

CONNECTING CURRENTS: TOWARD THE INTEGRATION OF NORTH AMERICAN ELECTRICITY MARKETS

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I. INTRODUCTION

As recently as 1991, closed markets and governmentally owned or regulated monopolies characterized the electricity industries of Canada, Mexico, and the United States.¹ In the past, trade in electricity among these nations consisted only of limited power transfers between border utilities.² Today, North American electricity markets look quite different. All three countries have liberalized their industries to varying

1. See TIMOTHY J. BRENNAN ET AL., *A SHOCK TO THE SYSTEM: RESTRUCTURING AMERICA'S ELECTRICITY INDUSTRY* 21-30 (1996) (providing a chronicle of the U.S. electricity industry's history from Thomas Edison's first power plant in the late 1880s to the dominance of government regulated monopolies in the early 1990s); Michael T. Burr, *Weathering the Storm*, INDEP. ENERGY, Mar. 1995, at 23, 26-27 (describing the provincially owned and regulated utilities of Canada); Reinier Lock, *Mexico-United States Energy Relations and NAFTA*, 1 U.S.-MEX. L.J. 235, 242 (1993) (discussing the Mexican government's ownership and control of Mexican utilities).

2. See Daniel Naccarato, *Ontario Hydro Plans Stalled*, J. COM., June 18, 1997, at 5B.

degrees by promoting competition at the wholesale level.³ This liberalization is creating new opportunities for the trade of electricity across North American borders, thus, leading one Canadian industry executive to predict that North American electricity markets will integrate to form one market within the next ten years.⁴ Interestingly, unilateral actions taken by the United States to open its domestic industry to competition, rather than the momentous ratification of the North American Free Trade Agreement (NAFTA),⁵ precipitated this movement toward the integration of North American electricity markets.⁶

Historically, vertically integrated,⁷ government regulated monopolies dominated the U.S. electricity industry.⁸ In the

3. See James Jelter, *Hydro-Quebec CEO Sees One N. American Power Market*, Reuters Fin. Serv., May 8, 1997, available in LEXIS, News Library, NON-US File (reporting that both the United States and the Canadian province of Quebec opened their electricity wholesale markets to competition); see also Arturo Gándara, *United States-Mexico Electricity Transfers: Of Alien Electrons and the Migration of Undocumented Environmental Burdens*, 16 ENERGY L.J. 1, 25–26 (1995) (discussing Mexico's new policy of allowing private firms to generate electricity for certain uses).

4. See Jelter, *supra* note 3. U.S. Energy Secretary Federico Pena made similar comments after a trip to Mexico in May 1997. See *Mexican Utility Seeks U.S. Partners; Restructuring to Follow Election*, POWER MARKETS WK., June 16, 1997, at 10, 11 [hereinafter *Mexican Utility Seeks*].

5. See Gándara, *supra* note 3, at 29–30.

6. See *U.S. Armlock on Canada's Utilities: Benard Simon Reports on the Influence of Washington Regulators Across the Border*, FIN. TIMES (London), July 24, 1997, at 5 [hereinafter *U.S. Armlock on Canada's Utilities*] (attributing the push to open Canadian wholesale markets to the influence of U.S. domestic policy); see also Gándara, *supra* note 3, at 23 (crediting U.S. law with encouraging more power transfers across the U.S.-Mexico border).

7. A “vertically integrated” utility company owns the means of generation, transmission, and distribution of electricity. See PETER C. CHRISTENSEN, *RETAIL WHEELING: A GUIDE FOR END-USERS* 12 (2d ed. 1996). The justification for vertical integration is rooted in the economic theory of “economy of scope,” the notion that joint production of multiple services is more cost effective than separately producing each of the services. See *Pros and Cons of Vertical Integration*, FIN. TIMES (London), Mar. 8, 1996, at 14.

8. See Jeffrey D. Watkiss & Douglas W. Smith, *The Energy Policy Act of 1992—A Watershed for Competition in the Wholesale Power Market*, 10 YALE J. ON REG. 447, 449 (1993). Isolated, competitive, and unregulated power systems comprised the electricity industry during its early years (1880s–1920s). See CHRISTENSEN, *supra* note 7, at 12. These systems often provided duplicative services, and reliability and incompatibility problems plagued the industry. See *id.* In the 1920s, competitive market forces drove many of these systems out of business. See *id.* Most of the surviving systems merged, and eventually a few monopolies dominated the industry. See *id.* The monopolists rationalized their dominance by characterizing the electricity industry as a natural monopoly. See *id.* A natural monopoly occurs when one firm is able to serve a market

early 1990s, Congress initiated regulatory reforms to promote competition in U.S. electricity markets.⁹ The reforms, which amounted to an incremental “restructuring”¹⁰ of the industry, began with the enactment of the Energy Policy Act of 1992 (EPAct).¹¹ EPAct permits regulated competition in the electricity generation market and, by extension, the wholesale electricity market.¹² EPAct further allows U.S. power generators to serve foreign markets directly, to the extent foreign markets are open to such service,¹³ and permits foreign power marketers to compete in the growing wholesale market of the United States.¹⁴

Although not necessarily designed to do so, the reforms of EPAct promote electricity trade among the United States, Canada, and Mexico. Current market conditions in the three countries make increased power transfers irresistible to

more efficiently than two or more competing firms. See BRENNAN, *supra* note 1, at 65. However, fraud and exorbitant pricing lead to extensive federal regulation in 1935 with the enactment of the Federal Power Act and the Public Utility Holding Company Act. See CHRISTENSEN, *supra* note 7, at 13.

9. See BRENNAN, *supra* note 1, at 6. Reformers argued that regulation failed to promote efficiency, ensure adequate service to consumers, and keep retail prices as low as practicably possible. See *id.* at 4. For example, since costs of production determined retail rates, utilities had no incentive to reduce production and transmission costs, and retail rates remained higher than necessary. See *id.* Furthermore, costs varied greatly in different parts of the country, causing disparity in retail prices across the United States. See *id.* Finally, changes in technology obviated the need for giant central power stations to maximize efficiency. See *id.*

10. In this context, the term “restructuring” refers to changing the organization of the industry as a means of separating the generation, transmission, and distribution functions. See BRENNAN, *supra* note 1, at 6.

11. See Pub. L. No. 102-486, 106 Stat. 2776 (codified as amended in scattered sections of 11, 15, 16, 25, 26, 30, 42, 43, 48 U.S.C.); see also Watkiss & Smith, *supra* note 8, at 449.

12. See 15 U.S.C. § 79z-5a (1994); Watkiss & Smith, *supra* note 8, at 449. Retail competition falls within the jurisdiction of the states. See 16 U.S.C. § 824(a)–(b) (1994). In an effort to decrease the electric rates of consumers, most states are also considering restructuring proposals to introduce competition at the retail level. See *Electricity Competition: Necessary Federal and State Roles: Hearings Before the Subcomm. on Energy and Power of the House Comm. on Commerce*, 105th Cong. (1997) [hereinafter Conlon Testimony] (statement of P. Gregory Conlon, President of the California Public Utilities Commission). California was the first state to actually implement customer choice at the retail level. See *Customer Choice Set for 1998 Implementation*, TRANSMISSION & DISTRIBUTION WORLD, June 1997, at 8, 8.

13. See Gándara, *supra* note 3, at 16–19.

14. See *Canada Utilities on Verge of Bigger U.S. Presence*, CURRENT COMPETITION, June 26, 1997, at 12, 12 [hereinafter *Canada Utilities on Verge*].

each.¹⁵ Canadian utilities find that utilizing their excessive generating capacity to sell millions of dollars of electricity in the competitive U.S. wholesale market is an obvious antidote for their current financial woes.¹⁶ Large investments in production facilities coupled with several years of stagnation in demand have resulted in Canadian utilities being burdened with the cost of immense generating capacity without sufficient markets for their power.¹⁷ These utility companies believe they will be successful in the U.S. wholesale market because the low cost of producing hydroelectric power in Canada makes their prices attractive to U.S. purchasers.¹⁸

Mexico finds that competitive U.S. wholesale prices make purchasing U.S. electricity a viable means of meeting its rapidly rising demand.¹⁹ Mexico's government owned monopoly, the Comision Federal de Electricidad (CFE),²⁰ does not have the financial ability to invest in its own generating capacity and meet the current rate of demand growth.²¹ The EPAct increases the number of buyers and sellers of electricity, which increases Mexico's chances of finding U.S. suppliers to meet its demand.²² Therefore, by purchasing U.S. power at competitive prices, Mexico is able to delay investment in its own production facilities and still buy power cheaper than it can produce it.²³

The United States also has economic incentives to increase trade in electricity with its neighbors. The introduction of cheap Canadian power into the U.S. wholesale market will eventually reduce retail prices to U.S.

