) Impact of Nord Stream 2 on the gas market in the CEE region (debate), European Parliament plenary session, 9 May 2016.

\(^{39}\) MEPs voice grave concerns about Nord Stream 2 project, European Parliament press release, 10 May 2016.

\(^{40}\) Letter from S&D Group to Vice-President Maroš Šefčovič and Commissioner Miguel Arias Cañete, 10 May 2016.

\(^{41}\) Legal opinion undermines EU’s ability to block Nord Stream pipeline, Politico, 7 February 2016.
to take steps towards carrying out the project. On 11 March 2016 the consortium chose the steel pipe suppliers: Germany's Europipe for 40%; Russia's United Metallurgical Company (OMK) for 33%; and Russian firm Chelyabinsk Pipe-Rolling Plant for 27%. The pipes are expected to be delivered in September 2016.\footnote{Nord Stream 2 Consortium Announces Pipeline Tender Awards, Natural Gas Europa, 14 March 2016.}

2.3.2. Nord Stream 2 – economic impact
NSP-2 is projected to double the capacity of Nord Stream 1, from 55 bcm to 110 bcm per year. In Scenario A, the additional natural gas is consumed in Germany, and in Scenario B it is re-exported. In Scenario A, NSP-2 could increase the Russian component of German consumption from 40% to 60%, resulting in greater dependence on Russian gas, a scenario apparently at odds with the goals of the Energy Union. In this sense, NSP-2 could be seen as continuing the German policy of increasing energy security by limiting transit through unsecure transit routes, following the gas crisis of 2005 and 2009. The Russian source has so far proven to be reliable for the German market, despite instability in Ukraine, which is expected to be affected by further reduction (but not complete offset) of gas transit. The objective of enhancing independence from the Ukrainian route has already been achieved by Germany: since 2013, German gas has no longer been supplied through Ukraine but only through the NSP and Yamal pipeline.

In scenario B, however, it is conceivable that a large part of the additional gas imported to Germany via NSP-2 will not be used for domestic consumption. The following factors may reinforce this scenario:

- In 2015, NSP was not working at full capacity (passing the threshold of 75 % in 2015): NS imported 35.5 bcm in 2014 and 39.1 bcm in 2015. The utilisation rate is however on a rising trend (See Figure 13).
- Germany imported 41 bcm in 2013 and 40.3 bcm in 2014 from Russia, from a total of 94.9 bcm of gas imports.
- In 2013 Germany exported more than 18.8 bcm of natural gas, a surplus mainly composed of Russian and Norwegian gas (IEA data). The quantity increased to 28.9 bcm in 2014, according to BP data.\footnote{BP Statistical Review of World Energy, June 2015. The figure is inflated since it derives from demand (import + production) - consumption. A part of the result is probably stored, so reducing the total exported.}

These factors make it highly probable that NSP-2 will increase Germany's role as a European gas hub. Germany is likely to keep a balanced energy mix and sound gas diversification at the same time as exporting its gas surplus to a large part of the EU. Indeed, Germany's vice-chancellor and Energy Minister Sigmar Gabriel has commented that NSP-2 is in Germany's and other Member States' (namely France's) interests.\footnote{See Gabriel verteidigt Russland-Pipeline Frankfurter Allgemeine 19 December 2015. Meeting with Germany's Vice-Chancellor and Minister of Economic Affairs and Energy Sigmar Gabriel.}

NSP-2 has in theory the capacity to supply southern and south eastern EU countries (Italy, Austria, Greece, Bulgaria, Hungary,
Romania, Slovakia, Czech Republic, Slovenia and Croatia), which received 47.8 bcm of Russian gas through Ukraine in 2014. As Germany is already independent from imports through Ukraine, only those countries mentioned will remain exposed to potential Russian/Ukraine disagreements and, first of all, to the Ukrainian request to double\textsuperscript{45} transit fees (at present deferred to arbitration). The transit contract with Russia expires in 2019 and in both cases (renewal or not), higher costs of transit may possibly be transferred to southern and south eastern European buyers.

It should be noted that the higher transit costs are coupled with a strong effort from the EU institutions to keep the Brotherhood pipeline in operation, and the EIB and EBRD have funded its renewal with €300 million in total (see Chapter 2.3.1). However, a complete shift would be an extreme (and costly) option. Transport costs from NS to southern and south-eastern Europe risk being even higher than Ukrainian transit.\textsuperscript{46} On the other hand, the connection of NSP/NSP-2 to the German network faces some legal hurdles as the EU’s Third Energy Package (2011) created some obstacles for Gazprom.

The legal obstacles facing the NSP-2 are mirrored in the case of the disagreement on the OPAL pipeline’s exemption from the rules of the Third Energy Package. The NS pipeline is connected through two main onshore pipelines: NEL and OPAL. NEL is 441 km long and since 1 November 2013, has allowed the transit of more than 20 bcm per year.\textsuperscript{47} The other pipeline, OPAL, with a capacity of 35 bcm per year, is the main connector of NS to European markets.

Under the unbundling rules introduced by the package to prevent firms that already dominate supply from also controlling distribution networks, Gazprom is required to reserve up to 50% of the OPAL pipeline’s capacities for gas transportation by independent suppliers. Although Germany’s national regulator granted an exemption from the energy package allowing Gazprom to use the full capacity of OPAL, an agreement between the Commission, the national regulator and Gazprom has not been put in place yet. For this reason the present usable capacity for Gazprom is 50% of the total. The completion of the interconnections and the energy internal market, however, offer the possibility in the future to supply southern and eastern markets from the north, especially in the event of new disruptions.

2.4. Southern Gas Corridor: Caspian gas reaches the EU

In late 2011, Turkey and Azerbaijan announced jointly that TANAP would be set up to carry gas from the Caspian Sea Shah Deniz fields to Greece via Turkey. In 2013, having

\textsuperscript{45} Ukraine Wants to Double Gas Transit Fees for Gazprom, Says Energy Minister, Wall Street Journal, 19 March 2015.


\textsuperscript{47} NEL website.
chosen a route that was 500 km shorter than that of Nabucco-West. The Trans-Adriatic Pipeline (TAP) was chosen by the consortium Shah Deniz II as the only pipeline that would transport TANAP gas from the Turkish-Greek border to Europe. As a result, the Nabucco project was officially cancelled later that year, and the TANAP and TAP projects became two major components of the new Southern Gas Corridor. Its construction is expected to cost around US$45 billion.

**Figure 15 – SCP, TANAP and TAP (Southern Gas Corridor)**

TANAP is expected initially to carry 16 bcm of gas per year. Its capacity is expected to increase to as much as 31 bcm per year by 2026. Its cost is expected to be around US$10-11 billion. The TAP project was designed in 2003 to connect Turkey with Italy via Greece and Albania. It is expected to carry 10 bcm per year with the potential to double when TANAP’s capacity is increased. Construction works for TAP started in July 2015 and marked by a ceremony on 17 May 2016, held in Thessaloniki, Greece, in the presence of Greek Prime Minister Alexis Tsipras. Financing issues were declared to have been resolved in late April 2016, and the EIB is likely to play a role.

Although TAP is a part of the European gas network, and therefore subject to EU regulation, the European Commission granted the pipeline a 25-year exemption from the unbundling rules during its first phase, after a request from the Italian, Greek and Albanian authorities. As of today, TAP can therefore be owned by the same companies as those exploiting the gas. The TAP consortium is not then likely to open the pipeline to its competitor Gazprom to send gas to Europe. The opening of TAP’s second phase would have provided a new opportunity for Russian companies to enter the European market with gas supplied through the future Turkish Stream. The suspension of Turkish Stream has removed this opportunity.

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48 The Nabucco project was conceived as an open project carrying natural gas from different sources and crossing Turkey, Bulgaria, Romania, Hungary and terminating in Austria. In 2011, the original project was reduced to Nabucco West, since Turkey and Azerbaijan announced jointly that TANAP would be created to carry natural gas from the Caspian Sea Shah Deniz fields to Greece via Turkey. Nabucco West itself was abandoned in 2013 and substituted by a totally different route, the TAP.

49 European Union’s Nabucco pipeline project aborted, WSWS, 13 July 2013.

50 SOCAR (State Oil Company of Azerbaijan Republic) holds 68% of TANAP, BOTAS ([Turkish] Petroleum Pipeline Corporation) and TPAO (Turkish Petroleum Corporation) 20%, while BP has 12%.

51 The main shareholders of TAP are SOCAR, Snam, BP, Fluxys, Enagás and Axpo. See TAP at a glance.


53 Azerbaijan expects to secure TAP gas pipeline finance in full in April, Reuters, 29 February 2016.

54 Russia can use Trans-Adriatic pipeline, Commission confirms, Euractiv, 2 April 2015.
3. Diversification and interconnection of EaP countries

3.1. EU engagement with its Eastern Partners

The Eastern Partnership (EaP), which represents the eastern dimension of the European Neighbourhood Policy (ENP), aims to strengthen the EU's relations with its six partners – Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine. The EaP has four main priority areas, one of which is energy security. The six Eastern Partners play a key role in energy transit for the EU (with the exception of Azerbaijan, an actual producer, and Armenia, which is not crossed by transit pipelines\(^{55}\)). Securing their stability and avoiding the kind of disruptions seen in 2006 and 2009 is vital for the EU.

