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THE EUROPEAN NEIGHBOURHOOD AND THE EU'S SECURITY OF SUPPLY WITH NATURAL GAS

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EXECUTIVE SUMMARY

European neighbourhood policy (ENP) is a key part of the European Union's foreign policy. Within that framework the EU external energy policy is of particular importance to ensure the energy supply to Europe is met while at the same time contributing to the goals related to the completion of the internal energy market of Europe. The main external energy dependence of the EU is in the area of gas. The EU imports roughly 45% of its gas. Russia stands for one third of the imports, Algeria's share is around 14%. Norway's resources, which stand for one third of imports, can be considered part of the EU's resources under the EEA Agreement. While the imports from the Northern and Southern neighbourhood of the EU are only very rarely in the focus of the public debate, the supplies from the Eastern neighbourhood have in the last decade caused a constant debate on the EU's security of supply. As domestic gas production in the EU is falling, the share of imports will rise in the future. A new connection of neighbourhood policy and energy policy is thus needed to manage this import dependence.

The EU pursues three goals in the field of energy: Reduce carbon emissions, achieve low prices for energy and ensure security of supply. The biggest challenge regarding the EU's security of supply with natural gas is the transport of pipeline gas from external suppliers to the internal market. With its three energy packages governing electricity and gas markets, the EU since the mid-1990s has mainly relied on the internal market to achieve its energy policy goals. In reflection of its internal rules, the EU's main strategy to achieve the secure transit of gas from the EU's neighbourhood has been so far to implement the energy acquis in supplier and transit countries via the Energy Community and by applying and implementing EU regulation such as the 994/2010. Since the 2014 political and military conflict over Ukraine, the EU has also set the political aim to maintain the Ukrainian transit route as a corridor for Russian gas supplies to the EU. however since 2006 the Ukrainian route has been the biggest challenge of supply security.

Another approach to increase transit security is to bypass transit countries by offshore pipelines. This strategy sets the EU in a direct interdependence with producing countries. In 2011, Nord Stream started to be operational after having been commissioned by Gazprom, E.ON, Wintershall, Gasunie and GDF Suez (now "Engie"). In June 2015 Gazprom signed a MoU with several European companies on the construction of a third and fourth string of Nord Stream, named "Nord Stream 2". The project is contentious especially because Ukraine would not only lose a bargaining tool in the gas import price negotiations with Russia, but also 2 bn EUR in state budget revenues from transit fees.

Given that Nord Stream 1 operates without any intergovernmental agreement the question remains whether the European Union would have explicit legal means to prevent the building of Nord Stream 2. EU importers are still bound to Russia by long-term supply contracts until the end 2020s. Norway's gas reserves are declining, LNG imports do help diversifying the EU's gas sources but are yet too expensive to be a large scale diversification option for Central and Eastern Europe. The EU and Russia need to find a framework for future Russian gas deliveries. The current Russia-Turkey divide lowers the chances to realize Turkish Stream and makes Gazprom more dependent on the Ukrainian transit and on the realization of Nord Stream 2 in order to create certainty for its exports to the EU. This could be a strategic moment to strike a comprehensive EU-Russia transit agreement on a coherent regime for all Russian import pipelines to the EU, or at least find individual solutions for every transit corridor, most notably the Ukrainian one. As Turkey is very dependent on Russian gas, it is also a good moment to deepen EU-Turkey energy relations. Turkey could be convinced to join the Energy Community so that the EU's internal market acquis would govern the entire route of the Southern Gas Corridor.

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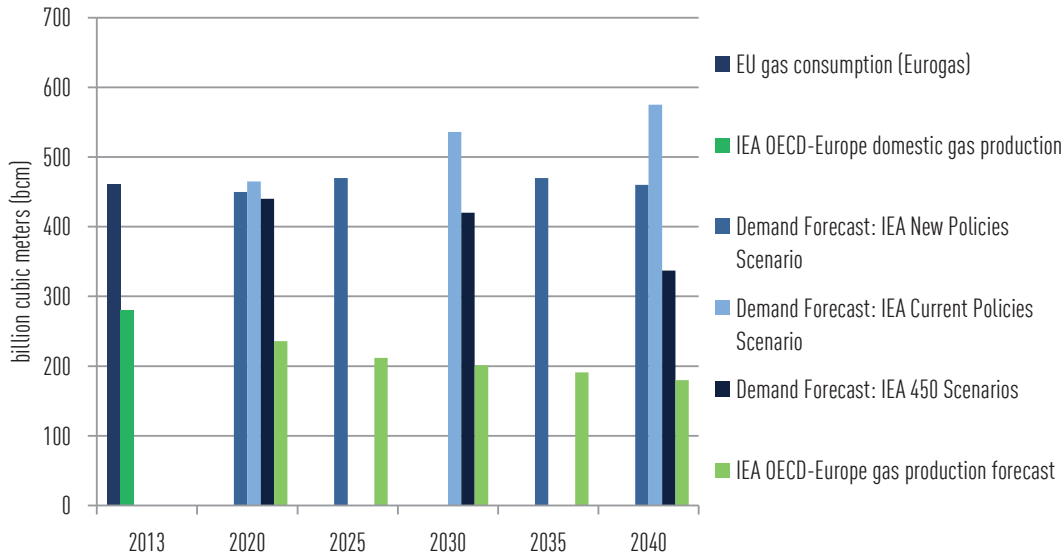
1. The EU's dependence on natural gas imports

The EU is strongly dependent on external suppliers in its natural gas consumption. Roughly two thirds of the EU's gas is imported. Russia and Norway each stand for one third of the exports, Algeria's share is around 14%. Lower shares are provided by Liquefied Natural Gas (LNG) for instance from Qatar and Nigeria. While the imports from the Northern and Southern neighbourhood of the EU are only very rarely in the focus of the public debate, supplies from the Eastern neighbourhood have in the last decade caused a constant debate on the EU's security of supply and therefore constitute the key subject studied in this paper.

Since 2008 gas demand in Europe has been declining, with an 11% decrease from 462 in 2013 to to 409 bcm in 2014[1]. As 2014 was an exceptionally warm year, with very low gas demand in residential heating, in the following 2013 will be used as the reference value for current consumption. But it might rise in the 2020s.

FIGURE 1 ► EU gas demand and domestic production forecast



Sources: IEA, World Energy Outlook 2015, Eurostat

In its "New Policies Scenario"[2] the IEA's World Energy Outlook expects a gas demand of 450 bcm in the EU in 2020 which then rises to 470 bcm in 2025 and stays on that level till 2035, then declining to 460 bcm till 2040. In the "Current Policy Scenario"[3] gas demand in the EU is 465 bcm in 2020, rising to 536 bcm in 2030 and 575 bcm in 2040.

The EU's decarbonisation efforts such as the ETS reform proposed by the European Commission in the summer of 2015 may increase the carbon price. Gas, which is less carbon intensive than coal, becomes more competitive in power generation. An increasing gas demand pushed by rising shares of gas in power generation can already be witnessed in the UK where the price of coal-based power generation rose massively after a doubling of the domestic tax on CO2 in April 2015[4]. The fuel switch price from coal to gas currently lies at 40 EUR

1. Platts, "European gas demand fell 11% on year in 2014 to 409 Bcm: Eurogas", 25 March 2015 [last accessed 14.06.2015].
2. "The New Policies Scenario – our central scenario – takes into account the policies and implementing measures affecting energy markets that had been adopted as of mid-2015, together with relevant policy proposals, even though specific measures needed to put them into effect have yet to be fully developed. The New Policies Scenario assumes only cautious implementation of current commitments and plans." ; World Energy Model Documentation 2015 Version [last accessed 07.01.2016], here: p. 4.
3. World Energy Model Documentation, *Ibid.*, "To illustrate the outcome of our current course, if unchanged, the Current Policies Scenario embodies the effects of only those government policies and measures that had been enacted or adopted by mid-2015. Without implying that total inaction is probable, it does not take into account any possible, potential or even likely future policy actions. It does however embody technological improvements. The scenario is designed to offer a baseline picture of how global energy markets would evolve without any new policy intervention."
4. Reuters, "UK GAS-Prompt prices rise as demand outstrips supply", 15.05.2015 [last accessed 09.12.2015].

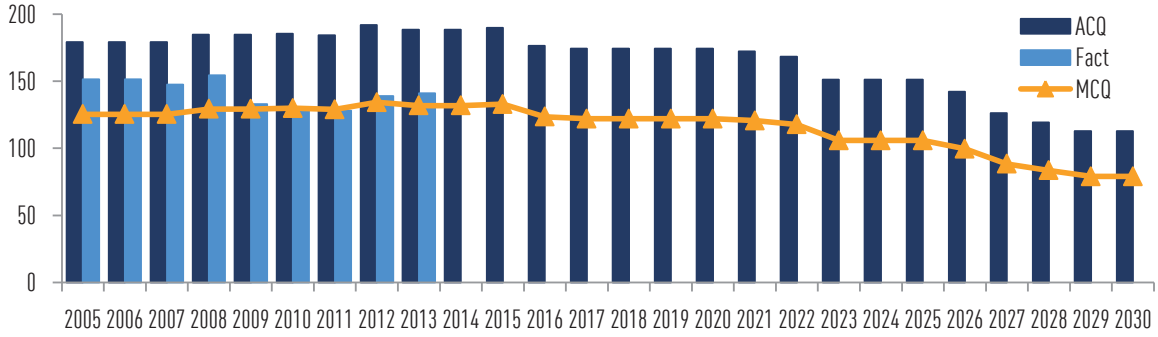
per ton of CO2, a price that, according to the International Energy Agency's reference scenario in the World Energy Outlook 2015, would only be reached by 2040 though. Scepticism about predicted rising gas demand is also justified because efficiency gains in residential heating and the penetration of the heating sector by renewables will cause a decline of gas use in heating. The IEA's "450 Scenario"[5] sees gas demand at 440 bcm in 2020, declining to 420 bcm in 2030 and 337 bcm in 2040.

