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U.S.-Mexican Energy Relations in the 1980's: New Resources versus Old Dilemmas

Christopher C. Joyner*

I. INTRODUCTION

Since the Arab oil embargo of 1973-1974, considerable media and governmental attention has been devoted to speculation about the lucrative possibilities which Mexico's newly discovered hydrocarbon resources could have for alleviating the precarious energy situation in the United States. Mexico's hydrocarbon potential is even more attractive to U.S. energy policymakers in light of both recent supply disruptions in oil imports from Iran and a tenfold increase since 1973 in oil prices by the Organization of Petroleum Exporting Countries (OPEC).1 Given the geographical juxtaposition of the two countries, it would seem that a symbiotic energy partnership might emerge. Any presumption that the United States will soon import major portions of Mexico's oil and gas resources, however, is somewhat myopic and premature. Accordingly, this article seeks to assess the factors which have encumbered the present U.S.-Mexican energy relationship, and the steps which might be taken to alleviate these barriers.

That international law and nations' foreign policies are closely linked

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1 During the last three months of 1973, the OPEC governments quadrupled the world price per barrel of oil from $1.99 to $7.00; by September 1975, the price had been increased to $11.51 per barrel. A series of price hikes by OPEC has since raised the price per barrel to more than $21.00 in mid-1979. See Joyner, The Petrodollar Phenomenon and Changing International Economic Relations, 138 WORLD AFF. 152 (1975); see also OPEC's Painful Squeeze, TIME, July 9, 1979, at 12. Interestingly enough, though not a member of the OPEC cartel, Mexico in July 1979 also raised its crude oil price accordingly, up 33 percent to $22.60 per barrel. Newsletter, Oil & Gas J., July 16, 1979, at 2-3. On October 8, Mexico announced a further increase of nine percent, raising the price to $24.60. Parisi, Kuwait Said to Lift Oil Cost 10%, N.Y. Times, Oct. 9, 1979, § D, at 1, col. 5. By the end of 1979, Mexico's price had climbed to $32.00 per barrel. Stogaubh & Yergin, Energy: An Emergency, 58 FOREIGN AFF. 563, 575 (1980). By August 1980, the price for Mexican lighter crude had been raised to $34.50 per barrel. Newsletter, Oil and Gas J., July 21, 1980, at 1.
seems abundantly clear. Nevertheless, because the law governing sovereignty over and trade of natural resources between nations is still nascent and conducted primarily on a bilateral contractual basis, this article will concentrate predominately upon the policy implications of U.S.-Mexican energy relations. This is not to intimate that legal considerations are non-existent or even secondary in bilateral energy dealings; rather, it is simply to suggest that as new transnational policies take shape, so too will the law of nations evolve (though perhaps at a slower pace), and take into account the special political and historical circumstances of the respective parties.

II. Historical Background

Long before Hernando Cortez arrived in Mexico in 1519, both coastal Indians and Aztecs reportedly used crude petroleum for making fuel, dyes, medications, glues, and ceremonial fires. Active commercial exploration for oil, however, did not begin until 1901, when the American industrialist, Edward L. Doheny, discovered crude in the Ebano region of San Luis Potosi. Shortly thereafter, the Petroleum Act of 1901 authorized Weetman Pearson, an English entrepreneur, to undertake exploratory operations on nationally owned vacant lands. Seven years later, Pearson’s efforts culminated in the establishment of the immensely profitable Mexican Eagle or “El Aguila” Company.

Mexico’s cumulative petroleum production then rose significantly, from 10,000 barrels in 1901, to a total of 24.8 million by 1911. Stimulated by World War II and the spreading popularity of the automobile, crude production in Mexico peaked in 1921, with an output of 193.4 million barrels. At that point, Mexico was the world’s principal petroleum exporter. Production output began declining in 1922, however, largely because of well exhaustion and imprudent exploitation. By 1930, annual production had fallen to only 40 million barrels.

Throughout the 1930’s, aggressive nationalism waxed greatly in Mexico and, as a consequence, foreign oil firms turned their investment atten-

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3 L. FANNING, AMERICAN OIL OPERATIONS ABROAD 25 (1947).
4 Gov’T OF MEXICO, MEXICO’S OIL 11 (1940).
5 Id. at 85.
7 Id.
10 J. Powell, supra note 6, at 208.
tion southward to Venezuela, and later, to the Middle East-Persian Gulf region. Any remaining favorable foreign investment sentiment toward Mexico's petroleum industry evaporated abruptly on March 18, 1938, when President Lázaro Cárdenas issued an executive expropriation decree which nationalized the holdings of 17 U.S., British and Dutch oil companies. Although compensation amounting to $130 million was eventually paid by the Mexican government, the act of expropriation produced feelings of indignation and outrage among major multinational oil firms, especially those in the United States. In response major U.S. oil companies activated a boycott of Mexican oil from 1938 to 1940, thereby driving down Mexico's production rate to 100,000 barrels per day (b/d). This boycott, coupled with Great Britain's subsequent retaliatory severance of diplomatic relations with Mexico between 1938 and 1941, left grave psychological scars on the Mexican people; the persistent memory of...
these Anglo-American reactions has served to instill and exacerbate Mexican suspicion and antipathy toward both the petroleum corporations which were responsible and the national governments which permitted them to pursue these policies.¹⁵

