

E-04	Keywords	Y3	equipment or facility	Z2	oil	S5	renewable energy
						E29	electrical machinery

Fuji Electric Co., Ltd.

Geothermal Power Plant

Features

1. Using renewable energy
Uses geothermal heat to generate power after removing the energy in the form of steam or hot water
2. Rich experience
 - Fuji has delivered geothermal steam turbines and generators for over a half century and occupy about 1/4 of the world market share.
 - Delivered a geothermal power generator with the world's largest capacity for a single machine (140 MW) to the Nga Awa Purua geothermal power plant
3. Fuji provides total coordination for geothermal plants
On top of manufacturing steam turbines and generators, Fuji designed the plant as a whole, arranged peripheral devices, and implemented construction.
4. Launched distribution of binary generators in 2010
 - Enable power generation from previously untapped low-temperature geothermal resources
 - Provide hybrid systems in combination with flash steam systems



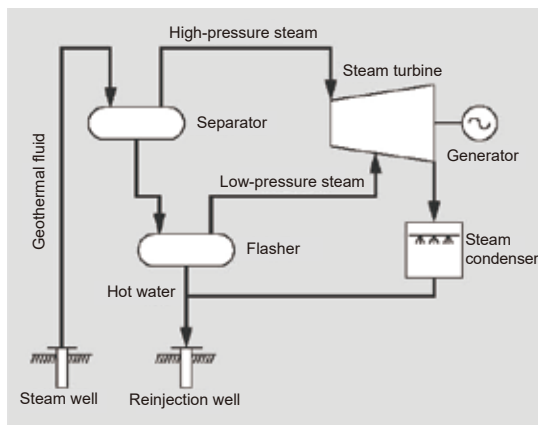
Nga Awa Purua geothermal power plant (New Zealand)
In operation since 2010

Basic Concept or Summary

Removes mixed fluid of steam and hot water heated by high temperature magma reservoirs through a well

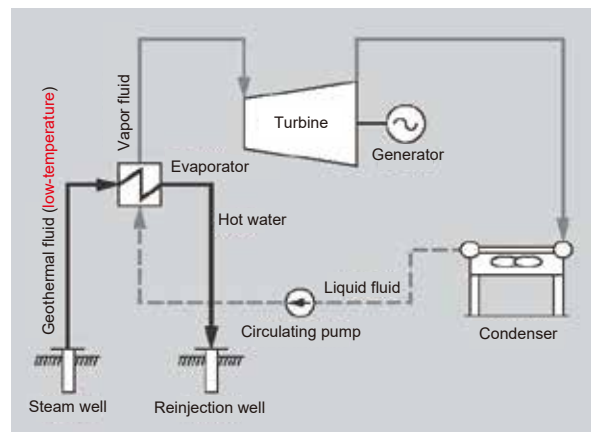
→ Flash steam system

Generates power by steam-driving turbines after separating steam and hot water extracted from the earth



→ Binary system

Generates power by using an evaporating medium with a lower boiling point than water to drive turbines with the steam and hot water extracted from the earth

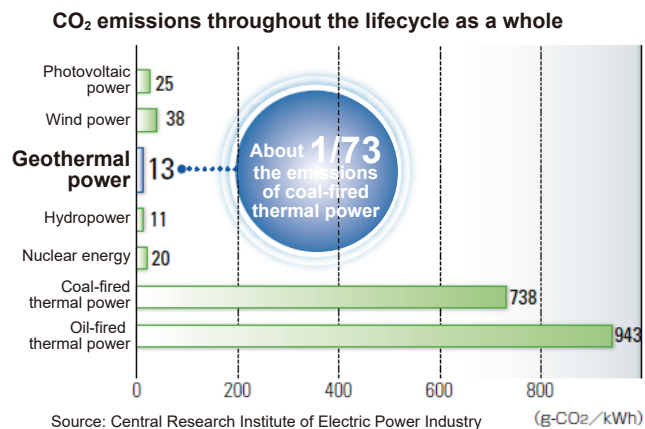


Geothermal steam turbine and generator



Takigami binary power plant (Japan)
Output: 5.05 MW
In operation since 2017

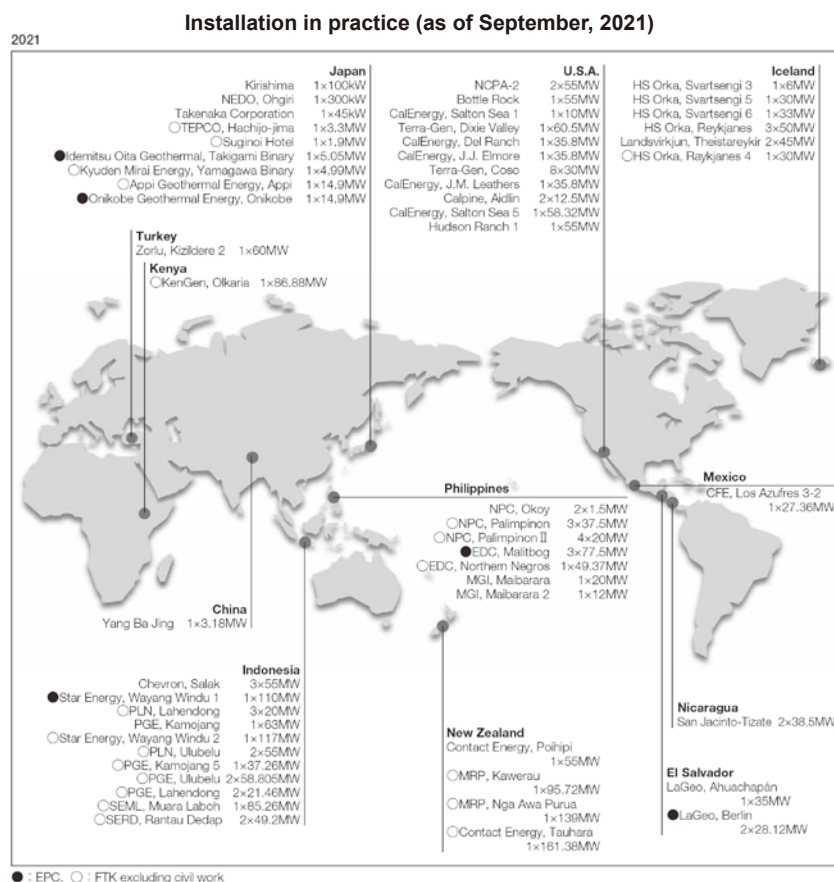
- ◆ Incredibly small amount of CO₂ emissions thanks to the use of geothermal energy instead of burning fossil fuels
- ◆ Unlike other natural resources (e.g. wind or sunlight), geothermal energy can be used consistently, since it is free from the impact of climate and other weather conditions. Therefore, usage rates for geothermal power are higher than for other forms of energy.



Installation in Practice or Schedule

Domestic Total output : 45.5MW, Number delivered : 9 (as of September, 2021)

Overseas Total output : 3,373MW, Number delivered : 76 (as of September, 2021)



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