Domestic gas production in OECD Europe, according to the IEA, is falling from 280 bcm in 2013 to 236 bcm in 2020 down to 212 bcm in 22025 and 180 bcm in 2040. The reasons for this besides the failure of a "shale gas revolution" in most of Europe is the gradual expiry of Groningen gas field and the limitations due to earthquakes in the Netherlands as well as decreasing production in British and Norwegian North Sea fields.

1.1. Russia's role on the European gas market in the future

Russia's pipeline export monopolist Gazprom is committed to supply the European gas market due to its long-term supply contracts until 2022 and beyond. Figure 1 shows the Annual Contract Quantities (ACQ), and Minimum Contract Quantities (MCQ) of Russian gas to Europe until 2030 and the actual deliveries from 2005 till 2013.

FIGURE 2 ► Contract volumes (ACQ and MCQ) and supply volumes of Russian gas to Europe



Source: Tatiana Mitrova, "Changing Gas Price Mechanisms in Europe and RUSSIA`s gas pricing policy", Presentation at the IAEE 38th International Conference, (Antalya, Turkey, 2015).

From 2022 to 2023 ACQ in long-term contracts of Gazprom to Europe will fall from 168.2 bcm to 151.2 bcm. Russia can easily provide additional gas to Europe, for instance from the Bovanenkovo gas field, which has been commissioned and which could provide up to 70-80 bcm of gas production annually. According to Tatiana Mitrova, Head of Oil and Gas Department in the Energy Research Institute of the Russian Academy of Sciences, there is no need for additional investments as "all the infrastructure is already created"[6]. She points out that Russia was entering an "era of over production", due to the rising role of independent producers: Novatek would be able to provide an additional 60 bcma by 2020; Rosneft plans to increase its production by 40 bcma by 2020; and associated gas production would be produced by vertically integrated oil companies of at least 15 bcma, or more[7].

Henderson from the Oxford Institute for Energy Studies even speaks of a Russian "gas bubble", as Gazprom (600 bcma) and Independents (200 bcma) now together have a core supply capacity of 800 bcma to Western markets, but export demand from Gazprom to Europe (150 bcma), to the CIS states (40 bcma) and domestic demand for Gazprom (260 bcma) and for the Independents (190 bcma) only sum up to 640 bcma. As these

5. World Energy Model, *ibid*., "The 450 Scenario sets out an energy pathway consistent with the goal of having around a 50% chance of limiting the global increase in average temperature to 2 °C, which would require the concentration of greenhouse gases in the atmosphere to be limited to around 450 parts per million of carbon-dioxide equivalent (ppm CO2-eq) in the long-term. The basis of the 450 Scenario is, however, different. Rather than being a projection influenced by policy actions, it deliberately selects a plausible energy pathway."
6. Natural Gas Europe, "A perfect storm of trouble for Russian gas", 15 June 2015 [last accessed 14.06.2015].
7. Natural Gas Eurppe, *ibid*.

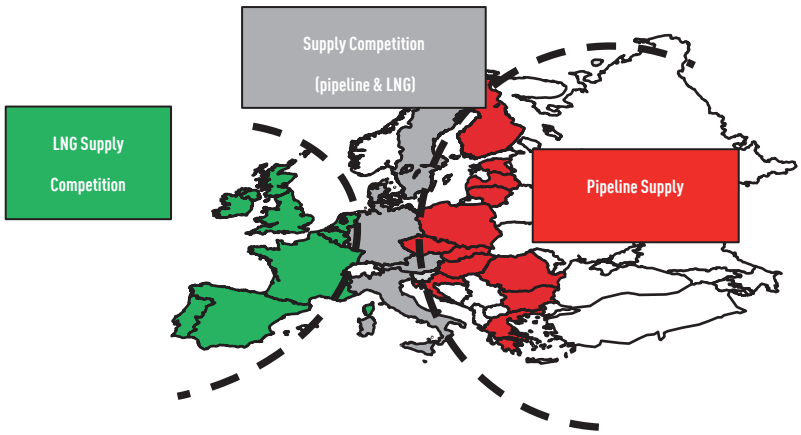
capacities are located in Western Siberian gas fields, and would rise in the 2020s as Gazprom and Independents develop new fields, Russia is in need to find customers for its gas[8]. The Western Siberian fields are only connected to the CIS and European markets by pipelines. Gazprom thus plans to connect its Western Siberian resources to China via the "Altai pipeline". Even if this succeeds, Russia would only deliver 30 bcm annually to China via this route. This means that in the long run, Russia is equally dependent on the European market to sell its gas.

1.2. Varying levels of dependence on Russian gas among the EU member states

With the enlargement round of 2004, Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, and Slovenia joined the EU. In 2007 Bulgaria and Romania followed. With this significant expansion to the East, the EU now included a number of member states that formerly as member states of the Comecon benefited from the Soviet pipeline infrastructure. After the dissolution of the Comecon the pipeline network to the East remained, but the CEE states now found themselves locked in a monopoly market controlled by Gazprom. Western Europe had in the meantime already built pipelines to Norway, Algeria and Lybia and LNG regasification terminals. The European gas market is thus highly segmented with Gazprom pipeline monopolies in the East, supply competition between pipelines and also LNG in the Centre (mainly Italy, Germany, Austria) and a competitive market with large LNG imports in North-West Europe as indicated in Figure 3.

This is of course reflected in the price levels for natural gas imports, especially for those from Russia. Meanwhile, the building of interconnectors between countries and the market liberalization packages of the EU could provide some remedy. Member states in Central and Eastern Europe tend to interpret the higher prices they are charged by Gazprom, compared to their Western neighbors that have a more diversified supply portfolio, as a result of political pricing[9]. This interpretation is questionable as many of these Central and Eastern member states have failed to liberalize their gas markets and to diversify their supply portfolios. One of the main reasons for the high dependency on a single supplier, namely Russia, is thus the lack of market integration with Europe and the lack of infrastructure for diversification of supply. Gazprom as the marginal supplier to these markets is however hardly to blame as other European companies equally used their dominant position for profit maximization. The higher price paid by CEECs is therefore unlikely to be the result of a political pricing, but a problem of over reliance on one supplier[10].

FIGURE 3 ► The fragmented European natural gas market



Source: Graphic by Philipp Offenberg, Jacques Delors Institut - Berlin

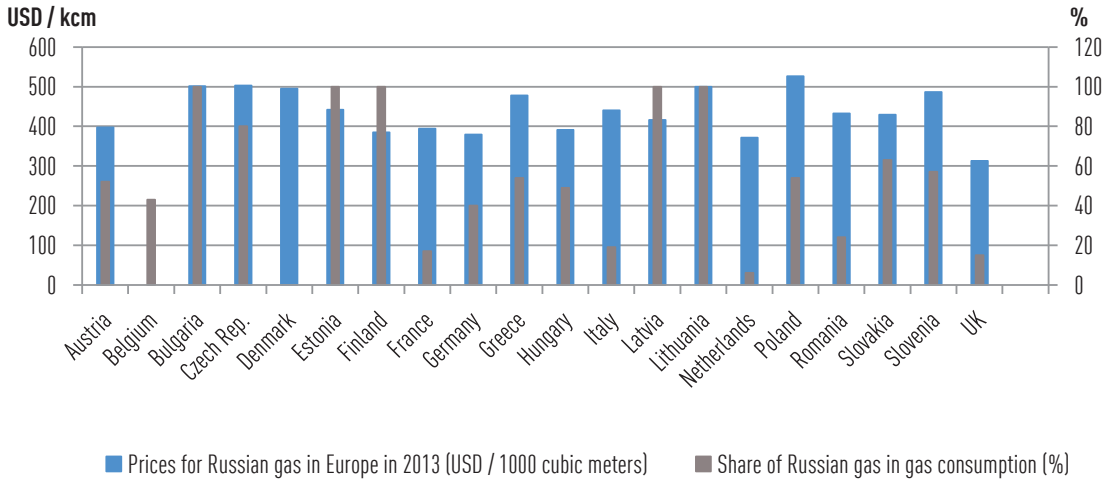
8. James Henderson, "Russian Gas: Production Potential and Security of Supply", (Flame, April 2015).
9. Ćwiek-Karpowicz, J., Godzimirski, J., Nowak, Z., „Macht aus der Pipeline Russlands Energiepolitik und die EU", *Osteuropa* 3/2015. [last accessed 28.08.2015].
10. The European Commission started a competition procedure against Gazprom in 2012, investigating whether the company is abusing its dominant market position in Central and Eastern Europe. Gazprom on 21 September 2015 sent a proposal to the European Commission to settle the claims of the antitrust case.

Figure 4 shows the share of Russian gas in the gas consumption of its EU export markets in 2013 and the price of gas imports (EUR / 1000 cubic meters (kcm)) from Russia in 2013. The graphs give some evidence for the assumption that a higher share of Russian gas and thus a stronger market power for Gazprom goes together with higher import prices for Russian gas[11].

The results of recent renegotiation rounds support this assumption. As Konoplyanik, adviser to the Director General of Gazprom Export [12] shows, after the demand drop and the decoupling of hub prices from the prices of oil-indexed long-term contracts in 2009[13], mainly importers from more competitive markets such as Germany or Italy were able to negotiate higher shares of sport market indexation or rebates under the re-opener clauses in long-term supply contracts with Gazprom. In Germany for instance Statoil had recently increased its market shares due to an aggressive flexible hub based pricing strategy.

