

Sustainable Energy Security: A Transatlantic Opportunity

A report by David Livingston and Jeffrey Feldman



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HEINRICH BÖLL FOUNDATION

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Capstone Report of the Carnegie-Heinrich Boell Foundation Energy Security Series, Brussels, Warsaw, and Washington D.C.

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PREFACE

The last decade has been a turbulent one for energy markets. It has been characterized by insecurity and disorder, innovative disruption and the development of new markets, extreme volatility and new regulation, strong contradictions regarding climate policy, the use of energy as a political tool, enormous environmental disasters, and unprecedented progress towards an economy based on renewable energy sources. In the last ten years, Europe's gas supply has been repeatedly cut-off by Russia, the United States has become the world's largest producer of natural gas, renewable energies have become ever more competitive against traditional fossil fuels, oil prices have gyrated from a high of \$140 a barrel to under \$30, Iran has been brought in from the cold, and extreme weather conditions have devastated a great many livelihoods.

Energy is a complex, multifaceted issue that is relevant for a whole range of public policy objectives, be it secure energy, affordable energy prices, or decarbonized energy to tackle climate change. Energy security, in this context, is one of the most important aspects, indeed a basic one, but it cannot be successfully addressed in isolation from other public policy aims.

This capstone report of the Carnegie Endowment for International Peace and the Heinrich-Böll-Stiftung entitled "Sustainable Energy Security: A Transatlantic Opportunity" clearly demonstrates the interconnectivity of the different dimensions of energy policy. The report breaks down the policy silos, providing a comprehensive overview of some of the myriad of issues that any 21st century energy order faces. With workshops in Brussels, Warsaw and Washington D.C., this report has escaped the traditional energy security echo chamber by including in its considerations climate milestones, such as the COP21 Paris Climate Agreement, trade developments such as the transatlantic trade and investment partnership (TTIP), global governance as well as regional cooperation such as the link-up of regional carbon-markets and the creation of sustainable low-carbon energy partnerships.

It is a call to policymakers on both sides of the Atlantic for a reinvigorated, pro-active transatlantic partnership that harnesses the opportunities a comprehensive sustainable energy partnership holds. In this context, the report makes a number of interesting suggestions such as fostering transatlantic partnerships at the subnational level, promoting renewables and climate policies in the framework of TTIP, and harmonizing transatlantic approaches to energy innovations.

I sincerely hope that the report may help to strengthen the transatlantic discussion on the old and new dynamics shaping the energy order. We definitely need more shared transatlantic space for stronger foresight discussions in the field of energy – be it with regards to the linkages between energy and finance, energy and digitalization or energy and cyber security.

— Reinhard Bütkofer, Member of the European Parliament

In 2015, the Carnegie Endowment for International Peace and the Heinrich Böll Foundation held three workshops to explore the transatlantic relationship on energy security. The United States and Europe are often considered to be the architects of certain modern-day global energy governance norms that guide countries towards policies to provide secure, reliable and affordable energy supplies – also referred to as energy security.

The purpose of the workshops was to evaluate and recommend options for how to bring together the security and energy communities on both sides of the Atlantic and frame a new vision for sustainable energy security going forward. The authors address but avoid getting caught up in age-old debates about the choice of energy independence versus interdependence and the false choice between providing energy security versus an energy system that addresses the global climate challenge.

The conveners have concluded that despite the immense changes in global energy markets, regional energy balances, technological evolution, and the balance of policy objectives, transatlantic cooperation to establish and deliver upon sustainable energy security is still an important goal; such collaboration could serve as a positive and leading example for the evolution of future global energy norms and actions. In fact, they suggest, these changes underpin the very rationale for a new vision of collective security.

It remains an open question whether or not the energy security concerns of today's energy system are better or worse than the energy security concerns of tomorrow's energy system, especially one that is transitioning to a new, lower carbon position. Resolving some core energy security issues of today does not necessarily mean countries are more resilient to future energy security threats or energy-related foreign policy entanglements. While both energy security and climate change are broad strategic issues that occupy the minds of policymakers in the energy, security, and foreign policy worlds, the pathway for navigating the challenges inherent in a transition to a secure, low carbon future are potentially more challenging than either community realizes. It will be important for the private sector to play a role in informing this new vision for transatlantic cooperation on energy security, as the market realities of a given energy system have often trumped or complicated the strategic imperatives of many policymakers. Unintended consequences of well-meaning policy initiatives are also important to factor into any new strategic approach.

Finally, a key metric for success in this new approach will be how well it engages and includes other major economies as well as the emerging economic powerhouses of tomorrow. The U.S. and Europe are indeed large markets and important players in the global energy governance framework, but the global balance of GDP and energy growth has shifted east and the governing architectures put in place in the governments and markets with growing energy consumption and trade will have the wind at their backs relative to the U.S. and Europe. The findings of this paper could apply more broadly to these other regions if carried out more strategically. It remains to be seen whether the balance of activity within the transatlantic context is enough to influence or sway the rapidly evolving behavior of the new emerging energy powerhouses.

This report provides a timely exploration of the transatlantic approach to energy security and climate issues with an eye toward the changing international energy,

security and climate context. Much more thinking can and should be done on this front and is likely to emerge in the coming years. In a time of such great and unpredictable change, open communication, common principles, and flexible and adaptable responses will provide durability and determine the success of such initiatives. This report provides some creative and important ideas about how such an approach might be pursued.

