David Koranyi is the Director of the Eurasian Energy Futures Initiative of the Atlantic Council. He has been a Non-resident Fellow at the Johns Hopkins University SAIS Centre for Transatlantic Relations since 2010. Mr. Koranyi speaks and publishes on the geopolitics of energy, and Hungarian, European, and US foreign and energy policy.

This paper is based on an earlier paper by the author published in Royal United Service Institute (RUSI) Journal in April, 2014 **https://www.rusi.org/publications/journal/ref:A536D0197D71EB/#.VdH837Kqqko**

European Natural Gas Security Challenges in the Wake of the Ukraine/Russia Crisis

David Koranyi

Geostrategic Context

Tectonic shifts are occurring in gas markets, globally. The focal point of demand shifts towards Asia, while market and trade patterns are changing in Europe and Eurasia. The U.S. is just beginning to fully grasp the consequences of its unconventional gas and oil revolution that has already dramatically reduced U.S. exposure to the political and economic volatility associated to dependency upon external sources of fossil fuel supplies – a fact with global repercussions. In 2005, the U.S. Energy Information Administration predicted that the U.S. will become the world's largest natural gas importer by 2015. Today, the U.S. is not only the largest natural gas producer globally[1] but is also planning to start exporting liquefied natural gas (LNG) at the end of this year.[2] North America (the U.S., Canada and Mexico together) may technically become energy independent by 2020[3]. Meanwhile, fossil fuel import needs will steadily increase in all major consumers outside the United States in the next two decades. Japan is totally dependent on imports of both oil and gas, and its dependence has only been exacerbated by the Fukushima nuclear accident in 2011. Even if China proves to be more

1 The US overtook Russia as the largest natural gas producer in the world in 2011.

2 US Energy Information Administration data.

3 Edward Morse, et al., Citi GPS, Energy 2020: North America, the New Middle East? (March 20, 2012), https://ir.citi.com/%2FSyMM9ffgfOZguStaGpnCw5NhPkvdMbbn02HMA05ZX%2BJHjYVS07GqhxF2wMk%2Bh4tv7DEZ5FymVM%3D.

successful in kick-starting and then ramping up its domestic shale gas production, despite the enormous difficulties on that front, it will still require massive quantities of imported natural gas to satisfy its fast-growing demand. India, finally, will be the demand growth epicentre in the next decade, heavily reliant on fossil fuel imports[4].

As conventional gas reserves in Europe become depleted, the continent's dependence on gas imports is also expected to grow further. The E.U. is already 60 percent plus dependent on gas imports. These numbers could go up as high as 85 percent by 2035[5]. Moreover, Europe depends on suppliers that are either unstable, or politically contentions – often both. Chief among them is Russia, whose aggressive behaviour in the Ukraine and its willingness to use energy as a weapon alarmed E.U. decision-makers from across the whole geographic and political spectrum and triggered a fundamental rethink of Europe's energy strategy, an analysis that is still ongoing.

The E.U.'s Energy Security Strategy[6] adopted by the European Council in October 2014 and its plans to build a 'European Energy Union' as outlined by the European Council in March 2015[7] both recognise the E.U.'s vulnerability on the gas front, and aim to address it via a wide set of measures that include energy efficiency and conservation, as well as a strategy of diversification. Natural gas demand forecasts widely differ for the medium- and long-term, but gas will continue to play a crucial role in Europe's energy mix and the E.U. will also remain a major natural gas importer for decades to come. Demand may even pick up again towards the end of this decade, if and when: Europe's emissions trading system is reformed; coal and in some cases nuclear are phased out from the energy mix; and gas is used – in the absence of a breakthrough in grid-scale storage technologies – as backup capacity for a growing renewable energy generation portfolio.[8]

To be sure, the E.U. has already made great strides towards improving security of supply in the wake of previous gas crises[9] and building an integrated and liquid gas market. Its second and then third energy packages successfully promoted competition and market principles such as unbundling and third party access in a vertically integrated industry prone to monopolistic abuse. This approach, pioneered by DG Competition in Brussels, is slowly bringing results as member states – however reluctantly – implement their provisions, and external suppliers find no alternative but to comply.

