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THE FORMATION OF INTERNATIONAL ENERGY TRANSACTIONS

STUART BROOM*

I. INTRODUCTION

Clarity and predictability are the two primary issues that need to be addressed relating to energy transactions in Mexico. I will highlight the main financing issues, the legal issues, and the economic risks that can hinder development. These energy issues will be explored through a discussion of specific projects developed by companies such as General Motors (GM) and Delphi. Both companies carry out extensive energy transactions in Mexico. The discussion will focus on the practical side of what they do, what they look at, and what they have to consider when developing both short-term and long-term plans for energy transactions.

II. ENERGY INFRASTRUCTURE AND COSTS

In the United States, most major manufacturing corporations have two major issues: (1) how to control pension plans, and (2) how to control energy costs. With regard to controlling energy costs in the U.S., there must be constant planning and concrete implementation. Mexico works in very much the same way. In Mexico, the largest concerns are the lack of clarity and predictability. These points will be demonstrated through a general discussion of major GM projects.

First, let us address the current situation in Mexico. The *Comisión Federal de Electricidad* (CFE) is the national utility organization.¹ However, the CFE in Mexico has very limited reserve capacity and does not have enough power plants to meet excess demand. Basically, they have just enough capacity to meet immediate demand, but without much margin. New power plants are being developed, but people are relying primarily on independent power producers to create new plants. This presents many problems because given CFE's existing power supply and the

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1. The Federal Electric Commission Law established the framework for the CFE (Federal Electricity Commission) on August 24, 1937. After amendments to the Mexican Constitution (Articles 27 and 28) in the 1940's two entities, CFE and a smaller company called *Luz y Fuerza del Centro* (LFC or Central Light and Power Company), became the primary operating firms in the Mexican electricity industry. The industry is primarily under the control of CFE, which is a vertically integrated firm controlling most of the generation, transmission, and distribution of electricity in Mexico. The remaining industry is controlled by LFC, which is also government-owned. Internal Data from *Comisión Federal de Electricidad y Cemex, S.A. de C.V.*, Energy Department; see also Peter Hartley, *Privatization and reform of the electricity industry: How Mexico can learn from the mistakes of others*, Working Paper, Rice University James A. Baker III Institute for Public Policy, available at http://www.rice.edu/energy/publications/docs/Hartley_PrivatizationReformElectricityMexico.pdf (last visited Feb. 18, 2005)(describing arguments for and against privatization of the energy industry).

current slow pace of development in independent power production (IPP),² producers are not in a particularly good position in Mexico. Additionally, extensive planning is required because Mexican energy use is significantly affected by a shortage of natural gas. Mexico has primarily relied on the importation of natural gas from the United States. Yet given the current energy situation, the restrictions and requirements for importing natural gas have become tighter. Mexico is now looking at obtaining four liquefied natural gas terminals. Even if things go well those terminals probably will not be on line at the earliest for another four years. Given this difficult situation what can corporations such as Delphi and GM do?

CFE is giving permits to international power plant developers that CFE relies on to build plants. The problem is that at least some Mexican Supreme Court decisions have brought the constitutionality of these permits into doubt.³ A question of great concern is whether a permit will be revoked once it is issued. In order to answer that question we must look down the chain a little bit to the financing entities—to the bankers. The bankers often get cold feet when deciding to lend money because they want clean opinions and want to know there are not going to be future problems. The bankers need to know that the permit will not be revoked and that they will eventually get their revenue stream.⁴ If the permit is revoked where will the financiers get revenue to pay for the debt service? So the permits are another issue that can be very troublesome. The difficulty of financing projects and the lack of infrastructure are only some of the major obstacles that companies must overcome. The bottom line is that there are legal issues, financing issues, and economic risks that all cloud development. All play a part in defining energy transactions. As a result, if there is an energy shortage the industry will be the first to experience problems because it will be required to supply the commercial sector first and then the residential sector.

