

**A NOVEL METHOD TO GENERATE ELECTRICITY BY UTILIZING LOW  
TEMPERATURE GEOTHERMAL RESOURCES**

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**Abstract**

In present energy position and petroleum cost inclination, oil and gas companies are energetically seeking additional innovative behavior to decrease operating costs and to enlarge the life of ageing fields. Many mature oil and gas fields are described by a huge amount of co-produced water having water cut up to 90%, which is required to be treat constantly and cannot be deliver to the environment. The produced water is required to dispose or re-inject into the reservoirs. This practice needs a lot of cost and decrease the net profit value of the petroleum companies. Co-produced steam can be a valuable source for the generation of electricity, as in the oil and gas fields with high water cut, the produced water temperature is up to 100°C, which is sufficient enough to produce electricity by using Binary power plant. Electricity production from produced water with high water cut will be a profitable source for oil and gas producers. Current study proposes a method for electricity generation using hot fluids (oil, water) produced from oil reservoir for which a pilot binary power plant of 300 KW could be a most suitable system whose payback time is round about 5 to 6 years. The daily water production from oil reservoir is about 17000 m<sup>3</sup> with temperature up to 100 °C. The predictable electrical power is about 3.5 MW and could be improved to 100 MW by raising the production of water.