The immediate effect of expropriation was to place the Mexican government in charge of 90 percent of its oil industry's productive capacity and in control of the country's indigenous subsoil exploitation rights.¹⁶ Accordingly, on June 7, 1938, a basic plan for organizing Mexico's petroleum industry was legislatively enacted.¹⁷ The Law of June 7 established two public agencies: Petroleas Mexicanos (PEMEX) was created to carry out exploration, production, refining, and other pre-marketing activities of the petroleum operation; Distribuidora de Petroleos Mexicanos was formed to coordinate marketing activities at home and abroad, but was formally disbanned and subsumed under PEMEX in 1940.¹⁸

Between 1946-1958, the Mexican petroleum industry gradually achieved economic viability under the capable directorship of Antonio J. Bermúdez.¹⁹ By 1952, PEMEX was producing 80 million barrels of oil annually—the greatest output since the mid-1920's—²⁰ and by 1973, production had regained its previous 1921 record rate of 500,000 b/d.²¹ With this impressive growth in petroleum production output, as well as the discovery in the early 1970's of several significant proven crude oil reserves on the Tehauntepec Isthmus, Mexico became recognized by the world oil trade press as an important export competitor in international petroleum commerce.²²

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¹⁶ The date of expropriation, March 18, is celebrated in Mexico today as a national holiday to commemorate that country's "Declaration of Economic Independence." Disputed ownership of subsoil rights was a major factor in the legal controversy surrounding President Cardenas' act of expropriation. See J. Powell, supra note 6, at 11-14; and R. Gaither, supra note 11, at 43-89.
¹⁷ J. Powell, supra note 6, at 36.
¹⁸ Id. at 36-37.
¹⁹ Id. at 170-71; Metz, Mexico: The Premier Oil Discovery in the Western Hemisphere, 202 SCIENCE 1261-62 (1978). See also A. Bermúdez, supra note 11.
²⁰ H. Cline, supra note 8, at 275. See also J. Powell, supra note 6, at 208.
²² See, e.g., Flanigan, Mexican Oil: The U.S. is most definitely not in the driver's seat, FORBES, Jan. 22, 1979, at 30; Stewart-Gordon, supra note 21; Reforma: A look at Mexico's greatest petroleum discovery, WORLD OIL, Sept. 1, 1978, at 57; Sandeman, Pemex Comes Out of its Shell, FORTUNE, Apr. 10, 1978, at 45.
III. MEXICO'S HYDROCARBON RESOURCES

A. Estimates of Reserves

Mexico's hydrocarbon energy sector has been characterized primarily by self-sufficiency and independent internal development. Moreover, petroleum reserve estimates have fluctuated upward in tandem with more widespread exploration efforts and increased drilling activities. In 1952, for example, President Alemán reported proven reserves to be approximately 1.4 billion barrels—nearly double the pre-expropriation estimate of 1937. By 1958, proven reserves were put at 3.5 billion barrels, and a year later, President López Mateos announced that the total had surpassed the 4 billion barrel mark. Throughout the late 1960's and into the 1970's, Mexico's petroleum reserve estimates accelerated appreciatively.

Proven crude oil reserves in Mexico were put at 3 billion barrels by the end of 1975, but by 1978 PEMEX had raised the figure to 9 billion barrels. More recently, the Mexican oil industry has revised its estimates to astonishing new heights. In September 1978, President López Portillo proclaimed the following breakdown of the nation's oil reserves: 20 billion barrels of proven reserves, 37 billion barrels of “probable” reserves, and some 200 billion barrels of “potential” reserves. On December 31, PEMEX announced that new discoveries had pushed these projections up to 40.2 billion barrels of proven reserves, 44.6 billion barrels of probable reserves, and 200 billion barrels of potential reserves.

Assuming that these figures are accurate, Mexico would then rank second only to Saudi Arabia in the non-Communist world in terms of petroleum reserves, far surpassing the United States estimate of its own liquid hydrocarbon reserves.

Two caveats should be inserted, however, as explanation for the recent precipitous jump of Mexico's petroleum reserves. First, in 1978, PEMEX changed its accounting system for ascertaining proven reserves. Previously, Mexico had counted as “proven” only those

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23 CONG. RESEARCH SERVICE, 95TH CONG., 2D SESS., MEXICO'S OIL AND GAS POLICY: AN ANALYSIS PREPARED FOR THE SENATE COMM. ON FOREIGN RELATIONS AND THE JOINT ECONOMIC COMM. 12-13 (Joint Comm. Print 1979) [hereinafter cited as MEXICO'S OIL AND GAS POLICY].
24 H. CLINE, supra note 8, at 276.
25 Id.
27 FLANIGAN, supra note 22.
28 Id.
30 STEWART-GORDON, supra note 21, at 39.
reserves which had been brought onstream and into actual production, thereby precluding from the reserve estimate those fields known to exist, but waiting to be brought on-line. The new system revised this accounting scheme to encompass all known reserves, irrespective of their production status.\(^{31}\)

