

REPORT OF THE INTERNATIONAL ENERGY LAW AND TRANSACTIONS COMMITTEE

This report focuses on two major developments in international energy law and transactions throughout 2018, as well as some limited material from 2019.* First, it discusses the impact of increased United States (U.S.) petroleum and natural gas production (due to the widespread use of hydraulic fracturing) on international energy trade, with a focus on North American trade. Second, it updates the Committee’s 2017 report about developments in European Union energy law and policy, specifically the soon-to-be completed adoption of the Clean Energy for All Europeans legislative package.

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I. U.S. ENERGY SUPPLY & TRADE DEVELOPMENTS

A. *Impact of the Shale Gas Revolution on U.S. Energy Imports/Exports*

Since 1953, the U.S. has been a net importer of energy including petroleum, natural gas and electricity. However, in 2017, the U.S. became a net exporter of natural gas, and the Energy Information Administration (EIA) projected in January 2019 that the U.S. will be a net exporter of petroleum by 2020.¹ EIA further projected that natural gas exports will increase steadily through 2030, and the U.S. is

* This report was drafted by Committee Chair Walter R. Hall II, Vice Chair Kenneth A. Barry, and O. Julia Weller.

1. U.S. ENERGY INFO. ADMIN. (EIA), ANNUAL ENERGY OUTLOOK 2019 12, 20, 66, 72–86 (Jan. 2019), <https://www.eia.gov/outlooks/aeo/pdf/aeo2019.pdf> [hereinafter AEO]; EIA, THE UNITED STATES IS EXPECTED TO EXPORT MORE ENERGY THAN IT IMPORTS BY 2020 (Jan. 29, 2019), <https://www.eia.gov/todayinenergy/detail.php?id=38152>.

projected to maintain its status as a net exporter until at least 2050.² Net exports of petroleum, however, are projected to end as early as 2035; the specific end-date is dependent on future oil price levels and production technology cost.³

This turnaround is attributable to: (1) the “shale gas revolution” (i.e. hydraulic fracturing of shale gas formations), which has greatly increased U.S. petroleum and natural gas production;⁴ (2) limited growth in U.S. demand for these fossil fuels;⁵ and (3) substantial growth in Mexican and, particularly, Asian demand.⁶ Most of the increased gas production comes from the Appalachian Marcellus and Utica shale formations in the eastern U.S., although there also has been significant production growth in the Permian and other basins in Texas/New Mexico and the Bakken oil field in North Dakota.⁷ The substantial growth in natural gas production volumes in the Appalachian region has resulted in the displacement of some imported Canadian natural gas into the Midwest and in the penetration of U.S. natural gas into eastern Canada, while the increased production in Texas and New Mexico has led to the U.S. increasingly exporting natural gas to Mexico.⁸ The shale gas boom also has led to expanded liquefied natural gas (LNG) trade with Asia and is reversing the historic flow patterns of natural gas from southwest or western U.S. production fields to eastern consumption regions.⁹

The effect of these developments on North American energy trade has been significant. Historically, the U.S. was a substantial net importer of both petroleum and natural gas from Canada, and a substantial net importer of petroleum from Mexico. The U.S. remains a net importer of petroleum from each country, but its natural gas imports from Canada have dropped significantly and it now exports

2. AEO, *supra* note 1, at 20.

3. *Id.* at 14.

4. As outlined by the International Energy Agency (IEA), “The shale revolution continues to shake up oil and gas supply, enabling the United States to pull away from the rest of the field as the world’s largest oil and gas producer. . . . [T]he United States accounts for more than half of global oil and gas production growth to 2025 (nearly 75% for oil and 40% for gas). By 2025, nearly every fifth barrel of oil and every fourth cubic metre of gas in the world come from the United States.” IEA, WORLD ENERGY OUTLOOK 2018: EXECUTIVE SUMMARY 2 (2018), <https://webstore.iea.org/download/summary/190?fileName=English-WEO-2018-ES.pdf> [hereinafter WEO]; *see also* IEA, GAS 2018: ANALYSIS AND FORECASTS TO 2023: EXECUTIVE SUMMARY 3 (2018), <https://webstore.iea.org/download/summary/1235?fileName=English-Gas-2018-ES.pdf> (stating that the U.S. provides “nearly three-quarters of LNG export growth” between 2017 and 2023).

5. AEO, *supra* note 1.

6. *Id.*; *see also* WEO, *supra* note 4; EIA, U.S. EXPECTS RELATIVELY FLAT NATURAL GAS PRICES, CONTINUED RECORD PRODUCTION THROUGH 2020 (Jan. 17, 2019), <https://www.eia.gov/todayinenergy/detail.php?id=38052>. For example, U.S. natural gas production equaled approximately 60 billion cubic feet (bcf/d) per day as late as 2010, but had increased to 83.3 bcf/d by 2018 and is projected to increase to above 115 bcf/d by 2030. EIA, NATURAL GAS PRODUCTION/CONSUMPTION RETROSPECTIVE 2010 (Apr. 25, 2011), <https://www.eia.gov/todayinenergy/detail.php?id=1090>; EIA, SHORT-TERM ENERGY OUTLOOK (Mar. 12, 2019), <https://www.eia.gov/outlooks/steo/report/natgas.php>; EIA, U.S. NATURAL GAS PRODUCTION AND CONSUMPTION INCREASE IN NEARLY ALL AEO2018 CASES (Apr. 16, 2018), <https://www.eia.gov/todayinenergy/detail.php?id=35792>. The United States surpassed Russia in 2009 as the world’s largest natural gas producer. EIA, UNITED STATES REMAINS THE WORLD’S TOP PRODUCER OF PETROLEUM AND NATURAL GAS HYDROCARBONS (June 7, 2017), <https://www.eia.gov/todayinenergy/detail.php?id=31532#>.

7. AEO, *supra* note 1, at 72–86; EIA, THE UNITED STATES EXPORTED MORE NATURAL GAS THAN IT IMPORTED IN 2017 (May 19, 2018), <https://www.eia.gov/todayinenergy/detail.php?id=35392#>.

8. AEO, *supra* note 1, at 80.

9. *Id.* at 78–80.

substantial natural gas (pipeline and LNG) and, to a lesser degree, electricity, to Mexico.¹⁰ Electricity trading between the U.S. and Canada has grown modestly over the past ten to fifteen years.¹¹ A detailed discussion of the current trading environment between the U.S., Canada and Mexico can be found in sections II and III below.

B. *Impact on LNG Trade*

To date, the increase in U.S. shale gas production has had only a modest effect on international trade outside of North America, but both the EIA and the International Energy Agency (IEA) project that this will change after 2020 and through 2050.¹² International trade in natural gas beyond North America consists primarily of trade in liquefied natural gas (LNG). Participation in this trade requires the construction of liquefaction terminals in supplier countries and regasification terminals in consumer countries. This is because natural gas, which naturally occurs in a gaseous state, must be cooled (i.e. to negative 162° Fahrenheit) and pressurized to permit transportation in ships from the supplier country to the consumer country.¹³ During the period when the U.S. was a net energy importer, it imported LNG through several regasification terminals. These have now been modified to become liquefaction terminals, and several additional plants have been approved for construction, such that future U.S. LNG liquefaction capacity could equal as much as 16.5 billion cubic feet per day (bcf/d).¹⁴ EIA projects that approximately 14 bcf/d of natural gas will be converted to LNG for export into this international market by 2030 and that such exports will continue through 2050.¹⁵ By contrast, U.S. LNG export trade in 2016 equaled less than 1 bcf/d and remains

10. *Id.* at 84; EIA, THE UNITED STATES IS EXPECTED TO EXPORT MORE ENERGY THAN IT IMPORTS BY 2020 (Jan. 29, 2019), <https://www.eia.gov/todayinenergy/detail.php?id=38152>; EIA, THE UNITED STATES IS A NET IMPORTER FROM CANADA (May 23, 2018), <https://www.eia.gov/todayinenergy/detail.php?id=36332> (noting that Canada is the U.S.'s largest energy trade partner with an export trade value in 2017 of approximately \$73 billion and an import trade value of approximately \$18 billion).

