

RETHINKING INTERNATIONAL REGULATORY STRATEGIES: THE INTERPLAY BETWEEN THE ELECTRICITY SECTOR AND THE ENVIRONMENT IN NORTH AMERICA

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I. Introduction; II. International Regulatory Strategies; a. *International Regulatory Competition*; b. *Harmonization*; c. *International Regulatory Cooperation*; III. The Electricity Sector Under NAFTA; a. *Individual Countries' Initiatives*; 1. United States; 2. Canada; 3. Mexico; b. *NAFTA Chapter 6: Energy And Basic Petrochemicals*; IV. The Interplay Between The Electricity Sector And The Environment In North America; a. *Environmental Assessment Of The North American Electricity Sector*; 1. Regulatory Differences; 2. Mitigating Pollution From The Electricity Sector In North America; 3. The Best Scenario: Renewable Energy Sources; b. *International Environmental Cooperation And The North American Electricity Sector*; V. Conclusion; VI. Notes.

I. Introduction

Economic integration is a reality in most parts of the world today. There are many forms under which countries may choose to arrange themselves, varying from free trade areas to common markets. The degree of changes one country will have to undergo to adapt to the framework of these integration processes will vary according to the level of integration that is underway. This paper deals with market integration in the electricity sector under NAFTA and the environmental concerns associated with that.

For purposes of trading, one has to take a hard look on what I consider a curiosity of the electricity sector: is electricity a good or a service? In most contexts this is an irrelevant question, but as we focus on trade in electricity, one will soon realize the opposite, because services and goods receive different treatment in the context of international trade disputes. Electricity could be considered a service for two main reasons: 1) it is intangible and intangibility characterizes services;¹ 2) electricity cannot be efficiently stored and must be consumed as it is produced, which features another key component for the definition of services.²

The WTO, on the other hand, apparently has not taken a definite position as to the precise classification of electricity. It has been argued the WTO has dispensed the generation of electricity treatment under the goods agreement, whereby transmission, distribution and related activities would fall under the scope of the General Agreement on Trade in Services (GATS).³ However, there is evidence confirming many WTO countries characterize electricity as a good.⁴

With regard to NAFTA, one can argue electricity is a good for at least the two following reasons.⁵ First, Chapter 6 falls under Part Two of NAFTA, which specifically deals with trade in goods. Second, Article 602 of the Agreement, under scope and coverage, in paragraphs 1 and 3 expressly defines energy and basic petrochemical as goods.

This paper argues that the North American Free Trade Agreement (NAFTA) is part of the reason the United States, Canada and Mexico are undergoing changes in their domestic legislations to respond to trade liberalization and international competition. However, even if the three North American countries believe a market orientation is the best way to run their economies, still state regulation is desirable to set min-

imum standards. In this context, the debate over which regulatory strategy will be the best fit for NAFTA is not outdated, quite to the contrary.

The central thesis of the paper is that NAFTA and its Environmental Side Agreement have all the right tools to promote a successful regional integration vis-à-vis the power sector⁶ and the environment. To achieve this objective in the interplay between the electricity sector and the environment in North America, a model of international regulatory cooperation is the most appropriate one to respond to further market integration and environmental protection.

Part II of the paper presents the theoretical framework for international regulatory strategies. To this end, international regulatory competition, harmonization, and international regulatory cooperation are analyzed. Part III deals with the electricity sector in North America under NAFTA rules. It explores briefly the rationale behind the changes the electricity sector in each one of NAFTA countries is undergoing. Later, it analyzes the main provisions of NAFTA Chapter 6 that deals with energy and basic petrochemicals, focusing particularly on the impacts these new rules have on the power sector in the region. Part IV of the paper assesses the environmental problems associated with the present electricity sector. It touches on the countries' regulatory differences, on alternative ways to mitigate pollution originated from the power sector, and on the prospect advantages of developing renewable energy technologies. Finally it argues NAFTA and the Environmental Side Agreement have the appropriate instruments to promote further market integration and protect the human health and the ecosystem if credit is given to the international regulatory cooperation strategy. Part V concludes the paper.

II. International regulatory strategies

Regulation has, in the recent past, assumed an important position in the world debate. Due to the global society we live in, legislators across-the-board were invited to rethink the regulatory framework for each country individually – from within its geographic boundaries – and the individual state vis-à-vis third countries. The regulatory debate has also played a major role in multilateral systems, such as the WTO; and, finally, on regional integration agreements, where the European Union (EU) and the North American Free Trade Area (NAFTA) are examples.

A. International Regulatory Competition

International regulatory competition has been in the center of regulatory studies for the last two decades.⁷ The core of the concept is that regulatory systems should all coexist and compete. "Drawing an analogy between product market and competition among jurisdictions in standard setting they [regulatory competition scholars] argue that regulatory competition leads to the adoption of standards of varying stringency that efficiently match the needs and desires of each jurisdiction."⁸ On the opposite side of regulatory harmonization, it argues that decentralization is more efficient and results on increased welfare. The argument follows that "interjurisdictional regulatory competition pressures government to perform efficiently and effectively."⁹ Some regulatory competition scholars view law as a product, meaning that the market for locational rights can work to promote efficiency in the specific area of law one is dealing with.¹⁰ Moreover, the normative strength of regulatory competition theory, argue Esty and Geradin, "lies in the hope that competition will stimulate experimentation, innovation, and product differentiation in regulation, as in market for products."¹¹

International regulatory competition scholars feel the states should not be bound by any particular standard, nor should any uniform system of regulation apply across-the-board, be it within a federal system, or in an international scale, among the member countries of a free trade agreement, such as NAFTA case. The theory goes on to say that a centralized system of regulation, one governed by harmonized standard may not be in line with the needs of the citizens of the involved states. A simple illustration is that state A may suffer the effects of acid rain from state C in a stronger manner than state B feels the same effects. A, B, and C are part of a trade agreement with harmonized environmental standards and measures. In this case, requiring A, B, and C to comply with exactly the same standards in exactly the same form may be welfare reducing to at least state B, that will have to bear the costs of the externalities coming from state C, whose effects are felt in state A. This is to say that a policy that maximizes the welfare of local residents is not necessarily the best policy for a more global perspective.¹²

On the other hand, the choice for a system based on competition, rather than harmonization, offers the advantage of not having to render state sovereignty, which still seems to be a big issue for many countries,

including the United States. The logic follows that "firms with a liberal choice of regimes argue that such a system will generate beneficial competition among jurisdictions seeking to attract firms."¹³ Under a pure economic analysis, an investor may find it less costly – therefore more desirable – to enter in a market with lower domestic regulatory standards, lowering the overall production cost of her business. All these factors together would encourage the entrance of new firms in this particular state's market. As Prof. Robert Wai puts it, "[r]egulatory competition may permit transnational business actors to play off differences between state actors in order to reduce their global burden."¹⁴

On the other hand, regulatory competition, or international regulatory competition for the purpose of this paper, is not free of criticism – quite to the contrary. One may find a great number of scholars writing on the issue and most of the time criticizing the given benefits of regulatory competition.¹⁵

The central attention given by these scholars seem to be the fear of a race toward the bottom in regulation. In other words, it is expected that regulators will lower their standards to compete in the international arena and attract more entrants to their market. Therefore, in the context of environmental law, the concern is developed by countries – usually the developed ones – fearing they will lose a stake of the share to less developed states with laxer environmental standards. Less stringent environmental standards, the critics argue, will encourage firms' mobility, because it is cost effective to comply with lax environmental standards and still be able to export the products to those markets that do comply with stringent standards.