To this end, the European Union has been strengthening its energy cooperation with the Eastern Partners since 2009, especially since the Eastern Partnership Summit of May 2009,\(^{56}\) which established the 'Eastern Partnership Platform on Energy Security'\(^{57}\). The policy dialogue platform brings together the EU and its EaP partners to discuss issues of common concern such as energy security, renewable energy, energy efficiency and nuclear safety. It also discusses the construction of infrastructure links and ways to bring partner countries' energy-related rules more in line with EU rules. Since 2010 the platform on energy has been supported by the Energy Flagship Initiative, which is aimed at facilitating the trade of gas and electricity between the EU and the six EaP partners, improving energy efficiency and to expanding the use of renewable energy sources.\(^{58}\)

The EU's cooperation with the EaP countries on energy security addresses the shared challenges the partners face, such as diversification of electricity, gas and oil interconnections, as well as energy efficiency and renewable energy. In the EU's view, more integrated energy markets allow for increased competitiveness, diversification of energy supply sources and transit routes and also facilitate the integration of variable renewable energy sources into the energy system. Energy efficiency and renewable energy contribute to energy security by decreasing dependency on imported fossil fuels and promoting a low-carbon economy. Establishing and strengthening a regulatory framework in nuclear safety contributes to safe use of nuclear energy in partner countries where nuclear energy is part of the energy mix. For instance, EU activities on a regulatory framework for nuclear safety offer partner countries the opportunity to participate in nuclear safety stress tests.\(^{59}\)

In addition to this regional approach, the EU has a more tailored approach to relations with individual EaP partners. The EU engagement with particular countries is managed by the ENP Action Plans which survey the country's needs and capacities, as well as the EU's interests in their bilateral relations. Laying out the strategic objectives of cooperation between the EU and its partners, action plans set out the partner country's agenda for political and economic reform, with short and medium-term priorities. The implementation of each action plan is monitored once a year with progress reports. (The priorities set out in the action plans and the progress report conclusions for each EaP country are examined briefly below.)

\(^{55}\) See transit and internal pipelines, IEA map of Europe gas infrastructure, Annex.
\(^{56}\) Joint Declaration, Prague Eastern Partnership Summit (May 2009).
\(^{57}\) The Eastern Partnership Multilateral Platforms.
\(^{58}\) Eastern Partnership flagship initiative: Energy.
\(^{59}\) Eastern Partnership: Multilateral Cooperation.
3.2. Armenia

Lacking any hydrocarbon resources, Armenia imports all of its oil and large proportion of its natural gas from Russia. The country's domestic energy production relies heavily on a single nuclear power plant that has been in operation since 1976. Located in an earthquake-prone region, the Armenian Nuclear Power Plant (ANPP), which has a design lifetime of 30 years, is cause for severe nuclear safety concerns\(^\text{60}\) and its decommissioning is one of the EU's key objectives under the EU-Armenia Action Plan.\(^\text{61}\) However, owing to its dependence on energy imports, the Armenian government is in favour of extending its service life until 2026, although its operation licence is due to expire in September 2016.

Located 30 km from the capital city, Yerevan, the first unit of the ANPP\(^\text{62}\) with a gross capacity of 408 MW was put into operation in 1976 and the second reactor was commissioned in 1980. The ANPP's operation was halted in 1989 due to a devastating earthquake and resumed operation in 1995 to tackle worsening power shortages. As the lifetime of the ANPP is coming to an end, the Armenian government has decided to built a new NPP. Construction of the new power plant is expected to begin in 2018 and should be completed on the closure of the older reactor.\(^\text{63}\) According to the inter-governmental agreement between Armenia and Russia signed in December 2014, Russia will provide a loan of US$ 270 million as well as a grant worth US$ 30 million for the ANPP’s lifetime extension. Works for the extension will start in 2017 and the NPP will halt operation for about six months. As the ANPP produces almost one-third of the country’s electricity, construction works are likely to cause energy shortages in Armenia. The ANPP produced 2.36 billion kWh of electricity in 2013, constituting 31% of the total production.

Armenia's domestic energy production in 2013 was 0.81 Mtoe while its energy imports equalled 2.25 Mtoe – indicating an energy self-sufficiency rate of around 28%. Nuclear power constitutes 76% of total domestic energy production, while the other energy source, hydropower, constitutes almost one-quarter of the domestic power supply. The share of biofuels and waste in domestic energy production is around 1%. Total primary energy supply (TPES) was 2.9 Mtoe in 2013. Natural gas accounted for 62%, expanding from 46.6% in 2002. The share of oil in TPES contracted from 14.7% in 2002 to 11% in 2013. Nuclear production's share was 21% in 2013 while biofuels/waste accounted for 6%. Electricity generation in Armenia reached 7 710 GWh in 2013, increasing for a third consecutive year.

Natural gas fuels 41% of electricity production while nuclear and hydro power account for 31% and 28%, respectively. Total final consumption (TFC) of energy was 2.1 Mtoe in

\(^\text{60}\) Along with the EU, neighbouring countries – Turkey, Georgia and Azerbaijan – and the United States have repeatedly voiced concerns over the ANPP. For more details see: Renewed Calls To Close Metsamor Nuclear Power Station, Eurasia Daily Monitor, 20 April 2011; Armenia’s Nuclear Problem, Silk Road Reporters, 8 November 2014; A Regional Threat: Metsamor, AViM, 5 November 2015. On a more positive note, in December 2014, the IAEA mission to review nuclear security practices in Armenia concluded that Armenia’s nuclear security regime was robust and important progress had been made in enhancing nuclear security since the previous mission held in 2003. See: IAEA Completes Nuclear Security Review Mission in Armenia, 12 December 2014.


\(^\text{62}\) For the technical details of the plant, see IAEA Power Reactor information System.

\(^\text{63}\) Construction of new power unit of Armenian nuclear power plant to begin in 2018, Trend, 14 January 2015.
2013: the residential sector's consumption accounts for 32%, up from 25% in 2002. Energy demand in the transport sector was 25% of TFC while the industry sector, which accounted for 38% in 2002, accounted for 18% of TFC in 2013.\footnote{Energy Balances of non-OECD Countries, OECD/IEA, 2015, pp. 42-43. For a detailed review of Armenia's energy policies, see: Eastern Europe, Caucasus and Central Asia: Energy Policies beyond IEA, OECD/IEA, 2015, pp. 33-61.}

**Figure 16 – Armenia's energy indicators**

![Energy indicators diagram](image)

Almost three-quarters of energy supply is dependent on the oil and natural gas imported from Russia. The total volume of gas imported from Russia through Georgia is around 2.5 bcm. Gazprom Armenia (formerly ArmRosgazprom) has the monopoly in gas supply in the country. The company was established in 1997, both the Armenian Energy Ministry and Gazprom having 45% share. Gazprom had acquired 80% of the company by 2006 and with an intergovernmental agreement of December 2013, Gazprom's ownership stake in ArmRosgazprom was increased to 100% and the company renamed as Gazprom Armenia.\footnote{Gazprom Armenia was the country's biggest tax-payer in 2014.} According to the agreement, Gazprom is to supply Armenia with up to 2.5 bcm of natural gas per year.\footnote{Gazprom increasing its stake in ArmRosgazprom to 100%, Gazprom, 16 January 2014.} As Armenia's bilateral relations with Russia are smoothly framed by the Eurasian Economic Union Armenia has no problem with increasing dependence on Russia.\footnote{Armenia hosts a Russian base close to its borders with Turkey. Russia reinforced the base after the downing of a Russian bomber by Turkish Air Forces in November 2015. Armenia is also dependent on remittances from immigrants working in Russia, which constituted almost 20% of GDP in 2014. As a result of Russia's economic slowdown, the remittances decreased from US$ 2.2 billion in 2013 to US$ 1.7 billion in 2015 (World Bank).}

Moreover, possible attempts to diversify are limited by the tense relations with the only natural gas producer in the region: Azerbaijan, owing to the unresolved Nagorno-
Karabakh dispute. Therefore, Azerbaijan is not likely to be a partner for Armenia to help diversify its energy supplies even if this would make good economic sense as a way to reduce dependency on Russia. Azerbaijan's closest ally, Turkey, has also tense relations with Armenia and this resulted in Armenia's exclusion from regional energy projects such as Baku-Tbilisi-Ceyhan (BTC) and the South Caucasus Pipeline (SCP) through which oil and gas from Azerbaijan reaches European markets via Georgia and Turkey.

Armenia considers Iran as an alternative to its isolation in the South Caucasus. After the lifting of sanctions, Iran's strengthened trade and energy relations are likely to benefit Armenia. Iran, which has already connected to Armenia via a gas pipeline with 2.2 bcm capacity, has the potential to help Armenia, as well as other resource-deprived countries of the region, to diversify its energy supplies and to decrease its dependence on Russia. According to the barter agreement between the two countries, Armenia imports around 0.35 bcm of natural gas from Iran and in turn exports electricity. The National Iranian Gas Export Company's chair Alireza Kameli, said, on 7 February 2016, that there is a possibility to increase gas exports to Armenia five-fold as part of the construction of a new electricity transmission line between the two countries.

The Armenian Energy Minister, Yervand Zakharyan, noting that the pipeline was not utilised to its full capacity, commented that it could be used for exporting Iranian gas to Georgia. In such a scenario, Armenia would benefit from being a corridor between Iran and Georgia. However, although Georgia negotiated with both Russia and Iran to diversify its gas imports, Georgia announced on 4 March 2016 that an agreement had been reached with Azerbaijan for increasing its exports to Georgia – increasing Georgia's dependence on Azerbaijan. Iran is therefore unlikely to be exporting gas to Georgia through Armenia in the short term.

EU-Armenia relations are governed by the EU-Armenia Partnership and Cooperation Agreement (PCA), which was signed in 1996 and ratified in 1999. On account of its decision to join the Russia-led Eurasian Economic Union, Armenia did not sign the Association Agreement including a Deep and Comprehensive Free Trade Area (AA/DCFTA) in September 2013, which would have replaced the PCA. On 12 October 2015, the EU’s Foreign Affairs Council authorised the European Commission and the High Representative to open negotiations for a new agreement with Armenia and negotiations were launched on 7 December 2015.

3.3. Azerbaijan

Owing to its rich oil and gas reserves, Azerbaijan is the only EaP country that has self-sufficiency in energy production and even has the capacity to export a large amount of

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68 The Nagorno-Karabakh region and the surrounding seven districts correspond to almost 20% of Azerbaijan’s internationally recognised territories. Various United Nations resolutions on the conflict condemned Armenia’s occupation and demanded withdrawal of Armenian forces from the occupied areas of Azerbaijan. Peace talks between the two countries have achieved no tangible success so far. Border skirmishes are common and the violence has been escalating since summer 2014. In April 2016, tension over the disputed region increased to an unprecedented level with the start of an armed conflict along the militarised ceasefire line.