Yet Europe's gas market integration is still incomplete. As the Ukraine/Russia Crisis wages on, gas remains a headache for European leaders, especially in Central and

4 WEO 2013, International Energy Agency

5 Jose Manuel Barroso, **"Energy Priorities for Europe, Presentation of J.M. Barroso, President of the European Commission to the European Council of 22 May 2013,"** European Commission, 4, http://ec.europa.eu/europe2020/pdf/energy3_en.pdf ; International Energy Agency data

6 https://ec.europa.eu/energy/en/topics/energy-strategy/energy-security-strategy

7 http://www.consilium.europa.eu/en/press/press-releases/2015/03/conclusions-energy-european-council-march-2015/

8 International Energy Agency, World Energy Outlook 2014

9 With special regard to the crises ensuing gas disputes between Ukraine and Russia in 2006 and 2009 and Belarus and Russia in 2004 and 2007

South-eastern Europe, as an issue of economic competitiveness, social stability, and national security. Although gas prices have recently decreased on the back of the declining oil prices (oil-indexed contracts make gas prices follow oil prices by a 6-9 month delay typically), countries highly dependent on Russian gas, predominantly in Southeast Europe are still exposed to political blackmail by Moscow. This affects their domestic stability, foreign policy and ability to support joint E.U. positions on sanctions and other measures to pressure Russia to return to a path of normalcy.

Europe's external Supply Options and associated Security Risks

Gas will remain a security of supply issue also because Europe's indigenous gas resources are in decline. As evidenced by the chart below, Europe will need new external supplies to fill the gap between declining indigenous conventional production and demand.

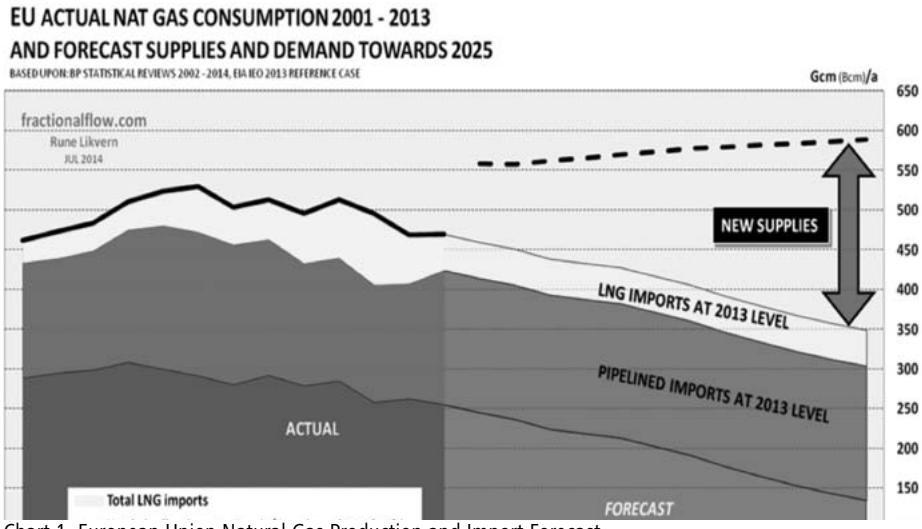


Chart 1. European Union Natural Gas Production and Import Forecast

The unconventional energy revolution in the U.S. has prompted some countries in Europe to look into their own unconventional resources. The United Kingdom, Poland, Lithuania, Romania, Hungary, and the Ukraine have all been actively exploring their underground materials in the past five years[10]. Yet the results have mostly been disappointing. The initial hopes were proven to be illusory, and most companies withdrew from the region, citing unfavourable geology as well as above-ground challenges, such as regulation and lack of social acceptance. Therefore, unconventional gas developments will unlikely be a panacea to Europe's gas sector vulnerabilities in the immediate or even in the medium-term future.

