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Testimony Before The Pennsylvania House Environmental Resources and Energy Committee On The Viability and Impact of Rare Earth Materials in Pennsylvania

January 10, 2021

Chairman Metcalfe and Members of the Committee:

My name is James Taylor and I'm the president of The Heartland Institute. I'm joined by Linnea Lueken, a Research Fellow with the Arthur B. Robinson Center on Climate and Environmental Policy at Heartland. She holds a Bachelor of Science in Petroleum Engineering, and a minor in Geology. The Heartland Institute is a 38-year-old independent, national, nonprofit organization whose mission is to discover, develop, and promote free-market solutions to social and economic problems. Heartland is headquartered in Illinois and focuses on providing national, state, and local elected officials with reliable and timely research and analysis on important policy issues.

I want to sincerely thank the committee for inviting our testimony and the testimony of the other witnesses because this is an issue of profound importance to not just Pennsylvanians, but to all Americans as firms rush to develop new sources of energy and to create efficiencies in existing sources of energy.

The issue runs tandem to a larger national and international conversation surrounding emerging technologies and the unique materials that make up components of that technology. Similarly, the debate isn't as pedestrian as determining which and how materials are extracted for use, but larger geopolitical and national security issues. And Pennsylvania lawmakers are right to begin those important discussions.

Mr. Chairman, I will give brief remarks and then invite questions for both Linnea and me.

Summary

- Rare earth minerals can be found in Pennsylvania, particularly embedded in Pennsylvania coal, and can be recovered from coal waste.
- The cost of recovering rare earths from coal waste is higher than the economic value of the rare earths that are recovered.
- Accordingly, rare earth production from coal waste is not occurring except where it is subsidized by taxpayer dollars.
- Mining and production specifically for rare earths – rather than recovering them from coal waste – is substantially more environmentally destructive than conventional mining.
- The Biden administration misleadingly claims that – after killing an enormous number of coal mining jobs in Pennsylvania and elsewhere – the federally subsidized programs to recover rare earths from coal waste at an economic loss are proof that the wind and solar industries are “creating” renewable energy jobs in Pennsylvania.
- A better way to reduce American reliance on China for rare earth minerals and to create and maintain Pennsylvania jobs is to end government favoritism for wind and solar power, such as Pennsylvania's 18-percent renewable power mandate.

Discussion

Rare earth minerals comprise 17 elements that are vital for high-tech consumer goods, military equipment, wind and solar power equipment, and many other economic goods. The minerals are called “rare” earths not because they are exceptionally rare, but because they tend to be interspersed throughout the earth’s crust rather than concentrated in easily mined and recovered deposits.

China produces 57 percent of the rare earth minerals that are mined globally¹. The United States ranks second with 15 percent of global rare earth production². All of U.S. rare earth mining occurs at a single mine in California³.

Rare earth minerals need to be culled from other materials – like coal – that they are embedded in. Rare earths can be recovered from coal waste, though the cost to recover the rare earths from coal waste is greater than the economic value of the rare earths that are recovered.

It is less expensive to mine rare earth minerals through conventional processes than to recover them from coal waste. However, the environmental consequences of rare earth mining can be disastrous⁴. The main reasons for the exceptional environmental damage are (1) the need to strip-mine prodigious amounts of earth to remove just a small amount of rare earths and (2) separating rare earths from their surrounding elements typically requires dissolving the surrounding elements in water, causing substantial toxic water runoff. Most Americans will not support producing rare earths domestically the way that they are typically mined, separated, and produced in China and elsewhere.

Rare earths are key components in wind and solar power equipment. Demand for rare earth minerals is growing, and prices are rising, in large part due to governments shutting down conventional energy production while subsidizing, incentivizing, and mandating wind and solar power. The government-driven demand for wind and solar equipment requiring rare earth minerals adds demand pressure in addition to demand pressure from other sources, such as cell phones and military equipment.

The U.S. Department of Energy is currently using federal taxpayer dollars to subsidize research and pilot programs to recover rare earths from coal waste⁵ and ⁶. Federal taxpayer subsidies (including subsidies from federal taxpayers in Pennsylvania) may eventually skew the market enough for it to make sense for private businesses to invest in rare earth recovery from coal waste. That is not yet happening, however.

The best course of action for the Pennsylvania legislature may be for the legislature to ensure there is no excess of red tape if and when rare earth production in Pennsylvania becomes economically productive. Similarly, any affirmative efforts to encourage rare earth production should go hand-in-hand with efforts to reduce or eliminate artificial pressures on rare earth minerals, such as wind and solar power subsidies and mandates.

From a policy perspective, the Biden administration claims that – after destroying an extremely large number of coal jobs in Pennsylvania and throughout the American economy – the administration is “creating” new renewable energy jobs by subsidizing a small number of jobs recovering rare earth minerals

¹ <https://www.statista.com/statistics/270277/mining-of-rare-earths-by-country/>

² Ibid.

³ <https://investingnews.com/daily/resource-investing/critical-metals-investing/rare-earth-investing/rare-earth-metal-production/>

⁴ https://e360.yale.edu/features/boom_in_mining_rare_earths_poses_mounting_toxic_risks

⁵ <https://www.energy.gov/articles/doe-awards-19-million-initiatives-produce-rare-earth-elements-and-critical-minerals>

⁶ <https://netl.doe.gov/coal/rare-earth-elements/program-overview/background>

in an economically unproductive manner from coal waste. This is not “creating” jobs – it is merely salvaging – at an uneconomic cost – a small number of jobs from the larger number of jobs anti-coal activists have killed, and continue to kill, by waging war on coal production and coal-fired electricity.

Any Pennsylvania government programs to encourage rare earth mining or recovery should be in conjunction with programs to encourage conventional energy production and conventional energy use, such as ending Pennsylvania’s renewable energy mandate.

Thank you, again, for this opportunity to discuss this issue and we are happy to take any questions you may have.