

The Costa Rican Geothermal Energy Development

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Abstract

The exploration and development of geothermal energy and its contribution to the electricity needs of the country are reviewed. A national reconnaissance resource study, now more than 10 years old, indicated that the possible total geothermal potential of Costa Rica was about 900 MWe.

The first deep geothermal exploratory wells in Costa Rica were drilled at Miravalles in 1979-1980. Electricity began to be produced at that geothermal field in early 1994. Since then, the installed capacity has grown from 55 MWe to 142.5 MWe. The two most studied undeveloped Costa Rican geothermal systems are those associated with the Tenorio and Rincón de la Vieja volcanoes. In 2001, a deep exploratory well program was begun at the Las Pailas geothermal zone on the southern slope of the Rincón de la Vieja volcano. Preliminary results of that drilling program are presented.

The contributions of different energy sources to the electricity system of Costa Rica are discussed. At the end of 2002, geothermal produced 1,120.7 GWh, representing 15 % of the total electricity generated, even though it only accounts to 8.5 % of the country's installed capacity.