That leaves Europe with a heavy reliance on external sources of gas for at least the next two decades. On the bright side, the E.U. is in a good position to access external gas supplies, as it is surrounded by major producing regions and global gas reserves

[10] Bulgaria – similar to France – placed a moratorium on fracking.

and production is slated to largely keep up with demand in the coming decades, even if gas consumption is forecast to grow dramatically, especially in Asia[11].

At the same time, virtually all existing and prospective external gas supply sources and routes are fraught with political and security risks, which the E.U. will have to be acutely aware of as well as grapple with for decades to come.

Map 1: Europe's External Gas Supply Options

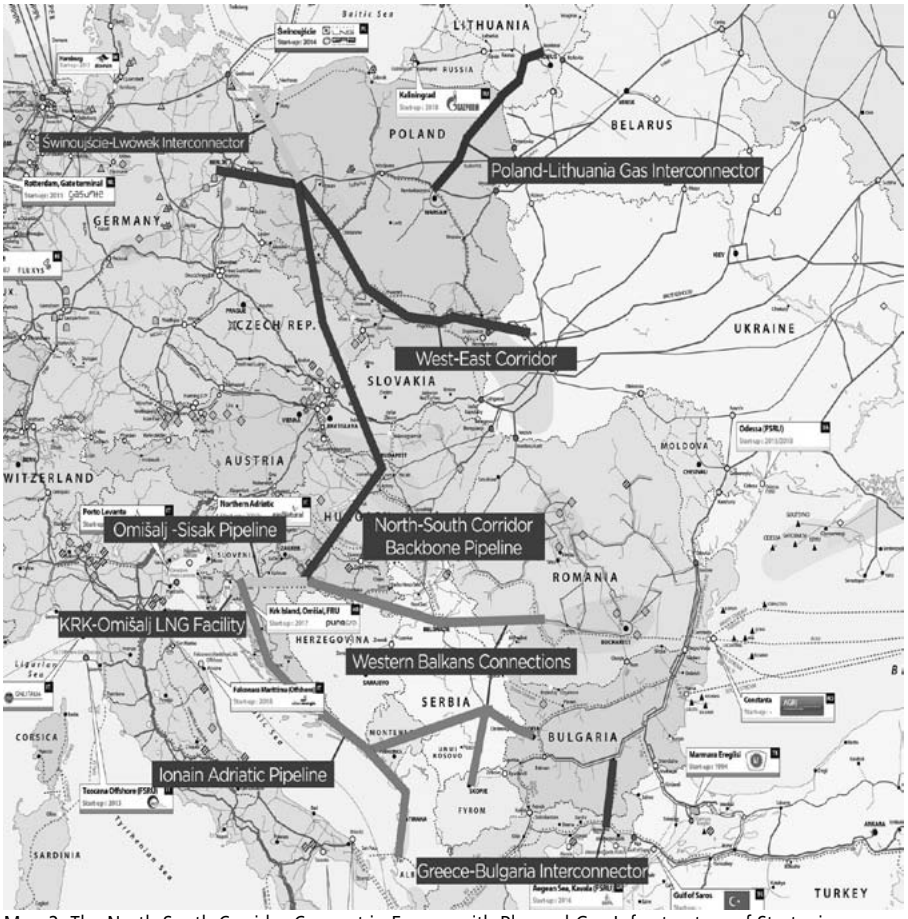
[11] World Energy Outlook 2013, International Energy Agency