Central and Eastern European companies were less successful in renegotiating contracts. However, as the Wall Street Journal reports, Lithuania's mere announcement of building of an LNG terminal (which has meanwhile been constructed) helped to negotiate lower prices with Gazprom[14].

FIGURE 4 ► Share of gas imported from Gazprom in the EU member states' gas consumption in 2013 and price of gas imports from Russia in 2013



Sources: Eurogas, BP, IEA, Gazprom Export, ENTSOG; Missing values for Belgium and Denmark. Graphic by Philipp Offenberg, Jacques Delors Institut - Berlin

In 2013 already, only 42% of the gas sold on the European market was indexed to oil according to the International Gas Union[15]. Stern and Rogers[16] from the Oxford Institute for Energy Studies argue that this is only a stage in the development to a fully hub-priced gas market in the EU. Churn ratios[17] are increasing at most hubs and there was an increase in OTC and exchange trading. Gazprom has so far been reluctant to move to spot market pricing as it understands hub prices as derivatives of long-term oil-indexed contracts stripped off Gazprom's "premium" for flexibility and security of supply that is embedded into the long-term contracts[18]. Norway's Statoil for instance has already removed its flexibility options due to an increase in the proportion of gas sold according to spot prices. According to Mitrova, Gazprom is adapting to the dramatic changes occurring in the European gas market in a "concealed" manner by "formally adhering to the principle of oil

11. This argument is also supported by: Götz, R., "Billiges Gas für Russlands Freunde? Fakten statt Thesen: Eine Replik" [last accessed 22.08.2015].
12. Konoplyanik provides an overview of contract renegotiations: Konoplyanik, A., "Russian gas in Europe: Why adaptation is inevitable", *Energy Strategy Reviews*, March 2012, Volume 1, Issue 1, pp. 42-56.
13. Hsueh, M., Lewis, M., "EU Energy Markets Thunders in the Index", *Deutsche Bank Special Report*, 22.03.2011.
14. Wall Street Journal, "Gas Terminal Plans Helped Lithuania Negotiate Lower Price From Gazprom", 28.05.2014 [last accessed 22.08.2015].
15. International Gas Union, "Wholesale Gas Price Survey – 2014 Edition" [last accessed 22.08.2015].
16. Stern, J., Rogers, H., "The Transition to Hub-Based Pricing in Continental Europe: A Response to Sergei Komlev of Gazprom Export", *Oxford Energy Comment*, February 2013.
17. The churn rate is an indicator of the liquidity of a market/ hub. It represents the ratio between the total volume of trades and the physical volume of gas consumed in the area served by the hub.
18. Komlev, S. "Pricing the 'invisible' Commodity – Discussion Paper", 11.01.2013 [last accessed 05.10.2014].

indexation, while de-facto providing strong price discounts and linking pricing to spot prices via the retroactive payments model"[19].

After Gazprom's efforts to settle the competition case with the European Commission it seems likely that the company will make further steps to adapt its commercial strategy to changing market realities in Europe. The fact that in September 2015 Gazprom held its very first auction of gas to be delivered to Europe[20] - a move which was certainly also motivated by the falling oil prices – is a further hint to this. Gazprom has vast gas reserves and the export pipeline infrastructure is already in place. It would be able to deliver cheaper gas than its competitors on the European market (except for Norway and the Netherlands which also have low costs but a declining production). If Gazprom starts competing for market share rather than price, Russian gas will stay an important factor on the European gas market for the decades to come. The only open question is via which route the gas will be shipped to Europe.

Main conclusions from this section

- The EU imports around 70% of its natural gas consumption. The largest importers are Russia and Norway (each one third of imports) and Algeria (14% of imports). The Norwegian resources can however be portrayed as part of the internal market under the EEA Agreement.

- According to different scenarios by the IEA, EU gas demand is expected to slightly (New Policies Scenario) or even strongly (Current Policies Scenario) increase till 2035 or 2040. The 450 Scenario, however, reflects the EU achieving its climate goals and suggests a strong decline in gas demand till 2040. While gas demand forecasts are contentious, it is certain that domestic production will massively decrease till 2040. This makes the EU even more dependent on gas imports

- Russia's Gazprom is legally obliged to deliver gas to the EU beyond the 2020s and in combination with the acquisition of storage assets is able to ramp up its production to increase export volumes. Gazprom seems to align its commercial strategy with new market realities in the EU and will probably remain one of the cheapest suppliers on the European market

19. Mitrova, T. "Changing Gas Price Mechanisms in Europe and RUSSIA`s gas pricing policy", Presentation at the IAEE 38th International Conference, (Antalya, Turkey, 2015) [last accessed 28.08.2015].
20. Bloomberg, "Gazprom Prefers Price Over Volume in First EU Gas Auctions", 10 September 2015 [last accessed 09.10.2015].

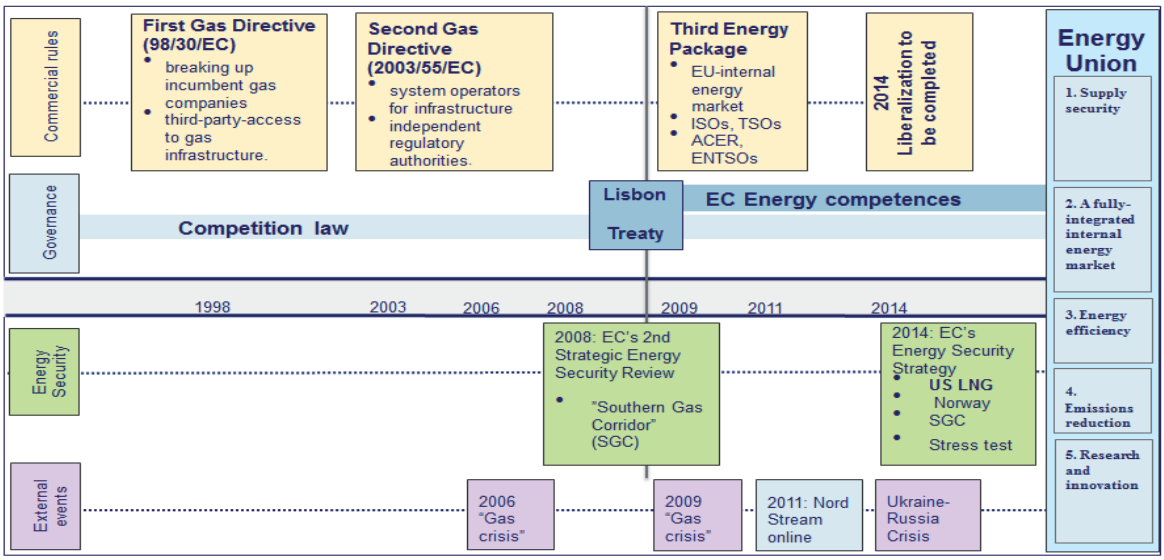
2. Securing the transport of natural gas to the EU

While interdependence between the EU and its external gas suppliers provides security of supply, the transport of pipeline gas to the internal market is a major security concern.

2.1. The EU's approaches to manage transit risks through third countries

The EU pursues three goals in the field of energy: Reduce carbon emissions, achieve low prices for energy and security of supply. With its three energy packages governing electricity and gas markets, the EU since the mid-1990s has mainly relied on the internal market to achieve these goals. The idea is to turn electricity, gas and carbon emission allowances into spot market traded commodities, and use price signals to gain cheap and clean energy from various different suppliers. Building liquid markets for gas requires the build-up of supply and transmission infrastructure so that gas can be supplied from various external suppliers and be shipped directed by price signals within the internal market. The Third Energy Package stipulates that this transmission infrastructure cannot be operated by natural gas producing and trading companies. Furthermore, in order to achieve a competitive market, pipelines have to be open for gas from different suppliers (third party access).

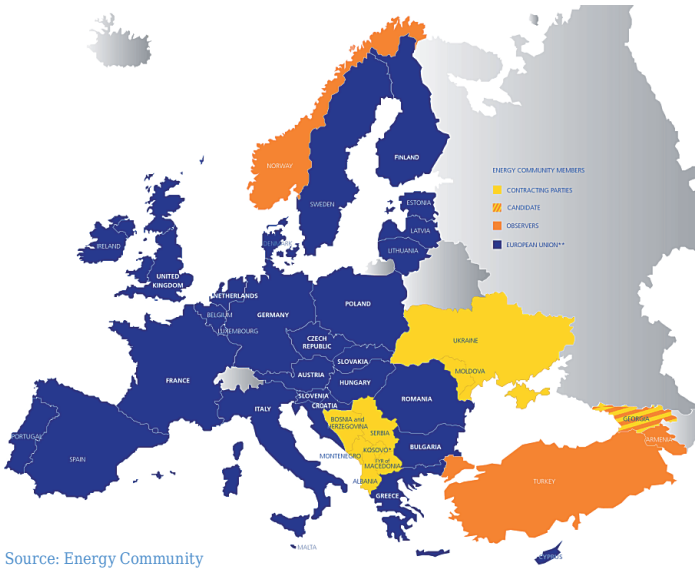
FIGURE 5 ► Overview of the EU's energy policy



Source: Graphic by Philipp Offenberg, Jacques Delors Institut - Berlin

The main strategy to achieve security of gas transit from the EU's neighbourhood so far has been to implement the energy acquis in supplier and transit countries via the Energy Community. The aim of the strategy is to depoliticize energy relations with suppliers and transit countries by the application of competition-based market rules. Since the 2006 and 2009 supply crises on the Eastern route, the EU has also opened a parallel policy string on security of supply that has a more political approach to energy relations. With its Energy Union, the EU since 2014 intensifies its attempts to politicize energy by trying to establish the Commission as the single voice of all members states vis-à-vis external suppliers.

