

TECHNICAL SPECIFICATIONS

Mexico's electrical system includes more than 33,000 megawatts of capacity. It operates at 60 cycles with normal voltages of 110, 200 and 400. Three-phase and single-phase 230 volt power is available. Generation is at a voltage of 4-22 KV, with transmission at 69, 114, 230 or 400 KV. The CFE operates about 350,000 kilometres of transmission and distribution lines, with about 1,300 substations.

Energy Diversification

One of the major objectives of the *Comisión Federal de Electricidad (CFE)*, Federal Electricity Commission, over the next ten years is to diversify the energy sources used for electricity generation, and to become less reliant on hydrocarbons in general and fuel oil in particular. The following alternative energy sources are being strongly promoted.

Natural Gas

Several major planned power projects will either be gas-fueled or dual-fueled, and some older facilities have been converted.

Solar Energy

The CFE is experimenting with solar technologies, both in the laboratory and in test installations. Photovoltaic systems are considered to have major potential for isolated communities.

Industrial Waste Heat

The CFE is developing practical co-generation systems and fostering the adoption of these technologies by industry.

Wind Energy

The CFE is experimenting with a number of different wind generator types, including a 100-kilowatt horizontal-axis design.

Anaerobic Sludge

The CFE has conducted laboratory experiments that suggest that sewage treatment plants can reduce their consumption of electricity by up to 70 percent by generating electricity from their own sludge.

Modernization

The 1994 annual report of the CFE sets out an ambitious plan for the modernization of Mexico's electricity infrastructure. Technical modernization is mainly aimed at the reduction of waste, under a program being carried out with financial assistance from the World Bank. This program could ultimately involve the expenditure of US \$2 billion over the next several years, and involves several components:

- studies of energy losses within the CFE system, and reduction of consumption for its own use;
- insulation of several thousand homes and a program to substitute fluorescent lamps for incandescent types;
- modernization of agricultural irrigation systems and the use of fluorescent lamps in poultry operations;

- evaluations of electricity waste in industry and demonstration projects to promote waste reduction;
- demonstration projects in stores, hotels, hospitals, schools and restaurants;
- pilot projects to cut energy use for municipal illumination and water pumping systems; and
- development of new technical standards for energy efficiency in electrically-operated devices.

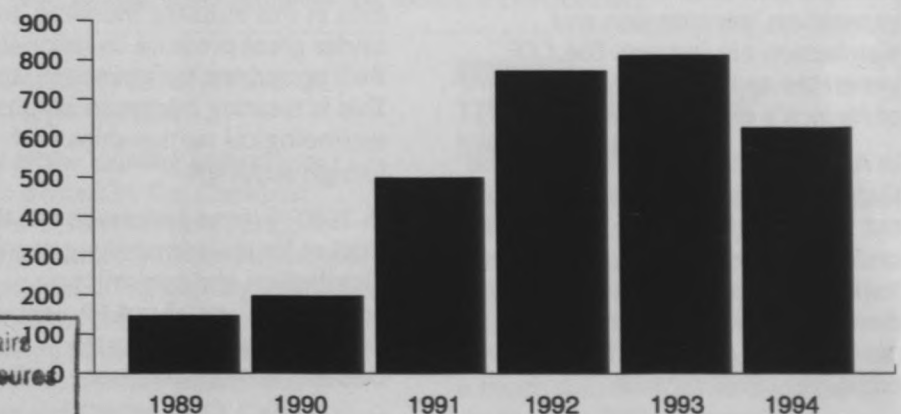
In addition, the CFE has already distributed close to two million copies of magazines and pamphlets promoting the rational use of energy.

FOREIGN TRADE

It is not possible to accurately calculate Mexico's imports of electric power generation and distribution equipment. The harmonized commodity classification system (HS) groups together a variety of electrical products which might be used for generation or distribution purposes, but which could also be used for other applications. The accompanying tables take a very

Electric Power and Distribution Equipment – Mexican Imports from the World, 1989-94

(US \$ millions)



Source: Government of Mexico import data and Statistics Canada World Trade Database.

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