15. See Gándara, *supra* note 3, at 23 (“[D]ue to the Energy Policy Act of 1992, never before have regulatory and market conditions been so propitious for the movement of substantial amounts of power from the United States to Mexico.”); *Ontario Hydro Revises Its Bid for Electricity Trade in the U.S.*, J. COMM., Feb. 24, 1997, at 7B (noting Canada's eagerness to increase its share of the U.S. electricity market).

16. See *Canada Utilities on Verge*, *supra* note 14, at 12.

17. See *id.* (discussing Canada's major electric power monopolies' eagerness to enter the U.S. market).

18. See *id.*

19. See *Mexican Utility Seeks*, *supra* note 4, at 10. Analysts estimate annual growth at five percent nationally and even higher in northern Mexico. See *id.*

20. See Gándara, *supra* note 3, at 3.

21. See *id.* at 15–16 (reporting that at its present rate of growth Mexico will need to increase its generating capacity by 100% every ten years).

22. See *id.* at 16.

23. See *id.*

consumers, and offering consumers the lowest price is one of the primary goals of market liberalization in the United States.²⁴ Furthermore, U.S. power generators will benefit from the accessibility of foreign markets in which they can sell their power.²⁵ Mexico is particularly enticing to them since its demand is steadily rising.²⁶

In addition to the aforementioned economic benefits, integration of the North American electric power markets should also reduce production waste as well as increase reliability of electric services across the continent.²⁷ For example, electricity demand in a particular region varies throughout the year due to changes in weather and industrial output.²⁸ In a period of high demand, it is more efficient for regional utilities to import excess electricity from a region experiencing a simultaneous period of low demand than for both utilities to maintain generating capacity sufficient to meet peak requirements at all times.²⁹ Furthermore, a utility company's supply may be dramatically reduced during high demand periods due to generating problems such as equipment malfunctions or low water reservoir levels.³⁰ These unexpected conditions may cause demand to exceed current generating capacity. To insure reliability, the utility company should import electricity required to meet peak demands from another, even foreign, utility.³¹

For all of the reasons stated above, increased trade of electricity among the United States, Canada, and Mexico

24. See Robert Howse & Gerald Heckman, *The Regulation of Trade in Electricity: A Canadian Perspective*, in ONTARIO HYDRO AT THE MILLENNIUM: HAS MONOPOLY'S MOMENT PASSED? 103, 109 (Ronald J. Daniels ed., 1996). Many industry analysts argue that competition in the wholesale market alone will not benefit the consumers or the "end users" because they purchase their power from their local distribution companies, which are still monopolies in most areas. See BRENNAN, *supra* note 1, at 41-43. In essence, the distributor will not pass the cost savings on to the consumer. See *id.* However, once states introduce retail competition, as is expected, consumers will in fact see lower prices. See *id.*

25. See Gándara, *supra* note 3, at 15-16.

26. See *id.*

27. See Howse & Heckman, *supra* note 24, at 108.

28. See *id.* For example, Canadian utilities experience higher demand for electricity in the winter, while many utilities in the United States experience lower demand in the winter and higher demand in the summer. See *id.*

29. See *id.*

30. See *id.*

31. See *id.*

yields practical and economic benefits for all three countries. However, along with new opportunities for trade, the introduction of competition into the North American electricity markets has brought about some new problems. For example, current international and domestic laws are not tailored to address or resolve certain disputes that have arisen between U.S. regulatory agencies and international buyers and sellers of wholesale power.³² Within the past two years, such disputes thwarted several international electricity trade deals.³³

In addition, the former regulatory framework that assured reliability³⁴ of the North American transmission lines is no longer feasible in the new, competitive markets.³⁵ Policy makers in Washington are currently debating how the reliability of the North American transmission lines should be regulated.³⁶ However, any regulatory body must include Canadian and Mexican representatives³⁷ because the U.S. transmission lines are connected with those of Canada and Mexico.³⁸

Unfortunately, the North American Free Trade Agreement (NAFTA) does not specifically address these regulatory and

32. See, e.g., *Key Administration Officials Link Electric Utility Industry Restructuring With Climate Change Policy*, FOSTER ELECTRIC REP., Dec. 17, 1997, at 1, 1 (encouraging legislation that, *inter alia*, fills the "gaps" in the FERC's authority) [hereinafter *Key Administration Officials*].

33. See, e.g., *Canadian Monopolies Close to Opening Power Marketing Arms in United States*, ENERGY REP., June 16, 1997, available in 1997 WL 8928100 (reporting a Canadian utility's contention that it could not meet some of the FERC's regulatory requirements for selling power in the U.S. wholesale market and, therefore, would lose one in forty export contracts with U.S. buyers).

34. The term "reliability" refers to (i) adequate capacity to meet demand and (ii) the ability to sustain losses of necessary components and continue to provide adequate service. See Howse & Heckman, *supra* note 24, at 105.

35. See Elaine Hiruo, *Pressure on NERC to Tear Down Grid Structure of Favoritism*, NUCLEONICS WK., Sept. 11, 1997, at 7, 7. Currently, a voluntary association of industry members, the North American Electric Reliability Council (NERC), regulates reliability of the three highly synchronized transmission grids that run throughout Canada and the United States and parts of Mexico. See BRENNAN, *supra* note 1, at 26.

36. See *DOE Task Force Endorses FERC Reliability Role; NERC's Future Pondered*, INSIDE F.E.R.C., Nov. 10, 1997, at 1, 1 (recognizing possible problems posed by the new industry structure and outlining proposed theories of regulation).

37. See *id.* at 2.

38. See *Schaefer Turns Panel's Spotlight on Reliability "Doom" Scenarios*, ELECTRIC UTIL. WK., June 23, 1997, at 15, 15 [hereinafter *Schaefer Turns Panel's Spotlight*].

reliability issues.³⁹ The U.S. Congress is considering legislation that may address some of the problems, but its solutions cannot infringe upon Canada's and Mexico's sovereignty.⁴⁰ Therefore, these three countries may prefer a treaty or side agreement to NAFTA rather than unilateral actions by the United States.⁴¹ Regardless of the course of action, the matter should be resolved quickly so North America can come closer to integrating its electricity markets and thereby reap the associated benefits.

Section II of this comment explains (i) the specific EAct provisions that instituted competition in the U.S. electricity wholesale market and (ii) the way such provisions affect Mexican and Canadian markets and encourage electricity trade among the three countries. Section III focuses on the particular international regulatory and jurisdictional problems concomitant with the restructuring of North American electricity markets. Section IV considers the specific problem of regulating reliability along the North American transmission grids after the introduction of competition. Finally, Section V discusses alternative solutions to these regulatory problems, including implementing an international treaty.

II. PROVISIONS OF THE EACT

Traditionally, utility monopolies controlled the electricity markets in the United States. For example, a nonutility power generator⁴² could not sell electricity at the wholesale⁴³ level unless it met very stringent structural and financial regulations. This effectively deterred entry into the market.⁴⁴ Furthermore, nonutility generators that did meet the strict

39. See Lock, *supra* note 1, at 240–42 (analyzing NAFTA's effect on energy regulation and its failure to harmonize the structural distinctions between countries).

40. See Schaefer Turns Panel's Spotlight, *supra* note 38, at 15.

41. See Conlon Testimony, *supra* note 12.

42. A non-utility power generator is an independent generator (producer of electricity) that is not affiliated or integrated with any retail or distribution system. See BRENNAN, *supra* note 1, at 16. Unlike utilities, non-utility power generators are not established under state or federal law or by franchise, nor do they have a designated service area. In other words, they are completely independent of the vertically integrated monopolies. See Joseph T. Kelliher, Comment, *Pushing the Envelope: Development of Federal Electric Transmission Access Policy*, 42 AM. U. L. REV. 543, 546 n.3 (1993).

43. "Wholesale" refers to the "sale of electricity for subsequent resale." See *id.* at 545 & n.2.