FIGURE 6 ► Energy Community: members, candidates and observers



Source: Energy Community

Gas transport via the Eastern route is a decisive factor in shaping the future EU – Russia natural gas relations and also linked to the security of supply in Ukraine and the country's economic situation. The governance of the Eastern route by some representatives of the European Commission and member states in Central and Eastern Europe is perceived as a test case for the Energy Union.

2.2. The Eastern route

The Ukrainian transit route for natural gas supplies from Russia to the EU is one of three transit corridors for Russian gas to the internal market. Following the 2004 so-called 'Orange Revolution', since 2006 the Ukrainian route has been a constant factor of insecurity. The main reason is the fact that Naftogaz is import customer of Gazprom, but also transit service provider for Gazprom's gas to the EU. Disputes around pricing and Ukraine's level of debt for Gazprom's deliveries to Ukraine were usually intertwined with questions relating to the transit regime of Russian gas to Europe. Combined with technical peculiarities of the Ukrainian gas system this endangered the transit of Russian gas supplies. This mixture led to the supply crises of 2006 and 2009.

In early 2005 Russia announced to shift the transit conditions and gas pricing for Ukraine to market-based pricing methods. After a long price dispute, Russia on 1 January 2006 announced that it would only feed the transit gas destined to Europe in the Ukrainian network but no gas for Ukrainian consumers. In several Central and Eastern European states gas supplies fluctuated, supplies to France were 25-30% down and Italy 24%. Gazprom argued that Ukraine had diverted gas supplies for Europe worth 25 million USD[21]. The conflict was settled on 4 January 2006 and supplies stabilized.

In November 2008 the next gas crisis emerged: Then Russian President Medvedev urged Ukraine to pay back the debt it had accumulated for its gas consumption from Russia. As there was no consent on how much money Ukraine owed Russia, no new supply contract for 2009 was entered and Russia stopped the deliveries to Ukraine on 1 January 2009. On 6 January several EU member states, Turkey and Macedonia reported a reduction of gas flows through the Ukrainian transit network. Figure 8 gives an overview of the percentage of total gas supplies that was missing in Europe and Turkey during the 2009 gas crisis. On 7 January Gazprom stopped the transit supplies through Ukraine for Europe. On 8 January Russia and Ukraine negotiated in Brussels with mediation of the European Commission.

21. BBC, "Ukraine 'stealing Europe's gas'", 02.01.2006 [last accessed 14.06.2015].

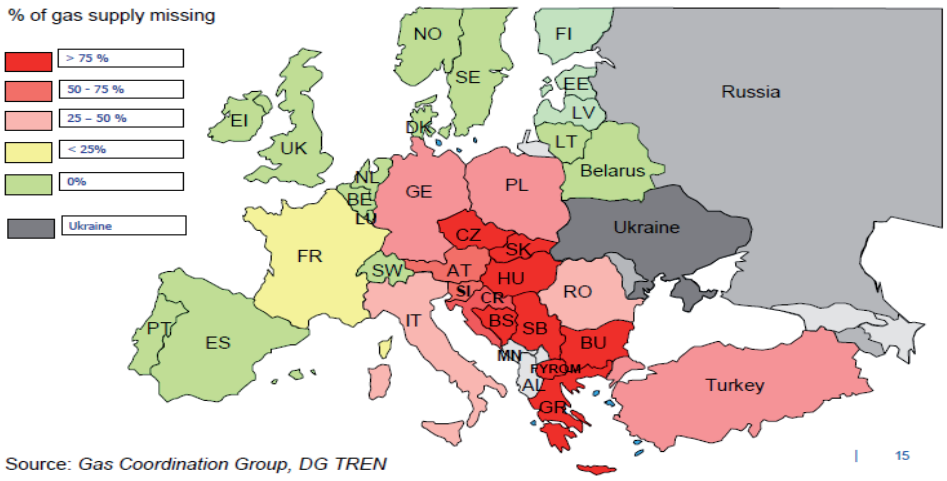
FIGURE 7 ► Ukrainian gas transit system

Source: The National Gas Union of Ukraine

The round agreed on an international observer mission for the Ukrainian pipeline network and Gazprom on 13 January resumed the feed-in of gas in the Ukrainian network. However, Ukraine then blocked the transit between 13 and 17 January, and only after long-term contracts over deliveries and transit had been signed on 19 January, the gas exports reached normal level on 22 January[22].

In 2014, when then Ukrainian President Victor Yanukovych refused to sign the EU-Ukraine association agreement; Gazprom's gas prices were reduced. Three months later, Yanukovych was overthrown and a pro-Western government was established. Gazprom then returned to the conditions of the contract from 2009. Russia furthermore demanded Ukraine to pay back its debts and threatened to stop its deliveries to Ukraine. Again the EU was threatened by another gas supply crisis and the European Commission stepped up to mediate between the two sides. From 16 June 2014 on, Gazprom only delivered gas to Ukraine against advance payments and one day later stopped deliveries, which were however resumed later. On 30 October the European Commission, Russia and Ukraine agreed on a "winter package" to secure the gas supplies to Ukraine during the winter of 2014/15.

FIGURE 8 ► Missing gas supplies in the EU during the 2009 transit crisis



Sources: Gas Coordination Group, DG TREN

22. Westphal, K, "Russisches Erdgas, ukrainische Röhren, europäische Versorgungssicherheit. Lehren und Konsequenzen aus dem Gasstreit 2009" [last accessed 14.06.2015].

Currently, the gas transit through Ukraine is governed by a "Winter Package" for the period from 1 October 2015 to 31 March 2016. It was negotiated during the tri-lateral negotiation between the European Commssion, Ukraine and Russia along Naftogaz and Gazprom as the concerned companies involved. It stipulates that Ukraine has to secure natural gas transit through its territory to the EU, while Russia commits to lowering the price to a concrete predicable price formula for Ukraine and to decreasing the Russian export duty to a competitive level comparable to the neighbouring EU countries in the fourth quarter of 2015. In support to Ukraine the European Commission makes at least 500 Million USD available by the end of 2015 for gas purchases by Ukraine. The unbundling of Naftogaz, i.e. the separation of gas production and gas import from gas transmission thus has the potential to separate these two discussions. The hope of the European Commission is that this will help establishing a resilient framework for long-term transit security to replace the current temporal transit packages and thus increase the EU's energy security. For the COM, the Ukrainian storages levels are also of concern as they are essential for the transit of gas because once the storage level drops below 13 bcm, transit of gas could be affected while the pressure in the transit lines drops.

The transit crisis damaged Gazprom's reputation as a dependable supplier. Academics such as Jonathan Stern and Simon Pirani rejected the interpretation that "the often-cited desire of the Russian government to use energy as an economic or political 'weapon' against European countries played any part in this crisis", and argued that Russia – which here means both Gazprom and the Russian state – relies heavily on the revenues generated from European sales"[23]. Decision makers in the European Commission and in some member states however perceived the crisis as the Russian government having used gas supplies as a weapon to gain political leverage.

2.3. The Southern Gas Corridor

As the Eastern route proved unreliable, it became evident to the European Commission that action needed to be taken to ensure security of supplies to households and reduce single dependencies. Consequently the EU adapted a diversification strategy which was laid down in the 2008 Second Strategic Energy Review of the European Commission[24]. It envisions opening up a Southern Gas Corridor; with the Azerbaijani Shah Deniz gas field is in the forefront. It has reserves of 700 to 1000 bcm of gas. The gas is transported from Azerbaijan through Georgia to Turkey via the South Caucasus Pipeline. Georgia is a candidate to the Energy Community, but with its accession it would lose the very favourable transit conditions.

For the onward transport through Turkey, the stipulations of the EU's acquis communautaire do not apply. Turkey, as well as Armenia and Norway, are observers to the Energy Community, thus they are not obliged to implement the EU's acquis communautaire. Provisions of the Third Energy Package such as third party access (TPA) to pipelines, unbundling or the package's stipulations on tariff regulations do not apply in these countries.

23. Stern, J, Yafimava, K., Pirani, S., "The Russo-Ukrainian gas dispute of January 2009: a comprehensive assessment", (Oxford, February 2009).
24. European Commission, "Second Strategic Energy Review" [last accessed 14.06.2015].