11. EIA, THE UNITED STATES IS A NET IMPORTER FROM CANADA (May 23, 2018), <https://www.eia.gov/todayinenergy/detail.php?id=36332>.

12. AEO, *supra* note 1, at 84; WEO, *supra* note 4, at 2.

13. EIA, LIQUEFIED NATURAL GAS-BASICS (July 13, 2018), https://www.eia.gov/energyexplained/index.php?page=natural_gas_lng.

14. FERC, NORTH AMERICAN LNG IMPORT/EXPORT TERMINALS APPROVED (Jan. 29, 2019), <https://www.ferc.gov/industries/gas/indus-act/lng/lng-approved.pdf>.

15. AEO, *supra* note 1, at 84–86; EIA, U.S. LIQUEFIED NATURAL GAS EXPORT CAPACITY TO MORE THAN DOUBLE BY THE END OF 2019 (Dec. 10, 2018), <https://www.eia.gov/todayinenergy/detail.php?id=37732>. The U.S. is projected to become the third largest supplier of LNG during this period (after Qatar & Australia) and provide 40% of the additional supply needed to support the expected substantial expansion in the LNG market. China (currently the world's second largest LNG consuming country and expected to become the largest in the early 2020s) and Europe (currently the second largest natural gas market in the world after the U.S.) are expected to become substantial consumers of U.S. supplied LNG. EIA, GLOBAL LNG TRADE CONTINUES TO GROW, ESPECIALLY FROM AUSTRALIA AND THE UNITED STATES (June 11, 2018), <https://www.eia.gov/todayinenergy/detail.php?id=36452>; EIA, CHINA BECOMES WORLD'S SECOND LARGEST LNG IMPORTER, BEHIND JAPAN (Feb. 23, 2018), <https://www.eia.gov/todayinenergy/detail.php?id=35072>; EIA, NATURAL GAS PRICES, PRODUCTION, AND EXPORTS INCREASED FROM 2016 TO 2017 (Jan. 16, 2018), <https://www.eia.gov/todayinenergy/detail.php?id=34532>.

at only slightly greater than 2 bcf/d in 2018.¹⁶

The IEA further projects that LNG trade will increase by almost 100 billion cubic meters (bcm) by 2040.¹⁷ Most of the increase in exports will take place to Asia, with China becoming the largest consumer of LNG, but with substantial growth in Europe as well.¹⁸ Moreover, by 2023, an additional 140 bcm of LNG export facilities will have been installed (half of which within the U.S.), substantially increasing LNG trade from that date forward.¹⁹ The IEA describes this expected development as a “structural transformation in the gas market that is being spurred by the rise of LNG” and, as further explained below, attributes much of this transformation to expected U.S. LNG exports.²⁰ Another key element of the transformation is that LNG markets will become more interconnected and globalized.²¹

In addition to these structural changes in the market, LNG contracting and pricing practices are expected to undergo major revisions – revisions that are facilitated by the growth in U.S. participation in this market. The IEA refers to these changes as “the new gas order.”²² Many of the contractual provisions employed in past LNG trade were adopted from the natural gas pipeline industry, including: (1) indexing of LNG prices to oil prices; (2) destination specific contracts; (3) prohibitions of resale of the LNG under the contract; (4) take-or-pay terms; and (5) long-term contracts. Many of these provisions, which were essential to the financing of geographically fixed pipelines, are proving unnecessary to finance infrastructure that supports the more flexible LNG trade.²³ Moreover, many of these practices have not been used in the U.S. since competitive interstate natural gas markets were introduced approximately twenty-five years ago.²⁴ Thus, U.S. LNG suppliers do not require these restrictive provisions, or do so less frequently, which places pressure on other LNG suppliers to also abandon them.

16. AEO, *supra* note 1, at 84–86; EIA, U.S. NATURAL GAS PRODUCTION AND CONSUMPTION INCREASE IN NEARLY ALL AEO 2018 CASES (Apr. 16, 2018), <https://www.eia.gov/todayinenergy/detail.php?id=35792>; EIA, NATURAL GAS PRICES, PRODUCTION, AND EXPORTS INCREASED FROM 2016 TO 2017 (Jan. 16, 2018), <https://www.eia.gov/todayinenergy/detail.php?id=34532>.

17. IEA, OUTLOOK FOR NATURAL GAS 367 (2017), https://www.iea.org/publications/freepublications/publication/WEO2017Excerpt_Outlook_for_Natural_Gas.pdf.

18. WEO, *supra* note 4, at 5. Global gas trade in 2017 approached 1.2 trillion cubic meters with LNG trade constituting 32.9% of that total. This percentage would be expected to substantially rise in coming years due to the expansion in LNG infrastructure stated above. *Id.*; *see also* IEA, GAS 2018: ANALYSIS AND FORECASTS TO 2023: EXECUTIVE SUMMARY 3 (2018), <https://www.iea.org/gas2018>; IEA, NATURAL GAS INFORMATION 2018 OVERVIEW (2018), <https://www.iea.org/statistics/naturalgas/> [hereinafter IEA Analysis].

19. IEA, ANALYSIS AND FORECASTS TO 2023: EXECUTIVE SUMMARY 5 (2018), <https://webstore.iea.org/download/summary/1235?fileName=English-Gas-2018-ES.pdf>.

20. IEA, OUTLOOK FOR NATURAL GAS iii (2017), https://www.iea.org/publications/freepublications/publication/WEO2017Excerpt_Outlook_for_Natural_Gas.pdf.

21. *Id.* at 362.

22. *Id.* at 367.

23. *Id.* at 367, 382–390; AEO, *supra* note 1, at 86.

24. IEA ANALYSIS, *supra* note 19, at 367.

II. CANADIAN ENERGY SUPPLY & TRADE DEVELOPMENTS

A. *Trudeau Administration Bill C-69 – A New Canadian Energy Regulator*

In February 2018, the Trudeau Administration's Environment Minister introduced legislation in the Canadian Parliament to enact the Impact Assessment Act and Canadian Energy Regulator Act (Bill C-69).²⁵ In its *New Canadian Energy Regulator Handbook*, the Administration explains that its objective is to replace the National Energy Board (NEB) by creating “a new, world-class federal energy regulator for the 21st century.”²⁶ This is to be accomplished through five primary changes in Canada's current energy and environment regulation:²⁷

- (i) **Establish Modern and Effective Governance:** The adjudicative function of the new Canadian Energy Regulator (CER) would be separated from the regulation function. The CER Commissioners, as well as a new Board of Directors, would be responsible for new project reviews and other adjudicatory matters, whereas a Chief Executive Officer would oversee day-to-day regulatory actions, thus enhancing the separation of adjudication from regulatory compliance.
- (ii) **Enhanced Certainty and Timelier Decisions:** New project certifications would be conducted through an integrated process, examining both environmental and regulatory issues in a single proceeding, conducted by both the new Impact Assessment Agency of Canada (IAAC) and the CER with reduced maximum time periods for concluding such reviews (i.e. two years). The CER also would be given new authority over offshore renewable projects and power lines, and its decision to reject a project could not be reversed by the Federal Cabinet.
- (iii) **More Inclusive Public Engagement:** Current NEB limitations on public participation in new project certification hearings to entities directly affected would be eliminated, the CER would be required to engage with the public outside of the hearing process, the factors considered by the regulator in making “public interest” determinations would be codified, and funding to permit public engagement in hearings and other regulatory processes would be expanded.
- (iv) **Greater Indigenous Participation:** The new legislation would require CER and IAAC consideration of indigenous knowledge in certification decision making, expand consultation with indigenous nations, establish an Indigenous Advisory Committee and require one Commissioner and one Board of Directors member to be a representative of indigenous peoples.

25. HOUSE OF COMMONS OF CAN., BILL C-69 (Feb. 8, 2018), https://www.parl.ca/Content/Bills/421/Government/C-69/C-69_1/C-69_1.PDF.