The tremendous inflation of Mexico's petroleum reserve estimates during the mid-1970's can also be attributed to PEMEX's persistent expansion of exploration and exploitation activities.\(^{32}\) In particular, application of modern, highly sophisticated seismic techniques have made possible the discovery of more extensive oil deposits beneath old-producing areas, often to drilling depths exceeding 15,000 feet.\(^{33}\) While previously available, these advanced seismic methods remained uneconomical for PEMEX until 1973-74, when a four fold increase in world petroleum prices constrained Mexico's ability to import Venezuelan crude as compensation for indigenous production shortfalls.\(^{34}\) Since then, deep-drilling by PEMEX has become more profitable and more productive, though hindered by labor union influence\(^{35}\) and the limited ability to finance adequately the necessary rig facilities.\(^{36}\)

Also to be considered in the assessment of Mexico's petroleum reserves is the fact that PEMEX converts natural gas estimates into mathematical equivalents of oil, and then integrates these figures into the entire petroleum calculation.\(^{37}\) Hence, while proven petroleum reserves in December 1973 were put at 16 billion barrels, 40 percent of this total was comprised of natural gas holdings.\(^{38}\) Similarly, the 20 billion barrels of proven reserves announced by President López Portillo in late 1978 actually consisted of 13 billion barrels of crude and 35 trillion cubic feet (tcf) of gas.\(^{39}\) This distinction remains salient because the current proven petroleum reserve projection of 40 billion barrels, generally presumed by the public to be wholly oil, is in actuality 26.1 billion barrels of crude oil and 70.3 tcf of natural gas.\(^{40}\)

\(^{31}\) Id.

\(^{32}\) See Mexico, supra note 26, at 64-74.

\(^{33}\) For discussion of PEMEX's current drilling and production practices in light of the subterranean geological character of Mexico's richest oil fields, see Reforma, supra note 22, at 57-60, 76.

\(^{34}\) Stewart-Gordon, supra note 21, at 37.

\(^{35}\) See Sandeman, Pemex Comes Out of its Shell, FORTUNE, Apr. 10, 1978, at 47.


\(^{37}\) See Mexico's Oil and Gas Policy, supra note 23, at 12-18.

\(^{38}\) Gordon, supra note 14, at 23. See also Mexico, supra note 26, at 72.

\(^{39}\) Flanigan, supra note 22.

\(^{40}\) Stewart-Gordon, supra note 21, at 35.
B. Location of Reserves

The major Mexican petroleum fields are found today in the Reforma, Compeche, and Chicontepec regions of southeastern Mexico (see map, Appendix A). The Reforma area, situated on the Tchuatepec Isthmus near Villahermosa in the states of Tabasco and Chiapas, has been producing from shallow deposits since 1904, but in 1972, significant rich deposits were discovered at depths of 14,000 feet. Approximately 80 oil fields have been identified throughout Reforma, 10 of which are currently in production. These reservoirs are the keystones to Mexico's petroleum output, with the A.J. Bermudez field complex alone having total proven reserves of 6.5 billion barrels of oil and 17.5 tcf of natural gas.

The Campeche Sound region, located on the western portion of the Yucatán platform, recently was described by General Jorge Diaz Serrano, the Director of PEMEX, as being "seven times larger than Reforma." The Campeche area is particularly interesting because it comprises a nexus of off-shore oil fields, lying under 100 to 225 feet of water. Test drillings have had a 70 percent success rate, and PEMEX had reported that anticipated production from Campeche wells would reach the 200,000 b/d level before 1980.

Finally, since 1975, much excitement has been generated over the hydrocarbon potential of the Chicontepec basin, a 1,275 square mile field overlapping the states of Tamaulipas, Vera Cruz, Hidalgo, and Puebla. Although PEMEX has projected in-place oil reserves of 110 billion barrels and in-place gas reserves of 40 tcf, subterranean geological impediments and high production costs are likely to obviate any large-scale output from the Chicontepec area before 1985. Further, reliable speculations suggest that depressed well output would permit only 20 or 30 percent of these deposits to be recoverable using present techniques; consequently,
if full development of Chicontepec were to be undertaken, a vast infra-
structure of transportation facilities and production equipment would be
required. Such a massive program seems uneconomical at the present
time, particularly in light of the facile and lucrative exploitability of the
Reforma and Campeche fields.

C. Production and Development of Reserves

An important consideration within the context of U.S.-Mexican en-
ergy relations is Mexico's ability to produce enough surplus petroleum to
permit substantial exports.49 As of early 1979, Mexico was producing 1.5
million b/d of oil and 2.5 billion cubic feet per day (cf/d) of natural gas,50
with 600,000 b/d of petroleum-equivalent available for exports.51

Notwithstanding these production figures, estimates of Mexico's fu-
ture production and export levels are subject to variance and controversy,
largely attributable to the political nature of such decisions. Yet, authori-
ties indicate that PEMEX's total hydrocarbon production goal for 1980 is
2.26 million b/d, with exports expected to be limited to one million b/d.52
The significant implications for the United States are clear. Currently,
the United States purchases approximately 80 percent of Mexico's oil ex-
ports, or 400,000 b/d.53 If, by 1985, Mexican production reaches 4 million
b/d, half that amount, or 2 million b/d, is likely to be exported. Assuming
that the United States receives 60 percent of those exports, it is conceiva-
ble that more than 15 percent of U.S. petroleum imports could come from
Mexico by the mid-1980's.54 Such an optimistic scenario is fraught, how-
ever, with political complications and conflicting socio-economic
priorities.