FIGURE 9 ► The projects of the Southern Gas Corridor

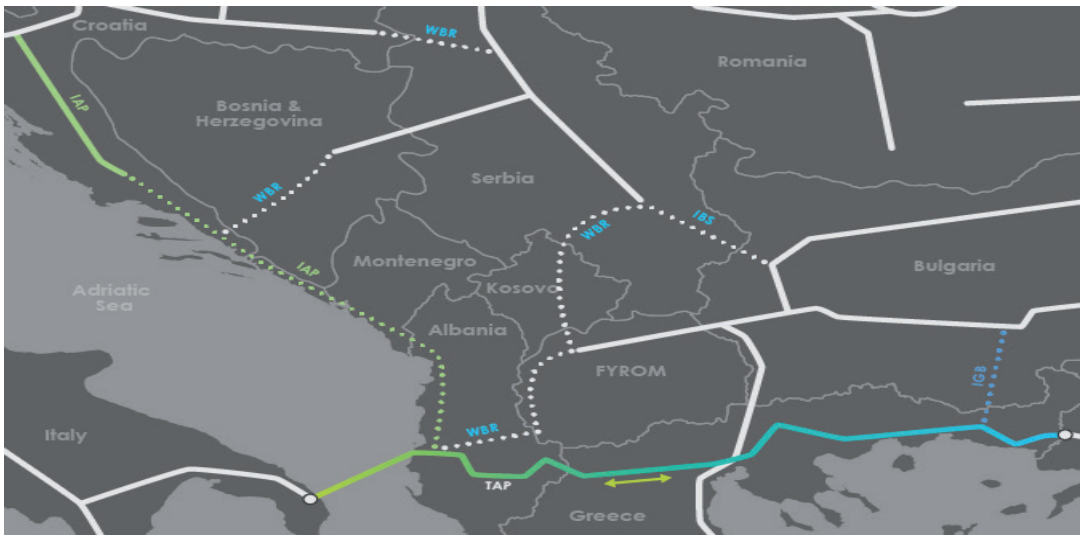
Source: Deutsche Welle

The transit of natural gas through Turkey via the envisioned Trans-Anatolian Pipeline (TANAP) from 2019 on will be underpinned by an intergovernmental agreement (IGA) between Azerbaijan and Turkey[25]. The pipeline will be governed by the provisions of the Energy Charter Treaty of 1991, which does not include a third party access regime and unbundling. This is why it is possible for the State Oil Company of the Azerbaijan Republic (SOCAR) to hold 51% of TANAP and an additional 7% through its Turkish unit SOCAR Turkey Energy and to also operate the pipeline. The IGA between Azerbaijan and Turkey even states that "The States agree that the participating interest of state entities owned by the Republic of Azerbaijan in the TANAP Project Entity shall not be less than 51% (fifty one per cent) of the total participating interest"[26]. Under EU regulation it would not be possible that a production company such as SOCAR operates[27] pipeline infrastructure.

With its majority share and due to the fact that it operates TANAP, SOCAR thus controls the gas transit through Turkey. Therefore, Azerbaijan is in a position to allow or refuse the feed-in of additional gas quantities from other sources. This is of importance as the EU in particular speculates on the feed-in of gas from additional sources such as Turkmenistan, Iraq and Iran. Moreover, Azerbaijan may set the transit fees. Koranyi and Sartori indicate that Azerbaijan has a powerful position concerning the gas transit through Turkey, which Gazprom also tried to attain with regard to the Ukrainian transit for two decades without success[28]. Azerbaijan's transit control over Turkey is comparable to Russia's control over the Belarus section of the Yamal pipeline, which is owned by Gazprom and operated by Gazprom Transgaz Belarus. Belarus also signed the Energy Charter Treaty, but contrary to Turkey, never ratified it. The same applies to Russia. The European Commission had proposed to cover the whole Southern Gas Corridor by a single agreement, but the transit countries were not interested.

25. TANAP, "Intergovernmental Agreement between the Government of the Republic of Turkey and the Government of the Republic of Azerbaijan concerning the Trans Anatolian Natural Gas Pipeline System", 26.06.2012, [last accessed 07.12.2015].
26. TANAP, *ibid.*, here: 7.
27. It is however legal for production companies to own pipeline infrastructure as long as the TSO is operationally and personally independent from the owner.
28. Koranyi, D., Sartori, N., "EU-Turkish Energy Relations in the Context of EU Accession Negotiations: Focus on Natural Gas", [Atlantic Council Dinu Patriciu Eurasia Center and Istituto Affari Internazionali (IAI)], December 2013, [last accessed 07.12.2015].

FIGURE 10 ► Trans-Adriatic Pipeline (TAP) and Ionian-Adriatic Pipeline (IAP)



Source: TAP AG

Originally, the EU favoured a different project for the transport of Caspian gas to the EU, "Nabucco". Initiated in 2002, the Nabucco pipeline was supposed to transport Caspian gas from the Eastern Turkish border to Baumgarten in Austria. The European Commission had helped Austria, Bulgaria, Hungary, Romania and Turkey to negotiate an intergovernmental agreement which had been ratified by all five countries. The IGA featured several aspects of the EU internal market regulation regarding transparency, third party access and tariff setting. For the EU, Nabucco due to its conformity with EU internal market regulation would have been the more favourable option than TANAP. In 2012 Nabucco was partly replaced by TANAP and scaled down to "Nabucco West", starting from the Turkish-Bulgarian border, but still ending in Baumgarten. In 2013 "Nabucco West" was abandoned in favour of the Trans Adriatic Pipeline (TAP).

TAP ships the gas coming through TANAP from the Turkish-Greek border through Greece and Albania to Italy. TAP is based on a 2013 intergovernmental agreement between Albania, Italy and Greece[29]. As Italy and Greece are EU member states and Albania is Energy Community member, the EU's internal market regulation applies to TAP. In 2013, TAP secured a third party access exemption for half of the initial capacity of 20 billion cubic meters annually for gas volumes from Azerbaijan supplied under the relevant Shah Deniz gas sales agreements over a period of 25 years. The third party access exemption was granted under Article 36 of the Third Gas Directive.

For the transport of natural gas northwards, i.e. the replacement of "Nabucco West", the Ionian-Adriatic Pipeline (IAP) is supposed to be built. It would run from Fier in Albania through Montenegro, and Bosnia and Herzegovina, to Split in Croatia. In Fier, IAP would be connected with the planned TAP. IAP is based on a Ministerial Declaration between Ministers from Albania, Croatia and Montenegro[30] and was struck within the framework of the Energy Community. The stipulations of the EU's internal market regulations would fully apply. The pipeline would be costly to build, but would only serve small markets. Furthermore, competition from an LNG terminal in Krk, Croatia, is to be expected. IAP's construction is far from certain.

29. TAP AG, "Albanian Parliament ratifies Intergovernmental Agreement on the Trans Adriatic Pipeline", 26.03.2013 [last accessed 07.12.2015].
30. Energy Community, "Ministerial Declaration on the Ionian-Adriatic Gas Pipeline Project", 25.09.2007 [last accessed 07.12.2015].

2.4. Russia's approach to mitigate transit risks to the EU

The Ukrainian transit route is considered unreliable both by Russian state representatives and Gazprom due to political and commercial conflicts. In 2014, then Polish Prime Minister Tusk re-initiated the Energy Union[31] discussion with the proposal to establish a joint gas purchase mechanism, so the EU member states would jointly buy their gas from Russia to strengthen their negotiating power. In order to secure the transit to Ukraine, the idea was that Russia should sell the gas to the EU's purchasing body[32] at Ukraine's Eastern border, so EU authorities would be responsible for the transit through Ukraine. The idea of a joint gas purchase however was watered down to a voluntary mechanism that had to be in accordance with EU competition law and WTO rules in the Council conclusions on the Energy Union in March 2015. The idea of the joint gas purchase was effectively buried as it conflicts with the market approach of the COM.

The idea of Russia selling its gas at the Eastern Ukrainian border can also not be set into practice by commercial actors as European companies also lack trust in the Ukrainian gas transit system. Unless Ukraine's gas reform successfully limits political interference in the gas transit, unbundles Naftogaz and limits corruption, European companies will rather participate in the construction of Gazprom's offshore pipeline projects such as Nord Stream and South Stream, than take the responsibility of gas transit through Ukraine. Moreover, in the current context, the Ukranian government does not de facto control significant parts of its eastern-territory, controlled by Russia-supported rebels, including the point of entry of the Soyuz pipeline into Ukraine's de iure territory.

FIGURE 11 ► Pipeline network for the export of Russian gas to Europe

Source: Samuel Bailey, licensed under Creative Commons.

Offshore pipelines set the EU in a direct interdependence with producing countries. In the year 2000 Nord Stream, a pipeline linking Russia and North-Eastern Germany via the Baltic Sea, was granted the status of a Trans-European Network (TEN) project by the EU, to help meeting the then expected increase in European gas demand. The pipeline started to be operational in 2011 and made Gazprom and European import companies less reliant on the Ukrainian gas transit system. Its two strings have a capacity of 55 bcm and helped reduce Ukrainian transit volumes. As Ukraine played a questionable role in the 2006 and 2009 transit crises as well, it served European companies as an argument to support the building of transit avoidance pipelines: the contracts for South Stream were signed in 2009, and in 2010 Italian Eni, French EDF and German

31. The debate over the EU's Energy Union originates from a 2010 paper calling for the creation of a "European Energy Community", proposed by former President of the European Commission Jacques Delors, then President of the European Parliament Jerzy Buzek and then President of the think-tank Notre Europe – Jacques Delors Institute Tomaso Padoa-Schioppa. The proposal was detailed in 2010 report, and updated in a 2015 report, both written by the Jacques Delors Institute.
32. A similar vehicle was discussed in 2010, the so called Caspian Development Cooperation (CDC).

Wintershall joined the project. The pipeline would have bypassed Ukraine by linking Russia and Bulgaria via the Black Sea with four strings of 63 bcm total capacity. However, an infringement procedure by the European Commission against Bulgaria based on the violation of procurement rules stopped the project and in 2014 the project was cancelled by Russia as geopolitics made an understanding about regulatory questions impossible.

Gazprom replaced South Stream by Turkish Stream which resembles the South Stream route but ends outside the EU's jurisdiction in Western Turkey rather than on the Bulgarian coast. As price negotiations between Russia and Turkey got stuck, in June 2015 Gazprom shifted away from the project and signed a MoU with several European companies on the construction of a third and fourth string of Nord Stream, named "Nord Stream 2". Nord Stream 2 would decrease the costs of Russian gas imports as no transit fees have to be paid. It may also increase security of supply as the weakest part of the supply chain (Ukraine) is replaced by the strongest one (the EU, here Germany).