26. GOV'T OF CANADA, THE NEW CANADIAN ENERGY REGULATOR HANDBOOK 2 (Feb. 4, 2019)(CER Handbook), <https://www.canada.ca/en/services/environment/conservation/assessments/environmental-reviews/national-energy-board-modernization/cer-handbook.html>; GOV'T OF CANADA, A MODERN, NEW AND WORLD-CLASS FEDERAL ENERGY REGULATOR FOR THE 21ST CENTURY – THE NEW CANADIAN ENERGY REGULATOR HANDBOOK, <https://www.canada.ca/content/dam/themes/environment/conservation/environmental-reviews/neb-handbook-e.pdf>.

27. CER Handbook, *supra* note 26, at 5-9.

- (v) **Strengthened Safety and Environmental Protection:** The new legislation would enhance the authority of federal inspection officers to halt unsafe construction or operation and would incorporate enforcing standards related to cybersecurity.

As of March 2019, the bill had passed the House of Commons and was before the Canadian Senate.²⁸ The Senate's Committee on Energy, the Environment and Natural Resources is taking statements in favor or in opposition to the Bill, and proposes to report it to the full Senate by May 9. Opponents of the Bill's passage, which includes much of Canada's energy industry, assert that it fails to sufficiently weight economic benefits from energy project development as a factor to be considered in project approval, and, because of the complexity and many factors to be considered in project approval, will not achieve its supposed benefits of more transparent and timely decision-making.²⁹

B. *Natural Gas Developments*

Natural gas production exceeded 15 bcf/d in Canada in 2018, and is expected to grow to over 20 bcf/d by 2040.³⁰ This growth, however, assumes the development of expanded export markets, including a significant LNG market, with LNG exports to begin in 2025.³¹ In 2018, Canada LNG, a British Columbia-based facility, became the first LNG plant to announce a final decision to begin its construction.³² The NEB has approved licenses for 24 LNG plants, of which 18 are in British Columbia, but no other plant is actively pursuing construction.³³ The uncertainties surrounding Canadian LNG development have been explained by the NEB as follows:

28. HOUSE OF COMMONS OF CAN., BILL C-69 (June 20, 2018), <https://www.parl.ca/DocumentViewer/en/42-1/bill/C-69/third-reading>; LEGISInfo, House Government Bill C- 69 (2018), <https://www.parl.ca/LegisInfo/BillDetails.aspx?billId=9630600&Language=E>.

29. *Globe editorial: Bill C-69 kills the National Energy Board but keeps all the problems*, THE GLOBE AND MAIL (Sept. 26, 2018), <https://www.theglobeandmail.com/opinion/editorials/article-globe-editorial-bill-c-69-kills-the-national-energy-board-but-keeps/>; Alberta Premier Rachel Notley calls for major amendments to Bill C-69 in Senate address, <https://globalnews.ca/news/5008504/alberta-rachel-notley-senate-bill-c-69/>. Senior elected officials of five additional Canadian Provinces have also sought significant modifications to or have opposed Bill C-69.

30. NAT'L ENERGY BD. (NEB), CANADA'S ENERGY FUTURE 2018: AN ENERGY MARKET ASSESSMENT 52 (Oct. 2018), <https://www.neb-one.gc.ca/nrg/ntgrtd/ft/2018/index-eng.html> [hereinafter CANADA ENERGY].

31. Jessica Jaganathan & Julie Gordon, *Nation's Biggest Private-Sector Project Yet, Wins Go-Ahead*, FINANCIAL POST (Oct. 2, 2018), <https://business.financialpost.com/commodities/energy/update-3-massive-canada-lng-project-gets-green-light-as-asia-demand-for-fuel-booms>.

32. BBC NEWS SERVICES, PARTNERS ANNOUNCE \$31BN CANADA LNG PROJECT GETS GO AHEAD (Oct. 2, 2018), <https://www.bbc.com/news/world-us-canada-45674267>. TransCanada plans to build a new 415-mile natural gas pipeline (Coastal Gaslink) to serve the Canada LNG facility. Julie Gordon, *Canada Gas Pipeline Built to Start in 2019, Pending LNG Plant FID*, REUTERS (May 16, 2018), <https://www.reuters.com/article/us-transcanada-pipeline-lng/canada-gas-pipeline-build-to-start-in-2019-pending-lng-plant-fid-idUSKCN1IH319>.

33. NEB, CANADA'S ROLE IN THE GLOBAL LNG MARKET: ENERGY MARKET ASSESSMENT 7-9 (July 2017), <https://www.neb-one.gc.ca/nrg/sttstc/ntrlgs/rprt/2017lngmrkt/index-eng.html> [hereinafter CANADA LNG]; Julie Gordon & Jessica Jaganathan, *Update-5 – Massive Canada LNG Project Gets Green Light as Asia Demand for Fuel Booms*, CNBC (Oct. 2, 2018), <https://www.cnn.com/2018/10/02/reuters-america-update-5-massive-canada-lng-project-gets-green-light-as-asia-demand-for-fuel-booms.html>; Gordon, *supra* note 31.

Canada has an abundance of natural gas and produces far more natural gas than it needs to meet domestic demand. Traditionally, the United States (U.S.) has been the primary export market for excess Canadian gas, but growing shale gas production in the U.S. has reduced this demand.

Consequently, Canadian (and U.S.) producers have been seeking overseas markets for their natural gas in the form of liquefied natural gas (LNG) exports. Price differentials between North American gas and global LNG have also been large enough to justify the facility development and long-range transportation costs related to LNG trade, although these differentials have been decreasing.

There have been a number of LNG projects proposed in Canada on the West and East Coasts. . . . There are no LNG export projects currently under construction in Canada, and only one of the smaller projects has decided to move ahead. . . .

Canada is a late entrant to global LNG markets and the next several years will be critical to the development of the Canadian LNG industry. Canadian projects have certain advantages, including abundant and relatively low cost natural gas supplies. In addition, west coast Canadian LNG projects have a shorter shipping distance to Asian markets compared to U.S. gulf coast facilities, and east coast Canadian projects have a shorter shipping distance to Europe.

Disadvantages facing Canadian projects include high costs to develop projects in remote locations with limited infrastructure, and, where the construction of new pipelines is required to supply the necessary gas. With LNG prices falling in recent years, the margins needed to justify this type of capital-intensive development have eroded. Increased competition has also made it difficult for Canadian projects to sign long-term supply contracts.”³⁴

On October 9, 2018, a rupture on the 36-inch mainline of Enbridge’s “BC Pipeline” impacted the supply of natural gas in the U.S. Pacific Northwest as well as British Columbia.³⁵ No injuries were reported, and by October 31, Enbridge announced that it had repaired the pipeline and restarted it at 55% capacity, with plans to ramp up operation to 80% capacity by November 2018.³⁶ Despite this, the *Financial Post* reported, two weeks after the rupture incident, that natural gas prices in Western Canada were in “freefall,” reaching a low of 8 cents (U.S.) per million British Thermal Unit on the Alberta pricing hub (a five-month low).³⁷ Producers already had suffered from expanded price differentials as compared to U.S. prices (in both natural gas and oil markets) due both to competition from U.S. shale resources and “a dearth of export pipeline or other transport from Canada’s production regions.”³⁸

34. CANADA LNG, *supra* note 33, at 1.

35. Michael Mobilia & Owen Comstock, *Natural Gas Pipeline Rupture in Canada Affects U.S. Energy Markets*, EIA (Oct. 18, 2018), <https://www.eia.gov/todayinenergy/detail.php?id=37312>.

36. FORTISBC, NATURAL GAS SUPPLY STILL LIMITED DESPITE COMPLETED ENBRIDGE PIPELINE REPAIR (Nov. 2, 2018), <https://www.fortisbc.com/news-events/media-centre-details/2018/11/03/20181102-Natural-gas-supply-still-limited-despite-completed-Enbridge-pipeline-repair>.

37. Rachel Adams-Heard & Kevin Oreland, *Natural Gas Prices Continue Their Freefall in Western Canada Amid Enbridge Pipeline Outage*, FINANCIAL POST (Oct. 22, 2018), <https://business.financialpost.com/commodities/energy/natural-gas-prices-continue-their-freefall-in-western-canada-amid-enbridge-pipeline-outage>.

38. CANADA ENERGY, *supra* note 30, at 21–25; NEB, WESTERN CANADIAN CRUDE OIL SUPPLY, MARKETS, AND PIPELINE CAPACITY 3–4 (Dec. 2018), <https://www.neb-one.gc.ca/nrg/ststsc/crdlndpctrl-mprdct/rprt/2018wstrncndncrd/index-eng.html> [hereinafter CRUDE OIL SUPPLY].

