

STUDENT NOTE:

THE NORTH AMERICAN GAS MARKETS AND THE ROLE OF THE REGULATORY AGENCIES (NEB/CANADA, FERC/USA, AND CRE/MEXICO)

MAYUCA SALAZAR CANALES*

I. INTRODUCTION: THE NORTH AMERICAN EXPERIENCE	168
II. THE UNITED STATES EXPERIENCE.....	170
A. Natural Gas Regulation History: A Spectrum of Regulation	170
B. The Energy Crisis, Specific Deregulation, and FERC.....	171
C. Challenges in Long-Term Contracts	175
D. FERC Today	176
E. Energy Policy Act of 2005.....	177
III. CANADA.....	179
A. Creation of a Regulatory Agency: The National Energy Board Act	179
B. NEB History	180
C. Specific Canada Deregulation	181
D. NEB Today: Protecting Public Interest.....	183
E. Recent NEB Developments.....	186
IV. MEXICO.....	186
A. Mexico's Natural Gas Legislative and Regulatory History	187
B. 1995 Amendment and New Regulation.....	190
C. Origin and Development of CRE	191
D. Natural Gas Activities Today	193
E. Mexico's Natural Gas Present Challenges	194
V. MEXICO AND NAFTA APPLICABLE PROVISIONS	195

*Ms. Salazar received her J.D. degree-equivalent from the Instituto Tecnológico y de Estudios Superiores de Monterrey, Monterrey, Mexico, in 2001, and her LL.M. from the University of Texas School of Law, Austin, Texas, in 2006. She has been an associate in the Monterrey office of Thompson & Knight LLP since September of 2003. The author wishes to gratefully acknowledge the assistance of Patricia Chicoine, Ron Fry, Gabriel Ruiz, and Catherine Whitney; special thanks to Professor John S. Dzienkowski, University of Texas School of Law.

VI. CURRENT REGULATION CONCERNS IN MEXICO.....	197
A. Commercialization.....	198
B. Transportation / Open Access.....	199
C. Pricing / Arbitration Point / Market References	199
D. Regulating Other Supply Sources.....	202
E. Safety / Environment	203
F. Lack of Cooperation from Local Authorities (State and Municipal)	204
G. Unfair Competition Practices by LPG Distribution Companies.....	205
H. Lack of Personnel with Expertise	205
I. Suggestions for Improving and Conforming Regulations with the Industry	206
VII. CONCLUSION.....	209

*The establishment of an effective regulatory framework
is crucial to the efficient operation of energy
markets and to the economic welfare of Mexico.*

I. INTRODUCTION: THE NORTH AMERICAN EXPERIENCE

Few people would contest that the energy industry is the most complex type of industry for any government to regulate. Conceiving and implementing a scheme that allows market forces to operate within a rules-based structure that captures the basic concepts of fairness and reasonableness is no easy task. The government must take into account the economy, politics, sociodemographics, environment, technology and the finiteness of resources, all in the context of ensuring the best possible conditions for its citizens. This task becomes even more demanding when it addresses any of the world's most precious but limited fuels, oil and natural gas.

A developing country that is attempting to catch up with more advanced countries in terms of development of the energy industry has a true challenge on its hands. Traditionally, most developing countries have a long history of using a government monopoly to develop its reserves. Therefore an attempt to attract foreign multinationals and competition poses significant regulatory challenges. Such a situation is what the regulatory authorities of Mexico are facing as they take their first steps toward privatization of a previously reserved sector and participate in competition as energy markets continue to evolve. The best approach for Mexico in tackling this challenge is to learn from the regulatory past of its

neighbors and NAFTA partners, Canada and the United States, and to work together with their regulatory authorities for greater efficiency.

Part II of this thesis provides some general theory on the role of regulation within a particular industry and what the optimal goals of a regulatory agency that strives for efficiency should be. Parts III and IV examine how Canada and the Mexico have each addressed the task of regulating the natural gas industry, including their history and evolution as influenced by each country's own external and internal factors, from Canada's concern about protecting interests within a market-based approach to the shift of the United States to different points on the regulation continuum. In Part IV, special detail is provided on Mexico's opening of midstream gas activities to private investment, in particular the 1995 amendments to diverse gas-related laws and statutes, and how this positively impacted an industry previously subjugated to a monopoly. Part V examines the North American Free Trade Agreement's provisions regarding a free-trade zone of goods that includes Mexico's treaty reservations on natural gas and dispute resolution provisions. Part VI analyzes current areas of concern within natural gas regulation in Mexico and identifies some areas of opportunity to deregulate further into a more market-based approach.

Finally, Part VII encompasses the initial premise that in a world where economic conditions are uncertain and energy resources scarce, North America must act together to take the best possible advantage of trading a commodity that in all likelihood will continue gaining popularity and importance as the years go by, and achieve the best possible harmonization of regulatory laws.

Mexico, in its effort to draw near to its North American neighbors, , can look to the U.S. and Canadian experiences in regulating their gas markets and adopt feasible ideas used by the Federal Energy Regulatory Commission and the National Energy Board. Cooperation is essential between the three agencies in order for Mexico to achieve better regulating practices and, in order to have a harmonized, efficient North American market zone.

The three North American countries have gone down different roads in terms of their own development of natural gas regulation, growing in distinct environments economically, historically, and legally. If Mexico is to use the approaches taken by its neighbors, their regulatory context should be analyzed in terms of this evolution. By identifying the similar market traits, statutes and rules of Canada and the United States, Mexico stands to benefit from a better understanding of established regulation processes. Mexico may then apply its own new market knowledge to the adoption and implementation of deregulation.

II. THE UNITED STATES EXPERIENCE

A. Natural Gas Regulation History: A Spectrum of Regulation

The U.S. natural gas industry has seen it all, from a development phase without price controls, to periods of broad price controls, and back to deregulation. This has resulted in significant distortions of price for regulated and unregulated gas and has defied market forces of supply and demand with artificial prices, gas surpluses, and cap restraints,¹ which will be further detailed below.

During the first half of the twentieth century, most companies were looking for oil and viewed gas as a by-product; demand for natural gas was therefore minimal, since there was little infrastructure to deliver gas to consumers. In order to develop a pipeline infrastructure, the U.S. Congress in 1938 enacted the Natural Gas Act (NGA),² the first natural gas regulation system, which created a price ceiling on the interstate sale of natural gas. The purpose of the NGA was to require that all gas sold under its jurisdiction be sold at just and reasonable rates; all rates and charges not satisfying this requirement were deemed “unlawful.” Accordingly, the NGA forbade granting any “undue preference or advantage” or maintaining “unreasonable differences in rates, charges, service, facilities or any other respect, either as between localities or as between classes of service.”³ Hence, the focused objectives of the NGA were twofold: (i) to stabilize and legitimize prices charged by pipelines to consumers and (ii) to provide financial security for pipelines by inducing investments during a period of scarce capital.⁴

The NGA created a commission, the Federal Power Commission (FPC), to regulate prices and ensure that they were reasonable for the sale of gas in interstate commerce by pipelines. The FPC became the controlling agency and held rate-setting authority, among other regulatory authority.

The FPC interpreted its original authority to include regulation of prices charged by “allowing regulation of natural gas produced by a pipeline over which the FPC exercised regulatory authority, even if such sales occurred within a single state.”⁵ However, the U.S. Supreme Court, in

1. Chris A. Radke, *The New Federal Gas Valuation Rule Amendments*, ST. BAR OF TEX. OIL, GAS & ENERGY RESOURCES, June 2005, at 26, 28.

2. 15 U.S.C. § 717-717w (2000). Act of June 21, 1934, ch. 556, 52 Stat. 821-833 (regulates the transportation and sale of natural gas in interstate commerce).

3. 15 U.S.C. § 717c(a)-(b) (2000).

4. Patricia A. Brown, *Klein v. Jones: Equitable Right to Royalties on Take-or-Pay Settlements*, 47 ARK. L. REV. 749, n. 11 (1994) (quoting M. ELIZABETH SANDERS, *THE REGULATION OF NATURAL GAS: POLICY & POLITICS, 1938-1978*, 50 (1981)).

5. Richard Greer Morgan & Martha Priddy Patterson, *The Natural Gas Policy Act of 1978: Four Years of Practice and Two Years to Make Perfect*, 71 KY. L.J. 105, 108 (1983).

Phillips Petroleum Co. v. Wisconsin,⁶ “rejected the FPC’s narrow view of its own powers and interpreted FPC’s jurisdiction over natural gas producers as extending beyond that previously exercised by FPC.”⁷ As a result of this landmark case, federal control of producer prices of natural gas came under NGA control.⁸

The *Phillips* decision marked the beginning of a period of regulation at the state and federal levels, which would continue until the late 1970s.⁹ Additional regulatory activity was driven by concerns of monopoly power over pipelines. As for price controls, despite the FPC’s expanded jurisdiction to regulate producer prices of gas, commentators have observed that “neither the NGA nor the *Phillips* decision provided guidance as to the methodology to be used by the FPC in setting producer prices.”¹⁰ Ultimately the FPC adopted a pricing scheme that set lower price ceilings for gas produced under old gas contracts and higher price ceilings for new contracts. Not surprisingly, perhaps, such a pricing scheme caused serious shortages of natural gas, because prices for interstate gas were significantly lower than the prices such gas could generate in the then unregulated market.¹¹ The FPC held natural gas at price levels artificially below market value and below the market price of alternative fuels, thus creating a high demand for actual gas.¹² As a worldwide energy crisis in oil, gas, and intrastate natural gas caused prices to rise, the price of interstate natural gas was held down by regulatory price caps.

Pipeline capacities, contract issues and other factors fueled by the artificial price environment led to decreased natural gas production and pipeline curtailments in the interstate market. Additionally, the FPC’s expanded jurisdiction resulted in a severe backlog of applications for natural gas permits. In short, it became evident that federal gas price regulation was not producing the desired results of fair rates and was not ameliorating the effects of the energy crisis on the United States.¹³

B. The Energy Crisis, Specific Deregulation, and FERC

The 1970s marked the beginning of a period of deregulation. The U.S. Congress passed the massive five-part National Energy Act in 1978 in response to the pressure of the worldwide energy crisis and to help the na-

6. *Phillips Petroleum Co. v. Wisconsin*, 347 U.S. 672 (1954).

7. Morgan & Patterson, *supra* note 5, at 109.

8. *Phillips*, 347 U.S. at 682 (discussing that the FPC has jurisdiction over rates of all wholesalers of natural gas in interstate commerce, specifically over sales for resale by producers to pipelines).

9. Radke, *supra* note 1, at 27.

10. Morgan & Patterson, *supra* note 5, at 109.

11. *Mobil Oil Exploration & Prod. Se. Inc. v. United Distrib. Cos.*, 498 U.S. 211, 217 (1991).

12. Brown, *supra* note 4, at 752.

13. Radke, *supra* note 1, at 27.

tion cope with it. To assist with implementation of the new legislation, the Department of Energy (DOE) was established under the Department of Energy Organization Act.¹⁴ Further, Congress enacted the Natural Gas Policy Act of 1978 (NGPA)¹⁵ and created the Federal Energy Regulatory Commission (FERC) to replace the FPC as the pricing regulatory agency.

The pricing scheme under the NGPA promoted production of natural gas to increase supply and inflated the price of natural gas to the level of alternative fuels in order to decrease demand. In addition to its already established jurisdiction over interstate market prices, the new federal role was to “[oversee] a national market price regulatory scheme.”¹⁶ Moving toward partial deregulation for newer gas sources, the price ceiling for new gas contracts became higher, and a more complex pricing scheme was designed for older contracts.¹⁷ In addition, NGPA established a phased deregulation scheme for new gas and allowed FERC to increase prices of old gas “whenever traditional pricing principles under the NGA would dictate a higher price.”¹⁸

In sum, the NGPA’s relevant effects on the gas market were that producers were encouraged to increase exploration and drilling, which created gas surpluses. Since pipelines expected demand to continue at high levels and thus have a market for their gas surpluses, they entered into long-term contracts to purchase gas at high prices, which usually contained take-or-pay clauses. A take-or-pay clause requires a pipeline to pay for a minimum contract volume of gas regardless of its ability to take such gas.¹⁹ In tandem with makeup clauses, which allow pipelines to take paid-for but undelivered gas, take-or-pay clauses provide pipelines with some degree of flexibility to vary the volume of gas taken to meet changing market conditions, since the idea of having makeup clauses was to reduce any possible ill effects of the take-or-pay clause on the pipelines’ ability to adjust to demand to some extent in the face of temporary declines.²⁰

However, market distortions soon began to arise, which caused FERC to issue several orders. For example, FERC Order 451²¹ collapsed the existing price categories for old gas contracts into a single classification.²²

14. Department of Energy Organization Act of 1977, 42 U.S.C. §7131, 7134 (2000).

15. Natural Gas Policy Act of 1978, 15 U.S.C. §§ 3301-3432 (2000).

16. *Transcon. Gas Pipe Line Corp. v. State Oil & Gas Bd.*, 474 U.S. 409, 421 (1986).

