

North American Free Trade & Investment Report

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*Biweekly report on legal & financial issues affecting direct investment and
cross-border trade in Mexico, the U.S., and Canada*

Energy

The Mexican Energy Sector

By Miguel Angel Quintana
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(EDITOR'S NOTE: This is part one of a two-part article. Part two will appear in the March 15, 2006 NAFTAIR.)

In 1999 and 2000 the administrations of President Zedillo (1994-2000) and the then new administration of President Fox (2000-2006) faced, what was considered at that time, the unpostponable challenge of expanding and modernizing its energy sector in order to boost Mexico's economic development and to cope with its demographic growth. Between 1999 and 2005, two presidents plus the four major political parties have sent to the Mexican Congress several bills to amend the energy regulatory framework, in particular the power industry. Actually no major energy related reforms, i.e., Constitutional reforms, have been passed; further more it is less likely that such reforms will take place in what remains of President Fox's administration which will end on December 1, 2006.

Not only did the much expected reforms not materialize, in 2001 in an unprecedented event, the Mexican Congress initiated a Constitutional Action against the Executive branch as a result of a Presidential Decree, by means of which the Power Public Service Regulations were amended in order to allow the Federal Commission of Electricity (CFE) to enter into surplus power purchase agreements with self-supply and cogeneration permit holders under which CFE could make capacity and energy payments for purchases in excess of the old 20 MW limit¹. The Mexican Supreme Court of Justice finally ruled the unconstitutionality of the Decree.²

Further, again in an unprecedented event, two legislators from the PRI opposition political party filed, before the Federation Superior Auditor, a claim against acts alleged to be committed by officers from the Energy Regulatory Commission (CRE), from CFE and from the Ministry of Energy (SENER). The alleged violations included irregularities in the issuance of self-supply, cogeneration and independent power production permits. After an extensive audit of all resolutions issued by the CRE (including those resolutions related to granting of power and gas permits), relatively minor irregularities were found which, in the

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opinion of the author, have more of a political tint than actual legal irregularities that may question the validity of the permits as the accusers alleged. In fact, such claim has not prevented petitioners of electricity and gas permits to file their requests for permits, nor have any of the permits granted by CRE been declared unconstitutional or illegal.³

Government Regulations Affecting Industry

So why has no energy reform materialized? Why have not one, but two administrations failed to obtain the approval from the Mexican Congress in order to enact such reforms?

For basically one reason: the lack of political agreement to successfully negotiate any major reforms (e.g., the fiscal, energy and labor reforms) between President Fox's Administration and the opposition (mainly the PRI and PRD political parties). Being fair, the lack of reform must not be entirely attributed to President Fox and his political operators. The opposition, from a Congress where no constitutional reforms may be passed without the PRI's consent, has responded to Fox's initiatives motivated more by political grounds, i.e., party's interests and populism, rather than the best interests of the country, no matter how important the reforms are for the country's development. On the other hand, it has to be said that the Administration has done very little to explain to the public the reason and the merits of an energy reform.

To make energy reforms is not an easy task since according to Mexican law, energy is a strategic area. The Mexican Constitution recognizes the strategic character of the energy industry and therefore it has specific dispositions that give the government complete control over almost all the activities related to the energy industry.

A divided Congress, conformed in its majority by the opposition has made the constitutional reforms an impossible achievement. To amend the Mexican Constitution the favorable vote of two thirds of the Mexican Congress is required, plus the affirmative vote of the majority of the legislatures of the states that make up the Mexican Republic.

Although there are a number of laws, regulations, decrees, resolutions, directives, official norms and other sets of dispositions, we will only refer to the Constitutional dispositions which are the foundations of all legislation affecting the energy industry.

