TRADE IN ENERGY UNDER THE TTIP: BENEFITS OF ALLIED POWER

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This article examines the potential for a secure and sustainable trade in energy between the U.S. and the E.U. through the Transatlantic Trade and Investment Partnership (TTIP). Since the start of negotiations on the comprehensive trade agreement in 2013, the E.U. has made clear its desire to have access to the abundant shale energy sources that have transformed the U.S. into the world's largest producer of both oil and gas.[1] Until present, longstanding political barriers and insufficient transport infrastructure have acted to keep most of the fruits of the U.S. shale revolution within North American

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[**] This article is the product of a collaborative effort between the author and the late Professor Stephen Zamora of the University of Houston Law Center. An expert on and enthusiast of international trade law, Prof. Zamora looked to the future of U.S. trade relations with optimistic anticipation and excitement. Since the writing of this article, however, U.S. foreign policy experienced a substantial shift corresponding with President Donald J. Trump's election in 2016. With the inauguration of the new political administration, TTIP negotiations talks stalled shortly thereafter. Nevertheless, this article serves as a highly valuable U.S. international economic affairs retrospective, as well as a preview of what a U.S.-E.U. bilateral trade agreement, like the TTIP could (and/or should) look like in the future. Thus, thus article is being published as a tribute to Prof. Zamora, who never ceased to continue looking toward a bright future for our country characterized by a cooperative and robust energy-centric international trade policy.

1. Lydia DePillis, *A Leaked Document Shows Just How Much the EU Wants a Piece of America's Fracking Boom*, WASH. POST: WONKBLOG (July 8, 2014), https://www.washingtonpost.com/news/wonk/wp/2014/07/08/could-a-trade-deal-lift-the-u-s-longstanding-ban-on-crude-oil-exports-europe-thinks-so/?utm_term=.ae36be9e7530.

borders.[2] Recent changes in energy export restrictions, however, may soon see the U.S. become a major energy exporter, by providing viable export markets through free trade agreements (FTAs) such as the TTIP.[3] This report will address a brief history and the development of U.S. energy policies and interests, modern U.S. energy export policy, opportunities for transatlantic energy trade, obstacles to trade development, and inclusion of a separate energy chapter in the TTIP. This information will be used to analyze the potential for a robust energy trade between the two parties, and its implications for global energy markets.

A day will come when we shall see those two immense groups, the United States of America and the United States of Europe, facing one another, stretching out their hands across the sea, exchanging their products . . . and joining together, to reap the well-being of all, these two infinite forces, the fraternity of men and the power of God.[4]

2. *See* Gary Clyde Hufbauer, Op-Ed., *Freeing American Crude: Oil Export Controls Amount to a Trifecta of Bad Policy*, WASH. TIMES (Apr. 27, 2017), https://piie.com/commentary/op-eds/freeing-american-crude-oil-export-controls-amount-trifecta-bad-policy ("Oil markets have changed dramatically since the 1970s, but the ban [on crude oil exports] remains frozen on the statute books.").

3. *See* Shayerah Ilias Akhta & Vivian C. Jones, Cong. Research Serv., R43387, Transatlantic Trade and Investment Partnership (TTIP) Negotiations (Feb. 4, 2014) ("TTIP could be the largest FTA in the world in terms of economic size and serve a number of strategic U.S. policy goals.").

4. Victor Hugo, Address at the Peace Congress at Paris (Aug. 22, 1849).

I. THE DEVELOPMENT OF U.S. ENERGY POLICIES AND INTERESTS

With limited exceptions,[5] the U.S. has followed a protectionist policy with regard to its crude oil resources since the government made the decision to impose a ban on exports over 40 years ago.[6] The Energy Policy and Conservation Act—enacted in the wake of the 1973–74 Arab oil embargo—created an approach to federal energy policy that centered on increasing domestic energy production and supply, restraining energy demand, and promoting overall energy efficiency.[7] The urgency for the U.S. to become more self-sufficient in energy became painfully evident after members of the Organization of Arab Petroleum Exporting Countries banned petroleum exports to the U.S. in retaliation for its support of Israel in the 1973 Arab-Israeli War, or Yom Kippur War.[8] The disruption in supply sent the price of crude oil spiraling upward and caused nationwide fuel shortages in the U.S.,[9] where production had been declining since 1970.[10] In fact, oil became so scarce during this time that the U.S. had to institute an allocation system.[11] While the Nixon Administration was able to negotiate an end to the embargo in March 1974,[12] the vulnerability exposed

5. Ilaria Espa & Kateryna Holzer, *Negotiating and Energy Deal under TTIP: Drivers and Impediments to U.S. Shale Exports to Europe*, 43 DENV. J. INT'L L. & POL'Y 357, 367 (2015) (stating that such exceptions include exports from Alaska's Cook Inlet; exports to Canada; exports in connection with refining or exchange of strategic petroleum reserve oil; exports of heavy California crude oil; exports consistent with certain international agreements; exports consistent with findings made by the President under applicable statutes; and exports of foreign origin crude oil).

6. *See* Hufbauer, *supra* note 2.

