

Industrial Upcycling: Transforming Oil Rigs to Geothermal Power

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Abstract:

Offshore oil and gas platforms in the Gulf of Mexico occur in an area with relatively easily exploited geothermal energy resources; can they be adapted for this purpose rather than being decommissioned? The feasibility of, and policy needs for, repurposing decommissioned offshore oil and gas platforms, particularly candidates for the “Rigs to Reefs” program, and retrofitting them for energy production using enhanced geothermal systems (EGS) requires interdisciplinary research. By drilling deeper from these platforms to access higher heat flows, binary geothermal plants can plausibly be constructed, thus significantly reducing the large capital expense required to construct an offshore geothermal well if there was no existing infrastructure. Once the geological heat flows are determined, an economic analysis and projection can take place. Assuming such a project is economically viable, regulatory and policy issues regarding offshore geothermal resource extraction are undeveloped and may need clarification or legislative action in order for a project to advance. Preliminary research and results for this research inquiry will be presented.