— Sarah Ladislaw, Director, Energy & National Security Program, Center for Strategic and International Studies

EXECUTIVE SUMMARY

Energy security, at the intersection of energy and security concerns, is best achieved in the framework of climate change mitigation by promoting sustainable interdependencies rather than energy independence. The threats arising from climate change are increasing in scope and volatility, alongside the affordability of the means to mitigate these threats. With this in mind, the issue of climate change can no longer be justifiably maintained as a minor consideration in the tripartite goal of maintaining a secure, affordable, and sustainable energy supply. Sustainable interdependencies, rather than absolute independence, recognizes that energy security and climate security are indeed dual public goods, and are goods that can only be provided by stable, secure partners with a common vision of the future global order and global energy system.¹

The global rules and norms built by Europe and the United States in the aftermath of World War II are in no way immutable features of nature; they require maintenance and rejuvenation for their continuation. Never has this been more true, with rising powers such as China - or resurgent ones such as Russia - now actively offering competing visions of global order and new conceptualizations of global public goods (e.g., the “Belt and Road” initiative or the Asian Infrastructure and Investment Bank). While not all of these alternatives will be unwelcome developments, nor necessarily inconsistent with sustainability or security concerns, there is no doubt that Europe and the U.S. have a responsibility to shape the way that the world responds to security threats both acute and chronic, including climate change. The transatlantic relationship between Europe and the U.S. must build out new, sustainable interdependencies to underwrite the values that each holds so dear, keeping in mind the following guiding principles:

- Define a proactive, rather than reactive, vision for the future of energy security in the transatlantic space. A vision circumscribed to the absence or attenuation of threats is not sufficient to stimulate more innovative and open thinking in government and the broader policy communities of capitals on both sides of the Atlantic. Instead, a new vision is needed in the energy sector that recognizes the rapidly shifting economics, ownership structure, and transition from energy “goods” (i.e. megawatt hours and megajoules) to energy “services” (mobility, reliability, sustainability). This vision would play to the strengths and innovative capacity of the EU and U.S., rather than relying solely on traditional metrics of energy strength, such as domestic production or pipeline capacity.

¹ For more on this idea, see also: David Koranyi, “A US Strategy for Sustainable Energy Security,” Atlantic Council, forthcoming.

- Develop, in relatively energy-poor and fossil-fuel-rich states, cutting-edge energy data and energy services capacity that will help them thrive as renewable electricity supplants carbon-intensive and politically contested natural gas. Done right, large-scale investment in renewables can serve a similar function for the transatlantic space as a sovereign wealth fund has played in oil-rich states. It transfers wealth (in the form of a stable, zero marginal-cost energy supply) to future generations, while simultaneously working to mitigate the risks (in the form of climate-related disruption and destruction) that those future generations will be exposed to.
- Increase U.S. support — in rhetorical and material terms — for the sustainable energy components of the EU’s Energy Union. The U.S. has thus far been an advocate — rightly — of greater connectivity and the completion of the internal energy market, but still balances too much of its focus towards traditional energy diversification options — such as coal or gas — in vulnerable parts of Eastern Europe. Renewable energy, energy efficiency, and the reduction of corruption have the potential to be equally transformative long-term outcomes that will help to shrink these vulnerabilities, and with them the exposure of the U.S. and other parts of Europe to concomitant security concerns.
- Foster transatlantic partnerships at the sub-national level — e.g. regional carbon-market linkages — that can serve as hubs of innovation more nimble than the established EU-U.S. collaborations. These “laboratories of solutions” can also serve to quickly model the strengths and flaws of various approaches to expand the base of empirical experience when considering how to address similar issues at the broader national or transatlantic level.
- Realize the potential of TTIP by going beyond liquefied natural gas (LNG) market liberalization and establishing rules clarifying the trade of energy goods and services, a framework for accommodating new business models and market entrants in the energy sector, as well as frameworks for third-party agreements that do not eschew climate considerations.
- Finally, place greater emphasis on harmonizing transatlantic approaches to energy innovation. Even as the balance of economic growth, manufacturing, and energy demand has rapidly shifted to emerging markets, the EU and U.S. still maintain significant inertial advantages — in the form of human capacity, supporting institutions, and dynamic markets — to underpin world-leading advanced research and innovation. This is an underemphasized dimension of EU-U.S. partnership, and should be enhanced in future years through the greater involvement of the private sector and tech-savvy civil society groups.

INTRODUCTION

Europe and the United States together face shifting dynamics in issues of both energy and security: renewed concern regarding Russia's leverage over European gas supply, the market and geopolitical responses to the North American "shale revolution", and outmoded energy infrastructure and institutions that have yet to fully take account of the risks and imperatives presented by climate change. Alongside and in conjunction with these changes, the European Union and the United States are building new mechanisms that involve the integration of energy policy with foreign policy, such as the nascent EU's Energy Union project and the prospective US-EU Transatlantic Trade and Investment Partnership (TTIP). Though it is clear that energy policy and foreign policy are increasingly intertwined, as Shahrazad Far and Richard Youngs put it, "the *direction* of linkage between energy policy and foreign policy remain unresolved."²

Considering the intersection of energy policy and foreign policy within the frame of climate-change mitigation offers a coherent and comprehensive approach to navigating the policy objectives in each policy realm. The rapid transformations in fossil-fuel production and consumption continues to shift oil and gas trade flows, rebalancing market power and causing instability in resource-rich states neighboring Europe. Climate change is a long-term, incremental, yet highly pernicious global challenge that demands a rapid deployment of clean, distributed, resilient energy technologies just when other more near-term security challenges are threatening to reinforce and expand the incumbent fossil fuel system. The effects of climate change have already intensified gruesome conflicts in Africa and the Middle East that have spilled over into Europe.

Over the course of 2015, the Carnegie Endowment for International Peace and the Heinrich-Böll-Stiftung convened three workshops — in Brussels, Washington D.C., and Warsaw — to examine the challenges and opportunities these issues' shifting dynamics pose for greater understanding and collaboration between the energy and security communities on both sides of the Atlantic. The organizers sought to include participants not only with "energy security" perspectives but also with those with experience in the energy field as well as the broader security and foreign policy field. At the center of this approach was an effort to escape the echo chamber and engage communities of scholars and policy makers that are not accustomed to working with one another on a regular basis.

The goal of this short synopsis is to spark a dialogue that can illuminate new aspects of these fields' intersections. Below, we discuss the key thematic currents that ran through the three workshops, and we attempt to build connections among them to make use of the surge of opportunities presented by an evolving energy sector and a shifting geopolitical landscape.

² Shahrazad Far and Richard Youngs, *Energy Union and EU global strategy: The undefined link*, Swedish Institute for European Policy Studies, November 2015, 6. http://www.sieps.se/sites/default/files/sieps %202015_5_rapp.pdf.