Russia

Despite the ongoing crisis with Russia, it is hard to fathom a scenario where Russia will not remain one of Europe's key gas suppliers for the foreseeable future. Russia supplies around 130-150 bcm of gas to Europe annually that could not be easily replaced overnight or even in a longer period of time without significant additional economic costs. Russia still has the world's largest conventional natural gas resources in addition to significant unconventional potential. Despite Russian posturing, Russia's increasing attention to Asia shall likely not be a big concern for European gas supply security. On the contrary: to a large extent Russia is being squeezed between two buyers both of which enjoy positions of strength: an increasingly integrated European gas market on the one side and a fast-growing Chinese market on the other – both with multiple supply options. Meanwhile, Russian producers face increasing costs of gas production at home while they have to operate in a much more competitive environment in Europe and increasingly so in East Asia too, as piped gas options from Central Asia and Myanmar grow and LNG markets become more liquid in the region. As the first pillar of the E.U.'s dual strategy to lessen its vulnerability via market integration and supply diversification is beginning to yield results, Russia's Gazprom – also squeezed by sanctions – has to compete on an integrated market. That diminishes Russia's ability to play 'divide et impera' and apply political and commercial pressure on individual countries. This is critically important for the E.U. as a whole, and in particular for those countries and companies in Central and South-eastern Europe that are still overwhelmingly dependent on Russian supplies and exposed to monopolistic abuse. Countries in the region that are increasingly integrated into the European gas market already witnessed their wholesale gas prices decrease as European wholesalers renegotiated prices on all of their contracts with Russia's Gazprom. By contrast, those who are less integrated into the European gas market, especially in the Balkans, continue to pay higher prices in absence of alternative options.

In that context, the ongoing anti-trust investigation against Gazprom will further improve Europe's standing as it will act as a restraint on Gazprom's ability to exploit its monopolistic position, even if it leads to further political friction between Brussels and Moscow. Provided that the E.U. remains firm in its commitment to complete its internal market integration, ramping up its diversification strategy and strictly enforcing its own competition rules, Gazprom will eventually have no other choice but to accept the new strategic and commercial realities and readjust its business model accordingly. Even if Nabucco, the project that was widely considered as the silver bullet in supply diversification in Central and South-eastern Europe eventually failed, countries in the region already enjoy improved access to alternative supplies. This access is enabled through interconnectors – providing access to Western European gas hubs and hub pricing – that have been built throughout the region, as well as via new supplies from the Southern Gas Corridor, and through existing and planned LNG terminals providing access to global LNG markets. Completing this infrastructure is critically important to blunt the Russian energy weapon in this region as advocated by the Atlantic Council's report on 'Completing Europe – The North-South Corridor' published in November 2014[12].

[12] Completing Europe – From the North-South Corridor to Energy, Transportation, and Telecommunications Union – A joint



Map 2. The North-South Corridor Concept in Europe with Planned Gas Infrastructure of Strategic Importance

Yet Russia is still fighting a rearguard battle in trying to preserve its political influence that comes with control over supply sources and routes. Southstream, Russia's strategic pipeline plan to circumvent the Ukraine and lock in markets in Central and Southeastern Europe was a key element in that strategy. It failed miserably as Moscow had to understand that the European Commission is serious about enforcing its own laws[13]. Now in a revamped form – through the so-called Turkish Stream – Moscow wants to reintroduce the project through the backdoor. Turkish Stream – along with talk of the expansion of Nordstream, a pipeline bringing gas from Russia directly to Germany – is an attempt to circumvent the Ukraine and dry out transit through that route, while locking in markets in Southeast Europe. Yet the project faces many challenges and its full realisation remains far from certain.[14]

report by the Atlantic Council and Central Europe Energy Partners: http://www.atlanticcouncil.org/publications/reports/completing-europe-from-the-north-south-corridor-to-energy-transportation-and-telecommunications-union

13 See more in 'Gazprom – Just Follow the Law' by Ambassador Richard Morningstar, Founding Director, Atlantic Council Global Energy Center – http://www.atlanticcouncil.org/blogs/new-atlanticist/gazprom-just-follow-the-law

14 See more in **"The Impact of Turkish Stream on European Energy Security and the Southern Gas Corridor'** by John Roberts – http://www.atlanticcouncil.org/publications/reports/the-impact-of-turkish-stream-on-european-energy-security-and-the-southern-gas-corridor

Irrespective of the transit route debates, the critical piece in the E.U. strategy is to ensure that Russian gas has to compete with alternatives in any European market, thereby reducing the risk of supply disruptions and curtailing Moscow's political leverage. Putting the E.U.–Russia gas trade on a purely commercial footing and minimising the political elements could be an unintended, yet positive result of the current crisis.