C. Oil Sands Developments

Canadian crude oil production equaled approximately 4.4 million barrels per day (b/d) in 2017, with approximately 60% of this volume obtained from oil sands deposits in Alberta.³⁹ The production of crude oil from oil sands faces several challenges. The first is the depressed price of crude oil discussed earlier. Additionally, crude oil from oil sands – also known as “bitumen” – has the consistency of cold molasses and does not flow unless heated or diluted with lighter grade oils.⁴⁰ This makes both the production and transportation of the produced “bitumen” more expensive than oil produced from traditional deposits.

Three methods are used to produce crude oil from Canadian oil sands: (1) standard production techniques are used to produce a very small portion of the total (i.e. lighter crude oil grades); (2) surface mining techniques (i.e. large trucks and shovel equipment), followed by heating of the excavated material, are used to produce product from deposits within 70 meters of the surface; and (3) “in situ” techniques, i.e. which combine the application of heat by means of buried pipes to separate the bitumen from its host rock formations and the collection of the separated oil flowing by gravity into additional buried pipe collectors, which oil is then pumped to the surface. Oil sands production can be transported by pipeline once diluted with lighter grade crudes. Railroad car transportation is also available, and Alberta is acquiring rail cars to transport up to 120,000 b/d of crude oil for refinement beginning in December 2019.⁴¹

Despite lower crude oil prices, oil sands production has risen modestly (8% annually) in recent years, but this growth is not expected to continue should crude oil prices remain at current levels.⁴² Over the long-term, however, and based upon the assumption of a return to supportive pricing and adequate transport, petroleum production in Canada is expected to grow to 6 million b/d in 2030 before leveling off.⁴³

An additional factor that could depress future oil sands production is a lack of pipeline capacity to deliver the oil to the specialized refineries in the U.S. and western Canada needed to refine it. Two major pipeline expansions, the Keystone XL Project and the Trans-Mountain Expansion Project, have been under development with support from the Canadian government. The Keystone XL project is intended to expand transportation to U.S. refineries in the Gulf of Mexico region and Trans-Mountain Expansion Project is meant to transport the crude to Canada’s west coast, either for export or for refining.⁴⁴ The Keystone XL Project would

39. CANADA ENERGY, *supra* note 30, at 42 & 44; NEB, CANADA’S ENERGY FUTURE 2017 SUPPLEMENT: OIL SANDS PRODUCTION (Jan. 2017), <https://www.neb-one.gc.ca/nrg/ntgrtd/fttr/2017lsnds/index-eng.html> [hereinafter OIL SANDS SUPPLEMENT]; CANADIAN ASSOC. OF PETROLEUM PRODUCERS, OIL SANDS - RECOVERING THE OIL (Feb. 21, 2019), <https://www.canadasoilsands.ca/en/what-are-the-oil-sands/recovering-the-oil>.

40. CRUDE OIL SUPPLY, *supra* note 38, at 5.

41. *Id.* at 4, 8, 13–15. On December 2, 2018, the Government of Alberta announced production curtailments reducing near-term future crude production by 325,000 b/d or 8.7%. *Id.* at 4. Two additional crude oil pipelines are presently in service (Express Pipeline & Enbridge Mainline) but fully utilized. *Id.*

42. CANADA ENERGY, *supra* note 30, at 20–21.

43. CRUDE OIL SUPPLY, *supra* note 38, at 6.

44. TRANS MOUNTAIN CORP., EXPANSION PROJECT, <https://www.transmountain.com/project-overview> (last visited Feb. 21, 2019); News Release, NEB, TRANSCANADA’S KEYSTONE PIPELINE GP LTD. AUTHORIZED

expand the transportation capacity of existing pipelines from the U.S.–Canada border to U.S. refineries in the Gulf of Mexico region by using a shorter route and larger diameter pipe.⁴⁵ The Canadian portion of the pipeline was approved by the Canadian government in 2010,⁴⁶ but the U.S. portion was rejected by President Obama due to concerns about the impact of the oil sands on climate change.⁴⁷ President Trump reversed that decision shortly after taking office, but a federal judge in Montana halted construction, holding that the U.S. State Department’s environmental analysis was insufficient and ordering a further report.⁴⁸ The State Department has issued a Notice of Intent to supplement its environmental analysis as directed by the Court.⁴⁹

Construction of the Trans-Mountain Expansion Project, which seeks to increase transport capacity of an existing pipeline from 300,000 to 890,000 Mbbls (and also expand a coastal marine terminal now able to service 5 marine tankers a month to permit servicing 34 such tankers) has been suspended since August 30, 2018, when NEB approval was overturned by a Canadian Federal Court of Appeal.⁵⁰ The Court held that the NEB failed to properly evaluate the adverse environmental effects of the expected marine shipping of the crude oil (NEB having held it lacked jurisdiction to do so), and further that indigenous peoples affected by the project had not been fully and effectively consulted.⁵¹

TO BEGIN ADDITIONAL CONSTRUCTION ACTIVITIES ON ITS KEystone XL PROJECT IN CANADA (Jan. 21, 2019), <https://www.neb-one.gc.ca/bts/nws/nr/2019/nr02-eng.html>.

45. TRANSCANADA, KEystone XL; ABOUT THE PROJECT (last visited Mar. 16, 2019), <http://www.keystone-xl.com/kxl-101/project/>.

46. News Release, NEB, TRANSCANADA’S KEystone PIPELINE GP LTD. AUTHORIZED TO BEGIN ADDITIONAL CONSTRUCTION ACTIVITIES ON ITS KEystone XL PROJECT IN CANADA (Jan. 21, 2019), <https://www.neb-one.gc.ca/bts/nws/nr/2019/nr02-eng.html>.

47. Dep’t of State, Notice of Decision to Deny a Presidential Permit to TransCanada Keystone Pipeline LP for the proposed Keystone XL Pipeline, 80 Fed. Reg. 76611 (Dec. 9, 2015); John Kemp, *Keystone Modifications Call Obama’s Bluff*, REUTERS (Sept. 6, 2012), <https://www.reuters.com/article/column-kemp-oil-keystone/column-keystone-modifications-call-obamas-bluff-john-kemp-idINL6E8K6D5920120906>.

48. U.S. Dep’t of State, Notice of Issuance of a Presidential Permit to TransCanada Keystone Pipeline, 82 Fed. Reg. 16467 (April 4, 2017); U.S. Dep’t of State, Notice of TransCanada Keystone Pipeline L.P.’s Re-Application for a Presidential Permit to Construct, Connect, Operate and Maintain Pipeline Facilities on the Border of the United States and Canada, 82 Fed. Reg. 10429 (Feb. 10, 2017). *Indigenous Env’tl. Network v. U.S. Dep’t of State*, 317 F. Supp. 3d 1118, 1123 (D. Mont. 2018); Steven Mufson & Juliet Eilperin, *Trump Seeks to Revive Dakota Access, Keystone XL Oil Pipelines*, THE WASHINGTON POST (Jan. 24, 2017), https://www.washingtonpost.com/news/energy-environment/wp/2017/01/24/trump-gives-green-light-to-dakota-access-keystone-xl-oil-pipelines/?noredirect=on&utm_term=.9345c8b34257; *Indigenous Env’tl. Network v. U.S. Dep’t of State*, 317 F. Supp. 3d 1118, 1123 (D. Mont. 2018).

49. Notice of Intent to Prepare a Supplemental Environmental Impact Statement for the Proposed Keystone XL Pipeline, 83 Fed. Reg. 62398 (Dec. 3, 2018); CBS NEWS, *KEystone XL PIPELINE TO START CONSTRUCTION IN 2019*, (September 24, 2018), <https://www.cbsnews.com/news/keystone-xl-pipeline-construction-to-start-in-2019/>. Prior to the Court’s directive, TransCanada had announced that it would re-initiate construction on the pipeline in 2019.

50. *Tsleil-Waututh Nation v. Canada*, 2018 FCA 153, para. 5, 13 (Can. Fed. Ct.).