7. Energy Policy and Conservation Act of 1975, 42 U.S.C. §§ 62–64 (2014).

8. *Milestones: 1969–1976, Oil Embargo, 1973–1974*, U.S. OFF. OF THE HISTORIAN, https://history.state.gov/milestones/1969-1976/oil-embargo (last visited Mar. 27, 2018).

9. ERNEST SMITH, ET AL., INTERNATIONAL PETROLEUM TRANSACTIONS, at 887 (3d ed. 2010).

10. *Id.* at 24.

11. DANIEL YERGIN, THE PRIZE: THE EPIC QUEST FOR OIL, MONEY AND POWER, at 617 (1992) ("An allocation system had been introduced in the United States just before the embargo because of the growing tightness of the market.").

12. *See Milestones: 1969–1976*, *supra* note 8, at 2 ("[T]he prospects of a negotiated end to hostilities between Israel and Syria proved sufficient to convince the relevant parties to lift the embargo in March 1974.").

in the crisis—the danger of long-term U.S. dependency on foreign oil—operated to position energy independence firmly at the top of the national security agenda.[13]

Though stopping short of an outright ban on foreign exports, the U.S. also imposes trade restrictions on its natural gas resources through a very stringent export-licensing regime. Under the Natural Gas Act of 1938 (NGA), as subsequently amended, the Department of Energy (DOE) is responsible for the administration of natural gas export licenses to prospective exporters on an ad hoc basis.[14] Section 3 of the NGA specifies that authorization for exports will only be issued after a determination is made that such exports are "consistent with the public interest."[15] While the guiding criteria for determining whether a given natural gas export is in the public interest do not accompany this provision of the NGA, the DOE has since provided some insight into how it makes its assessment. The 1984 DOE guidelines, for example, affirm that considerations such as the domestic need for the natural gas proposed to be exported, domestic security of supply, and other factors relevant to the public interest determination (i.e., the environment, geopolitics, etc.) principally govern the evaluation.[16] Further taken into account is whether the prospective exporter has already completed the requisite pre-filing process before the Federal Energy Regulatory Commission (FERC), from which the exporter must also gain approval for the siting, construction, and operation of import and export facilities for liquefied natural gas (LNG).[17] Pursuant to the National Environmental Policy Act of 1969, an analysis of the likely impact that an LNG terminal will have on

13. *Id.* (stating that the crisis "triggered new measures beyond the April and November 1973 reports that focused on energy conservation and development of domestic energy sources.").

14. Natural Gas Act of 1938, 15 U.S.C. § 717(b) ("After six months from June 21, 1938, no person shall export any natural gas from the United States to a foreign country or import any natural gas from a foreign country without first having secured an order of the Commission authorizing it to do so.").

15. *Id.* § 717(b)(3).

16. Policy Guidelines and Delegation Orders Relating to the Regulation of Imported Natural Gas, 49 Fed. Reg. 6,684 (Feb. 22, 1984).

17. *See What FERC Does*, FERC, https://www.ferc.gov/about/ferc-does.asp (last visited Jan. 27, 2018).

its surrounding local environment must be conducted by FERC, using input from relevant agencies, including the Environmental Protection Agency, the U.S. Coast Guard, and the U.S. Army Corps of Engineers.[18]

The frustrating effects of this onerous licensing regime on natural gas trade were later reconsidered by the U.S., when it sought to restructure its electric power industry.[19] Developing a competitive wholesale electricity generation market would require large quantities of Canadian natural gas for use in power generation.[20] In an apparent effort to expedite the import process and circumvent the established DOE authorization protocol (which applies to the importation as well as exportation of natural gas), the Energy Policy Act of 1992—incorporating an exception to the "public interest" rule—was passed.[21] For any nation with which the U.S. has "in effect a free trade agreement requiring national treatment for trade in natural gas," Congress explained, consistency with the public interest would be automatically presumed.[22] The provision further added that applications for importation or exportation of natural gas under such circumstances "shall be granted without modification or delay."[23] The FTA contemplated by the Congressional act was, of course, the Canada-U.S. FTA entered into just three years earlier. That

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18. U.S. DEP'T OF ENERGY, LIQUEFIED NATURAL GAS: UNDERSTANDING THE BASIC FACTS 17–18 (Aug. 2005), https://energy.gov/sites/prod/files/2013/04/f0/LNG_primerupd.pdf.

19. *See* U.S. ENERGY INFO. ADMIN., Energy Policy Act of 1992 ("EPACT . . . was intended in part to expand the use of natural gas. As the restructuring of the electric power industry was sustained in part by technological improvements in gas turbines, recasting economies of scale in electric power, EPACT contributed to the rise of gas-fired nonutility generators as the fastest growing source of electric generation capacity.").

20. *See id*. ("The Energy Policy Act of 1992 (EPACT) created a framework for a competitive wholesale electricity generation market and established a new category of electricity producer, the exempt wholesale generator (EWG)."); *see also* Jacqueline Weaver, *The Traditional Petroleum-Based Economy: An 'Eventful' Future: Of Peak Oil, Big Oil, Chinese Oil, Flags and Open Doors*, State Bar of Tex. – Oil, Gas & Energy L. Sec. Rep., at 12 (June 2006) (explaining that "[t]hroughout the 1990s, the United States increased its imports of natural gas from Canada to meet the growing gap between domestic supply and demand.").

