March 2004

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Mexico

Mexico is a major non-OPEC oil producer and home to one of the world's largest oil companies, Pemex. Most of Mexico's oil exports go to the United States.

Note: Information contained in this report is the best available as of March 2004 and can change.

BACKGROUND

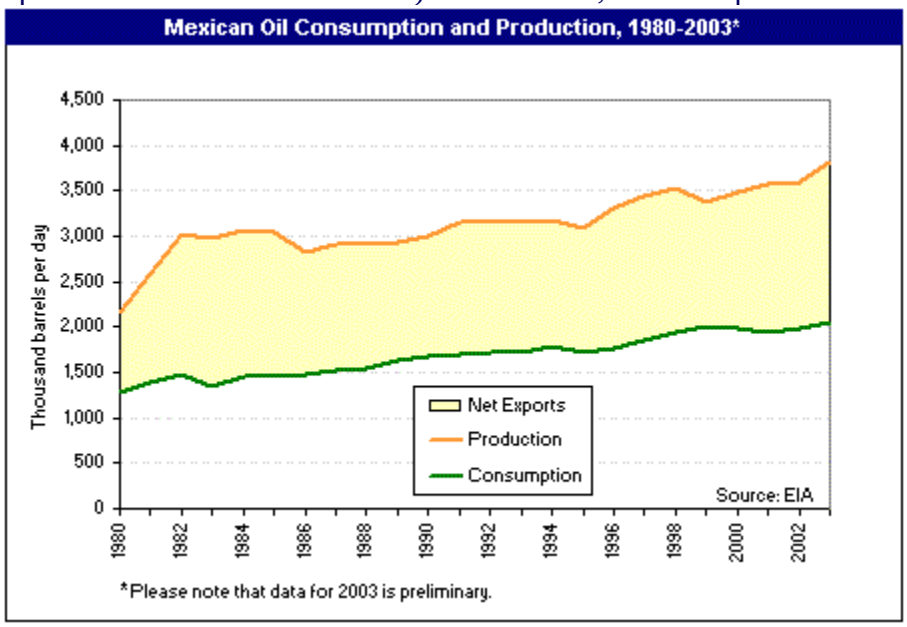
Mexico's economy grew only slightly in 2003, despite high oil revenues, and an economic recovery in the United States, Mexico's largest trading partner. For the year, real gross domestic product (GDP) grew 1.3%, up from the previous year's rate of 0.9%. One reason for Mexico's slow growth has been the inability of President Vicente Fox and the Mexican Congress to reach an agreement on key economic legislation. Relations between President Fox and the Mexican Congress remained strained in 2003, as the Congress continued to block several of the President's economic proposals, including legislation to improve tax collection and to revitalize the energy industry. Vicente Fox of the National Action Party (PAN) was inaugurated as president of Mexico on December 1, 2000, ending 71 consecutive years of Institutional Revolutionary Party (PRI) rule.

The United States accounted for 77% of Mexico's exports by value in 2002. Mexico's exports to the U.S. included significant quantities of crude oil, as well as manufactured goods and machinery. Mexico's merchandise exports increased modestly in 2003 over 2002, but were still below 2000 levels. In addition, Mexico's Maquiladora sector, which comprises foreign firms finishing products in Mexico in order to ship goods back to firms' prospective market, has lagged over the past two years after being a major contributor to Mexico's economic growth throughout the 1990s.

OIL

As of January 2004, Mexico had the fourth largest proven crude oil reserves in the Western Hemisphere after Canada, Venezuela, and the United States. In September 2002, Pemex had revised its proven crude oil reserve estimate downward 53% to 12.6 billion barrels, reducing Mexico's proven reserves at its lowest point in the last decade, but subsequently raised it to 15.7 billion barrels. This revision was done in order to comply with U.S. Securities and Exchange Commission (SEC) filing guidelines, which require that hydrocarbon reserves qualifying as "proven reserves" be under commitment for exploration in the short term. According to Pemex's Statistical Yearbook 2003, Mexico's ultimate potential reserves (including crude oil, condensate, natural gas liquids, and refinery gain) are significantly larger, at an estimated 40.6 billion barrels.

In 2003, Mexico produced an estimated 3.8 million barrels per day (bbl/d) of oil (including crude oil, condensate and natural gas liquids), of which 3.4 million bbl/d was crude (below Mexico's government targeted end-year production of 3.5 million bbl/d). Nonetheless, crude oil production jumped 6.1% year-on-year, mainly due to increased production from Mexico's revived oilfield, Cantarell.



In 2003, Mexico consumed 2.05 million bbl/d of oil, resulting in approximate net exports of 1.75 million bbl/d. The United States imported about 1.6 million bbl/d of these exports, making Mexico the third largest foreign supplier of petroleum to the United States, behind Canada and Saudi Arabia. During 2003, Mexico ranked as the world's fourth-largest oil producer (including crude, lease condensate, natural gas liquids, and refinery gain), behind Saudi Arabia, Russia and the United States.

Sector Organization: Petróleos Mexicanos

The Mexican Congress established Petróleos Mexicanos (Pemex) on June 7, 1938 in conjunction with the nationalization of the foreign oil companies then operating in Mexico. The company's operations were split in 1992 into four principal subsidiary entities: Pemex-Exploración y Producción (Pemex-Exploration and Production); Pemex-Refinación (Pemex-Refining); Pemex-Gas y Petroquímica Básica (Pemex-Gas and Basic Petrochemicals); and Pemex-Petroquímica (Pemex-Petrochemicals). Pemex retains exclusive rights to oil exploration and production in Mexico. However, Mexico's Constitution provides that the Mexican nation, not Pemex, owns the petroleum and other hydrocarbon reserves located in Mexico, according to Regulatory Law to Article 27 of the Political Constitution of the United Mexican States Concerning Petroleum Affairs (Ley Reglamentaria del Artículo 27 Constitucional en el Ramo del Petróleo).