2. Independent power production (IPP) is a financing scheme which allows private companies to develop, design, build and operate a plant that delivers energy to the CFE. The associated capacity and energy are purchased by the CFE for a period of twenty to twenty-five years through a bidding process. The plant remains the property of the private investors. See Miguel G. Breceda-Lapeyre, "Private Investment in Mexico's electricity sector," Commission for Environmental Cooperation, Economy and Trade Program available at http://www.cec.org/files/PDF/ECONOMY/mbinvest_en.pdf (last visited Feb. 18, 2005); See also *Secretaría de Energía, "Prospectiva del Sector Eléctrico 2001-2010"* available at www.energia.gob.mx (last visited Feb. 18, 2005).

3. In 2002 President Vicente Fox's administration proposed several amendments to the Mexican Constitution to facilitate privatization of the nation's electricity industry. Some opponents of privatization have criticized the recent changes and questioned their constitutionality. However, even before the proposed amendments there was heated discussion for many years about the privatization of the energy sector. Cf. Lic. Ramiro Villarreal Morales, A Legal Analysis of the Proposed Privatization of the Mexican Electricity Industry, 8 U.S.-Mex. L.J. 59 (2000); see also John P. Mathis and Miguel S. Escobedo, Mexico's Open Door to Cogeneration and Independent Power, 14 Energy L.J. 285 (1993) (describing some independent power projects in Mexico).

4. See Richard J. Gilbert et al., Introduction, in *International Comparisons of Electricity Regulation* 1, 3-4 (Richard J. Gilbert & Edward P. Kahn eds., 1996) (arguing that a critical factor influencing investment in the electricity sector is investor confidence "that the asset would not be expropriated, either explicitly or implicitly, through a stream of returns that would not be sufficiently remunerative"); see also Michael Kohler, "The Ambit of FERC Jurisdiction Over Electricity Contracts During Insolvency: Bankruptcy Jurisdiction and the "Just and Reasonable" Directive, 104 Colum. L. Rev. 1947 (2004) (describing why financial considerations are important when applying for permits).

III. ENERGY SHORTAGES AND SELF-SUPPLY⁵

There are basically two alternatives for dealing with energy shortages. The first alternative is to import power. The second alternative is to use the Mexican self-supply law.⁶ The importation of power should be addressed first because there are important problems to be discussed.

Importation of Power

When dealing with imported power, CFE appears to be uncomfortable with wheeling⁷ at retail versus wheeling for its own use and sale. If CFE is getting the power and reselling it that is not problematic. However, if they are receiving power directly from the United States, wheeling it for someone else, and then putting it up for sale to a private industry, that is more problematic. There are also issues as to what we call north-south transmission. In other words, is there enough capacity on the lines? That issue is unresolved, but there must be enough line capacity to wheel the power. At present there appears to be enough capacity.

In addition, companies must procure a purchase permit from CFE. There are many issues of backup power that are still unresolved in this area. The major concerns are primarily what if the power does not come and will there be backup power to provide to an industrial customer who may be buying it? With the North American Free Trade Agreement,⁸ there are also taxes and fee risks, which are a little clearer. For example, if you export power from Texas to Mexico there will not be a sales tax. Although there are no import fees now, that can always change and be added to NAFTA. There are also issues related to importing power. For example, GM was looking at a TECO plant to import power from McAllen, Texas.⁹ However, that plan worked only on an emergency basis and we could not get very far on it with CFE. These are issues that still remain to be resolved.

5. Self-supply refers to the utilization of electrical energy for one's own consumption, as long as the electricity comes from facilities destined to provide for the needs of a given group of co-owners and partners. See Law for the Public Service of Electrical Energy (LSPEE), or *Ley del Servicio Público de Energía Eléctrica*, D.O., December 22, 1975. For more information see the webpage of the Mexican Ministry of Energy at http://www.energia.gob.mx/ingles/index_elec.html (last visited April 8, 2005)(listing requirements for self-supply and Mexico's important energy laws).

6. See Law for the Public Service of Electrical Energy, *supra* note 5. The law requires that electricity self-supply meet the private needs of individuals or corporations and that it not affect national interests. When there are various applicants for self-supply from a given power plant, they will be co-owners of the facility or they will form the corporation with the purpose of generating electricity to satisfy the self-supply needs of the shareholders. In the latter case, the corporation shall not deliver energy to third parties that were not shareholders at the time the permit was granted. This includes any expansion plans, except when the assignment of the shares or the amendment to the original plans is approved. The applicants must make any excess energy available to the CFE.

