

Establish a Clean Mining Technology Institute

BACKGROUND

Mining for many minerals remains a thriving business in our Nation, and the potential for expanding mining to enable clean energy technologies (e.g., lithium and copper) continues to grow. The extraction of these minerals is often both energy and water-intensive leading to lower air quality and additional concerns for the mining communities. New technologies must be developed and demonstrated to address these concerns to catalyze expanded mining while stewarding an environment that miners want to live in.

Unfortunately, there is no one agency in the US government that owns the problem or has the mantle to push forward on innovations aimed at the mining industry. The Department of Energy, the Department of the Interior (including the Bureau of Mines), the Department of Commerce, and the Department of Defense (considering the link to critical minerals and the relationship to national security) all have a stake in the effort.

PROPOSAL

Establish a national-scale effort that focuses on developing and demonstrating technologies for eliminating emissions from mining and processing of minerals. This effort could be one or more centers that provide unique capabilities available broadly to researchers from industry, academia and government.

The Institute could be established and run by any of the listed agencies. It likely would be best if it was run by the Department of the Interior, but with a multi-agency advisory Board. The Institute would be in part an operator of unique facilities, a manager of access to existing facilities at other labs and institutions (e.g., leveraging to a great extent existing capabilities), and a convener of the community interested in making mining green.

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While there are efforts funded through the fossil energy programs in the Department of Energy, they are not applicable generally to the broad mining industry. Other efforts have largely been pushed by industry. There are similar initiatives that are being pursued in other countries, such as Chile that has an interest in combining their large solar energy potential with developing clean technologies for mining to enable expansion of their copper and lithium mining activities with a decrease in emissions to allow the country to meet their Paris climate goals.

PROPOSED FUNDING

The Institute would require approximately \$20-50M/yr initially, and that could be supplemented by matching funds or pursuit of joint funded projects with industrial partners.