Government Revenue Mainstay

Mexico's federal government relies on Pemex for approximately one-third of its budget, with Pemex and its subsidiaries turning over an estimated 60% of their annual revenues. This financial obligation can make it difficult for Pemex to make the necessary capital expenditures to maintain its production levels and to increase Mexico's hydrocarbon reserves. Pemex is also reliant on the Mexican Congress for its budget, making it difficult for the company to set its own priorities for reinvestment. In addition, the money allocated to Pemex can be affected by world oil prices. In 1998, for example, low oil prices resulted in Pemex generating lower revenues and thus paying less in taxes to the Mexican government. In response, the Mexican government imposed federal budget cuts that resulted in an 11% decrease in Pemex's capital expenditures budget.

Aside from government allocated resources, Pemex (as well as state-owned utility, Comisión National de Electricidad –CFE) can fund new projects through the private-debt-finance scheme Pidiregas (Proyectos de Impacto Diferido en el Registro del Gasto). Pemex mainly uses Pidiregas to fund long-term upstream projects. Although Pemex is one the largest oil and natural gas companies

in the world, it continues to post net losses on an annual basis. In 2003, Pemex posted a $3.72 billion net loss, 37% higher than the previous year.

Increasing Production

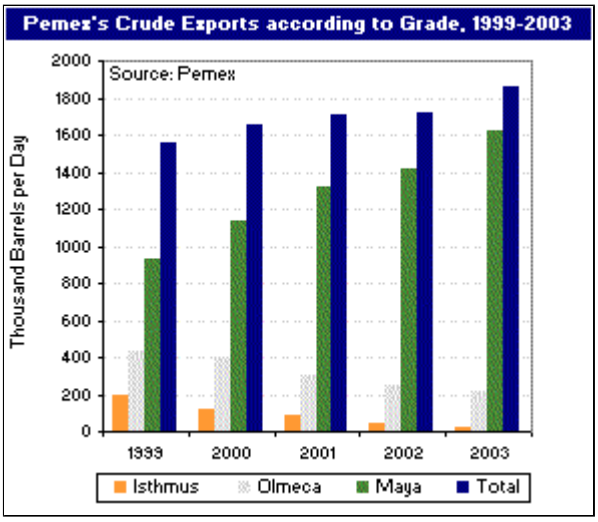
Pemex plans to increase crude oil production to 4 million bbl/d and to achieve 100% reserve replacement by 2006. In order to meet these goals, substantial capital expenditures are required in the next few years. Pemex has estimated that it will need to make capital expenditures of approximately $45.3 billion in exploration and production over the next five years in addition to $16.1 billion refinery upgrades over the next ten years in order to meet anticipated growth in domestic and international oil market demand. The Fox administration has recognized this and has successfully lobbied the Mexican Congress to raise annual allocations to Pemex. In 2003, Pemex's capital expenditure budget was an all-time high of $10.3 billion, and in 2004, will increase to $12 billion, of which 74.4% will go to production.

In May 2003, President Fox unveiled two multibillion-dollar projects for Pemex. The first project focuses on the development of the Chicontepec field, northeast of Mexico city, where hydorcarbon reserves are expected to total an estimated 18 billion barrels of oil equivalent (including all liquids and natural gas). Over 15 years, Pemex is expected to spend $29.8 billion to develop a planned 13,500 wells a Chicontepec. Pemex already has signed a $500 million oil-field services contract with ICA Flour Daniels and Schlumberger to drill 250 wells in the field. The second project, the Marine Platform Building Program, will build 47 offshore platforms, 111 miles of pipeline, plus separation and compressor facilities to develop the Ku-Maloob-Zaap complex and the Lankahuasa natural gas find and other light crude projects. Once completed in 2006, these projects are expected to produce 1.5 million bbl/d of crude oil and 1.5 billion cubic feet (Bcf) per day of natural gas.

As Mexico's existing fields mature, some observers consider Pemex to be unequipped to discover and monetize new natural resources. President Fox has made efforts towards modernizing Pemex by proposing that the company open itself increasingly to foreign involvement in Mexico, not only to increase operational efficiencies, but also to assist the company in exploring frontier areas, such as deepwater regions in the Gulf of Mexico.

Production and Exploration

The Bay of Campeche, located in southeastern Mexico, is the mainstay of the country's oil output, accounting for 67% of Mexico's crude oil output in 2002. Most of the oil produced in this region is a heavy crude oil (22° API), known as Maya-22. Maya accounts for nearly 50% of Mexico's crude oil production. Oil is produced from three major fields within the region: Cantarell; Ku-Maloob-Zaap; and Ek-Balam. Mexico also produces two other grades of crude oil: light, low-sulfur Isthmus-34; and extra-light Olmeca-39. Fields yielding these grades are also located in the South, mostly near the Gulf of Mexico. Of these crudes, Maya accounted for 87% of country's exports, followed by Olmeca (12%) and Isthmus (1%) in 2003 (see graph).



Cantarell Oil Field

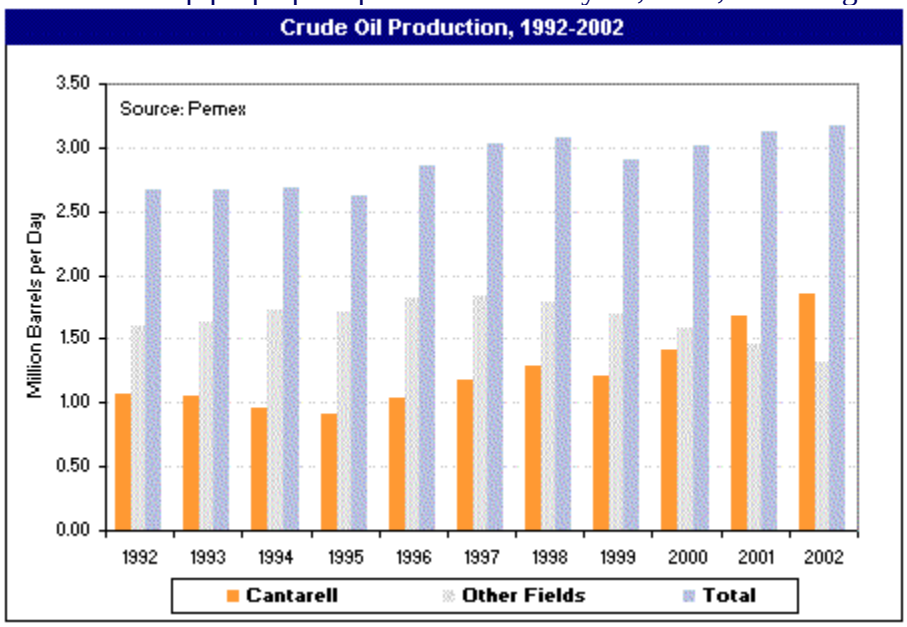
Cantarell is the largest oilfield in Mexico, as well as one of the largest in the world, with an estimated 35 billion barrels of oil originally in place. The Cantarell complex, located about 56 miles