44. See Watkiss & Smith, *supra* note 8, at 449.

federal requirements found it almost impossible to compete with the utilities, which preferred to buy and sell exclusively among themselves.⁴⁵ Therefore, until recently, utilities controlled almost all of the electricity generating capacity in the United States.⁴⁶

Although EPAct was its first deliberate measure to introduce competition into the electricity market,⁴⁷ Congress unintentionally advanced competition at the wholesale level almost fifteen years earlier with the enactment of the Public Utilities Regulatory Policies Act of 1978 (PURPA).⁴⁸ Due to the oil crisis and environmental movement of the 1970s, electricity generation costs skyrocketed while demand fell.⁴⁹ Congress enacted PURPA to alleviate the immense financial burden and operating risks associated with new generating capacity. Supporters of PURPA argued that allowing certain nonutility power generators to sell power to utilities would shift some of the generation costs away from the utilities.⁵⁰

Consequently, PURPA allows nonutility power generators who meet certain ownership and operating criteria to sell electricity to utilities.⁵¹ This narrow class of generators, called qualifying facilities (QFs), consists only of cogenerators, generators that produce electricity along with another form of energy and small power producers, generators that use renewable resources to produce electricity.⁵² PURPA further requires utilities to buy power from QFs at the utilities'

45. See *id.* at 453. "Before [1978] a non-utility generator was faced with trying to sell power to the local utility, a disinterested monopsony. The non-utility generator could not sell directly to retail customers because it did not have a state retail franchise, and could not deliver power to other wholesale customers—i.e., other utilities—because the local utility controlled and restricted the transmission facilities necessary to reach those buyers. The local utility could simply decline to buy the power, offer any price it chose, or refuse to transmit the power to another willing utility purchaser." *Id.*

46. See Kelliher, *supra* note 42, at 548 (stating that in the late 1970s "utilities controlled over ninety-seven percent of U.S. electric generating capacity").

47. See CHRISTENSEN, *supra* note 7, at 27–29.

48. Pub. L. No. 95-617, 92 Stat. 3117 (codified as amended at 16 U.S.C. §§ 2601–2645 (1988)); see Watkiss & Smith, *supra* note 8, at 452.

49. See Watkiss & Smith, *supra* note 8, at 452.

50. See *id.* "Buying power (from other utilities or non-utility generators) rather than building generating capacity—and thereby shifting rather than shouldering construction and operating risk—became an option considered favorably by an increasing number of utilities." *Id.*

51. See WILLIAM J. BAUMOL & J. GREGORY SIDAK, TRANSMISSION PRICING AND STRANDED COSTS IN THE ELECTRIC POWER INDUSTRY 10 (1995).

52. See *id.*

avoided costs.⁵³ In essence, PURPA authorizes some very specialized nonutility power generators to sell electricity at the wholesale level, but at regulated prices.

In contrast to PURPA, EPAct permits an unprecedented, broad class of nonutility power generators called exempt wholesale generators (EWGs) to sell electricity in the wholesale market.⁵⁴ EWGs are exempt from the strict operating and efficiency requirements of PURPA as well as any corporate structure requirements of earlier legislation.⁵⁵ In effect, EPAct allows almost any electricity generator to qualify as an EWG.⁵⁶ Furthermore, EPAct does not require utilities to purchase power from EWGs at avoided costs.⁵⁷ Therefore, EWGs can compete with utility companies' own generators and sell their power at market price.⁵⁸ As expected, the effect of relaxing the barriers to entry into the wholesale market is an increase in the number of wholesale suppliers.⁵⁹

In addition to encouraging new suppliers to enter the wholesale market, EPAct authorizes a new form of contracting between wholesalers and purchasers.⁶⁰ Prior to EPAct, the wholesale market was *closed*.⁶¹ For example, if Utility A wanted to sell electricity to Utility C, but Utility B owned the transmission lines between A and C, A had to sell the electricity to B, who would then contract with C to resell the electricity.⁶² A and C, separated geographically, could not contract for the sale of electricity without a buy-sell

53. *See id.* "Avoided costs" are the costs of generating or otherwise purchasing the same amount of electricity. *Id.* at 32-33.

54. *See* Gándara, *supra* note 3, at 18. EPAct did not eliminate QFs under PURPA; it only added another class of non-utilities who may sell electricity. In fact, in some situations a generator may find it more advantageous to apply for QF status rather than EWG status. *See* CHRISTENSEN, *supra* note 7, at 31-32.

55. *See* Gándara, *supra* note 3, at 18-19. Before PURPA, very few non-utility power generators qualified to sell their power in the wholesale market due to very strict federal regulations. *See* Watkiss & Smith, *supra* note 8, at 449.

56. *See* CHRISTENSEN, *supra* note 7, at 30. A qualified energy producer must apply to the FERC for approval as an EWG. *See* Watkiss & Smith, *supra* note 8, at 469.

57. *See* CHRISTENSEN, *supra* note 7, at 31-32.

58. *See id.* at 32-33.

59. *See* Gándara, *supra* note 3, at 19. By July 7, 1994, the FERC had approved 112 of the 159 EWG applications submitted. *See id.*

60. *See* CHRISTENSEN, *supra* note 7, at 28.

61. *Id.*

62. *See id.*

agreement with B.⁶³ In other words, A could not simply require B to “wheel”⁶⁴ the power to C and pay B the cost of providing the service.⁶⁵ Moreover, utility monopolies, who are also in the business of selling and buying electricity, owned the transmission facilities.⁶⁶ By refusing to wheel power for other utilities or nonutilities, they were in a better position to make the sale or purchase themselves.⁶⁷ In essence, utilities often stifled competition and gained unfair market advantages by refusing to deliver power from third-party sellers to third-party buyers over their transmission lines.⁶⁸

In a striking departure from traditional closed market contracting, EAct gives the Federal Energy Regulatory Commission (FERC)⁶⁹ the authority to order the transmitting utility (B in the above example) to wheel the electricity from a third-party seller to a third-party buyer (A & C above, respectively).⁷⁰ Any utility or nonutility that needs access to a utility’s transmission lines may apply to the FERC for an order requiring the transmitting utility to provide wheeling services.⁷¹ The FERC may issue the transmission order if it finds that wheeling is in the public interest and does not threaten reliability.⁷² If the transmitting utility does not have sufficient transmission capacity to provide the requested

63. *See id.*

64. The U.S. Supreme Court defined “wheeling” as the “transfer by direct transmission or displacement [of] electric power from one utility to another over the facilities of an intermediate utility.” *Otter Tail Power Co. v. United States*, 410 U.S. 366, 368 (1973).

65. *See* CHRISTENSEN, *supra* note 7, at 28.

66. *See* Watkiss & Smith, *supra* note 8, at 455.

67. *See id.*

68. *See id.*

69. In 1977 Congress established the FERC, which replaced the Federal Power Commission. *See* 42 U.S.C. §§ 7171–7172 (1994). The FERC’s responsibilities include regulating the transmission and wholesale of electricity. *See id.*; *see also* BRENNAN, *supra* note 1, at 10. Historically, the FERC virtually had no authority to require wheeling for purposes of promoting competition. *See* Watkiss & Smith, *supra* note 8, at 456–59 (tracing the history of the FERC’s authority to mandate pro-competitive wheeling starting from the 1973 U.S. Supreme Court decision holding that the FERC did not have such authority to the EAct, wherein Congress conferred the authority to order wheeling upon the FERC).

70. *See* 16 U.S.C. § 824j (1994); *see also* BAUMOL & SIDA, *supra* note 51, at 15.

71. *See* 16 U.S.C. § 824j(a) (1994); *see also* BAUMOL & SIDA, *supra* note 51, at 15.

72. *See* 16 U.S.C. § 824k(i)(1) (1994); *see also* Watkiss & Smith, *supra* note 8, at 456.

service, EPAct authorizes the FERC to compel the transmitting utility to sufficiently expand its transmission capacity.⁷³ However, the FERC is only allowed to order wheeling for wholesale sales.⁷⁴

Dissatisfied with EPAct's protracted application process for wheeling,⁷⁵ the FERC issued its own open transmission access order.⁷⁶ Without relying on EPAct, the FERC cited Sections 205 and 206 of the Federal Power Act,⁷⁷ which give it power to remedy undue discrimination, as the basis for its authority to mandate open transmission access.⁷⁸ Issued on April 24, 1996, FERC Order No. 888 (Order 888)⁷⁹ requires public utilities to separate or "functionally unbundle"⁸⁰ their transmission services from their generation and distribution services.⁸¹ They must provide open and nondiscriminatory access to their transmission lines and facilities and file open access tariffs with the FERC.⁸² The open access tariff must offer both point-to-point and network transmission service⁸³ and must also set the same wholesale rates for everyone who

73. See 16 U.S.C. § 824j(a) (1994); see also *Watkiss & Smith*, *supra* note 8, at 460.

74. See *BAUMOL & SIDAK*, *supra* note 51, at 15. Retail wheeling is within the jurisdiction of the states. See *id.*

75. See *CHRISTENSEN*, *supra* note 7, at 29. Under EPAct, before an entity applies to the FERC for a transmission order, it must directly request the transmitting utility to provide the service. See *id.* The transmitting utility has 60 days to respond as to why it cannot provide the service. See *id.* (describing the lengthy process that applicants must go through).