69 Aliyev: Turkey, Azerbaijan closest countries to each other on global scale, Trend, 15 March 2016.

70 Armenia as a bridge to Iran? Russia won’t like it, Aljazeera, 30 August 2015.

71 Eurasian Trade Opportunities in a Post-Sanctions Iran, EurasiaNet, 16 July 2015.

72 Tehran Plans to Increase Gas Supplies to Armenia Fivefold, Sputnik, 7 February 2016.

73 EU and Armenia launch negotiations for a new agreement, EEAS Press Release, 7 December 2015.
energy. Azerbaijan's importance and the role it plays for the European Union has grown\(^74\) in recent years, principally in the context of the EU's Southern Gas Corridor (SGC) initiative and particularly as a result of initial fears that the 2014 Ukraine crisis would result in Russia using the energy weapon against the EU (which in fact did not happen)\(^75\).

As energy supply diversification, which is one of the pillars of the EU's ambitious Energy Union, has speeded up the search for new import routes and new resource countries, Azeri oil and gas has gained further strategic significance for the EU. Azerbaijan can and is willing to play a strategic role in helping the EU achieve energy diversification away from Russia. Furthermore, Azerbaijan along with Turkmenistan, another Caspian country that is not dependent on Russia, compete with Russia as potential major energy suppliers and favour the EU supply diversification policy\(^76\).

According to International Energy Agency data, Azerbaijan’s domestic energy production was 59.3 Mtoe in 2013. Oil production, equal to 43.7 Mtoe constituted almost 26% of domestic energy production while natural gas production (15.3 Mtoe) accounted for almost 74% of the total. Azerbaijan’s total primary energy supply (TPES) equalled 13.9 Mtoe in 2013, indicating an increase of more than 18% since 2002. Azerbaijan’s TPES is made up mainly of natural gas and oil, representing 65.1% and 33% respectively. Hydro accounts for 1% and biofuels for about 0.7% of TPES\(^77\). Electricity generation totalled

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\(^76\) [A Secure and Stable Caspian Sea Is in America’s Interest](http://www.heritage.org/research/reports/2015/02/a-secure-stable-caspian-sea-is-americas-interest), The Heritage Foundation, 4 December 2015.

23 354 GWh in 2013, 23% higher than in 2002. Natural gas accounts for 93% of generation, while hydro and oil represent 6% and 1%, respectively. Total final consumption (TFC) of energy was 8.2 Mtoe in 2013. The residential sector accounted for almost 33% of TFC in 2013. Energy demand in the transport sector was 30% and industry accounted for 24% of final consumption.

Azerbaijan used to import gas from Russia, but became a gas exporter after the Shah Deniz-1, one of the largest gas-condensate fields in the world, became operational in 2007. In 2013, energy exports totalled 44.8 Mtoe of which about 82% was oil while natural gas exports accounted for 13.7%. While so far gas has been exported only to Turkey and Georgia (until the Southern Corridor is completed), the majority of oil export is destined for European markets, with the remainder exported to Russia and other countries in the region.

Azerbaijan’s total natural gas production in 2014 was 18.8 bcm, 9.9 bcm of which was from the Shah Deniz-1 field and 8.1 bcm of which was exported. Production is set to grow further with 16 bcm per year once the second stage (Shah Deniz-2), one of the largest gas developments in the world, becomes operational by 2018. As of today, the Shah Deniz-2 project is almost 70% complete in terms of its engineering, procurement and construction. Currently, two natural gas pipelines are in operation in the country. The 691 km-long and 7 bcm-capacity South Caucasus Pipeline (SCP) transports Azerbaijani gas from the Shah Deniz field to Turkey through Georgia, by-passing Armenia. A project to expand the SCP, including a new pipeline across Azerbaijan and the construction of two new compressor stations in Georgia, is underway. After the expansion of the SCP, its capacity will be tripled, reaching over 20 bcm per year. The expanded SCP (SCPX) will connect to TANAP at the Turkey-Georgia border, forming the eastern section of the Southern Gas Corridor. Expansion of the SCP, TANAP and TAP are all included on the EU’s list of projects of common interest.

Azerbaijan’s second gas export pipeline is the 240 km-long and 1 bcm-capacity Gazi-Magomed-Mozdok Pipeline which used to import gas from Russia until 2007, when an agreement between SOCAR and Gazprom reversed the flow. Azerbaijan started to export gas to Russia in 2010. In addition, Azerbaijan has two existing underground gas storage facilities with a total design storage capacity of 3.5 bcm: Galmaz (1.5 bcm) and Garadag (2 bcm). The 8 bcm-capacity Azerbaijan-Georgia-Romania-Hungary Interconnector LNG project will be completed in 2020.

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79 Shah Deniz, BP Azerbaijan.
80 In March 2016, SOCAR applied for a US$ 450 million loan from the Asian Development Bank to finance the expansion project, which is estimated to cost US$ 28 billion. Socar Seeks Shah Deniz 2 Loan, Natural Gas Europe, 28 March 2016.
81 South Caucasus pipeline, BP Azerbaijan.
There are three oil export pipelines in the country. About 80% of the oil is exported through the 1,768 km-long Baku-Tbilisi-Ceyhan pipeline which has a capacity of 1 million barrels per day, and has been in operation since 2006. Azerbaijani oil is shipped to world markets via tankers from Ceyhan, a southern Turkish city along the Mediterranean. The 1,335 km-long and 100,000 bbl/d-capacity Northern Route Export Pipeline (NREP), which has been operating since 1996, connects the Sangachal terminal in the Caspian Sea to the Novorossiysk terminal in Russia. The Western Route Export Pipeline (WREP) transports crude oil from the Caspian Sea to Supsa in Georgia where it continues to European markets via tankers. The WREP is 829 km in length with a capacity of 145,000 bbl/d and has been in operation since 1999.

The oil and gas pipelines mentioned above have established stable and reliable energy links between the EU and Azerbaijan, as the latter plays a pivotal role in the SGC that brings Caspian gas to the EU market. In the SGC context, the EU and Azerbaijan signed a Memorandum of Understanding (MoU) in the field of energy back in 2006. In addition, one of the priorities of EU-Azerbaijan relations in the ENP Action Plan is 'strengthening EU-Azerbaijan energy bilateral cooperation and energy and transport regional cooperation, in order to achieve the objectives of the 2004 Baku Ministerial Conferences'. In that context, it is safe to assume that EU-Azerbaijan cooperation will be developed further in the years ahead. (This bilateral cooperation and Azerbaijan's increasing role in EU's energy security is also supported by the United States.)

The EU and Azerbaijan signed the 'Joint Declaration on the Southern Gas Corridor' on 13 January 2011 in Baku. Upon the signing the declaration, the then-president of the European Commission, José Manuel Barroso, commented as follows: 'This is a major breakthrough. This agreement confirms Europe's direct access to gas from the Caspian basin, thus enabling the realisation of the Southern Corridor. This new supply route will enhance the energy security of European consumers and businesses.'

One major step towards the realisation of SGC was the intergovernmental agreement signed by the leaders of Azerbaijan and Turkey, Ilham Aliyev and Tayyip Erdoğan, on 26 June 2012. More recently, all the partner countries and companies involved in the SGC project convened at the first SGC Advisory Council Meeting in Baku on 12 February 2015. The ministers and officials, including the European Commission Vice President for Energy Union Maroš Šefčovič, signed a MoU reiterating their commitment for the realisation of the SGC. The Advisory Council held its second meeting in February 2016, again in Baku, with the participation of 11 states along with the EU which was represented by Vice-President Maroš Šefčovič and High Representative/Vice-President Federica Mogherini. The SGC initiative partners recognised Azerbaijan's strategic role as a key enabler of the SGC project and reiterated their commitment for further cooperation.

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83 The Ministerial Conference on Energy Cooperation between the EU, the Caspian Littoral States and their neighbouring countries was held in Baku in November 2004. The participants were: Armenia, Georgia, Iran, Kazakhstan, Kyrgyzstan, Moldova, Turkey, Russia, Ukraine, Uzbekistan and the European Commission.
85 Commission and Azerbaijan sign strategic gas deal, European Commission, 13 January 2011.
86 Southern Gas Corridor Advisory Council Convened, TANAP, 12 February 2015.
87 Albania, Azerbaijan, Bulgaria, Croatia, Georgia, Greece, Italia, Montenegro, Turkey, the United Kingdom and USA.
Emphasising the importance of diversifying energy resources, the partners acknowledged that the SGC is a strategic project.88

The EU part, the TAP, is designed to serve fewer countries than the original project, Nabucco, which was supposed to serve Bulgaria, Romania, Hungary and Austria but was abandoned in 2013. In the same year, having chosen a route that was 500 km shorter than that of Nabucco-West, TAP was chosen by the consortium Shah Deniz II as the only pipeline that would transport TANAP gas from the Turkish-Greek border to Europe. As a result, the Nabucco project was officially cancelled later that year, and the TANAP and TAP became parts of the new Southern Gas Corridor.89

Azerbaijan is seeking international funding to build the SGC, which is estimated to cost around US$ 45 billion. The state-owned Southern Gas Corridor Company (SGCC) has so far raised US$ 1 billion in 10-year eurobonds at a 6.875% yield, for the financing of its share (US$ 14 billion) in the SGC. On 2 April 2016, SOCAR President Rovnag Abdullaev stated that the company would raise US$ 2 billion by the end of 2016 and talks with international financial institutions such as the Asian Development Bank and the European Bank for Reconstruction and Development (EBRD) are underway.90 While half of Azerbaijan's share is to be financed by financial institutions and commercial banks of this kind, the other half is to be financed by the State Oil Fund of Azerbaijan (SOFAZ).

A significant fall in global oil prices, putting pressuring on the country's hydrocarbon-reliant economy, is causing a fall in the assets of SOFAZ as well as the Central Bank.91 Although Azerbaijan is facing some economic challenges, the SGC is progressing well. Azerbaijan Energy Minister, Natig Aliyev, has stated that the lion's share of the projects Shah Deniz-2 and the SCP expansion have been implemented ahead of schedule.92 Therefore, it is safe to conclude that the strategic role played by Azerbaijan and Caspian gas will expand once the SGC becomes fully operational.

