

INCREASING U.S.-MEXICO CROSS-BORDER TRADE IN ELECTRICITY BY NAFTA'S RENEGOTIATION

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Synopsis: Trade in electricity encounters several problems, such as the lack of interconnections, infrastructure and legal issues. The Mexican regulatory framework was one of the main hurdles to integrate the North America electric market. Nevertheless, Mexico has passed an energy reform entirely sweeping the previous regulation. Even though the new Mexican framework promotes an increase of trade in electricity with the United States, the current renegotiations of the North America Free Trade Agreement (NAFTA) can assure further stability and less political risk that could compromise the electric markets' integration.

Interconnections enable cross-border trade in electricity. Mexican links with the United States substantially limit trade. By contrast, Canada connects throughout the border allowing many available resources to provide electric energy to the northern border of the U.S. The effects of different degrees of integration between the markets correspond to the levels of trade.

NAFTA provides for innovation in the world of trade agreements, and particularly in the energy chapter. Nonetheless, this chapter has failed to achieve the overall goals of a free trade agreement. The wording of its clauses does not achieve the object and purpose of promoting and liberalizing trade. The main causes of this limited integration relate to the Mexican framework. Mexican lawmakers of that era developed monopolies in the energy field. This hampered the proper integration of the region and NAFTA's energy chapter reflects this situation. Other trade instruments also fail to promote trade in electricity.

Since the end of NAFTA's negotiations in 1992, many changes have transformed the Mexican economy. In 2013, Mexico amended its constitution to include favorable provisions to the electric market. Later, in 2014, the legislators implemented reforms by passing new laws. This new framework includes competition and open access. Similar principles governing ISOs and RTOs now regulate the Mexican electric market. A wholesale electric market currently operates in Mexico and the new legal framework encourages further trade.

Even though Mexico's electric framework can bring trade to a more prosperous era, NAFTA can set, at the international level, obligations for Canada, Mexico and the United States by promoting increased trade and its accompanying benefits. Provisions in NAFTA may include and favor a harmonized regulation, improvements in reliability and cooperation, overall efficiency and competition, environmental rights, and consultations and rights of indigenous peoples. We propose some clauses that negotiators should consider to achieve this goal. NAFTA can set a precedent to exploit the benefits of a more integrated market.

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I. INTRODUCTION

International trade in electricity remains small compared to the overall trade in goods and services. In 2011, electricity exports represented about \$40 billion and 662 Terawatt-hours (TWh).¹ This is 0.225% of the nearly \$18 trillion in worldwide trade in a year when eighty-seven countries reported positive exports or imports.² Despite this low percentage, trade in electricity remains essential for some nations, and has several advantages.³

Cross-border electrical interconnections benefit nations greatly. They can provide greater grid reliability, lower costs, transactional opportunities, economic trade benefits, and the potential for growing renewable deployment.⁴ However, trade in electricity differs drastically from other commodities, particularly because

1. Werner Antweiler, *Cross-Border Trade in Electricity*, 101 J. OF INT’L ECON. 42 (2016).

2. *Id.*

3. *Id.*

4. Kaipo Lucas et al., *The Value of a Synchronous Interconnection in Mexico: Impacts on Costs, Renewable Deployment, and Electricity Trade with the United States 1* (unpublished paper) (on file with author); see also JOHNATHAN A. LESSER & LEONARDO R. GHIANCCHINO, *FUNDAMENTALS OF ENERGY REGULATION* 404 (2nd ed. 2013) (“In the U.S., the typical reliability standard calls for a [loss of load expectation (LOLE)] also known as loss of load probability (LOLP)] value of 1-in-10 years, in other words, sufficient insurance so that the system could be expected to suffer a widespread outage only once every 10 years”).

electricity storage remains expensive.⁵ Additionally, electricity requires infrastructure to flow between the markets. The U.S.-Canada electric systems' integration goes back several decades.⁶ Canada and the U.S. have developed thirty transmission connections, which enable trade.⁷ The Mexico-U.S. border, by contrast, has few connections, which limits trade.⁸

Many factors can deter these transmission connections, but a legal system could substantially affect their construction. The current Mexican and U.S. legal frameworks support both further cross-border trade and the electric systems' integration.⁹ The Mexican legislature introduced open access and other principles governing competitive regimes.¹⁰ Prior to this legislation, these principles were unknown to Mexico.¹¹ Although private entities could generate electricity, they had to self-consume it, or otherwise sell its surplus to the vertically integrated State-owned enterprise (SOE).¹² Now, generators and the SOE can participate and sell electricity in the wholesale electric market.¹³ The new law unbundled this SOE, and it can compete with other private generators. Further, the new law set in place a newfangled entity with characteristics similar to the U.S. Independent System Operators (ISOs) and Regional Transmission Organizations (RTOs).¹⁴

Presently, NAFTA encourages trade and provides several advantages; but the current renegotiations could bring electricity trade to the next level.¹⁵ The three countries benefit from increased trade because the treaty eliminated tariffs on most goods that cross the borders.¹⁶ Electricity, as a good, benefits from national treatment under Article 301 and tariff elimination under Article 302.¹⁷ Still, NAFTA

5. KEVIN B. JONES & DAVID ZOPPO, A SMARTER, GREENER GRID: FORGING ENVIRONMENTAL PROGRESS THROUGH SMART ENERGY POLICIES AND TECHNOLOGIES 127-30 (Benjamin K. Sovacool ed., 2014) (Electric energy storage (EES) is "a set of technologies capable of storing previously generated electric energy and releasing that energy" later. "EES technologies may store electrical energy as potential, kinetic, chemical, or thermal energy." The most common forms of EES include batteries, flywheels, pumped hydro, compressed air, molten salt, ultracapacitors and distributed thermal energy. Pumped storage hydro is the most widely used option worldwide); *see also* Notice of Proposed Rulemaking, *Electronic Storage Participation in Mkts. Operated by Reg'l Transmission Orgs. & Indep. Sys. Operators*, 157 F.E.R.C. ¶ 61,121, 81 Fed. Reg. 86,522 (2016) (The U.S. energy regulator, FERC, has defined "an electric storage resource as a resource capable of receiving electric energy from the grid and storing it for later injection of electricity back to the grid regardless of where the resource is located on the electrical system. These resources include all types of electric storage technologies"); *see generally* Severin Borenstein & James Bushnell, *The U.S. Electricity Industry after 20 Years of Restructuring* 23 (Energy Inst. at Haas, Working Paper No. WP 252R, 2015).

6. DEP'T OF ENERGY: QUADRENNIAL ENERGY REVIEW TASK FORCE, QUADRENNIAL ENERGY REVIEW: TRANSFORMING THE NATION'S ELECTRICITY SYSTEM: THE SECOND INSTALLMENT OF THE QER 6-5 – 6-6, (2017) [hereinafter QER 2017].

7. U.S. Energy Info. Admin., *U.S.-Canada electricity trade increases*, U.S DEP'T OF ENERGY (Nov. 29, 2016, 3:30 PM), <https://www.eia.gov/todayinenergy/detail.php?id=21992>.

8. QER 2017, *supra* note 6, at 6-9.

9. *Id.* at 6-2 – 6-3, 6-10 – 6-13.

10. *Id.* at 6-10.

11. *Id.*

12. U.S. Bureau of Econ. & Bus. Affairs, *Investment Climate Statements for 2017 Mexico*, U.S. DEP'T OF STATE (June 25, 2017), <http://www.state.gov/e/eb/rls/othr/ics/investmentclimatestatements/index.htm?year=2017&dliid=270082>.

13. QER 2017, *supra* Note 6, at 6-10 fig. 6-4.

14. *Id.* at 6-10.

15. North American Free Trade Agreement, Can.-Mex.-U.S., Dec. 17, 1992, 32 I.L.M. 289 (1993) [hereinafter NAFTA].

16. *Id.* at 300.

17. GARY HORLICK ET AL., NAFTA PROVISIONS & THE ELECTRICITY SECTOR 5 (2002).

could become the keystone in the threefold domestic legal structure. Specific provisions in the electric sector at the international level can lock all the undertakings between the three countries, harmonizing the regimes and triggering further trade in electricity.

Nevertheless, the fifth round of NAFTA renegotiations “didn’t go so well.”¹⁸ While we await the sixth and further rounds, it is worth thinking about trade without NAFTA. That “would be a big step backward for businesses, farmers, workers and consumers in each of [the three countries], and would undermine [] national and continental competitiveness and security in ways that could reverberate for decades.”¹⁹ In the U.S., “millions of jobs depend on trade with Canada and Mexico, and American companies have developed complex, ‘just-in-time’ supply chains built around an integrated North American market.”²⁰ Regarding the energy field, “U.S. pipeline exports of natural gas” have doubled between 2009 and 2016.²¹ “Almost all of this growth is attributable to increasing exports to Mexico, which have accounted for more than half of all U.S. natural gas exports since April 2015.”²² Trade in electricity also would suffer.

Upon the effective withdrawal from NAFTA, tariffs would rise, which would cause prices to spike, cut into company profits and affect end-consumers. Notably, this would damage cross-border trade of all goods, including electricity. Besides, NAFTA encouraged foreign investors to explore the markets and invest in the three countries. Foreign investors of a NAFTA party would lose the special protection granted by investor-state dispute settlement provisions contained in Chapter Eleven. Several incentives lead to the conclusion that maintaining free trade improves the region.

To start, this work presents the problems. First, interconnections will show the effects they have on trade. For this purpose, a comparison between Mexican and Canadian interconnections with the United States will show trade implications. Second, a legal framework may inhibit interconnections. NAFTA and the World Trade Organization (WTO) law poorly help to achieve integration and increase trade. At the time NAFTA was negotiated, Mexico’s legal regime was based on monopolistic foundations.²³ NAFTA paid due regard to the signatories’ constitutions. Thus, drafters limited the energy chapter wording. To complement this international law understanding, commentaries to the old Mexican provisions shed light on the process.

Third, we turn our attention to the new competition era in Mexico and the vast new electric regulation. Fourth, even though the Mexican and United States

18. Phil Levy, *NAFTA Negotiations From The Other Side: What Mexico and Canada Can Do*, FORBES (Nov. 28, 2017, 12:32 AM), <https://www.forbes.com/sites/phillevy/2017/11/28/nafta-negotiations-from-the-other-side-of-the-table/#116d15f21948>; see also Ana Swanson & Elisabeth Malkin, *NAFTA Round Closes With Talks Bogged Down by Conflict*, N.Y. TIMES (Nov. 21, 2017), https://www.nytimes.com/2017/11/21/us/politics/nafta-talks.html?_r=0.