21. Energy Policy Act of 1992 § 201.

22. *Id.*

23. *Id.*

agreement, in Article 902, incorporated the "national treatment" obligation of Article III of the General Agreement on Tariffs and Trade (GATT) with respect to transfers of energy between the partners.[24] The obligation requires that laws and regulations do not discriminate between foreign and domestic goods on the basis of nationality.[25] Although carving out this FTA exception did provide the U.S. with expeditious access to Canadian gas imports, it did not likely consider the eventuality of a transformed U.S. natural gas market—one in which U.S. exports could escape the burdens of this outmoded regime by way of an FTA only.[26]

II. MODERN U.S. ENERGY EXPORT POLICY

Until 2009, much of the dialogue about oil reserves and the long-term adequacy of their supply to meet future demands centered on a theory called "Peak Oil."[27] The theory rested on the assumption that oil is a finite resource and that, as such, oil discoveries and the related reserves would necessarily peak at some point before eventually slipping into an irreversible decline.[28] In fact, as recently as ten years ago, many industry stakeholders believed that global oil production was either already in decline or soon would be.[29] In the case of the U.S., much concern (stemming from previous shortages) was caused by the perceived national security risk of increasing U.S. dependency upon imported oil.[30] It should then come as no surprise that American energy policy planners repeatedly urged domestic conservation and the diversification of energy supplies to combat

24. *See* SMITH ET AL., *supra* note 9, at 1046.

25. *Id.*

26. Adam Eldean, Comment, *Can the United States Control its Natural Gas?; International Trade Implications of Restrictions on Liquefied Natural Gas Exports*, 54 NAT. RES. J. 439, 447 (2014).

27. *See* SMITH ET AL., *supra* note 9, at 24.

28. *Id.*

29. *Id.* ("More recently geologists and economists have attempted to apply Hubbert's theory [of Peak Oil] to global oil supplies.").

30. *See* Weaver, *supra* note 20, at 3 (discussing "the long-term national security implications of the Western world's dependence on oil . . . from hostile and unstable countries.").

what were believed to be dwindling oil and gas resources.[31]

Fortunately for the U.S., these early pessimistic forecasts proved to be misguided, as they failed to appreciate the extent to which technology would play a role in exploration, drilling, and production.[32] As prices increase, additional capital is also invested in research and development, which, in turn, fosters innovation.[33] Horizontal drilling and hydraulic fracturing are the two innovations most responsible for reversing the U.S. energy outlook.[34] Hydraulic fracturing—injecting a mixture of water, sand, and chemicals underground at high pressure—causes cracks and fissures to spread through part of a formation to release the gas or oil trapped within.[35] Horizontal drilling—sinking a well a mile or more straight down, then a mile or more sideways—made it possible to expose a much greater area of resource-bearing rock to injections at various boreholes that are opened in the horizontal extension.[36] Utilizing these two exploration and production techniques jointly resulted in an enormous increase in shale gas and shale oil production in the U.S.[37] The effect of new shale exploration on supply of natural gas was, in fact, so profound and immediate that U.S. natural gas proved reserves were estimated to have increased by 11% in 2009 to 284 trillion cubic feet (Tcf)—the highest level in nearly 40 years.[38] Underscoring the value of the synergy found by coupling and refining these methods is the consideration that these historical levels were achieved despite an approximate one-third decline in the prices used to assess economic viability for 2009

31. *See Milestones: 1969–1976*, *supra* note 8 (explaining that the effects of the 1973 oil embargo "triggered new measures beyond the April and November 1973 reports that focused on energy conservation and development of domestic energy sources.").

32. SMITH ET AL., *supra* note 9, at 25.

33. *Id.*

34. *Id.* at 14–15, 25.

35. Ed Crooks, *The U.S. Shale Revolution*, FIN. TIMES (Apr. 24, 2015), http://www.ft.com/intl/cms/s/2/2ded7416-e930-11e4-a71a-00144feab7dc.html#slide0.

36. *Id.*

37. *Id.*

38. *See* U.S. ENERGY INFO. ADMIN., SUMMARY: U.S. CRUDE OIL, NATURAL GAS, AND NATURAL GAS LIQUIDS PROVED RESERVES 2009 1–4 (Nov. 2010), https://www.eia.gov/naturalgas/crudeoilreserves/archive/2009/pdf/arrsummary.pdf.

reserves as compared to the prices used in 2008.[39]

The "shale revolution" heavy-handedly rejected the status quo when, in a few short years, it transformed the U.S. into the world's largest producer of both oil and natural gas in 2012.[40] Given this reversed energy outlook, however, it would not be long before the security of supply rationale belying the U.S.' protectionist export regime drew scrutiny. While the shale boom uncovered vast, untapped reserves of crude oil and contributed to supply being its highest in recent memory,[41] the oil export ban still operated to make sure that oil pumped from U.S. fields did not leave the country (with the exception of shipments to Canada).[42] As a glut swelled, U.S. crude sank to more than $27 a barrel below overseas prices,[43] until it became worthwhile for U.S. refineries to buy it at a discount.[44] Influential industry stakeholders, including ConocoPhillips CEO Ryan Lance, began lobbying to have the ban removed by arguing that it effectively "trapped" U.S. oil in a low-price scenario with no way out.[45] The export ban, they argued, was preventing a realigning of domestic U.S. oil prices with global oil prices to the detriment of U.S. producers, who "ha[d] to have an outlet for [their] crude."[46] Allowing exports could be seen as activating a "safety valve" to release domestic production internationally, thus reducing

39. *Id.* at 1.