The race toward the bottom argument has been very effective in driving attention away from regulatory competition as a viable regulatory strategy mechanism. It is fair to say, however, that this is all speculation and so far there is no empirical evidence proving the critics' point.¹⁶ In the context of the EU, it is ascertained that a race toward the bottom is even less likely to occur than in regional trade agreements such as NAFTA. The reason offered is that it is more complicated to move companies from one jurisdiction to another in Europe than it is in North America.¹⁷ Quite opposite arguments have been made as to the consequences of regulatory competition. Prof. Roberta Romano, in a landmark article, called attention for the race toward the top in the regulatory competition over cor-

porate laws of the United States. Before Romano, it was taken for granted the preference for incorporating businesses in the state of Delaware was a race toward the bottom. However, she was able to prove that Delaware in fact offered better corporation laws and this was welfare increasing!¹⁸

Another common criticism of regulatory competition theory comes from public choice theory.¹⁹ Public choice theory argues that bureaucrats (legislators, regulators, etc) do not act on behalf of the public interest, but, instead, on behalf of their own personal interests. Bureaucrats, it is argued, in reality, act in a way as to maximize their benefits. Under a public choice argument, regulatory competition would be welfare reducing, because each state's regulations would be directed not towards a common social or economic goal.²⁰ As Professor Jonathan R. Macey puts it:

“[T]he public-choice or ‘interest group’ theory of regulation uses the standard assumptions about human nature routinely employed by economists. Public choice assumes that politicians, bureaucrats, and other decision-makers in public life are rationally self-interested. This means that, like individuals and firms in the private sector, politicians and bureaucrats attempt to maximize their personal power and wealth even when these selfish ends conflict with public-spirited goals. Applied to what bureaucrats and politicians do, the assumption of self-interest means that law is traded for political support, money, power, and other things that politicians and bureaucrats demand.”²¹

Those defending harmonization argue that the market failure resulting from regulatory competition schemes could be addressed by centralization. Centralization in the setting of common standards across the region would address public choice concerns, because hardly any standard would benefit regulators of different states over the same timeframe. In a larger scale, this factor will end up hurting economic integration because “regulators will not agree to enter into international agreements unless it is in their (private) interest to do so.”²²

B. Harmonization

On the other end of the spectrum, scholars argue for harmonization of standards as the way to achieve the common market goal, “min-

imize non-tariff barriers between jurisdictions, and prevent competitiveness-driven, welfare-reducing underegulation (the so-called 'race to the bottom')."²³ In the environmental context, argues Professor Andreas R. Ziegler, "[a]s long as the members of a trade area are allowed to maintain very different rules for environmental reasons, the elimination of trade obstacles is limited."²⁴ Harmonization presupposes uniformity of standards, as the term suggests. The harmonization can occur at different levels, from total harmonization to newer types limited to essential requirements necessary to provide the free movement of a product within the region. It follows that "[a] product cannot trade freely throughout a common market if states within the market can exclude it on the basis of environmental, or health and safety grounds."²⁵

Harmonization, as argued previously in this paper, can be very hard to achieve since the states involved have to compromise in a number of things. Nationalistic or local concerns usually arise in this context, primarily because harmonization implies surrendering sovereignty.

Finding a common ground among the participating states is another difficulty policy makers find in electing policies for the region. The European Union has harmonized its legislation in a number of issues. NAFTA, on the other hand, chose not to follow the EU model, preferring to stick to state sovereignty. The option for harmonization is understood when we interpret the context in which it was adopted in Europe. The interplay that exists today among nations was inexistent not many years ago. The current network that we observe today at various levels (legislative, judicial, etc) was not common, so policy makers needed a structure that could offer the benefits more modern techniques offer today. Therefore, harmonization was seen as the feasible way to overcome state differences and to establish common grounds on a number of issues.

Harmonization of legislations and public policies in Europe is good to a certain extent. It is good because it assures a minimum threshold in which all countries have to fulfill and it benefits the citizens of those countries with originally poor standards. On the other hand, the implementation of common laws and policies is not enough to guarantee countries will in fact comply with those laws and policies. In fact, this is the central problem the EU faces vis-à-vis harmonization: the difficulty of enforcing common policies. Regarding environmental issues, Professor

Richard L. Revesz points out that "in the international community, there is only a weak capacity for centralized environmental standard setting and virtually no capacity for centralized environmental enforcement."²⁶

With that in mind, one reaches the conclusion that a harmonized region is not necessarily a region on equal footing as to the welfare benefits of the harmonization. Formal equality of standards is not as important as the assurance of actual enforcement. In this scenario, it is possible to ask oneself about the actual benefits of harmonization to achieve economic integration, in a common market setting.

Conclusively, the regulatory strategies for today's world are not in hand with the needs of society.²⁷ One can observe that both ends of the spectrum, regulatory competition or harmonization, do not provide satisfying responses to the problems. The present setting is incapable of addressing the needs a global world imposed on them. Alternative responses emerge, and I see recourse to cooperation as the best available solution.

C. International Regulatory Cooperation

Apart from the two extremes; in the recent past, one can observe an increasing resort to cooperation. Cooperation that takes place not only in the national level, but also in the international arena, operating both horizontally and vertically. In times of cooperation, regulators rely strongly on the free (or close to free) flow of information to develop what scholars have termed as the network effect.²⁸ In times such as this, the international community is expected to work in networks: not networks of official state-to-state working groups, but through many informal processes of exchange of information. When the states disaggregate, when the unitary state fades away, network links have to fill the gap, and these links are to be operated by various other institutions, official and non-official.²⁹ This global governance is of great importance not only for financial institutions, but also for every citizen that watches traditional roles being played by not so traditional players. Regulators are expected to interact horizontal and vertically in an attempt to reach more efficient outcomes.

Professors Esty and Geradin argue "optimal governance requires a flexible mix of competition and cooperation between governmental actors, as well as between governmental and non-governmental actors."³⁰ International co-opetition theory "suggests that at least some regulatory functions will be more efficiently carried out on a centralized basis while other activities will likely be more appropriately handled by decentralized governmental bodies."³¹

The idea therefore is not to expect countries to harmonize legislations and regulations, nor do I think a state is better off by relying on pure market forces driving regulations. A balance has to be achieved, and this balance is cooperation. As Professors Esty and Geradin wisely advert:

"Our critique of regulatory competition theory and the observation that the market dynamics necessary to produce welfare gains may be present only in limited circumstances should not be seen as an argument in favour of across-the-board harmonization of standards. We simply conclude that just as the benefits of centralization should not be presumed, nor should any generalization in favour of decentralized governance be made. [...] [W]hat is needed is a multi-tier regulatory regime that gives policy makers access to both centralized and decentralized structures depending on the characteristics of the particular regulatory issue."³²

Although cooperation is the core of the new global order, it is an imperative with regard to crucial areas such as human rights and environmental law, where common patterns are necessary for the protection of global goals.