offshore in the Bay of Campeche, consists of four major sub-fields: Akal; Nohoch; Chac; and Kutz. Oil production from the region started in 1979 but, by 1996, output from the field had declined significantly due to decreased reservoir pressure. In 1997, Pemex developed a plan to reverse the field's decline by injecting nitrogen to maintain reservoir pressure. The company awarded a 15-year contract to an international consortium, consisting of BOC Gases, Marubeni Corporation, Westcoast Energy, ICA Fluor Daniel, and Linde, to supply 1.2 Bcf per day of nitrogen for injection.

After the project was completed in late November 2001, Cantarell began showing significant signs of recovery, and by 2002, daily production from the field had reached an estimated 1.88 million bbl/d, double the amount it was producing in 1995 (see graph to the right). Pemex continues to develop Cantarell, and has plans to install additional production infrastructure, including 53 new wells and two wellhead platforms. Pemex is also in the process of developing the untapped Sihil field, located underneath the Cantarell field. Pemex plans to issue a tender for construction of wellhead platform to develop Sihil and its 400 million barrels of recoverable oil in March 2004.

Mexico and OPEC

Although Mexico is not a member of the Organization of Petroleum Exporting Countries (OPEC), it has at times worked in conjunction with the cartel to adjust global crude oil supplies. For example, in January 2002, Mexico pledged to an export cap of 1.66 million barrels per day for the first half of 2002, a cut of 100,000 bbl/d, in order to help prop up oil prices. On January 13, 2003, following OPEC's announcement to raise the OPEC-10 output ceiling by 1.5 million bbl/d, Mexico announced its intentions to increase its own production by 120,000 bbl/d, to 1.88 million bbl/d. After OPEC decided to cut quotas by 1 million bbl/d on February 10, 2004, Mexico announced that it would wait before it decided whether to follow the cartel's lead. Mexico's Isthmus crude oil is the only non-OPEC crude oil included in the "OPEC basket," the arithmetic average of seven selected crudes that is used as an indicator of the average price per barrel of OPEC's oil (for more detail see EIA's Non-OPEC Factsheet).



Downstream

Pemex has six refineries within Mexico and controls 50% of a refinery in Deer Park, Texas, giving the company a total refining capacity of 1.73 million bbl/d. In 2001, the government began a $3.9 billion, long-term upgrading plan for all six refineries, designed not only to increase total refinery capacity by 350,000 bbl/d but also to improve the quality of gasoline by reducing levels of sulfur and lead. So far, work at three refineries, Madero, Salamanca, and Tula, has been completed. Work at the Cadereyta refinery is reportedly over budget and behind schedule by more than two years. Currently, work at Cadereyta is expected to be completed by August or September 2004. Pemex has yet to award contracts for the last two refineries, Minatitlan and Salina Cruz. Pemex's refinery arm is also considering adding a new cracker, which would process wet natural gas from the Gulf of

Mexico. Pemex is looking for a partner in the project, known as Fenix.

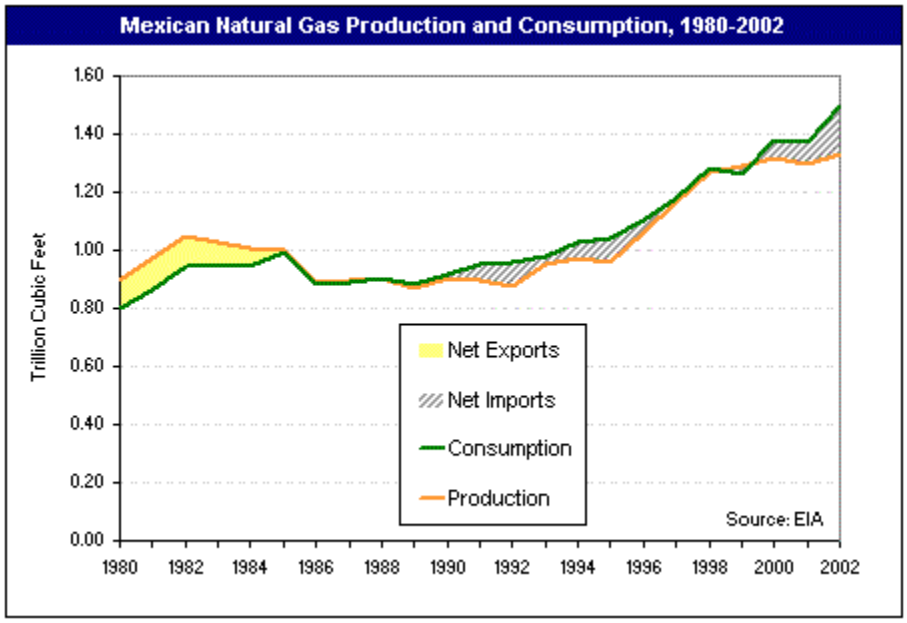
Despite being one of the world's largest producers of crude oil, Mexico still imports petroleum products to meet domestic demand, mainly due to insufficient refining capacity. However, imports have been steadily decreasing, from 326,000 bbl/d in 1999 to 200,000 bbl/d in 2003, after upgraded refineries - Madero, Salamanca, and Tula – came onstream.