76. See *id.* at 33.

77. 16 U.S.C. § 824 (1994).

78. See *An Industry in Transition: Report of the Committee on Electric Utility Regulation*, 17 *ENERGY L.J.* 245, 247 (1996); see also *Watkiss & Smith*, *supra* note 8, at 459–60. The FERC emphasized its authority to order wheeling under Sections 205 and 206 because it did not want to rely on the authority granted in EPAct. See *CHRISTENSEN*, *supra* note 7, at 33–34.

79. *Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities* 9, 18 C.F.R. pt. 35 (1996).

80. *Report of the Committee on Independent Power Production, 1995–1996*, 17 *ENERGY L.J.* 503, 503 (1996) [hereinafter *Independent Power Production*]. The term "functional" indicates that Order 888 does not require utilities to divest their transmission service or to separate it from the corporate structure; utilities simply must treat it as a separate, independent, and available service. See *id.* at 504.

81. See *id.* at 504.

82. See *id.* at 505–06.

83. See *id.* at 505.

requests transmission services, including the utility that owns the transmission facilities.⁸⁴

Order 888 specifically applies to public utilities⁸⁵ because the FERC's authority to require open access under Section 206 of the Federal Power Act only extends to public utilities.⁸⁶ Therefore, to encourage nonjurisdictional (nonpublic or foreign) utilities to provide open access to their transmission lines, the FERC developed a "reciprocity requirement."⁸⁷ All public utilities may include a reciprocity provision in their open access tariffs whereby they may refuse open transmission access to any nonjurisdictional utility that refuses to provide reciprocal open transmission access to the jurisdictional utility.⁸⁸ Hence, if a nonjurisdictional utility requests the transmission services of a public utility, it must allow the public utility transmission access to its lines.⁸⁹

By encouraging new energy suppliers to enter the wholesale market and by opening access to transmission lines so that wholesale suppliers can contract directly with purchasers located across the country,⁹⁰ EPAct and Order 888 together transformed the wholesale electricity market in the United States.⁹¹ Furthermore, these changes will likely foster increased trade in electricity between the United States and Mexico⁹² and the United States and Canada.⁹³ However, the reasons that these laws promote trade between the United States and Canada are different than the reasons they promote trade between the United States and Mexico.

84. See CHRISTENSEN, *supra* note 7, at 34.

85. See *id.* at 33–34 (defining public utilities as investor owned utilities, but not municipal electric utilities, cooperatives, or federal power agencies).

86. See *id.*

87. *Independent Power Production*, *supra* note 80, at 505–06.

88. See *id.* A nonjurisdictional utility may submit its own open access tariff for the FERC's approval as an acceptable reciprocity tariff. See *id.* at 506.

89. See *id.* at 506.

90. See CHRISTENSEN, *supra* note 7, at 28–34 (mentioning several of the benefits of the new changes).

91. See *id.* "On April 24, 1996, [the] FERC ordered the most sweeping and fundamental set of rule changes in the post-EPAct competitive era of the electricity industry." *Id.*

92. See Gándara, *supra* note 3, at 23.

93. See, e.g., Peter Morton, *Canada in U.S. Power Play: Three Canadian Energy Players Win Key Approvals Needed to Service American Electrical, Natural Gas Markets*, FIN. POST, Sept. 25, 1997, at 3 (reporting that the FERC granted B.C. Hydro a "coveted" power marketing license to sell electricity anywhere in the United States; B.C. Hydro estimated that its subsidiary, Powerex, will increase export sales to the United States to \$200 million a year).

Mexico's domestic generation facilities are not presently capable of meeting its rapidly rising demand.⁹⁴ Over the past few years, the Mexican government has considered several alternatives to its own investment in new generating capacity. The first is to allow some foreign firms to build production facilities in Mexico. Accordingly, in 1992 President Salinas signed a decree amending the Public Power Service Law, which permits private and even foreign firms to produce power in Mexico for private use, sale to the CFE, or export.⁹⁵ Moreover, EPAct allows EWGs to operate in foreign countries.⁹⁶ Therefore, several EWGs are operating in Mexico and selling power to the CFE with the FERC's approval.⁹⁷ The second alternative is to take advantage of competitive wholesale prices in the United States and purchase directly from U.S. suppliers.⁹⁸ Under EPAct power generators anywhere in the United States may contract directly with foreign purchasers for the wholesale of electricity. Consequently, CFE plans to complete more cross-border transactions with U.S. power generators.⁹⁹ Finally, the drastic option of opening the entire electricity industry to competition is now being considered.¹⁰⁰ Although this extreme proposal is likely to encounter some political opposition, senior government officials believe that a competitive market is inevitable given the current need for billions of dollars of investment in the industry.¹⁰¹ Eventually, the Mexican government will not be able to afford to retain ownership of the industry.¹⁰² Current plans outline

94. See *Mexican Utility Seeks*, *supra* note 4, at 10; see also Ronald Buchanan, *Mexican Electric Privatization Likely*, HOUS. CHRON., Feb. 13, 1999, at 1C (referring to President Zedillo's announcement that the electricity sector currently needs \$25 billion of investment to meet the growing demand).

95. See "Decreto que reforma, adiciona y deroga diversas disposiciones de la Ley del Servicio Público de Energía Eléctrica," D.O., 23 de diciembre de 1992.; see also Gándara, *supra* note 3, at 23-25 (noting that the Decree is the first of several small, but significant steps taken by Mexico to open up its nationalized electricity sector).

96. See Gándara, *supra* note 3, at 27.

97. See *id.* at 26-27.

98. See *Mexican Utility Seeks*, *supra* note 4, at 10.

99. See *id.*

100. See Buchanan, *supra* note 94, at 1C (noting that recently, Mexican officials announced plans to "throw electricity wide open to competition").

101. See *id.*

102. See *id.* ("The message to political opponents of change was clear: You can retain the state monopoly over power, but you'll have to say goodbye to the social spending the country definitely needs.").

a slow transition from the government owned monopolies to separate, privately owned distribution companies generating and competing to provide electricity to the power network.¹⁰³ Like in the United States, a regulatory commission would establish rules for a competitive market.¹⁰⁴

In contrast to Mexico, Canadian electricity markets suffer from stagnant growth¹⁰⁵ due to low demand and excessive generating capacity.¹⁰⁶ The provincial government owned utilities¹⁰⁷ are financially troubled and see the invitation to compete in the U.S. wholesale market as an irresistible financial opportunity.¹⁰⁸ Under Order 888, a foreign utility may sell electricity to a wholesale purchaser anywhere in the United States and have it transmitted via a competitor's transmission lines.¹⁰⁹ However, the foreign utility must first apply to the FERC for a power marketer license.¹¹⁰ Without a power marketer license, which provides the foreign utility access to U.S. transmission lines, a foreign utility is only able to sell power at the United States-Canada border.¹¹¹ U.S. and Canadian utilities have traded along the border for years, but

103. *See id.*

104. *See id.*

105. *See Canada Utilities on Verge, supra* note 14, at 12.

106. *See* Ronald J. Daniels & Michael J. Trebilcock, *The Future of Ontario Hydro: A Review of Structural and Regulatory Options*, in *ONTARIO HYDRO AT THE MILLENNIUM 6* (Ronald J. Daniels ed., 1996) (explaining several reasons for the low demand, including widespread adoption of energy saving measures, a severe recession in the early 1990s, a changing industrial structure that moved away from heavy manufacturing to more service industries, and low cost alternatives to electricity).

