Special Issue

Towards Geothermal Power Plants with Zero Greenhouse and Pollutant Gases Emissions

Message from the Guest Editors

The issue of avoiding emissions of greenhouse and pollutant gases is becoming a concern in the development of geothermal energy conversion and utilization projects (electricity and district heating). The geothermal resource often contains relevant amounts of non-condensable gases (NCGs), mostly CO2, but with marginal fractions of CH4, NH3, H2S, H2, Hg and other undesirable substances. The objective of developing cleaner and more sustainable geothermal energy implies avoiding or largely reducing gas emissions to the atmosphere, thus developing technologies either to reinject NCGs into the reservoir or to direct them to mineral sequestration processes. The solutions can be applied to geothermal power plants of different type (direct steam, flash, or binary/ORC) and resource conditions (water or steam-dominated reservoirs of different temperatures). The development of these solutions calls for expertise in widely multidisciplinary fields, ranging from geochemistry to reservoir and well engineering, two-phase flows including reactivity in fractured porous media (saline equilibria and kinetics), heat–mass transfer, and power engineering...

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Deadline for manuscript submissions

closed (31 December 2021)

Energies

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 7.3

mdpi.com/si/27461

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Energies is an international, open access journal in energy engineering and research. The journal publishes original papers, review articles, technical notes, and letters. Authors are encouraged to submit manuscripts which bridge the gaps between research, development and implementation. The journal provides a forum for information on research, innovation, and demonstration in the areas of energy conversion and conservation, the optimal use of energy resources, optimization of energy processes, mitigation of environmental pollutants, and sustainable energy systems.

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