



COMMITTEE ON
SCIENCE, SPACE, AND TECHNOLOGY
REPUBLICANS Frank Lucas, Ranking Member

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Energy Subcommittee Hearing Statement
“Fossil Energy Research: Enabling our Clean Energy Future”
Wednesday, June 19, 2019, 2:00 p.m.

Thank you, Chairman Lamb, for hosting this hearing which is especially relevant to the natural gas industry in my Oklahoma district.

Fossil fuels provide over 80% of energy worldwide and remain the dominant source of energy here in the U.S. Petroleum, natural gas, and coal provided more than 80% of total U.S. energy consumption for the past 100 years, with energy reserves to power our nation for the next century.

In order to responsibly use our vast energy resources, the next generation of fossil energy technologies must be more efficient, cleaner, and less expensive for American consumers. Fortunately, our country is uniquely positioned to prioritize the basic and early stage research that leads to groundbreaking technology.

Federally funded research programs have a history of paving the way for industry innovation. DOE labs created the drill bit technology that led to hydraulic fracturing and horizontal drilling, revolutionizing the oil and gas sector.

Basic research in geology at the Department of Energy’s Sandia National Lab led to the development of microseismic fracture mapping techniques for hydraulic fracturing. And sensor technologies originally developed for aerospace applications at NASA and the Department of Defense have been used to improve safety in oil and gas development.

In all of these cases, industry partners adapted techniques developed in the laboratory for commercial use, maximizing energy production across the country.

Today, DOE continues to make key investments in early-stage fossil energy research, while the private sector takes the lead on efforts to deploy new technologies. Innovators in our national labs are building on decades of groundbreaking successes in oil and gas production.

I am particularly interested to hear from Dr. Erik Webb on how Sandia National Lab is using monitoring systems and mathematical models to better understand the subsurface. His

research could help fossil energy producers make more informed decisions before they drill a well – saving time, money, and reducing their environmental footprint along the way.

We know that industry has the resources, capital, and capability to successfully commercialize new technology. What they often don't have is the infrastructure to conduct early stage research and maintain historical data. This is where DOE, national labs, and academia can help.

At the National Energy Technologies Laboratory (NETL), the nation's leading fossil energy lab, researchers are speeding up this process with high performance computing. Using the lab's Joule 2.0 supercomputer – which recently received a \$16.5 million upgrade that boosted its computational power by roughly eight times – DOE researchers are helping industry optimize chemical reactor designs and measure and improve the efficiency of gas turbines.

With DOE's research, industry can improve the next generation of power plants, using computational designs to save time and money in planning, and producing power more efficiently with less impact on the environment.

The Department plays an important role in ensuring energy producers are utilizing the most efficient, safe, and clean technologies. We in Congress owe it to American consumers to prioritize this important research, and responsibly provide the needed energy for economic development while maintaining environmental stewardship.

I want to thank you Chairman Lamb for holding this hearing, and I look forward to hearing from our witnesses today about the path forward for next generation fossil energy technology.

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