107. Electric utilities in Canada consist of provincial government owned monopolies. *See FERC's Canadian Decision*, INDEP. ENERGY, June, 1997. Each provincial monopoly is regulated by the provincial government. *See* Howse & Heckman, *supra* note 24, at 113–21. The National Energy Board of Canada (NEB), a regulatory agency that oversees the Canadian energy industries, has very little jurisdiction over the provincial monopolies, except to the extent that it has jurisdiction to regulate electricity exports, international power lines, and some interprovincial power lines. *See id.*

108. *See Canada Utilities on Verge, supra* note 14, at 12. Representatives of the Canadian utility Hydro Quebec argue that their prices are very competitive in the U.S. market because their production costs are so low. *See id.* Hydro Quebec and B.C. Hydro, for example, have low production costs due to the abundance of the resources necessary for generating hydroelectric power. *See id.*

109. *See* CHRISTENSEN, *supra* note 7, at 33 (implying that foreign utilities are not excluded from the phrase "public utilities").

110. *See Canada Utilities on Verge, supra* note 14, at 12 (relating that it may be difficult to receive a power marketer license).

111. *See* Morton, *supra* note 93, at 3.

Canadian utilities believe that direct access to the U.S. wholesale market will greatly increase their export sales.¹¹² Three of Canada's largest utilities, B.C. Hydro, Ontario Hydro, and Hydro Quebec, have applied to the FERC for power marketer licenses.¹¹³

III. INTERNATIONAL REGULATORY AND JURISDICTIONAL PROBLEMS

For the reasons stated above, EAct and Order 888 created new opportunities for many parties trading in the North American electricity markets.¹¹⁴ However, regulatory obstacles frustrated the agreements between some international buyers and sellers anxious to participate in the new competitive U.S. wholesale market.¹¹⁵

Before the issuance of Order 888, CFE annually purchased 200MW of electricity from El Paso Electric (EPE), a U.S. utility, to service the city of Juarez, Mexico.¹¹⁶ In an effort to take advantage of the competitive U.S. wholesale markets, CFE submitted its 1996 annual request for 200MW of electricity to U.S. suppliers for a competitive bid.¹¹⁷ CFE proposed to give the lowest bidder ten working days to guarantee that the electricity could be delivered to the Juarez, Mexico substation. In other words, the supplier was required to insure that the utility controlling the transmission lines between the supplier's substation and the Mexican substation would wheel the power to the substation in Juarez, Mexico.¹¹⁸ In anticipation of CFE's 200MW solicitation, Enron Power Marketing (Enron) requested a commitment from EPE, the utility that controlled the intermediary transmission lines, that it would wheel 100MW

112. *See id.*

113. *See id.* As of September 25, 1997, B.C. Hydro was the only provincial government owned utility to win FERC approval. *See id.*

114. *See supra* discussion Section II.

115. *See, e.g., Mexican Utility Seeks, supra* note 4, at 10 (noting CFE's complaint that El Paso Electric undermined a potential deal with the lowest U.S. bidder in CFE's solicitation of 200MW in 1996).

116. *See Mexico Will Buy From EPE, Which Says It Cannot Wheel for Winning Bidder SRP, POWER MARKETS WK.*, Dec. 2, 1996, at 9, 9 [hereinafter *Mexico Will Buy*].

117. *See id.*

118. *See id.*

to the Mexican substation so that Enron could sell 100MW to CFE.¹¹⁹

EPE, also bidding for the contract with CFE, refused to wheel the electricity for Enron.¹²⁰ Enron asked the FERC to order EPE to wheel the electricity under its open-access mandate.¹²¹ When the FERC ordered EPE to wheel electricity for Enron, EPE challenged the FERC's jurisdiction to order transmission for foreign sales.¹²² EPE argued that the FERC's authority to compel wheeling under Order 888 "did not apply in sales for consumption in a foreign country."¹²³ The FERC did not agree with EPE and declared that it does, in fact, have jurisdiction to order U.S. utilities to wheel electricity for a foreign sale, at least to the extent it can order transmission of electricity within U.S. territory and to the U.S. border.¹²⁴

The FERC then ruled that it does not have jurisdiction to order EPE to wheel the electricity from the El Paso substations across the border and into Mexico.¹²⁵ The FERC referred Enron to the Department of Energy (DOE), concluding that the DOE has jurisdiction over international transmission lines.¹²⁶ The DOE immediately sent the matter back to the FERC, responding that it agreed with the FERC's restructuring efforts and that the FERC has the authority to condition EPE's export permit on the requirement that EPE wheel electricity across the international border.¹²⁷

119. See *Mexican Utility Awards Power Supply Contract to El Paso Electric After Salt River is Unable to Obtain the Transmission Capacity Necessary to Deliver Power into Mexico*, FOSTER ELECTRIC REP., Dec. 23, 1996, at 24, 24 [hereinafter *Mexican Utility Awards*]; *FERC Orders EPE to Wheel for Enron, Warns Utilities to Follow Standards*, POWER MARKETS WK., Oct. 14, 1996, at 1, 1-2 [hereinafter *FERC Orders EPE to Wheel for Enron*].

120. See *Mexican Utility Awards*, *supra* note 119, at 24.

121. See *FERC Orders EPE to Wheel for Enron*, *supra* note 119, at 1.

122. See *id.* at 2.

123. *FERC Orders El Paso to Wheel for Enron as Marketer Competes for Mexico Sale*, ELECTRIC UTIL. WK., Oct. 14, 1996, at 1, 2.

124. See *id.* at 2. In the EPE/Enron case, the "border" means the electrical substations in El Paso; in essence, the FERC ordered EPE to provide transmission service for Enron from the origination point to the Diablo and Ascarte substations in El Paso. See *FERC Orders EPE to Wheel for Enron*, *supra* note 119, at 1.

125. See *FERC Orders EPE to Wheel for Enron*, *supra* note 119, at 1.

126. See *In Response to FERC Order, El Paso Electric Assures Open Access to Its Cross Border Transmission Facilities if Firm Transmission Capacity is Available; However, Lack of Capacity Leaves Salt River in the Lurch*, FOSTER ELECTRIC REP., Nov. 20, 1996, at 6, 6 [hereinafter *In Response to FERC Order*].

127. See *id.* at 6. DOE's delegation order read as follows:

In the meantime, CFE named Salt River Project (SRP) as the low bidder for the sale of 200MW to CFE.¹²⁸ Initially, EPE voluntarily agreed to provide transmission service from SRP's Arizona substation to the substation in Mexico.¹²⁹ However, during negotiations between SRP and EPE, EPE decided that it only had enough capacity to wheel 6MW for SRP. Obviously, SRP needed assurance that EPE could wheel 200MW.¹³⁰ Consequently, SRP was unable to meet the ten day deadline and lost the contract.¹³¹ In the end, CFE renewed its contract with EPE.¹³² In fact, they renewed it again for 1998.¹³³

Therefore, while the FERC and the DOE debated over who had jurisdiction to order open access to the transmission lines, both CFE and SRP lost the opportunity to enter into a mutually beneficial contract.¹³⁴ SRP estimates that the 200MW contract is worth twenty-three million dollars per year.¹³⁵ Convinced that EPE's only motivation was to keep its contract with the Mexican utility, CFE expressed its concern that other utilities will thwart future attempts by CFE to take advantage of the competitive U.S. wholesale market.¹³⁶

Taking the cue from the DOE, in April of 1998 the FERC determined that it had jurisdiction to order U.S. utilities to

"As a matter of policy, the department strongly supports the emergence of a more competitive wholesale electricity market and considers open and comparable transmission access a critical factor in creating and sustaining a competitive market. . . . Because the commission, under its current jurisdiction, regulates transmission access and the rates, terms and conditions of transmission service for most of the transmission facilities owned by EPE, and to permit uniform implementation of the commission's open-access policy, the department has concluded that the commission is the most appropriate agency to address the transmission access and related regulatory issues with respect to the EPE border facilities."

CFE Awards 200-MW Solicitation to SRP; Stage Set for Wheeling Dispute at FERC, *ELECTRIC UTIL. WK.*, Nov. 11, 1996, at 3, 4.

128. *See Mexico Will Buy*, *supra* note 116, at 9.

129. *See In Response to FERC Order*, *supra* note 126, at 7.

130. *See Mexico Will Buy*, *supra* note 116, at 9.

131. *See id.*

132. *See id.*

133. *See El Paso Renews Mexico Contract*, *ELECTRICITY DAILY*, Dec. 12, 1997, available in LEXIS, Energy Library, ELCdly File.

