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European Energy Supply Security in Light of the Ukraine Crisis

OVERVIEW

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The Ukraine crisis is intensifying the long-standing debate about the security of Europe's energy supplies. On a geopolitical level, the EU's energy interests to the east, south, and southeast are gaining salience. While there are entrenched dependencies on Russian natural gas deliveries in these regions, there are also medium-term alternatives, such as increased exports from Algeria and additional gas imports from the Caspian region. The idea of a transatlantic gas supply corridor has recently been proposed, but it remains on the drawing board because of costly infrastructure requirements and stiff competition for energy from Asia. Within the EU, the Ukraine crisis is providing further impetus for the shift of political priorities away from climate concerns and towards policies focused on security and competition. Energy security in Germany becomes a debate of the remuneration system between fossil and renewable energies.

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INTRODUCTION

The EU's strategic engagements to enhance the security of its energy supplies predate the crisis in Ukraine; the growing dependence on energy imports has been apparent for quite some time. Europe currently imports about two-thirds of the natural gas it consumes[1]. In 2012, the main gas suppliers were Russia (roughly 23 per cent), Norway (roughly 22 per cent), and Algeria (roughly 9 per cent).[2] Whereas oil can be procured elsewhere on the global market – albeit at prices that reflect potential market distortions – gas is tied to fixed infrastructure in the form of pipelines or Liquefied Natural Gas (LNG) terminals, rendering short-term substitution extremely expensive, i.e. technically unfeasible.

The bulk of gas imports arrives in the EU via pipelines. From a geopolitical perspective, one can identify several distinct energy supply corridors: the northwestern corridor (Norway), the eastern corridor (Russia), the southeastern corridor (the Caspian sea amongst others), and the southern corridor (Algeria amongst others). A small but growing share of gas imports reaches the EU in liquid form by sea (LNG). In light of these realities, a transatlantic gas supply corridor is under active consideration.

NORTHWESTERN GAS SUPPLY CORRIDOR

Gas exports from Norway represent a mainstay of increasing importance for the EU.

The northwestern gas supply corridor comprises gas deliveries from Norway to the EU. With respect to energy, Norway and the EU have historically benefited from close and economically robust ties. Norwegian natural gas reaches the EU without transiting through any intermediaries, and new joint pipeline projects demonstrate that their energy policies increasingly converge. Opportunities abound for non-Norwegian energy companies to capitalize on Norway's favourable investment conditions. In addition, the country is also a member of the European Economic Area (EEA), making it subject to the full extent of European directives regulating the gas market.

In light of current conditions, Norway is increasingly perceived as a substitute for Russian imports. And the country could, in fact, boost its gas exports on short notice – but only within reason. Norway could also provide opportunities for Germany to store energy; the vast volumes of renewable energy produced in Norway could be stored there in the form of reservoirs. However, such an approach would require substantial upgrades to the grid to enable it to sustain the amounts of electricity involved. Of course, it would remain to be seen how much storage capacity Norway could actually provide. Whatever the case, the Ukraine crisis will only raise Norway's profile as an energy supplier for the EU.

EASTERN GAS SUPPLY CORRIDOR

The gas links between the EU and Russia have become deeply entrenched in recent years. As a result, EU member states in central and eastern Europe, in particular, suffer from strategic disadvantages that could be remedied by a functioning internal gas market within the EU.

The eastern energy supply corridor encompasses the direct and indirect energy linkages between the EU and Russia. Gas transit states such as Ukraine and Belarus play a special role for Russian gas imports into the EU, a fact illustrated by the 2009 gas crisis, when a dispute between Russia and Ukraine interrupted flows to Europe and caused appreciable shortages. At the time, as much as eighty per cent of Russian gas reached the EU via pipelines that traversed Ukraine. As a result, more direct supply routes such as the Nord Stream pipeline, which was operationalized in 2011 and runs through the Baltic Sea before terminating near Greifswald (Mecklenburg-Vorpommern),[3] have become all the more important. Nonetheless, roughly fifty per cent of all Russian gas imports are still routed through Ukraine today. Although the completion of the Nord Stream pipeline represents an attractive alternative for Germany, central and eastern EU member states remain rather critical of the project. They have seen their strategic relevance eroded because they are no longer indispensable to Western Europe as EU-member transit states. In addition, the revenues that once accrued to Poland for gas transit fees will diminish. In response to this claim, the proponents of the Nord Stream pipeline counter with the argument that the EU in the aggregate will benefit from the additional gas link, although the extent to which this argument holds water remains to be seen. For its part, Poland has pushed ahead with the construction of an LNG terminal on the Baltic Sea coast near Świnoujście (German: Swinemünde), which is scheduled to be completed in the near future. To the extent that this project could satisfy part of Poland's own demand for natural gas and while supplying the country's EU neighbours in central and eastern Europe, it may also improve Poland's geostrategic position.