Constitutional Regulations affecting the Oil Industry

In accordance with the Constitution and the energy regulatory legislation, (i) the direct domain (ownership) of the oil and of all the solid, liquid and gaseous hydrogen carbides (Hydrocarbons) corresponds to the Mexican Nation; (ii) regarding oil and hydrocarbons, no concessions or contracts shall be granted (nor shall subsist those previously granted), and the Mexican Nation shall carry out the exploitation of such goods in accordance with the substantive law; and (iii) the functions carried out by the Mexican State regarding oil, hydrocarbons and basic petrochemicals are considered strategic and do not constitute a monopoly.⁴

Further, oil and hydrocarbons shall be exclusively exploited by the Mexican Nation through Pemex and its subsidiaries; such exploitation constitutes the *Oil*

Industry. The Oil Industry comprehends: (i) the exploration, exploitation, refining, transportation, storage, distribution and first-hand sale of oil and by-products of oil obtained through its refining; (ii) the exploration, exploitation, preparation and first-hand sale of gas, as well as the transportation and storage that may be essential and necessary to interconnect its exploitation and preparation; and (iii) the preparation, transportation, storage, distribution and first-hand sale of those byproducts of oil and gas that may be used as basic industrial raw material and that constitute basic petrochemicals (Ethane; Propane; Butane; Pentane; Hexane; Heptane; Raw material for carbon black; Naphthas; and Methane (when derived from hydrocarbons, obtained from deposits located in the national territory and used as raw material in petrochemical industrial processes).⁵

Important amendments to the legal framework regarding natural gas had taken place since 1995, beginning with the amendments to the Oil Regulatory Law which came into force in May of 1995 and which allows private investment in transportation, storage and distribution of natural gas, including the construction, operation and ownership of pipelines, facilities and equipments, which in the past were activities reserved to Pemex.⁶

Constitutional Regulations Affecting the Power Industry

The Constitution and the energy regulatory legislation sets forth (i) the Mexican Nation's exclusive right to generate, conduct, transform, distribute and supply electric power which is to be used for public service; (ii) that no concessions shall be granted regarding the electric power public service; and (iii) that the functions carried out by the State regarding the electric power public service are considered as strategic and do not constitute a monopoly.⁷

The 1975 Electric Power Law was amended in 1992 and its regulations were enacted in 1993, in order to attract private investment. Amendments basically defined activities that were not considered as public service, therefore, may be carried out by Mexican and foreign private entities; such activities are: (i) power generation through any of following schemes: (a) self-supply; (b) cogeneration, either for self-consumption or to export power; (c) small production for self-consumption, to sell power to CFE, or to export it; (d) independent power producer, either to sell power to CFE, or to export it; and (e) generation of power for interruptions in the service; and (ii) importation of power for self-consumption.⁸

Developments with the Energy Industry

Notwithstanding the lack of an integral energy reform, there have been a number of developments in the last decade. Most of them have been developed by private investment, mainly foreign investment.

Natural Gas

NG Transportation & Distribution

CRE has granted 150 current permits for transportation and distribution of natural gas for private companies which represent investment commitments of 2.48 Billion Dollars, as follows:⁹

- (i) 110 permits for own use transportation which represent 772.4 km ; 5,652 mmpcd; and an approximate investment in the order of USD 2,37.8 MM
- (ii) 19 permits (2 for Pemex gas and Petroquímica Básica and the remaining 17 to private entities) for transportation for public service (open access) which represent 11,315.6 km,; 11,241.6 mmpcd and an approximate investment in the order of USD 1,807.1 MM
- (iii) 21 permits for distribution which represents 40,957 km, 1,130.3 mmpcd, and an approximate investment in the order of USD 441.2 MM
- (iv) 4 permits for storage (liquefied natural gas terminals) which represents 3450 mmpcd and approximate investment of USD 2,613.6 MM

Permit holders are companies mainly from Belgium (Tractebel), Canada (Transcanada), France (Gaz de France), Mexico (Pemex, CFE), Spain (Repsol, Iberdrola) and the United States.

LNG Storage

CRE has granted 4 current permits to private companies for storage of natural gas regarding regasification terminal plants which represent investment commitments of 2.6 Billion Dollars. The first LMG terminal in Altamira owned by Shell, to serve mainly the Altamira V, Tuxpan V and Tamazunchale power plants is expected to start operations in 2006; two other terminals in Ensenada are expected to start operations in 2007, and the fourth permit was granted to Chevron Texaco for a project to be located in Islas Coronado and it was initially expected to start operations in 2008.¹⁰

Multiple Services Agreements (CSMs)

In order to further develop the Burgos Basin to increase the production of non-associated natural gas, Pemex Exploración and Producción (PEP) started in 2003 the CSM scheme. A CSM is a public works agreement under which several services are contracted in one single agreement; the contractor receives a fixed

price (unitary prices) for the works performed and the services granted (no risk sharing, no profit sharing; no percentages on the products, neither participation on the production).

