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CEO: Geothermal could provide Texas a hurricane-proof power source

Outlet

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Thermal Energy Partners CEO Bruce Cutright says Texans have a hurricane-proof source of renewable energy right below their feet.

Cutright told the Business Journal that Texas is the "Saudi Arabia of geothermal." The environmentally friendly power source creates a loop by pumping superheated water from highly pressurized and deep reservoirs, bringing it the surface where the steam is used to move a turbine. The cooled water is the injected back underground.

"Our system keeps operating 24 hours a day, 365 days a year," Cutright said. "It's completely scalable. It's the equivalent to as much power as you want."

A former geology professor with the University of Texas at Austin's Bureau of Economic Geology, Cutright watched as Hurricane Harvey made landfall, took wind and solar farms off-line and knocked down power lines. The same scenario repeated itself during Hurricane Irma.

In Texas, geothermal faces competition from cheap natural gas. Current market economics make natural gas and diesel the backup generators of choice. Cutright said those are limited by availability and deliverability of fuel, whereas geothermal can be used to create a microgrid that can be used for year-round power, in good or bad weather.

Cutright believes that when coupled with buried power lines and plants designed to withstand 150 mph winds, geothermal is an ideal power source to provide on-site, megawatt-scale electricity to hospitals, military bases, refineries, chemical plants and other critical infrastructure.

"This is as safe you can make it," Cutright said. "It wasn't designed as a bunker, but it is."

A 10-megawatt geothermal power plant being developed by Thermal Energy Partners in the Caribbean Island of Nevis dodged significant damage from Hurricane Irma. Cutright reported that the site only suffered some soil erosion, is scheduled to resume drilling in October and will be in operation by December 2019.

"That's the entire load for the island," Cutright said. "We're replacing six diesel generators. It's been the first island using 100 percent renewable energy. It'll cut power costs in half for the island."

According to the company's estimates, geological formations in the Texas Gulf Coast and South Texas region can provide up to 2,500 megawatts of carbon-free power - the equivalent to 142 billion barrels of crude oil. With most geothermal resources located 12,000 to 13,000 feet under ground, Cutright said the renewable power source would rely on the same drilling technology and techniques already being used by the oil and gas industry in Texas.

Cutright is still waiting to develop his company's first geothermal project in Texas but Southern Methodist University in Dallas is getting ready to help develop one in East Texas that is being funded by the U.S. Department of Energy's National Renewable Energy Laboratory.

SMU Geothermal Lab Coordinator Maria Richards told the Business Journal that the project will use geothermal resources to make a natural gas plant in Tyler County more efficient. But with thousands of shut-in oil wells across the state, Richards said there is even greater potential to use old oil wells to reach neighboring geothermal resources.

"Think about the number of natural gas plants in Texas, it's a really neat synergy," Richards said.