19. Perrin Beatty et al., *A Trade Deal in Distress: It’s Time to Save NAFTA*, THE HILL (Oct. 23, 2017, 11:40 AM), <http://thehill.com/opinion/finance/356695-a-trade-deal-in-distress-its-time-to-save-nafta>.

20. *Id.*

21. Energy Info. Admin., *U.S. Natural Gas Exports to Mexico Continue to Grow*, U.S. DEP’T OF ENERGY (Nov. 29, 2016), <https://www.eia.gov/todayinenergy/detail.php?id=28932>.

22. *Id.*

23. Elisabeth Malkin, *Are Monopolies Holding Mexico Back?*, N.Y. TIMES (June 2, 2009, 7:30 PM) <https://economix.blogs.nytimes.com/2009/06/02/monopolies-holding-mexico-back/>.

regimes support the integration and further trade ideas, it remains important to consider whether this will present benefits. Afterwards, the arguments will postulate that NAFTA can create a common framework harmonizing and increasing trade across the borders. To conclude, we present some suggestions in the way NAFTA provisions can effectively boost trade in electricity.

II. INTERCONNECTIONS ENABLE CROSS-BORDER TRADE IN ELECTRICITY

Historical and geographic factors, as well as available natural resources, determine electric integration between countries.²⁴ First, limited connections restrain trade. By contrast, a deeply interconnected system enables trade. The Mexican and Canadian borders with the United States illustrate these ideas.

A. Mexico

Electricity trade between Mexico and the United States goes back to 1905.²⁵ Two main factors have limited interconnections between these nations. First, population in the Mexican states along the United States border present low population densities.²⁶ These “border regions include areas with low (or insufficient)” transmission capacity.²⁷ Second, the lack of infrastructure limits trade.²⁸ A few transmission lines cross the U.S.-Mexico border in the states of California, New Mexico and Texas.²⁹ Most of the cross-border interconnections serve for emergency purposes, not for regular trade.³⁰

24. QER 2017, *supra* note 6, at 6-9.

25. U.S. Energy Info. Admin, *Mexico Week: U.S.-Mexico electricity trade is small, with tight regional focus* 1, U.S. DEP’T OF ENERGY (May 17, 2013), <https://www.eia.gov/todayinenergy/detail.php?id=11311>.

26. QER 2017, *supra* note 6, at 6-9.

27. *Id.*

28. *Id.*

29. Robert Mullin, *Mexico’s Grid Operator to Explore Participation in EIM* fig. 1, RTO INSIDER (Oct. 18, 2016), <https://www.rtoinsider.com/mexico-cenace-caiso-eim-33082>.

30. PAUL W. PARFOMAK ET AL., CONG. RESEARCH SERV., R44747, CROSS-BORDER ENERGY TRADE IN NORTH AMERICA: PRESENT AND POTENTIAL 33 (2017).

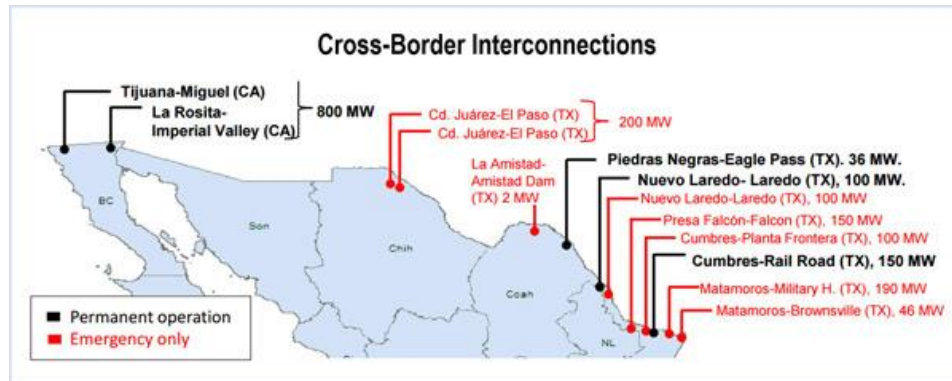


Figure 1: Cross-Border Interconnections between Mexico and the U.S.³¹

Baja California is the most integrated Mexican state with the U.S. system. Between the U.S. State of California and Mexican State of Baja California, connections are completely synchronized, but Baja California is not connected to the rest of the federal Mexican grid.³² The United States imports electricity from a minority of generators to supply the San Diego area.³³ A minor fraction of the Baja California grid connects with the Western Electric Coordinating Council (WECC), covering the “western [U.S.] as well as Alberta and British Columbia in Canada.”³⁴

The electricity trade in Texas has been episodic and occurs primarily during constrained supply periods within the transmission systems of “western Texas [and] the Mexican States of Tamaulipas and Chihuahua.”³⁵ These ties remain asynchronous, i.e., “the transmission systems on either [border] side can operate independently.”³⁶ Trade occurs during constrained supply periods within the Electric Reliability Council of Texas (ERCOT) “or Mexican transmission systems.”³⁷

B. Canada

Several factors have fostered the high integration of electric power systems between the United States and Canada. First, these “systems operate at synchronous ([]) compatible) frequencies, with over [thirty] major transmission connections between” both nations.³⁸ Recent proposed transmission projects can increase trade across this border.³⁹ The Massachusetts Request for Proposals for Long-

31. Mullin, *supra* note 29.

32. *Id.*

33. Energy Info. Admin., *Mexico Week: U.S.- Mexico Electricity Trade is Small, with Tight Regional Focus*, U.S. DEP’T OF ENERGY (May 17, 2013), <https://www.eia.gov/todayinenergy/detail.php?id=11311>.

34. *Id.*

35. *Id.*

36. *Id.*

37. *Id.*

38. Parfomak et al., *supra* note 30, at 27.

39. See U.S. Energy Info., *supra* note 7:

The Montana-Alberta Tie Line, completed in 2013, is a 230 kilovolt (kV) line that allows for bidirectional flow of power primarily for new wind power generating units on both sides of the [Canada-U.S.]

term Contracts for Clean Energy Projects (RFP), pursuant to Section 83D of Chapter 169 of the Acts of 2008, as amended by chapter 188 of the Acts of 2016, An Act to Promote Energy Diversity, merits particular attention.

The RFP initiative aims “to meet the Commonwealth’s [grand] clean energy goals.”⁴⁰ The Act mandates that the “Massachusetts-based affiliates of electricity distributors Unitil, Eversource and National Grid (the ‘Massachusetts Distributors’) . . . enter into long term contracts for the annual procurement of approximately 9,450,000 megawatt hours (MWh) of renewable energy from wind, solar, hydro or energy storage sources.”⁴¹ Bidders submitted forty-six proposals to the Massachusetts Distributors and Massachusetts Department of Energy Resources.⁴² “Canadian energy producers and suppliers feature prominently among the bidders, with some submitting multiple proposals in partnership with a number of renewable wind and hydro generation and transmission projects.”⁴³ Proposals included, among others:

Hydro-Quebec, with six proposals, including all hydro power (1,000 MW and 700 MW) or a hydro and wind power supply blend, over three proposed new transmission lines, containing joint proposals with Gaz Metro and Boralex in connection with both the New England Clean Energy Connect 1,200 MW transmission line and the Northern Pass 1,090 MW transmission line, and with Blackstone-backed TDI New England in connection with the New England Clean Power Link 1,000 MW transmission line; Emera, with its Atlantic Link 1,000 MW transmission line from Atlantic Canada; [and] RES Canada, with a 500.4 MW wind and 1,200 MW GridAmerica transmission line proposal from Quebec. . . .⁴⁴

On January 25, 2018, the selection of projects for negotiation will occur.⁴⁵ Successful bidders will “negotiate and enter into [twenty] year-long supply or transmission contracts with the various Massachusetts Distributors” by the end of March 2018.⁴⁶

Second, Canada’s spatial population distribution determines transmission infrastructure as “[75%] of the Canadian population lives within 100 miles of the U.S. border and is clustered along the coasts.”⁴⁷ Third, Canadian provinces have

border. The Great Northern Transmission line is a proposed 500 kV project connecting Minnesota Power with Manitoba Hydro, which is intended to support development of wind resources in the upper Midwest. Developers hope to relieve transmission congestion in the New York City area by sending hydropower directly from Quebec via the proposed Champlain Hudson Power Express transmission project, which could bring up to 1,000 megawatts of additional power into the city.

40. Christopher Langdon & Heba Al-Shakarchi, *Canadian Bidders in First Massachusetts Clean Energy RFP*, CANADIAN ENERGY PERSPECTIVES (August 14, 2017), <https://www.canadianenergylawblog.com/2017/08/14/canadian-bidders-in-first-massachusetts-clean-energy-rfp>.

41. *Id.*

42. *Id.*

43. *Id.*

44. *Id.*

45. Langdon & Al-Shakarchi, *supra* note 40.

46. *Id.*; MASS. DEP’T OF ENERGY RES., REQUEST FOR PROPOSALS FOR LONG-TERM CONTRACTS FOR CLEAN ENERGY PROJECTS 39 (March 31, 2017).

47. QER 2017, *supra* note 6, at 6-6.

near-complete authority over their individual electricity systems.⁴⁸ Consequently, “Canadian [] generators have prioritized exports to the [U.S.] over pan-Canadian trade.”⁴⁹ Canadian hydropower generators, able to increase capacity, have extended transmission in “short distances from Canadian population centers to the U.S. border [instead of] costly east-west transmission to other provinces.”⁵⁰ This “electrical transmission system design facilitates” electricity transport “more easily on a north-south basis to the” U.S. than from east to west across Canadian provinces.⁵¹

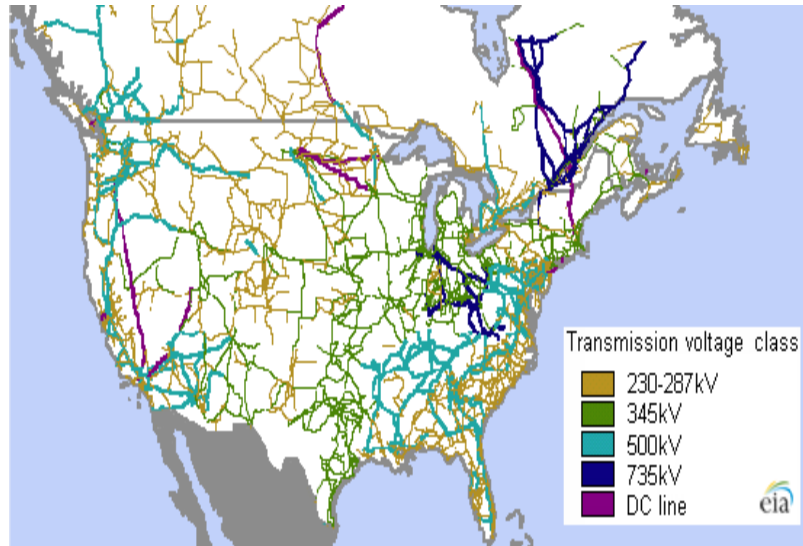


Figure 2. Cross-Border Interconnections in North America.⁵²

Fourth, electricity trade between Canada and the United States is higher “in regions with large amounts of hydropower.”⁵³ Canadian “hydroelectric projects in British Columbia, Manitoba, Quebec, Newfoundland and Labrador have” substantially augmented the capacity of generation.⁵⁴ Canada exports electricity on a net basis “to New England, New York, and the Midwest states.”⁵⁵ “On the other hand, the U.S. exports electricity to British Columbia from the Pacific Northwest States.”⁵⁶

48. *See generally* Constitution Act, 1867, 30 & 31 Vict., c 3, § 92A (U.K.).