40. *See* Linda Doman, *U.S. Remained World's Largest Producer of Petroleum and Natural Gas Hydrocarbons in 2014*, U.S. ENERGY INFO. ADMIN. (Apr. 7, 2015), http://www.eia.gov/todayinenergy/detail.cfm?id=20692.

41. Joe Carroll, *Shale Drillers Are Now Free to Export U.S. Oil Into Global Glut*, BUS. WK., (Dec. 16, 2015, 6:01 PM), http://www.bloomberg.com/news/articles/2015-12-17/shale-drillers-are-now-free-to-export-u-s-oil-into-global-glut (last updated Dec. 17, 2015, 9:54 AM).

42. *See* 15 C.F.R. § 754.2(b)(ii).

43. Carroll, *supra* note 41.

44. Jordan Blum, *Oil's Well that Ends Well: America Lifts Its Ban on Oil Exports*, ECONOMIST (Dec. 18, 2015), https://www.economist.com/news/finance-economics/21684531-light-sweet-compromise-puts-end-crude-market-distortions-america-lifts.

45. Carroll, *supra* note 41; *see also* Jennifer A. Dlouhy, *Oil Exports Gain Steam, Propelled by Lobbying Blitz*, HOUS. CHRON. (Sept. 7, 2015), http://www.houstonchronicle.com/business/article/Oil-exports-gain-steam-propelled-lobbying-blitz-6489214.php (last updated Sept. 15, 2015, 9:55 PM).

46. Carroll, *supra* note 41.

oversupply and the severely depressed domestic price caused by the glut.[47]

On December 18, 2015, President Obama signed a Congressional bill, repealing the four-decade old ban on U.S. crude oil exports.[48] While most experts correctly predicted that the lifting of the ban would not trigger any immediate trade expansion, due to the current oversaturation of the global market,[49] it has already allowed the reference price of U.S.–produced West Texas Intermediate (WTI) to compete and reach near-parity with rival international benchmark, Brent.[50] Thus, while it may not be economic for a European refinery, for example, to source American barrels at the current price for WTI relative to Brent, competition among the crudes in the future will allow buyers to be more selective about the types of oil they bring in.[51] This competition will, to a degree, level the playing field for producers and ultimately make oil trading more efficient.[52]

The continued justification of the security of supply rationale for the stringent natural gas export regime seems to be on equally shaky ground since the shale gas revolution. The Energy Information Administration recently estimated 2,276 Tcf of technically recoverable dry natural gas to be in the U.S.—enough to meet domestic demand for 84 years.[53] In consideration of the

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47. Paolo Natali et al., *Energising the TTIP: Political Economy of the Trade Policy Rationale* 3 (CEPS-CTR Project "TTIP in the Balance" Paper No. 9 & CEPS Spec. Rep. No. 113, July 2015), https://www.ceps.eu/system/files/TTIP%20energy.pdf.

48. Robert Grattan, *End to Export Ban Brings Rare Cheer to the Oil Patch*, RBN ENERGY (Dec. 19, 2015), https://rbnenergy.com/end-to-export-ban-brings-rare-cheer-to-the-oil-patch.

49. Clifford Krauss & Diane Cardwell, *Expected Repeal of Oil Export Ban Unlikely to Have Immediate Impact*, N.Y. TIMES (Dec. 16, 2015), http://www.nytimes.com/2015/12/17/business/energy-environment/expected-repeal-of-oil-export-ban-unlikely-to-have-immediate-impact.html?_r=0.

50. Blum, *supra* note 44; Jordan Blum, *On Exports, Oil Companies Quick Off the Mark*, HOUS. CHRON. (Dec. 30, 2015), http://www.houstonchronicle.com/business/energy/article/Shipments-set-to-start-after-export-ban-is-6728679.php.

51. Blum, *On Exports, Oil Companies Quick Off the Mark*, *supra* note 50; *see also* Blum, *supra* note 44.

52. Blum, *supra* note 44.

53. *Frequently Asked Questions, How Much Natural Gas Does the United States Have, and How Long Will It Last?*, U.S. ENERGY INFO. ADMIN.,

abundance of domestic natural gas and with the desire to access export markets overseas, U.S. producers have turned to LNG as the "safety valve." LNG is natural gas that is super-cooled under pressure so that its volume shrinks, providing for more economical handling and transportation.[54] LNG is then shipped in cryogenic tankers to terminals in the importing countries, where it is "regasified"—pressure and temperature are adjusted so that the liquid becomes gaseous—and fed into pipelines for local consumption.[55] The onerous process for DOE authorization, however, along with the enormous capital requirements and risks inherent in these projects helps explain why few make it to the operation stage.[56] In fact, to date, just fifteen final long-term authorizations to export the lower forty-eight states' domestically produced LNG to non-FTA countries have been granted.[57] In response to a growing petition for a more streamlined licensing procedure, a number of acts of legislation have been introduced in the U.S. Senate with the aim of bringing certainty to LNG investors.[58] Notably, on May 18, 2016, the U.S. House of Representatives passed the FY17 National Defense Authorization Act (NDAA), which authorizes $602 billion in funding for the Department of Defense and the national security programs of the Department of Energy.[59] While defense spending ostensibly bears little effect on the market for gas exports, the bill included a measure to streamline the permit process through the Department of Energy to export LNG.[60] With the U.S. currently

