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By Trey Gerfers (https://bigbendsentinel.com/people/trey-gerfers/)

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#### Geothermal energy in Presidio County

Conventional geothermal energy is found in the form of steam and very hot water beneath the earth's surface at depths of several feet to a few miles. These reservoirs of liquid heat can be tapped and brought to the surface to turn turbines and generate electricity. Conventional geothermal energy has long been restricted to places like Iceland, Japan, and the Western United States, where the steam is released at the surface naturally or with minor enhancements. But recent advances in drilling and recovery techniques pioneered for unconventional oil and gas extraction are paving the way to a future of unconventional geothermal energy production.

In a recent report funded by the Mitchell Foundation and the Educational Foundation of America titled "The Future of Geothermal in Texas – Contemporary Prospects and Perspectives," some 24 scientists, engineers and experts, many

from the oil and gas industry, make the case for a bold new approach to geothermal. Among several techniques, the report describes the use of novel drilling methods to access hot rock deep in the earth's subsurface to create a closed loop, through which a liquid (such as water or an engineered fluid) is then "pumped into the subsurface from the surface, picks up heat from the surrounding formation through conduction, and is then returned to the surface, bringing with it heat from the formation." This heat reaches the surface in the form of steam that can drive turbines and generate electricity. The steam condenses at the top of the system, where it is collected and pumped back into the subsurface to repeat the process again.

Geothermal energy is renewable because its heat will be continuously replenished by the earth's core for billions of years to come. Geothermal is clean because it emits no greenhouse gasses. Geothermal could also provide the missing link in the chain of renewable energy resources, such as wind and solar. We currently rely on high-emission fuels, like coal and natural gas, to cover our baseload electricity needs when the sun is not shining and the wind is not blowing. But geothermal could provide the baseload power necessary to keep our electricity grid running when these intermittent resources are offline. Geothermal baseload could significantly cut our electricity-related emissions and finally bring about a meaningful reduction in greenhouse gases to address climate uncertainty.



(https://elcosmico.com/event/trans-pecos-festival-of-music-love-2023-ticket-announcement/)

Dr. Ken Wisian, associate director of the Bureau of Economic Geology (BEG) at UT-Austin, recently presented to the Presidio County Commissioners Court. Dr. Wisian is one of the authors of the "Future of Geothermal in Texas" and an expert on geothermal potential in Texas. According to Wisian, geothermal systems are not cheap (around \$10 to \$30 million) and the cost greatly depends on the depths where the hot rock is to be found. Although "the available data are noisy," he says, "Presidio County checks all the boxes" for the development of a geothermal electricity plant if an analysis conducted by his team can better pinpoint where the potential lies "mostly along the Rio Grande River." As a low-income border county, Presidio is also well positioned to take advantage of funding from the North American Development Bank, the Department of Energy, and programs under the Inflation Reduction Act, among others, that could make the county's geothermal potential more attractive to outside investors and "spur economic development," says Wisian.

Economic development is what most interests Liz Rohana of the Presidio Municipal Development District, whose mission is "to establish economic growth in/for the City of Presidio and South Presidio County ... and to develop regional infrastructure." After seeing Dr. Wisian's presentation at Commissioners Court, Rohana sought to get PMDD involved and invited Dr. Wisian to present to the PMDD board, where he cautioned that "there are no promises," but the data indicate that the potential is there. Following a lengthy discussion, the PMDD voted unanimously to provide

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\$15,000 to fund an analysis by BEG. The study will likely be completed by early 2024. If the findings are favorable, then funding and investment can be sought to develop our geothermal resources. "What's exciting about the geothermal venture," says Rohana, "is that it's being presented in a transparent and promising way involving the input of all PMDD board members and community representatives and leaders."

Trey Gerfers is a San Antonio native and serves as general manager of the Presidio County Underground Water Conservation District. He is also chairman of the Presidio County Water Infrastructure Steering Committee and president of the Marfa Parks and Recreation Board. Trey has lived in Marfa since 2013. He can be reached at <u>tgerfers@pcuwcd.org. (mailto:trey.pcuwcd@gmail.com)</u>

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