The Southern Gas Corridor

The giant Azeri offshore gas field, Shah Deniz II will supply gas to Europe towards the end of this decade through a string of pipelines, collectively called the Southern Gas Corridor (SGC). The Corridor will open a fourth major gas pipeline route to Europe, a key element in the E.U.'s supply diversification strategy. While the SGC will rely solely on Azeri gas for its initial phase, beginning physical supplies in 2019, it could over time carry additional resources from the eastern Mediterranean (Israel, Cyprus), northern Iraq, and possibly from Georgia, Turkmenistan and Iran.

However, the challenges along the route that affect security of supplies are many, as are the obstacles to ensure that strategic volumes reach Europe through the SGC. The potential for renewal of conflict in the Caucasus portends dangerous consequences for Europe's energy security, especially with Russia's ability to stir up tension in the region. Azerbaijan, which will be the main supplier of the SGC also depends on hydrocarbon revenues. As, in the coming years, oil production plateaus in Azerbaijan, gas export revenues will be key to maintain stability in the country. Conversely, reduced income would likely contribute to social unrest in Azerbaijan, and could increase the probability of a renewal in the Nagorno Karabagh conflict with Armenia. Any resumption of violence would jeopardise the Baku-Tbilisi-Ceyhan (BTC) oil and the South Caucasus (SCP) gas pipelines, which pass very close to the current line of control separating Azerbaijani and Armenian forces. Georgia's internal political volatility is also key to both the BTC pipeline and the SGC. Without Georgia's cooperation, the SGC becomes defunct, Azerbaijan isolated and Baku diminished in its ability to conduct an independent, Western oriented foreign policy.

Central Asia may become another key gas supplier to Europe through the SGC. Turkmenistan in particular is very much willing to diversify its exports to the West as well. But that bumps up against a whole range of problems, including legal disputes over the status of the Caspian Sea. Furthermore China is the one that increasingly defines the geopolitical and economic landscape in Central Asia in large part because of energy. China is already purchasing large quantities of gas from the region and is investing heavily into upstream (the giant Kashagan oil field in Kazakhstan) and midstream (new pipelines from Turkmenistan, Uzbekistan and Kazakhstan) assets. These factors will hinder if not preclude European access to Central Asian gas resources for the foreseeable future, despite repeated attempts by the European Commission to open up that route.

Recent hydrocarbon discoveries in the Eastern Mediterranean Basin have prompted a re-evaluation of the strategic value of the region also from an energy perspective. Israel, Cyprus, and possibly Turkey and Lebanon have significant – albeit smaller than

previously thought – gas resources. Yet the lack of a Cyprus settlement, maritime boundary disputes and a range of other problems such as tensions between Turkey and Israel prevent the parties from agreeing on an export infrastructure that would ensure that some of the gas would actually end up in Europe. Though to date the discovery of gas resources has only exacerbated existing tensions in the region, a resolution of the Cyprus question and thus the unlocking of exports from Israel and Cyprus to Turkey and onwards to Europe could further boost the diversification value of the Southern Gas Corridor.