NATURAL GAS

Mexico has proven natural gas reserves of 15.0 trillion cubic feet (Tcf). Mexico's natural gas reserves were revised downwards, along with crude oil reserves, in September 2002, but they were adjusted back up again. Although the country is home to the Western Hemisphere's sixth-largest natural gas reserves (after the United States, Venezuela, Canada, Argentina, and Bolivia), Mexico's demand for natural gas has outpaced the country's production over the last decade (see graph). In 2002, Mexico's natural gas production remained flat at 1.33 Tcf while demand leaped to 1.50 Tcf.

According to Mexico's Ministry of Energy (Sener), consumption of natural gas increased 4.9% annually from 1993 to 2002. The largest jump in consumption occurred in the power sector, with its demand increasing from 465 million cubic feet per day (Mmcf/d) in 1993 to 1.51 billion cubic feet per day (Bcf/d) in 2002. Increased demand has resulted in Mexico importing more natural gas from the United States, with imports up 28% in 2003 over the previous year. According to a report released by Sener, Mexico's demand for natural gas is projected to reach 9.39 Bcf/d by 2012. The largest consumer of natural gas is projected to be the power sector, accounting for 45% of the country's total demand in 2012.

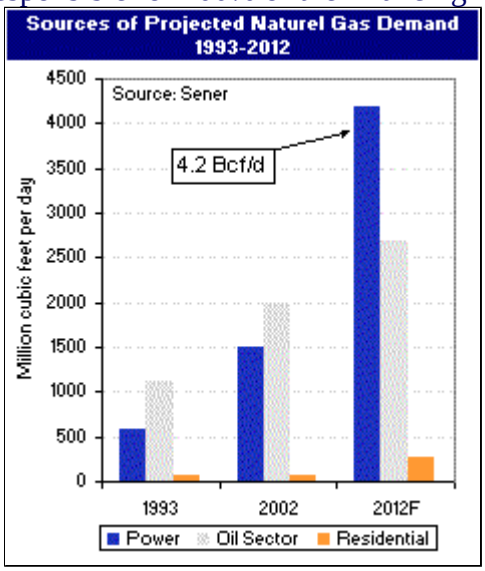
Strategic Gas Plan



One of the Fox administration's main priorities in reforming Mexico's energy sector has been to increase domestic natural gas production in order to meet domestic demand and to stem the rising tide of expensive imports from the United States. The Strategic Gas Plan, first introduced by Pemex in 2000, calls for domestic natural gas production to increase to 8 Bcf/d by 2008. In order to achieve this goal, Pemex has highlighted the following objectives: 1) increase natural gas production through multiple service contracts (MSCs); 2) diversify natural gas supply sources from abroad, i.e., liquefied natural gas (LNG), in order to decrease reliance on domestic production and on imports from the United States; 3) flare less associated natural gas (Pemex flared an estimated 266 Mmcf/d in 2002); 4) expand natural gas transport, distribution, and storage facilities, particularly increasing interconnection capacity between the U.S. pipeline grid and Mexico's; and 5) allocate more funding to exploration to increase proven reserves.

Multiple Service Contracts (MSCs)

MSCs, designed to comply with the country's constitution, mark Mexico's most ambitious effort to attract private companies to stimulate natural gas production by developing non-associated natural gas fields. Under a MSC contract, private companies will be responsible for 100% of the financing of a contract and will be paid for the works performed and services rendered. However, the natural gas produced in a specific field remains the property of Pemex. Examples of work which contractors can perform include seismic processing and interpretation, geological modeling, fields engineering, production engineering, drilling, facility design and construction, facility and well maintenance and natural gas transportation services (For further information regarding MSC, see link).



First MSC Bidding Round

In July 2003, Pemex opened up a bidding process for seven blocks located in the Burgos Basin, with the intention of increasing the Basin's natural gas production to 2 Bcf/d by 2008/9, from the current 1 Bcf/d. As of February 2004, Pemex had awarded five of the seven blocks. Two blocks, Corindón-Pandura and Ricos, failed to garner any bids. Repsol-YPF was the first private company to be awarded a MSC contract for the development the Reynosa-Monterrey block. Petrobras, along with Teikoku Oil of Japan and Grupo Diavaz of Mexico, were awarded contracts for two separate blocks: Cuervito and Fronterizo. Argentina's Tecpetrol, in partnership with Mexico's Industrial Perforadora de Campeche, won a contract for the Misión block. Texas-based Lewis Energy received the fifth contract on February 9, 2004 for the Olmos block. Pemex announced that investment in the five blocks would total some $4.5 billion.

The MSCs appear to be a positive step towards a gradual opening of Mexico's natural gas production to private and foreign companies. However, as many observers have pointed out, the first round will not significantly boost the country's natural gas production – the five MSC blocks are expected to produce an additional 440 Mmcf/d, well below the expected 1 Bcf/d if all seven blocks were awarded. The two largest blocks of the bidding rounds - Corindón-Pandura and Ricos - did not receive any bids. Nonetheless, Pemex already is in the process of setting up a second round for mid-2004. Possible contracts include developing Coatzacoalcos, Gas Teriario, and Cuichapa non-associated gas fields in the states of Veracruz and Tabasco.

Liquefied Natural Gas (LNG)

There are currently plans to develop LNG import regasification facilities on both coasts of Mexico. Most of the proposed facilities are located close to the U.S.-Mexican border in Baja California, with the intention to supply markets in Northern Mexico and in southwestern United States. This area has seen the most competition for LNG locations, based on the expected power demand increase in northern Mexico and its proximity to the U.S. border.

East Coast

Altamira: Royal Dutch/Shell and Total

The Altamira regasification terminal, a joint venture between Royal Dutch/Shell Group and Total Group, is the only LNG facility located on the east coast of Mexico. Altamira is expected to be operational in late 2006, with an annual capacity of 177 Bcf per year. In August 2003, Mexico's Comisión Federal de Electricidad (CFE) awarded Gas del Litoral S. de R.L. de C.V., a Mexican affiliate of Shell, a contract to supply 177 Bcf for 15 years. CFE plans to use the natural gas to

supply its next independent power projects (IPPs) in the Altamira region: Tuxpan X (500 megawatts - MW); Altamira V (500 MW); and Tamazunchale I (1,000 MW).