In the first round of CMSs 7 Blocks were put up for bid in the Burgos Basin (Coahuila, Nuevo León and Tamaulipas). Only 5 blocks were awarded (USD 4,300 MM):

- (i) Reynosa-Monterrey block / Repsol
- (ii) Cuervito block / Consortium Grupo Diavaz-Petrobras- Teikoku Oil.
- (iii) Fronterizo block / Consortium Grupo Diavaz-Petrobras- Teikoku Oil.
- (iv) Misión / Consortium Industria Perforadora de Campeche (IPC) – Techint - Tecpetrol.
- (v) Olmos / Lewis Energy Group.

In the second round of CMSs 4 Blocks were put up for bid in the Burgos Basin. Only 3 blocks were awarded:

- (i) Pandura-Anahúac block / IPC - Compañía de Desarrollo y Servicios Petroleros
- (ii) Monclova block / Consortium Hulera Mexicana, Energy Millennium, Andrews Technologies de México (México); Yuma Exploration and Production Inc. y Aries Operating LP.
- (iii) Pirineo block / Consortium Constructora Industrial Monclova, Materiales la Gloria, Alliance Petroleum and Steel Serv. (México); Suelopetrol and NCT Estudios y Proyectos (Venezuela); Petrotesting Colombia (Colombia)

SENER expects that the 8 awarded contracts shall represent an investment of USD 6,300 MM and an increase in the national production of natural gas in the order of 655 mmpcd.

¹ It is important to point out that before the Decree, CFE could execute power purchase agreements with self-supply and cogeneration permit holders in which capacity and energy payments may be agreed upon provided that the permit holders have energy surpluses of 20 MW or less; with those permit holders with surpluses of more than 20 MW, CFE may only agree to buy/pay power (but no payments for capacity); the Decree amended such possibility by allowing the parties to establish capacity payments, among other changes.

² As the Supreme Court finally ruled the unconstitutionality of the Decree, the dispositions related to the selling of surplus power as established in the Power Public Service Regulations before the Decree continue in effect. Although the constitutionality of the Power Public Service Law (and particularly of its dispositions that establishes the activities that are not considered as public service and therefore being carried out by private investment), was not part of the resolution of the Supreme Court, as it was not a part of the *litis*, of great relevance were some constitutional considerations made by some of the judges who questioned the

constitutionality of the 1992 amendments to the Power Public Service Law. Please refer to "Reorganization of the Mexican Electricity Sector: the Need to Review the Regulatory Framework" by this author (Journal of Energy & Natural Resources; International Bar Association; Vol. 21 No. 3, August 2003).

³ Please refer to "Consideraciones sobre la Denuncia de Hechos presentada ante la Auditoria Superior de la Federación en Materia de Energía Eléctrica by the autor and other authors (Ener Legis; Academia Mexicana de Derecho Energetico; No. 2; 2003).

⁴ Articles 27 and 28 of the Mexican Constitution; Article 1 of the Oil Regulatory Law; Article 1 of the Pemex Law; likewise, Article 5 of the Foreign investment Law (FIL) reserves the strategic activities of oil, hydrocarbons and basic petrochemicals to the Mexican State; further, the FIL establishes that LO gas (Gas LP) distribution and gasoline retail sales is an activity reserved to Mexican nationals, provided further that Foreign Investment may not participate directly in such activity or in Mexican corporations engaged in the same activity, nor through trusts, contracts, partnerships or by-law agreements, pyramiding plans, or other mechanisms granting any control or equity, except through the Neutral Investment scheme.

⁵ Articles 2 and 3 of the Oil Regulatory Law; Article 3 of the Oil Regulations.

⁶ Article 4 of the Oil Regulatory Law; please note that Pemex-Gas and Petroquímica Básica remains in charge of the exploration, exploitation, elaboration and first hand sales of gas, as well as the essential transportation and storage to interconnect its exploitation and elaboration

⁷ Articles 27 and 28 of the Mexican Constitution; Article 1 of the Power Public Service Law.