The balance is achieved through the development of networks. In NAFTA scenario, the US, Mexico, and Canada will exchange information on policies that affect those three countries. The EU experience has showed it is sometimes unrealistic to harmonize regulations of different legal cultures, and rely on the prospects of pure harmonization may be a threat to the stability of regional integration. On the other hand, leaving regulation to the market, the idea advocated in international regulatory competition theory, is not the best way to go either.

Countries are different, and although cultures are colliding to form a new global order, differences remain, and I think these differences are

good, because they are the trace of each legal culture. The harmonization of standards is not always an efficient way to respond to the globalization forces, and although harmonized standards further the formal development of a common market, they do not fully appreciate the benefits countries can gain from acting independently. Centralization ends up unifying standards, instead of approximating them, and this may not be good because it might reduce welfare and make people skeptical about the real advantages a harmonized strategy for regulation may bring.

At the same time, the world of today does not allow systems based on pure regulatory competition, because the world is one big amalgam, where geographical lines are fading away as economies come together and information networks substitute unitary governments.³³ Regulatory competition is a good thing to the extent that it encourages the implementation of efficient regulation. However, there should be a system of checks and balances to ensure some kind of control to avoid regulatory failures, such as the threat of a race toward the bottom. Who will exercise this power is uncertain to me, as we watch the declining prestige of legitimate institutions such as the UN. Maybe a market state will impose the limits, by erecting trade barriers to penalize unfair competitors. Maybe under the auspices of the theory of legal pluralism Professor Gunther Teubner puts forward, arguing that "global law will grow mainly from the social peripheries, not from the political centers of nation-states and international institutions[.]"³⁴ today's non-official actors will respond to that demand. These inquiries go beyond the scope of the present paper, but should be kept in mind as it engages in my thesis for international cooperation.

III. The electricity sector under NAFTA

The world market is highly connected to and dependable on the energy sector on its various forms. Energy has direct effects on businesses and people's life pretty much all over. Curiously, the energy sector is probably one of the exclusive markets, if not the only market, where less developed countries may have stronger bargaining power in international negotiations, because of the abundance of oil and gas in places like Venezuela and the Middle Eastern countries.³⁵

It has been argued competitive electricity markets will result in efficiency gains in a sector long characterized by monopolies and oligopolies.³⁶ At the same time, competition is expected to bring greater consumer choice "to result in a marginal decrease in electricity prices over and above price decreases brought about through efficiency gains."³⁷ Critics of such a system, on the other hand, have argued these benefits remain largely theoretical, and that price reductions expected from increased efficiency have been overwhelmed by price increases, mostly because of the increased volatility of wholesale electricity markets.³⁸

With the new world organization, where countries around the globe are grouping themselves in economic integration processes that vary from free trade areas to common markets, energy could not be left out, to the point that it could be argued further development of energy trade in the region was the main reason behind NAFTA. Individual countries' initiatives to cope with this new world of blurred dividing lines started to take place well before NAFTA negotiations. On the other hand, electricity, as part of the energy sector is included in Chapter 6 of NAFTA – Energy and Basic Petrochemicals.

A. Individual Countries' Initiatives

The electricity sector in North America, and in the U.S. and Canada in particular, has been characterized by the absence of competition, featuring vertical integration schemes. Even before NAFTA was being negotiated, the US, and Canada to a lesser extent, began implementing changes whereby the market, and no longer the government, would play the leading role in the energy sector.³⁹

1. United States

Changes in the regulation of public utilities, electricity in particular, have been underway for at least the two past decades. It has been argued the 1984 new guidelines on the regulation of natural gas imports was the first relevant move toward a market-oriented approach,⁴⁰ which would further influence the way electricity would be regulated. Moreover, the Federal Energy Regulatory Commission (FERC), in the mid-1980s, issued decisions to improve competition in the sector.⁴¹ In 1992,

the Energy Policy Act (EPACT) empowered FERC with broader authority to order transmitting utilities to provide transmission services for the new market entrants and removed existing barriers in the market for wholesale electricity.⁴² EPACT influenced FERC in the issuance of Orders No. 888 and 889 in 1996, imposing competition in the access to transmission services in the electricity sector.⁴³ FERC went one step further with Order No. 2000, creating regional transmission organizations.⁴⁴

2. Canada

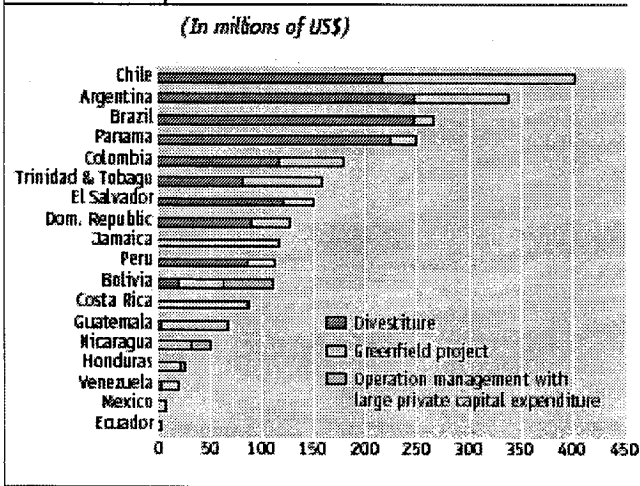
Canada was influenced by its Southern neighbor in the introduction of competition in the country's electricity sector. Changes are reported to have been started in the mid-1980s. In the Canadian context, the move toward a more competitive electricity sector was impacted by collapse in the world oil prices in the early 1980s and the election of a new progressive conservative federal government in 1984.⁴⁵ Different from the United States, most regulatory changes in Canada occur at the provincial level.⁴⁶ Federal actions are less common for political reasons. Therefore, neither the federal government nor the National Energy Board has played a leading role in reforming electricity regulations in Canada.⁴⁷

In order to secure access to the US market, in response to FERC's Orders 888 and 889, various Canadian utilities restructured their operations.⁴⁸ To this end, Alberta's electricity market underwent restructuring in 1996, and a competitive market was expected to be launched in Ontario the second semester of 2002.⁴⁹ In addition, these utilities are following the implementation of Order N. 2000, "which suggests that membership in Regional Transmission Organizations may be necessary in order to maintain market access."⁵⁰

3. Mexico

Latin America has been leading the world market in power sector reform,⁵¹ with the largest share of private electricity amongst all the developing regions.⁵² However, while countries like Brazil, Argentina and Chile have restructured their electricity sector to capture private investment, major players such as Mexico and Venezuela so far have made timid moves toward effective reforms in the sector.⁵³

Figure 12.1 | Private Investment in Electricity, 1990-99



Source: World Bank (2001)

Inter-American Development Bank, *COMPETITIVENESS: THE BUSINESS OF GROWTH*, Economic and Social Progress in Latin America 2001 Report 169 (2001).