3.4. Belarus

The authoritarian regime of long-ruling President Alexander Lukashenko has always leaned towards Russia.93 Minsk and Moscow have maintained close relations while the EU's engagement with the country has passed through difficult times, generally as a result of domestic political issues in Belarus. For instance, in response to the disappearance of opposition figures, the EU adopted a common position94 imposing

88 Joint Declaration of the Second Ministerial Meeting of the SGC Advisory Council, 29 February 2016.
90 Azerbaijan to Raise More Funding for Southern Corridor, Natural Gas Europe, 4 April 2016.
91 As of 1 January 2016, SOFAZ's assets equalled US$ 33.5 billion, 9.5% less than in 2015 when it stood at US$ 37.1 billion. The sharp drop in global oil and gas prices is the main reason for the shrinking of assets. Azerbaijan's deteriorating economic outlook is also evident from the fact that the Central Bank had to devalue the national currency twice in 2015. The reserves of the Central Bank fell 35% as of January 2016 on a year-on-year basis. Azerbaijan's GDP is likely to retract for the first time since 1995. For more on Azerbaijan's economic situation, see: Azerbaijan must adjust to less oil at lower prices, Oxford Analytica, 6 April 2016.
92 Work on all links of SGC underway ahead of schedule, ABC.Az, 11 April 2016.
93 20 years ago, on 2 April 1996, Russia and Belarus signed the Treaty establishing the Community of Belarus and Russia, establishing political and economic integration. On 8 December 1999, the two governments signed the Treaty on the Creation of a Union State, taking the integration one step further.
travel restrictions on certain Belarusian officials in September 2004. Continuing violations of electoral standards and the suppression of the opposition led the EU to impose additional sanctions including an asset freeze against certain figures of the regime and an arms embargo.  

As a tangible sign of the bleak political situation in Belarus, the EU has not yet ratified the Partnership and Cooperation Agreement concluded in March 1995. Moreover, although Belarus is covered by the ENP and the country became a member of the EaP initiative, an Action Plan for the country is still not in place and Belarus is not represented in the EURONEST Parliamentary Assembly. Nonetheless, the EaP does provide an opportunity to enhance EU-Belarus dialogue.

EU-Belarus relations are improving however. The EU has gradually increased its engagement with the country since 2011. In that context, in June 2011, the Commission invited Belarus to launch negotiations for visa facilitation and a readmission agreement and the Council reiterated its readiness for the negotiations in October 2012. Meanwhile, Belarus has taken some steps in recent years, such as the release of all political prisoners in August 2015, paving the way for further strengthening of bilateral relations. Responding to these welcome developments, the Council, in October 2015, suspended the restrictive measures for 170 individuals including President Lukashenko and three companies until 29 February 2016. On 25 February 2016, EU decided not to extend the restrictive measures and their listings were suspended, while the arms embargo and restrictive measures relating to four individuals accused of ‘disappearing’ opposition figures were extended for a period of twelve months.

While being dependent on Russian subsidies and being tightly integrated within the Eurasian Economic Union, Belarus is trying to develop closer relations with the West. More importantly, the 2014 Ukraine crisis worried Belarus, prompting it not to recognise

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95 For details about authoritarianism and the human rights situation in Belarus, see: Naja Bentzen, Belarus: An Autocracy quashing all opposition, EPRS, March 2015; Belarus: Human rights situation remains bleak, EPRS, February 2016.
97 Council conclusions on Belarus, Council of the EU, 15 October 2012.
99 Belarus sanctions: EU delists 170 people, 3 companies; prolongs arms embargo, Council of the EU, 25 February 2016.
100 Belarus has benefited from duty-free oil imports for its own use since 2007, when it began to pay 30% of the duty applied to other importers. It is estimated that Belarus saved US$ 2 billion in 2014 thanks to crude oil charged at 55% less than the average world price. For details, see: How Russia’s Subsidies Save the Belarusian Economy, Belarus Digest, 26 August 2015.
the annexation of Crimea, showing apparent concerns for its territorial integrity.\textsuperscript{101} As a matter of fact, President Lukashenko, arguing that fighting in Ukraine has shown that Belarus must have an army capable of protecting its national interests, has announced the country's readiness for dialogue with NATO.\textsuperscript{102}

There have been recent incidents where Belarus has partially distanced itself from Russia. For instance, Russia has been pressuring for an airbase to be established in Belarus. Although the Russian Prime Minister announced\textsuperscript{103} its establishment on 2 September 2015, President Lukashenko spoke out against it in October 2015.\textsuperscript{104} In a similar vein, Belarus’s Defence Minister Andrei Ravkov also said, in December 2015, that 'the issue hasn't been discussed and won't be discussed'.\textsuperscript{105} Limited diverging views with Russia have extended to trade sanctions as well, with Belarus happy to channel EU-banned products to Russia and profiting from Moscow's sanction regime.\textsuperscript{106} However this has not prompted this close Russian ally to pursue independent energy security policies.

All natural gas consumed in Belarus is imported, indicating a critical level of dependence on energy imports. Furthermore, Gazprom owns the pipeline network in Belarus, after an agreement was reached between Gazprom and Beltransgaz in November 2011 to sell the remaining 50% of stakes to Gazprom for US$2.5 billion. The deal also included price cuts for Russian gas imports to Belarus: Gazprom reduced the price from US$286 to US$164 per 1,000 m\textsuperscript{3} when the price for 1,000 m\textsuperscript{3} gas charged by Gazprom to European markets was around US$400.\textsuperscript{107} The sale of Beltransgaz to Gazprom has sparked political reactions, such as the criticism that Belarus has lost its sovereignty and leverage over Russia. President Lukashenko disagreed, arguing that the sale agreement saved billions of dollars.\textsuperscript{108}

Belarus benefits from the cheapest gas from Russia. Nonetheless, the gas trade between these two countries has not been free from crises.\textsuperscript{109} In January 2004, when Gazprom demanded a price increase from US$30 to US$50 per 1,000 m\textsuperscript{3}, Belarus refused and the dispute over pricing ended with Russia cutting off the gas supply to Belarus. Eventually, Gazprom and Belarus agreed to sign a new contract at US$46.68 per 1,000 m\textsuperscript{3}. Three years later, owing to the debt (around US$450 million) owed by Belarus to Gazprom, the latter threatened to decrease the supplies. However, following the payment of a large

\begin{itemize}
\item \textsuperscript{101} \textit{Fear of Russia will drive Belarus’s defence policy}, Oxford Analytica, 7 May 2015.
\item \textsuperscript{102} Lukashenko Says Belarus Ready For Dialogue With NATO, RFE/RL, 19 February 2015.
\item \textsuperscript{103} \textit{Russian Agreement On Air Base Rankles Some Belarusians}, EurasiaNet, 17 September 2015.
\item \textsuperscript{104} \textit{Lukashenko Defies Russia's Plans For Belarusian Air Base}, EurasiaNet, 6 October 2015.
\item \textsuperscript{105} \textit{Belarus Holding Off Russian Pressure On Air Base, But For How Long?}, EurasiaNet, 23 December 2015.
\item \textsuperscript{106} \textit{Belarus and Russian Food Embargo: a Success Story?}, Belarus Digest, 18 August 2015.
\item \textsuperscript{107} \textit{Gazprom Finally Bags Beltransgaz}, Natural Gas Europa, 26 November 2011.
\item \textsuperscript{108} \textit{Belarusian President: Beltransgaz Sale Very Profitable}, Natural Gas Europa, 23 December 2011.
\item \textsuperscript{109} \textit{Belarus-Russia Energy Disputes – political and economic comparative analysis}, PECOB’s Energy Policy Studies, February 2012.
\end{itemize}
part of the debt, Gazprom did not impose any sanctions. A similar dispute erupted in 2010, again owing to outstanding payments, and Russia reduced its gas supplies to Belarus by 60%. This time Belarus was asked to pay US$192 million in five days, because of the price increase from US$150 to US$184 per 1 000 m³. In return, Belarus asked Gazprom to pay US$260 million, the transit fee for using its pipelines for Russian exports to Western Europe. Both sides paid the bulk of their debt and Russia resumed full supply.\(^{110}\)

Oil and gas rows between Russia and Belarus caused concerns on the EU side as well. Belarus is a transit country for Russian gas to Poland, Ukraine and Lithuania. Besides, Russian oil to Latvia, Lithuania, Poland, Germany, the Czech Republic, Hungary and Croatia transits through the world’s longest oil pipeline, the Druzhba pipeline. When the Belarusian government attempted to impose a duty on the Russian oil shipped to Western Europe through its territory, Russia refused to pay that tax. In response, Belarus retaliated by cutting off the Druzhba pipeline.\(^{111}\) The halt in the oil supply did not pose an immediate risk for the EU countries, but raised concerns\(^{112}\) about possible Belarusian attempts to siphon off gas in transit, as Ukraine had in 2006 and 2009. Closer relations with Russia within the Eurasian Economic Union and the stability of the country make this quite unlikely however.

Belarus’s energy mix relies heavily on imports from Russia. Total energy production in Belarus was 4 Mtoe in 2013. The mix includes 1.65 Mtoe of crude oil, which represented 42% of total production, while biofuels and waste represented 39%. Other fuels include coal (14%) and natural gas (5%). Total primary energy supply (TPES) in 2013 was 27.2 Mtoe. Natural gas and oil are the main fuels in the Belarus energy mix, representing around 63% and 26% respectively while biofuels and waste accounted for 6% of TPES in 2013. Electricity generation was 31 507 GWh in the same year. Almost all electricity, around 99%, comes from natural gas. Reliance on natural gas in electricity production has increased over the last decade. Total final consumption of energy was 19.8 Mtoe in 2013, which is made up of the industrial (34%), residential (26%), transport (22%) and commercial services (18%) sectors.\(^{113}\)

The quest for partial energy diversification provided a decisive stimulus for the Belarusian government to step up its preparations for construction of the long- awaited nuclear power plant. In October 2007, President Lukashenko announced that the construction of the NPP would begin in 2008, stating that 'energy has been turned from a purely economic issue into a political one, into a factor affecting relations with other countries and with organisations'.\(^{114}\)

The construction works for the first of the two reactors started only in November 2013. Belarusian Deputy Prime Minister Vladimir Semashko has announced that the construction is proceeding as planned and the two reactors of the NPP are expected to be commissioned by end-2018 and mid-2020 respectively.\(^{115}\) The 2 400 MW-capacity

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\(^{110}\) [Russia 'to restart' full gas supplies after Belarus row](https://www.bbc.co.uk/), BBC, 24 June 2010.


