

CERAMAH TEKNIK TECHNICAL TALK

Classification of geothermal systems from a Geology and Resource Assessment perspective

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Venue and platform: Sheraton Hotel, Petaling Jaya, Selangor, Zoom and Facebook Live GSM

A special pre-GSM Annual General Meeting talk was delivered by Dr. Arnout JW Everts on 28th April, 2023, at the Sheraton Hotel, Petaling Jaya and via Zoom and Facebook Live. Some 90 members participated. An abstract of the talk is given below:

Abstract: Geothermal energy is the thermal energy in the Earth's crust which originates from the formation of the planet and from radioactive decay of materials. Geothermal energy can be exploited by directly tapping into hot surface-springs, or by drilling wells to flow heat to surface via a convective carrier (a working fluid). Conventional "open systems" produce formation fluid from the subsurface and pass these through a heat exchanger to recover heat. Alternative to this is a "closed loop system" where a suitable heat carrier (like water or supercritical CO₂) is circulated down in a cased well, warmed up by conductive heat transfer and then circulated back up and passed through a heat exchanger. Harvested heat can be used for direct heating or, where conditions are favourable, for electric power generation. Technologies in use for power generation include dry steam power stations, flash steam power stations and binary cycle power stations. Geothermal electricity generation is currently used in 26 countries, while geothermal heating is in use in 70 countries. Geothermal systems occupy a wide variety of geological settings, temperatures and phase-behaviour of geothermal fluids. Objective of this paper is to discuss classification of geothermal systems from a point of view of geology and how to address them from a point of view of classifying resource potential.

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President, Geological Society of Malaysia

29th April, 2023