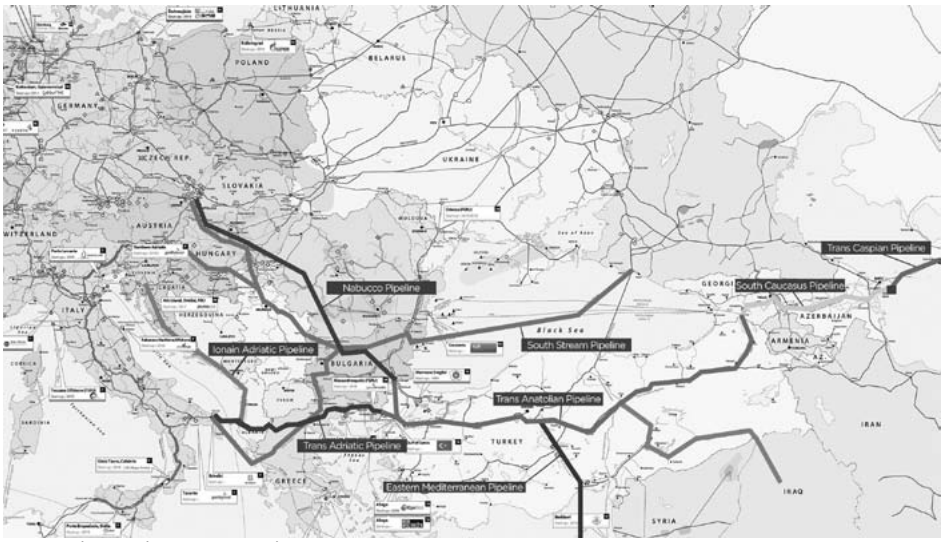
Iraq and especially Northern Iraq is central to Turkey's gas supply diversification strategy and of gas supplies which could eventually make their way to Europe. Yet Iraq is grappling with existential security challenges. Furthermore, increasing domestic gas demand and the inability to reach a lasting internal agreement between Baghdad and Erbil over hydrocarbon development and export strategy and revenue sharing continues to act as an impediment to Iraq becoming a major gas supplier to Europe. Regrettably U.S. and Turkish efforts are not complemented by a robust E.U. strategy towards Iraq as a potential supplier.

It is worth recalling that the original Nabucco concept was conceived to bring Iranian gas to Europe. A number of conditions are necessary for Iran to become a gas exporter: the nuclear deal struck in July 2015 must hold; a normalisation process with Iran must ensue; a major overhaul of Iran's domestic oil and gas production policies must occur, including the permitting joint ventures between Iranian and foreign firms. If these conditions are fulfilled then the ongoing developments in Iran's giant South Pars field and others could accelerate and Iran's gas production can be ramped up towards the second half of the decade. Exports could go towards Turkey and Europe, but will likely have to compete with demand from the Middle East and Pakistan, and even East Asia (where Iran could export gas in the form of LNG).

Another critical factor in the future of the SGC is the Trans-Anatolian Pipeline (TANAP) crossing Turkey. TANAP has served as the enabler to finally get the SGC moving, but it may end up being a missed strategic opportunity for both Turkey and Europe. The Corridor could be developed as a strategic project that goes beyond transporting gas from Azerbaijan and eventually becomes the fourth gas superhighway to Europe. TANAP will be controlled by SOCAR, Azerbaijan's state oil and gas company and will not fall under the E.U.'s Third Party Access rules, since Turkey is not a member of the Energy Community that extends E.U. rules and regulations to third party countries[15]. TANAP will thus enjoy control over gas transits via the pipeline in Turkey, including allowing transit of additional gas volumes from other sources and setting transit tariffs. In the 2020s Baku plans on shipping additional quantities of gas to Europe beyond the initial 10 bcm from Shah Deniz Phase II from prospective Caspian offshore fields such as Absheron, Umid and ACG Deep and may want to keep TANAP open to those volumes. Therefore, feeding Israeli or Northern Iraqi gas into TANAP and onward to Europe may not be an option and might lead

[15] Energy Community members outside the EU as of September 17, 2013: Ukraine, Moldova, Macedonia, Montenegro, Serbia, Kosovo, Bosnia and Herzegovina, and Albania.

to the development of a separate, dedicated pipeline infrastructure at significant additional costs. On the other hand, TANAP may well prove to be an enabler of additional non-Azeri gas transits so that early transit fees may help to make the expensive pipeline more bankable. In any case the inability of the E.U. to act in unison and see through the implementation of the original Nabucco concept (that would have been governed by E.U. law all along) having failed to provide more forceful diplomatic support and increased funding may prove to have been a strategic mistake.