1. Arc of Instability, or Age of Opportunity?

The security challenges facing Europe can be characterized as an “arc of instability,” a reference to migration and conflict-related issues in the MENA (Middle East North Africa) region, Russia, and Ukraine.³ This arc of instability not only cradles the EU’s geographic borders, it also serves to link what previously might have been understood to be disparate policy concerns: the effects of climate change, the growing refugee crisis, European access to energy resources, the terrorism of ISIS and its affiliates. Yet, even given the increasing recognition that the effects of climate change has contributed to conflicts in Africa and the Middle East, the EU has yet to take on climate-change mitigation as a strategy for addressing these conflicts over the long term.⁴

Furthermore, given the instability of regimes whose revenue is reliant on fossil fuel consumption, simply developing an internal climate strategy will not ensure the provision of the global public good that is a stable climate. While the European energy-security response to this arc of instability has rightfully included an extensive focus toward internal policies, it has done so at the risk of under-specifying its geopolitical perspective.

Where do opportunities lie to engage other states — European, Eurasian, MENA, Transatlantic — in climate-focused energy security policy? In addition to intra-EU dialogues surrounding the Energy Union vision to make the EU energy supplies more diverse and secure, the EU is carrying out a number of dialogues — from the Transatlantic Trade and Investment Partnership (TTIP) negotiations to the EU-U.S. Energy Council and beyond — that may promise further mechanisms for energy and policy cohesion across the Atlantic. Observers, critics, and advocates alike have discussed TTIP with respect to the role of U.S. LNG in relieving anxieties regarding the security of Europe’s gas supply; but, as we discuss in further detail below, U.S. LNG is less important to TTIP than negotiators have made it out to be, since the EU’s status as a US trade partner will allow exports *de facto* automatically.⁵

There are, of course, still opportunities to make TTIP a strong and meaningful agreement for strengthening Europe’s energy security, including, for example, by making progress on mutual recognition of relevant standards and lowering barriers facing renewable energy.

³ “The Road to Warsaw and Beyond,” Speech by General Petr Pavel, NATO, October 11, 2015, http://www.nato.int/cps/en/natohq/opinions_123879.htm.

⁴ John Kerry, “Remarks on Climate Change and National Security” (Old Dominion University, November 10, 2015), <http://www.state.gov/secretary/remarks/2015/11/249393.htm>.

⁵ David Livingston, “TTIP’s Lack of Energy,” *Strategic Europe* (blog), Carnegie Endowment for International Peace, March 24, 2015, <http://carnegieeurope.eu/strategiceurope/?fa=59478>.

Crucial here is the proposition – perhaps counterintuitive to some – that greater transatlantic trade in energy resources is no longer sufficient, on its own, to fully realize opportunities to improve EU and U.S. energy security. Given new technologies and business models in the energy sector, some of the largest fruits of transatlantic energy cooperation will also involve progress towards aiding each power in tapping its own alternative, homegrown energy resources (including energy efficiency), as well as a better mutual understanding of how each power interprets the concept of “energy diplomacy” in today’s changing world. This more nuanced definition of cooperation — including mutual assistance towards self-sufficiency and common understanding of energy as a diplomatic tool — can also help the EU and U.S. to focus attention on the root causes of its energy security woes.⁶

⁶ For a delineation of the EU's energy diplomacy concept and its goals see <http://data.consilium.europa.eu/doc/document/ST-10995-2015-INIT/en/pdf>.

2. Independence, Interdependence, and Instability

In order to understand these root causes of energy-security concerns, we must understand by what criteria the EU and the U.S. judge successful energy security policy. It is commonly believed that the U.S. energy policy is — at least rhetorically — singularly focused on achieving energy independence. The relative abundance of U.S. fossil energy resources, especially with the recent rapid development of shale (or “tight”) oil and gas, now offers the possibility of realizing this independence (at least in net terms) that it purportedly seeks. The EU, with its diminishing oil-production capacity and its relative reliance on Russia for natural gas,⁷ conceives of its position in the global energy space as defined, by necessity, by interdependence and institutional soft power. It is critical that, moving forward, *both* the U.S. and the EU ultimately seek interdependencies that are stable and resilient, rather than volatile and precarious.

The EU’s energy relationship with Russia is one such interdependency. Russia’s fossil-fuel economy is dominated by two abundant resources: gas and oil.⁸ The economics and geopolitics of these two resources, however, are quite different from one another. Considering each helps illustrate the ways in which instability arises not only from Europe’s dependency on Russian gas, but also from Russian dependency on the European oil market for its revenues. This case study in volatile interdependency will illustrate the need not just for energy partnerships and coalitions but for *sustainable, low-carbon* energy partnerships.

Russia’s gas monopoly, Gazprom, supplies around 30% of Europe’s natural gas. Its occasional use of its gas resources as a political tool — notably in 2006 and 2009 when Russia temporarily cut its supply to Europe after failed price negotiations with Ukraine⁹

⁷ See, e.g., Claire Milhench, “Low oil price domino effect to shut more North Sea fields early,” *Reuters*, July 14 2015, <http://www.reuters.com/article/us-northsea-oil-decommissioning-idUSKCN0PP02920150715#y0jDwgBXbLzROVvY.97>.

⁸ Andrey Movchan, “Just an Oil Company? The True Extent of Russia’s Dependency on Oil and Gas,” Carnegie Endowment for International Peace, September 14, 2015. <http://carnegieendowment.org/2015/09/14/just-oil-company-true-extent-of-russia-s-dependency-on-oil-and-gas/ihtg>.

⁹ Jonathan Stern, *The Russian-Ukrainian gas crisis of January 2006*, Oxford Institute for Energy Studies, January 16, 2006. <http://www.oxfordenergy.org/wpcms/wp-content/uploads/2011/01/Jan2006-RussiaUkraineGasCrisis-JonathanStern.pdf>; Simon Pirani, Jonathan Stern, and Katja Yafimava, *The Russo-Ukrainian gas dispute of January 2009: a comprehensive assessment*, Oxford Institute for Energy Studies, February 2009, <http://www.oxfordenergy.org/wpcms/wp-content/uploads/2010/11/NG27-TheRussiaUkrainianGasDisputeofJanuary2009AComprehensiveAssessment-JonathanSternSimonPiraniKatjaYafimava-2009.pdf>.