Although many have argued for the benefits of a liberalized power sector in the region – such as better quality services and lower tariffs – there may well be reasons to suspect deregulation of the sector in other countries in the region may not be the best alternative out there. Investors are aware of problems already in place in other Latin American countries with already liberalized power sectors. These problems include, but are not limited to weak regulatory institutions, and poor competition accentuated by the large presence of state-owned power companies.⁵⁴ On the other hand, the public at large, and in some instances the government of the potential host countries fear the prices will not go down, and that investors will not want to serve less profitable segments.⁵⁵

In Mexico, activities related to energy carry a cultural value in-existent in neither Canada nor the US. The old slogan “*El petróleo es nuestro*” (the oil is ours) has much to do with the inability of the Government to open the energy sector to foreign private investment, as it translates into pride of every Mexican citizen.⁵⁶

Table 12.1 | Share of Private Sector Participation
(In percent)

	Generation	Transmission	Distribution
Argentina	60	100	70
Bolivia	90	90	90
Brazil	30	10	60
Chile	90	90	90
Colombia	70	10	50
Costa Rica	10	0	10
Dominican Republic	60	0	50
Ecuador	20	0	30
El Salvador	40	0	100
Guatemala	50	0	100
Jamaica	20	0	0
Mexico	10	0	0
Paraguay	0	0	0
Peru	60	20	80
Trinidad and Tobago	40	0	0
Uruguay	0	0	0
Venezuela	20	10	40

Source: Espinosa (2001).

Inter-American development bank, Competitiveness: the business of growth, economic and social progress in Latin America 2001 Report 169 (2001).

The electricity sector in Mexico, on the other hand, is a bit less contentious in terms of national pride if compared to its oil industry. However, so far there has not been enough political will to fully achieve an entirely privatized power sector. The remarks made by Murphy are quite elucidating:

Mexico's state monopoly in electric energy was born less contentiously. Private producers and distributors entered the market first, but in 1937, President Cardenas created the state-owned Comision Federal de Electricidad (CFE) to serve less affluent consumers. In 1960, by negotiated buy-outs of private electricity companies, President Lopez Mateos transformed CFE into a state monopoly. In 1992, the Salinas administration significantly diminished that monopoly by an amendment of the electric energy law that allows private enterprise (1) to generate electric energy for self-supply, co-generation,

small production, sale to CFE, and emergency supply during interruption of public service; (2) to export electric energy so generated; and (3) to import electric energy for self-supply. Consequently, CFE's monopoly is now reduced to what Article 27 of the Constitution calls "public service."

Ewell E. Murphy, Jr., *The Prospect for Further Energy Privatization in Mexico*, 36 Tex. Int'l L.J. 75, 77 (2001) (citations ommited).

The 1999 President Zedillo's proposal of structural reforms in the Mexican electricity sector to include privatization of power companies⁵⁷ by means of an amendment to the electric energy provisions of the Mexican Constitution remains dormant before the Mexican Congress.⁵⁸ Much of today's reduced foreign private investment in the energy sector of Mexico is attributed to the state monopolies themselves.⁵⁹ With regard to the Mexican electricity sector, it has been argued "the state electric energy monopoly means that only the nation may generate, transmit, transport, distribute, or supply electric energy 'for the purpose of public service,' and the 'public sector' is exclusively in charge of the 'strategic area' of 'electricity.'"⁶⁰

B. NAFTA chapter 6: energy and basic petrochemicals

With regard to the text of the Agreement per se, Article 601, under principles, touches in three important issues. First, under Paragraph 1, the Parties confirm their respect for their Constitutions. Such provision certainly is not common in trade agreements, but in the energy context, it is used to conform the Mexican constitutional provision under which natural resources, such as oil and gas, in the territory of that country, belong to the sovereign. Second, the full respect for the Constitutions is balanced by the encouragement of trade liberalization through energy and basic petrochemicals (Paragraph 2). Third, the implementation of competition in the sector is seen as the best way to promote freer trade and to further each country's interest (Paragraph 3). These three principles: respect for the national constitution, energy trade liberalization, and promotion of competition are the cornerstone of Chapter 6 and should be kept in mind as one deals with the remaining provisions of this Chapter.

Annex 602.3 contains important information as it deals with reservations the Mexican government has in relation to the other Parties. The text of the Annex provides that the State of Mexico will exclusively be in charge of, for example: "exploration and exploitation of crude oil and natural gas;"⁶¹ foreign trade as it involves crude oil, natural and artificial gas, basic petrochemicals, and the supply of electricity; "exploration, exploitation and processing of radioactive minerals[;]"⁶² and the generation of nuclear energy. This provision confirms the commitment made by the three Parties to the Agreement to respect the Constitutional rights and obligations contained in the Mexican Constitution. On the other hand, it could be argued this is not in line with the spirit of the Agreement, because it directly impacts on the free flow of trade among the three nations and it hinders competition. It surprises me the negotiators for the US and Canada acquiesced to have Annex 602.3 as part of the Agreement. For one, the Annex imposes a burden on Canada and the US, that will open their energy market for Mexicans and, in exchange for that, will be barred from the Mexican market for energy and basic petrochemicals.

In the same Annex, however, under the heading of performance clauses, the text allows a Canadian or US enterprise to conduct the following activities: production for own use, co-generation, and independent power production. With regard to the first two activities – production for own use and co-generation – it is provided that electricity generated in excess must be sold to the Federal Electricity Commission (*Comision Federal de Electricidad* or CFE). The same requirement is not imperative as to independent power production, because the text expressly declares that "[e]lectricity generated by such a facility for sale in Mexico *shall* be sold to CFE and CFE shall purchase such electricity under terms and conditions agreed to by CFE and the enterprise."⁶³ Therefore, one can conclude that NAFTA investors are limited to take part only in those activities that involve secondary and non-reserved basic petrochemicals.⁶⁴