A further project intended to link Russia directly with the EU – a pipeline called the South Stream that will run through the Black Sea and terminate in Bulgaria, is still under construction.[4] In June 2014, all work on the European site of the project has stopped after the EU Commission mentioned concerns relating to its Antitrust legislation. Under EU law, a company may not both supply natural gas and control

access to the pipeline. The debate is still going on and heated up as several EU member support South Stream including Italy which will take in the EU council presidency in the second half of the year.

The Nord Stream and the South Stream pipelines both circumvent Ukraine and Belarus, undercutting the importance of these two gas transit states to the EU. Both nations are likely to see their influence diminish further. From the EU's vantage point, the Nord and South Stream pipelines may follow different routes, but they still cement Europe's one-sided gas dependence on Russia. Many other pipelines, such as the Yamal and the Brotherhood, which run through Belarus and Ukraine, respectively, will remain crucial to EU member states in central and eastern Europe, such as Poland, Slovakia, and the Czech Republic. Russia, on the other hand, is poised to benefit strategically; owing to its diversified direct links to individual EU member states, Russia is able to negotiate different prices. For instance, countries in central and eastern Europe pay higher average gas prices than Germany. This makes perfect sense according to the logic of the market, but the arrangement also endows Russia with potent geopolitical influence. The EU therefore is crafting efforts to blunt this influence through the so-called reverse flow process, whereby gas purchased at lower prices from Russia in Western Europe flows back to countries in central and eastern Europe (via the internal European gas market) at discounted rates vis-à-vis the Russian rate. Gas procured from other regions could also benefit central and eastern European countries through the same mechanism. Accordingly, the expansion of both storage capacity and interconnectors is taking on greater significance. The European internal gas market is thus acquiring geoeconomic heft robust enough to act as a counterweight to Russia.

SOUTHEASTERN GAS SUPPLY CORRIDOR

In the medium term, the southeastern gas supply corridor will play a major role not only for gas imports from the Caspian region but also as an alternative route for gas from the Middle East.

One project supported by the EU in the southeastern energy supply corridor was the Nabucco pipeline. The idea was to pump gas from the Caspian Sea across the Turkish-Georgian border, through Turkey to Bulgaria and Romania, and thence to Austria via Hungary. Nabucco itself should have been started from the Turkish-Bulgarian border. However, the operators of the gas field in the Caspian Sea (Azerbaijan) – the Sha-Deniz II Consortium – decided in favour of the less costly Trans-Adriatic Pipeline (TAP) for financial reasons. The TAP starts from the Turkish-Greece border and terminates in Italy after its journey through Greece and Albania. It's certainly possible that the Ukraine crisis might revive interest in the stalled Nabucco pipeline, but even the TAP would improve Europe's energy security because it represents an additional gas link outside of Russia's purview. In either case, Turkey stands to benefit geopolitically because of its new role as a gas transit state. The EU will have to adapt to these changing realities.

The southeastern gas link offers more than access to reserves from the Caspian Sea; gas-producing countries such as Kazakhstan, Turkmenistan, Uzbekistan, and Egypt could be within reach of the European energy market. Moreover, new avenues to channel oil and gas from Iraq and Iran with the EU could present themselves. Of course, it's worth noting that political instability in the above-mentioned countries could create difficult conditions for production. Parenthetically, the discovery of sizeable offshore reserves with export potential off the coast of Cyprus could alter the nature the southeastern supply corridor. These reserves could spawn entirely new possibilities for additional pipelines or LNG links with the EU. But once again, the political landscape is complex and involves Greece, Turkey, Cyprus, and Israel amongst others.

SOUTHERN GAS SUPPLY CORRIDOR

Algeria will increasingly attract attention in light of the debate about European energy security. It has significant potential to expand its gas exports and will gain geopolitical relevance as a transit country for Nigerian gas en route to Europe.