West Coast

Costa Azul: Sempra Energy/Royal Dutch Shell

After acknowledging that the market in the Costa Azul region could not absorb all of the expected volumes, Sempra Energy and Shell announced plans in December 2003 to merge both their proposed LNG projects in Mexico's Baja California. Sempra also had been facing strong local opposition to its original project. In November 2003, Mexico's Fiscal Justice and Administrative Court suspended permits Sempra received from Mexican Energy Regulatory Commission (CRE) and Ministry of the Environment (Semarnat) until the court could fully study the risks the project poses to local tourism development and to the environment. If built, the Shell/Sempra LNG joint venture would be located at Costa Azul, about 14 miles north of Ensenada. Pending regulatory approval, the proposed project will supply 1 Bcf/d to both Mexico and the United States.

Also in December 2003 , Sempra signed a deal to buy 500 Mmcf/d from BP's Tangguh LNG project in West Papua, Indonesia, for twenty years beginning in 2007. Sempra had originally planned to buy LNG from Bolivia until unrest in that country last year forced Sempra to look elsewhere for supply. Shell will most likely source its LNG from Australia's North West Shelf or from its Sakhalin-2 project, in Russia. The group hopes to begin construction in 2004, with completion in 2007.

Sempra plans to take advantage of its established presence in the region. The company already holds a natural gas distribution concession in Mexicali, on the California border, and supplies natural gas to the President Juárez power plant in Rosarito, via its Transportadora de Gas Natural de Baja California pipeline.

Coronado Islands: ChevronTexaco

In October 2003, ChevronTexaco announced plans to build a 1.4 Bcf/d-terminal, with an initial capacity of 700 Mmcf/d, offshore Mexico's Baja California peninsula, near the Coronado Islands. According to the company, natural gas from the terminal would most likely be distributed on both sides of the U.S. and Mexican border. ChevronTexaco initially planned to build the facility onshore but after witnessing the trouble that fellow competitors, Sempra and Marathon, had been having with local opposition, the company decided to move the project offshore. Thus far the company has filed permit applications with CRE and Semarnat, for the offshore terminal, as well as has applied for permission from the Ministry of Communication and Transport (SCT) for the right to construct and operate a terminal in Mexico's federal waters. The company will supply the regasification terminal from its Gorgon Joint Venture offshore Australia. Pending regulatory approval, startup is planned for 2007.

Lázaro Cárdenas: Repsol-YPF

In February 2004, Repsol-YPF outbid Tractebel to win a concession to construct a LNG terminal in the Port Lázaro Cárdenas, on the Pacific Coast. The plant initially will have a capacity of 141 Bcf per year and will eventually be ramped up to 353 Bcf per year. The project is expected to come onstream in 2008. Lázaro Cárdenas reportedly is the only port on Mexico's Pacific coast equipped with facilities to access the national natural gas grid.

Tijuana Regional Energy Center: Marathon

On March 2, 2004, Marathon Oil, in partnership with Golar LNG Limited and Grupo GGS, decided to drop its Tijuana Regional Energy Center after the local government decided to expropriate the land on which the group planned to build their facility. The proposed project would have included

an LNG regasification terminal, with a capacity of 750 Mmcf/d, a 1,200-MW electricity generation plant and a 2-million-gallon per day desalination facility. Since its inception, the plan had faced stiff local opposition to the project as it was located near residential areas around Tijuana.

Other LNG Projects

ConocoPhillips had planned to construct an LNG regasification facility in Rosarito, just south of Tijuana. It is unlikely, however, that the 680-Mmcf/d Rosarito terminal will be built, particularly after partner El Paso left the LNG joint venture in early 2003.

Increased Exploration Efforts

Pemex plans to allocate more funding in finding and developing new natural gas reserves in order to offset the rise of imports. In February 2004, Pemex announced that it planned to invest $ 1.2 billion in natural gas exploration and production in the state of Veracruz. The investment is designed to increase production from new discoveries which include Playuela, Copite, Vistoso, Madera and Lankahuasa.

Another option that Pemex has been considering is the development of deepwater hydrocarbon sources. While deepwater oil exploration has been taking place in waters of northern Gulf of Mexico (U.S.), Mexico has focused on shallow water production. Pemex is hoping to develop a framework which would allow for cooperation in deepwater areas, similar to MSCs.

Downstream: Transportation, Distribution and Storage

The downstream Mexican natural gas market has been open to private investors since the passage of the 1995 Natural Gas Law. This legislation modified the constitution to allow private companies to become involved in natural gas transportation, storage, and distribution in Mexico, although it prohibits a company from ownership in more than one function within the industry. The legislation also liberalized exports and imports and established the regulatory framework for building and expanding transmission and distribution pipelines. Pemex retains its control over exploration and production while giving private companies access to drilling and other services.

The Mexican Energy Regulatory Commission (CRE) regulates the natural gas industry. CRE's powers include enforcement of regulations, inspections of facilities, issuance of permits, regulation of prices, overall supervision of the industry, ensuring an adequate supply, security, the promotion of competition, and the elimination of cross-subsidies. Private-sector participation in these areas currently is subject to permits granted by CRE for 30 years, based on competitive bidding.

National Pipeline Grid

Pemex’s natural gas network currently extends 5,652 miles (includes Sistema Nacional de Gasoductos and Naco Hermosillo), with eight compression stations. In 1997, CRE granted nine private natural gas distributors 21 permits to operate in Mexico. The companies holding permits include Spain’s Gas Natural with seven; Belgium’s Tractebel, Gaz de France, and Sempra Energy with three each; Kinder Morgan and TXUEnergy with one each; and Mexican companies Grupo Diavaz and Grupo Imperial with three in total.

International Natural Gas Interconnectors

Mexico’s Ministry of Energy reported that there were fifteen natural gas interconnections between Mexico and the United States at the end of 2002. Natural gas import capacity has increased further since two new pipelines came onstream during 2003.

In April 2003, U.S.-based Kinder Morgan Energy Partners (KMP) opened its new cross-border

pipeline, connecting south Texas with Mexico industrial city of Monterrey, Mexico. KMP entered into a 15-year contract with Pemex, which subscribed for all of the pipeline's capacity -- 375 Mmcf/d. The pipeline connects to a 1,000-MW plant complex near Monterrey and to Pemex's natural gas transportation system. In November 2003, U.S. based Tidelands Oil and Gas opened a new natural gas pipeline (Eagle Pass International Pipeline), crossing at Eagle Pass, Texas and connecting to Piedras Negras, Mexico. The company expects to expand the transportation capacity of the pipeline in the future.