51. *Id.* at para. 448-449.

On February 22, 2019, the NEB issued its “Reconsideration Report” in response to the Court’s Order.⁵² The Board concluded that “[T]he Project is and will be required by the present and future public convenience and necessity, and is in the Canadian public interest. . . . The Board recommends that the GIC [Governor in Council] approve the Project by directing the issuance of a certificate of public convenience and necessity (CPCN) to Trans Mountain Pipeline ULC (Trans Mountain), subject to 156 conditions.”⁵³ The Board explained its decision as follows:

“Project related marine shipping is likely to cause significant adverse environmental effects on the Southern resident killer whale and on indigenous cultural use associated with the Southern Resident killer whale. The NEB also found that greenhouse gas emissions from Project-related marine vessels would likely be significant. While a credible worst-case spill from the Project or a Project-related marine vessel is not likely, it were to occur the environmental effects would be significant. While these effects weighed heavily in the NEB’s consideration of Project-related marine shipping, the NEB recommends that the Government of Canada find that they can be justified in the circumstances, in light of the considerable benefits of the Project and measures to minimize the effects.

The considerable benefits of the Project include increased access to diverse markets for Canadian oil; jobs created across Canada; the development of capacity of local and indigenous individuals, communities, and businesses; direct spending on pipeline materials in Canada; and considerable revenues to various levels of government.”⁵⁴ Further consultations with indigenous peoples are also in progress and a Government decision on the Project is expected shortly. As the above indicates, environmental opposition to production or transport of crude oil from oil sands is a third factor that could affect future crude production levels.⁵⁵

52. NEB, National Energy Board Reconsideration of Aspects of Its OH-0001-2014 Report as directed by Order in Council P.C. 2018-1177 (February 2019)(Reconsideration Report), <https://www.neb-one.gc.ca/pplctnflng/mjrpp/trnsmntnxpnsn/trnsmntnxpnsnrprt-eng.html>. The Board’s original Report, issued in May 2016, may be accessed at <https://www.neb-one.gc.ca/pplctnflng/mjrpp/trnsmntnxpnsn/hrngprcss-eng.html#s3>.

53. Reconsideration Report, Introduction and Disposition, note 52 *supra*, at p. 1.

54. NEB Press Release, “NEB Releases Reconsideration Report for Trans Mountain Expansion Project (Feb. 22, 2019),”; Reconsideration Report, Introduction and Disposition, note 52 *supra*, at p. 1- 7. The NEB further explains that its conclusion respecting significant adverse environmental effects from the Project’s marine terminal operations reflects in substantial part the already environmentally degraded and heavy shipping traffic in the Salish Sea where the terminal will be located, and further that its recommendation that the Government should approve the Project arises substantially from the numerous conditions (i.e. 156) it imposes on project operation to reduce environmental effects and its further 16 recommendations for Government action to offset Project environmental effects by reducing existing, non-project related adverse environmental effects on the Sea. NEB, Conditions and Recommendations Overview – Trans Mountain Project Reconsideration Report (Feb. 22, 2019), <https://www.neb-one.gc.ca/pplctnflng/mjrpp/trnsmntnxpnsn/trnsmntnxpnsnrprtcdntn-eng.html>.

55. A third planned major pipeline, proposed to ship oil sands bitumen from Alberta to New Brunswick, has been abandoned due to expected environmental opposition. Kristine Delkus, Letter to N.E.B., TRANSCANADA (Oct. 5, 2017), <https://apps.neb-one.gc.ca/REGDOCS/Item/Filing/A86594>; NEB, ENERGY EAST AND EASTERN MAINLINE PROJECTS (Oct. 5, 2017), <https://www.neb-one.gc.ca/pplctnflng/mjrpp/nrgyst/index->

III. MEXICO ENERGY SUPPLY & TRADE DEVELOPMENTS

A. *U.S. Energy Exports to Mexico*

As noted above, historically the U.S. has been a net importer of energy from Mexico; however, beginning in 2015, the combined value of exported U.S. natural gas and petroleum (i.e., refined crude oil) to Mexico overtook the value of U.S. import of Mexican crude.⁵⁶ The economic value of U.S. energy exports to Mexico – \$25.8 billion in 2017 – is more than double Mexico’s \$11.1 billion in crude oil exports to the U.S.⁵⁷ The main drivers behind the notable growth in exports to Mexico are the boom in U.S. natural gas production, coupled with Mexico’s plan to significantly boost natural gas-fired electric generation.⁵⁸ In 2017, exports to Mexico averaged 4.6 bcf/d, and the EIA reported that, during 2018, the pipeline industry was expected to “nearly double” the capacity for achieving such exports.⁵⁹ In July 2018, the EIA further observed that exports to Mexico had, for the first time, exceeded 5 bcf/d, as several “key pipelines” in that country were commissioned, with more expected by the end of the year.⁶⁰

Growing sales to Mexico of pipeline natural gas and natural gas liquids are an important component in EIA’s recent projection that the U.S. will become a net energy exporter by 2020.⁶¹ It will take another decade – to around 2030 – before the EIA foresees Mexican imports of natural gas plateauing, as by then it expects Mexico-sourced gas production to start displacing U.S. imports.

Mexico’s growing dependency on U.S. natural gas supplies, accounting for 60-65% of total Mexican supplies, has coincided with a fall in its internal gas production.⁶² Mexican gas is largely associated gas, and the country’s oil production has been in a downward trend (falling 30-40% since 2010) since hitting a peak in 2004.⁶³ While Mexico could address its growing dependency on natural gas im-

eng.html; Ian Austin, *Major Canadian Pipeline Project is Abandoned*, N.Y. TIMES (October 5, 2017), <https://www.nytimes.com/2017/10/05/business/canada-energy-east-pipeline.html>.

56. AEO, *supra* note 1, at 80, 84; Press Release, *EIA’s Annual Energy Outlook 2019 Projects Continued Robust Growth in U.S. Energy production, Emergence of the United States as Energy Exporter, and a Cleaner U.S. Electric Power Generation Mix*, EIA (Jan. 24, 2019), <https://www.eia.gov/pressroom/releases/press463.php>; EIA, *THE VALUE OF US ENERGY EXPORTS TO MEXICO EXCEEDED IMPORT VALUE FOR THIRD YEAR IN A ROW* (Mar. 14, 2018), <https://www.eia.gov/todayinenergy/detail.php?id=35332>.

57. EIA, *The Value of US Energy Exports to Mexico Exceeded Import Value for Third Year in a Row* (Mar. 14, 2018) <https://www.eia.gov/todayinenergy/detail.php?id=35332>.

58. AEO, *supra* note 1, at 80, 84.

59. EIA, *U.S. NATURAL GAS EXPORTS TO MEXICO CONTINUE TO GROW* (Nov. 29, 2016), <https://www.eia.gov/todayinenergy/detail.php?id=28932>.

60. EIA, *U.S. NATURAL GAS PIPELINE EXPORTS INCREASE WITH COMMISSIONING OF NEW PIPELINES IN MEXICO* (Aug. 22, 2018), <https://www.eia.gov/todayinenergy/detail.php?id=36935>.

61. AEO, *supra* note 1, at 13, 20. As further noted, *infra*, Mexico has ample potentially developable shale gas resources, although the timeline for accessing them, as well as the political will, remain uncertain. Jude Clement, *NAFTA Deal to Bolster U.S.-Mexican Natural Gas Trade*, FORBES (Aug. 17, 2018), <https://www.forbes.com/sites/judeclemente/2018/08/17/nafta-deal-to-bolster-u-s-mexican-natural-gas-trade/#17898c9063fa> [hereinafter Clement].