The southern gas supply corridor comprises gas imports from Algeria, Libya, and Egypt amongst others. Apart from Russian and Norwegian imports, Algerian gas represents the third most important source of energy for the EU. The majority of these natural gas exports reach the EU via LNG deliveries, although the percentage of gas funnelled through pipelines is on the rise.[5] These gas deliveries are particularly important for countries in southern Europe such as Spain and Italy, but also for France. The longest pipeline with the largest capacity is the Trans-Mediterranean pipeline, which runs to Italy via Tunisia and Sicily. In addition, the Mediterranean pipeline connections to Spain via the Maghreb-Europe Gas and the Medgaz pipelines are of particular significance. Algeria might also gain relevance as a gas transit country for Nigerian gas through the Trans-Sahara pipeline, which is currently under construction. Apart from Algeria's conventional natural gas reserves, Algeria is also thought to harbour the world's third-largest shale gas reserves after China and Argentina.

Algeria is an important and increasingly significant energy partner for the EU. Algeria itself regards its partnership with the EU as important and sees room for expansion. The country's weak democratic institutions, high levels of corruption, and terrorism-related political instability have yet to deter investors. On the contrary, investments in gas export infrastructure are likely to increase in the future. However, Algeria also recognizes that the EU currently has the upper hand in negotiations, which is why it is seeking ways to improve its own bargaining position. In this regard, the Trans-Sahara pipeline may have an important role to play, as it would make Algeria an important gas transit country for the EU. The Ukraine crisis could also enhance Algeria's strategic position, putting the EU in the position of having to rely on Algerian gas in the not-too-distant future. One hurdle that the EU would have to consider, however, is the extent to which it would be possible to transport Algerian gas into other regions in Europe to make the benefit accessible to other member states.

TRANSATLANTIC GAS SUPPLY CORRIDOR AND SHALE GAS

Transatlantic gas imports into the EU are technically feasible, but currently unlikely. From an economic perspective, Asian appetite for energy makes the Pacific more attractive.

Transatlantic energy links have recently consisted mainly of US coal exports to Europe. Because of increased shale gas usage in the United States, American coal has become relatively more expensive and therefore more attractive as an export. (A notable side effect of the increased use of shale gas in the US has been a reduction of the country's carbon footprint.) The Ukraine crisis has increased the appeal of US shale gas as a substitute for Russian gas, which may facilitate the opening of a transatlantic energy supply corridor for the EU. There are also extensive conventional and unconventional gas reserves on both the South and North American continents, such as in Canada and in numerous Latin American countries, which could potentially be exported. Asian nations, in particular China, have been aware of these opportunities for some quite some time.

US national security imperatives restrict energy exports to countries that have free trade agreements with the US. These legal parameters may take on added significance in light of the current transatlantic free-trade zone (TTIP) negotiations, which would provide such a basis for energy exports. With respect to Canada, agreements governing raw materials could also play an important role for European energy security; a free-trade agreement (the CETA), is currently being negotiated. Nonetheless, a transatlantic gas corridor would require an LNG export facility on the eastern seaboard of America as well as corresponding import facilities in Europe. Neither is currently in place to handle the envisioned trade, and both would require sizeable investments. To date, no natural gas has been transported to Europe across the Atlantic. Whether the will to develop the appropriate capacities is adequate remains dubious, as the expenses of transporting shale gas overland are considerable. For the time being, the US will likely continue to increase its energy independence – including from oil – but will not engage in significant energy exports in the longer term. It will, however, take the international technical and knowlegde lead in the area of fracking. In any case, the sale of natural gas to Asian clients promises far greater returns than exports to Europe.

Having said that, LNG technology would permit – in principle – the transport of liquefied gas via shipping lanes, providing an alternative to pipelines. At present, Japan is the leading buyer of LNG worldwide; the principal exporters are Qatar, Malaysia, Australia, and Indonesia; and the main LNG suppliers for Europe are Qatar and Algeria. In Asia, clear patterns of LNG use and corresponding trade routes are apparent, all of which raises the possibility of an emerging global gas market – similar to the international oil market – in which Europe could act as a buyer. There are already more than 20 operational LNG terminals in Europe, including facilities in Spain, France, the UK, Italy, and Greece. Additional terminals are either under construction or on the drawing board, two of which are planned for Germany.