17. Brown, *supra* note 4, at 753.

18. *Public Serv. Comm’n of N.Y. v. Mid-Louisiana Gas Co.*, 463 U.S. 319, 333 (1983).

19. Brown, *supra* note 4, at 749.

20. *Id.* at 754. As explained later in this section, not even makeup clauses could control the ill effects of the “gas bubble” created by market distortions.

21. Federal Energy Regulation Commission: Ceiling Prices, Old Gas Pricing Structure, 51 Fed. Reg. 22168, 22170-171 (1986) (ordering substantial increase in just and reasonable rates to further several policy goals).

22. *Klein v. Jones*, 980 F.2d 521, 527-28 (8th Cir. 1992).

The resultant new price ceiling was much lower than the existing ceiling for new gas but greater than the market price for old gas at that time.

In order to deal with the distortions caused in the market, FERC first issued Order 380,²³ which voided “minimum bills.” Minimum bills were the guaranteed payments that some customers agreed to make even if they did not take gas that pipelines had with customers, for being “unjust and unreasonable.”²⁴ Subsequently, FERC addressed this transportation issue by creating programs that enabled producers to market their surplus natural gas supplies directly to downstream customers and markets at market-based rates, thereby bypassing the pipelines’ role as middlemen and easing the “command and control” regime of price caps and regulated sales. Under such FERC initiatives, interstate pipelines eventually surrendered their role as gas merchants and became solely transporters.²⁵ In 1985, the planned target date for partial deregulation of gas prices as a way to achieve the NGPA’s statutory goals, FERC issued Order 436²⁶ as an initial step in addressing transportation issues in the new market-based environment. FERC had determined that the purpose of Order 436 was to encourage pipelines to offer open-access, nondiscriminatory transportation services so end users could obtain their supplies directly from producers. FERC had determined that since pipelines were blocking third parties from using interstate gas lines, implementation of Order 436 resulted in the “unbundling” of the pipeline’s “merchant” role as a gas seller from its job as a transporter.²⁷

It should be noted that the NGPA’s price ceilings and escalation formulas were based on Congress’s projections of the future market-clearing price of gas. However, those projections missed the mark by a wide margin. The statutory ceiling price applicable to new natural gas in April 1986 was \$4.241 USD/MMBtu; the spot market price of gas in April 1986 was less than \$2.00 USD/MMBtu.²⁸ Such price changes caused consumers not to want to accept gas because it was overpriced; thus, demand for natural gas fell, and transportation pipelines were faced with the problem that they were obligated under take-or-pay obligations to pay for gas that could not be recouped even under applicable makeup provisions. Many pipelines stopped paying for the gas they could not take, and much litiga-

23. Organization and Delegation of Powers and Duties Transfer of Civil Aeronautics Board Functions, 49 Fed. Reg. 227781-83 (1984) (explaining conclusion that minimum bills act as a restraint on competition).

24. John Burritt McArthur, *Cost Responsibility or Regulatory Indulgence for Electricity’s Stranded Costs?*, 47 AM. U.L. REV. 775, 804-05 (1998).

25. *Id.* at 806.

26. Commodity Futures Trading Commission: Regulation of Certain Leverage Transactions, 50 Fed. Reg. 42, 408 (1985) (removes many regulatory constraints on natural gas pipeline rates).

27. McArthur, *supra* note 24, at 806.

28. Richard J. Pierce, Jr., *Political Accountability and Delegated Power: A Response to Professor Lowi*, 36 AM. U.L. REV. 391, 403 (1987).

tion ensued between producers and pipelines. This litigation-mania was further fueled by Order 436's lack of clarification on take-or-pay and royalty issues, and the passing on of such costs to consumers.²⁹

The deregulation process continued when Congress passed the Natural Gas Wellhead Decontrol Act of 1989,³⁰ which provided for the gradual elimination of FERC regulation over producer sales of natural gas and targeted full deregulation of prices by 1993. The Energy Policy Act of 1992³¹ featured provisions to foster competition in the pipeline industry through regulatory reforms. Through a series of orders in 1992, FERC gradually worked its way up to Order 636,³² known as the Restructuring Rule. Order 636 required interstate pipelines to unbundle their sales services from transportation services and provide open-access transportation services that were equal in quality for all gas suppliers.³³ Thus Order 636 prevented possible monopoly through vertical integration of such services by making their bundling illegal.

The NGPA's effects exemplify the type of government intervention that almost invariably results when Congress uses a rules approach in delegating regulatory authority to an agency. It has been suggested by some treatise writers that Congress creates rules based on imperfect knowledge and foresight, and thereafter, allows such rules to be left in place long after they have become obsolete and possibly detrimental in their impact.³⁴ Thus, it is theorized that Congress's creation of statutory rules to govern future conduct, when it lacks the ability to foresee the uncertain future, may be more irresponsible than delegating broad authority to make rules, as is illustrated perhaps by the NGA experience.³⁵ During the early stages of NGA jurisdiction, in *Federal Power Commission v. Hope Natural Gas Co.*, the U.S. Supreme Court recognized that rate-making had to be a flexible process in which agencies were free to make policy decisions and to exercise discretion in order to balance, in a pragmatic manner, the many competing goals of the regulatory process.³⁶ On the other hand, Order 436, which dramatically restructured the sale of gas and had the effect of requiring pipelines to assure equal access to their facilities, is an example of a single rule that can fulfill the agency's statu-

29. Brown, *supra* note 4, at 756.

30. Natural Gas Wellhead Decontrol Act of 1989, Pub. L. No. 101-60, 103 Stat. 157 (codified as amended in scattered sections of 15 U.S.C.).

31. Energy Policy Act of 1992, Pub. L. No. 102-486, 106 Stat. 2776 (codified as amended in scattered sections of 42 U.S.C.).

32. Pipeline Service Obligations and Revisions to Regulations Governing Self-Implementing Transportation Under Part 284 of the Commission's Regulations and Regulation of Natural Gas Pipelines after Pipeline Wellhead Decontrol, 57 Fed. Reg. 13267, 13276 (1992).

33. Radke, *supra* note 1, at 28.

34. Pierce, *supra* note 28, at 403.

35. *Id.* at 405.

36. Fed. Power Comm'n v. Hope Natural Gas Co., 320 U.S. 591, 610-15 (1944).

tory goal more effectively without further policymaking, by substituting the command and control powers through a reconstructive strategy.³⁷ Professor Stewart and Justice Breyer have been advocates of the reconstructive strategy theory.³⁸ That is, when the authority in charge issues single regulatory rules, as opposed to constant making and remaking of policy decisions, the authority has more flexibility to fulfill its statutory goal; and if the legislative body reasonably intervenes with precise statutory standards and sets forth the extent and form of federal regulatory intervention, a constructive result is more likely to occur.

It is also important to consider that the market structure of sales itself evolved as well. The production chain became less vertically integrated than before. Therefore, the dedication of huge blocks of natural-gas-producing acreage by a producer for sales to an interstate pipeline at the wellhead gave way to a complex mix of wellhead sales, downstream sales made at pooling points or pipeline hubs near producing fields or processing plants, and downstream sales made at city gates or even the burner tips of end users.³⁹

C. Challenges in Long-Term Contracts

The natural gas industry was the first industry under FERC jurisdiction where the industry was required to allocate stranded costs by deregulation. It is important to bear in mind that deregulation may impose economic costs, which become stranded costs. Stranded costs are borne by the pipelines and arise from investments they made years ago while assuming that they could force their customers to buy natural gas at a particular price. For instance, Order 380 stranded some pipeline costs since, without minimum bills, pipelines were left without contract rights for recovering their full costs.⁴⁰ Another illustration of this point is that Order 436 did not include compensation to pipelines for recovery of their released capacity market for mainline space as a result of the open access rule, which reduced pipeline revenues previously obtained by the provision of transportation services.⁴¹ To benefit deregulation, fuller markets, and consumer welfare, these orders left pipelines with stranded-costs losses.⁴² As a remedy for pipelines' inability to pass on take-or-pay costs, FERC issued Order 500,⁴³ which split the responsibility for stranded costs

37. Pierce, *supra* note 28, at 403.

38. See generally Richard B. Stewart, *Reconstitutive Law*, 46 MD. L. REV. 86 (1986); STEPHEN BREYER, *REGULATION AND ITS REFORM* 189-260 (Harvard University Press 1982) (1938) (discussing benefits of deregulation in particular industries).

39. Radke, *supra* note 1, at 28.

40. McArthur, *supra* note 24, at 805.

41. *Id.* at 806.

42. *Id.* at 807.

43. Regulation of Natural Gas Pipelines After Partial Wellhead Decontrol, 52 Fed. Reg. 30334 (1987).

between pipelines and consumers, allocated in proportion to the responsibility for incurring them. Although costs were split, FERC refused, in Order 528-A,⁴⁴ to protect pipelines from incurring uneconomic costs in their take-or-pay contracts. Such economic burdens became apparent as regulatory changes opened the market to competition. FERC countered criticism of its refusal to provide such protection by stating that regulation “does not excuse industry participants from keeping up with market conditions.”⁴⁵ In fact, to encourage competition, Congress and FERC took a series of initiatives to remove regulations that protected pipelines. As mentioned in Order 528-A, FERC did not intend to guarantee recovery of costs that “market conditions would not otherwise permit them to recover.”⁴⁶

On the other hand, when Order 636 did not make pipelines absorb costs for unbundling transportation, FERC provided no explanation as to why it so favorably treated pipelines for transportation/field service unbundling, with far less favorable treatment for uncoupling transportation/merchant roles under Order 436.⁴⁷ However, the District of Columbia Court of Appeals reversed Order 636, and FERC, in response, issued Order 636-C in 1997.⁴⁸ In Order 636-C, FERC justified the pipelines’ full recovery of stranded costs by providing that prudently incurred costs as a result of such regulatory action were not the same as responsibility for costs for overpriced gas contracts under Order 500, as such cases arose from market conditions and not from regulatory action.⁴⁹

Everything considered, the regulatory authority must be careful while deregulating and take into account cost responsibility from allocating stranded costs, and reconciling market conditions under the regulatory structure. Such regulatory authority should also not be constrained by legislative rulemaking that is so specific that it hampers the regulatory authority’s ability to adjust to specific market situations.

D. FERC Today

FERC is responsible for regulating the interstate transportation of natural gas, oil, and electricity; monitoring energy markets and companies to protect customers from market manipulation and higher prices;

44. Mechanisms for Passthrough of Pipeline Take-or-Pay Buyout and Buydown Costs, 54 F.E.R.C. Reports ¶ 61095, 61303 (1991).

45. McArthur, *supra* note 24, at 814.

46. *Id.* at 816.

47. *Id.* at 818.

48. Pipeline Service Obligations and Revisions to Regulations Governing Self-Implementing Transportation Under Part 284 of the Commissions Regulations, 78 F.E.R.C. Reports ¶ 61186, 61787 (1997).

49. John Burritt McArthur, *The Irreconcilable Differences Between FERC’s Natural Gas and Electricity Stranded Cost Treatments*, 46 BUFF. L. REV. 71, 111 (1998).

and resolving disputes between energy companies, other organizations, and the public.⁵⁰ Specifically, in natural gas matters, FERC is the leading authority⁵¹ for granting permission to construct and operate interstate pipelines, storage facilities, and liquefied natural gas plants and granting permission to abandon facilities.⁵²

As a result of the deregulation process begun in the 1970s and despite some stumbles along the way for allocating stranded costs as described in the preceding section, FERC has gradually moved toward an overall market-based approach. Today, FERC's auditing and oversight focus on competition controls rather than price controls. The agency has made certain that transmission is open to producers on an equal basis, which in turn should result in energy market efficiency through fair competition. Consumers can negotiate the best terms for the supply and transportation of natural gas to markets. Due to deregulation of the U.S. gas industry, production has increased, proven reserves have decreased, and gas usage is increasing.