Map 3. The Southern Gas Corridor Concept

North Africa is another key region to supply gas to the E.U. with its own set of challenges. Algeria is the third largest gas supplier of the E.U. and holds the fourth largest shale gas reserves globally. The country has so far escaped the political turmoil of the Arab Awakening. Yet it is worth recalling the unprecedentedly large-scale attack against the Amenas gas facility in early 2013 by Islamic militants from Mali. The Amenas attack and other domestic and regional security challenges raise the spectre of potential disruptions in the future. Moreover, rapidly increasing Algerian domestic consumption could also limit the country's export potential[16]. Libyan production is now mostly back up to pre-war levels, but both oil and gas supplies have been interrupted for a prolonged period of time during and after the conflict. Given the state of general political disarray and abysmal security, Libyan supplies will likely remain volatile. And although Egypt will play a lesser role in the future as an energy exporter, as its own domestic consumption increases, the Suez Canal will continue to play a strategic role for global energy trade routes and European oil and gas supply security, not least as a chokepoint for LNG supplies from the Middle East and elsewhere.

LNG will continue to play an important role in Europe's gas supply as the role of LNG

16 See more in 'Algeria field report: Developing shale gas in North Africa' by Tim Boersma – http://www.brookings.edu/blogs/markaz/posts/2015/03/24-algeria-field-report-shale-gas-boersma

increases in the global gas trade and new LNG projects crop up all over the world in the next ten years, such as those already projected in Australia, Tanzania, Indonesia, Papua New Guinea, Qatar, Nigeria, East Africa, Equatorial Guinea, Peru, as well as in Canada and the U.S. LNG brings about its own challenges from pricing to maritime security but it provides added liquidity and diversity to satisfy European gas demand. LNG from North America in general and the U.S. in particular could be of special significance for European gas supply security.

Conclusions

Europe will remain dependent on gas imports and there are still countries within the E.U. that are in a vulnerable position due exposure to a single supplier. At the same time, Europe is in a good position to fight back against monopolies and promote access to additional external gas supplies to improve both its security of supplies and market competitiveness. To ensure success, European strategy needs to be reinforced on both fronts. Equally, a European Energy Union built on solidarity and cohesion, with enhanced capacities to deal with the challenges, is required.

Significant progress has been made in the past few years in integrating the European gas markets as the first pillar of this strategy. But critical pieces, particularly the North-South Corridor in Central and South-eastern Europe remain unfinished. They require a coordinated approach as well as targeted E.U. and regional resources to ensure the timely completion of strategic infrastructure.

The second diversification pillar aims to develop multiple pipeline supply options and tap into a more liquid global LNG market to help boost the E.U.'s security of supply. This external component of the Energy Union's strategy is of critical importance. The E.U. will have to devote considerably more attention and resources to develop and stabilise its existing and future external supply routes, by promoting stability and security in North Africa, ensuring the realisation and eventual expansion of the Southern Gas Corridor, developing a new modus vivendi with Russia and devising a more proactive external E.U. energy policy with regard to the Eastern Mediterranean, Iraq, Iran, and Central Asia.

Maximising the effectiveness of the E.U.'s external energy policy will require enhanced authority and capabilities at the E.U. level, including an Energy Diplomacy Office as a joint bureau by the External Action Service and European Commission's DG Energy, modelled upon the U.S. State Department's Bureau of Energy Resources, and the ability of the European Commission to access and review all gas supply contracts with third parties.