\(^{115}\) [BelNPP construction proceeds as planned](https://www.belta.by/), Belta, 19 April 2016.
NPP's expected impact on the country's energy mix is a 5 bcm-decrease in natural gas imports,\textsuperscript{116} diminishing the country's dependence on Russia and gas in electricity production.

**Figure 21 – Belarus's energy indicators**

![Figure 21 – Belarus's energy indicators](image)

Data source: IEA, compiled by authors.

However, the NPP, which is located 50 km away from Lithuania's capital, Vilnius, has caused another problem for Belarus: a dispute with neighbouring Lithuania over safety and environmental concerns.\textsuperscript{117} Lithuania is accusing Belarus of violating some United Nations Conventions and has urged the Belarusian government to comply with the international safety requirements and to carry out stress tests at the plant site.\textsuperscript{118}

### 3.5. Georgia

As successive Georgian governments have shown a commitment to pursuing closer relations with the EU, links between the country and the EU have strengthened in recent years. In June 2014, EU-Georgia relations reached a higher level with the signing of the Association Agreement (AA)\textsuperscript{119} which includes a Deep and Comprehensive Free Trade Area (DCFTA). Providing a reform agenda for Georgia, the AA/DCFTA foresees political and economic integration with the EU by significantly deepening ties. The EU is providing financial assistance to support reforms in the country.\textsuperscript{120} On 9 March 2016, the

\textsuperscript{116} Nuclear power plant to ensure Belarus' economic security, DSAE, 11 April 2016.

\textsuperscript{117} Belarus nuclear power plant 'worries' Lithuania, Euractiv, 14 December 2010.

\textsuperscript{118} Safety of nuclear installations in Belarus, EPRS, 2 June 2016.

\textsuperscript{119} Association Agreement between the EU and Georgia, Official Journal of the EU, 30 August 2014.

\textsuperscript{120} EU provides €100 million to support reform and economic development in Georgia, European Commission, 27 November 2015.
Commission presented a legislative proposal to grant Georgian citizens the right to visa-free travel in the Schengen area.\textsuperscript{121}

EU-Georgia ties are further strengthened by energy links between the two. It is intended that Georgia will serve as a reliable corridor country between Azerbaijan and the EU. The strategic role Georgia plays is growing, as the Southern Gas Corridor is to supply Caspian gas to the EU via Georgia and Turkey. Meanwhile, as the country connecting Azerbaijan to Turkey, Georgia is also developing better relations with both countries.\textsuperscript{122}

According to the ENP Action Plan for Georgia, implementing a coherent energy policy converging gradually with EU energy policy objectives, including security of energy supply, is one of the objectives of EU-Georgia relations. In that context, one of the dimensions of EU-Georgia energy cooperation is established through Energy Community (EnC), an international organisation established in 2005 with such objectives as creating an integrated energy market and enhancing security of supply among its members.\textsuperscript{123} Georgia has been a candidate for fully-fledged EnC membership since the launch of negotiations in February 2014. Since Georgia will be bound to implement EU law on energy, such as the regulations and directives (Third Energy Package)\textsuperscript{124} adopted in August 2009, Georgia's accession to the EnC will further integrate its energy sector with that of the EU countries. Even if Georgia fails to accede to the EnC, the EU-Georgia Association Agreement requires that Georgia harmonise its energy laws with the EU acquis.\textsuperscript{125}

Energy is an area of shared interest for the EU and Georgia, and this is accelerating Georgia's connections with the EU. The EU, meanwhile, is extending its internal rules beyond its borders, providing new means of integrating eastern energy markets with European ones and increasing supply security.

Georgia's internal gas supply is highly dependent on its neighbouring countries, in particular Azerbaijan. Georgia imports natural gas from Azerbaijan (2 bcm, 90% of total import), and from Russia (0.2 bcm) as a transit fee for the Russian gas exported to Armenia. While Georgia is important for EU gas supply diversification, Georgia has not been able to diversify its own gas supply away from Azerbaijan. In order to decrease dependence on Azerbaijan, some Georgian officials have demonstrated a willingness to increase imports from Russia, arguing that Azerbaijan cannot meet Georgia's growing gas

\textsuperscript{121} European Commission proposes to lift visa obligations for citizens of Georgia. European Commission press release, 9 March 2016.

\textsuperscript{122} Georgia developing close relations with Azerbaijan. Trend, 31 March 2016.

\textsuperscript{123} The EnC members are: the EU, Albania, Bosnia and Herzegovina, Kosovo, the Former Yugoslav Republic of Macedonia, Moldova, Montenegro, Serbia and Ukraine. There are three observer countries as well – Armenia, Norway and Turkey.

\textsuperscript{124} Third Energy Internal Market Package, Official Journal of the EU, 14 August 2009.

\textsuperscript{125} For an examination of the state of play of Georgia's integration with the EU energy sector, see: Georgia and European Energy Community – the Challenges of EU integration, Green Alternative, 30 May 2015.
demand on account of technical issues. In September 2015, Georgian Energy Minister Kakha Kaladze and Gazprom CEO Alexei Miller launched talks on a possible increase in Russian gas deliveries.126

Talks with Gazprom sparked protest in Georgia, as memories of the 2008 war with Russia over the breakaway regions of Abkhazia and South Ossetia are still fresh. For instance, Roman Gotsiridze, advisor of former-President Mikheil Saakashvili commented as follows: 'In case Georgia needs more gas, it can request from Baku, because the gas consumption growth is not significant and involving Gazprom in Georgian markets can undermine the country's economy and damage economic independency like what has done in Armenia'.127 This position is popular in Georgia and mass demonstrations are even organised to protest against the negotiations with Russia.128 For those not in favour of the talks, a deal on increased gas trading with Russia meant hampering the efforts for integration with the West, in particular the EU and NATO.129 Rooted in political grounds, this position does not take into account of the benefits of energy diversification.

When Georgia showed an interest in Russian gas for supply diversification away from Azerbaijan, Iran seized the opportunity to make a gas deal with Georgia as well.130 After the lifting of Western sanctions, Iran is speeding up its engagement with its neighbours, seeking stronger trade links where natural gas is a main component.131 Georgian Energy Minister Kaladze met with the head of the National Iranian Gas Export Company (NIGEC) Alireza Kameli on 18 February 2016 and discussed the possibility of importing Iranian gas to Georgia through Armenia.132 However, Energy Minister Kaladze stated on 29 February 2016 that Georgia would not continue talks with Iran on grounds of higher prices.133

After months-long uncertainty over which country (Azerbaijan, Iran or Russia) would supply additional gas to Georgia, on 4 March 2016, Georgian Prime Minister Giorgi Kvirikashvili announced their choice of a supplier of additional gas: Azerbaijan. Winning over Iran and Russia, Azerbaijan will deliver 0.5 bcm of gas in addition to its current level134 so enhancing dependency on this country.

Taking into account Georgia's pro-Western stance and its successful cooperation with Turkey and Azerbaijan, the deal is not a big surprise. Trilateral relations135 between Georgia, Turkey and Azerbaijan are very close and problem-free, while Russia has numerous disputes with all three of these countries. Besides, the prices offered by Russia and Iran are higher. As a matter of fact, while the prices Turkey was paying for Russian and Iranian gas per 1 000 m\(^3\) were US$418 and US$487 respectively, Azerbaijani gas was sold to Turkey for just US$340 – 19% and 30% less than Russia and Iran's prices.136

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126 Georgia, Russia Talk Gas, Eurasianet, 30 September 2015.
128 Thousands in Georgia Protest Gazprom Deal, VOA News, 6 May 2016.
130 Iran Joins Georgia's Caucasian Gas Circle, Eurasianet, 19 February 2016.
131 After Sanctions, Iran's Growing Role in the Caucasus, Natural Gas Europa, 3 February 2016.
132 Iran, Georgia Negotiate Over Gas Delivery through Armenia, Georgia Today, 18 February 2016.
133 Georgia not in talks to buy Iranian gas - minister, Trend, 29 February 2016.
134 Georgia: Azerbaijan Wins Gas Deal Over Russia, Iran, Eurasianet, 4 March 2016.
135 For an analysis, see: Azerbaycan-Georgia-Turkey: An Example of a Successful Regional Cooperation, CIES Policy Brief, November 2015.
136 Iran’s Transit Fees Could Be the Highest— Not Just in Azerbaijan But in the Whole Region, Natural Gas Europa, 13 November 2016.
Moreover, the Azeri-Georgian deal included a price cut, from US$318 to approximately US$278-283 per 1,000 m³. This deal does not consider the benefits of diversification and competition.

Opening alternative sources and routes of import normally decreases vulnerability in the event of disruption to pipelines (potentially caused by war or earthquakes).

**Figure 23 – Georgia's energy indicators**

Data source: IEA, compiled by authors.

What makes natural gas imports important for Georgia is the fact that the share of natural gas in domestic energy production in Georgia, which equalled 1.4 Mtoe in 2013, is almost non-existent. Hydro is the country’s main source of energy production, accounting for 50% of the total. It is followed by biofuels and waste (34%), coal (12%), oil (3%) and solar (1%). Georgia’s total primary energy supply was 3.9 Mtoe in 2013. Natural gas, which is entirely imported, is the main fuel in Georgia’s energy mix, accounting for 36% of TPES. It is followed by oil (25%), hydro (18%), biofuels (13%), and coal (8%).

Electricity generation in Georgia was 10 TWh in 2013. The use of oil in electricity generation was ceased in 2012, after decades of steady decline. Hydro power accounts for 82% while natural gas for 18%. Total final consumption (TFC) of energy was 3.5 Mtoe in 2013, made up of the industrial (18%), residential (40%), transport (25%) and commercial services (17%) sectors. Hydropower meets 100% of Georgian electricity demand in the summer months, but as the level of water decreases and consumption increases in the winters, gas-fired plants are necessary for meeting electricity demand. Georgia’s electricity grid is interconnected with Russia, Azerbaijan, Armenia and Turkey.