Sempra Energy and PG&E Gas Transmission Northwest reported in November 2003 that they had received strong interest during their open season in potentially expanding the North Baja pipeline system in Baja California, Mexico and the southwestern United States. The open season allows shippers to indicate interest for new interconnections to serve their markets. The importance of this proposed expansion is that it would allow natural gas from the proposed LNG terminals in the region to markets in Mexico and in the United States.

New Storage

In January 2004, Pemex signed a memorandum of understanding with U.S.-based Tidelands Oil and Gas to construct and operate a natural gas storage facility near Reynosa, Mexico. The facility is expected to have a storage capacity of 750 Bcf. Pemex hopes that the storage unit will give it more flexibility in dealing with natural gas price spikes in the United States.

COAL

Mexico has recoverable coal reserves of about 1.3 billion short tons, just over 70% of which is anthracite and bituminous, and just less than 30% of which is lignite and subbituminous. The majority of the country's coal reserves are located in Coahuila, in the northeast of the country, bordering the United States. Coal production has remained stable in the past few years (12.8 million short tons in 2001) and is used mostly for steel production and electricity generation. A small volume of imports from the United States, Canada, and Colombia augments domestic coal supplies.

Coal-fired plants supplied 15.8% of Mexico's electricity in 2002, according to Sener. Although this percentage is expected to fall in favor of natural gas-fired power plants to meet rising electricity demand, some have argued that coal consumption in the future could increase due to high natural gas prices. Mexican coal has very high ash content and therefore is mixed with lower-ash imported coal. Local coal has higher production costs than imported coal.

ELECTRICITY

In 2002, Mexico’s installed electric power generating capacity was 42.3 gigawatts. In the same year, the country generated an estimated 198.6 billion kilowatthours (Bkwh) of electricity, of which thermal (oil, natural gas, and coal) electricity generation account for 81%. Oil-fired power plants accounted for the largest share of Mexico's thermal electricity generation, but many of these plants are being converted to natural gas. According to Sener, fuel oil accounted for 49.4% of thermal feedstock in 2002. By 2012, natural gas is forecast to account for 63%of Mexico's power output while fuel oil's share is expected to drop to 24.2%. In 2002, hydropower accounted for 12% of Mexico's total electricity generation, followed by nuclear with 4.5% and geothermal with 2.5%. Mexico also has one wind-power installation in Oaxaca, which generated 0.005% of the country's total electricity generation. There are plans to increase Mexico's wind capacity.

Demand for electricity in Mexico has increased steadily over the last decade. Sener has forecast demand to grow at a rate of 5.6% between 2003 and 2012. The regions that are expected to see the largest increase are the Northeast, the Baja California and the Yucatan peninsula, mainly due to industrial and tourism development. According to government estimates, the country will need $50

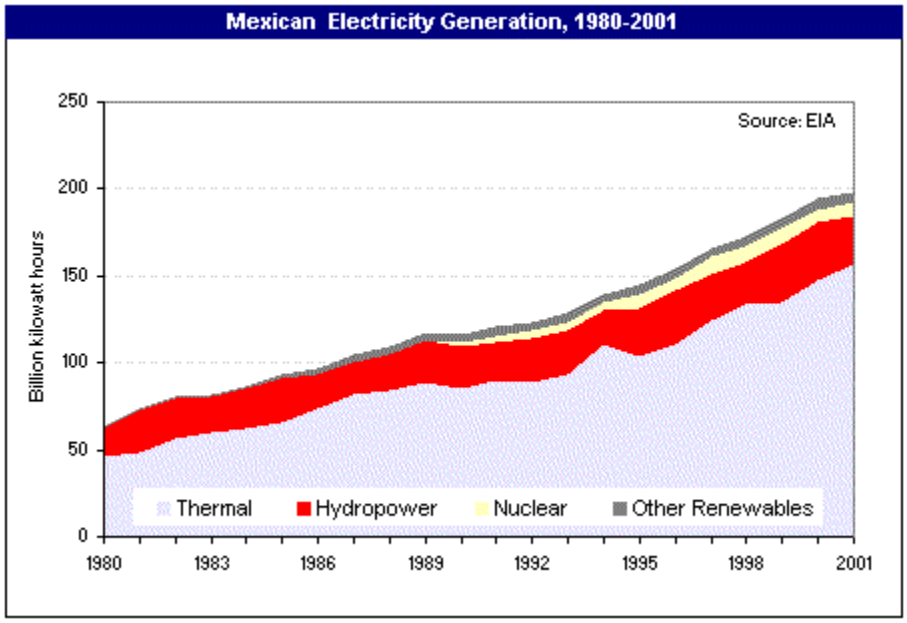
billion in investment over the next decade to meet the country's growing electricity demand.

Sector Organization

The Comisión Federal de Electricidad (CFE) and Luz y Fuerza Centro (LFC) are Mexico's two state-owned electricity companies. CFE continues to dominate the electric power sector, although the country's Public Electricity Service Act (Ley del Servicio Público de Energía Eléctrica) was amended in December 1992, allowing private participation in generation activities, such as independent power producers (IPPs), self-suppliers (autoabastecimiento), cogeneration and small-scale generation. CFE is obligated to supply electricity to the entire country as a public service except to Mexico City and some municipalities of the States of Mexico, Morelos, Hidalgo, and Puebla, where LFC is the supplier. In 2002, CFE and LFC accounted for 85.2% of Mexico's electric generation capacity, of which LFC contributed 2%. Pemex accounted for 5%, IPPs 6%, and self-suppliers for the remainder. CFE and LFC also control transmission and distribution of electricity.