IV. The interplay between the electricity sector and the environment in North America

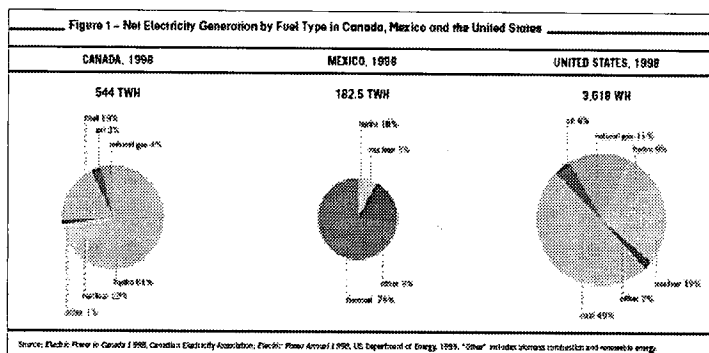
The electricity sector is one of the biggest sources of pollution, and both the environment and the human health⁶⁵ are the most affected. On the other hand, developing electricity is the cornerstone for economic

growth in less developed countries, as it is the vector that maintains those already developed economies running smoothly. In this context, NAFTA presents positive prospects of economic integration in the North American electricity market for the following reasons. First, because of the successful experience of NAFTA in other economic sectors of the region. Second, because of the stable trade and investment rules conferred by the Agreement. Finally, because the opening of the electricity sector to competition is being considered in Mexico, Canada and the United States.⁶⁶

With this framework in mind, it would not be logic to argue for non-integration in the electricity sector as it could mean higher pollution levels for the region and more difficult access to trading electricity goods. Higher pollution levels because the data available today show a move toward alternative energy sources is an imperative for the region⁶⁷ to meet the growing demand for electricity on the one side, and protecting the environment for present and future generations. Integration will also mean freer trade, as the US, Canada, and Mexico will be able to develop stronger trade and investment activities in the energy sector, without having to rely in third countries. However, increase in the volume of electricity trade in an environmentally sound manner will only be possible if the three countries act jointly.

A. Environmental Assessment of the North American electricity sector

In the above graph, one can see the net electricity generation by fuel type in each one of NAFTA countries for the year 1998. As of May 2003, the situation has not changed, and the problems to the human health and to the global ecosystem associated with the use of this traditional energy sources is being aggravated. Take for instance the case of the United States. In this country, electricity is accountable for nearly 70 percent of all sulfur dioxide emissions – responsible for acid rain and haze, 25 percent of nitrogen oxide releases – responsible for smog and acid rain, 1/4 of total toxic mercury releases, and approximately 35 percent of all the carbon dioxide (important green house gas) human activities put into the atmosphere – affecting “global climate change.”⁶⁸ These pollutants all result from the combustion of fossil fuels by the electricity generating activity.⁶⁹ The table bellow reports the emission of each pollutant by each of the North American countries.



Secretariat of the commission for environmental cooperation, environmental challenges and opportunities of the evolving north american electricity market 6 (commission for environmental cooperation of north america, report, 2002).

Table 2 – United States Projected Gross Trade in Electricity (thousand GWh)

	1999	2000	2001	2002	2003	2004	2005	2006	2007
Imports from Canada and Mexico	38.9	47.9	48	45.5	57.6	60.3	66.1	57.9	54
Gross Exports	13.5	13.0	13.1	13.1	12.7	16.6	16.7	16.8	16.9

Source: Energy Information Administration (EIA), Annual Energy Outlook, 2002

Secretariat of the commission for environmental cooperation, environmental challenges and opportunities of the evolving North American electricity market 4 (Commission For Environmental Cooperation Of North America, Report, 2002).

Table 3 – Emissions of Selected Air Pollutants from the Electricity Generating Sector in North America (1998)

	CO ₂ equivalent (tonnes)	Annual SO ₂ (tonnes)	Annual NO _x (tonnes)	Annual Hg (kg)
Canada	122,000,000	650,195	290,211	1,975
Mexico	90,095,882	1,683,199	280,931	1,117
United States	2,331,958,813	12,291,107	5,825,982	29,241
per capita				
Canada	4,033	0.021	0.010	0.000
Mexico	0.918	0.017	0.003	0.000
United States	8,637	0.046	0.022	0.000
per kW²				
Canada	13,320	0.071	0.032	0.000
Mexico	46,128	0.862	0.144	0.001
United States	233,554	1.231	0.583	0.004
per \$Wh				
Canada	217,229	1,158	0.517	0.004
Mexico	495,577	9,259	1,545	0.006
United States	608,780	3,209	1,521	0.010

Source: Statistics Canada, and for all other countries from 1998, see North Atlantic, and OECD Environment paper, Paul Wilson et al., 2002, "Estimating Air Pollution from Base Electric Power Generation", Commission for Environmental Cooperation, Montreal.
Population and Land Area: Canada (census statistics.ca); Mexico (Mexico: Economic Country Profile 1998) and United States (United States Economic Country Profile 1998). Electricity Generation: EPA, Electricity Information 2002.

Secretariat of the commission for environmental cooperation, environmental challenges and opportunities of the evolving north american electricity market 6 (Commission for environmental cooperation of North America, report, 2002).

1. Regulatory differences

Regulatory differences account for most of the problems in the interplay between electricity and the environment. Not only because country A will be polluting more than country B, and this is bad for the human health and the global ecosystem, but particularly because this means country A will be gaining a competitive advantage in trade over countries B and C. If country A is allowed to release more fuel pollutants out of the combustion generated by their power plants, because its environmental regulations are less stringent, then country A will have an economic advantage over countries B and C. If this scenario were not one of a free trade area, apart from the pollution problem, this competition strategy would be valid.

However, when countries do decide to join free trade areas, such as the case with NAFTA states, that sort of economic behavior should be avoided, because in the short run it will create hostility among the involved countries to further threat the stability of the free trade area. In this context, NAFTA countries need to find a middle ground solution, and they are currently working on that.

Many aspects have to be taken into consideration when economic growth in the electricity sector in the region is being balanced with environmental protection concerns. NAFTA countries have conducted extensive research to assess the major threats to the environment in the region caused particularly by electricity generation. They have identified the pollutants and the consequences each one of them have on the ecosystem and on the human health. They have considered developing harmonized environmental policies vis-à-vis the environment, but opted for a model of international cooperation, instead of imposing identical standards on all affected power facilities.⁷⁰

So far, the three NAFTA countries have dealt with air, water and land pollution in similar ways, employing a mix of command-and-control tools with market-based instruments to protect the environment.⁷¹ Although there is a tendency to move toward market-based tools, such as emissions trading, still there is much uncertainty on the effectiveness of its implementation.⁷² On the other hand, reliance on pure command-and-control instruments to protect the environment may not be suitable, because for some time now, environmental policies have moved from a reactive

approach to a precautionary one.⁷³ If this is the case, pure command-and-control mechanisms will not address the problem. Moreover, there is much concern with effective enforcement of environmental laws throughout the region. In this sense, environmental laws in North America may be similar, but it is another thing to inquire if they are being applied similarly and therefore achieving the macro objective of sustainable development.

