

## **Interdisciplinary Approach for Economic Production of Oil and Gas Reserves: Application of Geothermal Energy for Enhanced Oil Recovery**

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**Abstract :** With present scenario of aging oil and gas fields with high water cuts, volatile oil prices and increasing greenhouse gas emission, the need for alleviating such issues has necessitated for oil and gas industry to make the maximum out of available assets, infrastructure and reserves in mother Earth. Study undertaken emphasizes on utilizing Geothermal Energy under specific reservoir conditions for Enhanced oil Recovery (EOR) to boost up production. Allied benefits of this process include mitigation of electricity problem in remote fields and controlled CO-emission. Utilization of this energy for EOR and increasing economic life of field could surely be rewarding. A new way to value oil lands would be considered if geothermal co-production is integrated in the field development program. Temperature profile of co-produced fluid across its journey is a pivotal issue which has been studied. Geo pressured reservoirs resulting from trapped brine under an impermeable bed is also a frontier for exploitation. Hot geothermal fluid is a by-product of large number of oil and gas wells, historically this hot water has been seen as an inconvenience; however, it can be looked at as a useful resource. The production of hot fluids from abandoned and co-production of hot fluids from producing wells has potential to prolong life of oil and gas fields. The study encompasses various factors which are required for use of this technology and application of this process across various phases of oil and gas value chain. Interdisciplinary approach in oil and gas value chain has shown potential for economic production of estimated oil and gas reserves.

**Keywords :** enhanced oil recovery, geo-pressured reservoirs, geothermal energy, oil and gas value chain

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