Gas supplies to Central and Eastern Europe and also Ukraine would to a larger extent be delivered from Germany, rather than directly from Russia. Ukraine since 2014 imports gas from Nord Stream 1 via its Western EU neighbours. The prices for these Western imports are lower than for Ukraine's direct imports from Russia via the Eastern route. This changes the gas flows in CEE while also generating new sources of income for national governments. Considering the distances from the presumed landing point of Nord Stream 2 in North-Eastern Germany to Poland, Czech Republic and Slovakia, gas from Nord Stream 2 delivered via Germany would be cheaper than the gas from the Eastern route. Transit fees are set per volume and distance (usually 1000 cubic meters of gas per 100 kilometres). For the transport from Germany to Poland and Czech Republic (the latter via OPAL) these are much lower than for the long transport via the Eastern route through Ukraine. And even the distance from Nord Stream's landing point to Slovakia's current delivery on point its Eastern border is smaller than the distance from the entry point of the Brotherhood pipeline into Ukraine near Lukhansk to Eastern Slovakia.

FIGURE 12 ► **Routes of the "Turkish Stream" and "South Stream" pipeline projects**

Source: Interfax Energy

Regarding the political debate surrounding the extension of Nord Stream, the main objections are derived from geopolitical considerations. Since the 2014 political and military conflict over Ukraine, the EU has also set the political goal to maintain the Ukrainian transit route as a corridor for Russian gas supplies to the EU. The idea is to improve Ukraine's bargaining position in gas import negotiations with Russia and protect the annual state budget revenues of 2 bn USD that Ukraine gains from transit tariffs. This is an issue where the EU faces a conflict of goals between its market policy approach and its political energy security approach: In the EU's Gas Target Modell, the transmission of natural gas is understood as a product and the choice of a transmission route a commercial decision by a supplier. The European Commission as gas market regulator trying to force a market participant (here Gazprom) into the use of a specific transmission route after the

expiry of the existing transit agreement between Russia and Ukraine in 2019, represents a breach with the Commission's market-based approach to natural gas.

Central and Eastern European (CEE) member states also fear losing transit fees and furthermore would like to see the deal with Russia stopped amidst the conflict over Ukraine. Here again, the European Commission has to balance between its goals of building a liquid gas market to provide cheaper and cleaner energy and the political option of using energy cooperation as a geopolitical bargaining tool vis-à-vis Russia. While CEE countries support a political approach, the German government argues that the Commission has no mandate for a politically motivated halt of Nord Stream 2 as "the building of gas pipelines is not included by the Russia-sanctions of the European Union"[33].

2.5. The legal situation of offshore pipelines from third countries to the internal market

There are four aspects of pipeline regulation: 1) regulation prior to the building of a pipeline which includes the environmental impact assessment, 2) the prudential regulation of an infrastructure including health and safety aspects and liability insurance, 3) commercial clarity of operation including force majeure provisions and publication of data about when the pipeline undergoes maintenance and finally 4) the regulatory treatment of operation. For offshore pipelines from third countries to the EU, aspects 1,2 and 3 in most cases are regulated in Intergovernmental Agreements (IGA) between the exporting country and the landing country. The exception to this is Nord Stream 1 which is operated without IGA and governed by commercial agreements. The regulatory treatment of operation (4) in the EU is governed by the Third Energy Package which entered into force in March 2011 without retroactive effect. Transmission pipelines between third countries and the EU, including the offshore section, may well fall under the provisions of the EU legislation regarding unbundling, tariffs, third party access and certification of the TSO. Given the lack of precedent, it now belongs to the European Commission to assess the legal situation of NordStream2 according to its characteristics.

The existing pipelines through the Mediterranean Sea, the Trans-Mediterranean Pipeline (Algeria-Tunisia-Italy, commissioned in 1994), the Maghreb Europe Pipeline (Algeria-Morocco-Spain, commissioned in 1996), the Green Stream pipeline (Libya – Italy, commissioned in 2004) and the Medgaz pipeline (Algeria-Spain, commissioned in 2011) are de facto not unbundled, neither do they grant third party access.

FIGURE 13 ► **Pipelines through the Mediterranean Sea to the EU's internal market**

Greenstream
Trans-Mediterranean
Maghreb Europe,
Medgaz
Galsi (planned)
(Trans-Saharan)

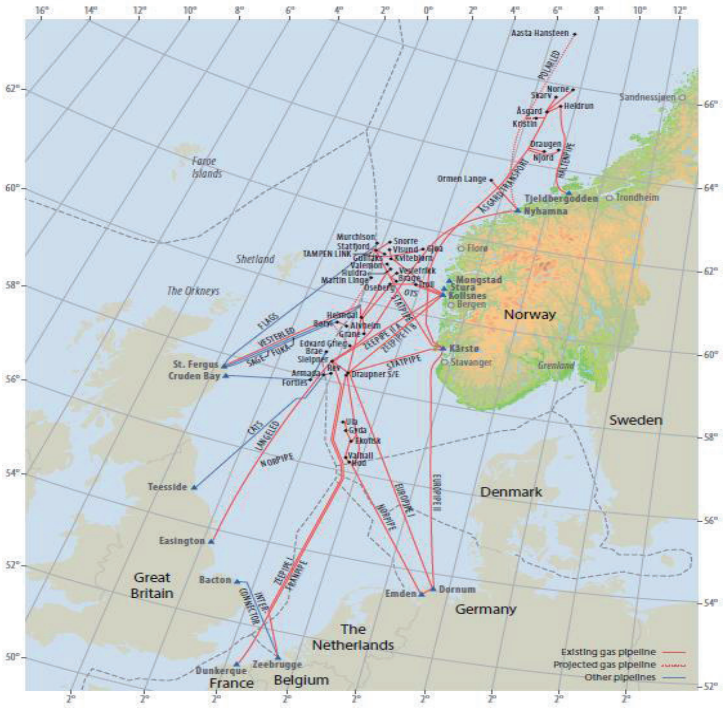
Source: Forbes.com

33. Deutscher Bundestag, "Antwort der Bundesregierung auf die Kleine Anfrage der Abgeordneten Oliver Krischer, Annalena Baerbock, Marieluise Beck (Bremen), weiterer Abgeordneter und der Fraktion BÜNDNIS 90/DIE GRÜNEN – Drucksache 18/6349", 02.11.2015, [last accessed 12.12.2015], here: 6.

The Trans-Mediterranean submarine pipeline is owned by the Trans-Mediterranean Pipeline Company Limited ("TMPC"), a company equally shared and jointly controlled by ENI and Sonatrach (the Algerian state-owned gas company). ENI can benefit of significant capacity rights of about 70-80% on those pipelines[34]. The Greenstream pipeline is a joint venture between ENI (75%) and the National Oil Corporation Libya[35]. All transport rights on that pipeline are held by ENI on an exclusive basis. Around 80% of the capacity is sublet to other shippers on a long term basis. These provisions run contrary to the EU's unbundling and third party access provisions.

The Medgaz pipeline (Algeria-Spain) was commissioned in March 2011, right when the Third Energy Package entered into force. The Spanish Ministry of Industry, Tourism and Commerce included the pipeline in its mandatory planning as of 31 March 2006 as a "Priority Project". The Spanish regulator CNE exempted[36] the pipeline from third party access based on a Spanish law from 1998, S. 70.5 Act 34/1998[37]. Medgaz is also not unbundled as the pipeline is owned by several gas production and sales companies: Sonatrach (Algeria), 43%, Cepsa (Spain), 42% and Gas Natural fenosa (Spain) 15%.

FIGURE 14 ► Norwegian gas export pipelines to the EU



Source: Norskpetroleum

Norway's natural gas export pipelines to Europe are based on intergovernmental agreements between Norway and the destination countries of these pipelines, Belgium, France, Germany and UK. Norway delivers to Belgium via Zeepipe, commissioned in 1993 and to France via Franpipe, commissioned in 1998. Germany is supplied via Norpipe, commissioned in 1977, Europipe 1 and Europipe 2, commissioned in 1995 and 1999. The UK receives Norwegian gas via the Vesterled pipeline, commissioned in 1978 and the the Langeled pipeline, commissioned in 2006. Norway's export network is operated by Gassco, an Independent System Operator (ISO), while the assets are owned by several upstream companies like Statoil and Shell.

34. European Commission, "Commission Decision of relating to a proceeding under Article 102 of the Treaty on the Functioning of the European Union ('TFEU') and Article 54 of the EEA Agreement (Case COMP/39.315 – ENI)", here: 6.
35. European Commission, *ibid.*, here: 6.
36. It can be argued though that through the national exemption process the Third Energy Package was formally applied.
37. CNE, "New infrastructures in the Spanish Gas Market", 15.10.2010, f [last accessed 10.12.2015].

Norway is part of the Agreement on the European Economic Area (EEA), which entered into force on 1 January 1994. It brings together the EU Member States and the three EEA EFTA States — Iceland, Liechtenstein and Norway — in a single market, referred to as the "Internal Market". The EEA Agreement stipulates that Norway's gas export pipelines are covered by the EU Gas Directive as upstream pipeline networks. According to Article 34 of the Third Gas Directive this means that provisions such as unbundling and third party access requirements lie in the hands of the National Regulatory Agency of the Member State where the upstream pipeline ends.

Liquefied Natural Gas (LNG) import terminals are also regulated under the Third Gas Directive, but usually are exempted from third party access as they are considered risky investments. Consequently by looking at the map and concluding from this information it becomes evident that unbundling and third party access provisions are de facto not applied on some of the major gas import infrastructure to the EU.