134. *See Mexico Will Buy*, *supra* note 116, at 9.

135. *See id.*

136. *See id.*

wheel power over international transmission facilities between the United States and a foreign country.¹³⁷ Although the FERC finally took decisive action on this issue, its authority to order wheeling over international transmission lines may be tenuous.¹³⁸ Considering the growth in demand for electricity in Mexico, any uncertainty should be resolved.¹³⁹ Moreover, once Canadian utilities open their wholesale markets to U.S. competitors, as discussed below, northern U.S. utilities may again challenge the FERC's jurisdiction and refuse to wheel for competitors in an effort to win the contracts themselves.

Canadian utilities have raised very different regulatory and jurisdictional issues. Since 1996, several Canadian utilities have petitioned the FERC for their power marketer licenses in order to access U.S. transmission lines, as provided in Order 888.¹⁴⁰ However, in accordance with the reciprocity requirement of Order 888, the FERC denies the applications of all Canadian applicants who do not agree to reciprocating open access to their transmission lines to U.S. wholesalers.¹⁴¹ In fact, only one of the three largest Canadian utilities has been awarded a license, even though all three

137. See *FERC Wraps Up Fight Over El Paso Wheeling, Open Access to Border*, ELECTRIC UTIL. WK., Apr. 20, 1998, at 15, 15 (quoting the FERC as stating, "Making available nondiscriminatory, comparable open-access transmission over cross-border facilities, U.S. power suppliers will have an opportunity to compete in foreign markets, and foreign suppliers will be able to compete for sales in U.S. markets.").

138. See *FERC Rules in Cross Border Dispute*, PR Newswire, Apr. 16, 1998, available in LEXIS, News Library, Wires File. EPE did not challenge the FERC's ultimate conclusion that it has the authority to regulate cross border transactions. See *id.* By April of 1998, EPE had already developed an agreement with all of the parties involved and announced it would comply with the FERC's open-access orders. However, the Canadian utility Ontario Hydro, in the course of a controversy with the FERC (discussed below) claims, *inter alia*, that the FERC does not have "statutory authority under the Federal Power Act" to regulate transmission access in foreign or cross-border transactions. See *Ontario Hydro Rips FERC on NAFTA, GATT*, ELECTRICITY DAILY, May 16, 1997, available in LEXIS, News Library, ELCdly File [hereinafter *Ontario Hydro Rips*].

139. See *Mexico Will Buy*, *supra* note 116, at 9.

140. See *Ontario Hydro Attacks FERC Rule, Says 'Couldn't Even Get in the Game'*, POWER MARKETS WK., May 12, 1997, at 6, 6 [hereinafter *Ontario Hydro Attacks*]; see also Morton, *supra* note 93, at 3.

141. See *Ontario Hydro Attacks*, *supra* note 140, at 6. A Canadian utility would be classified as a nonjurisdictional utility under Order 888. See *supra* discussion Section II. Therefore, the FERC cannot directly order a Canadian facility to open its transmission lines; it can only require reciprocity under Order 888. See *id.*

have repeatedly applied.¹⁴² The FERC continues to deny the other two major Canadian utilities their licenses because they have been unable to convince the FERC that their transmission lines will be opened to U.S. competitors in accordance with Order 888.¹⁴³

In the interim, these utilities are missing opportunities to partake in the competitive U.S. wholesale market that they are so anxious to enter.¹⁴⁴ For example, in 1997 Ontario Hydro, who refuses to open its markets to U.S. wholesalers, entered into forty electricity contracts with U.S. purchasers based on the assumption that it would qualify as a power marketer. After the FERC denied its power marketer license, Ontario Hydro complained to the FERC that it would lose every one of those contracts if the FERC did not grant a stay of enforcement of Order 888.¹⁴⁵ Ontario Hydro plead that it would lose over \$200 million dollars in lost sales if the FERC did not stay enforcement.¹⁴⁶ However, the FERC did not find Ontario Hydro's position particularly vulnerable since any profits generated as a result of a stay would be in increased trade with the United States, not trade on which Ontario Hydro had come to rely.¹⁴⁷

Therefore, the message sent by the FERC is clear; if Canadian utilities want access to U.S. transmission lines to sell their power in U.S. wholesale markets, they must open their transmission lines to U.S. wholesalers.¹⁴⁸ Since Canada's electricity industry traditionally consisted of provincial government owned monopolies that did not even

142. See Morton, *supra* note 93, at 3. B.C. Hydro won the FERC's approval in September 1997. See *id.*

143. See *id.* Hydro Quebec is making more progress than Ontario Hydro. See *id.*

144. See *Canadian Utilities on Verge*, *supra* note 14, at 12. The reciprocity requirement does not apply to sales to U.S. utilities interconnected to the Canadian border, nor does it apply to the traditional buy-sell arrangements where U.S. and Canadian utilities contract through middlemen. See *Despite FERC's Clarification on Reciprocity Requirements, Ontario Hydro Continues to Claim Irreparable Harm*, FOSTER ELECTRIC REP., June 4, 1997, at 3, 3.

145. See *Canadian Monopolies Close to Opening Power Marketing Arms in United States*, ENERGY REP., June 16, 1997, at 460, 460. Ontario Hydro made a special request to the FERC to stay enforcement of Order 888. See *FERC Denies Ontario Hydro's Request for Emergency Stay of Open-Access Reciprocity Requirements for Foreign Utilities*, FOSTER ELECTRIC REP., July 2, 1997, at 10.

146. See *FERC Denies Ontario Hydro's Request for Emergency Stay of Open-Access Reciprocity Requirements for Foreign Utilities*, *supra* note 145, at 10.

147. See *id.* at 11.

148. See *Canada Utilities on Verge*, *supra* note 14, at 12.

open their markets to other Canadian provinces, the idea of opening its wholesale markets to U.S. competitors may seem severe.¹⁴⁹ Most of the Canadian utilities are moving toward open access and open wholesale markets because they cannot resist the advantages of entering the competitive U.S. markets.¹⁵⁰

However, Ontario Hydro, one of the two major utilities that cannot win the FERC's approval, is particularly resistant to U.S. competition because the wholesale market in Ontario represents about seventy percent of the total market.¹⁵¹ Furthermore, Ontario Hydro alleges that by requiring Canada to open its own wholesale markets as a condition for doing business with U.S. wholesalers, the FERC's enforcement of Order 888 infringes on Canadian sovereignty.¹⁵² Ontario Hydro, along with other U.S. companies, initiated an action against the FERC in the U.S. Court of Appeals in New York in 1997.¹⁵³ The petitioners claimed that applying Order 888's reciprocity requirement to Canadian wholesalers seeking access to U.S. transmission lines is, *inter alia*, a violation of the national treatment provisions of NAFTA and the General Agreement on Tariffs and Trade (GATT).¹⁵⁴ The national treatment provisions of GATT and NAFTA are the same.¹⁵⁵

The products of the territory of any contracting party imported into the territory of any other contracting party shall be accorded treatment no less favorable than that accorded to like products of national origin in respect of all laws, regulations and requirements

149. See *U.S. Armlock on Canada's Utilities*, *supra* note 6, at 5.

150. See *id.* One commentator notes that the FERC accomplished in Order 888 what the Canadian federal government and the Canadian public could not accomplish in several years—introducing competition into the Canadian electricity industry. See *id.*

151. See *id.*

152. *Ontario Hydro Rips*, *supra* note 138. Ontario Hydro also charges that the U.S. is simply trying to force open Canadian markets for the United States electricity industry's benefit. See *id.*

153. See *Ontario Hydro Attacks*, *supra* note 140, at 6.

154. See *id.* Ontario Hydro also argues that the United States did not negotiate a uniform electric power access policy for all NAFTA parties, and that, in fact, Canada and Mexico reserved the right to maintain their existing transmission access policies under NAFTA. See *Ontario Hydro Says Order 888 Violates NAFTA, GATT By Mandating Reciprocity*, NORTHEAST POWER REP., June 7, 1996, at 5, 5 [hereinafter *Ontario Hydro Says*].