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https://www.eia.gov/tools/faqs/faq.php?id=58&t=8 (last updated July 25, 2017).

54. SMITH ET AL., *supra* note 9, at 1067.

55. *Id.*

56. *Id.* at 1073–74.

57. OFF. OF FOSSIL ENERGY, LONG TERM APPLICATIONS RECEIVED BY DOE/FE TO EXPORT DOMESTICALLY PRODUCED LNG FROM THE LOWER-48 STATES (AS OF MAY 20, 2016), https://energy.gov/sites/prod/files/2016/05/f31/Summary%20of%20LNG%20Export%20Applications.pdf.

58. *See, e.g.*, Export American Natural Gas Act, H.R. 428, 114th Cong. (2015); North Atlantic Energy Security Act, S. 2592, 113th Cong. § 107 (2014).

59. National Defense Authorization Act for Fiscal Year 2017, H.R. 4909, 144th Congress (as passed by House, May 18, 2016); *see H.R. 4909 — 114th Congress: National Defense Authorization Act for Fiscal Year 2017*, GOVTRACK.US, https://www.govtrack.us/congress/bills/114/hr4909 (last updated May 31, 2016)..

60. National Defense Authorization Act § 1090.

negotiating multilateral FTAs of an unprecedented scale, however, the DOE process for authorizing exports to non-FTA countries may soon become the exception rather than the rule.

III. OPPORTUNITIES FOR TRANSATLANTIC ENERGY TRADE

In June 2013, the 28 Member States of the E.U. presented the European Commission with a mandate for negotiating the TTIP with the U.S.[61] The comprehensive trade and investment agreement, a product of cooperation between the U.S. and the E.U., aims to stimulate their respective economies with the elimination of tariff and non-tariff barriers to transatlantic trade and facilitation of foreign investment.[62] Negotiations between the parties have since carried out in regular rounds, with an anticipated conclusion to the agreement by the end of 2016.[63]

Since the start of TTIP negotiations, the E.U. has made clear its desire to acquire access to U.S. shale sources.[64] Standing at the other end of the spectrum from the U.S.—in its new position as the world's top producer—the E.U. is both the world's second largest consumer of energy and the world's largest energy importer.[65] The E.U. imports 53% of the energy it consumes, including 90% of its crude oil and 66% of its natural gas.[66] Rapidly depleting domestic gas reserves and unabated gas demand further suggest that the E.U.'s gas import dependence will only

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61. *See* European Comm'n, MEMO/13/564, Member States Endorse EU-US Trade and Investment Negotiations 1, 5 (June 14, 2013), http://europa.eu/rapid/press-release_MEMO-13-564_en.htm.

62. Shayerah Ilias Akhta & Vivian C. Jones, Cong. Research Serv., R43387, TRANSATLANTIC TRADE AND INVESTMENT PARTNERSHIP (TTIP) NEGOTIATIONS 1, 11 (Feb. 4, 2014).

63. *See EU, US Negotiators Push for 2016 Deal, Though "TTIP Light" Not an Option*, *in* 20 BRIDGES NO. 16 (May 4, 2016), *available at* http://www.ictsd.org/bridges-news/bridges/news/eu-us-negotiators-push-for-2016-deal-though-ttip-light-not-an-option.

64. DePillis, *supra* note 1.

65. Shane R. DeBeer & Wim Vandenberghe, *How the Ukraine Crisis Is Redefining European, Russian, and U.S. Energy Relations*, *in* 14 PRATT'S ENERGY L. REP. 15 (Sept. 2014) (LexisNexis A.S. Pratt).

66. *Imports and Secure Supplies*, EUR. COMM'N, http://ec.europa.eu/energy/en/topics/imports-and-secure-supplies (last visited Oct. 9, 2017).

increase in the future.[67] Adding to the security concerns of this import-dependence, however, is the fact that the E.U.'s sources are poorly diversified.[68] Nearly 39% of Europe's gas needs to come from Russia via three routes: the Druzhba pipeline through Ukraine; the Yamal pipeline through Poland and Belarus; and the Nord Stream pipeline that crosses the Baltic Sea to Germany.[69] Cross-border pipelines have a long history, especially where transit is involved, of vulnerability to disruption and conflict.[70] Nowhere is this history better known than in Europe, where, in the winter of 2006 and again in January of 2009, gas supplies were briefly disrupted when Russia cut deliveries of gas to Ukraine in a dispute over prices.[71] These stoppages affected not only Ukraine, but also Bulgaria, Greece, Macedonia, Croatia, Romania, and other Central European countries.[72] Almost 80% of Russia's deliveries to Europe pass through Ukraine[73] and ongoing conflict in the region threatens Europe's gas supplies in the future. In response to the most recent turmoil in Ukraine, European leaders called on the European Commission to present a comprehensive study of E.U. energy security and to prescribe measures to strengthen Europe's position.[74] In the Energy Security package produced by the European Commission, plans to diversify import sources by "building the strategic infrastructure to complete the internal energy market" and develop "necessary projects to end single-source dependency" were introduced.[75] One such project announced by the European