Independent Power Producers (IPPs)

IPPs are allowed to build and own power generation facilities, with power generated mainly bought by CFE under long-term Power Purchase Agreements (PPAs) or exported. An example of this is InterGen's La Rosita Energy facility in Mexicali, Mexico, approximately 6 miles south of the U.S. border. InterGen currently sells 66% of the facility's capacity to CFE under a 25-year PPA. The remaining capacity is sold in the border region.



New Generation

In order to meet Mexico's projected electricity demand growth, CFE plans to add 25,757 MW in generation capacity between 2003 and 2012, of which over half is already under construction. In 2003, Spain's Union Fenosa, U.S.-based Sempra Energy, Canada's Transalta, and InterGen commissioned new power plants. The most recent power plant to come onstream was Iberdrola's 1,036-MW Altimira III & IV in February 2004. Projects scheduled to start operations this year include Guerrero Negro II, Baja California Sur I, Río Bravo III and the second stage of the Manuel Moreno Torres hydropower plant.

New IPP Bids

In 2003, CFE awarded three out of its five proposed IPP contracts to construct and operate new capacity. The three projects awarded included the 525-MW Valladolid III (to U.S.-based Calpine Corporation and Japan's Mitsui & Co. Ltd.); the 1,121-MW Altamira-V (to Spain's Iberdrola); and the 495-MW Tuxpan-V (to the Mitsubishi Corporation and Kyushu Electric Power). All these power plants will be natural gas-fired, combined-cycle power plants except for Mexicali II, which combines natural gas-fired capacity with a 25-MW solar unit. CFE has extended the tender bidding deadlines for the two IPP projects not awarded - the 1,046-MW Tamazunchale and the 250-MW

Mexicali-II plants - to March 29 and June 30, 2004, respectively. IPP projects that CFE plans to put out to bid in 2004 include the wind-powered La Venta II facility; the 469-MW combined-cycle natural gas-fired-plant, Agua Prieta II (456 MW); and the 700-MW coal powered Pacífico.

Infrastructure
Mexico has a national interconnected power grid with four regional divisions: Northern; North Baja; South Baja; and Southern (the largest). In the southeast and northeast, the grids are stretched such that new generation cannot be added without bolstering the transmission network. Accordingly, CFE has undertaken projects designed to make needed improvements to the national grid by working with private companies to install hundreds of miles of new high voltage transmission lines over the next few years.

International Interconnectors
Mexico's electricity grid connects to the United States on its northern border in several places. Most of the connections are between Texas grid and adjoining Mexican states which are used exclusively for emergency purposes. Currently, the Electric Reliability Council of Texas (ERCOT) is working closely with CFE in an attempt to increase the interconnectedness of their grids, both for economic and reliability reasons. In December 2003, ERCOT and CFE issued a joint report that outlined the benefits of building new transmission lines.
There also are three connections to California.

In the southern region, Mexico has an interconnector with Belize and is in the process of building a power transmission line connecting to Guatemala. The Mexico to Guatemala line, expected to be operational by mid-2005, is part of the Sistema de Interconexion Electrica para America Central (SIEPAC) project, which seeks to integrate the electricity grids of Central American countries.

ENVIRONMENT
While Mexico produces only 1.5% of the total world energy-related carbon emissions, it is a major regional contributor, along with Brazil, Argentina, Venezuela, Colombia and Chile, in Latin America. Mexico's carbon intensity is relatively high in comparison with most other countries of Central and South America. If policies are implemented as envisioned, however, carbon intensity likely will decrease in the future. Per capita energy consumption and carbon emissions are also high in comparison with other countries in the region; however, Mexico's per capita energy consumption and carbon emissions are low when compared to fellow OECD members.

COUNTRY OVERVIEW
President: Vicente Fox Quesada (since December 1, 2000)
Independence: September 16, 1810 (from Spain)
Population (2003E): 102.9 million
Location/Size: Southern N. America/762,000 square miles (nearly three times the size of Texas)
Major Cities: Mexico City (capital), Guadalajara, Monterrey, Puebla
Languages: Spanish, various Mayan, Nahuatl, and other regional indigenous languages
Ethnic Groups: Mestizo (Indian-Spanish), 60%; Amerindian, 30%; Caucasian, 9%; Other, 1%
Religions: Roman Catholic, 89%; Protestant, 6%, Other, 5%

ECONOMIC OVERVIEW
Secretary of Finance and Public Credit: Francisco Gil Diaz
Secretary of Economy: Fernando Canales Clariond
Currency: 1 Peso = 100 centavos
Market Exchange Rate (3/3/04): US$1 = 10.97 pesos
Nominal Gross Domestic Product (GDP, 2003E): $622.6 billion

Real GDP Growth Rate (2003E):1.3% **(2004F):** 3.2%
Inflation Rate (consumer prices, 2003E): 4.6% **(2004F):** 4.8%
Major Trading Partners: United States, Canada, Japan, Germany, and United Kingdom
Merchandise Exports (2003E): $165.3 billion
Merchandise Imports (2003E): $171.0 billion
Merchandise Trade Balance (2003E): -$5.7 billion
Major Export Products: products from maquiladoras, oil
Main Destinations of Exports (2002): U.S. (77%), Canada (5%), Japan (1.0%)
Major Import Products: products for maquiladoras, consumer goods, capital goods, raw materials and intermediate goods
Main Origins of Imports (2002): U.S. (63.6%), Germany (3.3%), Japan (2.5%), Canada (1.9%)

ENERGY OVERVIEW
Energy Minister: Felipe Calderon Hinojosa
Head of Pemex: Raúl Muñoz Leos
Proven Oil Reserves (1/1/04E): 15.8 billion barrels
Oil Production (2003E): 3.8 million barrels per day (bbl/d), of which 3.4 million bbl/d was crude
Oil Consumption (2003E): 2.05 million bbl/d
Net Oil Exports (2003E): 1.75 million bbl/d
Crude Oil Refining Capacity (1/1/04E): 1.73 million bbl/d
Natural Gas Reserves (1/1/04E): 15.0 trillion cubic feet (Tcf)
Natural Gas Production (2002E): 1.33 Tcf
Natural Gas Consumption (2002E): 1.50 Tcf
Net Natural Gas Imports (2002E): 0.27 Tcf
Recoverable Coal Reserves (2001E): 1.3 billion short tons
Coal Production (2002E): 12.1 million short tons
Coal Consumption (2002E): 13.8 million short tons
Net Coal Imports (2002E): 1.7 million short tons
Electric Generation Capacity (2002E): 42.3 gigawatts
Net Electricity Generation (2002E): 198.6 billion kilowatthours (Bkwh); 81% thermal, 12% hydro, 4.5% nuclear, 2.5% other
Net Electricity Consumption (2002E): 186.7 Bkwh