49. QER 2017, *supra* note 6, at 6-6.

50. *Id.* at 6-6.

51. Parfomak et al., *supra* note 30, at 34.

52. U.S. Energy Info. Admin., *Canada Week: Integrated Electric Grid Improves Reliability for United States, Canada*, U.S. Dep’t of Energy (Nov. 27, 2017), <https://www.eia.gov/todayinenergy/detail.php?id=8930>.

53. *Id.*

54. U.S. Energy Info. Admin, *supra* note 7.

55. *Id.*

56. U.S. Energy Info. Admin., *supra* note 17.

C. *The Effect of Interconnections across the Borders*

The above factors have effects on trade. All Canadian electricity trade is with the U.S.⁵⁷ “In 2015, Canadian net exports” accounted for almost “10% of total Canadian power generation,” about \$2.95 billion.⁵⁸ From 2006 to 2015, net U.S. electricity imports from Canada rose from 18.1 TWh to 59.8 TWh.⁵⁹ In 2015, the value of electricity exports from the U.S. to Canada equaled approximately \$300 million.⁶⁰ U.S. imports to Canada represent a small proportion on the national level. In 2015, they accounted for less than 1.5% of the U.S. electricity generation.⁶¹

The volume of the U.S.-Mexico electricity trade is approximately one-tenth compared to the U.S.-Canada electricity trade.⁶² “In 2015, total U.S. electricity imports from Mexico were 7.31 [TWh],” approximately 2% of annual electricity generation in Mexico.⁶³ U.S. exports to Mexico were about 0.4 TWh.⁶⁴ “[T]he value of U.S. electricity imports from Mexico was approximately \$810 million.”⁶⁵ “The value of U.S. exports to Mexico was about \$46.1 million.”⁶⁶

The above leads us to conclude that “[d]ue to the limited grid integration between Mexico and the United States, overall volumes of electricity traded are much lower than electricity traded with Canada.”⁶⁷ Different legal systems may, in large part, produce this limited integration. But the lack of clear obligations at the international level does not put states in a favorable position to achieve concrete goals.

III. THE INTERNATIONAL INSTRUMENTS

NAFTA and WTO law govern electricity trade between Canada, Mexico and the United States. Both frameworks insufficiently address the goals of increasing trade and integrating the systems. Until 2013, Mexico used to have monopolistic regimes in oil and electricity.⁶⁸ Consequently, in 1992 NAFTA negotiators limited the treaty’s scope of obligations in trade.⁶⁹ A reform to NAFTA’s energy chapter appears in 2017 as the most eloquent endeavor to compel States to integrate their electric systems and increase trade.

A. *NAFTA and the Old Mexican Legal Framework*

In the pre-NAFTA years, the spirit of achieving world trade, and particularly, preparing the harmonized entry into force of this treaty brought many drastic

57. See discussion *supra*, Part II.A-B.

58. Parfomak et al., *supra* note 30, at 31, 34.

59. *Id.* at 33.

60. *Id.* at 31-32.

61. *Id.* at 33.

62. *Id.*

63. Parfomak et al., *supra* note 30, at 32.

64. *Id.*

65. *Id.*

66. *Id.*

67. *Id.*

68. Richard H.K. Vietor & Haviland Sheldahl-Thomason, *Mexico’s Energy Reform*, HARV. BUS. SCH. CASES 1 (Jan. 23, 2017).

69. NAFTA, 32 I.L.M. at 297.

changes into the Mexican legal framework, but in the field of electricity, these changes were limited. Before 1986, the Mexican economy was closed and the Government managed plentiful SOEs.⁷⁰ The signature of the General Agreement on Tariffs and Trade (GATT) represented the first step in this chain of trade liberalization. Afterwards, Mexico privatized many companies in the following years.⁷¹ The Mexican State went from being a producer in several industries to the regulator and an investment promoter. The exception was the energy field.

The most significant event in trade liberalization occurred on August 12, 1992 when NAFTA's negotiations ended. On December 17, 1992, Canada, Mexico and the United States signed NAFTA. They resolved to: "create an expanded and secure market for the goods and services produced in their territories; reduce distortions to trade; [and] establish clear and mutually advantageous rules governing their trade."⁷² Besides, this international Free Trade Agreement (FTA) encompassed the following objectives: to "(a) eliminate barriers to trade in, and facilitate the cross-border movement of, goods and services between the territories of the Parties; (b) promote conditions of fair competition in the free trade area; . . . [and] (e) create effective procedures for the implementation and application of this Agreement."⁷³

Even though identical provisions emerged in subsequent FTAs executed by Mexico, NAFTA stands alone as the sole treaty out of twelve FTAs executed by Mexico that contains an energy chapter.⁷⁴ Nevertheless, "Chapter Six: Energy and Basic Petrochemicals" failed to develop trade in electricity.⁷⁵ This Chapter applies to energy measures originating in a party's territory and to investment and cross-border trade in services associated.⁷⁶ The palsy of this chapter relies on its wording. This chapter recognized that "it is *desirable* to strengthen the important role that trade in energy . . . plays in the free trade area and to enhance this role through sustained and gradual liberalization."⁷⁷ No obligation compelled parties to liberalize the energy sector nor to increase energy trade.

Consistent with the above timid desire, NAFTA does not cover issues concerning the development of cross-border electricity network and access to energy

70. M. ANGELES VILLARREAL, CONG. RESEARCH SERV., RL34733, NAFTA AND THE MEXICAN ECONOMY 2 (2010).

71. *Id.*

72. NAFTA, 32 I.L.M. at 297.

73. *Id.*

74. *Id.* at 364. See generally FTA between Mexico and Colombia, DOF 09/01/1995, Art. 1-01 (b), (c) and (g); FTA between Mexico and Chile, DOF 28/07/1999, Art. 1-02 (b), (c) and (g); and FTA between Mexico and Israel, DOF 28/06/2000, Art. 1-03 (a), (b), (d). Similar wording, although not identical appears in the FTAs between Mexico and the European Community, DOF 31/06/2000, Art. 4; NAFTA and FTAs with Colombia (1995); Chile (1999); Israel (2000); European Union (2000); European Free Trade Association including Island, Lichtenstein, Norway and Switzerland (2001); Uruguay (2004); Japan (2005); Peru (2012); Central America including Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua (2013); Panama (2015); TPP 11 (2018). See also Secretaría de Economía, *Países con Tratados y Acuerdos firmados con México* (May 10, 2015) <https://www.gob.mx/se/acciones-y-programas/comercio-exterior-paises-con-tratados-y-acuerdos-firmados-con-mexico>. Mexico used to have two State-owned monopolies in oil and electricity, so, there were no incentives to negotiate energy chapters in the subsequent treaties.

75. NAFTA, 32 I.L.M. at 364-68.

76. *Id.* at 364.

77. *Id.* (emphasis added).

infrastructure. Furthermore, NAFTA did not address in any depth the role of domestic regulatory bodies conducting energy trade. This silence comes despite the important role these bodies play in the North American energy markets' governance.⁷⁸

The Mexican legal framework stands as the main reason why negotiators stipulated desires for free trade in energy instead of obligations. Article 601 confirms full respect to the Constitution of the signatories.⁷⁹ This article runs counter to NAFTA's objectives, but at the same time it may be the unique suitable result of intense negotiations due to the prevailing circumstances. By that time, the text of the Mexican Constitution stated that "the Nation shall *exclusively* generate, conduct, transform, distribute and supply electric energy for the public service. In these matters, the State will not grant concessions to private persons and the Nation will exploit the natural resources needed for those purposes."⁸⁰ Accordingly, Mexico reserved to itself in NAFTA "the supply of electricity" including generation, "transmission, transformation, distribution and sale of electricity."⁸¹ This respect to the contracting parties' constitutions acted against NAFTA's objectives. It set boundaries to the regulatory leverage of the Agreement regarding energy trade and investment as well as the establishment of energy infrastructure.⁸²

When NAFTA was negotiated and entered into force, *Comisión Federal de Electricidad* (CFE) was a vertically integrated state-owned utility, and served as the sole generator, provider and distributor of electricity in Mexico.⁸³ CFE oversaw electric national system planning, and carried out works and installation for operating and maintaining the national electric system.⁸⁴

Prior to January 1, 1994, the date of NAFTA's entry into force, and despite NAFTA's desire and respect to the parties' constitutions, the Mexican Federal Congress enacted several reforms in line with international trade liberalization. On December 23, 1992, the Mexican Congress enacted a reform to the Public Service of Electric Energy Law that allowed generation of electricity by private parties, but under limited circumstances.⁸⁵ As such, this law stated certain activities that Congress did not consider "public service," and where private entities could

78. J. Owen Saunders, *Canada-U.S. Energy Issues: Electricity and Regulatory Sovereignty*, CANADA & THE NEW AM. EMPIRE, <https://www.uvic.ca/research/centres/globalstudies/assets/docs/publications/CanadaUSEnergyIssuesElectricityandRegulatorySovereignty.pdf>.

79. NAFTA, 32 I.L.M. 364.

80. Constitución Política de los Estados Unidos Mexicanos, CP, Art. 27, Diario Oficial de la Federación [DOF] 05-02-1917, últimas reformas DOF 06-01-1975 (emphasis added).

81. NAFTA, 32 I.L.M. 366, Annex 602.3.

82. Kateryna Holzer, *Regulatory Aspects and Public International Law Issues of the Construction of Cross-Border Electricity Networks*, SOC. SCI. RESEARCH NETWORK at 12 (Oct 7, 2015), <https://poseidon01.ssrn.com/delivery.php?ID=380124069122108084089008074123065081059089022064027023064107066125083028119004006123033062000029047123108124065072094121004027058071007053078069079088065001097069030038014010096101072113125075017113025068087115110068122098067125124100118067006066091122&EXT=pdf>.