⁸ Articles 3 and 36 of the Power Public Service Law, and Article 72 of the Power Public Service Regulations. For detailed analysis of the self-supply, cogeneration, independent power production, small production and importation

of power schemes you may consult from the author "The Legal Framework for Energy in Mexico" published in the IFLR Guide to Mexico, January 1, 2002.

⁹ Numbers up to June 2005, source: "Prospectiva del Mercado de Gas Natural 2005-2014", SENER.

¹⁰ Numbers up to June 2005, source: "Prospectiva del Mercado de Gas Natural 2005-2014", SENER.

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Power

Installed Capacity

According to the latest published official numbers,¹ Mexico's effective installed capacity amounted to 53,561 MW which represented an increase of 5% in respect to the previous year, mainly due to independent power production projects (IPP). The national gross generation of power amounted to 208,634 GWh which represented an increase of 2.5% in respect to the previous year.

Of the total national effective installed capacity, 87% correspond to power destined for the public service (17% to private IPPs), and the remaining 13% corresponds to projects developed under legal schemes not considered as public service, structured as follows:

Power for the Public Service

- 71% (from 74.4% in the previous year) of the total national capacity is owned by CFE;
- 14% (from 13.6% in the previous year) of the total national capacity correspond to IPPs projects developed mainly by European, Japanese and American companies;
- 2% (from 1.7% in the previous year) of the total national capacity is owned by *Luz y Fuerza del Centro*, the other governmental owned utility.

Power Derived from Projects not Considered as Public Service

- 7% (from 6.3% in the previous year) of the total national capacity correspond to Self-supply projects;
- 3% (from 2.9% in the previous year) of the total national capacity to Cogeneration schemes;
- 2% of the total national capacity correspond to Export projects, and
- 1% (from 1.2% in the previous year) of the total national capacity corresponds to small power projects dated before the 1992 reforms to the Electric Power Law.

Generation

Generation of Power in 2004 increased to 235,600 GWh of which CFE and LFC contributed 68.4%, IPPs 20.1%, self-suppliers 5.9%, cogenerators 3%, exporters 1.9% and small producers 0.6%. In other words, approximately 30% of the power generated in Mexico is generated by private investors.

Permitting

There are 330 current permits issued by CRE, of which 296 are in operation, 31 under construction and 3 are inactive, with a total authorized capacity of 15,405 MW (in operation) as follows:

- (i) 59 permits correspond to continue own use (pre 1992) which amounts to 594MW of which 574 MW are in operation;
- (ii) 21 permits for IPP projects which amounts to 12,557MW of which 8,212 MW are in operation;
- (iii) 148 permits for Self-supply which amounts to 4,682 MW of which 3,678 MW are in operation;
- (iv) 34 permits for Cogeneration which amounts to 2,117 MW of which 1,427 MW are in operation;
- (v) 5 permits for Exportation which amounts to 1630 MW of which 1330 MW are in operation;

(vi) 27 permits for Importation which amounts to a maximum demand of 184 MW.

Permit holders include a number of domestic (Mexican) and foreign companies. The big projects, under the IPP scheme, have been developed by big players such as Iberdrola (Spain), Electricite de France (France), Union Fenosa (Spain), Mitsubishi (Japan), Transalta, Interger, AES, etc. ²

Consumption

It is expected that the national consumption of power for the period 2005-2014 shall increase from 183.9 TWh to 305.1 TWh which represents an annual growth rate of 5.2% during such period; it is further expected that CFE and LFC shall require during the same period 22,574 MW for the public service to cope

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with the expected demand. Considering additional capacity from self-supply and cogeneration projects (including projects developed by Pemex) as well as the retirement of old power plants (5,108 MW) the expected installed capacity of the national electric system shall amount to 64,564 MW in 2014.

Pemex Cogeneration

After a very long debate, finally on January 12, 2006 it was published in the Official Gazette of the Federation the amendments to the Oil Regulatory Law and the Pemex and Subsidiaries Organic Law that shall permit Pemex and its subsidiaries to develop cogeneration projects (thermal and electric energy, typically in the form of steam and power) and to sell its surplus power to CFE and LFC.