67. Natali et al., *supra* note 47, at 9.

68. DeBeer & Vandenberghe, *supra* note 65, at 15, 22.

69. *Id.* at 15.

70. SMITH ET AL., *supra* note 9, at 1039.

71. *Id.* at 1044–45.

72. Ropert Lea, *Europe Plunged into Energy Crisis as Russia Cuts off Gas Supply via Ukraine*, DAILY MAIL ONLINE (Jan. 7, 2009, 06:57 BST), http://www.dailymail.co.uk/news/article-1106382/Europe-plunged-energy-crisis-Russia-cuts-gas-supply-Ukraine.html.

73. *Id.*

74. *Energy Security Strategy*, EUR. COMM'N, https://ec.europa.eu/energy/en/topics/energy-strategy-and-energy-union/energy-security-strategy (last visited Mar. 27, 2018).

75. *See* Press Release, Towards Energy Union: The Commission Presents Sustainable Energy Security Package, Eur. Comm'n Press Release IP/16/307 (Feb. 16,

Commission was to "work to remove obstacles to LNG imports from the U.S. and other LNG producers."[76] This search for a steady and sustainable supply of LNG has led several E.U. Member States to petition for removal of trade restrictions by the U.S. by way of comprehensive energy provisions in the TTIP.[77] As one European politician shrewdly observed: "[Russian President Vladmir] Putin has made a cardinal mistake . . . energy security [has never been] so high on the E.U. political agenda."[78]

While there is broad European agreement that the E.U. should attempt to determine how its energy dependence can be mitigated by indigenous sources, there are presently no feasible near-term solutions.[79] With gas production in Europe steadily declining, some Member States see developing Europe's indigenous unconventional resources as a path to energy independence.[80]

The U.K. and Poland, for example, have been vocal proponents for shale gas exploitation in Europe—believing it to hold similar potential for the E.U. as it has for the U.S. Shale gas exploitation in Europe, however, is considerably more complex than in the U.S. for several reasons (including ownership of mineral resources, population density, and geology).[81] These complexities have contributed to a growing opposition by European environmentalists and interest groups, and have led the European Commission to consider publishing binding regulations on hydraulic fracturing in the near future.[82] Over the remainder of this decade at least, no major shale successes outside of North America are likely and U.S. LNG exports are predicted to be the primary driver of increased global LNG supply.[83]

2016), http://europa.eu/rapid/press-release_IP-16-307_en.htm.

76. David Livingston, *TTIP's Lack of Energy*, CARNEGIE ENDOWMENT FOR INT'L PEACE (Mar. 24, 2015), http://carnegieeurope.eu/strategiceurope/?fa=59478.

77. DeBeer & Vandenberghe, *supra* note 65, at 23.

78. Livingston, *supra* note 76, at 1.

79. DeBeer & Vandenberghe, *supra* note 65, at 19–20.

80. *Id.*

81. *Id.*

82. *Id.*

83. Christopher Goncalves, *Breaking Rules and Changing the Game: Will Shale Gas*

Nuclear power is even more controversial than shale gas in Europe in terms of public acceptance, due largely to concerns stemming from the Fukushima accident in March 2011.[84]

While there is no consensus about the role nuclear power will play in the future in Europe, some countries such as Germany oppose it and have committed to phasing out their nuclear reactors altogether.[85] In the interim, gas and coal seem to be doing the heavy lifting in the European power mix, with imports of the latter having increased significantly since natural gas abundance in the U.S. drove down prices of the fuel (the U.S. is experiencing a switch from coal to gas in power generation).[86] While coal continues to be the cheapest fossil fuel for generating electricity, however, it is also the dirtiest.[87] Given these considerations, it is not surprising that discussion of domestic energy supply in Europe has continually turned to an emphasis on renewables.

Renewable energy has significantly diversified the E.U.'s energy supply mix; its share in final energy consumption increased from 8.3% in 2004 to 14.1% in 2013 and is projected to reach 20% in 2020.[88] In fact, renewables support measures are already posing to phase out coal-fired plants in the U.K., the Netherlands, and possibly in Germany.[89] In the medium-term, however, there is a significant opportunity for natural gas to play a pivotal transitional role in Europe as a "bridge fuel" to cleaner renewable energies.[90] Natural gas is the cleanest fossil fuel that, when combusted, emits only 54.0% of the carbon of coal and none

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Rock the World?, 35 ENERGY L. J. 225, 255 (2014).

84. *Id.* at 232–34, 259.

85. *Id.* at 259.

