Somaliland texas energy storage

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On Tuesday, the San Miguel Electric Cooperative announced a deal with Sage Geosystems, a company founded by former executives from oil and gas major Shell as part ofthe state’s broader boom in geothermal energy startups.

The deal, which will also see the pilot project lease space from a coal power plant, represents a microcosm of an energy transitionin which utilities are often caught between polluting but constantand clean but intermittent energy sources.

Rather than seeking to tap underground heat,the project uses “earth storage” and a turbine built from off-the-shelf partsto trap cheap power from wind and solar and sell it back to the grid when it’s needed.

The technology is somewhat akin to an upside-down version of “pumped storage,” in which water is pumped uphill into a hydro dam reservoir when power is cheap and allowed to run back downhill when it is expensive — although in this case when the water gets tapped, it flows back up through the well.

Like pioneers at competitors like Fervo, Taff and her cofounders saw huge potential in the fracking toolkit, which upended the oil and gas business beginning in the early 2000s by largely eliminating the risk of “dry holes,” in which wells turn out not to have as much oil or gas as expected — a problem that still plagues conventional geothermal, which seeks underground systems of hot water.

With fracking and horizontal drilling, oil and gas producers gained the ability to effectively turn on oil and gas production at will — something geothermal pioneers hope fracking will bring to their industry as well.

But while geothermal advocates like Jamie Beard of Project Innerspace told The Hill that oil and gasis primed for a move to geothermal, so far the industry —with rare exceptions— has been reluctant to invest in such a shift.

That’s left the field to a handful of startups like Sage, which are seeking to develop the first wave of new geothermal projects — a process the Department of Energy hopes will begin a fast-rolling snowball of new drilling that will help to unleash an industrythat could pick up a significant portionof U.S. power needs by midcentury.

First, techniques for harvesting pressure energy are several times more efficient than those for tapping geothermal heat, and the well-establishedturbine technology used to harvest it— a hydro-dam flywheel attached to a wind turbine — is simpler and more proven than that which Sage proposes using for

geothermal.

The pump storage projectwill “allow us to demonstrate about 80 percent of what we need for geothermal,” Taff told The Hill — giving the company a chance to prove its ability to drill wells, store and tap power using established oil and gas technology before it moves on to the harder task of harvesting heat.

“Then for geothermal, you just drill the well deeper — and then of course, your power plant is different, in that you have a heat exchanger and then the binary cycle turbine,” which the company is currently testing.

The cooperative is a “mine-mouth” facility south of San Antonio that extracts lignite coal, burns it and sells the power into the markets run by the Electric Reliability Council of Texas, which controls Texas’s island grid.

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