— has been a key motivator behind Europe's recent push to develop an "Energy Union".¹⁰ Though Russian gas is a crucial — and dominant — component of Europe's gas supply and Eurasian geopolitical dynamics, it accounted for only 14% of Russia's 2013 export revenue, compared to the 54% of export revenue represented by Russia's crude oil and petroleum product exports.¹¹

The market for oil is more robust than the market for gas — there are many buyers and sellers, none of whom can unilaterally set a price. (This is, in part, due to Europe's limited pipeline and LNG import infrastructure which disallows more extensive long-distance trading that would allow for fewer regional political disputes.) Even though Russia's market power is relatively low in European oil markets, however, 72% of Russia's crude-oil exports went to Europe in 2014; this figure suggests just how crucial a role Europe plays for a country whose taxes on mineral extraction and exports contribute 50% of its federal budget revenue.¹² In the realm of oil exports, Russia has much less political leverage, which reflects the bi-directionality of its interdependent relationship with Europe.

Even in the midst of significant regional tensions, oil supplies to Europe have not been significantly disrupted. In 2007, as a pricing dispute between Belarus and Russia led to a temporary shut-down of the Druzhba pipeline (supplying one-tenth of Europe's oil), key destination markets such as Germany and Poland were largely unaffected due to their refineries' ability to draw on their inventories and arrange for alternate supply sources from nearby storage and other infrastructure.¹³

By contrast, Europe experienced historic petroleum supply disruptions in 2015 due not to geopolitics, but instead, at least in part, to changing climate patterns. With the Rhine River experiencing record low water levels from mid-2015 that significantly restricted navigation for large vessels such as fuel barges, upriver markets in Switzerland and Southern Germany experienced severe disruptions throughout the second half of the year.¹⁴ Meanwhile, downriver locales in the Netherlands and Belgium saw significant stock build-ups, massively distorting price spreads for fuel delivery in various Rhine-dependent markets.

These examples illustrate the instability that arises not only from Russia's exercise of its monopoly power, but also from the non-human forces to which human societies are increasingly subjected. The mutual energy security of both Europe and Russia is predicated on interdependency with the climate, albeit on a much less politically malleable timescale. There is a constitutive and mutual instability affected by

¹⁰ Georg Zachmann, "The European Energy Union: Slogan or an important step towards integration?" *Bruegel* (blog), September 27 2015, <http://bruegel.org/2015/09/the-european-energy-union-slogan-or-an-important-step-towards-integration/>

¹¹ See <https://www.eia.gov/todayinenergy/detail.cfm?id=17231>

¹² See <https://www.eia.gov/todayinenergy/detail.cfm?id=17231> and <http://www.eia.gov/todayinenergy/detail.cfm?id=22392>

¹³ Keith Crane, *Imported Oil and U.S. National Security*, Rand Corporation, pp. 29-30, 2009. http://www.rand.org/content/dam/rand/pubs/monographs/2009/RAND_MG838.pdf

¹⁴ U.S. Energy Information Administration, "Record low water levels on Rhine River are disrupting fuel shipments," *Today in Energy*, November 17, 2015, <https://www.eia.gov/todayinenergy/detail.cfm?id=23792>

relationships built on fossil fuels. Simply developing new fossil-fuel resources will not engender the stability and long-term resiliency that Europe seeks — such stability would be better achieved by focusing greater attention on interdependencies underpinned by renewables and well-integrated, competitive markets.

3. Energy Union: In the Eye of the Beholder

Regulatory action has a crucial role to play in energy-security policy, and, if it consciously takes aim at the demand-side causes of Europe's energy issues, the EU's fledgling Energy Union could facilitate the enactment of such regulation. In doing so, it could also expand the EU's operating space for foreign and security policy. Though an energy transition to renewable power introduces its own security-of-supply concerns, greater interconnectivity has the potential to reduce risks of intermittency.

Think tank reports and EU mandarins have long discussed the ideal of optimizing the security, growth, and environmental profile of the European space through full linkage and coordination within its energy system. It is only recently that current events have provided the catalyst necessary for the European Commission to publicly formulate an Energy Union proposal.

In its earlier articulations by the government of then Prime Minister of Poland, Donald Tusk, the Energy Union was a mechanism squarely aimed at buttressing the EU's security of supply. The aim was to establish a single EU natural-gas purchasing authority to match Gazprom's monopoly power as a seller with the theoretical monopsony power created through the consolidation of all EU gas demand.¹⁵ Tusk's original conceptualization of the Energy Union analogized it to the EU Banking Union, initiated in 2012 in response to the recent financial crisis, and also included a generous number of references to the role that fossil resources could play in weaning the continent from dependence on Russian (likewise fossil) energy supplies.

Like so many policy concepts whose rhetoric expands faster than their substance, the concept of an Energy Union soon saw the visions and agendas of other actors, at both the EU and member state level, grafted onto it. Renewables advocates, not least in the Commission itself, viewed it as an opportunity to more muscularly implement the market reforms and infrastructure linkages needed to allow higher penetrations of solar and wind resources in years to come. Countries mulling new pipelines or LNG terminals hope to capitalize on the opportunity to attract new funds or political support from the EU to push the new infrastructure forward. Germany sees in the nascent Energy Union idea the seeds of a continent-wide *Energiewende* (clean energy transition), and hopes to export some of its hard-earned lessons. Even outside partners, from Algeria to Azerbaijan to Norway and beyond, are watching developments closely in the hope of dovetailing their own export strategies with an evolving set of rules and norms in the European market.

¹⁵ Donald Tusk, "A united Europe can end Russia's energy stranglehold," *Financial Times*, 21 April 2014

The Energy Union, in other words, took shape in the first instance as a bit of a Rorschach test, allowing every interested actor to see reflected in it their own unique perspectives, endowments, and strategic desires. At the macro level, it has been enabled not so much by historical inertia but instead by two key trends at the margin. Leaders in Eastern and Central Europe have recognized that aspirations to reduce their dependence on Russian gas and increase their access to other foreign suppliers can only be achieved with far greater levels of integration *among* European member states. Concurrently, it has become increasingly clear to leaders in Western Europe that large ambitions in the realm of climate change and renewable energy are only likely to be met, at a cost acceptable and endurable for European society, with far more liberalized and efficient flows of energy within the European market.

