

23RD APEC ENERGY WORKING GROUP MEETING

Bangkok, Thailand, May 15-16, 2002

Notable Energy Developments

MEXICO

OIL

Since 2001, the world economy, and specially the United States suffered a slowdown accentuated after the September 11 attacks. This situation generated a decrease in oil demand and world oil prices.

Regarding this situation, the main oil producing countries intensified the dialogue in order to evaluate possible actions to balance supply and demand.

On November 11, 2001, the Ministers of Energy of Mexico, Venezuela and Saudi Arabia, met in Madrid, Spain, in order to analyze the behavior of the oil international market. During the meeting, the Ministers emphasized the importance of a stable market to maintain investment to ensure oil supply. Ministers confirmed the need of the consensus between OPEC and independent producing countries, as well as the consuming–producing countries dialogue.

To enhance the dialogue among independent oil producing countries, the Minister of Energy of Mexico visited Norway and Russia in November 2001 and March 2002. In these opportunities, the responsables of the energy sector of the three countries exchanged comments regarding the international oil market outlook.

On December 28, 2001, the Organization of the Petroleum Exporting Countries (OPEC) confirmed its decision to reduce its crude oil production by 1.5 million barrels per day over the next months, as of January 1, 2002, establishing its production base in 21.7 million barrels per day. Even though Mexico is not a member of the Organization, welcomed the decision and decided to reduce its crude oil export base by 100 thousand barrels per day, from an oil export base of 1 million 660 thousand barrels per day as of January 1, 2002. Norway, Russia, Angola and Oman joined this effort and the commitment of the main independent oil producing countries was of 462 thousand barrels per day.

Mexico is committed with full compliance of the agreements as well as with a close evaluation of the fundamentals of the market in order to maintain its stability, a healthy balance between supply and demand which will hinder a price fall and permit the necessary investments in order to assure a reliable supply. Mexico is committed, as well, with a continuous dialogue between producers and consumers, as well as between oil producing countries OPEC and Non-OPEC.

NATURAL GAS

During the period reported, the Energy Regulatory Commission (CRE) granted four permits. The Electricity Federal Commission (CFE) obtained a natural gas transportation permit for self use for the thermoelectric project *Valle de Mexico*, with a consumption of 7.5 million cubic meters of natural gas per day. Other natural gas transportation permits for self use were granted to *Aguas Tratadas de Minatitlan* with a capacity of 5,000 cubic meters, and *Termoelectrica Mexicali* with a consumption of 3 million cubic meters.

The CRE also granted to *Gasoductos La Rosita S. de R.L.* a natural gas transportation permit for self use. The gas will be consumed by: *Energía Azteca X, S. de R.L. de C.V.* and *Energia de Baja California, S. de R.L. de C.V.* with a consumption of 4.872 millions of cubic meters of natural gas per day. *Energia Azteca X* will produce 750 MW and *Energia de Baja California* will produce 250 MW. The length of the system will be of 3,810 meters and it is located in the municipality of Mexicali, Baja California.

On the other hand, a Coordination Agreement was signed between the Ministry of Energy, the CRE, and the State of Mexico, in order to extend the coverage of distribution, transportation and natural gas storage. The celebration of specific agreements among the municipalities and the natural gas companies is also contemplated as a measure that will provide more certainty to investors and a better infrastructure for the municipalities and final consumers.

Another important issue to mention is that, with the objective of certifying the process ISO-9000 of the CRE according to the Mexican Norm and renewing the present ISO-9000 certification, an auditing was performed by Laboratori General D'Assaigs i Investigacions (LGAI) and the Asociación de Normalización y Certificación (ANCE), during December. The result was that the quality system of the Commission fulfills the requirements established by the Norms and the auditing bodies.

Regarding verification visits to confirm the compliance of permit holders with the obligations established in the permits, it is significant to report that the CRE carried out nine verifications in natural gas, seven of them for distribution and two for transportation. Verification visits performed by CRE demonstrated the compliance with the obligations of their permits.

Recently, Official Mexican Norms were published by the CRE with regard to: installation for natural gas utilization, natural gas distribution, compressed natural gas for automotive use (minimum security requirements for service stations and vehicular installations), LPG transportation through pipelines (design, construction, operation and maintenance).