62. Clement, *supra* note 61.

63. *Id.*

ports by implementing widespread hydraulic fracturing, its newly elected president, Andres Manuel Lopez Obrador, has thus far opposed employing this technology for producing natural gas.⁶⁴

B. Status of Mexican Energy Industry Reforms

The election of President Lopez Obrador and his *Juntos Haremos Historia* party (which controls both houses of Congress) has cast doubt on the future of a set of 2013 legislative reforms that mandated the unbundling of the state-run vertical monopolies controlling the electric and natural gas industries.⁶⁵ While the country has proceeded to establish competitive, “open access” regimes, which are modeled after the U.S. and European Union counterparts, the new President, in his inaugural speech to the Mexican Congress, railed against the 2013 reforms as an example of failure of the “neoliberal economy,” citing as evidence falling crude oil production and rising prices for natural gas, electricity, and gasoline.⁶⁶ In a subsequent speech to supporters, he reiterated his opposition to fracking.⁶⁷

The extent to which Lopez Obrador’s rhetoric may translate into new governmental policies remains to be seen. For example, when the President visited a region where shale resources exist – and the local populace is known to favor fracking – he softened his tone, styling his position as a “recommendation” rather than an outright ban.⁶⁸ It likewise remains an open question whether the new Lopez Obrador Administration is serious about overturning Mexico’s prior steps toward deregulation and privatization. For example, while Lopez Obrador has pledged not to unwind contracts already awarded or energy investments made by foreign entities pursuant to the restructuring,⁶⁹ his newly appointed energy minister, Rocio Nahle, has stated her plans to suspend further auctions for oilfield development rights until 2021.⁷⁰

64. *Id.* (noting that EIA estimates that Mexico has a “recoverable shale resource” of 550 trillion cubic feet).

65. See generally Orlando Federico Cabrera-Colorado, Increasing U.S.-Mexico Cross-Border Trade in Electricity by NAFTA’s Renegotiation, 39 ENERGY L.J. 79 (2018).

66. Andrés Manuel López, President, United Mexican States, *Inaugural Address* (Dec. 1, 2018); see also Ronald Buchanan, *Vowing to Transform Mexico, AMLO Takes Aim at Energy Reform in Inaugural Speech*, NATURAL GAS INTELLIGENCE (Dec. 3, 2018), <https://www.naturalgasintel.com/articles/116657-vowing-to-transform-mexico-amlo-takes-aim-at-energy-reform-in-inaugural-speech> (discussing energy relevant portions of President López’ inaugural speech).

67. Andrés Manuel López, President, United Mexican States, *Speech in the Zócalo* (Dec. 2, 2018).

68. Buchanan, *supra* note 66.

69. Nacha Cattán & Eric Martin, *Mexico’s AMLO Takes Office with Attack on Energy Overhaul*, BLOOMBERG (Dec. 1, 2018), <https://bloomberg.com/news/articles/2018-12-01/lopez-obrador-takes-the-reins-in-mexico-vowing-a-transformation>.

70. THE OIL & GAS YEAR, MEXICO E&P AUCTIONS ON HOLD UNTIL 2021: REPORT (Nov. 21, 2018), <https://www.theoilandgasyear.com/news/mexico-ep-auctions-on-hold-until-2021-report/>.

C. *Impact of NAFTA Renegotiation*

In September 2018, the U.S. reached an accord with Mexico and Canada to revise the North American Free Trade Agreement (NAFTA).⁷¹ The new United States – Mexico – Canada Agreement (USMCA) preserves the *status quo* for energy products sold among the countries, including the absence of tariffs.⁷² Of significance for the U.S. oil industry is that Chapter 11’s special provisions for disputing governmental decisions were retained for the energy industry.⁷³ Oil companies had sought to preserve this extra-judicial dispute resolution process for their industry, lest the Mexican government decide to renationalize its energy sector. The USMCA revisions are subject to approval by the respective legislatures of the each country and generally will not go into effect until 2020.⁷⁴

IV. EUROPEAN ENERGY MARKET DEVELOPMENTS

A. *The Clean Energy for All Europeans Package*

In its 2017 Report,⁷⁵ the Committee described at length an extensive package of European Union (EU) legislative proposals known as the Clean Energy for All Europeans Package (Clean Energy Package). This legislation was proposed by the European Commission on November 30, 2016, for adoption by the European Council and EU Parliament.⁷⁶ The Commission summarized the purpose and need for the new legislation as follows:

An integrated EU energy market is the most cost-effective way to ensure secure and affordable supplies to EU citizens. Through common energy market rules and cross border infrastructure, energy can be produced in one EU country and delivered to consumers in another. This keeps prices in check by creating competition and allowing consumers to choose energy suppliers. . . .

Today’s electricity market has fundamentally changed since 2009, when the most recent legislation was introduced. The share of electricity by renewables is expected to grow from 25% to 50% in 2030. . . . Markets need to be improved to meet the needs of renewable energies and attract investment in the resources, like energy storage, that can compensate for variable energy production.

The market must also provide the right incentives for consumers to become more active and to contribute to keeping the electricity system stable.

71. Heather Long, *U.S. Canada and Mexico just reached sweeping new NAFTA deal*, WASH. POST (Oct. 1, 2018), <https://washingtonpost.com/business/2018/10/01/us-canada-mexico-just-reached-sweeping-new-nafta-deal-heres-whats-it/?utmterm=.b4ff20fee69f>.

72. Ryan T. Anderson et al., *An Analysis of the United States – Mexico – Canada Agreement*, THE HERITAGE FOUNDATION: BACKGROUNDER (Jan. 28, 2019), <https://www.heritage.org/trade/report/analysis-the-united-states-mexico-canada-agreement>.

73. Long, *supra* note 71.

74. *Id.*

75. See generally *Committee Report of the International Energy Law and Transactions*, 39 ENERGY L. J. 1 (2018).

76. *Id.* This package places “emphasis on three key objectives: putting energy efficiency first, achieving global leadership in renewable energy use] and providing a fair deal for consumers” in an integrated and competitive internal energy market. EURO. COMM’N, ENERGY STRATEGY AND ENERGY UNION: SECURE, COMPETITIVE, AND SUSTAINABLE ENERGY, <https://ec.europa.eu/energy/en/topics/energy-strategy-and-energy-union> (last visited Mar. 20, 2019). The Commission has estimated that these legislative programs will generate 900,000 jobs and a 1% increase in GDP over the next decade.

On 30 November 2016, the Commission proposed a package of measures . . . including new rules on EU energy market design in order to help energy markets include more renewables, empower consumers, and better manage energy flows across the EU.⁷⁷

The Clean Energy Package implements policies adopted over the past several years, including the Energy Union Package⁷⁸—launched in February 2015—as well as environmental policies to support EU commitments under the Paris Agreement.⁷⁹ The legislation establishes two new clean energy targets for the EU to achieve in 2030: (1) a requirement that 32% of its energy supply be obtained from renewable energy and (2) an objective that 32.5% of energy equivalence be obtained from energy efficiency.⁸⁰ Each target is subject to increase if conditions warrant in 2023.⁸¹ The legislation further adopts an increased electric grid “interconnection target” of 15% by 2030.⁸² If achieved, these targets are expected to produce a 45% reduction in CO₂ and other emissions by 2030, as compared to 1990 emission levels.⁸³

The Clean Energy Package consists of eight separate pieces of legislation. Four of these were fully enacted in 2018 and became effective on December 24, 2018: (1) Energy Performance in Buildings;⁸⁴ (2) Renewable Energy;⁸⁵ (3) Energy Efficiency;⁸⁶ and (4) Governance.⁸⁷ On March 26, 2019, the European Parliament

77. EURO. COMM’N, MARKETS AND CONSUMERS: INTEGRATED ENERGY MARKETS FOR EUROPEAN HOUSEHOLDS AND BUSINESSES, <https://ec.europa.eu/energy/en/topics/markets-and-consumers> (last visited Mar. 20, 2019). The Commission has further stated that the “EU imports more than half of all the energy it consumes, its “import dependency is particularly high for crude oil (90%) and natural gas (69%),” and that many Member States rely on only a single supplier (such as Russia), which leaves them “vulnerable to supply disruptions whether caused by political or commercial disputes, or infrastructure failure.” EURO. COMM’N, ENERGY SECURITY STRATEGY, <https://ec.europa.eu/energy/en/topics/energy-strategy-and-energy-union/energy-security-strategy> (last visited Mar. 20, 2019).