DEBATE ON ENERGY SUPPLY SECURITY IN THE EU

In the EU, the Ukraine crisis has accelerated a shift in policy priorities away from climate concerns and towards policies focused on security and competition.

In recent years, the EU Commission has introduced a large number of projects and initiatives designed to improve the security of Europe's energy supplies. The EU's energy-related policies include the following: the expansion of the geographical size of the EU's internal market; the strengthening of its energy partnerships; the improvement of developing countries' access to sustainable energy products, and greater promotion of EU policies beyond the EU's own borders. In addition to these efforts, the EU has also concluded a series of bilateral agreements, encompassing important strategic dialogue forums and other agreements with various parties including Norway, Russia, the Organization of the Petroleum Exporting Countries (OPEC), the United States,

Brazil, Ukraine, the Caspian Region, the Middle East and the Persian Gulf, the southern Mediterranean, China, and India. In light of the Ukraine crisis, the EU Commission also recently published a European Energy Security Strategy document,[6] which includes suggested short-term measures, such as the expansion of European gas storage capacities, as well as suggested medium- to long-term measures, such as the improvement of market structures for trading in electricity and gas.

Within the EU, opinions differ about the degree to which European energy security ought to be assured, in no small part because each member grapples with different forms of dependence. The integration of EU energy policy has not matured to the point where it could compensate for the one-sided energy dependencies of individual EU member states. This was clearly illustrated recently during the debate about the future development of the European climate and energy goals for 2030. EU members from central and eastern Europe in particular – many of whom depend considerably on Russian energy imports – maintained that overly ambitious climate and renewable energy targets are prohibitively costly from their point of view, and could jeopardize their energy security. They prefer to rely on domestic coal deposits, fracking opportunities to explore shale gas, and the use of nuclear energy. With respect to the debate about EU climate and energy goals, the binding 2030 objectives (encompassing climate protection, renewable energy, and energy efficiency targets) will likely fail to take effect. At recent discussions, energy efficiency targets were particularly contentious. However, the energy security debate may yet result in a re-examination of these targets.

The latest threats emanating from Russia have rekindled the debate about energy security within Europe. The state-owned company Gazprom recently announced that it would "turn off the spigots" to Ukraine if the country did not pay the demanded prices. The feuding stems from Russia's refusal to grant gas discounts in the wake of its annexation of the Crimean peninsula. Absent discounts, Ukraine would have to pay disproportionately higher gas prices. Aside from the direct repercussions such a price hike would trigger for Ukraine and other EU member states, Russia's threats have already prompted a fundamental debate about the gas market. Polish Prime Minister Tusk recently called for the creation of an energy union, the primary purpose of which would be the purchase of Russian gas by an entity such as the European Energy Agency. For his part, the EU Energy Commissioner, Günther Oettinger, is rather sceptical of this proposal; he does not want a politically defined price for gas. His main focus is on the development of the internal energy market, which will improve the natural gas trade within the EU.

Above all, this entails the improvement of Europe's infrastructure for natural gas. It is already feasible today to transfer low-cost gas from Western Europe to central and eastern Europe via intra-continental pipelines. The fundamental political debate on this issue has just begun, and one can only hope that further international conflicts will not be needed to bring it to an effective conclusion.

GERMAN *ENERGIEWENDE*

In Germany, the *Energiewende* will contribute to energy security by replacing fossil fuels with renewable energies in the long term. In the short term, transitional energy sources such as brown coal will, however, play a more important role. Energy security in Germany becomes a debate of the remuneration system between fossil and renewable energies.

There are robust links between Germany and Russia in terms of both energy and economic policy. In particular, Russian gas imports represent an important item of debate. As the EU's largest industrial power, Germany has embarked on a fundamental change of course with respect to energy policy with its decision to pursue the *Energiewende*. In the long term, the *Energiewende* should make a significant contribution to supply security as domestic renewable energies gradually replace fossil fuel imports. In the near term, natural gas, coal, and oil will serve important roles as transitional fuels to span the gap during implementation as nuclear power is abandoned – especially so in the wake of the Ukraine crisis. Domestic brown coal, in particular, is once again assuming special importance. Germany has extensive and readily extractable deposits of brown coal and it seems the current political landscape will support that direction in a midterm.