IV. MExICo's SocIO-EcoNoMIC DILEMMAS

A. The Problems

The Mexican economy suffers from serious problems, aggravated in-

N.Y. Times, Jan. 6, 1979, at 27, col. 3.
50 OIL & GAS J., Mar. 26, 1979, at 68.
51 Stewart-Gordon, supra note 21, at 35. Cf. Pelham, Price at Issue: U.S.-Mexican
Negotiations Planned on Natural Gas, 37 CONG. Q., Feb. 24, 1979, at 318 (Pelham puts
Mexico's exports at 500,000 b/d).
52 OIL & GAS J., Mar. 26, 1979, at 68; Flanigan, supra note 22, at 32; Riding, supra note
48, at 25; Pelham, supra note 51.
53 Pelham, supra note 51.
54 These projections were made by the U.S. Embassy in Mexico City and were reported
in Flanigan, supra note 22, at 32. See also, Economics, not gas exports, seen restraining
ternally by accelerated population growth and externally by an unfavorable balance of trade.

At the heart of Mexico's social and economic problems is the reality of a burgeoning population, increasing at a rate of 3.4 percent per year, and the inability to create a sufficient number of jobs for the nearly 800,000 new entrants added annually to the labor force.\(^5\) If left unchecked, Mexico's current population of about 70 million will more than double to 150 million by the year 2000. Mexico City, having 8.5 million inhabitants in 1970, will grow to over 31.5 million during the same period.\(^6\) Given the government's espoused developmental goal of a six to seven percent yearly increase in Gross Domestic Product, however, industry would be able to provide only 150,000 new jobs a year.\(^7\) Consequently, even if new job opportunities could be expanded two-fold, less than one-half of each year's available new work force would be employed. The situation is compounded by the concurrent migration of the rural population to urban areas.\(^8\)

A second factor straining Mexico's economic development in the 1970's is an unfavorable balance of trade, exacerbated by a 20 percent domestic inflation rate.\(^9\) Though remedied somewhat by devaluation of the peso in September 1976 and by higher-priced petroleum exports, the current account deficit for 1978 was nonetheless projected as $2.5 billion, due to greater volumes of imported products.\(^10\) Mexico's external foreign debt in the public sector jumped to $25 billion in 1978, with foreign debt service alone in excess of $4 billion.\(^11\)

Thus, in the context of socio-economic development, Mexico legitimately can be classified as a "less developed country." The obvious pangs and pressures of accelerated population growth yield such social repercussions as inadequate food, shelter, medical care, education, and employment opportunities for its citizenry. Yet, there is obvious potential for Mexico's petroleum exports to play a significant role in the alleviation of these internal dislocations.

B. The Energy Plan

Mexico's plan as to the amount of petroleum to produce, when to

\(^{5}\) Gordon, supra note 14, at 7.
\(^{6}\) Id. at 4, 7; Salas, World Population Growth: Hopeful Signs of a Slowdown, 12 Futurist 279 (1978).
\(^{7}\) Gordon, supra note 14, at 7.
\(^{8}\) Id.
\(^{9}\) Strodes, Mexico: Is It As Good As It Looks?, FINANCIAL WORLD, Mar. 15, 1979, at 54.
\(^{10}\) U.S. Foreign Service, Mexico 78-132 FOREIGN ECONOMIC TRENDS AND THEIR IMPLICATIONS FOR THE UNITED STATES 8 (U.S. Dep't Com. June 1978).
\(^{11}\) Gordon, supra note 14, at 19, 34.
bring it onstream, and to whom to export it is of course influenced by the nature of the problems which Mexico confronts as a developing country. To be sure, Mexico will expand petroleum production output in order to finance its own industrial development, and will be guided by a “pay-as-you-go” philosophy. According to recent government statements, Mexico’s oil production levels will be fixed in relation to its national economic growth rate, or at about seven percent annually. PEMEX apparently has no intention of selling Mexican oil abroad as fast as possible for the purpose of reaping massive inflows of petrodollars. Rather, a deliberate, self-paced production program is being undertaken through 1982, at a projected cost of some $17 billion, not only to expand production, but also to accelerate exploration activities and to enhance refinery and petro-chemical capacity. By doing so, PEMEX anticipates spending nearly 25 percent of the government’s available gross investment allocations over the period to become the paramount national industrial enterprise in Mexico. In the near term, however, petroleum exports are not being touted publicly as an immediate panacea for solving Mexico’s serious social and economic difficulties, and no official policy has yet been openly articulated for incorporating oil and gas revenues into a comprehensive plan for Mexico’s modernization and industrial development.