83. Ley del Servicio Público de Energía Eléctrica [LSPEE], arts. 1, 4, 7, Diario Oficial de la Federación [DOF] 22-12-1975, últimas reformas 09-04-2012 (Mex.), repealed on 11-8-2014.

84. *Id.*

85. Victor & Sheldahl-Thomason, *supra* note 68, at 2.

generate electricity.⁸⁶ The list included (1) generation for self-consumption, co-generation, and small production; (2) generation for the sale to CFE; (3) generation to export; (4) imports of electricity for self-consumption; and (5) electric energy generated for emergencies.⁸⁷ Later, Congress fortified the Mexican State's participation in the electric industry's management with constitutional provisions.⁸⁸ On August 20, 1993, Congress passed a constitutional reform stating that the functions exclusively exercised by the state in the strategic areas, like electricity, will not constitute a monopoly.⁸⁹ Mexico was also enacting a competition law so it had to set on constitutional grounds its monopolistic position.⁹⁰

NAFTA is not the sole instrument governing cross-border trade in electricity. The World Trade Organization (WTO) rules also apply to trade in electricity.

B. *The World Trade Organization System*

A year after NAFTA's entry into force, on January 1, 1995, the WTO replaced GATT "as the organization overseeing the multilateral trading system."⁹¹ Canada and the United States signed the GATT in 1948, and Mexico signed in 1986. Thus, these GATT signatory countries were "GATT contracting parties." Upon signing the WTO agreements – including the updated GATT, known as GATT 1994 – Canada, Mexico and the United States became WTO members.⁹²

The Ministers of 124 Governments affirmed in the Marrakesh Declaration of 15 April 1994 that the WTO's establishment "ushers in a new era of global economic cooperation, reflecting the widespread desire to operate in a fairer and more open multilateral trading system."⁹³ "They believe[d] that the trade liberalization and strengthened rules achieved in the Uruguay Round [would] lead to a progressively more open world trading environment."⁹⁴

Despite the WTO objectives, WTO law does not contain specific provisions on electricity. In the Marrakesh Agreement Establishing the WTO, the parties to the agreement expressed their desire to contribute to the WTO objectives "by entering into reciprocal and mutually advantageous arrangements directed to the substantial reduction of tariffs and other barriers to trade."⁹⁵ Even though WTO law lacks electricity provisions, "the Harmonized System (HS) Nomenclature on the

86. *Id.*

87. LSPEE, *supra* note 83, art 3.

88. Constitución Política de los Estados Unidos Mexicanos, CP, Art. 28, Diario Oficial de la Federación [DOF] 05-02-1917, últimas reformas DOF 20-08-1993.

89. *Id.*

90. Ley Federal de Competencia Económica [LFCE], Diario Oficial de la Federación [DOF] 24-12-1992 (repealed 8-30-2011).

91. WORLD TRADE ORG.: THE 128 COUNTRIES THAT HAD SIGNED GATT BY 1994, https://www.wto.org/english/thewto_e/gattmem_e.htm (last visited Jan. 30, 2018).

92. *Id.*

93. WORLD TRADE ORG.: MARRAKESH DECLARATION OF 15 APRIL 1994, https://www.wto.org/english/docs_e/legal_e/marrakesh_decl_e.htm (last visited Jan. 30, 2018).

94. *Id.*

95. Marrakesh Agreement Establishing the World Trade Organization, Apr. 15, 1994, 1867 U.N.T.S. 154.

codification of commodities” defined electricity as a good irrespective of its special properties.⁹⁶ WTO tariff schedules followed the definition.⁹⁷ Electrical energy is classified under the code 2716. Thus, electrical energy qualifies as a good under the WTO law and is a subject to the GATT 1994 rules.⁹⁸

In a similar vein to NAFTA, WTO rules poorly address export restrictions in energy trade and the challenges to develop energy infrastructure. WTO’s GATT Article V stands as the most relevant provision for electricity transmission, and contains the freedom of transit “via the routes most convenient for international transit.”⁹⁹ This Article also regulates the imposition of charges for goods transportation in transit and fees associated with services provided.¹⁰⁰ These provisions apply to energy transit via fixed infrastructure, which includes electricity transmission lines.¹⁰¹

Unfortunately, GATT Article V cannot create a positive obligation for WTO members to ensure that the infrastructure needed for the transit of foreign goods gets built. Building transit infrastructure on territories of sovereign states remains within a state’s discretionary power. Nothing under customary international law obligates states to provide their territories for the development of energy transportation infrastructure, nor does it obligate investment in the infrastructure.¹⁰² GATT Article V fails to regulate “the establishment of capacity for energy transportation” or to promote cross-border electric networks.¹⁰³

Other WTO provisions, such as the Agreement on Subsidies and Countervailing Measures, the General Agreement on Trade in Services, the Agreement on Trade-related Investment Measures, and the Agreement on Government Procurement have diminutive importance in the development of cross-border transmission systems.¹⁰⁴

As we may see, states’ sovereignty over natural resources constrains global energy regulations; mainly, by the states’ right to determine their energy resources’ ownership and their energy sectors’ structure. Not surprisingly, the “existing multilateral agreements have little influence on the development of cross-border electricity infrastructure.”¹⁰⁵

WTO’s freedom of transit provision contained in the GATT fails to create third party rights “to establish electric[] system interconnectors” or “to support the development of cross-border electric[] networks.”¹⁰⁶ Additionally, NAFTA remains useless to advance trade in electricity. Consequently, Canada, Mexico and the United States, as sovereigns in their territories, have full discretion to facilitate transit infrastructure.¹⁰⁷ The old Mexican regime prevented the investors’ interest

96. THOMAS COTTIER ET AL., *ENERGY IN WTO LAW AND POLICY* 4.

97. *Id.* at 4.

98. *See generally id.*

99. General Agreement on Tariffs and Trade, Art. 5, Oct. 30, 1947, 55 U.N.T.S. 194, 61 Stat. A-11.

100. *Id.*

101. *Id.*

102. Holzer, *supra* note 82, at 8.

103. *Id.*

104. *Id.* at 8-9.

105. *Id.* at 14.

106. *Id.*

107. Holzer, *supra* note 82, at 8.

to participate in the electric systems' integration and increase trade.¹⁰⁸ The new Mexican regime supports the ideas of competition and contains express provisions for the above purpose.¹⁰⁹ The new legal framework has enticed many investors to apply for permits and invest in project development activities, specifically Mexico's government-run agency Centro Nacional de Control de Energía (CENACE) recently coordinated power auctions for large-scale renewable energy and gas power projects.¹¹⁰

For this reason, the domestic legal system of Mexico demands attention.

IV. THE CURRENT MEXICAN LEGAL FRAMEWORK

The new Mexican regulatory framework wiped out the previous regime and supports the idea of U.S.-Mexico grid integration and further trade in electricity.¹¹¹ Congress granted express jurisdiction to the federal government over all the electric industry activities.¹¹² The legal framework has had, and will continue to have, uniformity, avoiding jurisdictional uncertainties that frequently appear in the U.S. system.¹¹³ The reforms focus on competition. They attempt to reduce electricity costs and develop more clean energy.¹¹⁴ The following subsections navigate through the highlights of the reforms.

A. Introduction

The Mexican electric industry comprises generation, transmission, distribution, and electric power sales, planning and control of the National Electric System as well as the wholesale electric market operation.¹¹⁵ The National Electric System includes transmission and distribution grids; power stations delivering electric

108. Vietor & Sheldahl-Thomason, *supra* note 68, at 1.

109. *Id.*

110. *See generally* U.S. Office of Elec. Delivery & Energy Reliability, *Export Authorizations*, U.S. DEP'T OF ENERGY (last visited May 8, 2017), <https://energy.gov/oe/services/electricity-policy-coordination-and-implementation/international-electricity-regulation-0> (illustrating that after the Mexican reform to the Constitution was enacted and published on December 20, 2013 in the Federal Official Gazette (equivalent to the U.S. Federal Register), the following companies have applied for Authorization to Transmit Electric Energy to Mexico and the U.S. Department of Energy (DOE) has granted orders authorizing electricity exports to Mexico: Global Pure Energy, LLC.; Energia Sierra Juarez U.S., LLC (a Sempra U.S. Gas Power company); Frontera Marketing, LLC; Sempra Generation, LLC; Vitrol Inc.; Elan Energy Services, LLC; Lion Shield Energy, LLC; Tenaska Energía de México, S. de R.L. de C.V.; Termoelectrica U.S., LLC; MXTREP #1, LLC; Rassini Energy Project, LLC; BioUrja Power, LLC; CWP Energy (a Canadian corporation); Calpine Energy Services, L.P.; Tenaska Power Services Co.; and Castleton Commodities Merchant Trading L.P.).

111. *See generally* Decreto por el que se reforman y adicionan diversas disposiciones de la Constitución Política de los Estados Unidos Mexicanos, en Materia de Energía, Diario Oficial de la Federación [DOF] 20-12-2013 (Mex.).

112. Ley de la Industria Eléctrica [LIE] art 7, Diario Oficial de la Federación [DOF] 11-08-2014.

113. *See generally Hughes v. Talen Energy Mktg. LLC*, 136 S. Ct. 1288 (2016) (demonstrating the jurisdiction of certain matters in the U.S. is clear regarding the "transmission of electric energy in interstate commerce and the sale of such energy at wholesale in interstate commerce"); *see also* JOEL B. EISEN ET AL., *ENERGY, ECONOMICS AND THE ENVIRONMENT: CASES AND MATERIALS* 642, 709 (4th ed., 2015) (Doubts arise out of novel state programs like Maryland or New York. The next jurisdictional riddle will be the platform named Reforming the Energy Vision proposed by the New York Public Service Commission that aims at transforming the electric industry to create a market-based, sustainable products and services that drive a customer-oriented electric industry. Nevertheless, a shared jurisdiction in the U.S. has served as a lab to design and test the convenience of novel solutions.).

114. QER 2017, *supra* note 7, at 6-4.

115. Ley de la Industria Eléctrica [LIE] art 2, Diario Oficial de la Federación [DOF] 11-08-2014.

energy to the grids; and the equipment and facilities of the National Center for Energy Control (CENACE) to carry out operative control.¹¹⁶

Electric supply is a matter affected by public interest. Generation and commercialization are subject to free competition.¹¹⁷ Commercialization activities include: (1) marketing the electric supply to the end users; (2) representing Exempt Generators in the wholesale electric market; (3) carrying out wholesale electric market transactions; (4) entering into Collateral Electric Contracts; and (5) selling and purchasing ancillary services not included in the Electric Market.¹¹⁸ Under the old regime, private generators could not sell electricity to any desired consumer; they had to self-consume or sell the surplus to CFE.¹¹⁹ Competition may entice foreign generators to export electricity to Mexico.