Consider the following views on the effects of the regulation transition by Richard J. Pierce, a respected and major proponent of natural gas deregulation:

The FERC can take pride in an extraordinary accomplishment. In most respects, the beneficial effects of the transition have exceeded even initial optimistic expectations. The effects of the transition have included significant rationalization of the gas transportation and storage functions, in addition to the expected beneficial effects on the gas sales market . . . Moreover, the participants in the post-transition market, including many who originally opposed the transition, have discovered that the post-transition market can produce good results for service providers as well as consumers.⁵³

E. Energy Policy Act of 2005

The most recent leading action taken by Congress concerning the energy industry in general is embodied in the Energy Policy Act of 2005

50. Federal Energy Regulatory Commission, *Student's Corner, What Is FERC?*, <http://www.ferc.gov/students/whatisferc/whatisferc.htm> (last visited Apr. 22, 2006).

51. It is important to keep in mind that the following natural gas activities are not regulated by FERC, but by each state's own public utility commissions: (i) local distribution pipeline companies (pipelines that serve individual residences, commercial buildings, etc., are regulated by the state authorities are usually smaller in diameter, operate at lower pressure, and are often constructed of plastic instead of steel); (ii) compensation to landowners for land affected by installation of natural-gas-facilities; and (iii) the development and operation of natural gas fueled vehicles, such as cars and buses.

52. Federal Energy Regulatory Commission, *Student's Corner, Energy We Regulate*, <http://www.ferc.gov/students/energyweregulate/gas.htm> (last visited Apr. 22, 2006).

53. Richard J. Pierce, *The State of the Transition to Competitive Markets in Natural Gas and Electricity*, 15 ENERGY L.J. 323, 323-24 (1994).

(EPACT).⁵⁴ EPACT covers many areas of the energy industry, one of them being natural gas. As concerns natural gas, EPACT provides royalty and tax incentives to encourage producers to obtain gas from remote areas. The outer continental shelf and Alaska are the two primary target areas for natural gas development. EPACT also sets forth producer incentives for using methods of recovery for declining wells, such as carbon dioxide injections, and gives priority to increasing energy efficiency through the use of alternate fuels.⁵⁵

EPACT also makes significant amendments to the NGA. Section 311(a) of EPACT amends Section 717 of the NGA, which addresses the necessity of federal regulation of natural gas companies.⁵⁶ Included within the scope of the federal regulation is the importation and exportation of natural gas in foreign commerce and the persons or entities engaged in such importation and exportation.⁵⁷

Another significant modification concerns new storage facilities, as set forth in Section 312 of EPACT. This amendment expedites the authorization for providing storage and storage-related services to new facilities at market-based rates, even when a company is unable to demonstrate that it lacks market power, as long as FERC is satisfied that (a) market-based rates are in the public interest and necessary to encourage the construction of the storage capacity in an area that needs such capacity and (b) consumers are protected. FERC conducts periodic reviews to ensure that the rate is just, reasonable, and not unduly discriminatory or preferential.

As a result of EPACT, all coordination of federal applications for authorizations in federal natural gas matters is now done through FERC, pursuant to Section 313 of EPACT. As part of this coordination, FERC has authority to set schedules for all federal authorizations, in an expeditious manner that complies with the rules for federal schedules, and additionally coordinates compliance with National Environmental Policy Act requirements.

Concerning matters of transportation, EPACT Section 316 facilitates price transparency with due regard to public interest, integrity of markets, fair competition, and protection of consumers. Pursuant to Sections 1325 and 1326, distribution lines are treated as fifteen year property and gathering lines as seven year property, respectively.

54. Energy Policy Act of 2005, Pub. L. No. 109-15, 119 Stat. 594 (2005).

55. See generally Energy Policy Act of 2005, *supra* note 54.

56. Regulation of Natural Gas Companies, 15 U.S.C.A. § 717(a) (2005) (providing that “the business of transporting and selling natural gas for ultimate distribution to the public is affected with a public interest, and that Federal regulation in matters relating to the transportation of natural gas and the sale thereof in interstate and foreign commerce is necessary in the public interest”).

57. 15 U.S.C.A. § 717(b) (2005) (providing for the mandatory authorization order by FERC for importing and exporting natural gas).

EPACT Section 1801 sets forth the Secretary of Energy's obligation to conduct a study on natural gas storage and projected capacity trends with the goal of making recommendations to help prevent future supply shortages. A related report required of the Secretary of Energy is the natural gas supply shortage report, the purpose of which is to develop recommendations to achieve a balance between supply and demand, providing residents with reasonably stable prices and accommodating long-term growth of industrial and commercial enterprises.

EPACT Section 1807 provides for another report to be prepared by the Secretary of Energy and submitted to the respective Congressional Committees on Energy. Such report is to concern the status of energy export developments in Latin America, with a focus on Mexico. The preparation of this report and its proper consideration by Congress should have a positive impact on improving Mexico-U.S. relationships in energy matters, especially since its goal is to effectively coordinate regulatory approval of U.S./Mexico border projects with appropriate U.S. agencies and the Mexican government.⁵⁸

To follow this examination of the U.S. regulatory history of natural gas interstate transportation and distribution, the Canadian example and its own particular regulatory evolution on the same matters are discussed below.

III. CANADA

A. Creation of a Regulatory Agency: The National Energy Board Act

Canada's counterpart regulatory agency to FERC came into existence in the late 1950s, when Canadian oil and gas development began to step up significantly, particularly in Western Canada. The government recognized the need to regulate certain aspects of the construction of pipelines and natural gas exports, primarily with respect to a long-term license to TransCanada PipeLines Limited (TCPL). A Royal Commission on Energy in 1959 recommended that an independent federal regulatory agency on energy be established. After looking into energy export policies, pipeline economic regulation, and the authorities that could be appointed to an energy board, the Canadian Parliament drafted and passed the National Energy Board Act,⁵⁹ creating the National Energy Board (NEB).

58. Energy Policy Act of 2005, *supra* note 54, at § 1807 (providing "The report shall contain a detailed analysis of the status of energy export development in Mexico and a description of all significant efforts by the Secretary and other departments and agencies to promote a constructive relationship with Mexico regarding the development of that nation's energy capacity. In particular this report shall outline efforts made to ensure that regulatory approval and oversight of the United States/Mexico border projects that result in the expansion of Mexican energy capacity are effectively coordinated across departments and with the Mexican government.")

59. National Energy Board Act, R.S.C., c. N-6, s. 1 (1985).

The NEB acquired responsibility for gas exports from the Ministry of Trade and Commerce and for pipeline regulation from the Board of Transport Commissioners. The National Energy Board Act also granted the NEB responsibility for regulating tolls and tariffs and defined its jurisdiction and status as an independent court of record.⁶⁰

B. NEB History

The NEB has taken several steps to increase exports into the United States and obtain a stronger presence in the U.S. gas market, Canada's greatest "client." During the energy crisis of the 1970s, the NEB enacted several initiatives based on the conclusion, that deliverability, not reserves, was needed to assure supply and, deliverability could be encouraged by higher prices. The NEB encouraged exporters to increase their prices, allowing for an additional source of funds for further investment in gas development, which accentuated the "gas bubble"⁶¹ as time went on.

Before the 1985 Guidelines for Negotiated Settlements Pipelines (as defined herein below), the NEB rate regulation resulted in tolls that were lower than they otherwise would be. On one hand, the pipelines' revenue requirements were constrained by NEB regulation, which constraint was affected more by the rather low equity ratios of 25% to 35% that characterized the period. In such regard, one commentator has observed, "This reflected an 'unwritten' regulatory restraint compact between producers and pipelines, under which the former proposed and the latter accepted those low equity ratios in exchange for regulatory provisions that reduced the pipelines' risks."⁶² Despite such constraint, the take-or-pay problems affecting the U.S. pipelines in connection with the "gas bubble," which caused much market distortion, did not do as much damage in Canada, because arrangements worked out by Canadian industry participants kept pipelines' earnings from regulated operations steady throughout the period.⁶³

On the other hand, regulation did very little to effectively discipline the pipelines into achieving efficiency in terms of their investment and operations, as to both engineering and economics. There was little motivation for such innovations because the transportation pipelines' great

60. Canadian National Energy Board, *Why Was the National Energy Board Created?*, http://www.neb-one.gc.ca/AboutUs/history_e.htm (last visited Apr. 20, 2005).

61. See e.g., Canadian National Energy Board, *supra* note 60, at Section III (providing that the term "gas bubble" is used to describe the situation originating in the U.S. back in the 1970s, where there was too much gas and not enough demand for it, causing problems with the executed take-or-pay contracts).

62. Roland Priddle, *Reflections on National Energy Board Regulation 1959-98: From Persuasion to Prescription and on to Partnership*, 37 ALBERTA L. REV. 524, 537 (1999).

63. *Id.* at 538.

bulk of capacity was reserved by local distribution companies (LDC), which, like the pipelines, did not have a commercial incentive to minimize costs.⁶⁴

During the late 1960s and early 1970s, Canadian oil and gas markets showed remarkable growth. During the energy crisis, however, money-making commercially inspired projects receded and were replaced by a frenzy of energy regulatory and administrative activity. Again, at least one commentator has pronounced that all this regulatory action “was largely a waste of time and money . . . Supply for Canadians could have been much better secured by the operation of the market.”⁶⁵ The early 1980s recession and the effect of falling energy prices resulted in a decrease of energy-related projects, along with the difficulty of marketing available exports of oil and gas. The NEB soon recognized the need to provide reasonable expeditious treatment of applications, and in 1984 the Rules of Practice and Procedure⁶⁶ were amended to waive the rules that were found not to be applicable.⁶⁷

C. Specific Canada Deregulation

Also, during the early part of the 1980s the Canadian gas market was oversupplied as a result of falling demand and increasing supply. Beginning in 1985, the NEB corrected this situation by making changes in regulation.

First, the release of the market began with the Western Accord of March 25, 1985, on Energy Pricing and Taxation,⁶⁸ and the Agreement on Natural Gas Markets and Prices of October 31, 1985⁶⁹ (also referred to as the “Halloween Agreement”). Both enactments were needed by the NEB to clear away the accumulated regulatory debris and set the industry on a course toward deregulation of commodity markets and eventual light-handed regulation of facilities owned by entities that retained market power, due to their monopoly-like characteristics. For example, the Halloween Agreement provides that:

. . . a more flexible and market-oriented pricing regime was required for the domestic pricing of natural gas. The present Agreement is intended to create the conditions for such a regime, including an or-

64. *Id.* at 538.

65. *Id.* at 542.

66. Pursuant to Section 8(b) of the National Energy Board Act, the NEB may make rules governing the making of applications, representations and complaints to the NEB, as well as the conduct of its hearings. The NEB has exercised that power by creating the National Energy Board Rules of Practice and Procedure.

67. Priddle, *supra* note 62, at 542.

68. *The Western Accord*, an agreement between the governments of Canada, Alberta, British Columbia and Saskatchewan on Natural Gas Markets and Prices (Mar. 25, 1985).

69. *Agreement Among the Governments of Canada, Alberta, British Columbia and Saskatchewan on Natural Gas Markets and Prices* (Oct. 31, 1985).

derly transition which is fair to consumers and producers and which will enhance the possibilities for price and other terms to be freely negotiated between buyers and sellers. This will have favourable effects on investment, employment and trade and will provide energy security for all Canadians.⁷⁰

Accordingly, the Agreement on Natural Gas Market and Prices established changes in natural gas export pricing policy, affecting both short-term orders and long-term export licenses. The new market-oriented policy allowed a more flexible approach to participating in the U.S. spot market.

Next, in 1987, the NEB adopted a market-based procedure for determining the surplus natural gas available for export, replacing the previous reserves-to-production (R/P) ratio procedure that required high ratios in order to establish gas for export was surplus to foreseeable Canadian requirements. Under the new procedure, sales contracts were required to contain provisions that permitted adjustments to reflect changing market conditions and assurances that the gas contracted for would be taken.⁷¹

Later, the U.S.-Canadian Free Trade Agreement of 1988 (CFTA) prohibited most import and export restrictions on energy products. In great part, this is why NAFTA did not result in significant regulatory changes between both countries: most trade barriers had already been lifted.⁷²

Finally, in 1993 NEB decided not to include cost-benefit analysis in determining whether proposed natural gas exports were in the public interest, which facilitated sales of Canadian gas exported under short-term orders.⁷³

Thus, from a closely regulated system, Canada soon transitioned to a market that fosters direct sales among willing sellers and buyers, based upon freely negotiated pricing, with transportation being accessible on an open-access basis.⁷⁴ Three major results were accomplished by the transition:

1. Free commodity markets were achieved by dropping federal-provincial regulation of the price of gas in interprovincial trade.⁷⁵ In addition, the export license was redesigned upon review of the twenty-five-year quantitative surplus test (the R/P Ratio Procedure) (where artificial adjustments to surpluses were made by set-

70. *Id.* at 1.