ENVIRONMENTAL OVERVIEW
Secretary of Environment & Natural Resources: Alberto Cardenas Jimenez
Total Energy Consumption (2001E): 6.0 quadrillion Btu* (1.5% of world total energy consumption)
Energy-Related Carbon Dioxide Emissions (2001E): 352.2 million metric tons of carbon dioxide (1.5% of world total carbon dioxide emissions)
Per Capita Energy Consumption (2001E): 59.0 million Btu (vs U.S. value of 341.8 million Btu)
Per Capita Carbon Dioxide Emissions (2001E): 3.5 metric tons of carbon (vs U.S. value of 20.2 metric tons of carbon)
Energy Intensity (2001E): 7,433 Btu/$1995 (vs U.S. value of 10,810 Btu/$1995)**
Carbon Dioxide Intensity (2001E): 0.44 metric tons of carbon/thousand $1995 (vs U.S. value of 0.64 metric tons/thousand $1995)**
Fuel Share of Energy Consumption (2001E): Oil (62.8%), Natural Gas (24.2%), Hydro (4.9%), Coal (4.5%), Other (2.0%), Nuclear (1.4%)
Fuel Share of Carbon Dioxide Emissions (2001E): Oil (71.2%), Natural Gas (21.7%), Coal (7.0%)
Status in Climate Change Negotiations: Non-Annex I country under the United Nations Framework Convention on Climate Change (ratified March 11th, 1993). Ratified the Kyoto

Protocol on September 7th, 2000.
Major Environmental Issues: Natural fresh water resources scarce and polluted in north, inaccessible and poor quality in center and extreme southeast; raw sewage and industrial effluents polluting rivers in urban areas; deforestation; widespread erosion; desertification; serious air pollution in the national capital and urban centers along US-Mexico border.
Major International Environmental Agreements: A party to Conventions on Biodiversity, Climate Change, Desertification, Endangered Species, Hazardous Wastes, Law of the Sea, Marine Dumping, Marine Life Conservation, Nuclear Test Ban, Ozone Layer Protection, Ship Pollution, Wetlands and Whaling.

* The total energy consumption statistic includes petroleum, dry natural gas, coal, net hydro, nuclear, geothermal, solar, wind, wood and waste electric power. The renewable energy consumption statistic is based on International Energy Agency (IEA) data and includes hydropower, solar, wind, tide, geothermal, solid biomass and animal products, biomass gas and liquids, industrial and municipal wastes. Sectoral shares of energy consumption and carbon emissions are also based on IEA data.
**GDP figures from OECD estimates based on purchasing power parity (PPP) exchange rates.

ENERGY INDUSTRY
Organization: *Oil and natural gas* - Petróleos Mexicanos (Pemex), four operating subsidiaries (Exploration and Production, Refining, Gas and Basic Petrochemicals, Secondary Petrochemicals), Petroleos Mexicanos Internacional (PMI); *Electric power and distribution* - Comisión Federal de Electricidad (CFE) and Luz y Fuerza del Centro (LFC); *Natural gas and electric power regulation* - Comisión Reguladora de Energía (CRE)
Major Ports: Gulf Coast - Cayo Arcos, Dos Bocas, and Pajaritos (handle most of Pemex's oil exports), Tuxpan, Ciudad Madero; Pacific Coast - Salina Cruz, Rosarito
Major Oil-Producing Fields: Cantarell, Abkatun, Ku, Caan, Pol, Chuc
Major Refineries (Crude Capacity): Salina Cruz (330,000 bbl/d), Tula Hidalgo (320,000 bbl/d), Salamanca (245,000 bbl/d), Cadereyta (275,000 bbl/d), Minatitlan (194,000 bbl/d), Ciudad Madero (320,000 bbl/d)

Sources for this report include: Business News Americas; Cambridge Energy Research Associates; ChevronTexaco; Chicago Tribune; CIA World Factbook; Comisión Federal de Electricidad; Dallas Morning News; Deutsche Bank; Dow Jones News wire service; Economist Intelligence Unit ViewsWire; Electric Utility Week; Energy Compass; Financial Times; Foster Electric Report; Global Insight; Global Power Report; Houston Chronicle; Inside Energy; Inside F.E.R.C.; International Energy Agency; International Oil Daily; International Petroleum Finance; Los Angeles Times; Marathon Oil Corporation; Mexico's Ministry of Energy; Natural Gas Week; New York Times; Oil and Gas Journal; Oil Daily; Pemex; Petrobras; Petroleum Economist; Petroleum Intelligence Weekly; Platts Oilgram News; PR News; Repsol-YPF; San Diego Union-Tribune; Securities and Exchanges Commission; Sempra Energy ; Shell; Tractebel; Transalta; Union Fenosa; Upstream; U.S. Department of State; U.S. Energy Information Administration; World Gas Intelligence; Wood MacKenzie; World Markets Analysis Online.

LINKS

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Links to other U.S. government sites:
CIA World Factbook - Mexico

U.S. Department of Commerce's Country Commercial Guide - Mexico
U.S. Department of Energy, Bilateral Energy Agreements with Mexico
U.S. Department of Energy's Office of Fossil Energy's International section - Mexico
U.S. Department of Energy, U.S. Electricity Trade
U.S. State Department's Consular Information Sheet - Mexico

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Secretaría de Comunicaciones y Transportes (SCT)
Secretaría de Medio Ambiente y Recursos Naturales (Semarnat)

LNG
ChevronTexaco Terminal GNL Mar Adentro de Baja California
Golar LNG Limited
Marathon - Tijuana LNG Project
Sempra Energy LNG Corporation

Oil and Natural Gas Companies
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File last modified: March 17, 2004

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