Source:JASE-W Japanese Smart Energy Products & Technologies
https://www.jase-w.eccj.or.jp/technologies/index.html

						S5	renewable energy
E-19	Keywords	Y4	system or software	Z4	electricity	L	Technical Services

Nippon Koei Co., Ltd.

Engineering Services for Geothermal Development

Features

- **Trend of renewable energy use**
  A number of developing countries are facing energy issues including regional disparities in electrification rates and strain arising from a growing demand for power. Since this is one of the factors inhibiting poverty alleviation and economic growth, the development and stable supply of low-cost and clean energy is in demand for the people. Geothermal energy features superior supply stability and a low emission of global warming substances. As a purely domestically produced renewable energy, geothermal energy is drawing a lot of attention from the perspective of energy security and mitigation of global warming.
- **Abundant track records in electric power engineering services**
  Nippon Koei have been providing consulting services in the field of power development for more than 50 years in response to local issues of individual nations around the world, e.g. the formulation of optimum power development plans, the design of facilities, such as power plants, power transmission and distribution networks, as well as substations.
- **Proposals utilizing advantages as total consulting service provider**
  As a total consulting service provider with expertise in a diverse range of fields, such as electric power, civil engineering, agriculture, city planning, etc., we are not only able to propose power development, but we also offer solutions on regional development with the direct use of geothermal resources.
- Active Efforts for the Development of Geothermal Energy in Latin America and East Africa
  We are actively engaged in consulting services for geothermal energy development with the governments in Latin America (Bolivia, Peru etc.) and East Africa (Ethiopia, Djibouti etc.) where they have abundant geothermal resources.

Basic Concept or Summary

- Geothermal studies
  We study geothermal manifestations such as fumarolic gas and hot springs on the surface of the ground and combine them with findings from geophysical and geochemical surveys in order to appropriately select candidate sites for geothermal development.
- Geothermal reservoir assessment and simulation
  We support the formulation of geothermal power plant construction plans for geothermal resources using geothermal well data from three-dimensional geothermal fluid dynamics and heat transport model analysis to evaluate the geothermal resources which can be developed.
- Geothermal power plant projects Survey, design, implementation and implementation management
  Nippon Koei provides comprehensive services in the overall project cycle from surveys for geothermal power plant projects in various locations in the world to the design, implementation and supervision of those projects.


Exploration well drilling site (Rwanda)


Consultation with relevant authorities (Peru)


Geothermal surface survey (Republic of Djibouti)


Geochemical survey (Ethiopia)

Effects or Remarks

- Geothermal power helps to reduce fossil fuel utilization, as well as carbon dioxide emissions. This not only improves the environment, but we can also expect benefits by registering the project as a CDM project.
- A number of remote areas in archipelagic countries as well as mountainous countries, where grid systems have not been well developed, have only diesel power to meet the regional electricity demand. Power generation costs could be reduced by replacing diesel with geothermal.
- Conversion into geothermal energy, which is a purely domestically produced energy, not only becomes possible for reducing the amount of fossil fuels imported, but other benefits can also be expected, e.g. exporting fossil fuels produced within the country as a means to acquire foreign currency by saving domestic consumption.

Installation in Practice or Schedule

Primary track records in the recent past:

Information Collection/Checking Related to Geothermal Development (gravity survey) in the Republic of Djibouti. (Ongoing since 2015)

Information Collection/Checking Related to Geothermal Development (geophysical survey) in the Republic of Djibouti. (January 2015 to August 2015)

Laguna Colorada Geothermal Power Plant Construction Project, Phase 1 of First Stage in the Plurinational State of Bolivia. (Ongoing since 2015)

Information Collection/Checking Related to Geothermal Development in the Federal Democratic Republic of Ethiopia. (November 2015 to August 2016)

Information Collection/Checking Related to Geothermal Development in Saint Vincent and the Grenadines. (February 2015 to August 2016)

Information Collection/Checking Related to Geothermal Development in the Republic of Djibouti. (March 2014 to September 2014)

M/P Formulation Project for Nation-wide Geothermal Development in the Federal Democratic Republic of Ethiopia. (September 2013 to March 2015)

Survey for the Geothermal Development Project in Tacna Region, the Republic of Peru (September 2013 to February 2014)

JCM Feasibility Study “Binary Geothermal Power Generation in the Republic of the Union of Myanmar” (July 2013 to March 2014)

Data Collection Survey on Geothermal Development in the Republic of Rwanda (March 2013 to September 2013)

Pre-feasibility study of geothermal development in East Nusa Tenggara Province, Indonesia. (September 2012 to February 2013)

Master plan study for the development of renewable energy in the Republic of El Salvador. (July 2011 to March 2012)

Pre-feasibility study of geothermal development in Nevado del Ruiz volcano, Colombia. (June 2011 to September 2012)

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