The greatest of the threats is the so called "pollution haven." Pollution havens are areas in a country or in the region where less stringent environmental standards are at place or the enforcement of these standards and regulations are applied more loosely. Pollution havens permit plants to be built in regions with less stringent environmental standards and regulations, avoiding production costs, while incorporating this competitive advantage against their competitors that do not enjoy the same "benefits." This threat in economic terms is defined as a race toward the bottom, and countries that do require rigorous environmental standards often have to bear the price of both losing existent and potential plants in their territory, and also face the competition of those companies that lowered their production costs based on laxer environmental standards and regulations, which will come back to their country of origin to compete for market share.⁷⁴

This fear is not only in the books according to the evidence available in the CEC background reports. Curiously, the prospective "homes" for pollution havens may not be only in Mexico, but even Canada may represent a threat to the stability of the free trade in electricity in the region. In Mexico, developers have initiated a number of new power plant projects in northern Baja California that, according to the United States EPA, releases particles in violation to the standards in place in California – because transboundary pollution is an issue here.⁷⁵ The DOE has recently concluded Mexico is an attractive place to install new power plants to serve the Californian market, because of less stringent environmental standards.⁷⁶ A second concrete example involves Canada. A fair number of new coal power plant developers are willing to install themselves in Alberta. Critics have argued these plants will not be subject to the same environmental standards present elsewhere in North America, creating a competitive advantage for those new developers.⁷⁷

2. Mitigating pollution from the electricity sector in North America

There are several ways one can deal with pollution. The real question seems to be which way is the most efficient and effective, if there is only one. My bet is that North America will be better off in terms of protecting the environment if it opts to use a multitude of environmental protection instruments. The simplest possible mitigation to the pollution problem is reducing demand for electricity.⁷⁸ However, this is not as simple as it may seem to be. First, reducing demand for electricity means taking a step back in economic growth in developing countries such as Mexico. Second, Canada and the United States will have their electricity sector and all the other sectors that depend on it put in jeopardy, because stable industries depend on constant and increasing supply of electricity. Therefore, taken as whole, this alternative is not viable to solve major pollution problems. It might help a bit, but one country cannot rely on reducing demand as its sole strategy to mitigate pollution coming from its electricity sector.

Secondly, available data report that the annual GDP per capita for the three NAFTA countries in 2000 was: Mexico \$3,800; Canada \$24,600; and United States \$28,600.⁷⁹ The differences in GDP between Mexico and the two other countries are huge, and of course this has direct impact on financing. Mexico is the country in the region that needs the largest percentage growth in electricity demand. However, it is unable to raise the capital necessary to invest in resources that will contribute to a cleaner environment.⁸⁰ The solution proposed by the Mexican government is to have the United States and Canada providing opportunities for innovation or technology transfer to Mexico.⁸¹ This seems a plausible pollution mitigation alternative for Mexico, but certainly the United States and Canada would want something in exchange, such as a bigger share of the Mexican electricity market. One cannot be sure Mexico is willing to close this deal, if this is the scenario.

3. The best scenario: renewable energy sources

The best scenario one can envision, given the available data today, is reliance on renewable energy sources to supply the growing demand for electricity in North America. Renewable energy has been defined else-

where as "any energy source for which the rate at which it is available in perpetuity exceeds the rate at which it is consumed."⁸² Renewable energy generally includes: wind energy, ethanol fuels, biomass, geothermal, hydropower, and solar energy. Although there are good chances of furthering the development of renewable energy sources in the region, so far its contribution has been insufficient.

The biggest advantage of using renewable energy sources vis-à-vis the environment relies on the reduction of pollutants release originated from the combustion of traditional fuel types. It has been argued that "[t]he increased adoption of renewable technologies would also reduce air pollution, lower the risk of climate change, help solve both electric power-plant cooling water problems and damage to water bodies from extraction of fossil fuels."⁸³

Another advantage of developing renewable technologies for electricity generation is said to be the creation of jobs.⁸⁴ The Mexican government, although acknowledging that the state does not dispose of the infrastructure to allow the implementation of renewable energy sources, recognizes that large-scale renewable energy plants "may bring economic opportunities such as the creation of jobs for the implementation, installation and maintenance of electrical energy plants using unconventional technology."⁸⁵ However, one can argue that this is at least disputable, because the scenario provided by the Mexican government, with the exception of the maintenance activity, is rather temporary. Therefore, one can argue Mexico is overestimating the benefits of renewable technologies with regard to the job creation aspect of it.

B. International environmental cooperation and the North American electricity sector

In the last part of the paper I return to the central thesis of this work: effective environmental protection and stable economic growth is achieved not through international regulatory competition, nor through harmonization of environmental standards, but through international regulatory cooperation for the following reasons.

First, a legal environment of pure regulatory competition does not work for free trade areas or any other sort of economic integration pro-

cesses. Competition is good in the sense that it encourages innovation, and this is central to economic growth. Competition also gives incentives for the states to put out the best regulations to attract new market entrants. This is both an advantage and a disadvantage. It is an advantage because the country will probably increase its revenues by adding new and profitable economic actors to the national sector. However, it can also be a disadvantage, therefore a bad thing, when the means that these countries use to attract new market entrants are not the most legitimate, such as the case of lax environmental regulations. If a country needs to lower its environmental standards and apply human rights loosely, than it is a victory with no honor.

Second, harmonization may have worked in many instances in the European Union, but have failed in others. Harmonizing standards through the implementation of the EU directives into each member country national legal system may result in a failure when, even though you have the mechanisms to enforce the standards and regulations in the community level, still you need to respect the subsidiary principle. Note that politics also plays an important role in environmental policy decisions. In the context of the EU, environmental policies have been slowed down because of internal politics, as was the case with harmonized energy taxes in 1993.⁸⁶ If however one still wants to argue for harmonization for NAFTA's environmental policies, then you have to consider that there is a quite clear dividing line between NAFTA and the EU. NAFTA, as its acronym suggests, stands for a free trade area. The EU is a common market. There is widely developed scholarship on Community law that point out the many variances that divide a free trade area from a common market. For the purposes of this paper, it suffices to say that, unlike the EU, NAFTA does not count with one supranational institutional body, something that would resemble the ECJ. Yes, NAFTA has well-developed dispute resolution mechanisms, but, in the end of the day, they depend on diplomatic acquiescence among the disputing countries. Moreover, it is a bad thing to have laws, harmonized if you will, if you cannot guarantee compliance and enforcement. In the long run, a region with unenforceable environmental rules will be a region with weak environmental standards. One certainly does not wish that for NAFTA.

Finally, one can argue that the North American Agreement on Environmental Cooperation (NAAEC or the Environmental Side Agree-

ment) took the right route in terms of developing the best available environmental policies to first and foremost protect the ecosystem and the human environment, and also promoting the trade development in the region. The regulatory strategy under the NAAEC is one of cooperation.⁸⁷ The counties do not have to harmonize standards in identical terms, but also they are not encouraged to act on their own when the issue is one of common concern for the region. All the NAAEC requires from each of the member states is to enforce their domestic environmental laws and regulation. This approach fits very well NAFTA framework, because even if the three countries are acting jointly, they are not interfering in the sovereignty of their partners.