2.6. The legal situation of Russia's offshore gas export projects to the EU

Contrary to the Norwegian offshore export pipelines to the EU, the two strings of the Nord Stream pipeline that since 2011 have been delivering gas from Vyborg in Russia to Greifswald in Germany ("Nord Stream 1") are not based on an intergovernmental agreement between Russia and Germany or any other EU member state. Originally it was planned to conclude an intergovernmental agreement between the European Union and the Russian Federation, but this never materialized. Due to the absence of an EU-RF agreement on Nord Stream, the regulatory treatment of the pipeline is unclear as both Russian and EU law (the pipeline goes from Russian territory through the Exclusive Economic Zone of several EU member states to Germany) apply to the pipeline. The Third Energy Package is not applied on Nord Stream 1. The German Regulatory Authority, Bundesnetzagentur, has never certified Nord Stream 1, but the European Commission has not started an infringement procedure against Germany due to that.

As Nord Stream 1 was presented as a pipeline connecting the huge Shtokman gas field in the Barents Sea to the EU during the pipelines planning phase[38], one possible explanation for the European Commission's inactivity is that it considers Nord Stream 1 as upstream pipeline network, even though it has never stated this officially. But as the Shtokman field still has not been developed, the Commission could well identify Nord Stream 1 as transmission network and apply the Third Energy Package on the pipeline. However, in the absence of an EU-RF agreement this would cause a conflict with Russian law. The European Commission states that it "tolerates" the current status of Nord Stream 1.

Even though it were primarily regulatory issues regarding the onshore sections of Russia's South Stream pipeline that eventually led to the demise of the project in December 2014, the regulation of the offshore section of South Stream was also contentious. The European Commission was afraid that Bulgaria's parliament could amend the national energy law to rule that an offshore segment of South Stream lies outside EU competition directives[39]. This however never happened. Nevertheless, the South Stream consortium did not consider the Third Gas Directive applicable on the offshore section of South Stream. The consortium argued the pipeline was an import pipeline, which according to the EU's Third Gas Directive, Article 2 (2) would be qualified as 'upstream pipeline network'. In that case, the same provisions as for the Norwegian pipelines would apply and the European Commission would not be involved in the regulation. The question of whether or not South Stream would have been an upstream pipeline network or a transmission network according to Article 2 (3) of the Third Gas Directive was never solved as Russia abandoned South Stream in December 2014. But opposed to Nord Stream 1, the European Commission in the case of South Stream made clear that they saw the offshore section of South Stream as subject to the Third Energy Package.

38. Gazprom, "Shtokman" [last accessed 08.12.2015].
39. Financial Times, "Gazprom criticises EU over South Stream gas pipeline", 30.05.2015, [last accessed 08.12.2015].

The European Commission upholds this argument for Nord Stream 2 and insists on the application of the Third Energy Package. The Federal Ministry for Economic Affairs and Energy (BMWi) of Germany however argues that Nord Stream was an upstream pipeline as it was meant to supply gas in order to serve the increasing European import demand amidst falling domestic production in the Netherlands (the Groningen field) and the North Sea. The Ministry states that the purpose of Nord Stream 2 was not to redirect existing import volumes to bypass Ukraine. If Nord Stream 2 gets classified as upstream pipeline, the German Regulatory Authority, Bundesnetzagentur, would be responsible for the pipeline's regulation. At a state visit in Moscow in October 2015, German Vice Chancellor Gabriel stated that it was preferable to him if the German authorities would be in charge of the process[40].

In case the current dispute between Germany and the European Commission in the regulatory framework for Nord Stream 2 results in the conclusion that the Third Energy Package is to be applied on the pipeline, third party access, unbundling and the EU's tariff regime would fully apply to the pipeline. Nord Stream 2 would then have to be operated by an independent system operator or transmission system operator. The Polish section of the Yamal-Europe pipeline is a precedent of placing Russian gas transport infrastructure under an independent system operator[41]. Russia accused the EU of expropriation, but the transit since the transfer of ownership works without any disputes.

Given that Nord Stream 1 operates without any intergovernmental agreement between Russia and the EU, the question remains whether the European Union would have explicit legal means to prevent the building of Nord Stream 2. If the pipeline is built without an EU-RF agreement, the European Commission could only try to have influence through the regulation of the onshore transport once the gas has arrived in Germany. This could for instance work via the regulation of OPAL, the pipeline connecting the landing point of Nord Stream in North-Eastern Germany to the Czech Republic.

In 2009 the Commission had decided that according to the Third Gas Directive's third party access provisions, Gazprom could only use 50% of OPAL's capacity as otherwise Gazprom would have too much market power in the Czech Republic. Gazprom repealed at the Commission against that decision, but had not received an answer until it withdrew its application for third party access exemption in December 2014. According to sources quoted by Reuters[42] the postponement of the answer by the COM in September 2014 was politically motivated due to the Ukraine crisis. Without the full access to OPAL, Gazprom is not even able to operate Nord Stream at its full capacity of 55 bcm, not to mention an additional expansion of 55 bcm through Nord Stream 2.

Even though OPAL gives the Commission some leeway on Nord Stream 2, Gazprom could still circumvent this by selling the gas in auctions at Nord Stream's landing point in Germany. As Gazprom seems to shift to a spot market based sales strategy this is not an unlikely scenario anymore.

2.7. The implications of Nord Stream 2 for the Ukrainian transit

Even if Ukraine successfully implements the EU's energy acquis, and the Energy Community member's gas market becomes an extension of the EU's internal market, the Ukrainian transit route would still not be attractive for Gazprom and European import companies. The reason is of commercial nature: Ukraine's gas transit system is in need of modernization. A 2009 document by the Energy Charter Conference amounts total investment expenditure required for modernisation and reconstruction of the Ukrainian Gas Transmission System (UGTS) to 3018.5 mln. USD[43]. If Ukraine was part of the internal market, its gas infrastructure would constitute a market zone as outlined in the EU's Gas Target Model. This would mean that entry-exit tariffs would be applied. The modernisation of the Ukrainian transit system would then most likely be financed through these tariffs. With increasing urgency of modernization of the Ukrainian transit system, the entry-exit tariffs would

40. President of Russia, "Meeting with Vice-Chancellor and Minister of Economic Affairs and Energy of Germany Sigmar Gabriel", 28.10.2015 [last accessed 08.12.2015].
41. European Commission, "Commission Opinion Certification of Gaz-System as the operator of the Polish section of the Yamal-Europe Pipeline", 2014, [last accessed 09.12.2014].
42. Reuters,. "EU-Kommission verschiebt Entscheidung über Opal-Pipeline erneut" 03.11.2014 [last accessed 14.06.2015].
43. Energy Charter Conference, "Master Plan Ukrainian Gas Transmission System (UGTS) Priority Objects Modernisation and Reconstruction", June 2009, [last accessed 09.12.2015].

have to rise, and will probably be higher than current transit fees, rendering transit through Ukraine less attractive for Gazprom and European companies. This may however be partially compensated by the implementation of the EU acquis that should lead to a less corrupt, more efficient and therefore more competitive gas transmission system.

Since March 2009, the Commission advocated a tripartite solution to the management and rehabilitation of the UGTS but such solution has not been found, also because the gas reform in Ukraine did not materialize fast enough. Since the 2014 political and military conflict, Ukrainian authorities have repeatedly pointed out that partial Russian ownership of the UGTS was unacceptable[44]. However, a successful modernization of the UGTS depends on Russian transit gas being shipped through Ukraine. Otherwise the UGTS would not generate revenue. As long as Russia's bypass pipeline projects are on the table, it will be difficult to find private investors for the UGTS. The EU however is determined to keep the Ukrainian transit route as annual revenues of 2bn USD for the Ukrainian state budget depend on the utilization of the UGTS.

Konoplyanik argues that even if the transit through the UGTS was replaced by Nord Stream 2, the Ukrainian state would not necessarily lose revenues: As Gazprom is shifting to a spot market sales strategy and large gas volumes would be transported from the landing point of Nord Stream 2 southwards to Austria's Baumgarten hub, the Western Ukrainian gas storages could be used to provide liquidity to the Baumgarten hub[45]. Under Gazprom's current long-term contract sales strategy, purchase volumes can be flexibly nominated within a pre-defined range by buyers. At spot markets, gas buyers can only buy fixed volumes. This turns flexibility for gas buyers into a separate product, which can be provided by storage operators. Ukraine could earn money from increased use of its storages. Currently the storages are mainly used for seasonal adjustments of Russian gas transit flows to the EU that means that the number of injections and withdrawals and thus revenue is quite limited.

As this scenario depends on many factors, the future setting of the Ukrainian transit and storages cannot be credibly determined before a decision on Nord Stream 2 is taken and it is clear which volumes of Russian gas will be transported through the UGTS.

Main conclusions from this section

- The EU pursues three goals in the field of energy: Reduce carbon emissions, achieve low prices for energy and security of supply

- Since the late 1990s the internal market has been the major tool to achieve these goals. Consequently, the EU tries to expand its energy market regulation to the near abroad via the Energy Community, so that gas transit countries also underlie stipulations such as third party access to gas pipelines

- Besides its efforts to depoliticize energy relations, the EU since the Ukrainian gas transit crisis of 2006 also pursues an energy security strategy that makes political decisions on gas suppliers and transport routes. There often is a conflict of goals between the internal market approach and the political approach

- The major transit risk currently is the Ukrainian Gas Transit System. Besides its political risks, the system itself is in need of modernization. The EU has set the political aim to maintain Ukraine as a transit corridor for Russian gas

- The EU has opened up the Southern Gas Corridor to transport gas from Azerbaijan via Georgia and Turkey to the EU. However, both transit countries are reluctant to become Energy Community members and thus the transit conditions do not comply with the standards of the EU's internal market

44. TASS, "No selling Ukraine's gas transit system to Gazprom", 24.07.2014 [last accessed 09.12.2015].
45. Konoplyanik, A., "Russia's evolving gas export strategy", in: *Energy Economist* issue 408, October 2015, 11-16, here: 16.