The core of the *Energiewende*, the Renewable Energy Sources Act (EEG), is currently undergoing reform, the aim of which is to counter rising total costs and the uncontrolled proliferation of renewable energy projects by aligning incentives more closely with the market. The measures envisioned by reformers include direct marketing (*Direktvermarktung*) and tendering renewable energies. The reform represents a fundamental shift in the German support for renewable energies. One of the consequences of the subsidized expansion of renewable energies is that conventional power plants especially for gas are being shuttered because they are no longer cost-effective to operate. This may have adverse effects on German energy security. Therefore, the idea of a capacity market has also been floated to guarantee excess power plant capacity above and beyond market demand. It's worth noting that the development of a capacity

market would, in fact, create a new redistribution mechanism – subsidies for fossil fuels, despite the fact that the aim of the EEG reform is to lower subsidies – at least for renewable energies.

In addition, the Federal Ministry for Economic Affairs and Energy announced a Ten-Point plan with regard to the *Energiewende*. The plan includes

1. a timeline for the development of the Renewable Energy Sources Act (EEG) towards more market integration,
2. a position – 40 percent greenhouse gas reduction, 30 percent renewable energies and a mandatory energy efficiency target based to economic indicators – of the German government considering the EU climate and energy target 2030 debate,
3. a position of a reform of the European Emission Trading System by supporting the market stability reserve,
4. a timeline to develop a common market design for the electricity sector together with Germany's neighbour countries,
5. a plan for the development of an energy efficiency strategy containing financial and regulation instruments,
6. a roadmap for a building strategy to increase their energy efficiency,
7.-8. timelines for the development of the supra-regional and local transmission grid system,
9. a timeline to monitor the progress of the *Energiewende*,
10. a reorganisation of the *Energiewende* platforms.

OUTLOOK

Russia's importance in terms of supplying gas to the EU remains unchanged; it is currently unfeasible to replace Russian gas imports in the short term with other gas supply corridors. Efforts to reduce dependence on Russian energy must also consider that Europe is not the only entity seeking diversification; Russia, too, has been attempting to diversify its range of clients for quite some time, particularly in Asia, which its recently concluded gas supply agreement with China serves to illustrate. This development could cause increasing divergences of EU and Russian energy policies. From a global perspective, the EU may well lose the strategic advantage that the proximity of Russian gas represents.

The EU has gradually expanded its energy-related foreign policy in recent years with a large number of initiatives and projects. But apart from the political and technical advances in the southeastern gas corridor, no new structural sources of energy supplies have been added. On the contrary, observers have merely witnessed gradual improvements to the northwestern, eastern, and southern gas supply corridors. The recently discovered natural gas reserves in the Mediterranean might present new opportunities, but they are rarely paid any attention in the public debate.

The concept for a transatlantic energy supply corridor illustrates clearly that the Asian market will largely shape the future of the global energy landscape. Asian countries, most notably China, are driving up global demand for energy and acquiring influence over countries on the supply side, such as the United States; this influence also extends to Latin American countries. For Europe, shale gas imports from the United States are not commercially viable, but the United States is discovering that its resources are putting it in a highly advantageous position that could radically reshape energy policies around the world. As natural gas markets become increasingly globalized, the US will be in a position to compete with other energy-producing countries such as Russia. In this scenario, the US could use its resources to exert geopolitical influence – provided that US private sector companies are willing to cooperate in such a venture. The question for the EU is whether it will become a pawn in the international energy markets or a global player whose influence matches its significance as the world's third-largest consumer of energy.

1| http://ec.europa.eu/energy/security_of_supply_en.htm [5.6.2014]
2| http://www.eurogas.org/uploads/media/Eurogas_Statistical_Report_2013.pdf [6.6.2014]
3| The Nord Stream pipeline is owned and operated by Nord Stream AG. The Russian company Gazprom has a 51-per cent stake in the company. Other stakeholders are the French GDF Suez, the Dutch Gasunie as well as the German companies Wintershall and EON Ruhrgas.
4| Gazprom is the principal shareholder with 50 per cent. Further shares are held by the Italian company Eni (20 per cent) and the French EDF as well as Wintershall (15 per cent each).
5| Algeria was the first natural gas producer worldwide that used LNG technology for export purposes.
6| http://ec.europa.eu/energy/doc/20140528_energy_security_communication.pdf