As the project continues to unfold at the outset of 2016, its current contours already show a marked evolution from earlier forms. Gone is the notion of a single gas purchasing authority that would have encountered a number of tensions with the seemingly contradictory pursuit of market liberalization and competition through earlier regulatory foundations such as the EU's Third Energy Package. Similarly, the atomization of Energy Union objectives and authorities into individual "pillars" appears to have disappeared, replaced by reference to "mutually-reinforcing and closely interrelated dimensions". The shift may simply be a rhetorical one, but it suggests that European policymakers understand the need for efforts such as energy sector decarbonization, the EU single market, and security of energy supply to be pursued in a coordinated fashion from the outset, rather than being siloed in their respective Directorates and stitched together by an awkward, post-hoc process. Finally, while two instances of enhanced governance have already been borne from the Energy Union project — the empowerment of the Agency for Cooperation of Energy Regulators (ACER) and the European Networks of Transmission System Operators (ENTSOs) — much remains to be done to fulfill the promise of an "integrated governance and monitoring process."¹⁶

The Energy Union concept has thus far been mobilized to build strong intra-EU networks and to forge a coherent energy strategy by, for example, collectively determining — or at a minimum providing oversight of — the terms of individual states' bilateral contracts with Russia. Already, these signals from the European Union are beginning to have impacts even without concrete policy follow-through, with Gazprom starting to experiment for the first time with extensive spot-price based gas auctions via the St. Petersburg trading hub.¹⁷ Gazprom has indicated that it may soon move to sell up to 10 percent of its gas through spot auctions, in a move to better accommodate Europe's desire to move away from long-term oil-indexed gas contracts towards a more dynamic, hybrid pricing environment that mixes long-term supply contracts with extensive spot pricing. Despite these early signs of progress, however, larger questions remain. What remains to be seen is the extent to which cleaner, renewable, decentralized energy

¹⁶ European Commission, *A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy*, COM (2015) 80, 25 February 2015.

¹⁷ See: <https://next.ft.com/content/ad9a8a5e-5556-11e5-8642-453585f2cfcd> and <http://www.platts.com/latest-news/natural-gas/london/russias-gazprom-edges-towards-flexible-gas-market-26210724>

sources — which offer benefits across every dimension of the Energy Union's goals — will be embraced in the years ahead.

Part of the challenge of any EU-wide policy strategy is that it will have to account for and navigate the domestic political concerns of its member states in order to realize the benefits of collective action. This has so far not been a strength of the Energy Union discussions. For one, Germany and Austria continue to negotiate with Gazprom on the Nord Stream II gas pipeline, which some believe could undermine the EU's aim to diversify its sources and preserve Ukraine's role as a gas transit state.¹⁸ In the UK, austerity policies have drastically reduced subsidies for renewables at the same time as climate policy has ratcheted down coal-power production. This has lead to a crisis of incoherence whereby the country is now subsidizing emissions-intensive diesel generators for everyday power.¹⁹

On the other hand, a number of Central European member states are increasingly locked into large, centralized energy sources as they aim for greater energy autonomy. While Hungary and the Czech Republic plan to add nuclear capacity, which will increase its citizens' access to energy in the short run, the cost competitiveness of these plants is poised to diminish over the coming decades as renewable resources gain traction across Europe. These projects have also been the subject of significant corruption accusations, calling into question the economic basis for their construction until governance and transparency are improved, and until the plants' role in a diverse low-carbon future generation portfolio is clarified.²⁰

Like Hungary, Poland is seeking to strengthen its energy autonomy. Indeed, it was former Polish Prime Minister Donald Tusk, now president of the European Council, who spurred the movement toward an Energy Union for this very reason, with an eye to Poland's coal resources.²¹ The country's coal industry is well-known for its significant influence on domestic politics, even as coal continues to shrink its share within the country's increasingly diversified economy. The subsidies the Polish government provides for an increasingly uncompetitive industry — even buying 6 million tonnes of unsold coal in 2015 — attests to the fossil fuel's uncertain outlook.²²

However, the government's attitude toward coal belies the opportunities Poland faces to develop a more sustainable energy strategy that works in concert with its broader goals of economic development and energy security. For example, Poland is

¹⁸ See <http://carnegieeurope.eu/strategiceurope/?fa=62161>

¹⁹ See Kiran Stacey, "UK turns to diesel to meet power supply crunch," *Financial Times*, November 3, 2015, <http://www.ft.com/intl/cms/s/0/0f664c78-821b-11e5-8095-ed1a37d1e096.html?siteedition=uk#axzz3tNJHkwIR>.

²⁰ Andrew Byrne and Christian Oliver, "Hungary's Russian-built energy plants rebuked," *Financial Times*, November 19, 2015, <https://next.ft.com/content/ddd83bfa-8ed9-11e5-a549-b89a1dfede9b>

²¹ Andrew Kureth, "Why Poland still clings to coal," Politico.eu, October 17, 2015, <http://www.politico.eu/article/why-poland-still-clings-to-coal-energy-union-security-eu-commission/>

²² Agnieszka Barteczko, "Poland to buy coal from stockpiles to help mines – PM," *Reuters*, December 4, 2015, <http://www.reuters.com/article/poland-coal-idUSL8N13T2YO20151204#VW0HyCflHl3wX6M.97>

well-positioned to become a key player in Europe's data-oriented and services-oriented energy future, given the growth of major technology company offices (e.g. Google, Deutsche Telekom). The development of this industry will rely on forward-thinking, multilateral policymaking: crafting legal frameworks (in TTIP or otherwise) regarding data use, alongside efforts aimed at energy efficiency, could facilitate development that is sustainable environmentally, economically, and geopolitically. It is important to address the anxieties and implied labor market adjustments that would come with diversifying energy supply away from coal. In some cases complementary jobs in the emerging clean energy sector may readily present themselves, while in other cases direct state intervention will be necessary to re-skill and re-integrate a workforce for whom coal is not only a source of economic livelihood, but also a source of culture and identity.

How can the EU emphasize the greater benefits of collective action in the face of pressing energy security issues in individual member states, particularly those that are relatively less wealthy? Greater connectivity between Member States and key infrastructure networks is poised to provide at least a partial solution to some of the constraints and price asymmetries, particularly in Central and Eastern Europe. This is not a regional issue, but indeed an inter-regional issue, with the role of traditional energy "islands" such as the Nordic and Baltic area poised to play a crucial role in expanding the energy options (and not to mention the low-carbon portfolio) available to Central and Eastern European states. But this process can also be catalyzed through effective partnership with the United States. Both the EU and the United States must work more diligently on the rules and standards that can facilitate the development of a modern, clean, and intelligent energy system across both sides of the Atlantic.