71. Priddle, *supra* note 62, at 543.

72. United States-Canada Free Trade Agreement, U.S.-Can., Jan. 2, 1988, 27 I.L.M. 293.

73. Energy Information Administration, *Canadian Regulatory Reform Leads to Long-Term Increase in Sales to the United States (1985)*, http://www.eia.doe.gov/oil_gas/natural_gas/analysis_publications/ngmajorleg/canadian.html (last visited Apr. 20, 2005).

74. Keith F. Miller, *Energy Regulation and the Role of the Market*, 37 ALBERTA L. REV. 419, 420 (1999).

75. Priddle, *supra* note 62, at 543.

ting aside a predetermined amount of gas reserves), which was interfering with the proper functioning of the market,⁷⁶ and, the Market-Based Gas Export Procedure was created. The foregoing was accomplished within the framework of an unchanged National Energy Board Act, with public hearings and ongoing monitoring of elementary components.

2. Pipeline open access was achieved upon agency review of the double-charges issue,⁷⁷ even though the pipelines saw it and direct marketing of gas as a threat to the way they conducted their business.⁷⁸
3. Pipeline rate regulation was reached by negotiated settlements on a long-term basis. This brought an end to the excessive number of public hearings related to rate matters. As an instrument of regulation, this practice is more sophisticated than that produced by traditional methods, and it placed Canada at the top in regulating pipeline tolls and monopolies in general. Such Canadian innovations placed “market forces, rather than governments, politicians and regulators, in charge of the ‘commanding heights’ of the Canadian oil and gas economy.”⁷⁹ Thus the NEB articulated a position of minimal interference in commercial decisions, unless public interest or environmental well-being is placed at risk.

D. NEB Today: Protecting Public Interest

The deregulation process described in the preceding section has shaped the way NEB works and oversees gas market regulation. Today, the NEB’s corporate purpose is to promote safety, environmental protection, and economic efficiency in the Canadian public interest within the mandate set by the Canadian Parliament in the regulation of pipelines, energy development, and trade. This principle guides the NEB in carrying out and interpreting its regulatory responsibilities. The NEB is accountable to the Canadian Parliament, to which it reports through the Minister of Natural Resources.

The NEB’s responsibilities include approval over the construction and operation of international and interprovincial gas pipelines and additions to the existing pipeline systems. Pipelines are currently the only method used to deliver natural gas in Canada today.

76. Miller, *supra* note 74, at 423.

77. An example of the double-charge problem is when a customer would have to pay the TCPL demand toll to the distributor responsible for paying it and also pay TCPL for transportation of the direct purchase gas.

78. Priddle, *supra* note 62, at 545.

79. *Id.* at 546.

When a pipeline exceeds 40 kilometers in length, a public or oral hearing may be held to determine the need for such a facility. The NEB has no jurisdiction over pipelines completely within the borders of a province: those are regulated by the province's regulatory body. Consistent with its corporate purpose, the NEB also has environmental responsibilities to ensure protection during the planning, construction, operation, and abandonment of projects; it has assumed a mandate for environmental protection as a component of public interest, through a mechanism that ensures that projects receive appropriate levels of assessment before proceeding.⁸⁰ The NEB also shares responsibility with the Canadian Transportation Safety Board for incident investigation and ensures that companies comply with regulations concerning the safety of employees.

Not surprisingly, the NEB is a supporter and trendsetter in using a market-based approach in a number of decisions concerning pipeline applications to decide whether facilities are needed and whether the associated tolls are just and reasonable.⁸¹ In matters of tolls and tariffs, the NEB has installed a review program to ensure that tolls and tariffs are just and reasonable and that there is no undue discrimination in tariffs and services.

For purposes of its regulatory programs, the NEB has divided pipeline companies into two "Groups." Group 1 is made up of the ten major oil and gas pipeline companies, and Group 2 is composed of the remaining smaller companies. This grouping facilitates financial regulation depending upon the public interest in the company's operations. Three of the Group 1 pipelines and all Group 2 pipelines are regulated on a complaint basis, meaning that the complainant must first attempt to try to work out its problem with the pipeline company. If no settlement is reached, a complaint is filed.

Tolls for Group 1 companies are set according to their capital and operating costs to ensure that companies shipping natural gas are protected from unjustified high transportation costs. The tolls cover cost of service plus a fair and reasonable return to investors.⁸²

Toll applications normally warrant a public hearing. In 1994 the NEB published the Guidelines for Negotiated Settlement of Traffic, Tolls, and

80. Guidelines that prescribe information to be filed concerning application to construct a pipeline, pursuant to NEBA § 52, include detailed information respecting supply, demand, purpose, justification, economic evaluation of the facilities, tolls, and financial information. The NEB initiated a review of these guidelines in 2002 and issued the Filing Manual, which replaces the Guidelines in its entirety. There is an increased emphasis on requiring consultation to take place before any application is filed.

81. Miller, *supra* note 74, at 424.

82. National Energy Board, *History and Responsibilities*, http://www.neb.gc.ca/AboutUs/history_e.htm, (last visited Oct. 16, 2006).

Tariffs,⁸³ which were provided to facilitate a negotiated settlement process and allow all interested parties, including pipeline companies, producers, shippers, consumers, governments, and others, to resolve toll and tariff matters through consensus and negotiation. However, negotiated settlements must still be approved by the NEB.⁸⁴

A pipeline company's tariff contains the conditions under which transportation service is provided, including conditions for accepting new shippers, allocating capacity to shippers, and determining which position a prospective shipper will occupy on the waiting list for service.⁸⁵

The open-access provisions are also present in NEB regulations. Such provisions require pipelines to provide access to transportation to all parties on a nondiscriminatory basis. Further, the tolls for services provided under similar circumstances and conditions with respect to all traffic of the same description, carried over the same route, must be the same for all customers. The NEB performs audits to verify compliance as part of this monitoring responsibility.⁸⁶

Regarding exports of natural gas, the NEB grants long-term or short-term licenses. Long-term licenses are given for twenty-five-year periods, following a public hearing and with Governor in Council approval, and short-term licenses are granted for maximum periods of two years. The volume exported depends upon market supply and demand as well as available pipeline capacity, and Canada's imports are much smaller compared to its exports. A short-term order is required for approval of exporting propane, butane, and ethane obtained from oil refinery processing; ethylene does not require approval. The NEB ensures that under existing exporting authorizations, the quantity of gas exported does not exceed the surplus remaining after Canadian requirements have been met. Internally, supply and demand are linked by a system of 550,000 kilometers of pipelines between the locations of most of the natural gas supplies in Western Canada, the Arctic, and offshore, to the consumers concentrated in Ontario, Quebec, and lower British Columbia.⁸⁷

NEB cooperates closely with other Canadian authorities and regulatory agencies to reduce overlap and provide more efficient regulatory services, including utility boards and commissions, environmental boards, and the Northern Pipeline Agency (responsible for the planning and construction of the proposed Alaska Natural Gas Transportation System on the Canadian side).⁸⁸

83. National Energy Board, *Guidelines for Negotiated Settlement of Traffic, Tolls, and Tariffs*, File No. 4600-A000-3 (Aug. 23, 1994).

84. National Energy Board, *supra* note 82.

85. *Id.*

86. *Id.*

87. *Id.*

88. *Id.*

Above all, the NEB has a public interest mandate, which requires it to consider ways to balance competing interests, in particular pipeline safety and environmental assessment.

E. Recent NEB Developments

TCPL applied to the NEB for approval of its tolls for the 2003 calendar year, as well as with respect to certain other tariff matters. This hearing was significant because it represented the first fully contested cost-of-service tolls hearing since the 1994 Guidelines were passed. Since that time, TCPL's tolls have been established on the basis of NEB-approved negotiated settlements between TCPL and its shippers, with the notable exception of cost of capital matters for the 2001 and 2002 test years. This hearing was the sole public hearing held by the NEB during the April 2003 to March 2004 year.⁸⁹

On July 18, 2003, NEB issued guidelines for an alternate dispute resolution (ADR) program that can be used to arrive at a resolution on a disputed issue in lieu of reliance on the NEB's traditional regulatory process. The goal was to ensure that there were fair and efficient processes in place as alternatives to a litigated hearing, including negotiation, facilitation, workshops, and mediation. NEB must still confirm, however, that agreements reached through the ADR program are consistent with the NEB Act.⁹⁰

The next Part turns to Mexico—particularly how midstream gas activities were unbundled from the constitutional monopoly over national resources, and the brief regulatory experience in this recently privatized field.

IV. MEXICO

Before analyzing Mexico's regulatory history of natural gas, it is important to mention that Mexico has only recently begun to adopt regulatory approaches that are more consistent with competitive activities in the natural gas market. Like other developing economies around the world, Mexico is currently deregulating portions of certain sectors that were traditionally heavily regulated, either because they were considered "natural monopolies" or they were considered so important that their operation could not be entrusted to the market.

89. National Energy Board, *NEB Issues Its Decision Concerning Tolls for TransCanada Pipelines for the Year 2003*, http://www.neb.gc.ca/newsroom/releases/nr2003/nr0322_e.htm. (last visited October 29, 2006).

90. Alan Harvie & Terrance M. Hughes, *Petroleum Law Edition: Article: Recent Regulatory and Legislative Developments of Interest to Oil and Gas Lawyers*, 43 ALBERTA L. REV. 183, 218 (2005).

“[I]t is only portions of these sectors that are deregulated; other portions remain under monopoly control and some form of regulation,”⁹¹ such as opening competition to natural gas distribution while production remains a regulated monopoly.⁹²

As discussed in the previous sections of this paper, regulation is not a static process, and in matters of energy it is less so. This becomes particularly challenging for a young regulating authority such as Mexico’s,⁹³ which must provide a regulatory framework that reconciles effectively limiting a participant’s market power, which is sometimes a government entity, through measures that stimulate competition and encourage commercial activities and the development of secondary markets (i.e., restrictions on vertical integration, separation of services provided by the same provider, etc.), while establishing its credibility both within the government and among the population.

Mexico’s young regulatory agency may use the international experience of other regulating entities in order to enrich and support the structural changes it makes along the way and thereby safeguard a more effective deregulatory process. Maintaining permanent mechanisms of formal and informal communication with other regulating entities that allow the exchange of documents and experiences about the energy sector is a good way to achieve this purpose. Thus, all participants benefit from the development and elaboration of compatible regulating markets, which advances the regional integration of the markets.⁹⁴

A. Mexico’s Natural Gas Legislative and Regulatory History

Mexico has had a world-renowned paternalistic approach to its natural resources for more than seventy years. The origin of the State’s legal monopoly as a strategic area over natural gas activities originates directly from the *Constitucion Política de los Estados Unidos Mexicanos* (the Constitution). Even though during the first part of the twentieth century it was the foreign companies that undertook development of oil and gas, the expropriation of these natural resources in 1938⁹⁵ ended all concessions on both oil and natural gas, and all foreign participation in this industry left the country. Article 27 of the Constitution was amended soon thereafter, providing that:

91. Russell W. Pittman, *Symposium: Second Annual Latin American Competition and Trade Round Table: Introduction*, 25 *BROOK. J. INT’L L.* 263, 271-72 (1999).

92. *Id.* at 272.

93. *See infra* Chapter VI, at 26.

94. Héctor Olea Hernández, *Apuntes Sobre el Proceso de Reforma Estructural del Gas Natural en México*, 43 (José Carlos Fermat Romero ed., Comisión Reguladora de Energía 2005).

95. Initially, it was disputes over labor issues, tax disputes, and resistance to price increases that led the Cardenas administration to emphatically enforce sovereign control over natural resources.

