

Application of Geothermal Energy Associated with Oil and Gas Fields at the Time of Low Oil Prices

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Abstract

Oil and gas resources are traditionally considered as high CO₂ emissions. In some oil fields, a significant portion of crude oil is burning to provide heat for transportation of oil in winter. However there is a huge amount of geothermal energy co-existed with oil and gas in these petroleum reservoirs. Recently geothermal HVAC, direct use, and power generation by using hot fluids co-produced from oil and gas reservoirs have been hot topics in cases in which oil and gas are being produced by water injection. However there are many problems to be yet solved in order to make it profitable, especially at the time of low oil prices. One of the important concerns that operators often consider is what the relationship between oil production and application of the geothermal energy co-produced from the reservoirs. The oil operators do not want that the use of the low-enthalpy and low-income geothermal energy reduces their oil production. To this end, some examples of applying geothermal energy in oil and gas fields in china have been analyzed and discussed in this paper. These include the electricity generation and oil transportation using coproduced hot fluid in Huabei oil field, space heating and tubing cleaning in Liaohe and Daqing oilfield in Northern China.

Application of Geothermal Energy from Oil and Gas Fields in China and US at the Time of Low Oil Prices