

## Venezuela

The Republic of Venezuela (República de Venezuela) with its capital of Caracas (1.824.892 inhabitants, 1990) comprise an area of 912.050 km<sup>2</sup>. With 24,17 million inhabitants the population density is 26 inhabitants per km<sup>2</sup>, which is below the regional average. Nevertheless the urban population is with 87 percent one of the highest in LAC.

Venezuela is a country of natural beauty and dramatic contrasts. The snow-covered peaks of the Andes in the west, the steamy Amazonian jungles in the south, the beautiful Gran Sabana plateau in the east and white-sand beaches with coconut palms at the Caribbean coast are part of the unique environment. Furthermore, South America's largest lake, Lake Maracaibo, and the world's highest waterfall are famous spots. Due to its huge oil reserves, Venezuela is important to world energy markets. Venezuela consistently ranks as one of the top suppliers of U.S. oil imports and is among the top ten crude oil producers in the world. In addition there are vast resources of other minerals and metals in the country. Oil accounts for more than three-quarters of total Venezuelan export revenues, about half of total government revenues, and about one-third of gross domestic product. In reaction to capital flight and low world oil prices, on February 12, 2002, the Venezuelan currency lost about 20 percent of its original worth.<sup>1</sup>

Venezuela has one of the highest electric supply rates in Latin America at over 90 percent, and Venezuelans are the highest per capita users of electricity in Latin America.<sup>2</sup> The electricity consumption in 2000 was 60,55 million MWh, of which 68 percent were generated with hydropower, while the remainder of 32 percent was generated by oil- and natural gas-fired thermoelectric plants. Increased demand in coming years will be met with a combination of natural gas and oil as well as hydropower. The proportions of hydropower to thermal power are expected to remain constant. Venezuela has the world's second largest operational hydroelectric dam (after Itaipú in Paraguay), the 10.000 MW Raul Leoni dam on the Caroní River. Venezuela typically generates excess power (1.500 GWh in 2000) and feeds it in the grid which is joining Venezuela with Colombia. In the future it is planned to connect these two countries with Brazil.

The Venezuelan electricity sector is a mixture of state-owned utilities, comprising the majority of the sector, and some private companies. The state owned company, Electrificación de Caroní (EDELCA) is the largest generation company in Venezuela, generating over 70 percent of the country's electricity. After a decade of under-investment in Venezuela's electricity sector, the country now is facing a potential crisis. Analysts are predicting even more blackouts, and electricity rationing could come at some point in 2002.<sup>3</sup> The main reason for the power shortfall is the reduced hydropower capacity, caused by low rainfalls in the past. Rampant electricity theft also is straining the infrastructure, with illegal hookups accounting for an estimated quarter of Venezuela's total consumption.

Venezuela has the largest proven oil reserves in the western hemisphere at 77,68 milliard. The production in 2000 was estimated at 1,1 milliard barrel, about 173,7 million barrels were

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<sup>1</sup> World Bank 2002: 43.

<sup>2</sup> IEA 2000.

<sup>3</sup> WEC 2001: 35.

consumed domestically, while the remaining 926 million barrels were exported.<sup>4</sup> The main part of 60 percent was exported to the United States. Venezuela has ranked consistently in the last several years as one of the four top sources of U.S. oil imports (along with Canada, Mexico, and Saudi Arabia).

Venezuela is a founding member of the Organization of Petroleum Exporting Countries (OPEC) and regularly exceeded its OPEC-agreed oil production targets. The Venezuelan President Chávez indicated in March 2002 that the social cost of maintaining the OPEC quota is becoming increasingly difficult, as exports are essential for the country's economy.

Venezuela's natural gas reserves are estimated at 4,15 billion cubic metres. The country has, 2<sup>nd</sup> to the United States, the second largest proven reserves in the western hemisphere. The country produced only about 39,5 milliard cubic metres in 2000. About 60 percent of the country's gas production are consumed by the oil industry, which either re-injects the gas into oil fields or flares it. About 10 percent are consumed for power generation; 6 percent is used in petrochemical production, and the remainder of 24 percent is used by industrial or commercial customers in large cities.<sup>5</sup> The existing Venezuelan natural gas infrastructure consists of more than 4.000 kilometres of domestic pipeline whereas the country has no export pipelines.

Venezuela has recoverable coal reserves of approximately 1,3 milliard metric tons. The country is the third largest coal producer in Latin America, after Colombia and Brazil. Production in 2000 amounted to over 8,4 million metric tons while the country's coal consumption was 1,3 million tons. The country is a net coal exporter with an export volume of 7,1 million tons. Trading partners are LAC countries, the United States and Europe.<sup>6</sup>

Due to the rich fossil fuel resources of Venezuela, the energy continues to be provided largely by the combustion of fossil fuels. Potential biomass resources are residues of coffee pulp, sugar cane, corn, sorghum, rice and bananas. Due to large-scale production of milk, beef, pork and poultry, considerable amounts of biogas-suitable biomass is available. The country's sugar industry produced 535 tons of sugar and 1,74 million tons of sugar cane bagasse.<sup>7</sup>

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<sup>4</sup> EIA 2000. and SIEE 2000.

<sup>5</sup> IEA 2002.

<sup>6</sup> UN 2001-2002

<sup>7</sup> ISO 1999. and WEC 2002