86. Natali et al., *supra* note 47, at 10.

87. *Electrical Uses*, NATURALGAS.ORG (Sept. 20, 2013), http://www.naturalgas.org/overview/uses/.

88. News Release, Eurostat, Share of Renewables in Energy Consumption Up to 14% in 2012, Eurostat News Release 37/2014 (Mar. 7, 2014), http://ec.europa.eu/eurostat/documents/2995521/5181358/8-10032014-AP-EN.PDF/91350d4a-4b57-4833-b9f0-32cfe0a6d360.

89. Natali et al., *supra* note 47, at 10.

90. Vicente L. Mayor, *How TTIP Can Enhance EU-US Energy Security and Counterbalance Russia's Energy Weight*, ATLANTIC COUNCIL: NEW ATLANTICIST BLOG (Dec. 9, 2014), http://www.atlanticcouncil.org/blogs/new-atlanticist/how-ttip-can-enhance-eu-us-energy-security-and-counterbalance-russia-s-energy-weight.

of the particular matter or sulfur oxide.[91] To this end, the DOE has certified that natural gas exports will reduce global greenhouse-gas emissions as LNG replaces coal.[92]

IV. OBSTACLES TO TRADE DEVELOPMENT

While there are many justifications for transatlantic trade in energy, and avenues are certainly opening to allow for such trade, the future of the endeavor will be determined largely by price. At today's prices hovering around $30 per barrel, as well as price spreads between U.S. and international crudes being fairly modest, Brent (the international crude benchmark) would have to be at a greater premium than that seen today in order to justify sourcing significant volumes across the Atlantic.[93] This is considering that it presently costs in the range of $2 to $4 to ship a barrel of crude oil from the U.S. Gulf Coast to Europe.[94] While global demand for crude has not been able to keep up with the staggering amount being pumped worldwide, however, this will likely change in the long run, as low crude prices spur demand for fuel.[95] With increased demand, upward pressure will be exerted on price and foreign buyers may come to rely on the U.S. for exports.[96]

In the market for natural gas, increasingly ample supply of shale gas and positive expectations for continued production have held U.S. markets to levels around $4 per million British Thermal Unit (MMBtu) for Henry Hub (not expected to exceed $5 per MMBtu in the mid-term).[97] Over recent years, European and

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91. *Natural Gas and the Environment*, NaturalGas.org (Sept. 20, 2013), http://naturalgas.org/environment/naturalgas/.

92. Mayor, *supra* note 90, at 2.

93. David Livingston, *End of the U.S. Crude Oil Export Ban—Consequences for TTIP and the Climate*, CARNEGIE ENDOWMENT FOR INT'L PEACE (Jan. 15, 2016), http://carnegieenndowment.org/2016/01/15/end-of-us-crude-oil-export-ban-consequences-for-ttip-and-climate/isy8.

94. *Id.*

95. Alison Sider, *U.S. Exports First Freely Traded Oil in 40 Years*, WALL ST. J. (Jan. 13, 2016), http://www.wsj.com/articles/u-s-exports-first-freely-traded-oil-in-40-years-1452643962.

96. *Id.*

97. Goncalves, *supra* note 83, at 229.

Asian prices have respectively ranged from two to four times the level of Henry Hub prices.[98] The opportunity to use shale-driven LNG surpluses to reduce future procurement prices appeals to many foreign buyers.[99] While the price differential may currently operate to the chagrin of domestic sellers, the prices yielded on the global market still produce net gains for such exporters—especially considering the volumes potentially traded. North American LNG exports have been predicted to grow to represent between 15% and 20% of global LNG trade by 2020.[100] Following this assumption, North American hub-priced supplies would dominate the incremental market for new LNG supply.[101] When taken into account with the LNG surpluses that would be generated, this supply has the potential to disrupt oil-indexation practices and stimulate preference for hub-pricing.[102] Compared with historical conventions for international LNG supply contracts and fully oil-indexed prices, newer U.S. LNG contracts are offering more delivery and destination flexibility, lower price levels, and greater price stability.[103] As a result of these benefits, large European buyers are increasingly optimistic about U.S. LNG providing the solution to commercial diversification concerns.[104]

Unlike crude oil, which can fairly easily be shipped by tanker, natural gas exports will require considerable investments into building the necessary infrastructure for transporting gas from the U.S. to Europe (liquefied gas terminals, regasification terminals, requalification of refineries, etc.).[105] Measures to this end are already well underway on both sides of the Atlantic, however, and this is a good indication of the high trading volumes

98. *Id.*

99. *Id.*

100. *Id.* at 230.

101. *Id.*

102. *Id.*

103. *Id.* at 251.