155. See Howse & Heckman, *supra* note 24, at 128–29 (noting that NAFTA incorporates GATT's national treatment provisions via NAFTA's Art. 301).

affecting their internal sale, offering for sale, purchase, transportation, distribution or use.¹⁵⁶

In this context, the national treatment provisions are subject to interpretation. For example, most would agree that the national treatment provisions of GATT and NAFTA prohibit Country A from excluding Country B from A's open domestic markets.¹⁵⁷ However, Ontario Hydro, as well as industry commentators,¹⁵⁸ argues that when the domestic markets of Country A are closed, Country B, who has open markets, cannot condition A's participation in B's open markets upon A giving B equal access to A's otherwise closed markets.¹⁵⁹ Ontario Hydro's rationale seems to conclude that since all Canadian electricity markets are (or were) closed, the United States must allow Canadian electric utilities to compete in United States markets while they keep their Canadian markets closed to United States competitors.¹⁶⁰

The FERC counters Ontario Hydro's arguments with the explanation that the FERC is treating Ontario Hydro and other Canadian utilities in the same way other nonjurisdictional utilities are treated in the United States.¹⁶¹ Specifically, the FERC requires that all nonjurisdictional facilities reciprocate open transmission access in order to access jurisdictional utilities' transmission lines.¹⁶² Therefore, there is no violation of the national treatment provisions. Furthermore, if Canadian utilities were exempt from the reciprocity requirements they would have an unfair advantage over their U.S. competitors.¹⁶³

Most of the Canadian provinces prefer to open their wholesale markets rather than challenge the FERC's policies in court.¹⁶⁴ However, the issue as to whether the FERC has jurisdiction to condition a foreign wholesaler's access to U.S. transmission lines on assurances of reciprocal access must be resolved. As North American electricity markets continue

156. General Agreement On Trade And Tariffs, Oct. 30, 1947, art. III(4), 61 Stat. A-11, T.I.A.S. 1700, 55 U.N.T.S. 194.

157. See Howse & Heckman, *supra* note 24, at 128-29.

158. See *id.* at 128-30.

159. See *Ontario Hydro Unsatisfied by FERC's Efforts to Clarify Reciprocity Rule*, ELECTRICITY UTIL. WK., June 2, 1997, at 3, 3-4.

160. See *id.*

161. See *id.* at 3.

162. See *id.* at 3-4.

163. See *id.* at 4.

164. See *U.S. Armlock on Canada's Utilities*, *supra* note 6, at 5.

to liberalize, these problems are likely to reoccur. For example, some experts predict that in eight to ten years the Mexican electricity supply will actually meet demand¹⁶⁵ due to continued U.S. investment in Mexican generating capacity,¹⁶⁶ the number of EWGs soon to be operating in Mexico,¹⁶⁷ and plans for future Mexican investment in its own generating capacity.¹⁶⁸ If and when Mexico is capable of excess generating capacity, the CFE may also look to sell electricity in the U.S. wholesale market. Demand in the United States is expected to rise as a result of the introduction of retail wheeling,¹⁶⁹ and Mexico may help the United States meet that demand. However, as a monopolized utility,¹⁷⁰ the CFE would have the same reciprocity problems that some Canadian utilities have encountered.

IV. REGULATING RELIABILITY AFTER COMPETITION IS ESTABLISHED

Currently, the North American Electric Reliability Council (NERC) is responsible for regulating the reliability of the North American transmission lines.¹⁷¹ The NERC is a nonprofit organization comprised of ten regional councils; membership consists of utilities and nonutilities from all

165. See *Mexican Utility Seeks*, *supra* note 4, at 10.

166. See Gándara, *supra* note 3, at 26.

167. See *id.*

168. See *Mexican Utility Seeks*, *supra* note 4, at 10.

169. See *Key Administration Officials*, *supra* note 32, at 1.

170. See *Ontario Hydro Says*, *supra* note 154, at 5.

171. See *Electricity: Reliability and Competition: Hearings Before the Subcomm. on Energy and Power of the House Comm. on Commerce*, 105th Cong. (1997) (testimony of David R. Nevius, Vice President of North American Electric Reliability Council) [hereinafter Nevius Testimony]. The electricity industry established the NERC in 1968 in an effort to address system reliability problems that caused the Northeast Blackout of 1965. See *id.* Three major transmission grids cover all of the continental United States, Canada, and parts of Mexico as follows: (1) the Texas Interconnect (encompassing most of Texas and parts of Mexico), (2) the Western Interconnect (encompassing the western half of the United States and Canada and parts of Mexico), and (3) the Eastern Interconnect (encompassing the eastern half of the United States and Canada). See CHRISTENSEN, *supra* note 7, at 21. These three grids are virtually isolated from one another, but all utilities within each grid are connected. See *id.* at 21–22. Therefore, stress to the system—such as faulty transmission or power generation—in one region of North America can affect other regions within the same grid. See *id.* Reliability planning insures reestablishment of equilibrium when difficulties arise in one area so that the effects are not felt throughout the system. See *id.*

segments of the electricity industry.¹⁷² The NERC's purview encompasses all of Canada, the United States and northern Mexico.¹⁷³ By regularly performing capability and stability studies, the NERC sets minimum reliability standards for transmission lines¹⁷⁴ and then measures performance against these standards.¹⁷⁵ However, all membership and participation is voluntary, and currently the NERC must use peer pressure to persuade members to comply with its rules.¹⁷⁶

Maintaining reliability standards is extremely important because it decreases the likelihood of power system failures, also known as "blackouts."¹⁷⁷ Transmission systems have capacity limitations; when activity exceeds transmission capacity, the system becomes congested and shuts down.¹⁷⁸ Reliability standards (1) insure that activity does not exceed capacity and (2) provide for the rerouting of currents across the transmission system if and when a system shuts down due to congestion.¹⁷⁹

The NERC has adequately maintained system reliability since its inception, but the restructuring of the U.S. and Canadian electricity industries has changed the way reliability of transmission lines should be regulated.¹⁸⁰ First, some commentators argue that self regulation is not as

172. See Nevius Testimony, *supra* note 171.

173. See *id.*

174. See CHRISTENSEN, *supra* note 7, at 22.

175. See Nevius Testimony, *supra* note 171.

176. See *id.* (pointing out the channels of communication and levels of investigative review utilized by the NERC to enforce reliability standards upon its members); see also Joseph F. Schuler, Jr., *Electric Industry Issues Forum; Reliability, Transmission and Competition; Can NERC Juggle All Three En Route to Open Access?*, FORTNIGHTLY, June 1, 1997, at 45, 45.

177. *Utilities Worry About Demand on Wires; Marketers Say Concerns Are Groundless*, ENERGY REP., Aug. 11, 1997, available in LEXIS, News Library, Pasha File [hereinafter *Utilities Worry*]. Maintaining reliability requires (1) constant communication among active buyers, sellers, and transmitters of electricity; (2) state of the art monitoring; and (3) setting and maintaining standards that all participants follow, whether voluntarily or enforced. See Nevius Testimony, *supra* note 171.

178. See *Utilities Worry*, *supra* note 177.

179. See *id.* (quoting Greg Nesbitt, CEO of Central Louisiana Electric, as stating, "We designed these systems so if a single element in the system fails or ceases to operate, it's shut down and flows are redistributed over the rest of the system, and the system rides through without disturbance. That's what reliability is about, too: riding through disturbance.>").

180. See *Moler to Oversee Recommendations of Electric Reliability Task Force*, INSIDE ENERGY, Sept. 8, 1997, at 5, 5-6 [hereinafter *Moler to Oversee*].

feasible in a competitive market because the competitive forces compel firms to be adverse to one another, rather than to work together.¹⁸¹ In competitive markets, suppliers tend to minimize the costs of production; therefore, reliability could be sacrificed for profit.¹⁸² The competitive model may also fail to plan for future increases in capacity.¹⁸³ Second, the introduction of competitive wholesale markets encourages the entry of more energy suppliers, which is expected to result in increased demand.¹⁸⁴ This increased activity will create more exchanges along the transmission lines, making reliability issues more of a concern than they were before restructuring.¹⁸⁵ Therefore, while maintaining system reliability becomes more complicated, the NERC members have less incentive to play by the rules to insure that reliability is maintained. Moreover, since the NERC cannot enforce disciplinary sanctions against its members, it is much less effective in a competitive industry, at least under its present structure.¹⁸⁶

Some argue that reliability can no longer be maintained by “one industry organization or government entity.”¹⁸⁷ Currently, the NERC is dominated by veteran industry executives—an “old boys’ network”—who are not necessarily amenable to newcomers.¹⁸⁸ In essence, private entities control access to the transmission lines, and they

181. See *Schaefer Turns Panel’s Spotlight*, *supra* note 38, at 15–16 (presenting arguments by industry experts and legislators for and against self regulation).