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Georgia is therefore planning to supply its electricity surplus to Iran in spring and summer through Armenia and get it back in winter.\textsuperscript{138}

Lacking any proven natural gas resources, Georgia is dependent on gas imports and the country is a net importer of energy. However, in October 2015, Frontera Resources, a US oil and gas exploration and production company, announced that the potential gas reserves discovered in Georgia's South Kakheti region could contain as much as 3 800 bcm of natural gas.\textsuperscript{139} Although the company seems confident in their estimates, officials in Georgia are sceptical about the feasibility of production in that field, stressing that the reserves are not confirmed as recoverable.\textsuperscript{140}

### 3.6. Moldova

Moldova has poor domestic energy resources and is almost wholly dependent on imports of fossil fuels and electricity, able to meet only 10% of its energy supply domestically. Moldova is connected to the Ukrainian gas transportation system that transits all gas imports from Russia to Moldova. Moldova also transits gas to Romania, destined for European markets, Turkey and the Balkans. The combined length of Moldova's three transit pipelines is 247 km (with a total capacity of 34.6 bcm per year. Moldova, having no gas storage facilities and no access to LNG, imports around 1.1 bcm of natural gas from Russia.

In addition to Moldova's inclusion in the EU's ENP (since 2004) and EaP (since 2009), Moldova is one of two EaP members of the Energy Community (the other is Ukraine), which makes it necessary for the country to incorporate EU legislation on energy. EnC members are committed to adopt Security of Supply Statements (SoSS)\textsuperscript{141} starting one year after their membership of the Community. Moldova submitted its first SoSS to the EnC secretariat in November 2013.

The Moldovan government aims to decrease its dependence on Russia but is facing difficulties in its efforts.\textsuperscript{142} One noteworthy step in that context was the inauguration of the EU-backed pipeline from Romania to Moldova. Solemnly inaugurated in August 2014 and worth €26 million in construction, the pipeline worked only for one month in 2015: Moldova imported 1 mcm of gas from Romania, of an expected capacity of 1.5 bcm per year.

In its current form, the pipeline can only service up to 3% of the Moldovan population – the approximately 35 000 people living in the small town of Ungheni. Thus, an extension of the pipeline towards Chisinau, the capital city where consumption equals 60% of total consumption, was considered crucial to make the investment meaningful and limit dependency on Russian gas. In May 2015, Moldova and Romania signed a Memorandum of Understanding on the implementation of projects necessary to expand the pipeline and interconnect the Moldova-Romania gas and power networks. Moldovan Prime Minister Chiril Gaburici has said that interconnections on the gas and electricity market

\textsuperscript{138} Georgia can supply electricity to Iran – Minister, Trend, 16 February 2016.

\textsuperscript{139} Frontera Resources Upgrades Gas Potential In Georgia Operations, Frontera Recourses, 8 October 2015.

\textsuperscript{140} Despite Frontera's Confident Estimates, the Georgian Government Is Sceptical, Natural Gas Europe, 8 February 2016.


\textsuperscript{142} Empty Pipeline Shows Difficulty Of Breaking Moldova's Gazprom Addiction, RFE/RL, 29 September 2014.
do not mean giving up other traditional gas and electric energy suppliers, but ensuring the diversification of these sources and the energy security of Moldova.\textsuperscript{143}

**Figure 24 – Moldova’s energy indicators**

<table>
<thead>
<tr>
<th>Domestic energy production by source</th>
<th>Total primary energy supply by source</th>
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<tbody>
<tr>
<td>88% Biofuels/waste 9% Hydro 3% Oil</td>
<td>56% Natural gas 9% Oil 3% Coal 25% Biofuels/waste 4% Electricity 1% Hydro</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Electricity generation by source</th>
<th>Total final consumption by sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>93% Natural gas 7% Hydro</td>
<td>41% Residential 16% Industry 22% Transport 21% Commercial</td>
</tr>
</tbody>
</table>

Data source: IEA, compiled by authors.

However, the financing of the project is a serious issue. According to an independent study financed by the Dutch government,\textsuperscript{144} the new section of the pipeline would cost €92 million plus €20 million for compressor stations.\textsuperscript{145} The EU has made available €10 million, provided €80 million are co-financed by the EU financial institutions (EIB and EBRD). The main financing drawback relates to the repayment of the potential EBRD-EIB loan: since it will be released at quasi-market conditions, the capital return should come from the final gas tariffs. Since the amount of gas supplied to Chisinau is estimated to be quite low in absolute value and the announced Gazprom price is much lower, the final tariff price might prove prohibitive and less convenient than Russian gas.

As the country has very limited natural resources the only part of the energy strategy the government can control is energy efficiency. In February 2013, the first National Energy Efficiency Action Plan (NEEAP) for the period 2013–2015 was adopted. Moldova has set an intermediary energy savings target of 9%, reported to the baseline of 2009, to be reached by 2016.\textsuperscript{146}

\textsuperscript{143} Moldova, Romania sign memorandum on Iasi-Ungheni gas pipeline expanding, Government of Moldova, 22 May 2015.


\textsuperscript{145} Costs are indicative since they depend on two technical options.

Moldova’s total energy production was 0.3 Mtoe in 2013. The mix includes 10 Ttoe of crude oil (3% of total production), while biofuels and waste represented 88% and hydro 9%. Total primary energy supply (TPES) in 2013 was 3 Mtoe. In Moldova’s energy mix, natural gas represents around 56% and oil 26%, indicating a low degree of diversification. Biofuels and waste accounted for 9% of TPES in 2013. Electricity generation in the country amounted to 4.5 TWh in 2013. Natural gas fuels 93% of power generation, while hydro accounted for almost 7% with the remainder from oil. In 2013, total final consumption of energy was 2.3 Mtoe, made up of the industrial (23%), residential (41%), transport (22%) and commercial services (14%) sectors.147

**Figure 25 – Ukraine’s energy indicators**

- **Domestic energy production by source**
  - Coal: 47%
  - Natural gas: 26%
  - Oil: 19%
  - Nuclear: 4%
  - Other: 1%

- **Total primary energy supply by source**
  - Coal: 36%
  - Natural gas: 34%
  - Nuclear: 19%
  - Oil: 8%
  - Other: 1%

- **Electricity generation by source**
  - Nuclear: 43%
  - Coal: 42%
  - Natural gas: 17%
  - Hydro: 18%
  - Solar: 7%

- **Total final consumption by sector**
  - Residential: 34%
  - Industry: 31%
  - Transport: 18%
  - Commercial: 17%

*Data source: IEA, compiled by authors.*

### 3.7. Ukraine

Ukraine is the biggest energy producer and importer among EaP countries. It is highly reliant on fossil fuel imports since its demand largely surpasses its energy production. Natural gas imports represent 57% of all energy imports, while oil products represent 20%, and coal 23%. Total energy production in the country was 85.9 Mtoe in 2013. Endowed with indigenous energy resources, Ukraine is a major coal producer. Coal’s share in the energy mix is 47%. Nuclear power contributes with 26%, natural gas 19% and oil 3%, while biofuels and waste represent 2% and hydro 1%.

Ukraine’s total primary energy supply (TPES) in 2013 was 116.1 Mtoe. Coal is the biggest fuel with 36%, followed by natural gas (34%), nuclear power (19%), and oil 8%. Biofuels and waste accounted for 1.5% of TPES in 2013. Net energy imports accounted for 27% of TPES, a decline from 43.6% in 2002. Electricity generation amounted to 193.7 TWh in 2013. Nuclear has the biggest share with 43%, followed by coal 42%. Natural gas and hydro account for 7% each. Solar and biofuels contribute with nearly 1%. Total final

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147 *Energy Balances of non-OECD Countries*, pp. 172-174; For a detailed review of Moldova’s energy policies, see: Eastern Europe, Caucasus and Central Asia, pp. 238-265.
consumption of energy was 70.1 Mtoe in 2013, made up of the industrial (38%), residential (34%), transport (17%) and commercial services (18%) sectors.148

Like other sources of energy, natural gas imports have decreased notably in recent years owing to the severe economic crisis and the collapse of industrial production. From July 2012 to February 2016 industrial production was on a downward trend, decreasing by 26.9%149 year on year, affecting imports of all energy sources.

**Figure 26 – Ukraine's gas imports from Russia and the EU**

![Graph showing gas imports from Russia and the EU](image)

Data source: European Commission.

In 2014, Ukraine imported only 19.5 bcm of gas, a noteworthy decline when compared with 27.9 bcm in 2013. Gas domestic production was relatively stable, decreasing slightly from 21.45 bcm in 2013 to 20.53 bcm in 2014.150 In 2015, imports showed a further reduction from 19.5 bcm to 15.79 bcm, owing to a 21% decline in demand for gas.151

The origin of the imported gas has shown a peculiar bipolar trend. Indeed, the capacity for reverse-flows152 from the EU to Ukraine increased significantly in 2014-2015, enabling Ukraine to import gas via the EU and thus reduce its direct dependence on Russia.153 In 2015, for the first time, the volume of gas imported from the EU (10.4 bcm) surpassed that imported from Russia (6.1 bcm),154 totalling approximately 60% of imports. Naftogaz is expecting further a decrease in gas consumption to the level of 29 bcm. Should this happen, Ukraine's need for gas would be less than 10 bcm, all of which could be

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148 Energy Balances of non-OECD Countries, pp. 257-259; For a detailed review of Ukraine’s energy policies, see: Eastern Europe, Caucasus and Central Asia, pp. 332-378.
149 Index of Industrial production in Ukraine, State Statistics Service of Ukraine.
150 Energy Community, Fact sheets Ukraine, 2015.
151 Imports of Russian gas in 2014 decreased by a factor of 1.7 (courtesy translation), Naftogaz, 6 January 2015.
152 Total reverse-flow capacity available for Ukraine is around 17 bcm (Poland 1.5 bcm, Hungary 5.5 bcm and Slovakia 10 bcm).
154 See Quarterly Report Energy on European Gas Markets Vol.9
maintained from the EU through reverse-flow.\textsuperscript{155} However, the latest proposal\textsuperscript{156} of the Ukrainian government regarding gas supplies from Gazprom for the winter period of 2016-17 paved the way to maintain both channels open as an understandable diversification policy.