63 Riding, supra note 48, at 27, col. 3.
64 The goals of PEMEX’s ambitious developmental program can be summarized as follows: 1) Step up exploration by drilling 1,300 new wells, at a cost of $1.02 billion; 2) Increase crude oil and condensate production from the 1977 level of 1 million b/d to 2.2-2.5 million b/d by 1980. Concurrently, raise crude exports from 200,000 b/d in 1977 to 1.1 million b/d in 1980, at a cost of $7.13 billion; 3) Double PEMEX’s refinery capacity to 1.7 million b/d, at a cost of $2.33 billion; 4) Increase gas production from 2.2 billion cf/d to 4 billion cf/d; 5) Begin gas exports to the United States via pipeline, at a total estimated cost of $4 billion; 6) Triple annual petro-chemical capacity to 18.6 million tons by 1982, at a cost of $2.43 billion. Gordon, supra note 14, at 23. See also 95th Cong., 1st Sess., Nineteenth Mexico-United States Interparliamentary Conference, Background Materials for U.S. Delegation Use Only 180 (Joint Comm. Print 1979) (copies on file at Case Western Reserve Journal of International Law) [hereinafter cited as Nineteenth Mexico-United States Interparliamentary Conference]; Wett & Matheny, Pemex driving hard toward ambitious 6-year plan goals, Oil & Gas J., Aug. 20, 1979, at 73-105.
65 See Sandeman, supra note 22, at 45-48.
66 Regarding these economic policy considerations, Romero Kolbeck, Director-General of Banco de México, recently commented: In the future, oil will play a major role and will provide Mexico with additional resources that can be invested not only in the field of energy, but in many other sectors that will provide employment. We are determined not to allow the growth of any one sector or product to distort the rest of the economy and possibly hinder our long-term development. To that end, the foreign exchange derived from oil exports will be channelled to productive investment in fishing, agriculture, industrial activities and other sectors, thus avoiding the export of capital from Mexico.
V. U.S.-Mexican Energy Relations

A. The Natural Gas Controversy

On September 21, 1979, the United States and Mexico concluded negotiations that provided for Mexican gas sales to the United States. Although the amount of gas involved (300 million cf/d) is relatively small, this agreement should nonetheless be seen as a positive step toward more amicable energy relations between the two countries.

Under the accord, Mexico will begin exporting gas to the United States on January 1, 1980 at an initial price of $3.625 per thousand cubic feet. The price is to be adjusted quarterly "by the same percentage as the change in world crude oil prices," and the open-ended contract provides for termination of the agreement by either party with 180 days notice. While the agreement admittedly is significant in its own right, protracted and often heated negotiations about the sale of natural gas during the past three years clearly reveal that frustration and resentment still encumber U.S.-Mexican dealings.

In 1976, the Mexican Government decided to pursue a petroleum-based economic development plan; to facilitate this end, PEMEX announced that it would be willing to sell excess petroleum-associated gas to the United States. In order to make the offer more attractive, Mexico indicated that it would construct an 847 mile, 48 inch pipeline from the Reforma fields near Cactus to Reynosa, approximately 100 miles away from McAllen, Texas, where a nationwide gas distribution system for the


70 Id. Important to note are the advantages and disadvantages for the United States in this natural gas arrangement. On the positive side: 1) The deal offers security in that imports by overland pipeline from an adjoining nation is preferable to importing liquified natural gas (LNG) by tanker from distant overseas sources; 2) The time factor is better because immediate production/importation is possible with facilities already in place; 3) The price of $3.625 per thousand cubic feet is cheaper than that for any current LNG imports; and 4) The cancellation clause weighs better for the United States because Mexico's domestic consumer market for gas is still small. On the negative side, the contract price for Mexican gas is an open motivator for Canada to renegotiate higher prices for its gas exports to the United States, which are now being sold for $2.80 per thousand cubic feet. Editorial, The Good and Bad in the U.S.-Mexican Gas Deal, Oil & Gas J., Oct. 1, 1979, at 21.

71 For discussion, see Pelham, supra note 51, and Flanigan, supra note 22, at 29-32.

72 Pagliano, Mexico's Oil and Gas Resources: Implications for the U.S., in Nineteenth Mexico-United States Intraparliamentary Conference, supra note 64, at 249. See also Flanigan, supra note 22, at 29-30.
United States was already in operation. According to the plan, Mexican gas deliveries would initially be 800 million cf/d, and would gradually increase to 2 billion cf/d after processing facilities were constructed.\footnote{Pagliano, supra note 72.} In return, PEMEX anticipated obtaining some $2 billion annually in additional foreign exchange earnings.\footnote{To Mexico with Love, \textit{Time}, Feb. 19, 1979, at 13.}

On August 3, 1977, negotiations concerning a marketing agreement for Mexico's selling of natural gas to the United States bore fruit in the form of a "Memorandum of Intentions," signed by PEMEX and a consortium of six U.S. gas transmission firms: Tenneco Interamerican, (which would receive 37 percent of the gas); Texas Eastern Transmission (to receive 27.5 percent); El Paso Natural Gas (15 percent); Transcontinental Gas Pipeline (10 percent); Southern Natural Resources (6.5 percent); and Florida Gas (3.5 percent).\footnote{PETROLEUM ECONOMIST, Feb. 1978, at 69-70.} According to the arrangement, the pipeline, to be built at a cost of $1.5 billion, would be financed partially by the Export-Import Bank with $400 million in credits towards Mexico's purchase of U.S. equipment for use on the line.\footnote{Flanigan, supra note 22, at 29-30.} The price for the gas imports agreed upon by PEMEX and the consortium was to be $2.60 per thousand cubic feet.\footnote{Pelham, supra note 51.} Shortly thereafter, Mexico began construction on the gas pipeline running north toward the Texas border.

