

## Optimization of Hydraulic Fracturing for Horizontal Wells in Enhanced Geothermal Reservoirs

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**Abstract :** Geothermal energy is a renewable energy source that can be found in abundance on our planet. Only a small fraction of it is currently converted to electrical power, though in recent years installed geothermal capacity has increased considerably all over the world. In this paper, we assumed a model for designing of Enhanced Geothermal System, EGS. We used computer modeling group, CMG reservoir simulation software to create the typical Hot Dry Rock, HDR reservoir. In this research two wells, one injection of cold water and one production of hot water are included in the model. There are some hydraulic fractures created by the mentioned software. And cold water is injected in order to produce energy from the reservoir. The result of injecting cold water to the reservoir and extracting geothermal energy is defined by some graphs at the end of this research. The production of energy is quantified in a period of 10 years.

**Keywords :** geothermal energy, EGS, HDR, hydraulic fracturing

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