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Biden-Harris Administration Invests \$16 Million to Build America's First-of-a-Kind Critical Minerals Production Facility

Projects in West Virginia and North Dakota Will Help Strengthen America's Clean Energy Supply Chain, Revitalize Energy Communities, and Enhance National Security

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WASHINGTON, D.C.— As part of President Biden’s [Investing in America](#)² agenda, the U.S. Department of Energy (DOE) today announced \$16 million from the Bipartisan Infrastructure Law to bring critical mineral supply chains to America and reduce reliance on competitors like China. The funding will support projects in West Virginia and North Dakota for the development of a first-of-a-kind rare earth element and critical minerals extraction and separation refinery. Rare earth elements and other critical minerals and materials are key to manufacturing clean energy technologies right here in America that will help the nation reach the Biden-Harris Administration’s goal of a net-zero emissions economy by 2050.

“Today’s funding will support a first-in-the-nation facility that will convert legacy fossil fuel waste into a domestic source of critical minerals needed to strengthen our clean energy supply chains,” said **U.S. Secretary of Energy Jennifer M. Granholm**. “President Biden’s Investing in America agenda is helping reduce our overreliance on adversarial nations and positioning the country as a global manufacturing leader—while supporting communities that have helped power our nation for generations.”

The United States imports more than 80% of its rare earth elements and critical minerals to produce clean energy technologies and other indispensable products that we rely on every day such as smart phones, computers, and medical equipment. Across the country, there are billions of tons of coal waste and ash, mine tailings, acid mine drainage, and discharged water. These waste streams from mining, energy production, and related activities contain a wide variety of valuable rare earth elements and other critical minerals that can be produced and used to build clean energy technologies, while helping to create healthier environments for communities across the country.

The projects announced today will study how they can extract critical minerals from coal mine waste streams as the first of two project phases.

- **The University of North Dakota (Grand Forks, North Dakota)** will complete a study to recover and refine rare earth elements and critical minerals from North Dakota lignite mine wastes. The project aims to advance technologies that can enable a cost-competitive, environmentally sensitive process to produce rare earth metals and critical minerals from domestic coal waste. (Award amount: \$7,999,999).
- **West Virginia University (Morgantown, West Virginia)** will complete a study for producing rare earth elements and critical minerals using acid

mine drainage and mineral tailings feedstocks with at-source pollution treatment. Intermediate products will be processed to high-purity oxides, salts, or metals depending on specific market needs. (Award amount: \$8,000,000)

"West Virginia University has provided a mining engineering education to generations of students for more than 150 years, helping to build a strong and innovative mining industry that powered our nation and made us a global energy leader. This \$8 million award, using funding from my Bipartisan Infrastructure Law, will continue that legacy and help to develop the energy technologies of the future with a first-of-its-kind facility to extract and separate rare earth elements and critical minerals from acid mine drainage and mine waste," said **U.S. Senator Joe Manchin (WV)**. "By deploying this innovative technology to reclaim water from mining waste, we will ensure that we are producing these materials in the cleanest way possible while addressing environmental liabilities. West Virginia and West Virginia University are continuing to lead the way in energy innovation, and I can't wait to see how the entire nation benefits."

"Along with their industry partners and the U.S. Department of Energy, the University of North Dakota is on the cutting edge of our energy future," said **U.S. Senator Kevin Cramer (ND)**. "This award builds on the group's efforts to research, find, and affordably extract rare earth elements and minerals in North Dakota. The significance of developing this domestic supply chain for national and energy security cannot be overstated."

The Phase I projects will be managed by DOE's Office of Fossil Energy and Carbon Management (FECM) and the National Energy Technology Laboratory (NETL) in collaboration with the Office of Manufacturing and Energy Supply Chains (MESCC).

Over a period of about 15 months, these detailed engineering and cost studies will identify risks and costs, and will solidify plans for developing economically viable processes to extract, separate, and produce rare earth elements and critical minerals from the nation's vast quantities of mining wastes that won't be harmful to the environment. Following completion of the studies and a period of technical review, these projects will have the opportunity to apply for Phase II funding for construction and operation of the demonstration-scale facility.

The two selected project teams were required as part of their applications to submit [Community Benefits Plans](#) to demonstrate meaningful engagement with

and tangible benefits to the communities in which these projects will be located. These plans provide details on their commitments to community and labor engagement, quality job creation, diversity, equity, inclusion, and accessibility, and benefits to disadvantaged communities as part of the [Justice40 Initiative](#). The selected projects are required to develop and implement strategies to ensure strong community and worker benefits, and report on such activities and outcomes.

Visit [FECM](#), [MESC](#), and [NETL](#) websites to learn more about DOE's efforts to strengthen and secure a domestic supply chain for rare earth elements and critical minerals and materials.

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