Despite the apparent success of these negotiations, within four months the gas pipeline deal had totally collapsed. The Export-Import Bank credits for the pipeline had been blocked in the Senate. The State Department persisted in trying to pressure PEMEX into lowering the price by linking it to problems of illegal Mexican immigration and marijuana smuggling. The new Secretary of Energy, James R. Schlesinger, brusquely vetoed the whole gas deal package ostensibly because Mexico's price of $2.60 per thousand cubic feet was higher than the $2.16 being charged for imported Canadian gas.\footnote{The agreement would have stipulated that importation of the 2 billion cubic feet of natural gas per day would be at a border price determined by the BTU equivalence to the average daily high price of \#2 fuel oil entering New York harbor, which was then $2.70. The Carter Administration was unwilling to accept this formula for a number of related reasons: 1) The price of $2.60 per thousand cubic feet would have been nearly $1.00 higher than the $1.75 ceiling Secretary Schlesinger wanted to place on domestically-produced intrastate U.S. gas; 2) The agreement would have permitted the price of gas to float upward as the world price for imported crude increased, hence linking the price of Mexican gas to OPEC-dominated oil prices; 3) There was concern that the agreement might seriously jeopardize pending natural gas legislation in Congress; and 4) Concurrence with the stipulated price surely would have created upward pressure on the price for U.S. imports of considerably larger volumes of Canadian gas. Pagliano, supra note 72, at 249-50; Corrigan, \textit{U.S.-Mexican Rela-}}
opposition to the price, the Letter of Intent was allowed to expire by both parties on December 31, 1977.79

The regrettable result of these developments was to insult and anger the López Portillo government.80 Consequently, the PEMEX pipeline was abruptly rerouted westward toward the industrial city of Monterrey,81 and bilateral natural gas negotiations with the United States lay dormant until resuscitated by President Carter's visit to Mexico in February 1979.82 The breakdown of these natural gas negotiations pointed out a very significant realization: not only was the opportunity missed for assuaging residual Mexican bitterness toward the United States for its traditional indifference toward Mexico's people and problems, but the episode served to exacerbate further the legacy of antagonism. More explicitly, the patent lesson gleaned from the 1977 gas controversy is that U.S. arrogance and a "take-it-or-leave-it" approach are not the ingredients for successful negotiations with Mexico; if anything, such attitudes breed little more than Mexican contempt and disdain.

B. The Crude Oil Situation

In regard to petroleum, Mexico's export policy is shifting from one of near exclusivity to one of "export diversification."83 In 1977, approxi-
mately 85 percent of Mexican oil exports (170,000 b/d) were allocated to the U.S. market. Under the new diversification program, the U.S. proportion of total Mexican crude exports is scheduled to be reduced. Consequently, PEMEX has intimated that by the end of 1979 the United States would receive only 80 percent of Mexico's crude exports (about 550,000 b/d) and that by late 1980, the U.S. share will fall to 60 percent (720,000 b/d), with the balance largely going to European countries and Japan.

Although the percentage of Mexican oil exports is anticipated to decrease, the volume of crude exported to the United States seems likely to grow. This apparent paradox is neatly resolved by realizing that during the next two years Mexico's total crude production rates will be concomitantly accelerated; that is to say, whereas in early 1979 PEMEX was producing 1.3 million b/d of oil — with .5 million b/d earmarked for export — by late 1980 the production goal is set for 2.25 million b/d, of which 1.5 million b/d will be exported. Thus, while the United States will receive a dwindling percentage of Mexican petroleum in the early 1980's, the amount will in fact exceed that currently imported from Mexico.

Unlike the case with natural gas, recent U.S. policy toward Mexican crude oil imports has been far more flexible. Largely attributable to geographical proximity and resultant lessened transportation costs, the United States has readily paid Mexico's price for oil (which is usually pegged to the prevalent world market; i.e., the OPEC price). Moreover, present trends indicate that U.S. purchase agents will buy all the oil Mexico is willing to sell. PEMEX price hikes occurring concomitantly with OPEC strategy are not likely to dissuade U.S. corporations from buying Mexican petroleum; if anything, only PEMEX's self-induced quota limits on the quantity of oil available for sale to the United States will prevent such purchases.

several East European countries are also negotiating Mexican petroleum deals, including Rumania, Poland, and Hungary. Mexico Oil News, The Mexico Report, Aug. 1, 1979, at 1, col. 2.

Pagliano, supra note 72, at 249.

Id.

See supra note 45. PEMEX has also indicated plans to bolster production rates to 2.7 to 3 million b/d by 1982 with 1.2 to 1.8 million b/d earmarked for exports. U.S./Mexico RELATIONS AND POTENTIALS, supra note 81, at 10. See also Grayson, supra note 9.

The U.S. market would seem to offer the most profitable opportunities for selling Mexican oil, particularly because of the large demand factor, coupled with proximity. Lower transportation costs to the United States would yield more profit for PEMEX than exported oil to Japan and Europe.


Id. at 25.
C. The Balance Sheet

The energy dimension highlights the perplexing nature of U.S.-Mexican relations: that is, prevalent domestic issues and problems in both countries are significantly affected by each other's policies. Thus, if Mexico is to achieve its objective of fuller socio-economic development and industrialization, domestic solutions for those problems will clearly require greater cooperation and assistance from the United States.