Among other actions, the Electric Industry Law includes, as public and universal service obligations, the following: (1) granting open access to transmission and distribution grids; and (2) offering and providing Electric Supply to every person demanding service when it is technically feasible.¹²⁰ This provision helps to satisfy the concerns of the Department of Energy (DOE) regarding open access.¹²¹ Any interested entity may apply to obtain interconnection and the state is obligated to comply with it.¹²²

B. CENACE, the Mexican ISO

In the previous regime, private entities could generate electricity on a limited basis, mainly for self-supply. Otherwise, they had to sell energy to CFE.¹²³ This archaic law lacked interconnection or open access provisions. In 1998, the Energy Regulatory Commission issued an order authorizing model contracts for interconnection and electricity sale contracts.¹²⁴ Private parties had to request interconnection to CFE.¹²⁵ There was no statutory obligation on CFE to interconnect or even provide open access. CFE also operated the National Electric System.¹²⁶

By contrast, the new framework seems harmonized with U.S. principles, and adequate to interact on a competitive basis. Now, CENACE operates both the National Electric System and the wholesale electric market, as well as guarantees open access without undue discrimination to the transmission and distribution

116. See generally *id.* arts 2,3.

117. See generally *id.* art 4.

118. Ley de la Industria Eléctrica [LIE] art 45; see also Ley de la Industria Eléctrica [LIE] art 3 (defining Exempt Generators as the owners or possessors of one or several Power Stations that neither require nor have a permit to generate electric energy).

119. LSPEE, art 3.

120. Ley de la Industria Eléctrica [LIE] art 4.

121. See generally Order No. 888, *Promoting Wholesale Competition Through Open-Access Non-discriminatory Transmission Services by Public Utilities, and Recovery of Stranded Costs by Public Utilities and Transmitting Utilities*, F.E.R.C. STATS & REGS. ¶ 31,036, 61 Fed. Reg. 21,540, 21,541 (May 10, 1996).

122. Ley de la Industria Eléctrica [LIE] art 33.

123. *Id.* art 3.

124. Resolución sobre la aprobación de los modelos de contrato de interconexión y de los convenios de compraventa de excedentes de energía eléctrica, Diario Oficial de la Federación [DOF] 11-02-1998 (Mex.).

125. *Id.*

126. LSPEE art 36.

grids.¹²⁷ CENACE is a public decentralized organ of the Federal Public Administration with its own legal representation and patrimony, detached from CFE.¹²⁸ Additionally, CENACE (1) determines the acts for the dispatch security, the National Electric System's Reliability, and the assignment and dispatch of the Electric Stations; (2) reviews and adjusts the market operative provisions; (3) the Controllable Demand and the import and export programs; (4) receives offers and determines the electric energy prices; (5) carries out auctions for the Electric Collateral Contracts; (6) orders Carriers and Distributors to execute interconnection contracts, the Electric Stations' interconnection or the Load Centers connection to the grids; (7) manages the Transmission Financial Rights; and (8) coordinates with the organisms operating the market and electric systems abroad.¹²⁹

CENACE's features seem aligned with the principles governing ISOs and RTOs. CENACE reduces conflicts with private entities, and the law obligates CENACE to provide open access without undue discrimination in a similar fashion as the U.S. Federal Energy Regulatory Commission (FERC) Order No. 888.¹³⁰ This obligation coincides with the DOE's concern that owners of international transmission facilities should provide access across the border in accordance with the U.S. Federal Power Act and FERC Order No. 888.¹³¹

CENACE can enter into agreements with U.S. ISOs and RTOs if authorized by the Mexican Secretary of Energy.¹³² CENACE's capacity to coordinate and operate with foreign electric systems and markets represent a huge shift, because, in the past, CFE was responsible for this interaction.¹³³ Therefore, the new framework advances the idea of further integration and increased trade.

C. Transmission and Distribution

The Mexican state will be responsible for planning and control of the Electric National System as well as the Public Transmission Service and Electrical Power Distribution.¹³⁴ This coincides with FERC Order No. 888 principles governing ISOs. An ISO and its employees should have no financial interest in the economic performance of any power market participant. Specifically, "an ISO cannot be owned by any market participant."¹³⁵ Carriers and Distributors are the organs,

127. Ley de la Industria Eléctrica [LIE] art 107; Estatuto Orgánico del Centro Nacional de Control de Energía [CENACE] art 1, Diario Oficial de la Federación [DOF] 29-06-2016 [hereinafter CENACE].

128. Ley de la Industria Eléctrica [LIE] art 107.

129. Ley de la Industria Eléctrica [LIE] art 3. *Central Eléctrica* is defined as the installations and equipment that are allowed to generate electricity and Ancillary Products. *Centro de Carga* means the installation or equipment, in a specific place, that allows the end user to receive the electric supply. These Load Centers will be determined in the measurement point of the supplied energy.

130. Compare CENACE, art 1, with Order No. 888, *supra* note 121, at 21,451.

131. Order No. 888, *supra* note 121, at 21,451; see generally Fronterra Marketing, LLC, Order No. EA-403, Order Authorizing Electricity Exports to Mexico, OE Docket No. EA-432 (March 24, 2015), <https://energy.gov/sites/prod/files/2015/03/f20/EA-403%20Fronterra%20Marketing%2C%20LLC.pdf> (In 2015, the DOE granted to Fronterra Marketing, LLC an authorization to export electric energy to Mexico. Under condition (B), "the electric energy exported by Fronterra Marketing pursuant to this Order may be delivered to Mexico over any authorized international transmission facility that is appropriate for *open access transmission* by third parties" (emphasis added)).

132. *Id.* art 108.

133. LSPEE, art 2.

134. Ley de la Industria Eléctrica [LIE] art 2.

135. Order No. 888, *supra* note 121, at 21,596.

productive SOEs, or their subsidiaries responsible for the transmission and distribution grids.¹³⁶ They will operate the grids following CENACE's instructions.¹³⁷ The Mexican State is responsible for these activities through CFE Transmisión, a new SOE managing the transmission and distribution grids.¹³⁸ Hence, the Mexican government, in charge of transmission and distribution, minimizes conflicts of interest that could compromise market competition.

Carriers and Distributors must maintain and update the transmission and distribution grids.¹³⁹ CFE Transmisión's Board of Directors will oversee that this SOE provides open access and enables competition in the market.¹⁴⁰ CENACE's surveillance and the statutory obligations safeguard open access and interconnection.¹⁴¹

CFE Transmisión has a statutory obligation to interconnect generators to its grids without discrimination when it is technically feasible.¹⁴² For Electric Station's interconnection, the law obligates CFE Transmisión to enter interconnection or connection contracts.¹⁴³ At CENACE's request, the Energy Regulatory Commission will issue general guidelines assessing the benefits.¹⁴⁴ Therefore, CFE Transmisión will have objective parameters to accomplish its mandate. If the works are not included in the extension and renewal programs, a Generator may carry out the works at her own cost or pay CFE Transmisión.¹⁴⁵ The provision stands out because private parties that need infrastructure can proceed to develop it on their own.¹⁴⁶ They will not be harmed just because the SOE decided not to include such works. Likewise, Carriers and Distributors can conduct, on the streets and public areas, all the necessary work to install, maintain, and move the lines and equipment for the service.¹⁴⁷

136. Ley de la Industria Eléctrica [LIE] art 26; Ley de la Industria Eléctrica [LIE] art 3 (*Transportista* is defined as the organ or productive SOE or their subsidiaries that provide the Transmission Public Service of Electric Energy. Distributor is defined in the same terms of *Transportista* above.).

137. Ley de la Industria Eléctrica [LIE] art 26.

138. See generally Acuerdo de Creación de la Empresa Productiva Subsidiaria de la Comisión Federal de Electricidad, denominada CFE Transmisión, Diario Oficial de la Federación [DOF] 23-03-2016 (Mex.); see also Ley de la Industria Eléctrica [LIE] art 30 (The Secretary of Energy and CFE Transmisión may form partnerships or enter into contracts with private parties to carry out finance, installation, maintenance, operation and extension of the infrastructure needed to preserve the Public Transmission service and Electric Energy Distribution. The partnerships and contracts are subject to the following: (1) the state will be responsible for the Public Service of Transmission and Distribution of Electricity, the contractors will be joint obligors in the provision of services; (2) contracts will be subject to the regulated tariff and the conditions issued by CRE; (3) the adjudication of these contracts will be made through competitive procedures; (4) the minimal amount of domestic content will be determined by the Secretary of Energy; (5) the contracts shall include technology and knowledge transfer to Carriers and Distributors; and (6) the goods of public property will not be useful to guarantee obligations).

139. Ley de la Industria Eléctrica [LIE] arts 26, 28.

140. CFE Transmisión art 14.

141. *Id.*

142. Ley de la Industria Eléctrica [LIE] art 33.

143. *Id.* art 34 (The applicant can carry out, at her own cost, the works to install the infrastructure needed, or may request that CENACE or Distributors include specific works in the grid's extension and renewal programs. Contracts will be based on the models issued by CRE. The Market Rules determine the criteria so that CENACE can define the special characteristics of the infrastructure required for this purpose).

144. *Id.*

145. *Id.* art 35 (The regulations set the methodology for the calculation of those payments).

146. Ley de la Industria Eléctrica [LIE] art 33.

147. Ley de la Industria Eléctrica [LIE] art 39.

D. Use and Occupation of the Surface

The electric industry is affected by public interest. For transmission and distribution, and for electric power plant construction, investors may occupy and affect the surface or obtain easements. Electricity transmission and distribution are affected with social interest and public policy; thus, they will prevail over any other activity implicating the land's use.¹⁴⁸ Land for transmission and distribution grid installation are subject to easements.¹⁴⁹ Private grids are governed by special regulation.¹⁵⁰

The Mexican law is harmonized with U.S. eminent domain doctrine.¹⁵¹ Both regimes can now develop transmission lines and specifically in the border region to increase cross-border trade in electricity. These obligations will be useful to develop infrastructure, and particularly transmission lines, the absence of which would limit cross-border trade in electricity.

E. The Wholesale Electric Market

The existence of a new wholesale electric market enables more competition and new investors. The market presents new opportunities to advance trade. CENACE operates the wholesale electric market.¹⁵² In this market, the Generators, Marketers, and Qualified Users, as Participants, may carry out transactions for the sale of (1) electric energy; (2) ancillary services; (3) power; (4) product export and import; (5) Financial Transmission Rights; (6) Clean Energy Certificates; and (7) other products for the Electric Energy System.¹⁵³

Generators, Marketers, and Qualified Users can participate in the wholesale electric market.¹⁵⁴ They must enter into a Participant Agreement with CENACE and post a bond.¹⁵⁵ CENACE may invoice, process and charge transmission, distribution services as well as ancillary services, associated operational costs, and the wholesale electric market's transactions.¹⁵⁶ CENACE will determine the Electric Station's allocation and dispatch, controllable demand, and the import and export programs based on delivery security and economic efficiency.¹⁵⁷

148. *Id.* art 71.