78. See EURO. COMM’N, ENERGY UNION PACKAGE: A FRAMEWORK STRATEGY FOR A RESILIENT ENERGY UNION WITH A FORWARD-LOOKING CLIMATE CHANGE POLICY (2015). The strategy includes development of a single, EU-wide, competitive energy market, expanded success to distributed energy, enhanced clean energy production amongst other elements. *Id.*

79. EURO. COMM’N, CLIMATE ACTION: PARIS AGREEMENT, <https://ec.europa.eu/clima/policies/international/negotiations/paris> (last visited Mar. 20, 2019). The Clean Energy Package, and particularly the targets discussed in the above paragraph, are the basis for the Commission’s “Vision for a Climate Neutral Europe by 2050 – A Clean Planet for All,” which was published on November 28, 2018. EURO. COMM’N, 2050 LONG-TERM ENERGY STRATEGY, <https://ec.europa.eu/energy/en/topics/energy-strategy-and-energy-union/2050-long-term-strategy> (last visited Mar. 20, 2019). The latter seeks to initiate a dialogue within Europe on objectives and implementation programs to achieve Europe’s Paris Accord commitments.

80. EURO. COMM’N, CLEAN ENERGY FOR ALL EUROPEANS (Dec. 12, 2018), <https://ec.europa.eu.energy/en/topics/energy-strategy-and-energy-union/clean-energy-all-europeans>.

81. *Id.*

82. *Id.* The above stated targets replace lesser ones associated with the existing EU Third Energy Package which are expected to be achieved in 2020. An “interconnection target” measures the magnitude of electric generating capacity in an EU country that may be exported to other EU countries.

83. *Id.*

84. See generally Council Directive 2018/844, 2018 O.J. (L 156/75) (EU).

85. See generally Council Directive 2018/2001, 2018 O.J. (L 328/82) (EU) [hereinafter Renewable Sources].

86. See generally Council Directive 2018/2002, 2018 O.J. (L 328/210) (EU).

87. See generally Commission Regulation 2018/1999, 2018 O.J. (L 328/1) 1 [hereinafter Governance Legislation].

signed off on the four remaining pieces of legislation, which concludes the negotiations on the Clean Energy Package.⁸⁸ These four new legislative acts are: (1) a new Electricity Regulation; (2) a new Electricity Directive; (3) a new Regulation on Risk Preparedness; and (4) a new Regulation expanding the regulatory authority of the Agency for Cooperation of Energy Regulators (ACER). Following this parliamentary approval, the Council of Ministers of the EU will have to formally approve the texts of the Directive and the three Regulations, after which they will be published in the Official Journal of the EU. The Regulations will enter immediately into force (with the applicable date of 1 January 2020), while the Directive will require transposition into national law by each EU country within 18 months of publication.⁸⁹

One of the key drivers for the new Electricity Directive is the assumption that consumers will also increasingly be producers — or “prosumers” as they are called by the Clean Energy Package — and that the rules need to be adapted to support distributed generation.⁹⁰ As described in the Directive’s Explanatory Memorandum:

The existing market rules are based on the predominant generation technologies of the last decade, i.e. centralized, large scale fossil fuel-based power plants with limited participation of consumers. As variable RES-E [i.e. renewables & energy efficiency] will play an increasing role in the generation mix of the future, and consumers should be enabled to participate in the markets if they wish so, the rules need to be adapted. Short-term electricity markets which allow trading RES-E across borders are key for the successful integration of RES-E into the market. . . .

Delivering a new deal for energy consumers is a key commitment of the Energy Union. . . . Although consumers can generate and store electricity as well as manage their energy consumption more easily than ever, the current design of the retail market prevents them from being able to fully benefit from such opportunities. . . .

In many Member States, electricity prices do not follow demand and supply, but are regulated by the public authorities. Price regulation can limit the development of effective competition, discourage investments and the emergence of new market players. The Commission therefore committed in its Energy Union Framework Strategy to phase-out regulated prices below cost and to encourage Member States to establish a road map for the phasing out of all regulated prices. The new market design aims at ensuring that supply prices are free of any public intervention, and only with duly justified exceptions.⁹¹

A detailed description of these eight pieces of legislation was provided in the Committee’s 2017 Report.⁹² The following paragraphs supplement that description to further explain the Clean Energy Package’s objectives, expected implementation, and relationship to major, recently adopted EU energy and environmental policies.

88. Press Release, European Commission: Clean Energy for All Europeans: Commission welcomes European Parliament’s adoption of new electricity market design proposals, (March 26, 2019) http://europa.eu/rapid/press-release_IP-19-1836_en.htm [hereinafter EC Press Release].

89. *Id.*

90. *Commission Proposal for a Directive of the European Parliament and of the Council on Common Rules for the Internal Market in Electricity*, COM (2016) 864 final, at 2-3 (Feb. 2, 2017).

91. *Id.*

92. See generally *Committee Report of the International Energy Law and Transactions Committee*, 39 ENERGY L. J. 1 (2018).

The new Renewable Sources Directive,⁹³ in addition to establishing 2030's increased binding renewables penetration target, also establishes: (1) rules to govern support schemes that EU member states can implement to incentivize renewables development; (2) rules for incentivizing or pursuing joint renewable development projects with other EU members and non-members; and (3) rules designed to streamline the permitting process for renewables development and ensuring that end-users are permitted to develop, self-consume, and sell back to the grid electricity from renewable generation sources, subject to limitation if the magnitude of such resources exceeds 8% of installed electric generation capacity.⁹⁴ Support schemes are required to avoid unnecessary interference with the operation of competitive market pricing and to consider system integration costs and effects on grid stability in their design. Additional rules promote the use of renewables in the heating and cooling sector (including district heating and cooling) and govern the development and use of biofuels.⁹⁵

As described above, the Governance legislation sets forth the principal mechanism for implementation of the policies advanced by the new legislation. EU member states are required to develop and submit to the European Commission each year an Integrated National Energy and Climate Plan.⁹⁶ Such plans are required to “implement strategies and measures designed to meet the objectives and targets of the Energy Union and the long-term Union greenhouse gas emissions commitments consistent with the Paris Agreement, and . . . the Union’s 2030 targets for energy and climate.”⁹⁷ These plans should also address each of the five dimensions of the Energy Union policy: (1) energy security; (2) improvement of the internal energy market; (3) expanding energy efficiency; (4) decarbonization and pursuing research; and (5) innovation and competitiveness.⁹⁸ Extensive reporting requirements are also imposed to permit Commission assessment of whether the enhanced 2030 objectives are being met. If they are not being met or if the integrated national plans fail to propose satisfactory measures to obtain the desired targets, the Commission is empowered to make recommendations of improvements necessary or take other measures to achieve such objectives.⁹⁹

As a part of the Energy Security Strategy, the risk preparedness legislation was created to respond to a 2014 “energy security stress test” to determine the effects of up to a six-month halt to Russian gas imports.¹⁰⁰ That test indicated that,

93. Renewable Sources, *supra* note 84.

94. *Id.*

95. *Id.*

96. Governance Legislation, *supra* note 86; Memo, *New Energy Union Governance to Deliver Common Goals*, EURO. COMM’N (Nov. 30, 2018), https://ec.europa.eu.clima/sites/clima/files/2016113001_governance_technical.en.pdf (stating that new and more intensive governance provisions are needed to achieve the increased renewable, efficiency and environmental improvement standards imposed by the new Renewable and Energy Efficiency Directives. It further states that the new governance procedures are expected to increase co-operation amongst Member States needed to achieve these goals).

97. Governance Legislation, *supra* note 86, at art. 1.

98. *Id.*

99. *Id.* at art. 17.

