World Academy of Science, Engineering and Technology
International Journal of Mathematical and Computational Sciences
Vol:14, No:12, 2020

Investigation of Enhanced Geothermal System with CO2 as Working Fluid

Authors : Ruina Xu, Peixue Jiang, Feng Luo

Abstract : The novel concept of enhanced geothermal system with CO2 instead of water as working fluid (CO2-EGS) has attracted wide attention due to additional benefit of CO2 geological storage during the power generation process. In this research, numerical investigation on a doublet CO2-EGS system is performed, focusing on the influence of the injection/production well perforation location in the targeted geothermal reservoir. Three different reservoir inlet and outlet boundary conditions are used in simulations since the well constrains are different in reality. The results show that CO2-EGS system performance of power generation and power cost vary greatly among cases of different wells perforation locations, and the optimum options under different boundary conditions are also different.

Keywords : Enhanced Geothermal System, supercritical CO2, heat transfer, CO2-EGS
Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development
Conference Location : Chicago, United States
Conference Dates : December 12-13, 2020