4. Transatlantic Developments

Though the COP 21 deliberations took center stage as the most consequential multilateral climate negotiations of 2015, a little-discussed transatlantic agreement set the scene for the Paris Agreement. In June, the G7 declared that decarbonizing the global economy would be necessary by the end of the century to avoid catastrophic warming.²³ The declaration also affirmed the G7's commitment to supporting the Green Climate Fund, insurance for vulnerable populations, and access to renewable energy in Africa. Though the language of "decarbonization" was ultimately struck from the Paris Agreement, the G7's declaration, along with pressure from the so-called "High-Ambition Coalition" organized by several small island nations, Europe, and the U.S., helped put the language of decarbonization on the table.²⁴

To what extent can the G7 action foster sustainable interdependencies that can address the energy and security concerns now facing the EU and the U.S.? Even though the G7 goal may have proved influential in the COP discussions, critics of the declaration are skeptical that each country will earnestly carry out efforts to reach a goal that is nearly 80 years in the future. Indeed, Canada and Japan, in view of their respective energy abundance and dearth, pushed to extend the decarbonization goal from 2050, as German Chancellor Angela Merkel had intended it to be, by 50 years.²⁵ Further, the renewed discussion of fossil-fuel subsidies only highlights the failure of the group to achieve its members' years-old pledge to end them.²⁶ The G7 can achieve the climate goals it has set for itself if it builds an architecture for collaboration that goes beyond the few high-level meetings with overstuffed agendas and introduces regulatory certainty for the most emissions-intensive sectors.

A lesson of the COP outcome, however, is that the nature of multilateralism is changing. The Intended Nationally Determined Contributions (INDCs) which, even if they will fail to avoid catastrophic warming, have turned the UN climate compliance process on its head and as such may allow for more ambitious achievements in the coming years.

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- 23 White House Office of the Press Secretary, "G-7 Leaders' Declaration," press release, June 8, 2015, <https://www.whitehouse.gov/the-press-office/2015/06/08/g-7-leaders-declaration>.
 - 24 See: "Adoption of the Paris Agreement," December 12, 2015, <https://unfccc.int/resource/docs/2015/cop21/eng/109r01.pdf>, and "Draft Paris Outcome [Version 1]," December 9 2015, <http://unfccc.int/resource/docs/2015/cop21/eng/da01.pdf>.
 - 25 David Livingston, "The G7 Climate Mandate and the Tragedy of Horizons," Carnegie Endowment for International Peace, February 4, 2016, <http://carnegieendowment.org/2016/02/04/g7-climate-mandate-and-tragedy-of-horizons/itjk>.
 - 26 Elizabeth Bast, et al., *Empty Promises: G20 Subsidies to Oil, Gas, and Coal Production* (ODI, November 2015), <http://www.odi.org/publications/10058-production-subsidies-oil-gas-coal-fossil-fuels-g20-broken-promises>.

Further, sub-national entities made unprecedented commitments to act on climate.²⁷

These shifts in strategy are instructive for the development of transatlantic sustainable-energy partnership built up from a sub-national level. These more nimble affiliations can create laboratories for policy innovation that can subsequently be scaled up to the national level, as appropriate. (After all, it may be that a patchwork of interdependencies is more effective at achieving climate-change mitigation than larger regimes of cooperation.)

Carbon-market linkages can serve as one such mode of affiliation across the Atlantic, particularly as the states formulate their strategies for implementing the Clean Power Plan. California has already implemented a successful energy-sector cap-and-trade program; in 2014, California linked its market with Quebec's similarly designed system.²⁸ Though coordinating across languages, time zones, currencies, and enforcement regimes across jurisdictions can complicate market linkages, smaller-scale pilots will afford valuable experience that can pave the potentially rocky path to sustainable interdependencies.²⁹ Building alternatives to traditional methods of international energy diplomacy is a low-cost effort that can work with and parallel to the higher-level work taking place at the G7 and at the EU-US Energy Council.

In addition to smaller and flexible collaborations among sub-national entities, a consistent and coherent set of rules governing international policy can facilitate networks across the Atlantic that build sustainable energy and security interdependencies. The international trade system offers one of the most compelling vectors through which such rules and standards can be established and institutionalized in such a way that they survive the vagaries of domestic politics. With progress in the multilateral trade system relegated to the “least-common-denominator” approach of the consensus-based World Trade Organization, so-called “minilateralism” has accelerated, filling the vacuum left by the stalled WTO Doha Round. The US in particular is at the center of this trend, having recently concluded the Trans Pacific Partnership (TPP) between twelve Pacific Rim countries and with TTIP negotiations with the EU pressing slowly ahead. TTIP, due to both its size (the single largest prospective bilateral trade agreement in history) and complexity (the EU and the U.S. are two of the most capable regulatory powers in the world), offers a historic mechanism to shape the future of transatlantic energy relations.

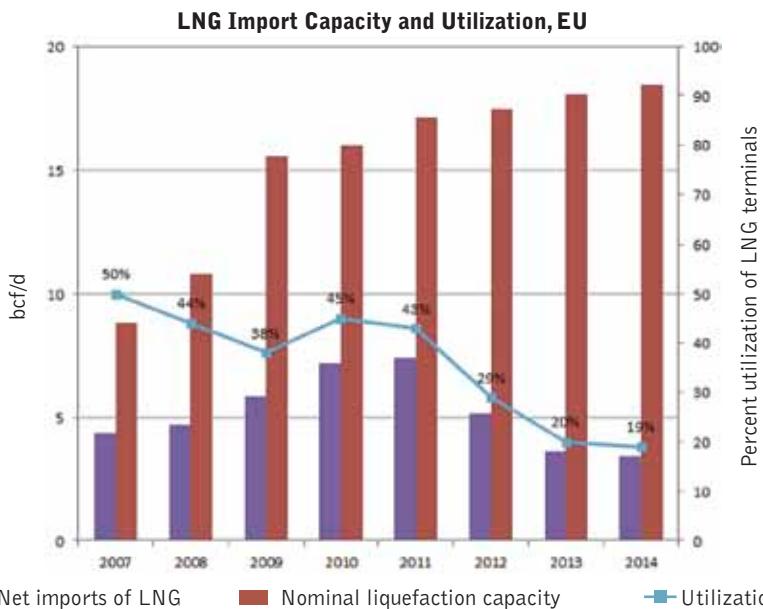
²⁷ “Cities & Regions Launch Major Five-Year Vision to Take Action on Climate Change,” UNFCCC, accessed February 24, 2016, <http://newsroom.unfccc.int/lpaa/cities-subnationals/lpaa-focus-cities-regions-across-the-world-unite-to-launch-major-five-year-vision-to-take-action-on-climate-change/>.