104. *Id.*

105. Francesco Stipo, *Is Europe the New Frontier for US Energy Exports?*, THE HILL (Aug. 31, 2015), http://thehill.com/blogs/pundits-blog/energy-environment/252293-is-europe-the-new-frontier-for-us-energy-exports.

that are anticipated.[106] LNG projects are economically feasible only where there are large proven reserves and where markets and politics permit operations at a high load factor over an extended period.[107] The economics of shale production suggests that high volumes of low cost output will be sustainable for several decades to come.[108] Consequently, over the second half of this decade, several U.S. LNG export projects are poised to introduce large volumes of hub-priced LNG to the global market, as their offtakers aim to take advantage of the price discount of this gas relative to that in global gas markets today.[109] Overall, LNG import capacity in Europe is sufficient to address the needs; currently, it is enough to meet around 43% of total current gas demand, but it is not optimally distributed.[110] Significant regional disparities regarding access to LNG remain.[111] The E.U. is thus considering having new terminals in appropriate locations, or better access to existing terminals—allowing more gas hubs to function.[112] In its European Energy Security Strategy, the European Commission emphasized the need to explore ways to improve interconnectivity and cross-border use of storage capacity to bolster the E.U. infrastructure.[113]

V. INCLUSION OF A SEPARATE ENERGY CHAPTER

Among the questions that have arisen in TTIP negotiations is how to address trade and investment in energy and whether or not there should be a separate chapter on energy in the agreement.[114] Much of this discussion has focused on the

106. *Id.*; Michael Levi, *A Strategy for U.S. Natural Gas Exports*, HAMILTON PROJECT (June 2012), http://www.hamiltonproject.org/assets/legacy/files/downloads_and_links/06_exports_levi.pdf.

107. SMITH ET AL., *supra* note 9, at 1073.

108. Goncalves, *supra* note 83, at 241.

109. *Id.* at 240.

110. Eur. Comm'n Press Release IP/16/307, *supra* note 75.

111. *Id.*

112. *Id.*

113. *Id.*

114. *Commission to Hold Off On Tabling New TTIP Energy Proposal Until July*, 34 INSIDE U.S. TRADE 16 (Apr. 22, 2016), http://insidetrade.com/inside-us-trade/commission-hold-tabling-new-ttip-energy-proposal-until-july.

sufficiency of World Trade Organization (WTO) provisions, particularly GATT and the General Agreement on Trade in Services' provisions to cover issues unique to raw materials and energy.[115] The E.U. has also cited the potential of TTIP's treatment of energy to set a new global standard and serve as a model for future energy-related agreements.[116] To appreciate the underlying concerns in this dialogue, however, it is worthwhile to note the paradigm shift reflected by the U.S.' position on the issue as a result of its emergence as an energy power.

Thus far in TTIP negotiations, the U.S. has continued to resist European negotiators' push for a separate chapter on energy that would promote access to energy sources and raw material, claiming that such a chapter is unnecessary.[117] The U.S. argues that separating out provisions on energy from language on trade in goods and services or on investment creates an unjustified distinction.[118] This is inconsistent with past U.S. positions taken in past FTAs, such as the Canada-U.S. FTA and the North American Free Trade Agreement (NAFTA).[119] In the negotiations for each of these FTAs, the U.S. was insistent on the inclusion of a separate energy chapter.[120] This difference between the U.S. historical position and the one taken in TTIP negotiations can most readily be explained by the shift in the U.S. energy outlook. When NAFTA was being negotiated, energy security was still dictating U.S. policy in foreign relations. At the time, the overriding objective of the U.S. was to obtain greater access to the crude oil resources of its neighbors, Mexico and

115. EUR. COMM'N, *EU - US Transatlantic Trade and Investment Partnership*: *Raw Materials and Energy – Initial EU Position Paper* (July 2013), http://trade.ec.europa.eu/doclib/docs/2013/july/tradoc_151624.pdf.

116. *Id.*

117. Stephen Joyce, *Negotiators Battle Clock, Differences in TTIP Talks*, BLOOMBERG BNA (Apr. 25, 2016), http://news.bna.com/itln/display/batch_print_display.adp?searchid=27570276.

118. Keith J. Benes, *Considerations for the Treatment of Energy in the US-EU Transatlantic Trade and Investment Partnership*, CTR. ON GLOBAL ENERGY POLICY (Sept. 2015), http://energypolicy.columbia.edu/sites/default/files/energy/Considerations%20for%20the%20Treatment%20of%20Energy%20in%20TTIP_September%202015.pdf.

119. *Id.*

120. *Id.*

Canada.[121] Present E.U. supply security and diversification concerns are similar to the issues that motivated the U.S. to demand separate energy chapters in the Canada-U.S. FTA and later, NAFTA—namely the drive to include an explicit bar on energy export restrictions.[122]

VI. IMPLICATIONS FOR THE FUTURE

Irrespective of whether a separate chapter on energy materializes in the final TTIP agreement, the U.S. and E.U. should seize the opportunity to adopt a legal framework for energy products and raw materials that reflects the importance of their mutual energy security. Energy's role in modern society, as less a commodity and more a political asset, means that those with great energy resources wield disproportionate power over those without them. The new realities of the U.S.' energy position create an obligation to bring stability to global energy markets by supporting its trade partners (against threats from historically unstable producers),[123] and thereby maximizing the benefits of allied power. The stage is set for a revolutionary change in global energy markets, with trade implications of an unprecedented scale. If the TTIP is to be a beacon of economic cooperation, a model for the 21st century, and the tie that binds the largest trading partners in the world, energy must be at the heart of it.

121. *Id.* at 11.

122. *Id.* at 17.

123. American energy supplies on world markets could serve as a buffer for future shocks.