149. *Id.* art 42.

150. *Id.* art 43.

151. *See generally* CENACE, *supra* note 127; *see also* Alexandra B. Klass & Danielle Menhard, *Transporting Oil and Gas: U.S. Infrastructure Challenges*, 100 IOWA L. REV. 947, 983 n.231 (2015) ("Eminent domain is the power of government to obtain title to or access to property from private parties without their consent").

152. Ley de la Industria Eléctrica [LIE] art 3.

153. *See generally* Ley de la Industria Eléctrica [LIE] arts 3, 96, 121 (*Usuario Calificado* means End User with a registry before the CRE to acquire Electric Supply as a Market Participant or by means of a Qualified Services Provider, Participante del Mercado is the person who enters into a contract with CENACE in a Generator, Commercializer, Supplier, Commercializer not Supplier, or Qualified User, Financial Transmission Rights mean the rights and obligations of receiving or paying the amount based on the difference deriving from the Local Marginal Prices in two nodes of the National Electric System).

154. *Id.* art 98.

155. *Id.*

156. *Id.* art 100.

157. *Id.* art 101.

F. Imports and Exports of Electricity

Generators and suppliers with a permit, as well as Marketer non-Suppliers and registered Qualified Users may import and export electric energy.¹⁵⁸ Electric Stations producing electricity abroad and exclusively connected to the National Electric System require a permit.¹⁵⁹ Electric energy imports have been allowed since the date this law was promulgated.¹⁶⁰

The Energy Regulatory Commission issued some temporary rules while the wholesale electric market was still not active.¹⁶¹ Now that this Market is active, imports can occur as prescribed by the Rules of the Wholesale Electric Market.¹⁶² These Rules thoroughly regulate imports and exports of electricity. Describing into full detail these transactions goes beyond the purpose of this article. Hence, this subsection presents a summary.

Under these rules, Imports and Export Transactions are defined as offers accepted in the Short-Term Energy Market for the sale (import) or purchase (export) of energy and/or Ancillary Services to or from the wholesale electric market and its origin (import) or destiny (export) in a neighbor electric system and interconnected to the National Electric System.¹⁶³ Imports from Electric Center Units located abroad connected only to the National Electric System, or to this System and other systems, must enter into a Generator Market Participant Agreement to represent the Center in the wholesale electric market.¹⁶⁴

The Rules of the Market include imports and exports in the Short-Term Market.¹⁶⁵ In a first phase, the Market will accept Import and Export Transactions for energy with fixed programming in the day-ahead market.¹⁶⁶ Later, in a second phase, Import and Export Transactions can serve as a reserve in the real-time market.¹⁶⁷

All market participants must submit to CENACE imports and exports through the Electric National System.¹⁶⁸ CENACE will determine import and export offers that will be implemented through the delivery.¹⁶⁹ Market participants, by electronic exchange, may only physically schedule the imports and exports when CENACE accepts the economic offer.¹⁷⁰ CENACE will not issue physical long-term transmission rights for import and export routes between the National Electric System and systems of other countries.¹⁷¹ CENACE may grant Financial Transmission Rights by auction or to fund the expansion of the Electric National

158. Reglamento de la Ley de la Industria Eléctrica [RLIE] art 19, Diario Oficial de la Federación [DOF] 31-10-2014 (Mex.).

159. Ley de la Industria Eléctrica [LIE] art 96.

160. *Id.*

161. *Id.*

162. *Id.*

163. BASES DEL MERCADO ELÉCTRICO Diario Oficial de la Federación [DOF] 08-09-2015 (Mex.).

164. *Id.* Bases 3.2.15 (d), (f).

165. *Id.* Bases 1.4.2.

166. *Id.*

167. Bases del Mercado Eléctrico, *supra* note 164, Bases 1.4.2.

168. *Id.* Bases 10.5.1 (a).

169. *Id.* Bases 10.5.1 (b).

170. *Id.* Bases 10.5.1 (c).

171. *Id.* Bases 10.5.1 (d).

System, through the delivery and reception points for the imports and exports.¹⁷² Import and exports will be determined by Real-time market optimization.¹⁷³ Nevertheless, CENACE may establish import and export programs to ensure reliability.¹⁷⁴

The current framework appeals to investors, as they could sell electricity to Qualified Users under a competitive framework.

V. A NEW HORIZON OF ELECTRIC TRADE AND INTEGRATION

Having in mind that the new Mexican framework supports the idea of further cross-border trade of electricity and several provisions help to develop the infrastructure needed to interconnect the systems, NAFTA could assist in unlocking increased electricity trade. Thus, this section discusses some ideas and wording proposals that may help to achieve this goal.

A. Regulatory Harmonization

Cross-border trade enhances coordination on energy data. Energy markets require this data for its proper function, planning, construction and operation of energy transmission, storage, and distribution (TS&D) infrastructure. Integration implicates “harmonizing and improving the availability of relevant energy data.”¹⁷⁵ Harmonization can also cover regulation regarding energy overall and infrastructure. A harmonized regulatory framework “benefits regulated parties by eliminating duplicative requirements and generating savings in time or cost.”¹⁷⁶ This may lower costs and make products available in both countries, which will help consumers too. Regulators can also take advantage of a harmonized system “by enabling joint approaches to common risks.”¹⁷⁷

In their authorizations for electricity export and import, both United States and Mexican authorities require regulated companies to collect and submit data of the electric energy transactions between the two countries to the corresponding agency.¹⁷⁸ Mexico requires monthly submissions, while the U.S. requires quarterly submissions.¹⁷⁹ Opportunities for regulatory harmonization between Canada, Mexico and the U.S. exist across different sources, types of infrastructure,

172. Bases del Mercado Eléctrico, *supra* note 164, Bases 10.5.1 (e).

173. *Id.* Bases 10.5.1 (f).

174. *Id.* Bases 10.5.1 (g).

175. U.S. DEP'T OF ENERGY, QUADRENNIAL ENERGY REVIEW: ENERGY TRANSMISSION, STORAGE, AND DISTRIBUTION INFRASTRUCTURE 6-10, (2015), [hereinafter QER 2015]. In this respect, the Energy Minister and Secretaries from Canada, Mexico and the U.S. are launching a framework for sharing energy information for North America (www.nacei.org).

176. *Id.*

177. *Id.*

178. *Compare Castleton Commodities Merchant Trading L.P.*, Order No. EA-432, Order Authorizing Electricity Exports to Mexico at 14, OE Docket No. EA-432 (Jan. 3, 2017), <https://energy.gov/sites/prod/files/2017/02/f34/EA-432%20Castleton%20Commodities.pdf> (illustrating U.S. companies are required to submit quarterly electricity import and export reports to the Energy Information Administration) with *Frontera México Generación, S. de R.L. de C.V.*, Autorización para importar Energía Eléctrica AUT/002/2015 at 3, Autorización Núm. AUT/002/2015 (Dec. 22, 2015), <http://drive.cre.gob.mx/Drive/ObtenerPermiso/?id=14586 > (illustrating in Mexico, companies need to comply with and submit monthly to the *Comisión Reguladora de Energía*.)

179. *Compare* Order No. EA-432, *supra* note 179, at 13, with Autorización Núm. AUT/002/2015, *supra* note 179, at 3.

transport modes, market structures, energy security, and environmental protection. Based on the above, NAFTA could include the following provisions:

Parties agree to promote investment in cross-border trade of electricity. Parties shall cooperate to

- (1) provide and share energy data to improve its availability;
- (2) harmonize forms and procedures for the collection of energy data;
- (3) cooperate to determine if Contracting Parties can eliminate duplicative requirements, particularly those that request for an application of an authorization;
- (4) set uniform parameters to grant authorizations for the export and import of electric energy in the NAFTA region, with such authorization to remain in effect for equal amounts of time in the countries where trade in electricity occurs;
- (5) set special uniform rules and efficient processes on authorization:
 - (a) for the export and import of electric energy in the NAFTA region;
 - (b) to construct, operate, maintain and connect a new electric transmission line across the NAFTA region.

B. NAFTA Can Help to Improve Reliability and Cooperation

NAFTA parties could entrust the reliability of the NAFTA region to an international organization. Deep integration between the U.S. and Canadian electric systems allow both countries to pool resources and to improve reliability in both countries.¹⁸⁰ Customers benefit from this reliable service through an enhanced system stability under the North American Electric Reliability Corporation (NERC).¹⁸¹ NERC is the electric reliability organization for Canada, the northern portion of Baja California, Mexico and the continental United States, subject to oversight by the Canadian authorities and the FERC.¹⁸² NERC “is a not-for-profit international regulatory authority whose mission is to assure the reliability and security of the bulk power system in North America.”¹⁸³ The NERC develops reliability standards, annually assesses seasonal and long-term reliability, monitors the bulk power system, and educates personnel.¹⁸⁴

Additionally, the Northeast Power Coordinating Council (NPCC), the Midwest Reliability Organization (MRO), and the Western Electricity Coordinating Council (WECC) safeguard the power flowing across the U.S. and Canadian transmission lines preserving the stability of the North American eastern and western power grids.¹⁸⁵ The NAFTA region could benefit from the same reliability by establishing the NAFTA Energy Commission.

Likewise, the mission of the Great Lakes Commission could inspire this NAFTA Energy Commission. By its mission statement, the Great Lakes Commission:

[R]epresents, advises and assists its member states and provinces by fostering dialogue, developing consensus, facilitating collaboration and speaking with a unified

180. Parfomak et al., *supra* note 30, at 34; *see also* CANADIAN ELEC. ASS’N, THE NORTH AMERICAN GRID: POWERING COOPERATION ON CLEAN ENERGY AND THE ENVIRONMENT 6 (2016).