The living proof that the international regulatory cooperation strategy adopted by the Environmental Side Agreement is working is the ongoing regional cooperation activities in North America. First, it has been reported the existence of "Border Institutes" "that have been held to pin down commonalities in airsheds and water needs while spotlighting differences in emissions and ambient standards, enforcement, and efforts at remediation."⁸⁸ Second, interactions between border governors and between nongovernmental organizations have begun to play a role in developing binational trading programs for pollution reduction.⁸⁹ Third, Transboundary Environmental Impact Assessment (TEIA) is becoming familiar in the region prior to the development of new projects that may impact on more than one state. British Columbia and the state of Washington have signed an agreement committing them to conduct TEIAs prior to initiate new plant installation and operation proceedings. In addition to that, although Mexico has not signed such an Agreement with the US or even within Mexico – if the case requires – 10 Mexico/US Border States have declared their intention to share information concerning the risks projects inside their jurisdiction may adversely affect the neighbor state.⁹⁰

V. Conclusion

There has been much progress toward a truly integrated North American market, and the electricity sector is one of the most important sectors in a country. Therefore, assessing the opportunities and risks free trade in the region will bring to the sector is an imperative. Assessing the im-

pacts further energy trade liberalization will have on the regional environment is the wisest thing to do, as the environment per se is the source of the generated energy. If growth in electricity is inevitable to promote economic development in Mexico and to maintain the United States and the Canadian economies running smoothly, then the region is invited to think about ways to preserve the environment for the ecosystem itself and for the present and future generations. So far, despite much criticism directed at NAFTA Chapter 6 and accusations that the Environmental Side Agreement has no teeth, one can argue that Chapter 6 is not a failure and that the Environmental Side Agreement adopted the best of the regulatory strategies for the region. Finally, the recommendation is for further cooperation among NAFTA countries in order to efficiently respond to increasing demand for electricity in an environmentally sound manner.

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VI. Notes

1 GARY HORLICK ET AL., NAFTA PROVISIONS AND THE ELECTRICITY SECTOR 3 (Commission for Environmental Cooperation of North America, Working Paper N. 4, 2002).

2 *Id.*

3 *Id.*

4 *Id.*

5 *Id.* at 4.

6 Three main activities are generally recognized as comprising the electricity sector: (a) electric power generation, involving the conversion of primary energy (fossil fuels such as coal, oil and natural gas) into electrical energy (or secondary electricity); the transmission of electricity, which refers to the transportation of electricity from generators to distribution companies and large final consumers (industry) through high voltage mains (grids); and (c) the distribution of electricity, including the selling and delivery of electricity to end-users (including residential consumers) through low voltage mains.

GARY HORLICK ET AL., NAFTA PROVISIONS AND THE ELECTRICITY SECTOR 2 (Commission for Environmental Cooperation of North America, Working Paper N. 4, 2002).

7 See DANIEL C. ESTY & DAMIEN GERADIN, *Regulatory Co-Opetition* 30, in DANIEL C. ESTY & DAMIEN GERADIN, REGULATORY COMPETITION AND ECONOMIC INTEGRATION (2001)

8, See *id.* at 30.

9 See *id.* at Introduction xxiii.

10 *Id.* at xxiv. See also Jonathan R. Macey,

The 'Demand' for International Regulatory Cooperation: A Public-Choice Perspective 150, in GEORGE A. BERMANN ET AL., TRANSATLANTIC REGULATORY CO-OPERATION (2000) (arguing, according to Judge Richard Posner, "public-choice theory asserts that legislation is a good demanded and supplied much as other goods, so that legislative protection flows to those groups that derive the greatest value from it.")

11 See ESTY & GERADIN, *International Co-Opetition*, *supra* note 7, at 33.

12 Andrew T. Guzman, *Antitrust and International Regulatory Federalism*, 76 N.Y.U. L.Rev. 1142, 1147 (2001).

13 *Id.* at 1147-48.

14 Robert Wai, *Transnational Liftoff and Juridical Touchdown: The Regulatory Function of Private International Law in an Era of Globalization*, 40 Colum. J. Transnat'l L. 209, 55 (2002).

15 See generally DANIEL ESTY & DAMIEN GERADIN, REGULATORY COMPETITION AND ECONOMIC INTEGRATION (2001); GEORGE A. BERMANN ET AL., TRANSATLANTIC REGULATORY CO-OPERATION (2000); WILLIAM BRATTON ET AL., INTERNATIONAL REGULATORY COMPETITION AND COORDINATION (1996).

16 See ESTY & GERADIN, *supra* note 7, at 6 (arguing that "[a]n extensive set of empirical evidence shows that the stringency of environmental regulations does not have a statistically significant effect on plant location decisions.")

17 Daniel C. Esty & Damien Geradin, *Market Access, Competitiveness, and Harmonization: Environmental Protection in*

Regional Trade Agreements, 21 Harv. Envtl' L. Rev. 265, 308-09 (1997).

18 Roberta Romano, *Empowering Investors: A Market Approach to Securities Regulation*, 107 Yale L.J. 2359 (1998). See also Roberta Romano, *The Need for Competition in International Securities Regulation*, 2 Theoretical Inquires L. 387 (2001).

19 See generally Andrew T. Guzman, *Public Choice and International Regulatory Competition*, 90 Geo. L.J. 971 (2002).

20 But see ESTY & Geradin, *International Co-Operation*, *supra* note 7, at 33 (arguing that "[f]rom a public choice standpoint, competition forces regulators and their collaborators to in industry to abandon the manipulation of regulatory mechanisms for private gain ('capture') and to adopt decisions more in line with the preferences of their citizens.")

21 See Macey, *supra* note 10, at 150.

22 See *id.* at 148.

23 See ESTY & GERADIN, *Regulatory Co-Operation*, *supra* note 7, at 30.

24 ANDREAS R. ZIEGLER, *TRADE AND ENVIRONMENTAL LAW IN THE EUROPEAN COMMUNITY* 241 (1996).

25 See Richard L. Revesz, *Federalism and Regulation: Some Generalizations* 18, DANIEL C. ESTY & DAMIEN GERADIN, *REGULATORY COMPETITION AND ECONOMIC INTEGRATION* (2001).

26 See Revesz, *supra* note 25, at 20.

27 See Esty & Geradin, *supra* note 17, at 309 (arguing that "the EC's choice of harmonization as the primary strategy for facilitating economic integration has largely failed to ensure fair conditions of competition.")

28 Professor Anne-Marie Slaughter, Address at the University of Texas School of Law (Mar. 20, 2003). See Anne-Marie Slaughter, *Introduction to ANNE-MARIE SLAUGHTER, A NEW WORLD ORDER* 2, 15-18 (forthcoming book 2003-04).

29 *Id.* at 9.

30 See ESTY & GERADIN, *International Co-Operation*, *supra* note 7, at 31.

31 *Id.* at 37. Further implications of this approach are recognized by the authors, by noting that "[c]ollective action – or high degrees of regulatory cooperation – will likewise be more efficient than regulatory competition when interjurisdictional trade is significant and cross-border regulatory transaction costs are high. For instance, inconsistent safety standards for internationally traded goods will generate substantial costs for producers and may even discourage them from exporting their products. Producers may need to spend vast sums on lawyers to spell out the particularized rules of each jurisdiction and then further amounts to tailor their products to local market requirements. Even the most minor regulatory differences can have considerable economic implications. IN such circumstances, it is generally recognized that the convergence of standards or some form of mutual recognition policy will be desirable." *Id.*

32 *Id.* at 38.

