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'Shale paradox' calls for close look at good, bad of shale revolution

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A floor hand signals to the driller to pull the pipe from the mouse hole on Orion Drilling Co.'s Perseus drilling rig near Encinal in Webb County, Texas, U.S., on Monday, March 26, 2012. The Perseus is drilling for oil and gas in the Eagle Ford Shale, a sedimentary rock formation underlying an area of South and East Texas.

Photographer: Eddie Seal/Bloomberg

For all the benefits the shale boom has provided, shale reservoirs remain what Scott Tinker calls enigmatic.

Tinker, director of the University of Texas at Austin's Bureau of Economic Geology, discussed what he calls shale's paradox with members of the Midland chapter, Society of Independent Professional Earth Scientists. Shale resources are large, yet recovery has been small. Shale producers make money, they lose money. Shale production impacts local economies but benefits the global economy. Shale products impact the

local environment but benefits the global environment.

"The narrative these days is about good energy and bad energy. Shale has been painted as bad energy," Tinker said. "But on average, it's good energy, in terms of the economy, peoples' livelihoods. It has literally changed the energy landscape."

The United States has added 5 million barrels of crude production a day since the shale revolution began, bringing it to a record 10 million barrels a day. The Permian Basin alone is now producing about 3 million barrels a day.

Moving from the "phenomenal" shale resources the country contains to reserves requires the right technologies, the right infrastructure, the right political climate, the right regulatory climate, the right economic framework, Tinker said. And there are "phenomenal" shale resources around the globe that can be developed with a similar proper framework, he said.

He said U.S. energy consumption has been essentially flat for over two decades, while carbon dioxide emissions fell 20 percent from 2005 to 2015.

For all that, there remains the call for more renewable energy. Proponents even note that the cost of renewables has fallen dramatically, he said.

"That's true, in a sense, if you look at cost per unit," Tinker said. But all forms of renewable energy have additional costs that add up, he said, listing those costs as including power lines, batteries and backup generators.

"Renewables have an environmental impact," he said, starting with the need to mine and process the metals and elements needed, not to mention the chemicals involved. Wind turbines alone require a lot of metals, including copper and wire. Then there's the manufacturing needed to generate wind turbines, solar panels and batteries. And the land required to host wind or solar farms, the transmission lines needed to transmit the electricity generated by those farms to homes and businesses. Then there's the disposal of that equipment when it wears out.

Yes, he said, shale production has an impact on the local environment "but we're getting better at cleaning it up."

And increased natural gas use globally to generate electricity is resulting in lower CO2 and nitrogen oxide emissions and a cleaner atmosphere.

Shale producers are seeing their cash flow catch up with that of their peers who aren't focused on shale, he said. They have also helped create jobs and economic growth in their communities.

"A healthy economy lifts people from poverty and allows for investment in the environment," and the energy industry has played a significant role in generating healthy economies, Tinker said.

"Our job is to get out there and educate people about our industry and be proud of what we do," he said.

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