²⁸ “Overview of ARB Emissions Trading Program,” California Air Resources Board, February 9, 2015, http://www.arb.ca.gov/cc/capandtrade/guidance/cap_trade_overview.pdf.

²⁹ See: Mary Nichols’s discussion of market linkage at “Making Paris Happen: Carbon Markets, Taxes, and Other Policy Solutions for Climate Action” (Center for Global Development, January 11, 2016), <http://www.cgdev.org/event/making-paris-happen-carbon-markets-taxes-and-other-policy-solutions-climate-action>.

5. The Role of TTIP

What transatlantic interdependencies might TTIP strengthen in light of Europe's regional energy-security concerns? One major goal of ongoing TTIP negotiations so far has been securing the EU's market access to the resources of the United States. However, the question of U.S. fossil fuel exports to Europe will in all likelihood be settled by the time TTIP comes into effect. LNG exports will be available to Europe as a free-trade partner when TTIP is signed,³⁰ and major investments will, in the coming years, likely already be determined. U.S. crude oil exports, on the other hand, have been dealt with as a domestic-politics issue. Moreover, EU LNG imports are currently constrained not so much by lack of infrastructure or willing exporters, but by price constraints. The EU's volumes of LNG imports are far below its receiving capacity (see figure below), and its LNG utilization more than halved from the late 2000s to 2014. Until LNG becomes cost-competitive with renewables and coal — which may occur as the EU updates its Emissions Trading Scheme to keep carbon prices more stable — it cannot figure seriously in energy-security discussions.³¹



Sources: International Group of Liquefied Natural Gas Importers, approximate conversion factors from BP Statistical Review 2015 (includes Turkey)

- ³⁰ Livingston, "TTIP's Lack of Energy."
- ³¹ See also: Jason Bordoff and Trevor Houser, *American Gas to the Rescue?*, Center on Global Energy Policy, September 2014: 23, http://energypolicy.columbia.edu/sites/default/files/energy/CGEP_American%20Gas%20to%20the%20Rescue%3E.pdf.

Beyond opening access to markets, the negotiating parties have also touted TTIP's role as an agreement that can set the standard for "21st-century" trade agreements by covering issues heretofore unaddressed (or under-addressed) by such agreements.³² There are a number of international-trade issues that could be clarified by TTIP's rules and norms: the legality of local content requirements, the distinction between energy goods and services, third party access to energy infrastructure, modernized provisions for the resolution of energy investment-related disputes, the implementation of fossil-fuel subsidy reform, and the drafting of templates for third-party agreements, and the relationship between the bilateral treaty, the WTO, and future developments in the realm of international climate change governance.

An energy chapter of TTIP presents a wide scope of potential to deal with climate issues in addressing these rules and norms. The EU recently announced that its new trade strategy will involve the inclusion of energy and raw materials provisions in all trade agreements, with a particular focus on sustainable development and modernizing rules and standards.³³ While climate change is not *immediately* implicated by the most probable energy-related provisions in TTIP or other similar agreements (such as the Canada-EU Trade Agreement or the Trans-Pacific Partnership), it could quickly come to the fore should individual countries or blocs of countries seek to erect border tariffs or other measures for the purpose of equalizing the carbon price faced by domestic goods and services and those imported from abroad. In other words, the climate regime — currently enshrined in the Paris COP21 outcomes — is still in its formative stages and any *21st-century* trade agreement must engage with, or at least give thought to, not only extant issues at the energy/climate nexus but also those anticipated to become more material in the years ahead. It would be disingenuous to suggest that the structure of TTIP as agreed upon before 2020 will have no bearing on the future architecture of post-2020 climate governance, most notably by virtue of the policy space that it constrains (through any restrictions on trade-restrictive action) or by virtue of the elevated climate ambitions that it facilitates (through acceleration of trade and innovation in clean energy goods and services).

A dedicated energy chapter in TTIP may not be the appropriate medium in which to cast (or reinforce) all definitive new rules for the energy sector. After all, TTIP will be a static agreement, and global energy policy will need to be nimble in response to the transformations already occurring in the sector. For example, the role of data sharing and distributed generation is likely to cause paradigm shifts in energy consumption and production in the near future. And, as mentioned, if proper carve-outs for non-discriminatory, science-based domestic environmental regulations are not maintained, it could constrain the operating space for crucial government action on climate change and related challenges.

However, the historical development of the major energy-related provisions in prior

³² See: "How TTIP would affect you," <http://ec.europa.eu/trade/policy/in-focus/ttip/about-ttip/impact/>.

³³ "Trade for All: Towards a more responsible trade and investment policy," European Commission, October 2015, http://trade.ec.europa.eu/doclib/docs/2015/october/tradoc_153846.pdf.

U.S. trade agreements — mostly precipitated by urgent security-of-supply concerns — can provide insight into what an energy chapter in TTIP could achieve.³⁴ TTIP rules and norms should ideally focus on long-run issues, setting up flexible institutions and processes. However, there are compelling reasons in the near-term to include an energy chapter, including harmonizing standards of interoperability for electric vehicles, and drafting policy for collaboration on third-party agreements with countries as diverse as Turkey, Ukraine, India and China in mind. Negotiators should recognize that energy provisions can and should go beyond the near-term availability of fossil fuels. Other issues, such as standards for distributed generation and demand response, high resolution data use for energy efficiency purposes, and grid security are all of greater import to the evolution of energy systems (and their vulnerabilities) in the United States and the European Union.

Very little new ground has been tread thus far in the TTIP negotiations themselves on most energy issues, though greater ambition on either side is likely to be found in respective position papers or informal dialogues. Much of this lack of progress was due to the explicit sequencing by the United States of a focus on completing the Pacific TPP before turning to TTIP in earnest, a strategic choice that most within the current U.S. government would defend as prudent and pragmatic. The EU and the U.S. have never negotiated a trade agreement with as large an economic entity, or as well-prepared and well-resourced a negotiating team, as they now face in one another. As a result, it appears that each has had to revise both the substance and strategy of its approach as negotiations have evolved.