The direct property of all of the natural resources of the continental platform corresponds to the Nation . . . [T]he property of the Nation is inalienable and permanent, and the use and enjoyment of the resources, by individuals or companies that are formed under Mexican law, shall not be carried out except by concessions granted by the Federal Executive Power . . . Regarding oil and solid, liquid or gas hydrocarbons or radioactive minerals, no concessions or contracts shall be granted, nor shall the ones granted remain valid and the Nation shall carry out the exploitation of those products.⁹⁶

The phrasing of the article makes it unmistakable that the sovereign has full control of the nation's natural resources and only the sovereign itself may exploit them. In light of this monopoly, the Regulatory Law of Article 27 of the Constitution was passed in 1958 (the Regulatory Law). In general, the spirit behind the law is to keep the oil industry under the monopoly of the State, and not subject to arbitrary private interests. The law also regulates the potential productivity of the subsoil and assures oil and by-products supply through *Petróleos Mexicanos* (PEMEX). PEMEX is the government-owned company with the exclusive attributions to explore, exploit, produce, and commercialize hydrocarbons from the Mexican subsoil in all its natural states. Article 4 of the Regulatory Law provides that "[t]he Nation shall carry out the exploration and exploitation of the oil and its related activities . . . through *Petróleos Mexicanos* and its subsidiaries."⁹⁷

Therefore the nation can fulfill its objective of regulating production, knowing what the national reserves are and adopting a conservation policy to assure present and future generations' stability and benefit in oil and derivatives supply. Under the Regulatory Law, the only foreseen way for private entities to participate in the oil industry is by contracting with PEMEX for a specific work, labor, or service, in benefit of the nation, receiving predetermined cash compensation.⁹⁸ It eliminated the still-existing concessions to that date regarding refining, transportation, storage, distribution, and elaboration of natural gas, since as originally drafted only the State through PEMEX was allowed to provide these services to the nation.

Despite Mexico's abundant reserves, for the most part of the twentieth century little progress was made in terms of gas activities. Before 1995:

96. *Constitucion Politica de los Estados Unidos Mexicanos* [Const.], art. 27., *Diario Oficial de la Federación* [D.O.], 5 de Febrero de 1917 (Mex.).

97. *Ley Reglamentaria del Artículo 27 en el Ramo del Petróleo* [Regulatory Law], art. 4, *Diario Oficial de la Federación* [D.O.] 11 de Mayo de 1958 (Mex.).

98. *Id.* at art. 4-6. *See Ley Reglamentaria del Artículo 27 Constitucional en el Ramo del Petróleo* [Regulatory Law], art. 4-6, *Diario Oficial de la Federación* [D.O.], 31 de Diciembre de 1958 (Mex.).

PEMEX was solely responsible for natural gas activities. Although the state-owned company developed a barely adequate 6200 mile pipeline network, the concepts of natural gas storage and marketing were virtually unknown in Mexico. Budgetary constraints limit pipeline construction, and the consequent lack of infrastructure has contributed to an underutilization of natural gas in industrial processes, as well as in residential and commercial markets.⁹⁹

The private distribution networks were also very concentrated in certain locations, and the lack of infrastructure made them unresponsive and not easily adjusted to market demands.

The inability of any private entity to participate in any form of gas activities resulted in a lack of appropriate production infrastructure, and Mexico became a net natural gas importer. Mexico had been a net exporter of natural gas until 1989, when economic problems forced the country to find natural gas sources from the United States,¹⁰⁰ even though Mexico has proven natural gas reserves adequate for supplying domestic requirements over the next seventy-five years.¹⁰¹ Moreover, the 1994 financial crisis cut deeply into the domestic demand for natural gas.

Before 1995 most of the gas production continued to be a by-product, as associated gas that was produced together with oil. Few non-associated reserves had been developed, and gas production remained secondary to oil. Even with potential sources that could be developed, the construction of a gas pipeline was needed to supply entire areas and cities that had no access to it.¹⁰² In addition, PEMEX's national pipeline network suffered from transportation capacity irregularity. For instance, imported gas from the United States created severe bottlenecks in some places of the main 48-inch pipeline, while having excess capacities in other spots of the pipeline, carrying only a third of its full capacity.¹⁰³

Two factors may be the source of PEMEX's reluctance to develop non-associated natural gas reserves. One was a 1992 explosion in Guadalajara, which killed around two hundred people. The explosion originated when gas leaked from a corroded pipe into the sewer system and combined with sewer fumes, which put in evidence for the world how outdated and inefficient the infrastructure was. The other factor was that

99. Danielle Homant, *Mexico: Constitutional and Political Implications of the 1995 Natural Gas Regulations*, 4 TULSA J. COMP. & INT'L L. 233, 240 (1997).

100. *Id.* at 242. (quoting Andi Spicer, *Increased Prices Could Stimulate Gas Exports*, 199 GAS WORLD INT'L 26 (1994).

101. Secretaría de Energía, *Prospectiva del Mercado de Gas Natural 2005-2014*, <http://www.energia.gob.mx/work/sites/SenerNva/resources/LocalContent/4226/1/ProspectivaGasNatural.pdf>, 39 (last visited Aug. 31, 2006).

102. Javier Estrada Estrada, *Desarrollo y Perspectivas de la Distribución del Gas Natural en México*, in 10 AÑOS DE REGULACIÓN ENERGÉTICA EN MÉXICO 76 (José Carlos Fermat Romero ed., Comisión Reguladora de Energía 2005).

103. Homant, *supra* note 99, at 241.

much capital investment was needed to extract non-associated natural gas. Power plants, which nowadays are major consumers of natural gas as fuel, were the main purchasers of crude oil that was not good enough for export back in those days, so there was little incentive to find and exploit additional sources of natural gas for domestic uses.¹⁰⁴

As evidence of how much investment was needed to expand the transportation pipelines and local distribution networks, Mexico City, one of the largest metropolitan areas in the world, was not connected to residential natural gas systems before 1997. It had to rely on liquid petroleum gas (LPG), a fuel that is dirtier and more dangerous than natural gas.¹⁰⁵

B. 1995 Amendment and New Regulation

As previously stated, up until 1995 PEMEX continued to have a monopoly over distribution, transportation and storage of natural gas. PEMEX was the only entity authorized to build, operate, and own pipelines, as well as the only one with the authorization to import, export, and commercialize natural gas in national territory. This vertically integrated structure resulted in limited domestic exploitation of natural gas.¹⁰⁶ This structure was also a disincentive for additional investment to expand the pipeline distribution system, since PEMEX operated a main transportation pipeline to its own industrial clients, and private PEMEX commissioners operated local distribution companies on a commercial and residential level in cities and towns, restricting this underused system to cities with easier access to natural gas.¹⁰⁷ Despite abundant production as an oil by-product, the lack of a distribution system and consumption forced much gas flaring for the associated gas produced.

The Mexican government saw little need for vigorous regulation, in light of minor exploitation of natural gas and PEMEX control of the market. However, by 1995, it became evident under the Zedillo administration that if any modernization of the industry was to be achieved, a major overhaul of the legal framework of the industry was needed so that it could contribute to Mexico's sustainable development and the population's well-being. A reform of the national energy policy was under way, modifying the then applicable laws governing the industry to match the following political objectives of the National Development Plan for the years 1994 to 2000:

1. defining the activities over which the State would continue to have a monopoly;

104. *Id.* at 241.

105. *Id.* at 243. Additionally, environmental regulations required the phase-out of oil by 50% as of 2005.

106. Olea Hernández, *supra* note 94, at 29.

107. *Id.* at 30.

2. differentiating natural and legal monopolies and considering them as regulated activities; and
3. determining potentially competitive activities, to be market regulated.¹⁰⁸

The essence of the reform was to provide for the participation of private parties in long-term midstream gas activities, previously reserved to PEMEX, promote import and export activities and restructuring, and create the proper institutions for regulating the industry.¹⁰⁹ Many commentators would argue that the Constitution's Article 27 was being "broadly" interpreted in order to allow foreign investment in natural gas activities.

In June 1995 the U.S. Department of Energy sponsored meetings between senior officials of the energy regulatory agencies of Canada, Mexico, and the United States for the purpose of assisting the Mexican agency—the Comisión Reguladora de Energía—in designing a system to regulate the distribution of natural gas in Mexico.¹¹⁰ As described in the preceding two sections, the United States and Canada both have extensive networks of natural gas distribution and decades of experience in complex regulatory issues. Fortunately, Mexico did not go about designing a new gas regulatory system alone: it looked to both the U.S. and the Canadian models, as well as consulting with industrial groups and associations interested in the development of the energy industry.

The importance of the new regulatory system over natural gas cannot be stressed enough. It constituted the first step toward bringing in foreign capital to activities that had been closed off to anyone but PEMEX for the past seventy years. The first decade of implementation of the new regulatory system was significant in terms of the situations that arose and the challenges in regulation that needed to be met, discussed in Part VI below.

C. Origin and Development of CRE

Pursuant to the 1995 reforms, the Regulatory Law of Article 27 was amended and the new Natural Gas Regulations (Regulations) were passed, providing that transportation, distribution, and storage activities of natural gas were to be regulated by the Energy Regulatory Commission (*Comisión Reguladora de Energía*, or *CRE*). This entity was originally created in 1993 with the intention of having an authoritative body independent of the executive power to apply energy regulations. Never-

108. *Id.* at 35.

109. *Id.* at 33.

110. Stephen Zamora, *NAFTA and the Harmonization of Domestic Legal Systems: The Side Effects of Free Trade*, 12 ARIZ. J. INT'L & COMP. L. 401, 418 (1995).

theless, it lacked the necessary technical and operational autonomy to regulate certain aspects of the energy industry, among them natural gas midstream activities, since regulation was still centralized in the Secretary of Energy (formerly the Secretary of Energy, Mines and State Industry), and applied by the Comisión Federal de Electricidad (*CFE*), the government-owned company that produces and supplies power and electricity to the country, in matters of electricity, and PEMEX in matters of oil and gas. The Energy Regulatory Commission Law was passed on October 31, 1995, and the CRE began a new phase in which it now operated with technical and operative autonomy from the executive power.

Similarly to FERC, the CRE was provided with the authority to regulate and promote competitive transportation, distribution, and storage of natural gas, and soon thereafter, CRE issued four principal administrative regulations or Directives regarding: (i) natural gas prices and rates, (ii) accounting of regulated activities, (iii) determination of general distribution zones, and (iv) firsthand sales, plus the official technical and safety standards set out in the official guidelines (*Normas Oficiales Mexicanas* or *NOM*).¹¹¹ This way, regulation activity was concentrated in one authority, as opposed to the past, where several government agencies and entities had some sort of role, since all related attributions were dispersed. The new arrangement provided the first signs of stability and clarity in natural gas regulations.¹¹²

The natural gas reforms did not privatize PEMEX's existing natural gas transportation assets; however, since the network was underutilized, an aggressive disincorporation would have put at risk a scheme in which private capital participated. This would have been reflected as an increase in the services costs to the end user, contradicting the objective of finding efficiency at the lowest possible cost. However, PEMEX did begin a disincorporation process of its local distribution networks and assets, as well as its affiliated distribution companies.¹¹³

The CRE faced significant challenges during its first years. It needed to attempt to merge into the North American electricity market—which was rapidly evolving following deregulation—to align market forces, and to protect consumers, all of which were within the scope of its new authority. Back then, the CRE's objectives were focused on providing an adequate supply of natural gas for the network of independent power plants to be bid upon for construction and supply of electricity, setting up geographic zones of distribution for natural gas, finding the appropriate scheme for firsthand sales, providing competitive conditions for distribu-

111. NOM-003-SECRE-1997 (1997) (Mex.) regulates distribution of natural gas; NOM-007-SECRE-1999 (1999) (Mex.) regulates transportation of natural gas.

112. Olea Hernández, *supra* note 94, at 39.

113. *Id.* at 36.

tion and transportation of natural gas, providing open access to the PEMEX National Pipelines Network (*Sistema Nacional de Gasoductos* or *SNG*), and creating regulations for storage terminals.¹¹⁴

D. Natural Gas Activities Today

Ten years after the natural gas revolution and the creation of an independent government entity to oversee the natural gas midstream activities, significant participation by private entities has been achieved. To this date, 19 open-access transportation permits, 112 independent user permits, and 21 natural gas distribution permits have been granted.¹¹⁵ Although some concerns over pricing issues will be analyzed in Part VII below, in general there is more transparency in prices, rates, and service conditions than at any point in Mexico's history.

The CRE's practice in granting permits has become more sophisticated. It has to take into consideration not only the legal aspects of a permit but also the technical aspects including project engineering, location, safety, and emergency measures, as well as the economic aspects, such as information of the party providing the financing for the project and the commitment and responsibility for it, in order to decide if the permit is to be granted or not.¹¹⁶

Regarding open access, consistent with the idea introduced by FERC Order 436, the requesting party must allow for nondiscriminatory open access limited to available capacity (meaning that capacity which is not effectively used), and the open-access arrangement is made with the end user through a services contract.¹¹⁷

Foreign investment participation in the activities of transportation, distribution, and storage activities also has an effect on the electricity industry, since natural gas satisfied approximately 42% of the public electricity sector's demand for fuel in 2004, compared to 16% in 1994.¹¹⁸ An important objective of the Mexican government's energy policy, as mentioned before, is to encourage its facilities to move from fuel oil to the more environmentally friendly natural gas by building and using combined-cycle gas-fired power plants. In all three North American countries, it has been determined that combined-cycle energy plants fueled by natural gas are the best economically viable option for providing electricity.

