

GEOTHERMAL ENERGY ABSTRACTS

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Geothermal Resource Development for Electric Power Generation in Indonesia: Results and Future Promises

Indonesia is one of the largest developing countries in southeast Asia; therefore, energy demand tends to increase continuously. Fortunately, large amounts of energy resource potentials are available, among which is energy from geothermal resources. Some of these energy resources comprise exportable commodities such as oil, natural gas, and coal; others are for domestic consumption such as hydrothermal and geothermal energy.

During the next several years the Indonesian government intends to accelerate development of nonexportable energies used to generate electrical power in order to save exportable energies that can bring foreign currencies. Therefore, geothermal has become a priority goal. Moreover, this type of energy is of particular interest because Indonesia has a large geothermal energy potential related to the Circum-Pacific volcanic belts. These geothermal manifestations are spread throughout almost the entire archipelago, except the island of Kalimantan.

Geothermal exploration in Indonesia began in 1929 when some shallow wells were drilled in Kamojang, West Java. Actual exploration for geothermal energy to generate electricity commenced in 1972. Preliminary reconnaissance surveys were made by the Volcanological Survey of Indonesia.

In 1982, the state oil company, Pertamina, was placed in charge of exploration and development activities for geothermal energy in different fields, either by its own activities or in the form of joint-operation contracts with foreign companies. In addition, the state electrical company, PLN, is responsible for installing a power plant to generate and distribute electricity.

Presently, several projects are at different stages of maturity. Some fields are in an exploration stage, and others are already developed. Geothermal fields have mainly been developed in Java, e.g., Kamojang has a 30-MW power plant, in use since February 1982, that is being upgraded to 140-MW capacity, scheduled for completion in 1987. Dieng is being developed for 55-110 MW, and Gunung Salak for 110 MW.

Fields in the exploration stages are Darajat, Banten, Cisolok in West Java, and another in Lahendong, Manado, North Sulawesi. Exploration studies are in progress in 15 fields among the 77 promising geothermal areas found throughout Indonesia.

In this paper, important data about exploration studies, brief summaries about development histories, and actual status of developing fields will be presented.