7. "Wheeling" is the transmission of power from one generator to its destination in a particular industry. The wheeling occurs on CFE's lines. GM does not own the lines so CFE transmits power over its lines to the ultimate consumer.

8. North American Free Trade Agreement, Dec. 17, 1992, U.S.-Can.-Mex., 32 I.L.M. 605, available at <http://www.nppc.org/resources/glossary.html#n> (last visited April 8, 2005). NAFTA is a trade agreement between Canada, Mexico, and the United States, implemented on January 1, 1994, with a fifteen-year transition period.

9. The TECO power plant was built by TECO Power Services. TECO Power Services is a wholly owned subsidiary of TECO Energy, a diversified, energy-related holding company headquartered in Tampa, Florida. See webpage at <http://www.globalmanufacture.net/home/news/teco.cfm> (last visited April 8, 2005)(describing the TECO plant project).

Self-Supply Law

Currently, the primary route being used to find alternatives to CFE is what we call self-supply. Self-supply is essentially what the word implies: companies produce and consume their own power. Hypothetically speaking, Corporation X in Mexico builds a 100-megawatt power plant. Then if GM in Mexico wants some of that power it can buy a share or partnership interest in that corporation, for 100 pesos, and become self-supplied.¹⁰ GM can be added to the permit and the inter-connection agreement, so CFE will inter-connect with it, and GM will get that power wheeled to it.

How do companies qualify for self-supply? A purchasing company must buy at least a share or a partnership interest in the generating company, but there may be more than one generating company. In order to qualify a purchaser must buy a share in each generating company that will provide power to the company. If there are multiple providers, a single share of one generating company will not be enough. This allows the generating company to enter into an inter-connection agreement with CFE for that share purchaser. That share is transferable by the purchaser. However, once a permit is obtained with CFE under an inter-connection agreement to receive power, when the company comes to the end of the contract it will take about six months for that permit to expire. Companies must plan in advance because if they happen to go past the normal expiration period, or if they default and terminate, they may be required to continue for another six months.

Given that this particular method of self-supply has problems, why is it so attractive to companies like GM? Because corporations for the most part are not building their own power plants since it involves large amounts of initial capital investment, commitments of debt service for probably fifteen or twenty years, and other complex factors. These commitments generally do not make a lot of economic sense, so companies are reluctant to build. However, some companies are building power plants. For example, Semex has built a 230-megawatt petroleum-coke plant. That plant is oversized right now for the needs of Semex.¹¹ Since GM probably will not build a power plant and Semex needs to sell off its excess energy, the two companies will enter into self-supply arrangements. This solution benefits GM because there is no risk, meaning that if GM drops out tomorrow, it will not feel an impact other than going back to CFE. GM looks to short-term contracts because as the market keeps constricting and expanding, it allows the company to flow with the market place and energy demands. GM likely will not enter into long-term contracts at this point. Many corporations, such as Delphi, are taking a similar approach to that of GM.

Self-supply is attractive because it can reduce energy costs without any capital investment. It can be a significant wedge against CFE rate increases, depending on the structure of the contract. A correctly structured contract will have little-to-no exposure to negative savings. Self-supply also offers the flexibility of entering into short-term or long-term power-purchase agreements. If the power is not self-consumed, companies may sell it off to CFE at an attractive rate.

10. For an explanation of the self-supply law see *supra* note 5.

11. I am just using Semex to illustrate this point because there are other corporations in a similar vein that may have power to sell to others.

So far GM and Delphi have entered into about a dozen power-purchase agreements. They want to explore short-term opportunities with little or no risk and to obtain power-purchase agreements that provide them with guaranteed savings. In order to keep costs under control and to make energy transactions more efficient, in recent years these companies have looked at several different opportunities and options such as using wind power, building new plants, and making agreements in other areas.