114. Fernando Elizondo Barragán, *Prologue to 10 AÑOS DE REGULACIÓN ENERGÉTICA EN MÉXICO 9* (José Carlos Fermat Romero ed., Comisión Reguladora de Energía 2005).

115. FERNANDO CANALES CLARIOND ET AL., PROSPECTIVA DEL MERCADO DE GAS NATURAL 2005-2014, 39 (2006), <http://www.energia.gob.mx/work/sites/SenerNva/resources/LocalContent/4226/1/ProspecticaGasNatural.pdf>. (last visited Oct. 29, 2006).

116. See Reglamento de Gas Natural [Natural Gas Regulations], Diario Oficial de la Federación [D.O.] ch. III, art. 14-58, 8 Noviembre de 1995 (Mex.).

117. See *id.* ch. II, § 2, art. 63-69.

118. Secretaría de Energía, *supra* note 101, at 51.

Consumers in urban centers that had previously been deprived of natural gas have benefited immensely. New users now have an alternative supply source to LPG, which had previously been the only fuel readily available. Natural gas is a safer, cleaner, and for the most part economically better alternative, especially if price volatility can be kept under some control.

E. Mexico's Natural Gas Present Challenges

The initial deregulation of the gas market had many positive impacts. Private distributing companies allowing natural gas to reach more places where it had been lacking an adequate supply system increased transparency in price and service conditions, and new market niches were opened. PEMEX Gas y Petroquímica Básica (PGPB), the PEMEX subdivision in charge of processing natural gas and its products, as well as their transportation, marketing, and storage, has so far disincorporated 858 kilometers of distribution lines and its two distributing private companies and has separated transport from distribution activities, avoiding vertical integration. Additionally, as a result of the post-1995 era, PGPB had to obtain its own permit for the SNG.¹¹⁹

Up to now it has been an adaptation process and a learning experience for every Mexican participant in the industry. The evolution of the regulation of natural gas in Mexico to date does not however, mean that the hard work is over and the regulatory process has been finished. CRE faces many challenges today in terms of bringing together economics and regulation; there is still much room for deregulation in a market that must increasingly be open and accessible, in constant interaction with the rest of the North American market and with an eye for a possible future harmonized system. A few challenges still need to be addressed and will be discussed further in Part VII. For purposes of illustration some of them are:

1. The constant pressure from significant industrial and domestic sectors of the country to find alternative natural gas price formulas. Despite the initial forecasts of becoming an exporting country due to plentiful natural gas resources, Mexico has so far not met the challenges of increasing domestic supply (this because PEMEX still maintains a monopoly over the activities of exploration and production of natural gas, which is subject matter for an entirely separate and extensive analysis) and must import gas primarily from the United States, which is itself an importing country. With the recent permits and bids for LNG regasification terminals, Mexico hopes to

119. Roberto Ramirez Soberon, *Petróleos Mexicanos y la Comisión Reguladora de Energía*, (Oct. 18, 2005), <http://www.cre.gob.mx/diez/2dia/12-rr.pdf>. (last visited Oct. 29, 2006).

obtain a steady supply at a competitive price from faraway regions of the world. In addition, electric power relies heavily on natural gas supply; this sector alone will be consuming 50% of the domestic demand of natural gas, three times the volume consumed ten years ago.¹²⁰

2. Permanent first-hand sales. Such sales are still a regulated monopoly; a redetermination of the first-hand sales price mechanism is necessary.¹²¹
3. Competitive conditions in commercialization and midstream. There is still not an adequate open access to the SNG.¹²²

The next section analyzes NAFTA applicable provisions in natural gas. An important provision to consider is arbitration for midstream gas activities as a dispute resolution.

V. MEXICO AND NAFTA APPLICABLE PROVISIONS

The North American Free Trade Agreement (NAFTA) effective as of January 1, 1994, establishes a free trade area between Mexico, the United States, and Canada. Its objective is to reach an open market area by breaking down barriers to trade, promoting fair competition, and increasing foreign investment.¹²³ Nonetheless, Mexico made an important reservation in its energy chapter Annex 602.3, which provides that the Mexican State reserves certain basic activities; among them, it keeps the constitutional principle of ownership over natural and artificial gas resources, its exploration, exploitation, and production, and first-hand sales of natural gas. Despite these reservations, NAFTA allows foreigners to negotiate specific services contracts with PEMEX and may be paid based on levels of performance.

Through NAFTA, Mexico commits its state companies to “refrain from using their monopoly positions to engage in anti-competitive practices” and not to “discriminate against natural persons or enterprises of another party in the import or export of energy or basic petrochemical goods.”¹²⁴ The massive monopoly of PEMEX that still prevails over its reserved activities and the marketing of natural gas is inconsistent with the NAFTA provision above. But as a result of the 1995 natural gas reform, foreign investment can participate within the limits provided by the Foreign Investment Law in private entities that carry out the activities of

120. Elizondo Barragán, *supra* note 114, at 9.

121. *Id.*

122. *Id.* at 10.

123. North American Free Trade Agreement, U.S.-Can.-Mex., Dec. 17, 1992, 32 I.L.M. 289 (1993).

124. ERNEST E. SMITH ET AL., INTERNATIONAL PETROLEUM TRANSACTIONS 941-42 (2nd ed. 2000).

transportation, storage, and distribution of natural gas. However, PEMEX continues to decide at what stage first-hand sales occur, which can be at the wellhead. Thus U.S. and Canadian companies can participate in these activities, so long as they are done beyond the first-hand sales point.¹²⁵

NAFTA also provides two important features, national treatment obligation and dispute resolution. The national treatment obligation requires the governments of Canada, Mexico, and United States to extend to foreign investors the same treatment as domestic investors and companies. Mexico has the longest list of exceptions to the national treatment obligation because of the hydrocarbon activities reservation, although the Foreign Investment Law has thus been modified to allow the participation of foreign capital, up to certain percentages depending on the specific activity.¹²⁶

The dispute resolution provision is slightly more complex. NAFTA provides for arbitration of disputes between investors and the Mexican government.¹²⁷ This means that instead of pursuing a lawsuit in Mexican courts and under Mexican laws, a foreign investor may bring judicial action or submit the claim to arbitration using the rules of international law, according to the rules of Chapter 11 of NAFTA. This is the first time Mexico has entered into an international agreement providing for investor-state arbitration.¹²⁸ These binding dispute resolution processes for monetary damages before a trade tribunal are litigated before special international arbitration bodies of the World Bank and the United Nations. Therefore, Article 1110 of NAFTA guarantees foreign investors compensation from any direct government expropriation or an action “tantamount to” an “indirect expropriation.”¹²⁹

There have been few cases thus far, most of them related to some aspect of public health or environmental safety, two areas of concern strongly related to any natural gas projects.¹³⁰ While this recourse pro-

125. Homant, *supra* note 99, at 254.

126. Ley de Inversion Extranjera [Foreign Investment Law], Diario Oficial de la Federación [D.O.] 27 Diciembre de 1993 (Mex.).

127. See North American Free Trade Agreement, *supra* note 123, art. 19-20.

128. Gloria L. Sandrino, *The NAFTA Investment Chapter and Foreign Direct Investment in Mexico: A Third World Perspective*, 27 VAND. J. TRANSNAT'L L. 259, 319-20 (1994).

129. Mary Bottari, *NAFTA's Investor "Rights": A Corporate Dream, a Citizen Nightmare*, 22 MULTINATIONAL MONITOR 4, 1 (2001).

130. *Id.* at 2. For instance, in 1999 the Canadian corporation Methanex sued the U.S. government for \$970 million, due to a California executive order phasing out the sale of a Methanex product. Methanex claimed the order violated its special investor rights granted under NAFTA because the California environmental policy limits the corporation's ability to sell MBTE (Methyl Tertiary Butane), a gasoline additive. In an amended claim, Methanex alleged that the California ban discriminated against MTBE in favor of ethanol, a similar U.S. product, and is therefore also a violation of NAFTA's national treatment rules. Methanex brought its NAFTA case before UNCITRAL, the arbitration body of the United Nations. Finally, on August 7, 2005, the panel ruled against Methanex. This case was closely followed due to its implications for

vides some security to protect investors' investments, there are questions about whether governments retain the authority to enact environmental and health controls on foreign investors, and about the powers of local governments.¹³¹

As more foreign companies participate in midstream gas activities because of further deregulation and increased trust in the Mexican market, it will be interesting to see how the tribunals will resolve any claim that should arise and is brought under Chapter 11 of NAFTA. Although the opening provided by the 1995 reform is relatively new compared to the more developed markets of the United States and Canada, there have not been enough cases yet to determine if the dispute resolution provision provides adequate assurances to foreign investors against expropriation and national treatment rules. Though trade barriers have been significantly decreased, whether Mexico, Canada, and the United States can seriously consider engaging in a free trade relationship involving energy goods is yet to be seen.

VI. CURRENT REGULATION CONCERNS IN MEXICO

Right after the implementation of the new 1995 regulation framework, a flurry of successes occurred, particularly in natural gas distribution bids. For example, the Mexicali distribution bid in 1996 attracted a great number of interested parties, and a total of forty companies participated in distribution bids between the years 1996 and 1999.¹³² In 2002 it was a different story, as the Veracruz bid was declared deserted. Even if there have been more transportation permits,¹³³ they seem few when seen in the context of the North America market as a whole.

This lack of interest and stagnancy should be resolved and investment promoted. The regulatory issues discussed below have contributed to

NAFTA's ability to undermine local legislative processes and the public health and environmental legislation resulting from it. In this case, NAFTA did not change any California law environmental provisions.

On the contrary, in a case against the Mexican government, the U.S.-based Metalclad, a waste disposal company, claimed that the State of San Luis Potosí breached Chapter 11 of NAFTA in refusing to grant a permit for a waste disposal facility that the governor declared was part of a 600,000 acre ecological zone. The tribunal ruled in August 2000 against the Mexican government, and awarded Metalclad \$16.7 million. Metalclad proceeded to construct the facility without having local approvals, claiming it had assurances from the Mexican federal government. This is a potential liability, as anytime a company does not have all of the required local authorizations, the local authorities can hinder the company's operations at any time.

131. *Id.*

132. Asociación Mexicana de Gas Natural, A.C., *Evolución y Retos de las Actividades de Transporte, Distribución y Almacenamiento de Gas Natural en México* (Oct. 2005), <http://www.cre.gob.mx/diez/presentaciones/LV-17.pdf> (last visited Oct. 29, 2006).

133. Twenty-three permits have been granted, fifteen are already operating and one is under construction. Comisión Reguladora de Energía, Jorge A. Ocejo Moreno, *La Relación entre el Regulador y las Empresas Reguladas* (Oct. 16, 2005), <http://www.cre.gob.mx/diez/presentaciones/JOM-03.pdf> (last visited Oct. 29, 2006).

holding back a complete transition to a market-based approach and encouraging competitive conditions that would allow the CRE to consolidate an efficient regulatory framework that is consistent with those of the rest of North America. However, some of these issues are particular to Mexico, since the CRE is dealing with regulating a natural monopoly, created by PGPB's control over the pipeline infrastructure, a situation neither FERC nor NEB had to face.¹³⁴

Industries are naturally concerned about financing, fuel prices, and infrastructure, since this has a direct effect on the competitiveness of their own business. The CRE has to factor in this balance of competing interests. After all, it is the CRE's mission to provide an impartial, efficient, and transparent regulatory framework and promotion of the natural gas industry. Therefore, the CRE has to make sure the industry offers quality of service at competitive prices and continuity of supply.¹³⁵ Economically, the effects are protecting the consumer from abuses and indiscriminate price increases; as a regulating authority, it means operating with autonomy and generating trust among industry participants.¹³⁶

The following issues are areas of concern for the CRE for achieving efficient regulatory activity.