- Russia's Gazprom and several European gas companies try to avoid the transit risks through Ukraine by proposing offshore bypass pipelines, such as Nord Stream, South Stream, Turkish Stream and most recently Nord Stream 2

- The EU still has different legal frameworks for offshore pipelines from third countries to the EU. While the regulation of the Norwegian offshore export pipelines is set in a bilateral agreement between Norway and the EU, no such agreement exists between Russia and the EU

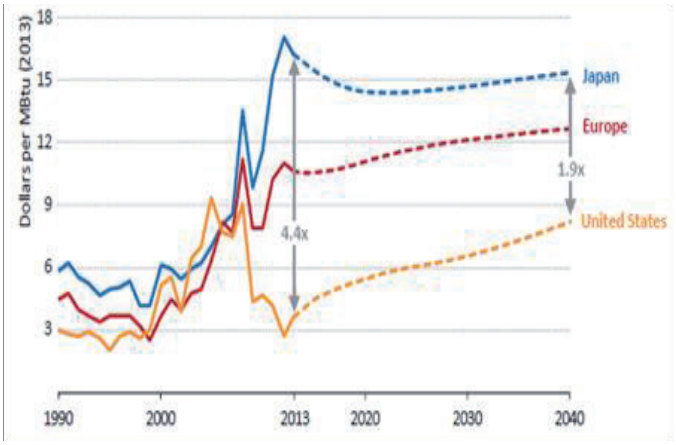
- Nord Stream 1 operates without any intergovernmental agreement. It seems unlikely that the EU can bring Nord Stream 2 to a halt by legal means

- With Nord Stream 2 being planned, there is no certainty for the Ukrainian transit route and no investment security for the Ukrainian Gas Transit System

3. Potential alternatives to Russian gas imports

The EU's diversification strategy is based on building up the Southern Gas Corridor. While larger volumes from the Caspian region are expected in the mid-2020s, supplies from the Shah Deniz gas field in Azerbaijan of only 10 bcma are expected to come online in 2018. Despite all diversification efforts, the share of Russian gas in Europe's gas consumption according to BP would stagnate around 30% in the future. The additional import need is suspected to be delivered by Iraq, and Iran[46]. Whether these imports materialize is unclear, not only due to the instability in the Middle East, the question of the Iranian sanctions, but also due to the transit arrangements of TANAP.

FIGURE 15 ► Gas price levels in Japan, Europe and the United States.



Post 2014 prices are estimates made by the IEA under its reference scenario.

Source: IEA, 2014 World Energy Outlook

The European Commission is currently designing an LNG strategy, and an additional LNG port in Lithuania has recently gone online. For a long time, the European LNG market has not been attractive to foreign suppliers: Natural gas according to the IEA's 2014 World Energy Outlook (Figure 15) traded around 15 USD per MBtu in Asia and only around 10 USD per MMBtu in Europe. However, developments such as Russia's pipeline projects to Asia and further Central Asian pipelines to China create a more competitive Asian gas market. New LNG projects coming on stream in the next years in Australia and the US will not only have to compete

46. Reuters, "EU to grow more reliant on gas imports, Russia supply seen flat: BP", 27.03.2015, [last accessed 14.06.2015].

between each other for Asian demand, but also against the price set by pipeline import deals such as the Sino-Russian deal, which has an estimated price of around 11-12 USD /MMBtu[47]. The demand for LNG will also decrease with Japan's nuclear power plants coming online again. The high LNG price level in Asia, also known as "Asian Premium", is decreasing: LNG prices in Japan have come down to 7 USD/MMBtu in mid-2015, making the European market more attractive. Furthermore, the United States gear up to become an LNG supplier to Europe.

Provided, the problems of lacking gas grid interconnection and slow market liberalization are tackled, LNG supplies would be able to give leverage to Central-Eastern European member states in their price negotiations with Gazprom. The EU currently has roughly 200 bcma of regasification capacities, which due to the price differential between LNG and pipeline gas are only used to around 20%. Marginal costs for Russian gas supplies to Central-Eastern Europe are 30 EUR per 1000 cubic meters (including production, shipping, transit fees), while LNG deliveries from the United States to Central-Eastern Europe come at marginal costs of 70 EUR per 1000 cubic meters (including production, liquefaction, shipping, regasification)[48]. LNG can thus not replace large shares of Russian pipeline gas on the European market, unless there is the political will to heavily subsidize LNG imports.

Both geopolitical vulnerability and pricing vulnerability to Russian gas are problems mostly focused on Central and Eastern European member states. As the Climate Action Network states, "the current security of supply concern, (…) is first and foremost a heating issue. Indeed, 61% of EU imported gas is used in buildings." The biggest concern is Central-Eastern Europe with its old inventory of buildings. In these regions regasification capacity is yet limited as well as market interconnection. The best solution for security of supply thus is energy efficiency measures in buildings. As an internal EU policy, energy efficiency diminishes the EU energy needs. In case EU imports from non-Russian suppliers (especially Algeria and Norway) remain constant, it means that gas volumes saved through energy efficiency would reduce Russian import volumes. This is a reason why energy efficiency may be theoretically considered as an alternative fuel[49].

Main conclusions from this section

- The question of the Iranian sanctions and the transit arrangements of TANAP cause uncertainty over gas supplies via the Southern route
- With falling gas prices in Asia, the European market has become more attractive to LNG suppliers. LNG is yet unlikely to replace Russian imports on a large scale, unless European economic and political decision makers are willing to pay an "energy security premium" to have cheaper but more diversified gas supplies
- But even low volumes of LNG can increase competition and lower import prices for Russian pipeline gas in Central and Eastern Europe
- Achieving energy efficiency gains in sectors where gas is consumed and in Central-Eastern European Member States is a critical way to reduce the EU's dependence on Russian gas imports

47. Mitrova, T., "The Shifting Energy Dynamics and Geopolitical Implications of the U.S. Shale Revolution for Asia: Russia`s Perspective", (Washington, 15 October 2014 [last accessed 14.06.2015].
48. Own calculation based on: Egging, R., Gabriel, S.A., Holz, F., Zhuang, J (2008). A Complementarity Model for the European Natural Gas Market. Energy Policy, Volume 36, (2008), pp. 2385-2414. ; DIW. World Gas Model 2007. ; U.S. Energy Information Administration (last accessed 12.08.2015).; U.S. Energy Information Administration.
49. Andoura, S., Vinois, J-A (2015), "From the European Energy Community to the Energy Union A policy proposal for the short term and the long term", [last accessed 08.01.2016], here: p. 130.

Conclusion: A bilateral agreement between the EU and Russia to govern all transit corridors for Russian gas to Europe

The transport of pipeline gas from external suppliers to the internal market is currently in focus of the EU's security of gas supply discussion. This touches both the EU's diversification projects and the envisaged pipeline projects of Gazprom to the EU's internal market. Regarding the EU's main pipeline diversification project, the Southern Gas Corridor from Azerbaijan through Turkey to Greece, the challenge for the EU is to guarantee that SOCAR will also transit non-Azeri gas through Turkey in the future, as the European Commission has plans to source gas from Turkmenistan and potentially from the Kurdish regions of Iraq and from Iran in the future.

The provisional nature of the transit of Russian gas through Ukraine and Nord Stream 1 as well as the open controversy about the regulatory regime for South Stream and Nord Stream 2 are caused by the fact that unlike with Norway there is no overarching agreement on transit of natural gas between the EU and Russia. The optimal solution would be a coherent regime for all Russian export pipelines to the EU. This could create legal certainty for Nord Stream 1 and 2 and potentially South Stream, as well as a commitment by Russia to the Ukrainian transit corridor and an unbundling solution for the gas transport through Belarus.

Also an agreement between the EU and Russia limited to the governance of Nord Stream 2 (such an agreement was originally planned for Nord Stream 1) could contribute to a fast solution for the Ukrainian transit, given the slow pace of the Ukrainian gas market reforms[50]. In the negotiations of such an agreement the EU could also ask for Russia's ratification of the Energy Charter Treaty or the liberalization of the Russian natural gas market, especially the breakup of Gazprom's pipeline gas export monopoly or the export of Central Asian gas through Nord Stream.

As Norway's gas reserves are declining, LNG imports from the United States and other suppliers are too expensive to be a large scale diversification option and EU importers are still bound to Russia by long-term supply contracts, the EU and Russia need to find a framework for future Russian gas deliveries. Russia's Turkish Stream project seems not likely to be realized amidst the recent Russia-Turkey divide. Gazprom is now dependent on the realization of Nord Stream 2 in order to create certainty for its exports to the EU. This could be a strategic moment to strike a comprehensive EU-RF transit agreement, or at least find individual solutions for every transit corridor, most notably the Ukrainian one.

As Turkey is very dependent on Russian gas, the current Russia-Turkey divide is also a good moment to deepen EU-Turkey energy relations. Turkey could be convinced to join the Energy Community. Given that the negotiations of accession of Turkey to the EU have been recently re-launched, priority could be given to the negotiations on Chapter 15 that deals with the EU's energy acquis[51] and would therefore lead to the implementation of regulated third party access and unbundling to be applied on TANAP.

Finally, the currently rapidly evolving geopolitical context could be both a challenge and an opportunity in bringing the EU, Russia and Turkey together. That aspect of the neighbourhood policy has not been discussed here, but it is likely to be an important ingredient in taking up the proposals formulated in this paper.

50. Natural Gas Europe, "Helping Ukraine to Reform Naftogaz's Gas Transmission Business", 28.11.2015, [last accessed 09.12-2015].
51. The author wants to thank Thomas Pellerin-Carlin from Jacques Delors Institute for sharing this idea.

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