33 See SLAUGHTER, *supra* note 28, at 15-18.

34 See GUNTHER TEUBNER, *GLOBAL LAW WITHOUT A STATE* 7 (1997).

35 Please note that while there have been incentives to move to renewable energy sources, still the sector is very much con-

nected to the traditional oil and gas sources of energy.

36 SCOTT VAUGHAN, ET AL., ENVIRONMENTAL CHALLENGES AND OPPORTUNITIES IN THE NORTH AMERICAN ELECTRICITY MARKET 3 (Commission for Environmental Cooperation of North America, Working Paper N. 1, 2002).

37 *Id.*

38 *Id.*

39 See J. Owen Saunders, *North American Deregulation of Electricity: Sharing Regulatory Sovereignty*, 36 Tex. Int'l L.J., 167 (2001).

40 *Id.*

41 *Id.*

42 *Id.* at 169.

43 *Id.*

44 *Id.* at 172.

45 See J. Owen Saunders, *North American Deregulation of Electricity: Sharing Regulatory Sovereignty*, 36 Tex. Int'l L.J., 167 (2001).

46 *Id.* at 169.

47 *Id.*

48 See SCOTT VAUGHAN ET AL., *supra* note 36, at 5.

49 *Id.*

50 *Id.*

51 INTER-AMERICAN DEVELOPMENT BANK, COMPETITIVENESS: THE BUSINESS OF GROWTH, Economic and Social Progress in Latin America 2001 Report 165 (2001).

52 *Id.*

53 *Id.*

54 *Id.* at 166.

55 *Id.*

56 See generally Ewell E. Murphy, Jr, *The Prospect for Further Energy Privatization in Mexico*, 36 Tex. Int'l L.J. 75 (2001).

57 See RALPH H FOLSOM, NAFTA IN A NUTSHELL 101 (1999).

58 *Id.* at 77. The author stated "[i]n 1997, a that a party lost control of the Lower House; subsequently, President Zedillo was not able to increase the allowed percentage of foreign ownership in secondary petrochemicals, or to obtain a constitutional amendment to privatize 'public service' in electricity." *Id.* at 81.

59 *Id.* at 78.

60 *Id.* (footnotes omitted).

61 RALPH H. FOLSOM ET AL., NAFTA: A PROBLEM-ORIENTED COURSEBOOK 72 (Supp. 2000).

62 *Id.*

63 *Id.* at 73 (emphasis added).

64 RALPH H. FOLSOM, NAFTA IN A NUTSHELL, *supra* note 57, at 101.

65 See SCOTT VAUGHAN ET AL., *supra* note 36, at 7.

66 Please note that trade in electricity in North America already is a reality:

SECRETARIAT OF THE COMMISSION FOR ENVIRONMENTAL COOPERATION, ENVIRONMENTAL CHALLENGES AND OPPORTUNITIES OF THE EVOLVING NORTH AMERICAN ELECTRICITY MARKET 4 (Commission for Environmental Cooperation of North America, Report, 2002).

67 See generally CEC background papers for the Secretariat Report Council under Article 13 of the North American Agreement on Environmental Cooperation about Environmental Challenges and Opportunities of the Evolving North American Electricity Market at www.cec.org/programs_projects/other_initiatives/electricity/index.cfm?varlan=english (last visited April 14, 2003).

68 JOSEPH M. DUKERT, A REVIEW: "ENVIRONMENTAL CHALLENGES AND OPPORTUNITIES OF THE NORTH AMERICAN ELECTRICITY MARKET" 2 (Commission for Environmental Cooperation of North America, Working Paper N. 7, 2002).

69 PAUL MILLER ET AL., ESTIMATING FUTURE AIR POLLUTION FROM NEW ELECTRIC POWER GENERATION 1 (Commission for Environmental Cooperation of North America, Working Paper N. 2, 2002).

70 See Secretariat of the CEC Report, *supra* note 66, at 20.

71 *Id.*

72 *Id.* at 21.

73 Professor Antonio Benjamin, Address at the University of Texas School of Law Comparative Environmental Law course (Feb. 12, 2003).

74 See PAUL MILLER ET AL., *supra* note 69, at 18.

75 See SCOTT VAUGHAN ET AL., *supra* note 36, at 6.

76 *Id.*

77 *Id.* at 6-7.

78 See JOSEPH M. DUKERT, *supra* note 68, at 3.

79 *Id.* at 7.

80 *Id.* at 6.

81 SECRETARIAT OF THE COMMISSION FOR ENVIRONMENTAL COOPERATION, ENVIRONMENTAL CHALLENGES AND OPPORTUNITIES OF THE EVOLVING NORTH AMERICAN ELECTRICITY MARKET app. at 5 (Commission for Environmental Cooperation of North America, Report, 2002).

82 WILLIAM R. MOOMAW, ASSESSING BARRIERS AND OPPORTUNITIES FOR RENEWABLE ENERGY IN NORTH AMERICA 2 (Commission for Environmental Cooperation of North America, Working Paper N. 9, 2002).

83 *Id.* at 1.

84 *Id.*

85 SECRETARIAT OF THE COMMISSION FOR ENVIRONMENTAL COOPERATION, ENVIRONMENTAL CHALLENGES AND OPPORTUNITIES OF THE EVOLVING NORTH AMERICAN ELECTRICITY MARKET app., *supra* note 81, at 6.

86 LISA NICHOLS, EUROPEAN ELECTRICITY GENERATING FACILITIES: AN OVERVIEW OF EUROPEAN REGULATORY REQUIREMENTS AND STANDARDIZATION EFFORTS 7 (Commission for Environmental Cooperation of North America, Working Paper N. 6, 2002).

87 Article 20 of the NAAEC provides:

"Article 20: Cooperation

The parties shall at all times endeavor to agree on interpretation and application of this Agreement, and shall make every attempt through cooperation and

consultations to resolve any matter that might affect its operation.

To the maximum extent possible, each Party shall notify any other Party with an interest in the matter of any proposed or actual environmental measure that the Party considers might materially affect the operation of this Agreement or otherwise substantially affect that other Party's interests under this Agreement.

On request of any other Party, a Party shall promptly provide information and respond to questions pertaining to any such actual or proposed environmental measure, whether or not that other Party has been previously notified of that measure.

Any Party may notify any other Party of, and provide to that Party, any credible information regarding possible violations of its environmental law, specific and sufficient to allow the other Party to inquire into the matter. The modified Party shall take appropriate steps in accordance with its law to so inquire and to respond to the other Party."

88 See JOSEPH M. DUKERT, *supra* note 68, at 8.

89 *Id.*

90 *Id.* at 9.