A. Commercialization

PEMEX currently has a legal monopoly in the production of natural gas, and a natural monopoly in the SNG, seriously constraining possible competitiveness in the industry. PEMEX has incentives to continue monopolizing the available transport capacity, foreclosing other possible competitors' access to the SNG.¹³⁷

Due to its monopoly status, natural gas commercialization schemes are rigid, whereas most agreements are fundamentally adhesion contracts. The end user is put in a situation in which it cannot effectively defend itself from shortages or sudden price variations. In addition, this lack of supply options limits other contracting schemes, such as long-term agreements, tailor-made services, financing, and hedging, which in turn makes it difficult for end users to adjust to changes in the market.¹³⁸

134. Comisión Reguladora de Energía, *supra* note 133, at 25.

135. Asociación Mexicana de Energía, *Marco Regulatorio del Sector Eléctrico Nacional*, (Oct. 17, 2005), <http://www.cre.gob.mx/diez/presentaciones/EA-18.pdf>. (last visited Oct. 29, 2006).

136. Comisión Reguladora de Energía, *supra* note 133.

137. Olea Hernández, *supra* note 94, at 44.

138. *Id.*

B. Transportation / Open Access

The objective of deregulation was that PEMEX concentrate on exploration and production (E&P) activities and obtain more production. However, PEMEX continues to construct transportation pipelines in association with private investors (for instance, the Samalayuca and San Fernando projects) and foreclosing open access to the SNG by contracting for all its available capacity.¹³⁹

PEMEX is applying valuable resources to an activity that was transferred to private sector development as a result of the 1995 reforms. Natural gas E&P activities, not transportation, should be PEMEX's priority, since together with imports from the United States or LNG suppliers, exploration of non-associated natural gas is vital to offset the projected demand increase.

C. Pricing / Arbitration Point / Market References

There is no question that gas prices are volatile and unpredictable. Setting up a formula for determination of prices is in no way an easy task. From 2000 to August 2005, gas prices have increased 91.45% and 277% overall since 1998. This comes as no surprise, since gas prices at the well-head in the United States shot up from an average of \$2.00 USD/MMBtu at the beginning of 2002 to almost \$7.00 USD/MMBtu in 2005.¹⁴⁰ Several commentators have since criticized indexing the Mexican price of first-hand natural gas sales to the most expensive market in the world and have proposed alternate ways to determine price.

The CRE has the authority to determine the mechanisms for setting natural gas prices, pursuant to Article 8 of the Natural Gas Regulations. Article 8 provides "the maximum price for natural gas subject to a first-hand sale shall be determined by the directives issued by the Commission. The methodology for its determination must reflect the opportunity cost and competitive conditions of gas regarding in the international markets and the place where the sale is made."¹⁴¹

As far as regulating first-hand sales and natural gas prices goes, an immeasurably valuable provision is Article 12 of the Natural Gas Regulations, which provides that:

When at the Commission's judgment there are effective competitive conditions, the terms for first hand sales and gas prices may be freely agreed upon by the parties. If however, under effective competitive

139. *Id.*

140. Francisco de la Isla Corry, *El Debate Sobre el Precio de las Ventas de Primera Mano de Gas Natural*, 10 AÑOS DE REGULACIÓN ENERGÉTICA EN MÉXICO 67 (José Carlos Fermat Romero ed., Comisión Reguladora de Energía 2005).

141. *Reglamento de Gas Natural* [Natural Gas Regulations], Diario Oficial de la Federación [D.O.] ch. III, art. 8, 8 Noviembre de 1995 (Mex.).

conditions the Federal Competition Commission determines that parties are incurring in unduly discriminatory practices, the Commission shall reestablish the price regulations and the terms that govern such sales.

The key in this provision is that parties may not agree by themselves on the prices of first-hand sales until the CRE has determined that effective economic conditions exist. The Regulations are obscure in terms of how the CRE is to come to such a resolution. Political interference and PEMEX's negative influence could give grounds for the CRE never to find that effective economic conditions exist, despite evidence to the contrary.

Therefore, until a resolution of this nature is issued, the current price determination is set out in the First-Hand Sales Directive, which takes into account the free import of gas and the open access to PEMEX interconnections along the border. The cost of opportunity of the first-hand sales price is associated with the markets in the south of Texas, specifically the Houston Ship Channel, with an adjustment for historical prices in the south of Texas and the corresponding transportation charges to the processing plants.¹⁴²

This "netback" cost of opportunity, as it is called in the industry, causes gas flows to commingle at Los Ramones, N.L., and the corrected Houston Ship Channel price is adjusted to reflect this as the arbitration point. The netback reflects the interaction of supply and demand in the North America market. The SNG transportation rates that make up the netback are published and reviewed every five years. However, the sudden increase in prices in the United States caused the government to intervene in providing mitigation alternatives, including long-term hedging and freezing the price at 4 USD/MMBtu for certain long-term contracts.¹⁴³ This caused numerous industry participants to request a review of the netback price setup. In addition, despite the reliability and publicity of the indexes used, the California utilities and Enron crises have seeded uncertainty among investors regarding the truthfulness and efficiency of such data.¹⁴⁴

For its own profitability reasons, PEMEX has the incentive of producing less natural gas and consuming more natural gas south of the arbitration point. The first-hand sales price is only affected as more natural gas is exported into Texas from exceeding northern production, while limiting non-associated gas exploration and production in the south. This allows for manipulations or inefficiencies that translate into an abuse of the

142. de la Isla Corry, *supra* note 140, at 51.

143. *Id.* at 51-53.

144. *Id.* at 65.

monopoly power and costs that are ultimately absorbed by the consumer. PEMEX has argued extensively in favor of moving the arbitration point to the south to Cempoala, Veracruz (south of Los Ramones), since the current natural gas price is not incorporating the real transportation costs and discourages gas imports to be sold south of Los Ramones, since they could not compete at prices sold by PGPB at current market conditions. However, CRE's response was that although there has been a change in geographic demand, it is partly because PEMEX purposefully developed E&P activities in the north and increased its own consumption in the south to maintain pressure over price. Moving the arbitration point would also mean an increase in distance covered by the imported gas through the SNG and higher rates charged as a result.¹⁴⁵

Moreover, PEMEX still vents around 200 mcf of natural gas for lack of sufficient investment in infrastructure, a practice condemned by industry users as another tactic by PEMEX to make less natural gas available to the consumer market.¹⁴⁶

Price increases resulted in transportation rate increases during the five-year review of 2004, causing regulated companies to reduce investment for expanding networks, since there is little justification for additional bids, with no degradation in the service quality.¹⁴⁷ The distribution rates are also affected since the distributor has to pass on the costs of transportation to the consumer within its distribution zone, thus making end users want to rely on other fuel sources and jeopardizing a distributor's clientele for delivering gas.

One alternative to disincorporating the U.S. Houston Ship Channel reference is to establish a "Mexico Price," where PEMEX would have to take on the costs of the gas market as sole supplier and keep the price below the cost of opportunity.¹⁴⁸ Whether such a price is the best alternative to encourage competition is questionable and an issue to be determined by experts in the area. What is certain, however, is that the current price scheme has not fostered the desired competition so far. Also questionable is the usefulness of any sort of fixed rates at all. Consider what Richard J. Price has observed on fixed rates:

In the world of utility ratemaking—and we are seeing this already in the natural gas industry . . . —there are not going to be fixed rates. That is totally inconsistent with the way in which a competitive market functions, and it is incompatible with the kind of very dynamic, volatile market that will exist in this industry in, I believe, no more

145. *Id.* at 61-65.

146. *Id.* at 63.

147. Raul Montefort, *Transporte de Gas Natural* (2005), <http://www.cre.gob.mx/diez/presentaciones/rm-04.pdf>. (last visited Oct. 29, 2006).

148. De la Isla Corry, *supra* note 140, at 66.

than five years. Instead, ratemaking will consist of devising formulas, trying to figure out what formula will produce the best results.¹⁴⁹

Pricing will ultimately depend on: (i) the success of big projects, (ii) the capacity to establish regasification terminals, (iii) successful exploration and production projects, and (iv) oil prices. Any changes in the pricing scheme have to consider how the change will affect existing projects. Moreover, prices have to be consistent with the rest of North America in order to guarantee a steady long-term supply.

The CRE should also take into consideration the U.S. experience in long-term contracts when reviewing or setting up the price mechanism. With an unstable price that rises unexpectedly, transferable costs become a serious issue in long-term contracts and are in danger of becoming stranded costs. No reasonable investor would be willing to enter into long-term contracts without a sense of security regarding his investment. Even more so, no consumer is willing to be the one to bear the risk of stranded costs.

D. Regulating Other Supply Sources

The natural gas demand by the private sector is forecasted to be 9,493 mmpcd in the year 2014, while national supply is forecasted to be 7,704 mmpcd.¹⁵⁰ Generally, there is a steadily growing difference between the supply and demand curves. It is obvious that Mexico needs alternative sources of supply. With not enough natural gas E&P activities carried out by PEMEX to satisfy national demand, the best and most viable solution is liquefied natural gas (LNG).

The supply of LNG into a regasification terminal would mean that additional natural gas would be injected into the SNG, and additional distribution networks would be built around the supply toward new consumer centers in areas that need it the most: the Pacific and the South. Additionally, a steady supply of LNG from a terminal would allow power plants to be built around this source of natural gas, which as discussed previously is a priority in the energy policy.¹⁵¹

If an LNG terminal is going to supply a power plant, or any residential or industrial center, for that matter; there has to be sufficient reliance on the supply source and the storage capacity in the event that something

149. This remark was made at a symposium on Regulatory Decision-Making Reform in Harvard University's John F. Kennedy School of Government in 1995. Ten years later we clearly see the turn prices took in terms of volatility and dynamics. See RICHARD J. PIERCE, JR., REGULATION AND COMPETITION IN NATURAL GAS DISTRIBUTION 37-60 (1990).

150. Secretaría de Energía, *supra* note 101, at 16.

151. Alejandro Breña de la Rosa, *La Industria del Gas Natural Licuado en México, Una Perspectiva Regulatoria*, 10 AÑOS DE REGULACIÓN ENERGÉTICA EN MÉXICO, 91 (José Carlos Fermat Romero ed., Comisión Reguladora de Energía, 2005).

happens along the supply chain. This means reliance on an uninterrupted source or the availability to contract from different sources, the price of gas and transportation tariffs, and confidence in the regulatory framework.

This constitutes a relatively new incursion by Mexico into this type of energy source; it was not until 2002 that several multinationals initially approached the CRE with the idea of developing LNG projects. Agreeing that it is a viable energy source, the CRE determined that the corresponding permit for LNG terminals would be the storage permit. In addition, the CRE had to address the particular requirements of this industry and put together a NOM regarding safety design, construction, operation, and maintenance of LNG terminals, based on the National Fire Protection Association (NFPA) code and other worldwide accepted rules and regulations of this industry, which became NOM-013-SECRE-2004, effective June 17, 2005.¹⁵² Four permits were granted in 2003 to build LNG terminals in Baja California and the Gulf Coast, with other locations currently being studied and a bid under way for a terminal in Manzanillo.

This additional supply source might bring prices down in the future, or at least hold them to less volatile spikes; if excess gas is delivered, Mexico could potentially become a net exporter in the future, even though not all exported gas would be produced domestically. However, pricing remains a matter of concern; it is most probable that LNG at the terminals will be indexed to a market reference. The Pacific terminals are contemplated to be indexed to Henry Hub, but the netback mechanism should be applied to determine a differential price and should take into consideration the transportation rates that PGPB would charge for transporting the gas through its SNG until the supply point is reached.

The LNG experience in Mexico has so far reflected a positive approach to regulating a new industry. The CRE has wisely relied on foreign experience to regulate a totally new field, taking into consideration rules set by the Department of Transportation of the United States, NFPA, the IMO Code for Construction and Equipment of Ships Carrying Liquefied Gases in Bulk, and British standards. Still, the pricing scheme needs to be studied further to avoid passing on unnecessary costs to consumers, and people specialized in this area should be working at CRE/CFE to find faster ways get a project under way.

E. Safety / Environment

Some pipelines are deteriorating and need maintenance, with the risk of leaks and corrosion. This is due in part to a lack of incentive to modernize distribution pipelines prior to the 1995 reforms. Even though the

152. *Id.* at 108.

few private distributors acted as PEMEX concessionaires, the commission paid to the distributor was not enough to cover maintenance or expansion of the network.¹⁵³ Unlike the equivalent U.S. authority, the Mexican Secretary of Transportation does not regulate pipeline safety. Unfortunately, this is tied with the lack of preparedness of normativity personnel. Technical and safety NOMs are usually issued as a result of an accident or safety mishap such as an explosion or a leak, thus they are not preventive measures.