IV. ENERGY PROJECTS

I will address some specific projects to provide examples of how the concepts we discussed above apply to major corporations in Mexico that are doing extensive business and/or are major electricity consumers. GM has recently entered into contracts with several hydro developers. How can hydroelectric dams mitigate the problem of rising costs during peak periods?¹² A hydro developer can provide power during peak periods. First, think about the cost of fuel. Since the source of energy is running water it is essentially free fuel. The only thing that is going to stop it is an uncontrollable factor such as drought or agricultural use for irrigation in Mexico. So if hydroelectric dams are managed correctly, the water can be stored until a peak period and then used to generate power at a price below that of CFE. GM will get significant savings from this energy-producing method by avoiding high power costs during peak periods. A company may mitigate rising costs if it can obtain supplied power from an alternative source during a peak period. Peak periods can last anywhere from days to months to even years. Peak periods may even occur at different times within a single day. Non-peak periods are usually midnight to six o'clock when demand is low. In contrast, a peak period usually occurs at noon on a regular day when demand is high.

During non-peak periods companies may have to buy from CFE or other energy companies because dams do not want to supply during non-peak periods. However, the price cannot be any higher than the applicable CFE rate for the same period. So energy consumers cannot lose. The highest price they will pay is the CFE rate at the time. By its very nature, the transaction will only be a short-term contract. Several companies have entered into such agreements. Those companies that do so are merely off-takers.¹³ They are not the companies that will be supplied for the duration (ten to twenty years) of the financing. Companies like GM would rather utilize short-term models in order to respond to the contraction and expansion of the energy market and evolving laws and regulations in Mexico.

GM has also found one other short-term model useful. It signed a contract with another major corporation and structured the agreement so that GM gets a guaranteed percentage discount off the price of the energy it would have theoretically bought from CFE during the same period. The other company supplies power to GM during peak periods by performing what is called a load shift. In other words, by using less power itself, the other company can supply GM with the extra

12. A peak period occurs when there is maximum demand on CFE's system. As demand increases so do costs.

13. These are companies that enter into contracts with other companies that have excess energy to sell.

power. The company guarantees the power whether or not it is actually able to provide it. This kind of agreement provides guaranteed energy in the short term without excessive risks.

Lastly, I will discuss energy banks.¹⁴ Energy banks present many issues that corporations should be aware of because an energy bank concept is always built into the contracts. Energy banks have been authorized by CFE but to my knowledge have not yet been implemented in Mexico. I cannot go into much detail because CFE's rules are quite vague. GM has set up a banking system whereby the power supplier has to implement the bank as soon as GM requests it, within certain set parameters.

There are a lot of issues that have not been resolved by CFE but still need to be addressed. I will quickly highlight some of the main issues: Is Bank X generating a plan? Who controls the bank? Is there a generator? How many may participate? If there are many different participants who gets preference among the participants? If a company deposits power into the bank can it withdraw more than it put in or is it limited only to what it deposited? What kind of power can be deposited, peak-period power or non-peak-period power? Is there a maximum deposit? What is the price? What happens to bank power at the end of the term of the contract? There are many issues CFE has not addressed that must be handled contractually by participating companies. GM is doing its best under the circumstances so that in the end, hopefully everything will satisfy the CFE.

V. CONCLUSION

I have given a basic overview of what large corporations are doing right now with energy transactions in Mexico. To summarize, the legal climate is not conducive to deal-making. Financing is problematic in Mexico right now. Long-term commitments will make the most sense in the area of self-supply. However, whether to pursue long-term or short-term commitments is a decision the company will have to make for itself. At this time, short-term agreements appear to be more attractive to most major corporations. Industry must be allowed to continue to protect its operational capabilities and to access new opportunities. Corporations must be able to rely on consistent energy sources while seeking out new alternatives because if an energy shortage arises, industry will be the first sector affected. Finally, imported power and independent power production appear to present the most likely solutions to providing energy, at least in the short-term, if the regulatory and transmission framework improve. Overall, the system needs much improvement but hopefully some of these methods will help corporations address their energy needs.

14. An "energy bank" is a system that allows companies to save unused or excess energy for later use. Depending on the contract between the power generator and the private company the energy may be available at the same price as when it was stored. This is a good option for companies that have available energy but for whatever reason cannot use all of it (e.g., periods of decreased production, problems at the power plant, etc.). This energy is useful during times of high demand when the price increases.