Mexico

The United Mexican States (Estados Unidos Mexicanos) with its capital Mexico City (Ciudad de Mexico, 11.707.964 inhabitants, 1995) is the most northern country of Latin America, is bordered by the United States of America to the north, Guatemala and Belize to the south, the Pacific Ocean to the west and the Gulf of Mexico to the east. The landscape comprises of wetlands, deserts, jungles and alpine areas. About 40 percent of the total area consists of highlands which are predominantly widely infertile. A volcanic mountainous area, starting in the south of the highlands, reaches to the east coast.

Its area comprise 1.972.547 km² with 98,881 million inhabitants (2000) and a population density of 50 inhabitants per km². About 74 percent (1999) of the people are living in urban areas, due to the fact that Mexicans are migrating from rural areas to the industrialised urban centres.

Mexico is in the middle of a major political, social and economic transformation. In July 2000, Vicente Fox Quesada was elected for President and a 71 years period of uninterrupted governance by the Institutional Revolutionary Party ended in an establishment of a pluralistic political system. The new state administration has promised to tackle serious issues such as poverty, economic disparity, education, transparency in government and Aboriginal issues. One of the main tasks will be to expand the electricity sector in order to follow up the requested speed in development. It is generally agreed that the required capital can be raised only with the aid of the private sector. The ongoing process of decentralisation and privatisation of the energy sector therefore plays an important role in future national policy-making.[1]

In the recent years, Mexico has sought economic prosperity through liberalisation of its trade policy. Mexico was the first Latin American member of the Asia-Pacific Economic Co-operation forum (APEC), joining in year 1993. In January 1994, Mexico joined Canada and the United States in the North American Free Trade Agreement (NAFTA). Furthermore, Mexico joined the Organization for Economic Cooperation and Development (OECD) and became a founding member of the World Trade Organization (WTO). Nevertheless, Mexico experienced a severe financial crisis that also threatened the stability of other emerging market economies, especially in Latin America. The global financial problems in 1998 caused the national currency (Peso) to fall against the U.S. Dollar. The problems caused a sharp decline in the Mexican stock market and triggered reductions in government spending.

Mexican economy has experienced a high growth rate, less inflation, lower interest rates, and a stable exchange rate during the last three years.

In 2000 Mexico consumed a combined total of 155 million Megawatt-hours of electricity. Of this total, thermal (coal-, oil-, or gas-fired) plants generated 114,2 million MWh (73,7 percent), hydroelectric plants generated 27,6 million MWh (17,8 percent), nuclear plants generated 8 million MWh (5,2 percent), and geothermal and bioenergy plants 5,2 million MWh (3,3 percent). Mexico's industrial energy policy calls for conversion of many oil-fired power plants to natural gas by 2005. Most new power plants will run on natural gas. Mexico has proven natural gas reserves of about 2 billion (10^{12}) cubic metre, with 2000 consumption

[1] GTZ 2002: 140 f.

of about 37 milliard cubic metres. The country has home to the Western hemisphere's fourth-largest natural gas reserves (after the United States, Venezuela, and Canada).

Mexico has the second largest proven crude oil reserves in the Latin America with an estimated potential of 47,6 milliard barrels after Venezuela which has a estimated potential of 77,68 milliard barrels. In 2000 Mexico consumed 730 million barrels of oil equivalent (Boe). With net oil exports of roughly 1,6 million bbl/d, Mexico ranked as the world's fifth-largest oil producer (including crude, lease condensate, natural gas liquids, and refinery gain), behind the United States, Saudi Arabia, Russia, and Iran.[2]

Mexico has recoverable coal reserves of about 1,8 milliard tons. Coal production has remained stable in the past few years and is used mostly for steel production and electricity generation. The overall coal consumption in 2000 was 11,8 million tons while a small volume of imports (0,3 million tons) from the United States, Canada, and Colombia were used to support the domestic coal production.

Coal-fired plants supply roughly 10 percent of Mexico's electricity, but this percentage is expected to fall as natural gas-fired power plants are favoured to meet rising demand. Mexican coal has very high ash content and therefore is mixed with lower-ash imported coal. Furthermore, local coal costs are higher (caused by high production costs) than imported coal.

In May 1991, the government enacted legal reforms allowing private companies to generate electricity either for their own consumption or for sale to the Federal Electricity Commission (CFE) or small-scale consumers in rural or remote areas. To invite investors, the government opened a platform for research and discussion on bioenergy. Two main long lasting agencies are involved: an advisory council on the use of renewable energy sources (Consejo Consultativo para el Fomento de las Energias Renovables -COFER-) which was set up in 1997 and includes all major government and non-governmental institutions, this advisory council is supervised by the national commission for energy saving (Comision Nacional para el Ahorro de Energia -CONAE-) set up in 1989. Since 2000 new action plans have been drafted by the Ministry of Energy and the State Institute for Electricity Research. This includes mainly the development of commercial projects in rural electrification, biogas from landfills, sewage treatment plans as well as wind farms, pilot and research projects in the field of grid-coupled PV and parabolic reflectors.[3]

First positive outcomes are already visible. The regulatory authority for energy (Comisión Reguladora de Energia-CRE-) registered in 2000 growing electricity generation, using biogas in two plants with altogether 11 MW. Furthermore plans for 19 plants with together 171 MW, using fuel oil and bagasse were issued.[4]

The government encouraged production of basic crops such as corn and beans by maintaining support prices. In order to rationalise its agricultural sector, Mexico is now phasing out its support price scheme. Corn production dropped in 1995 and 1996 as more was imported. The government in 1996 crafted federal-to-state agreements targeted at each states' most urgent needs, with the goal of increasing the use of modern equipment and technology in order to increase per-acre productivity. By supporting the agricultural output in the main products such as corn, beans, oilseeds, feed grains, fruit, cotton, coffee and sugarcane, the Mexican

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[2] IEO 2002: 67.

[3] GTZ 2002: 138 f.

[4] GTZ 2002: 143. For further information see *Huacuz* 2001.

Government is preparing the future increase of biomass and the utilisation of bioenergy. The sugar industry produced 5,03 million tons of sugar in 1999 while the available cane bagasse had an annual output of 16,39 million tonnes.[5] Up to now most of the bagasse is used as an self-sufficient energy supplier.

[5] ISO 1999.