181. Canadian Elec. Ass’n, *supra* note 182, at 12.

182. NERC, <http://www.nerc.com/Pages/default.aspx> (last visited Feb. 11, 2018).

183. *Id.*

184. *Id.*

185. Parfomak et al., *supra* note 30, at 34.

voice to advance collective interests and responsibilities to promote economic prosperity and environmental protection and to achieve the balanced and sustainable use of Great Lakes-St. Lawrence River basin water resources.¹⁸⁶

The Great Lakes Commission is a public agency established by the Great Lakes Basin Compact in 1955 to help its Member [U.S.] states speak with a unified voice and collectively fulfill their vision for a healthy, vibrant Great Lakes-St. Lawrence River region.¹⁸⁷ “The Canadian provinces of Ontario and Quebec joined the Commission as associate members via a Declaration of Partnership in 1999.¹⁸⁸

Besides, cooperation among governments, utilities, and regulators have produced benefits and enabled faster recoveries in regional crises. Three examples illustrate this point. First, in 2012, Superstorm Sandy left 2.7 million customers without power in New Jersey.¹⁸⁹ About 800 Canadian utility workers went to aid New Jersey customers and restored power.¹⁹⁰ Second, in “January 2015, Hydro-Quebec dispatched 180 employees and [seventy-five] trucks” to Boston “to assist with power outages” caused by the “snowfall there in response to mutual aid requests coordinated through the North Atlantic Mutual Assistance Group (NAMA).”¹⁹¹ These emergency responses to electrical outages encompass “wheeling power through the grid to cover outages.”¹⁹² Third, Mexico supplied electricity “to Texas to support . . . system operators threatened by blackouts.”¹⁹³ Having these ideas in mind, we would suggest that NAFTA may include the following:

Parties recognize that integration between the NAFTA region may improve reliability. Cooperation between governments, utilities, and regulators may enable faster recoveries during crisis in the NAFTA region. Therefore, Parties agree to allow the integration of the electric system as well as facilitate all cooperation between the governmental bodies, utilities and regulators to facilitate cooperation in crisis.

To achieve this goal, the Contracting Parties will create the NAFTA Energy Commission, an international organization integrated with an equal number of representatives from the Contracting Parties, to assure the reliability and security of the bulk power system in the NAFTA region. The Commission must develop reliability standards and secure the enforcement of these standards; assess reliability; safeguard that power flowing across the Contracting Parties’ transmission lines preserves stability; and monitor the bulk power system.

This Commission shall create a forum to foster dialogue between the Contracting parties; develop consensus; advance cross-border trade of electricity; develop cooperation among governments, utilities and regulators; enable recoveries in regional

186. Great Lakes Comm’n, *Strategic Plan for the Great Lakes Commission 2017-2022*, http://www.glc.org/wp-content/uploads/2013/07/GLC-strategic-plan_Final_Adopted-Jan-13-2017.pdf.

187. *Id.*

188. *Id.*; QER 2015, *supra* note 176, at 6-1.

189. *Id.*

190. *Id.*

191. *Id.* The group covers twenty-one utilities among thirteen states, D.C. and four Canadian provinces. It represents one of seven Regional Mutual Assistance Groups organized by the Edison Electric Institute.

192. *Id.*

193. *Id.*

crisis; and promote environmental protection and the sustainable use of natural resources in the energy field.

C. *NAFTA Can Enhance Efficiency and Competition*

Small volumes of trade enhance efficiency. International trade presents an opportunity to reduce excessive reserve capacity and import electricity from neighboring countries that have a comparative advantage in generation. Countries trading electricity need not keep as much reserve generation capacity to respond to peaks in fluctuating demand, and sharing resources will decrease the necessity for expensive facilities on both sides of the border.¹⁹⁴

Further trade in electricity between the U.S. and Mexico could enhance long term price stability and impact on other market factors. ERCOT could benefit from greater integration through access to better imports and develop business relationships with power exporters. California's ambitious clean energy program presents a unique opportunity for Mexican energy exporters of the State of Baja California. They can supply clean energy and dispatch able power or essential reliability services.¹⁹⁵ The same reasoning applies to Canadian suppliers and producers that submitted proposals to participate in Massachusetts' RFP initiative that aims to meet the grand energy goals. System integration can promote environmental protections.

Lastly, sources in one market can help address the needs of other markets. Generators will participate in cross-border trade of electricity only if they can offer competitive prices. As Mexico used to be a monopoly, NAFTA parties must ensure that competition truly occurs in the Mexican market. For the above, NAFTA could provide for the following:

Parties agree to implement legislation to allow for shared resources and allow the integration of the electric systems. For this purpose, NAFTA parties should facilitate the participation of third parties in the development and implementation stages of cross-border interconnection projects.

Parties agree to aim to increase competition in energy markets, and gradually liberalize electric markets.

D. *Environmental Concerns*

Environmental regulations may become an issue in preventing cross-border interconnection projects from moving forward, and their lengthy and painstaking compliance may struggle and deter the development of infrastructure, including transmission, which is essential to increase trade.

In the United States, any major federal action that will have significant impacts on the environment requires federal agencies to prepare and make public an

194. U.S. Energy Info. Admin., *supra* note 52 (“For example, seasonal variation in electric demand means the two countries can share resources: electric heating causes Canadian load to peak in winter, while the United States is largely summer-peaking because of air conditioning.” Both countries could build up capacity but that would sit idle for several months during the year).

195. QER 2017, *supra* note 6, at 6-3.

environmental impact statement (EIS) analyzing the environmental impacts of their proposed action and alternatives.¹⁹⁶

Regulations interpreting National Environmental Policy Act (NEPA) create a multistep process to determine whether federal action requires an EIS. “First, an agency must determine whether the proposal normally requires an EIS.”¹⁹⁷ “If it does, the agency must prepare an EIS unless it can demonstrate that there” is no significant impact potential.¹⁹⁸ “Conversely, if the agency determines that the proposal . . . fall[s] within a categorical exclusion,” an EIS is unneeded.¹⁹⁹ In the Dynasty Order, the DOE determined that section B4.2 of Appendix B to Subpart D of Part 1021 of DOE’S National Environmental Policy Act Implementing Procedures excludes this action.²⁰⁰ This exclusion is provided for electric energy transmission using existing transmission systems.²⁰¹

“If the proposal does not fall neatly within either category, the agency is required to conduct an environmental assessment (EA).”²⁰² Afterwards, “an agency must either issue a finding of no significant impact (FONSI) or a notice of intent to conduct an EIS (NOI).”²⁰³ If the agency needs an EIS, the agency must publish the NOI in the Federal Register, and prepare a draft of the EIS. After a comment period, the agency prepares and issues the final EIS. Finally, the agency issues a Record of Decision presenting the alternative and reasons for the decision.²⁰⁴

Although NEPA requirements are purely procedural, Revesz argues that it matters.²⁰⁵ “First, NEPA provides a procedural framework that encourages political feedback and public participation.”²⁰⁶ Second, NEPA ensures that environmental issues are identified prior to beginning the process.²⁰⁷ However, the high cost of the NEPA process effects the agency.²⁰⁸ The preparation of an EIS can cost upwards of “\$2,000,000 and take as long as [six] years.”²⁰⁹ This procedural requirement certainly can obstruct the development of transmission lines. Investors desiring to develop cross-border trade of electricity may prefer to avail existing transmission systems, otherwise they may engage in a lengthy and litigious procedure that can substantially increase the cost and delay of the project. Nonetheless, due to the existence of few interconnections between the U.S. and Mexico, further trade will require new transmission lines.

As in the United States, Mexico also governs the environmental impact of human activity in the energy industry. An environmental impact assessment is a

196. 42 U.S.C. § 4332(C)(i-iii) (1970).

197. RICHARD L. REVESZ, ENVIRONMENTAL LAW & POLICY 797 (3rd ed. 2008).

198. *Id.*

199. *Id.*

200. 10 C.F.R. pt. 1021 app. B4.2 (2011). DOE EA-385, *Order Authorizing Electricity Exports to Canada*, dated 12-07-12

201. *Id.*

202. REVESZ, *supra* note 202, at 797 (EA is “a truncated EIS designed to provide sufficient evidence and analysis for determining whether the preparation of . . . an assessment of [the environmental impacts of the proposed actions] is warranted,” and “a description of this appropriate alternatives”).

203. *Id.* at 798.

204. *Id.*

205. *Id.* at 808.

206. *Id.* at 814.

207. REVESZ, *supra* note 202, at 814.

208. *Id.* at 815.

209. *Id.*

process by which the Secretary of the Environment and Natural Resources establishes the conditions to be met for works and activities that may cause ecological imbalance or exceed the limits and conditions to protect the environment and preserve and restore ecosystems.²¹⁰ This avoids or reduces negative effects on the environment.²¹¹ Persons who intend to carry out electric industry works or activities need an authorization of environmental impact from the Secretary in advance.²¹²

Applicants who intend to obtain the above authorization must submit an EIS.²¹³ This EIS must provide a description of the possible effects on the ecosystems that may be affected by the works or activities at issue, considering the elements forming the ecosystems, preventive, mitigation and other necessary measures to avoid and minimize the negative effects on the environment.²¹⁴ Regulations require persons wishing to conduct electric industry works or activities to obtain advance authorization from the Secretary on environmental impact. Specifically, authorization is required for (1) the construction of nuclear, hydroelectric, carbon, geothermal, wind, thermoelectric, conventional, combined cycle or turbo gas plants with capacity over 0.5 MW; (2) the construction of electric stations or substations; and (3) the transmission and sub-transmission electric works.²¹⁵ The works in (2) and (3) do not require an authorization in environmental impact if they will be in urban, sub-urban, urban or services equipment, rural, agricultural, industrial, or tourist areas.²¹⁶

These environmental requirements can substantially delay the development of infrastructure or stop completely a project, although they are necessary for the sake of the environment. In this regard, the Mexican framework presents efficiencies absent in the U.S. First, in Mexico, applicants provide the authority with the EIS for authorization.²¹⁷ In the U.S., the agency itself prepares the EIS.²¹⁸ Second, the applicant will try to prepare the EIS saving its budget and time resources.

The Mexican authority shall rule on the matter within a period of sixty to 120 working days.²¹⁹ This period may be extended for additional requirements, but it is highly unlikely that it will last six years, as in the U.S. If the authority takes longer, the applicant must infer that it was denied.²²⁰ This provides certainty. No need to wait years for a negative decision.

Third, the Mexican framework allows transmission works in urban areas without any authorization.²²¹ In this regard, transmission lines and other relevant

210. Ley General de Equilibrio Ecológico y Protección al Ambiente [LGEEPA] art 28, Diario Oficial de la Federación [DOF] 28-1-1988, últimas reformas DOF 07-01-2000 (Mex.).

211. *Id.*

212. *Id.*

213. *Id.* art. 30.

214. *Id.*

215. Reglamento de la ley General del Equilibrio Ecológico y Protección al Ambiente en Materia de Evaluación del Impacto Ambiental [RLGEEyPAMEIA] art 5, frac. K, Diario Oficial de la Federación [DOF] 30-05-2000, últimas reformas DOF 31-10-2014 (Mex.).