Environmentally, this issue took great importance during NAFTA negotiations, both for U.S. concerns about sulfur emissions at the border and for worldwide concern about climatic change and CO₂ emissions. However, the regulatory authority must balance the nature vs. natural gas debate, providing adequate environmental protection with the advancement of much needed projects for the development of the industry throughout North America. For instance, much of the U.S. Rocky Mountain area, which is estimated to have great reserves, has remained in large part unexplored due to environmental protests about its being a restricted area.¹⁵⁴ In Mexico, the Coronado Island LNG project has been deterred by numerous protests from environmentalist groups.¹⁵⁵ Although concerns are legitimate, environmental protesting discourages many projects from going through.

Although not directly related to regulatory issues, the following matters may constrain their practical implementation.

F. Lack of Cooperation from Local Authorities (State and Municipal)

It is difficult enough to regulate a federal industry—Public Utilities Commissions regulate local distribution and service quality in the United States—however, most natural gas projects also involve some sort of participation by both state governments and municipal authorities. Companies are subject to obtaining corresponding construction permits and environmental assessment reports, paying state/municipal fees, and regularizing rights-of-way. If the corresponding local authorities do not approve of the project or do not find it to be beneficial for their own development or interests, they can seriously hamper or delay the construction of a pipeline or expansion of a distribution network.¹⁵⁶

Some hostilities that have been reported by state and municipal authorities include arbitrariness in granting construction permits, excessive government fees; slowing of procedures through bureaucratic paperwork,

153. *Id.* at 80.

154. James M. Fannon & Frank Fannon, *Energy and the Environment: The Future of Natural Gas in America*, 26 ENERGY L. J. 349, 362-79 (2005).

155. *Id.* at 376.

156. Estrada, *supra* note 102, at 85.

abuse by civil protection authorities, and no good standing in rights-of-way.¹⁵⁷

This hostility would make any investor nervous, and it creates mistrust because of possible inconsistencies between federal authorities and local authorities, and sudden changes of direction taken by one authority, as well as procedural deadlocks.

G. Unfair Competition Practices by LPG Distribution Companies

Traditionally, LPG has been the only source available to certain consumer industrial and residential consumer centers, for both economic and practical reasons of an available distribution network. With the opening of the natural gas industry, owners of LPG transportation and distribution network, have exerted their influence on politicians, out of a desire to protect their own businesses and in order to retain preferential subsidized treatment over natural gas. Such owners have also influenced the public to an extent, inciting fear and misinformation regarding the safety of natural gas. If natural gas is to have a chance at competitive conditions, alternative fuels should have the same legal, price, surveillance, and operation conditions as natural gas.¹⁵⁸

H. Lack of Personnel with Expertise

The natural gas industry is a profoundly complex one. It requires people trained with extensive knowledge of consumer needs, supply availability and economic concepts, not to mention technical expertise far beyond ordinary technology issues. Personnel must be trained and educated in this area, in policy and in setting technology, safety standards, and requirements. Mexico's education platform does not provide for personnel that are technically qualified for supervising such a specialized field.

The CRE should be provided with a budget aimed at the proper training and instruction of personnel. The education and interaction between the other regulatory agencies should be encouraged in order to establish a solid group of people with the technical and economic expertise that this industry requires, which will in turn strengthen the CRE's autonomy and the possibility of identifying instances where it is better to let the market itself call the shots instead of over regulating it.

157. Javier H. Estrada Estrada, *Desarrollo y Perspectivas en la Distribución de Gas Natural en México* (Oct. 17, 2005), <http://www.cre.gob.mx/diez/presentaciones/JE-08.pdf>. (last visited Oct. 29, 2006).

158. Estrada, *supra* note 102, at 84-85.

*I. Suggestions for Improving and
Conforming Regulations with the Industry*

Following are ten suggestions that could improve Mexican deregulation of natural gas and treating it as the key factor in industry development, and moving still further into a market-based regulation approach; some of which are being addressed by the Secretary of Energy in its future development plans. For each different component of this industry, Mexico can look to the U.S.'s and Canada's experiences for answers to particular questions; for instance looking to the U.S. for price controls, unbundling transportation and sale services and cost allocation, and to Canada for its experience on public consultations, the environment, exports and dispute resolutions through settlements.

Increase Gas Supply

An adequate supply guarantees a degree of certainty and security, especially when having diverse supply alternatives. PEMEX should be encouraged to perform more E&P activities, such as the Burgos Multiple Services Contracts. Priority should be given to LNG development, as this will connect supply points with delivery points, independently from the PGPB system. It also allows imports to participate in competitive conditions to gas produced by PGPB.

Create a True Open-Access Market

The lack of available capacity in the current transportation infrastructure is inhibiting distribution projects. Generally, PGPB's participation in transportation activities should be restricted. Open access makes it possible for imports to compete, allows the creation of a secondary market by intermediaries, and creates investment opportunities in the form of expanding distribution zones.

Establish Competitive Pricing

Until individual parties are free to negotiate their own prices under the elusive "effective competitive conditions" set forth in Article 12 of the Regulations, price competitiveness should at least encourage the invisible hand of the market to be incorporated to the rate setting. Structuring the first-hand sales mechanism to imitate adjustments in a competitive market is needed. Buying natural gas produced by PEMEX is currently the only option, with no legislative amendments foreseen anytime in the near future, making supply conditions inflexible. The price formula must reflect the national volume of production, encourage consumption, encourage investment inside and outside Mexico, and develop the industry. The price formula must also reflect the true opportunity cost in order to cre-

ate competitive conditions, or consumers will be reluctant to enter into long-term contracts with transporters and marketers. In light of take-or-pay contracts, if the seller is to give up the right to seek alternative buyers for the buyer's promise to continue to take the gas, providing prices that are attractive to both buyer and seller is the key issue; after all, the fundamental idea is that rates should always be "just and reasonable."

See That Local and Federal Authorities Cooperate

Local authorities must appreciate the benefits that any natural gas project brings to the community, including private investment in infrastructure, increases in the value of property, and obtaining more income from taxes, not to mention that more businesses and residential areas would have access to this fuel source. Local barriers should not get in the way of new projects or the expansion of existing distribution networks, and federal authorities must seek ways to promote cooperation.

Provide Equal Competitive Conditions for Alternative Fuels

If LPG, diesel, and other sources of fuel continue to be subsidized by the government, natural gas is not participating on an equal playing field. The supply conditions in which all these fuels are marketed and distributed should be the same.

Explore Alternate Storage Opportunities

Regarding alternate storage opportunities, Mexico could follow the examples set by industrial consumers in United States and Canada. Many local companies that are consumers in industrial quantities may have the means and resources to store natural gas in salt caverns or sand domes and exhausted reservoirs, and could benefit greatly from permits to store. There are currently two permits granted, but the projects' implementation is detained. CRE should be encouraged to facilitate and deregulate this practice and allow industries to store natural gas in this way.

A good example to follow in storage issues is the one adopted by the United States in its EPACT, deregulating authorizations for new storage facilities by bypassing the requirements for the storage company to prove that it possesses no market power, so long as FERC is satisfied the rates are just, reasonable, and not discriminatory.

Create More Competitive Market Conditions

The CRE should revise and update the directives and NOMs and review transportation tariffs more frequently than every five years. Additionally, it is feasible that many companies in other countries are under the impression that all hydrocarbon activities are carried out by PEMEX

and might not be aware that the gas midstream activities are open to private investment. A road show by the CRE to promote this more open market may be beneficial to attract investment.

Create a Learning Base from the U.S. and Canada Experience

Mexico looked to the U.S.'s and Canada's regulation of the industry, as well as to that of other countries, when the midstream market was opened in 1995. This practice has to continue, since no doubt the CRE has a valuable learning source in the regulatory experience of these two. The United States and Canada are not in the same situation as Mexico, as neither had a massive nationwide legal and natural monopoly to regulate, despite the fact that TCPL historically was the dominant Canadian transportation company. However, any issue that has arisen, whether in pricing, rate bases, supply shortfalls, cross-border pipelines, safety, or the environment, has been addressed by the much more mature gas market industry in those two countries. CRE personnel should be encouraged to further study their experiences, how they resolved particular issues, and whether the solutions applied had beneficial results. This strategy is also tied to the purpose of having knowledgeable people on the subject who can provide sound technical and economical analysis of the industry. The more CRE learns from them, the more the regulatory framework will harmonize with those of others.

Cooperate with FERC and NEB

This cooperation is absolutely crucial. The CRE, FERC, and NEB signed a cooperation agreement in September 2003 for the purpose of openly sharing and exchanging information on regulatory approaches, management practices, developments in energy markets, energy policy contexts, and cross-border projects, plus holding meetings to facilitate the exchange of information.¹⁵⁹ In addition, the North America Energy Working Group, made up of experts in the area of commerce and interconnections of natural gas, has put together a study of the North American gas market and the interaction's among the three countries and the future of the industry.¹⁶⁰ It cannot be stressed enough how pivotal cooperation is to strengthening the North American gas industry. This agree-

159. National Energy Board, *Agreement Regarding Cooperation Amongst the Comision Reguladora de Energia of Mexico, the Federal Energy Regulatory Commission of the United States of America and the National Energy Board of Canada*, (Sept. 26, 2003) http://www.neb-one.gc.ca/ActsRegulations/MOUs/neb_cre_ferc_2003_09_26_e.pdf. (last visited October 29, 2006).

160. *Vision del Mercado de Gas Natural en América del Norte*, (August 2005) <http://www.energia.gob.mx/work/sites/SenerNva/resources/LocalContent/4229/1/visionfinassegundasGN.pdf>. (last visited October 29, 2006).

ment and study and other forms of cooperation should be given serious priority and put into practice.¹⁶¹

Cooperate With All Industry Participants

This kind of cooperation benefits everyone all around, since in this uncertain industry consumers need assurance that their energy needs will be satisfied, and authorities must achieve their purpose to create conditions that provide such security. The CRE and other authorities involved must be encouraged to promote and integrate public consultations into their regulatory processes, whether industrial or residential, by means of open forums or other public participation means, and consumers must be able to present their problems before the authorities and know their interests are being considered. This way the regulating authority has a better perception of what market conditions are and what regulatory deficiencies need to be addressed. Remember Justice Breyer's words: "The opportunity to participate must build confidence, because it builds legitimacy."¹⁶²

VII. CONCLUSION

Natural gas regulation does not exist in a vacuum. It is influenced by complex social, fiscal, technological, and economic factors, on both national and international levels. The government must guarantee that its citizens and industries are supplied with adequate fuel at competitive prices and conditions. It also has to maintain the delicate and fragile balance between supply and demand. Because it is clear, Mexico is not about to give up its sovereignty over natural resources anytime soon, the best provisional solution for providing fuel for the nation is to strengthen the role of PEMEX in regard to E&P activities and to strengthen the role played by the CRE as the regulating authority in matters of natural gas.

Mexico has abundant natural gas resources and, with effective regulation, many options to alternative gas supplies that would benefit not just the country, but the North American market. Overall, the CRE must strive for favorable competitive conditions and avoid excessive regulation that would hinder the development of a much-needed infrastructure to provide industries with fuel that is economically reasonable for their businesses and homeowners with a cheap fuel source for their day-to-day activities, while making an effort to again be a net exporter of natural gas after domestic demand is met.

161. National Energy Board, *supra* note 159.

162. Conference: *Harvard Electricity Policy Group: Regulatory Decisionmaking Reform*, 8 ADMIN. L.J. AM. U. 789, 904 (1995). This seminar was one in a series that addressed the evolution of regulatory institutions in the context of the introduction of competition into the power sector.

The United States and Canada have a long history in regulating natural gas. Mexico can learn from their experiences to face its present and future challenges. Part I discussed briefly what any government should take into consideration when striving for effective regulation. As examined in Part II, the United States went through a period of heavy regulation in particular regarding price controls, and Mexico can examine the problems caused by the energy crisis of the 1970s and solutions (whether they worked or not) brought about through pricing mechanism and cost allocation. Part III explained how Canada had an even more market-based approach to pricing, but how through deregulation it handled particular issues such as exports into the United States, environmental matters and dispute resolution, all the time promoting public participation. Part IV studied the positive impact opening midstream natural gas activities had on the whole, and Part V discussed some provisions to look for in national treatment of natural gas activities and dispute resolution set out in NAFTA. Finally, Part VI analyzed CRE's challenges in the future and possible ways to approach them.

An energy crisis in the near future because of the recent roller-coasting prices of oil is not so far-fetched. The North American countries must work together to keep a harmonized energy market going to the extent possible. Due to Mexico's NAFTA reservations over oil, this goal can only be achieved with the commercialization of natural gas as the fuel of the future. Cooperation and support among the regulatory authorities of each country is critical not only to encourage effective and favorable competitive conditions but also to promote the welfare of all of North America.