The reform shall allow Pemex and its subsidiaries to generate power under a different scheme to the one established in the Power Public Service Law, i.e., firstly to satisfy its own power and steam requirements without paying expensive bills to CFE, and secondly to freely sell its surpluses of power to CFE and LFC without the 20 MW limit on energy and capacity payments imposed to other cogeneration permit holders under the "regular" scheme of the Power Public Service Law.

The Current Pemex cogeneration installed capacity is 1,748 MW, mainly through conventional systems

of low efficiency (mainly using heavy fuel oils). According to the 2005 Mexican Senate Evaluation Report, Pemex's potential cogeneration capacity, based on its productive processes steam requirements (6,800 steam tons per hour), may be in the order of 4,000 MW of which 1,400 MW may be used for self-supply with the remaining 2,600 MW to be sold to CFE and LFC. Based on such Report, it is possible to install modular plants with a capacity of 350 MW in 4 of the major refineries with an estimated investment of USD 1,700 MM, while the remaining 2,600 MW may cost USD 3,300 MM, so that the total estimated investment to develop cogeneration projects with an aggregate output of 4,000 MW is around USD 5,000 MM (depending on the quality of fuels location of the plant and the technology).

Conclusion

During the current administration, which started on December 1, 2000 and will end on December 1, 2006, the Mexican economy did not grow as expected, notwithstanding the expectations and President Fox's promise to grow the GDP at 7% a year at the beginning of his Administration. It did not grow mainly because of the lack of major strategic reforms such as energy, fiscal and labor reforms; other reasons may be attributable to the world economic scenario (the slowdown of the American economy in 2000 and 2001), and the competition from other emerging economies (mainly China and India).

The Mexican oil sector is in bad shape notwithstanding the high oil prices. Pemex income from the selling of oil amounted a record USD 28,000 MM during 2005. It is hard to expect that high oil prices will continue, so most likely the prices will start to slow down sooner or later. Tax policies have dried out Pemex resources preventing Pemex from investing in much needed exploration and infrastructure. Further, it is expected that the Mexican production of crude shall decrease from the end of 2006 or the beginning of 2007 (as a consequence of the declining of the Cantarell oil field). As a result of the above, the main fuel, natural gas, as well as some hydrocarbons derivatives such as gasoline have become expensive commodities in Mexico.

The power sector is a bit better. Although the current installed capacity, which includes various power plants developed by private investment under the scheme of independent power production, together with CFE and LFC's own generation capacity, have satisfied the national demand of power at least for the time being and to some extent.

Notwithstanding Mexico's financial stability due to a disciplined control of public expenditure and

finances and tight control of the inflation; to huge resources derived from the high prices of the oil, from the remittances from Mexican workers working in the US (USD 18,000 MM) and from direct foreign investment in Mexico (USD 12,000 MM), it is only with structural reforms that Mexico's future can be redirected towards growth. Labor legislation makes labor relationships expensive, this in turn helps to create incentives for informal markets and informal jobs (about 50% of the working age Mexicans); large informal markets mean lower collection of taxes. To mitigate the lower collection of taxes the Mexican Government has to compensate by taking resources from Pemex income, but by doing that Pemex is short cash for exploration, research and development, etc. (not counting corruption scandals involving energy unions). If there are no reforms that will redirect Mexico into a higher economic growth, the Mexican economy will not be able to absorb all entrants into the formal labor force. And so goes the circle, on and on.

Those structural reforms have to be in the fiscal, energy and labor fronts. Energy reform does not need to imply a privatization of the sector (which should not be expected any time soon), however it has to include constitutional changes as well as changes to the substantive laws in order to give Pemex, CFE and LFC more budgetary, financial and operational freedom, allowing such entities to invest more in what is needed to grow their activities, and at the same time such reform must permit private investment to perform activities currently reserved exclusively to Pemex, CFE and LFC.

It remains to be seen how the new President to be elected in the July 2006 elections will face the structural reforms and how those reforms, if any, will be structured. As we have seen in the current *sexenio*,

what it is certain is that without political agreements there are no reforms. Next July, more than ever, the vote of the Mexicans for the members of both Houses of the Congress will be as important as the vote for president.

¹ Numbers by SENER up to December 2004

² Numbers up to December 2004, source: "*Prospectiva del Sector Eléctrico Nacional 2005-2014*", SENER.

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