216. *Id.*

217. Ley General de Equilibrio Ecológico y Protección al Ambiente [LGEEPA] art 30.

218. 42 U.S.C. § 4332 (C)(i).

219. Ley General de Equilibrio Ecológico y Protección al Ambiente [LGEEPA] art 35 BIS.

220. *Id.* art 37.

221. Reglamento de la ley General de Equilibrio Ecológico y Protección al Ambiente en Materia de Evaluación del Impacto Ambiental [RLGEEyPAMEIA] art 5, frac. K.

infrastructure may be easily developed in Mexico but may be not in the U.S. For the above reasons, NAFTA should include a provision compelling parties to implement environmental regulation addressing these concerns. For instance, NAFTA could be amended to read as follows:

Parties agree to respect the environment and environmental regulations, but these regulations should facilitate cross-border trade of electricity between the Parties, particularly for the development of infrastructure needed to integrate transmission lines and the overall electric system of the Parties.

Parties agree to gradually eliminate unnecessary regulations that impede the integration of the electric system and the development of new transmission lines. However, Parties recognize their sovereign power to deny authorizations when a project presents reasonable environmental hazards.

Parties agree that the preparation and issuance of Environmental Impact Statements required for the integration of the electric systems in the NAFTA region and the development of new transmission lines shall be in a maximum of two years from the date of application, including any extension.²²² Upon reaching the end of this period without a decision of the applicable authority having been rendered, the EIS should be interpreted as having been resolved in a negative sense.

Parties agree that transmission works in urban areas will not require an EIS or any other authorization.

E. Consultations and Rights of Indigenous People

When authorities encourage individuals to participate in decision-making processes, to cooperate with administrative initiatives, and to comply with administrative regulations, they are perceived as legitimate authority performing more efficiently.²²³ Therefore, other permits required for the development of electric infrastructure that require the participation of other individuals can benefit from all parties being involved, but the permitting process can represent a deterrence or become an obstacle for the development of infrastructure and other transmission lines facilitating cross-border trade in electricity.

For instance, the law of New Hampshire – applicable to the Northern Pass project crossing the U.S.-Canada border – requires that “[w]ithin 90 days after acceptance of an application for a certificate,” the New Hampshire Site Evaluation Committee “shall hold one public hearing in each county [where] the proposed facility [will] be located.”²²⁴ Texas law requires most utilities to apply with the Public Utility Commission “to obtain or amend a Certificate of Convenience and

222. Order No. 3355, *Streamlining National Environmental Reviews and Implementation of Executive Order 13807*, U.S. DEP’T OF INTERIOR (Aug. 31, 2017) (This period seems reasonable considering that the Department of the Interior (DOI) issued Order 3355 imposing limits on NEPA reviews undertaken by DOI. The Order limits EIS preparation to one year and imposes a 150-page limit on most EISs).

223. KEITH HAWKINS, *THE USE OF LEGAL DISCRETION: PERSPECTIVES FROM LAW AND SOCIAL SCIENCE* 29 (KEITH HAWKINS ED., 1992).

224. N.H. REV. STAT. ANN. § 162-H:10(i-c) (2014).

Necessity (CCN) . . . to build a new transmission line in Texas.”²²⁵ These regulations apply to the development of new infrastructure; depending on the specific case, they can make cross-border trade of electricity thrive or stop.²²⁶

With respect to the rights of indigenous people, the Mexican Electric Industry Law provides that the Secretary of Energy shall carry out consulting proceedings to consider the interests and rights of the indigenous communities.²²⁷ For this purpose, applicants of authorizations to develop electric projects shall submit to the Secretary an assessment of social impact.²²⁸ These proceedings may obstruct the development of the electric industry if developers do not know how to manage the social aspects and how to deal with the interests of indigenous communities.

Even though energy matters pertain to the federal jurisdiction, local or municipal governments require developers of infrastructure to obtain permits, like construction permits.²²⁹ For instance, the development of transmission lines implicates construction and works on roads and highways. The local or municipal authorities may have proper jurisdiction to issue these permits. Consequently, NAFTA could be amended to provide as follows:

Parties agree to respect public hearings and consultations with the communities directly involved in the development of electric infrastructure projects.

Parties should endeavor to try to bring closer communities, investors, regulators and all parties involved to reach consensus regarding the risks and benefits of developing electric infrastructure in the concerned area.

Parties should list all the permits and regulatory requirements needed to develop infrastructure and interconnection lines at the federal, state or provincial and municipal level.

F. A New Energy Chapter in NAFTA

Governments around the world are beginning to battle climate change. “Electricity production generates the largest share of greenhouse gas emissions.”²³⁰ In 2015, 67% of the electricity in the U.S. came “from burning fossil fuels, mostly coal and natural gas.”²³¹ By contrast, Canada produced about 66% of its electricity from renewable sources.²³² In 2015, roughly 60% of Canada’s electricity was produced by hydro with the remainder coming from other sources.²³³ “The greatest change occurring in electricity markets today – and

225. PUB. UTIL. COMM’N OF TEX., LANDOWNERS AND TRANSMISSION LINE CASES AT THE PUC 2 (2011).

226. *Id.*

227. Ley de la Industria Eléctrica [LIE] art 119.

228. *Id.* art 120.

229. *Id.* art 71.

230. U.S. Env’tl. Protection Agency, *Sources of Greenhouse Gas Emissions* (last visited Feb. 7, 2018), <http://www.epa.gov/ghgemissions/sources-geenhouse-gas-emissions>.

231. *Id.*

232. Ian Johnson, *Canada produces 66% of its electricity from renewables*, INDEPENDENT (May 3, 2017), <http://www.independent.co.uk/news/world/americas/canada-electricity-renewable-energy-66-per-cent-hydro-biomass-wind-fossil-fuels-environment-friendly-a7715166.html> (last visited Oct. 21, 2017).

233. *Id.*

likely going forward for many years – is the increased recognition of environmental costs of electricity generation, most notably (but not exclusively) greenhouse gas emissions.²³⁴ A strong emphasis on environmental matters limits the air and water pollution from traditional sources of generation. The goals for increasing generation from renewable energy resources have appealed to environmental stakeholders concerned by climate change and encouraged technological developments.²³⁵

NAFTA cannot ignore these changes and must set goals to reduce pollution and encourage renewable sources of generation. Mexico's renewable energy target is 25% for 2018, 30% for 2021, and 35% for 2024.²³⁶ In the U.S., "30% of the electricity consumed by the federal government is to come from renewable energy sources, according to Executive Order 13,693."²³⁷ NAFTA contracting parties should try to negotiate and undertake to abide by specific renewable energy targets. Under the current Trump Administration, negotiators may encounter difficulty in reaching renewable energy goals, but effective negotiations should lead Parties to set commitments that may not depend on the political agenda of each Party's administration.

VI. CONCLUSIONS

NAFTA's renegotiations present a unique opportunity to create a new era of trade, and this era must include specific obligations concerning trade in electricity. Negotiators should consider the different degrees of integration regarding the U.S.-Canadian electric sector and the U.S.-Mexican electric system. Legal, political, sociological, and geographic factors have caused gaps between the integration of the electric markets in the NAFTA region. The absence of infrastructure, like transmission lines, stands today as the major obstacle for the integration and growth of electric trade in the region. Further, transmission lines and generators need to come close to the border to exploit this potential.

Integration and growth can benefit the three countries. The advantages may encompass further reliability, efficiency, price stability, coordination of energy data, harmonization of regulation that may produce savings for the regulated companies, and even cooperation among governments, utilities and regulators.

Historic needs and economic issues have carried over into different legal frameworks governing the electric sector in the U.S. and Mexico; still, both systems allow trade of electricity and the development of infrastructure for this purpose. The U.S. and Canada have extensive experience in importing and exporting energy. In the process, the U.S. has endorsed the open access policy developed by FERC Order No. 888. Competition has proved to benefit the markets in several aspects; however, the previous Mexican framework was outdated and could not accept competition.

In 1992, when the first NAFTA negotiations ended, States decided to respect the domestic frameworks of each party. Not surprisingly, NAFTA did not obligate

234. Borenstein & Bushnell, *supra* note 5, at 20.

235. *Id.* at 21.

236. Ley para la Transición Energética [LTE] Tercero Transitorio, Diario Oficial de la Federación [DOF] 24-12-2015 (Mex.).

237. U.S. Office of Energy Efficiency & Renewable Energy, *Federal Agency Use of Renewable Electric Energy* (last visited Oct. 28, 2017), <https://energy.gov/eere/femp/achieving-30-renewable-electricity-use-2025>.

parties to develop the integration of the energy markets. By that time, the Mexican SOE, CFE, was used to generate, operate, transmit and distribute electric energy. Still, the old framework allowed private generators to produce electric energy for self-consumption. Otherwise, they had to sell the remainder to the vertically integrated entity. The old model could not stand.

Today, a constitutional reform and new laws govern the new electric horizon in Mexico. Legislators decided to create CENACE, a governmental entity that must comply with similar principles governing the U.S. ISOs/RTOs. They also decided to secure competition and CENACE's independence by keeping it part of the government. CENACE controls operations and ensures open access. CFE Transmisión will manage the grids. Statutory provisions obligate CENACE and CFE to guarantee open access, and CFE Transmisión to interconnect generators to the grid.

The Mexican government supports the idea of further trade for a couple of reasons. First, transmission and distribution are affected by social interest and public policy. They prevail over any other activity regarding the use of land. Additionally, the electric industry is affected with public use. The electric industry can obtain necessary easements to provide transmission of electricity as well as to build new generation facilities. The new Wholesale Electric Market breaks with decades of CFE's monopoly. Private investors can participate in the sector and develop the infrastructure needed. Statutory obligations and surveillance by the Board of Directors impose on CFE Transmisión to provide open access and interconnection. Generators can carry out transmission and distribution works, even if they are not included in the extension and renewal plans. In a similar vein, NAFTA parties must provide third parties with the possibility of participating in the development and implementation stages of cross-border interconnection projects.

On both sides, environmental and other permitting processes may become obstacles to infrastructure's development. The U.S. NEPA can substantially harm any new transmission line. Other municipal and local permits may add to the load of interested developers.

NAFTA comes as the most suitable helper to lock all the undertakings between the two legal frameworks. Both legal frameworks interact but under different sets of provisions. Nonetheless, the integration of the electric systems and the desire to increase trade in electricity requires a true commitment bringing the exchange of electricity to the next level. Undertakings for NAFTA parties can benefit the three countries and advance reliability, permitting processes, and other regulatory issues. Regional cooperation under NAFTA and the proposed provisions for the energy chapter can fill the gaps in the WTO law and the previous framework for the development of energy infrastructure. Harmonization of energy legislation at the NAFTA level will continue with the integration of the electric sector and increase trade.