It is unfortunate, but "dependency" has often been used to describe the quality of Mexico's relationship with the United States. Mexico sends nearly two-thirds of its exports to, and purchases two-thirds of its imports from, the United States. In turn, Mexico is the United States' fifth largest trading customer. Further, the business of tourism, Mexico's second largest industry, is generated mainly from the United States: more than 85 percent of visitors to Mexico come from its northern neighbor, and tourism earns $2 billion annually in foreign exchange, a sum that greatly alleviates Mexico's balance of payments deficit.

In addition to trade and tourism, other issues in recent years have served to complicate U.S.-Mexican relations; these issues could also portend serious implications for commercial negotiations involving future sales of Mexican petroleum and natural gas to the United States. Certainly not least among these are U.S. concerns over undocumented workers, or "illegal aliens," who cross the border to escape poverty by seeking employment in the United States. Admittedly, this illicit migration, estimated to range somewhere between two and eight million, provides a welcome safety valve for Mexico's tremendous population and economic pressures; moreover, each year these workers send back to Mexico $3 billion in U.S. dollars, a sum exceeding even that earned by tourism. Not to be overlooked are other contemporary controversial issues that also have impinged upon U.S.-Mexican relations—the salinity of the Colorado River, treatment of prisoners in jails of both nations, and the invest-

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90 Turner, supra note 15, at 35-61.
91 From 1973 to 1977, the percentage of Mexican exports to the United States, as a percentage of total Mexican exports, rose from 60.2 to 66.5 percent. During the same period, Mexican imports from the United States, as a percentage of total Mexican imports, rose from 59.7 to 63.6 percent. Trends and Prospects in U.S.—Mexican Trade, in Nineteenth Mexico-United States Interparliamentary Conference, supra note 64, at 175, 187.
92 Id. at 173.
93 Mexico's Oil and Gas Policy, supra note 23, at 51.
96 In 1977, the United States concluded with Mexico a treaty providing for mutual repatriation and transfer of prisoners, beginning on December 9, 1977. Within a year, 351 Americans and 137 Mexicans had been transferred back to their respective countries. Sen-
ment of U.S. capital in, and transfer of U.S. technology to, Mexican industry.\textsuperscript{97}

Thus, the point underlined is this: U.S.-Mexican problems are urgent and real, and solutions will come only with extreme difficulty. If the United States is to expect substantial benefits in the form of imported Mexican energy resources, it must acknowledge the unique stake it has in Mexico's political stability and continued economic growth. Such a policy might require designation of a "special relationship" between the United States and Mexico — a relationship necessitating some U.S. moderation in trade concessions and perhaps even restoration of the bracero program, whereby specified numbers of Mexican nationals legally will be permitted to enter the United States to augment badly needed seasonal agricultural labor. As tersely enunciated in a recent Congressional report, "[T]he U.S. needs a strong neighbor to the South, and we must act now not selfishly, but in a manner that contributes to permanent good relations."\textsuperscript{98} Continuing further, the study averred:

To regain Mexican confidence in our word and in our business integrity, the U.S. must understand Mexico's need to diversify and to export manufactured goods in addition to oil and gas. . . . We must be sensitive without being paternalistic. How we handle Mexico's improving balance of trade with the U.S., whether we resist countervailing duties to counteract Mexican stimuli to their domestic industry and how we handle the undocumented worker problem will determine whether we continue to be Mexico's premiere trading partner.\textsuperscript{99}

To be sure, this line of political reasoning manifestly holds true for U.S.-Mexican energy relations in the 1980's as well.

VI. Conclusion

The possibility of the United States importing large volumes of petroleum and natural gas from Mexico carries with it profound implications for the respective foreign policies of each nation. U.S. liberalization of migration policies and commercial conditions would contribute toward the substantial alleviation of Mexico's serious internal socio-economic problems of unemployment and poverty. On the other hand, market availability of proximitous Mexican hydrocarbon resources would better enable the United States to meet its domestic consumer demands for en-

\textsuperscript{97} See generally Mexico's Macho Mood, supra note 82.

\textsuperscript{98} U.S./Mexico Relations and Potentials, supra note 81, at 3.

\textsuperscript{99} Id.
ergy, while at the same time reduce its vulnerable dependence upon OPEC, and particularly Middle East Arab, oil production.

Nevertheless, there is still a compelling need to bear in mind the historical background against which this new relationship must unfold. The humiliating caricature of the United States as the “Colossus of the North” is deeply ingrained in the Mexican psyche. In the nineteenth century, more than one-half of Mexico’s territory was lost to the United States, and U.S. military incursions in 1836, 1846, and 1916 did much to inculcate Mexican resentment and antipathy. Not surprisingly then, U.S.-Mexican energy relations during the 1980’s likely might be aggravated by the remnants of anti-Yankeeism infused in recently re-discovered Mexican petro-nationalism.100

In conclusion, for the United States, closer economic relations with Mexico loom as a vital new issue; for Mexico, however, U.S. attention is perceived as a resurgence of an old problem. In this regard, one observation appears overwhelmingly self-evident: achieving closer, more amiable energy relations between the United States and Mexico during this decade can only be realized if the former is willing to exert more sincere efforts toward understanding and appreciating the social needs and developmental aspirations of its southern neighbor. To persevere otherwise is to invite petro-political repercussions and commercial recalcitrance between the United States and Mexico — a situation which neither can afford in an era of impending energy scarcities and exacerbated socio-economic inequities.