European gas is imported to Ukraine mainly through the Slovakian Budinice pipeline, equalling almost 90% of total reverse flow.\textsuperscript{157} Reverse flow contracts were fiercely opposed by Gazprom until 2014.\textsuperscript{158} However, after being formally accused of violating competition law, its opposition to reverse flow declined.\textsuperscript{159} This changing attitude is probably driven by the economic interest in continuing a regular supply of gas, regardless of its physical destination. Indeed, gas flowing from Slovakia to Ukraine originates in Russia and is exported to Slovakia via the Brotherhood (Urengoy-Pomary-Uzhgorod) pipeline. Russian gas flowing through the Ukrainian network increased its transit flow by 76% in the latest quarter of 2015 year-on-year (see Chapters 2.3 and 2.1), while transit through NSP remained essentially unchanged and the Belarus route decreased slightly.\textsuperscript{160}

**Table 27 – Price of gas from Russia and Europe**

<table>
<thead>
<tr>
<th>Year</th>
<th>Russian Price, (US$ / mcm)</th>
<th>European Price, (US$ / mcm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>Q1: 268.50</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Q2: 485</td>
<td>282</td>
</tr>
<tr>
<td></td>
<td>Q3: n/a</td>
<td>352</td>
</tr>
<tr>
<td></td>
<td>Q4: 378</td>
<td>353</td>
</tr>
<tr>
<td>2015</td>
<td>Q1: 329</td>
<td>294.8</td>
</tr>
<tr>
<td></td>
<td>Q2: 247</td>
<td>275.3</td>
</tr>
<tr>
<td></td>
<td>Q3: 247</td>
<td>265.7</td>
</tr>
<tr>
<td></td>
<td>Q4: 227.4</td>
<td>230-250</td>
</tr>
</tbody>
</table>


This peculiar pattern is explained by political choices. Ukrainian President Petro Poroshenko stated in March 2015 that ‘Ukraine will buy gas that it gets through reverse flows from a number of European countries for US$245 per 1000 m$^3$ under reverse deliveries’.\textsuperscript{161} This was permitted by the fact that several interconnectors between the EU and Ukraine had been completed. Prices of gas imported in reverse flow are, however, on average higher than directly imported Russian gas.

When Russia cut off\textsuperscript{162} gas to Ukraine in 16 June 2014 on the grounds of Ukraine’s debt, several rounds of negotiations were held between the Commission, Russia and Ukraine.

\textsuperscript{155} See **Securing Ukraine’s Energy Sector**, Atlantic Council, 4 April 2016.

\textsuperscript{156} See **Ukraine seeking Russian gas for next winter**, Reuters, 7 June 2016 and **Ukraine’s Naftogaz will try to deal with Gazprom without EU mediation**, Euractiv 8 June 2016.

\textsuperscript{157} See **Ukraine’s European Gas Imports Rise on Year**, Natural Gas Europe, 1 February 2016

\textsuperscript{158} See **Gazprom says ‘reverse flow’ gas for Ukraine raises legal questions**, Reuters, 5 April 2014.

\textsuperscript{159} According to the Commission, ‘Gazprom imposes territorial restrictions in its supply agreements with wholesalers and with some industrial customers in above countries. These restrictions include export bans and clauses requiring the purchased gas to be used in a specific territory (destination clauses).’ For more on the Commission’s objections to Gazprom, see: **Commission sends Statement of Objections to Gazprom for alleged abuse of dominance on Central and Eastern European gas supply markets**, 22 April 2015.

\textsuperscript{160} See **Quarterly Report Energy on European Gas Markets**, Vol.9

\textsuperscript{161} See **Interview given by President Petro Poroshenko to ‘Pershyi Natsionalnyi’**, YouTube, 9 March 2015; **Ukraine to pay US$ 245 per 1000 m$^3$ of gas received via reverse flows – Poroshenko**, Interfax, 10 March 2015.

\textsuperscript{162} See **Russia cuts off gas supply to Ukraine after talks collapse**, The Guardian, 16 June 2014.
The three parties agreed, in October 2014, on a 'winter package' which resumed the Russian gas flow to Ukraine in December 2014. Gas flow ceased again in July 2015 and restarted in September following the new agreement for winter 2015 concluded on 25 September 2015 by European Commissioner Maroš Šefčovič, Energy Minister Vladimir Demchyshyn (Ukraine) and Energy Minister Alexander Novak (Russia), a discount on gas imports was granted to Ukraine, but lack of trust required advance payments of gas supply. Although Russia and Ukraine agreed on the terms of potential gas deliveries to Ukraine for the period from 1 October 2015 until 31 March 2016, imports were suspended again on 26 November 2015. Ukraine, did not import any gas directly from Russia in the first quarter of 2016 either (see Figure 26).

3.7.1. Impact of Nord Stream on Ukraine
The impact of NSP on Ukraine was considerable, initially curbing the flow of gas in transit. The first line of Nord Stream opened in 2011 and the amount of gas passing through Ukraine declined by 24% between the first half of 2011 and the first half of 2012. The Ukrainian route was used by 48.6% of Russian gas in 2013, falling to 38.7% in 2014 (including Turkey and Balkans). In 2015 the Ukrainian route increased slightly compared with NSP and the Belarusian route, bringing the relative weight respectively to 39%, 30% and 29%. The increase of gas quantities was even more dynamic (see previous chapter), a pattern explained by the decline in EU production and reverse flow exports from Slovakia to Ukraine.

Early declarations from Gazprom (January 2015) implied the intention to discontinue Ukraine as a transit country after 2019, arguing that Turkish Stream and Nord Stream enlarged capacity would be capable of substituting the Ukrainian route. Nevertheless, in June 2015, Gazprom Deputy CEO Alexander Medvedev reaffirmed their intention to bypass Ukraine. Yet, Gazprom seemed to change its mind after a short while, a change mirrored in President Putin’s order to find ways to renew the transit contract in 2019. Gazprom CEO Miller told Vice-President Šefčovič that Gazprom was ready to negotiate with Ukraine. In December 2015, President Putin confirmed that Russia would continue to supply gas to the EU through Ukraine.

The re-affirmed need to maintain the Ukrainian transit capacity was partly due to the suspension of the Turkish Stream project. In the annual press conference of 31 May 2016, the Gazprom CEO declared that 'Russian political leaders highlighted that we

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164 EU-Ukraine-Russia talks agree on the terms of a binding protocol to secure gas supplies for the coming winter, European Commission, 25 September 2015.

165 According to Gazprom data, EU’s total volume of gas import in 2013 was 162.7 bcm, 85 bcm of which was passed through Ukraine, amounting to 52%. For more data from Gazprom, see: [Infographic: Gazprom and Ukraine Gas Transit and Supply Issues](https://www.gazprom.com/en/energy-magazine/2014/6/infographic-gazprom-and-ukraine-gas-transit-and-supply-issues), Gazprom, 5 June 2014.


168 Gazprom reaffirms plans to bypass Ukraine in 2019, Euractiv, 10 June 2015.

169 Gazprom CEO tells EC about planned amounts of gas supplies on each route to EU, Interfax, 14 September 2015.

170 The Turkish-Russian relations after November 2015 aircraft incident and ensuing dispute between the two governments induced Gazprom to redefine its supply projects. See [Turkey downs Russian warplane near Syria border, Putin warns of 'serious consequences'](https://www.reuters.com/article/us-russia-syria-plane-down-idUSKCN11P289-20151124), Reuters, 24 November 2015.
should be ready to discuss the issue of gas transit via Ukraine post-2019. The main drawback to this aim is the transit fees issue and the Ukrainian decision to double them compared with the contract in force. The recent Turkish-Russia rapprochement (in July 2016) may pave the way to reopen discussions on the Turkish stream project.

As elaborated above on the impact of NSP-2 on the EU gas market, it should be stressed that even in scenario B (Germany re-exporting supplementary gas supplies instead of increasing its consumption of Russian gas), a total shift of gas transit from the Ukrainian to the NS route is unlikely, on account of the higher costs for EU southern countries and to the need for route diversification (an essential security aspect). Theoretically, it may be in the interests of the EU to keep the Ukrainian route operational, even with reduced quantities (scenario B.1). However, in the event of disruptions on this route or a sudden and sharp increase in transit costs (as the Ukrainian regulator is trying to require) a complete shift of transit is conceivable (scenario B.2). Its consequences on Ukraine would be threefold:

- It would deprive the country of badly needed transit fees (US$2 billion in 2014, equal to 1.5% of GDP). Transit fees were much higher before the entry into force of Nord Stream: US$3.2 billion in 2011.
- Ukraine would no longer be able to deter Russia from cutting off its own gas supplies by threatening to siphon gas that’s bound for the EU.
- Ukraine will probably complete its shift to the ‘reverse flow’ policy, by importing all of its gas from the EU. Kiev now supplies itself through domestic sources and reverse-flow agreements taking gas that originated in Russia from central Europe, mainly Slovakia. In this way gas supply to Ukraine would be secured from controversies with Russia, such as those that occurred in 2005, 2009 and 2014.

NSP-2 is supposed to increase this component. In other words, fiercely opposed by Ukraine to keep Russian gas transit on its territory, NSP-2 may have the side effect of securing Ukrainian consumption (of Russian gas) through Germany.

3.7.2. Perspective of Ukraine as a transit country

Ukraine is therefore now both a transit country for Russian gas destined for the EU, and an importer of natural gas (mainly of Russian origin) from the EU. As declared by Vice-President Šefčovič’s to the European Parliament on 6 April, Ukraine can only remain a transit country and attract investors to its gas assets ‘by completing ownership unbundling of Naftogaz and setting up an independent energy regulator in line with the Third Energy Package’. Its role as a transit country depends, however, not only on the country, but also on the supplier and the end users at both ends of the pipe.

On the one hand, Russia is not giving up the idea of bypassing Ukraine. NSP-2 could go in this direction, but a complete shift is likely to affect EU Member States importing through Ukraine (Italy, Austria, Greece, Bulgaria, Hungary, Romania, Slovakia, Czech Republic, Slovenia and Croatia) since the new longer route from Germany to Italy and Bulgaria risks proving more expensive than the Ukrainian route. Besides, the decision of Naftogaz to double the transit fees, unless it is pure retaliation against the Russian-requested

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172 See Ukrainian regulator sets new gas transit rules, ICIS 31 December 2015 and the gas regulator (NKREKP) Decree ‘On establishment of tariffs for JSC Ukrtransgaz ‘for services of natural gas transportation pipelines for cross-border entry points and exit points’.