182. See *Utilities Worry*, *supra* note 177. But see *Schaefer Turns Panel’s Spotlight*, *supra* note 38, at 15 (noting that reliability improved after deregulation of the trucking, airline, and telecommunications industries).

183. See *Utilities Worry*, *supra* note 177.

184. See *Key Administration Officials*, *supra* note 32, at 1.

185. See Nevius Testimony, *supra* note 171. “Increased competition and open access to transmission systems are presenting new challenges to the reliable operation of North America’s interconnected electric grids. Recent regulatory and functional changes are increasing the level of interchanges across the Interconnections, including emergency interchange during periods of high demand.” *Id.*

186. See *Schaefer Turns Panel’s Spotlight*, *supra* note 38, at 15. But see *Utilities Worry*, *supra* note 177 (presenting arguments that pricing and contractual arrangements will determine the level of service consumers receive; for example, consumers will “get” the reliability that they pay for, and therefore, reliability issues are not problematic in competitive markets).

187. *Moler to Oversee*, *supra* note 180, at 5.

188. Hiruo, *supra* note 35, at 7.

discriminate against some competitors.¹⁸⁹ Therefore, the favoritism that is characteristic of NERC oversight must be replaced with fair standards of accessibility to transmission lines.¹⁹⁰ This goal can only be accomplished by involving more players—industry representatives, customers, and government officials from the United States, Mexico, and Canada.¹⁹¹

Therefore, the primary limitations of the NERC in a competitive industry are its favoritism and its inability to enforce its rules. Acknowledging the importance of insuring reliability in competitive markets, Congress and the Clinton Administration are considering alternatives to the NERC as the sole guarantor of reliability.¹⁹² One proposal recommends giving the FERC oversight authority to enforce the NERC's reliability standards.¹⁹³ In this scheme, the NERC would also open its membership to newcomers so that the transmission lines are not controlled by dominant companies.¹⁹⁴ Other proposals have included interstate compacts and international treaties.¹⁹⁵

Any regulatory body, however, must include representatives of Canada and Mexico since reliability issues affect those nations as well.¹⁹⁶ In fact, since the North American power grids are interconnected, any plan to insure reliability must include the cooperation of Canadian and Mexican utilities.¹⁹⁷ "Reliability does not stop at an international border and reliability does not respect the border."¹⁹⁸ This complicates proposed solutions such as bringing the NERC under the FERC's control since Canadian and Mexican utilities are not subject to the FERC's jurisdiction.

189. *See id.*

190. *See id.*

191. *See id.*

192. *See Competition Can Enhance Reliability Advocates Claim; Others Disagree*, INSIDE F.E.R.C., June 23, 1997, at 1, 11.

193. *Schaefer Turns Panel's Spotlight*, *supra* note 38, at 15.

194. *See id.* at 16.

195. *See Conlon Testimony*, *supra* note 12.

196. *See Hiruo*, *supra* note 35, at 7.

197. *See Nevius Testimony*, *supra* note 171.

198. *Id.*

V. ALTERNATIVE SOLUTIONS TO
REGULATORY PROBLEMS

Each of the regulatory and jurisdictional problems mentioned in Sections III and IV will continue to hinder power transfers across North American borders until they are resolved. Furthermore, such problems will only be complicated by future developments and further liberalization of North American electricity markets.¹⁹⁹ For example, last year Powerex, a subsidiary of Canadian BC Hydro, submitted a bid to CFE to supply electricity.²⁰⁰ Assuming that Powerex won the bid, it is not clear under current law who could order the wheeling across U.S. transmission lines for Powerex.²⁰¹ Surely, U.S. transmitting utilities would argue, like EPE did, that a Canadian sale to Mexico does not fall within FERC's regulatory jurisdiction over interstate commerce.

In addition, most states are planning to implement competition at the retail level, and with the potential for retail wheeling, Mexican commercial and industrial operations may shop along the border for retail electricity providers.²⁰² The FERC has absolutely no authority to order wheeling for retail distribution; rather regulation of retail distribution falls within the jurisdiction of the states.²⁰³ Therefore, introduction of competition at the retail level will only complicate international jurisdiction and regulation issues by adding another interested entity.

Proposed federal legislation attempts to address some of these problems,²⁰⁴ but unilateral actions taken by the United States tend to infringe on Canadian and Mexican sovereignty. Moreover, concerted efforts to solve the problems through changes in the domestic laws of all three countries will likely fail in the absence of a treaty or unified strategy. Currently, the organization and structure of the electricity industries in each of the respective countries, as well as differences in federalism, domestic trade, and industry regulation, render a

199. See Howse & Heckman, *supra* note 24, at 132.

200. See *CFE Deal: Powerex, SDG&E Shortlisted, Salt River, APS No Longer in the Running*, POWER MARKETS. WK., Mar. 31, 1997, at 3.

201. See *id.*

202. See Gándara, *supra* note 3, at 27.

203. See Watkiss & Smith, *supra* note 8, at 456, 460.

204. See *Schaefer Turns Panel's Spotlight*, *supra* note 38, at 15.

piecemeal approach unworkable without some guiding principles or common goals.²⁰⁵

NAFTA does not specifically address the issues of transmission access and reliability assurance.²⁰⁶ Indeed, NAFTA negotiators made no attempt to harmonize the electricity markets of the three countries.²⁰⁷ This closed market approach was feasible when government owned or regulated monopolies controlled the North American electricity industries and almost all trade consisted of bilateral contracts between vertically integrated utilities.²⁰⁸ However, as North American markets liberalize and move toward integration,²⁰⁹ it is necessary to consider a treaty or side agreement to NAFTA. A negotiated agreement could provide direction for the future and a commitment toward greater integration of the North American markets in a way that unilateral actions by the United States cannot.

An international agreement could provide for wheeling across North American borders to carry out contracts for the sale of electricity. Furthermore, an international agreement could provide a means of allowing Mexican and Canadian participation in U.S. wholesale markets without offending their senses of sovereignty. At the same time, the agreement could protect U.S. economic interests and insure fairness to U.S. competitors. In essence, all three countries could agree on trade policy that economically benefits each country without infringing on any single country's jurisdiction.

Certainly, reliability issues could be addressed in a treaty that would give each country a voice in any regulatory body overseeing system reliability. In addition, all three countries could agree on enforcement mechanisms to insure compliance with reliability regulations. Finally, the three countries could work together to formulate continental energy and efficiency strategies. After all, inefficiency, duplicative services, and reliability problems were what lead to the monopolistic, closed markets in the first place.

205. See *supra* discussion Sections III & IV.

206. See *id.*

207. See Lock, *supra* note 1, at 241. "[T]he United States Congress had tried to deal with the highly controversial issue of transmission access in electricity for fifty-seven years, . . . To have attempted to gain such an ability for foreign power producers through the 'back door' of the NAFTA negotiation would have added . . . most United States electric utilities, to NAFTA's opponents." *Id.*

208. See Howse & Heckman, *supra* note 24, at 132.

209. See Jelter, *supra* note 3.

VI. CONCLUSION

The restructuring of the U.S. electricity industry will likely increase electricity trade throughout North America.²¹⁰ Mexico is slowly and cautiously restructuring its electricity market toward market-based generation,²¹¹ and several Canadian provinces have already introduced competition into their wholesale markets.²¹² In fact, some predict North America is moving toward a unified electricity market.²¹³ This increase in trade will benefit both the economy and the reliability of the industry.²¹⁴

However, certain regulatory and jurisdictional problems have hindered at least one very large trade deal between U.S. and foreign wholesalers and purchasers.²¹⁵ These issues have not been completely resolved and will continue to create problems for future buyers and sellers. Since NAFTA does not provide the rules of trade in competitive North American electricity markets, an international treaty or side agreement to NAFTA is necessary to supply a regulatory framework for international transmission and reliability throughout the North American power grid.

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210. See Gándara, *supra* note 3, at 23.

211. See *Mexican Utility Seeks*, *supra* note 4, at 9.

212. See Jelter, *supra* note 3.

213. See *id.*

214. See Howse & Heckman, *supra* note 24, at 105–09; see also *supra* notes 14–30 and accompanying text.

215. See *Mexican Utility Seeks*, *supra* note 4, at 9.

[†] This comment won the James E. Skelton, Jr., Writing Award for International Economic Law.