

## Nicaragua

The Republic of Nicaragua (República de Nicaragua) with its capital Managua (1.000.000 inhabitants) comprises an area of 130.000 km<sup>2</sup> and 5,074 million inhabitants. The population density is with 39 inhabitants per km<sup>2</sup> just below the regional average, whereas urban population rate is located with 64 percent at the ceiling.

Although the country possesses beautiful landscapes and cultural treasures, Nicaragua is best known for the 1979 Sandinista National Liberation Front (FSLN) revolution and subsequent Contra War. In response to both domestic and international pressure, the Sandinista regime finally entered into negotiations with the Nicaraguan Resistance and agreed to nationwide elections in February 1990.

This opened the country and led to the implementation of free market oriented reforms in 1991. The government programme has made, despite some setbacks widespread progress mainly in reducing the state's influence in the production sector with a large scale privatisation program. The economy began expanding in 1994 while in 2001, the global recession, combined with a series of bank failures, low coffee prices, and a drought, caused the economy to retract. Nicaragua is primarily an agricultural country, but construction, mining, fisheries, and general commerce also have been expanding during the last few years. Rapid expansion of the tourist industry has made it the nation's third-largest source of foreign exchange.

As late as 1993, the LAC region remained without an interconnected power grid. In 2000, Nicaragua obtained 67,6 percent of its 1,61 million MWh consumption with the combustion of oil, while hydropower contributed 17,7 percent. The rest of 14,7 percent was mainly covered by geothermal power plants, working with different techniques. The Flash Steam technique involves the flashing of hot water (above 1750°C) in a single or dual flash system to produce steam that drives a turbine. The Binary-cycle method, utilises hot geothermal water to boil working fluids (between 1000°C and 1750°C) from which vapours, drive a turbine. The third technique, named Dry Steam method, first cleans the steam in order to remove entrapped solids, before using it to run a turbine.

Nicaragua has no proven oil, coal or natural gas resources. Therefore, the fossil fuel consumption is totally covered by imported oil. The overall consumption of 8,43 million barrels in 2000 was imported from countries like Mexico and Venezuela.<sup>1</sup>

Agricultural residues from the production and processing of coffee, sugar, corn, rice, beans and bananas are potential biomass resources that can be utilised in further bioenergy projects. The 1999 sugar cane production was estimated at 351 thousand tons with a projected bagasse potential of 1,14 million tons.<sup>2</sup>

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<sup>1</sup> EIA SIEE 2000.

<sup>2</sup> ISO 1999.