The recent lifting of crude oil export restrictions in the United States – a heretofore focus of the requests made by the European Union in their initial TTIP energy chapter position paper – places the onus on TTIP negotiators to re-think the fundamental trade-offs that would be at the core of an energy chapter. This is room for optimism, as it may focus their efforts on the litany of energy goods and services, beyond only hydrocarbons — that deserve consideration in a putative transatlantic free trade zone. In such a case, a TTIP energy chapter would indeed be closer to living up to its billing by European advocates as an exercise in setting norms and rules, rather than only a dash for energy supplies. Indeed, one European diplomat described the idea of an energy chapter as a “Magna Carta” for the energy sector. Over the long run, the strategic rule and norm-shaping potential of TTIP is far greater than its immediate trade benefits, though it is also more difficult to shape and anticipate.

34 See Keith J. Benes, *Considerations for the Treatment of Energy in the US–EU Transatlantic Trade and Investment Partnership*, Center on Global Energy Policy, September 2015, http://www.thelugarcenter.org/media/publication/14_Considerations%20for%20the%20Treatment%20of%20Energy%20in%20TTIP.pdf.

CONCLUSION

In examining transatlantic energy security along these lines, can we now say whether energy policy actually does or ideally should guide foreign policy or vice versa? The discussion above complicates this question by suggesting that energy security involves a complex assemblage of issues and actors whose tendencies and goals are in some places aligned and in others opposed. We found, for example, that intra-EU energy regulatory structures can to some extent diminish the threat of instability posed by a monopolistic and erratic Russia and other energy suppliers at Europe's periphery. This analysis demonstrates more generally the importance of pragmatic thinking, that is, thinking along the contours of a problem, rather than thinking in conceptually distinct categories like "energy" or "security." To this end, energy, security, and foreign policy analysts must constantly ask what we hope to achieve with the concepts we use. If the field of energy security was an ad hoc construction suited to a particular historical moment, the myriad issues we face today — climate change, ISIS's oil production, development goals — can illustrate the shortcomings of this approach in producing new insights and plans of action.

Although this workshop series focused on three capitals — Brussels, Warsaw, and Washington — that were pivotal to the evolving transatlantic energy and security landscape in 2015, pulling at the thread of current trends points to a number of other regional and thematic "hotspots" that are poised to exercise significant influence on the energy/security/foreign policy nexus in years ahead. The future trajectory and policy choices of the Balkans, the Baltic/Nordic region, and Turkey — among others — all merit special attention by policymakers and independent experts in the near future in order to explicate the themes raised in this paper with greater resolution and granularity.

It is clear that Russia's exercise of political power through energy leverage is also intrinsically linked to the situation of European energy demand. Europe is constrained by the uneven development of its renewables capacity and of energy-efficiency measures, which require the building of new infrastructure and coherent long-term policy strategies among member states. Thus far, European-level renewables strategy has been constrained by member state differences and a lack of clarity in the primary rationale behind policy mechanisms, be it energy security, decarbonization, or industrial policy. Similarly, there is far too little consideration given to demand-side strategies in managing Europe's exposure to oil dependence across security, foreign policy, and price volatility dimensions.

If half the time and energy spent debating pipeline politics and the reliability of MENA suppliers was instead dedicated to completing the internal EU energy market and developing intelligent clean transport strategies, the dividends would be significant. Though it stands little to no chance of adoption in the current political environment, the clean transport strategy contained in President Obama's final budget proposal

– including a \$10/barrel oil tax – provides a starting point for considering an integrated approach to delivering simultaneous economic, climate, and security benefits through reduced oil demand.

Moreover, it will be important to channel the growing momentum for multi-lateral partnerships toward sustainable energy goals. The intra-EU Energy Union and TTIP conversations can take a wider frame of energy security to discuss the energy-efficiency-focused data-sharing provisions and interoperability standards for low-carbon products on the horizon. Crafting legal frameworks regarding data use, alongside efforts aimed at energy efficiency, could facilitate development that is sustainable environmentally, economically, and geopolitically.

For EU and non-EU states contiguous with Europe, energy policymakers should ensure that the pursuit of competitive advantage does not short-circuit the interconnectivity that 21st-century energy realities like renewable power generation will require. Third-party-agreement frameworks in TTIP that definitely include consideration of climate change may work to set standards for future partnerships, such as with Turkey. In turn, the sheer economic gravity of TTIP suggests that this model may also significantly impact future multi-lateral energy agreements. For TTIP, this includes ensuring that the agreement would remain compatible with future unilateral or mini-lateral actions to price carbon, such as through a carbon border adjustment that is non-discriminatory and based on a sound scientific foundation. It is key that any such agreements remain attuned to their impacts on climate change and, conversely, climate change's impacts on the terms of the agreement.

What steps can policymakers take to appraise the above-identified networks of interdependencies and strengthen them? While it is true that the Energy Union and TTIP can provide rules and norms for policy planning, the content, not just the existence, of these rules is crucial in determining whether it can successfully facilitate a transition to a sustainable energy future. Addressing holistically, where possible, issues of GHG-emissions mitigation, security of supply, and the distribution of political and economic burdens will not only bring transatlantic energy security policy into the 21st century, but will contribute to the mitigation and management of global risks facing the world in decades ahead.

ECOLOGY

Sustainable Energy Security: A Transatlantic Opportunity

On both sides of the Atlantic, energy continues to be a complex, multifaceted issue that is relevant for a whole range of public policy objectives. Energy security is one of the most important aspects of this, but it cannot be successfully addressed in isolation from other public policy aims. The aim of this paper is to shed light on how three policy communities — those dealing with security, foreign policy and energy issues — can come together to discuss and find solutions to the transatlantic energy agenda in light of transforming energy security realities on both sides of the Atlantic. Its findings are based on a transatlantic workshop series held in Washington D.C., Brussels and Warsaw in 2015.

This report demonstrates the interconnectivity of the different dimensions of energy policy. The report breaks down the policy silos, providing a comprehensive overview of some of the myriad of issues that any 21st century energy order faces. With workshops in Brussels, Warsaw and Washington D.C., this report has escaped the traditional energy security echo chamber by including in its considerations climate milestones, such as the COP21 Paris Climate Agreement, trade developments such as the transatlantic trade and investment partnership (TTIP), global governance as well as regional co-operation such as the linkages between regional carbon-markets and the creation of sustainable low-carbon energy partnerships.