173 See previous footnote.
arbitration\textsuperscript{174} on the payment of Ukrainian debt, risks increasing gas costs for the above-mentioned importing countries,\textsuperscript{175} prompting them to seek alternative sources or routes.\textsuperscript{176}

New sources point to the dilemma Ukraine is facing in the short term: since its transit contract with Gazprom expires in 2019, its renewal will depend on several conditions, including new tariffs, guarantees of supply security and business predictability.\textsuperscript{177} After the initial declarations of 2015, Gazprom now seems to be set on keeping the Ukrainian route post-2019, should negotiations succeed. The supply capacity of NS and the potential NSP-2 and the geographical destination of the largest quantities crossing Ukraine (Italy) make its complete circumvention unlikely.

Should the tensions between Russia and Ukraine not ease, the possibility of not renewing the contract also exists. This would not necessarily result in halting all Ukrainian gas transit, but in selling natural gas to the EU customers directly at the Ukrainian/Russian border, leaving the transit business operations directly to the parties. In this case, EU companies may benefit from a certain predictability thanks to the energy provisions of the DCFTA with Ukraine. Nevertheless, Ukraine’s reliability as a transit partner depends on it undertaking the serious reforms advocated by Vice-President Šefčovič and in not taking advantage of the transit role for the future, as happened in 2006 and 2009.

4. Main references


\textsuperscript{174} On 16 June 2014, Gazprom turned to the Arbitration Institute of the Stockholm Chamber of Commerce (SCC) to recover US$ 4.5 billion in debt from Naftogaz. At the same time, Naftogaz asked the court to retroactively change the price of gas and secure compensation for all excess payments made since 20 May 2011 and cancel the re-export ban. On July 21, these cases were consolidated, and on September 15 an arbitration panel was formed. It is expected to give a decision in 2016 or early 2017. For more, see: Gazprom files lawsuit in Stockholm arbitration for US$ 4.5 billion and switches Naftogaz of Ukraine to gas prepayment, Gazprom, 16 June 2014; Naftogaz expects decision in Stockholm arbitration with Gazprom appear late 2016 or early 2017, Interfax, 7 June 2016.

\textsuperscript{175} NKREKP Decree ‘On establishment of tariffs for JSC ‘Ukrtransgaz ‘for services of natural gas transportation pipelines for cross-border entry points and exit points’.

\textsuperscript{176} A previous paper of the DG EXPO Policy Department highlighted the political consequences of such a situation (Scenario B), with the increasing fragility of the international position of Ukraine. See, Changing pipelines, shifting strategies: Gas in south-eastern Europe, and the implications for Ukraine, European Parliament, DG External Policies, Policy Department, July 2015.

\textsuperscript{177} Russian Gas Transit Across Ukraine post-2019.
5. Annex

1. EU natural gas consumption, import and production

![Graph showing EU natural gas consumption, import and production]


2. Capacity of major Russian gas export pipelines

<table>
<thead>
<tr>
<th>Pipeline</th>
<th>Capacity</th>
<th>Destination of exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orenburg-Western border (Uzhgorod)</td>
<td>26</td>
<td>Slovakia, Czech, Austria, Germany, France, Switzerland, Slovenia, Italy</td>
</tr>
<tr>
<td>Urengoy-Uzhgorod</td>
<td>28</td>
<td>Slovakia, Czech, Austria, Germany, France, Switzerland, Slovenia, Italy</td>
</tr>
<tr>
<td>Yamburg-Western border (Uzhgorod)</td>
<td>26</td>
<td>Slovakia, Czech, Austria, Germany, France, Switzerland, Slovenia, Italy</td>
</tr>
<tr>
<td>Dolina-Uzhgorod - 2 lines</td>
<td>17</td>
<td>Slovakia, Czech, Austria, Germany, France, Switzerland, Slovenia, Italy</td>
</tr>
<tr>
<td>Komarno-Drozdowichi - 2 lines</td>
<td>5</td>
<td>Poland</td>
</tr>
<tr>
<td>Uzhgorod-Beregovo - 2 lines</td>
<td>13</td>
<td>Hungary, Serbia, Bosnia</td>
</tr>
<tr>
<td>Hust - Satu Mare</td>
<td>2</td>
<td>Romania</td>
</tr>
<tr>
<td>Ananyev-Tiraspol-Izmail &amp; Shebelinlkomaizmail - 3 lines</td>
<td>27</td>
<td>Romania, Bulgaria, Greece, Turkey, Macedonia</td>
</tr>
<tr>
<td><strong>Total via Ukraine:</strong></td>
<td><strong>143</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Via Belarus:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yamal-Europe (Torzhok-Kondratki-</td>
<td>31</td>
<td>Poland, Germany, Netherlands, Belgium, UK</td>
</tr>
<tr>
<td>Frankfurt/Oder)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kobrin-Brest</td>
<td>5</td>
<td>Poland</td>
</tr>
<tr>
<td><strong>Total via Belarus:</strong></td>
<td><strong>35</strong></td>
<td></td>
</tr>
<tr>
<td>St. Petersburg-Finland - 2 lines</td>
<td>7</td>
<td>Finland</td>
</tr>
<tr>
<td>Blue Stream (design capacity)</td>
<td>16</td>
<td>Turkey (possible to Greece, Macedonia)</td>
</tr>
<tr>
<td>Nord Stream 1 and 2</td>
<td>66</td>
<td>Germany, France, Czech and other</td>
</tr>
<tr>
<td><strong>TOTAL EXISTING EXPORT CAPACITY:</strong></td>
<td><strong>256</strong></td>
<td></td>
</tr>
<tr>
<td><strong>NEW PIPELINES:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Stream</td>
<td>63</td>
<td>Bulgaria, Serbia, Greece, Italy and other</td>
</tr>
<tr>
<td>Nord Stream 3 and 4</td>
<td>55</td>
<td>Germany, France, Czech and other</td>
</tr>
<tr>
<td><strong>TOTAL PLANNED EXPORT CAPACITY:</strong></td>
<td><strong>374</strong></td>
<td></td>
</tr>
</tbody>
</table>

3. Russian gas exports to European countries (2013-2014)

<table>
<thead>
<tr>
<th>Countries receiving all their Russian gas imports via Ukraine</th>
<th>Exports, 2013 (Total)</th>
<th>Exports, 2014 (Total)</th>
<th>Exports, 2014 (LTSCs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italy</td>
<td>25.3</td>
<td>21.7</td>
<td>21.7</td>
</tr>
<tr>
<td>Austria</td>
<td>5.2</td>
<td>4.2</td>
<td>3.9</td>
</tr>
<tr>
<td>Greece</td>
<td>2.6</td>
<td>1.7</td>
<td>1.7</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>2.9</td>
<td>2.8</td>
<td>2.8</td>
</tr>
<tr>
<td>Hungary</td>
<td>6.0</td>
<td>5.4</td>
<td>5.4</td>
</tr>
<tr>
<td>Romania</td>
<td>1.4</td>
<td>0.5</td>
<td>0.3</td>
</tr>
<tr>
<td>Slovakia</td>
<td>5.5</td>
<td>4.4</td>
<td>4.4</td>
</tr>
<tr>
<td>Czech Republic*</td>
<td>7.9</td>
<td>4.76</td>
<td>4.76</td>
</tr>
<tr>
<td>Slovenia</td>
<td>0.5</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>Croatia**</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Serbia</td>
<td>2.0</td>
<td>1.5</td>
<td>1.4</td>
</tr>
<tr>
<td>FYROM</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Bosnia &amp; Herzegovina</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td>59.8</td>
<td>47.86</td>
<td>47.26</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Countries receiving some of their Russian gas imports via Ukraine</th>
<th>Exports, 2013 (Total)</th>
<th>Exports, 2014 (Total)</th>
<th>Exports, 2014 (LTSCs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>France***</td>
<td>8.6</td>
<td>7.6</td>
<td>7.1</td>
</tr>
<tr>
<td>Poland</td>
<td>12.9</td>
<td>9.1</td>
<td>9.1</td>
</tr>
<tr>
<td>Turkey</td>
<td>26.7</td>
<td>27.3</td>
<td>27.3</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td>48.2</td>
<td>44</td>
<td>43.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Countries receiving no Russian gas via Ukraine</th>
<th>Exports, 2013 (Total)</th>
<th>Exports, 2014 (Total)</th>
<th>Exports, 2014 (LTSCs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany****</td>
<td>41</td>
<td>40.3</td>
<td>38.7</td>
</tr>
<tr>
<td>Finland</td>
<td>3.5</td>
<td>3.1</td>
<td>3.1</td>
</tr>
<tr>
<td>Netherlands</td>
<td>2.9</td>
<td>4.7</td>
<td>3.5</td>
</tr>
<tr>
<td>Switzerland</td>
<td>0.4</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>Denmark</td>
<td>0.3</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>Estonia</td>
<td>0.7</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>Latvia</td>
<td>1.1</td>
<td>1.1</td>
<td>1.1</td>
</tr>
<tr>
<td>Lithuania</td>
<td>2.4</td>
<td>2.5</td>
<td>2.5</td>
</tr>
<tr>
<td>UK</td>
<td>16.6</td>
<td>15.5</td>
<td>10.1</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td>68.9</td>
<td>68.3</td>
<td>60.1</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>176.9</td>
<td>160.16</td>
<td>150.86</td>
</tr>
</tbody>
</table>

*Transit across Ukraine to Europe (including to Moldova and Turkey): 86.1 bcm in 2013 and 62.2 in 2014*  

The European Union has been increasing efforts to maintain gas supply security especially vis-à-vis its main gas supplier, Russia. In that context, Eastern Partnership (EaP) countries, serving either as gas suppliers (Azerbaijan) or transit/corridor countries (all the others except Armenia), have an undeniable role for the EU. Security of gas supply depends on close EU cooperation with its EaP partners and interconnections between them. There have been some welcome developments, such as the Southern Gas Corridor that transports Caspian gas to the EU, which reflects the importance of the EaP partners and also contributes to EU energy security and the ambitious Energy Union project. On the other hand, a project aimed at doubling the capacity of the Nord Stream gas pipeline directly connecting Germany and Russia under the Baltic Sea has raised some criticism.