ELECTRICITY

During the period reported, the CRE granted two power permits to *Mexicana de Electrogeneración* for self use. In both permits participants are *Omnilife de Mexico* and *Grupo Omnilife*. The first permit will have a capacity of 10.88 MW with an annual energy production estimated in 27 GWh. The second permit will have a capacity of 6,48 MW with an annual energy production estimated in 25 GWh. Both plants will be located in dams on the Ayuquila

River, in the municipality of Ayutla in the State of Jalisco. The total investment is estimated in 17 million dollars approximately.

The CRE also granted a power permit to *Eléctrica del Valle de Mexico* for self use. The participants include: *Cimentaciones y Puertos, S.A.* and *Inversiones Eólicas, S. de R.L. de C.V.* Total capacity of the plant will be 180 MW with an annual energy production estimated of 973 GWh. The plant will be located in the municipalities of Asuncion Ixtaltepec and Juchitan de Zaragoza in the State the Oaxaca, and the investment is estimated in 180 million dollars approximately.

A permit to export electricity to the United States through the company *Central Power L.L.C.* was granted by the CRE to *Energía de Baja California* as an independent production project with a capacity of 337.05 MW. The estimated annual production will be 2,952.12 GWh with an approximate natural gas consumption of 606.30 million of cubic meters.

A second permit to export electricity to the United States was granted by the CRE to *AES Rosarito* through the company *AES New Energy Inc.*, as an independent production project with a capacity of 556 MW. The estimated annual production will be 3,500 GWh and the approximate natural gas consumption will be 764.56 million of cubic meters.

It is important to mention, that the CRE published in the Official Gazzette the approval of a methodology to calculate the cost for the study on electricity transmission service applications granted by Electricity Federal Commission (CFE) and Luz y Fuerza del Centro (LFC).

With this methodology, the investors who are interested in installing generation plants and choose to use the CFE lines, will be able to place their generation plants on the site that they consider most convenient, both technically and economically.

Cogeneration

Mexico's cogeneration potential development depends on several factors, such as the regulatory framework, capital availability, investment costs, electricity and fuel pricing among others. Current cogeneration accounts for 3,000 MW, representing 9% of total generation capacity.

Considering these factors, it is estimated that it will be possible to develop a cogeneration capacity in Mexico, from 1996 to 2006, from 3,507 Mwe in a low scenario and from 6,578 MWe in the high scenario, requiring an investment, in that period, of 2,805 - 7,894 million US dollars, respectively.

Once this cogeneration potential is implemented, it would be possible to obtain annual savings in fuel consumption equivalent to 28.0 millions of barrels of oil equivalent, for the low scenario, and of 52.7 millions of barrels of oil equivalent for the high scenario.

Total potential for cogeneration projects of Petroleos Mexicanos (PEMEX) subsidiaries surpassed the 4,500 MW, 945 MW of which are destined to domestic use and the exceeding capacity (3,595 MW) could be used to supply the electric service national network. The objective of these projects is to reduce the consumption of fuels for the production of steam and the electric power generation within the own-state company facilities.

The Electricity Federal Commission (CFE) intends to promote and support fuels diversification alternatives technology development for power generation. There's an important proposal to establish a working group to expedite the procedures that private generators should make to the CFE y LFC.

Renewable Energy

Mexican government is committed to support the design and implementation of programs to facilitate the acquisition of equipments and systems in order to: make the best use of renewable energies, intensify the national technology R&D with the adjustment and adoption of international technology advances on energy, promote actions related to the development of specialized human resources in the design and operation of systems that use renewable energies, among others.

In this regard, it is important to mention that on February 28 and March 1st, the National Commission for Energy Conservation (CONAE), organized a *Meeting-Dialogue to Incentive Investment on Renewable Energies in Mexico*. In the event took part government officials and private sector representatives from all over the country, who exchanged points of view with international specialists on the potential and options for a larger use of these sources in Mexico, with especial emphasis in the possibility of developing *green tariff* programs, as well as certificates or specialized funds for power generation through energy derived from wind, hydro, biomass and the sun.

Current renewable sources generation capacity in Mexico accounts: 9,620 MW hydropower; 855 MW geothermal; 2 MW wind, which represent 26% of total generation capacity.

Potential of renewable sources:

• Hydroelectric (Only 17% is currently exploited)	53,000 MW
• Geothermal (Only 40% is currently exploited)	2,120 MW
• Wind (Only 0.1% is currently exploited)	5,000 MW
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Total	60,120 MW