100. EURO. COMM’N, *SEE ENERGY SECURITY STRATEGY* (2014), <https://ec.europa.eu/energy/en/topics/energy-strategy-and-energy-union/energy-security-strategy>.

although such an interruption would have a substantial impact, sufficient supplies could still be available to supply all EU consumers, if there was proper cooperation amongst EU Members and if the EU properly prioritized supply deliveries.¹⁰¹ The risk preparedness legislation seeks to adopt a legislative basis to achieve the necessary cooperation to obtain this desired result.¹⁰²

The European Commission has noted that today's electricity market has changed in fundamental ways since the Third Energy package of 2009 was enacted and that the revised Electricity Directive puts consumers "at the heart of the transition—giving them more choice and greater protection" while also protecting the energy poor and vulnerable consumers.¹⁰³ The revised Electricity Regulation "opens up electricity markets to renewables, energy storage and demand response, it brings stricter and harmonized rules for capacity mechanisms, reconciling EU objectives of security of supply and emission reduction."¹⁰⁴

Finally, the ACER legislation expands ACER's authority to include oversight of future Regional Coordination Centers where Transmission System Operators will develop solutions to grid coordination issues arising from conflicting or inconsistent national actions, as well as rendering other actions affecting regional grid coordination subject to ACER rather than national approvals.¹⁰⁵

B. Natural Gas Developments

The EU also has pursued its energy and environmental policies outside of enacting new legislation. The EU has determined that enhanced integration of an EU-wide energy market requires increasing the member states' physical interconnection. The EU has both promoted the development of and funded projects to achieve enhanced interconnectivity for both the electric and natural gas networks.¹⁰⁶ Some \$800 million of such projects, termed "Projects of Common Interest," were funded in 2018, including the Baltic electricity synchronization project (i.e. to transfer synchronous operation of the Baltic countries' regional grid from Russia to the EU), and several transmission interconnectors between member countries (for example the UK and France, Denmark and Poland, etc.).¹⁰⁷

101. *Id.*

102. *Id.*

103. Press Release, European Commission: Clean Energy for All Europeans: Commission welcomes European Parliament's adoption of new electricity market design proposals, (March 26, 2019) http://europa.eu/rapid/press-release_IP-19-1836_en.htm [hereinafter EC Press Release]; Commission Proposal for a Directive of the European Parliament and of the Council on Common Rules for the Internal Market in Electricity, COM (2016) 864 final, at 2-3 (Feb. 2, 2017).

104. *Id.*

105. Press Release, *Commissioner Miguel Arias Cañete welcomes the provisional political agreement on a proposal to enhance the role of the Agency for the Cooperation of Energy Regulators*, ACER (Dec. 11, 2018), <https://ec.europa.eu/energy/en/news/commissioner-miguel-arias-cañete-welcomes-provisional-political-agreement-proposal-enhance-role>.

106. Gabriel Gordon-Harper, *European Union Announces Collaborative Energy Projects*, SDG KNOWLEDGE HUB (Jan. 30, 2018), <https://sgd.iisd.org/news/european-union-announces-collaborative-energy-projects/>.

107. Press Release, *Energy Union: EU invests a further €8500 million in priority energy infrastructure* (January 23, 2019), <https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKEwj-7JjD9ZThAhUF7J4KHeAGCf4QFjAAegQIAxAc&url=http%3A%2F%2Feuropa.eu%2Frapid>

Natural gas currently represents approximately 25% of the EU's overall energy consumption, i.e. approximating 480 bcm per year, with demand expected to remain relatively stable in coming years.¹⁰⁸ Only approximately 30% of this supply is produced domestically, and production is rapidly declining, though consideration is being given to expand production from shale gas formations.¹⁰⁹ Over one-third of the EU's imported natural gas is from Russia, with an additional 30% from Norway and a growing 14% from imported LNG.¹¹⁰ Noting the current and projected role of LNG in meeting Europe's energy supply needs, the Commission has stated that:

The EU is the biggest importer of natural gas in the world. Diversification of supply sources is therefore paramount both for energy security as well as for competitiveness. Ensuring that all Member States have access to liquid gas markets is therefore a key objective of the EU's Energy Union. LNG can give a real boost to the EU's diversity of gas supply and hence greatly improve energy security. Today, the countries in Western Europe that have access to LNG import terminals and liquid gas markets are far more resilient to possible supply interruptions than those that are dependent upon a single gas supplier.

Cargoes of LNG are available from a wide variety of different supplier countries worldwide, and the global LNG market is undergoing a dynamic development with the entrance of new suppliers such as the US and Australia.¹¹¹

On July 25, 2018, EU President Juncker and President Trump issued a joint statement agreeing to expand EU-U.S. strategic energy cooperation and specifically noted the desire to increase EU imports of U.S.-produced LNG.¹¹² Prior to that joint statement, EU LNG imports from the U.S. equaled 4% of total EU imports; since the statement, they have increased by 52%, and several new long-term contracts have been signed with Polish and Spanish companies.¹¹³ Both the EU

%2Fpress-release_IP-19-561_en.pdf&usg=AOvVaw2S3vdjpuXC3bNMNMKIKWim; EUR. COMM'N, AMENDING REGULATION (EU) NO 347/2013 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL AS REGARDS THE UNION LIST OF PROJECTS OF COMMON INTEREST (Nov. 23, 2017), <https://eurlex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32018R0540>; EUR. COMM'N, INFRASTRUCTURE; CONNECTING ENERGY MARKET AND REGIONS, <https://ec.europa.eu/energy/en/topics/infrastructure> (last visited Mar. 8, 2019). A number of these Projects of Common Interest comprise expansions of the European natural gas transport system, including several interconnectors for the system between member states. Many of these interconnectors are being developed pursuant to an additional EU policy, the Trans-European Networks for Energy (TEN-E) strategy, pursuant to which nine priority transport corridors have been identified and are being developed between two or more EU countries. EURO. COMM'N, TRANS-EUROPEAN NETWORKS FOR ENERGY, <https://ec.europa.eu/energy/en/topics/infrastructure/trans-european-networks-energy> (last visited Mar. 20, 2019).

108. See EURO. COMM'N, LIQUEFIED NATURAL GAS (2018) <https://ec.europa.eu/energy/en/topics/oil-gas-and-coal/liquefied-natural-gas-lng>.

109. See EURO. COMM'N, EU-US LNG TRADE 2018 (2018), http://europa.eu/rapid/attachment/SPEECH-18-6640/en/EU_US_LNG_Trade_v15.pdf; EURO COMM'N, SHALE GAS (2018), <https://ec.europa.eu/energy/en/topics/oil-gas-and-coal/shale-gas>. Currently, several EU countries prohibit shale gas production through hydraulic fracturing (i.e. France and Bulgaria), while it is permitted in others (i.e. UK and Poland). *Id.*

110. EUR. COMM'N, LIQUEFIED NATURAL GAS, <https://ec.europa.eu/energy/en/topics/oil-gas-and-coal/liquefied-natural-gas-lng> (last visited Mar. 20, 2019).

111. *Id.*

112. Press Release, *EU-US Joint Statement of 25 July: European Union imports of US Liquefied Natural Gas (LNG) are on the rise*, EURO. COMM'N (2018), http://europa.eu/rapid/press-release_IP-18-4920_en.htm.

113. EURO. COMM'N, *EU-U.S. LNG Trade* (2018), http://europa.eu/rapid/attachment/SPEECH-18-6640/en/EU_US_LNG_Trade_v15.pdf.

and the U.S. are investing in expanded LNG terminals that will permit such expanded trade.¹¹⁴

Additionally, in May 2018, the EU, under its antitrust laws, imposed binding obligations on Gazprom, the national Russian gas supplier to Europe, to end contractual restrictions on the free flow of gas supply that it sells into Europe (thereby permitting its purchasers to resell the gas to others), to facilitate gas flows to and from isolated European markets (primarily the Baltic States and Bulgaria), adopted “effective tools” to permit Gazprom customers to limit their gas prices from Gazprom to the price level existing in competitive Western European gas markets and prohibited Gazprom from leveraging its market position in European national markets to the disadvantage of its European customers.¹¹⁵

114. *Id.* The EU is co-financing €638 million of LNG projects that will expand its existing 150 bcm of unused capacity by another 15 bcm by 2021, while the U.S. is expanding its LNG liquefaction capacity by 80 million cubic meters to be completed by 2023. Global liquefied natural gas trade is expected to increase from 391 to 505 bcm between 2017 and 2023. *EU-U.S. Joint Statement*, *supra* note 107.

115. Press Release, *Antitrust: Commission imposes binding obligations on Gazprom to enable free flow of gas at competitive prices in Central and Eastern European gas markets*, EURO. COMM’N (May 24, 2018), <https://ec.europa.eu/energy/en/news/antitrust-commission-imposes-binding-obligations-gazprom-enable-free-flow-gas-competitive>.

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