100 See generally H. Cline, The United States and Mexico (1953); J. Rippy, The United States and Mexico (rev. ed. 1931); J. Callahan, American Foreign Policy in Mexican Relations (1932); and F. Turner, supra note 15, at 35-61, 202-53.

101 As Edward Williams has observed:
All that pertains to Mexican-U.S. relations is bothered by Mexican nationalistic sensitivities. Mexican revolutionary ideology carries an omnipresent strain of anti-Yankeeism that pervades Mexican responses to its powerful neighbor to North. Although relations between the two nations are basically rather good, a fragility is ever-present, implying a threat of serious discord and introducing a sense of unpredictability.

Williams, Oil in Mexican-U.S. Relations: Analysis and Bargaining Scenario, 22 Orbis 201, 202 (1978). It is important also to recall the vital historical role petroleum played in fueling Mexican nationalism against the United States. See notes 5-12 and accompanying text supra.
### APPENDIX B

#### TABLE 1

Mexico's Proved Reserves, as of December 31, 1978

<table>
<thead>
<tr>
<th>District</th>
<th>Oil, bb1</th>
<th>Condensate, bb1</th>
<th>Gas, MMcf</th>
<th>Converted to liquids, thou bb1</th>
<th>Total liquids thou bb1</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Zone</td>
<td>478,186,859</td>
<td>322,615,320</td>
<td>13,519,012</td>
<td>2,703,802</td>
<td>3,504,606</td>
</tr>
<tr>
<td>Angostura</td>
<td>97,457,876</td>
<td>57,499,573</td>
<td>979,111</td>
<td>195,822</td>
<td>350,779</td>
</tr>
<tr>
<td>Poza Rica</td>
<td>1,529,895,691</td>
<td>127,841,979</td>
<td>2,760,951</td>
<td>552,190</td>
<td>2,209,928</td>
</tr>
<tr>
<td>South Zone</td>
<td>12,548,878,223</td>
<td>959,547,214</td>
<td>14,901,329</td>
<td>2,980,266</td>
<td>16,488,691</td>
</tr>
<tr>
<td>Chicontepec</td>
<td>10,960,106,000</td>
<td>1,324,891,000</td>
<td>26,775,008</td>
<td>5,355,002</td>
<td>17,639,999</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>25,614,524,649</td>
<td>2,792,395,086</td>
<td>58,935,411</td>
<td>11,787,082</td>
<td>40,194,003</td>
</tr>
</tbody>
</table>

Source: *Oil and Gas Journal, Aug. 20, 1979, at 74.*

#### TABLE 2

Crude Oil Production in Mexico, 1977 and 1978

(Barrels per day)

<table>
<thead>
<tr>
<th>District</th>
<th>1978</th>
<th>1977</th>
<th>% diff.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Zone</td>
<td>69,843</td>
<td>67,393</td>
<td>+ 3.6</td>
</tr>
<tr>
<td>Northeast Frontier</td>
<td>1,038</td>
<td></td>
<td></td>
</tr>
<tr>
<td>North</td>
<td>47,093</td>
<td></td>
<td></td>
</tr>
<tr>
<td>South</td>
<td>21,712</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poza Rica</td>
<td>130,771</td>
<td>126,749</td>
<td>+ 3.2</td>
</tr>
<tr>
<td>Light</td>
<td>110,962</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heavy</td>
<td>11,661</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Papaloapan</td>
<td>8,148</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Southern Zone</td>
<td>1,008,558</td>
<td>786,638</td>
<td>+28.2</td>
</tr>
<tr>
<td>Agua Dulce</td>
<td>62,897</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ciudad Pemex</td>
<td>224</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comalcalco</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tertiary</td>
<td>31,432</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cretaceous</td>
<td>955,423</td>
<td></td>
<td></td>
</tr>
<tr>
<td>El Plan</td>
<td>42,559</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nanchital</td>
<td>6,023</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>1,209,172</td>
<td>980,780</td>
<td>+23.3</td>
</tr>
</tbody>
</table>

### Natural Gas Production in Mexico, 1977 and 1978
(Millions of cubic feet per day)

<table>
<thead>
<tr>
<th>District</th>
<th>1978</th>
<th>1977</th>
<th>% diff.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Zone</td>
<td>631.7</td>
<td>474.3</td>
<td>+33.2</td>
</tr>
<tr>
<td>Northeast Frontier</td>
<td>531.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northern District</td>
<td>82.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Southern District</td>
<td>18.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poza Rica</td>
<td>181.8</td>
<td>155.3</td>
<td>+17.0</td>
</tr>
<tr>
<td>Ponza Rica</td>
<td>141.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Golden Lane</td>
<td>9.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Papaloapan</td>
<td>31.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Southern Zone</td>
<td>1,747.9</td>
<td>1,416.6</td>
<td>+ 2.4</td>
</tr>
<tr>
<td>Agua Dulce</td>
<td>73.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comalcalco</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tertiary</td>
<td>31.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cretaceous</td>
<td>1,205.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ciudad Pemex</td>
<td>393.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>El Plan</td>
<td>40.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nanchital</td>
<td>4.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>2,561.4</td>
<td>2,046.2</td>
<td>+25.2</td>
</tr>
</tbody>
</table>