
NDIC Website One-page Summary

Project: **FY20-XC-221**

Title: Rare Earth Element Extraction and Concentration at Pilot-Scale from North Dakota Coal-Related Feedstocks

Submitted By: Institute for Energy Studies (UND)

PM/PI: Michael Mann
241 Centennial Drive, Stop 7101
Grand Forks, ND 58202-7101
701-777-3852
Michael.Mann@UND.edu

Purpose: The University of North Dakota (UND), in collaboration with Microbeam Technologies Inc. (MTI), Barr Engineering Co., Rare Earth Salts (RES) and MLJ Consulting is proposing to demonstrate at the pilot scale its novel technology for rare earth element recovery from North Dakota lignite coal feedstocks.

The objectives of this project include:

- 1) Confirm coal seams found within active North Dakota mines have elevated REE content and collect a large sample (300-500 tons) for further processing
- 2) Design and construct a pilot-scale facility for REE extraction and concentration with at least 0.25 tons/hr coal feed
- 3) Determine optimal operating conditions using existing bench-scale equipment and utilize these optimized parameters to process at least 100 tons of high REE coal
- 4) Verify REE product quality with downstream REE refiners (RES) and reduce potential costs and time-to-market associated with coal-related REE materials.

Duration: 30 months

Participants & Cost Share:

DOE-NETL	\$4,989,255
NACC	\$25,000 cash, \$100,000 in-kind
GRE	\$125,000 in-kind
MPC	\$50,000 cash, \$75,000 in-kind
BNI	\$60,000 cash, \$60,000 in-kind
MTI	\$34,300 in-kind
UND	\$90,000 in-kind
NDIC	<u>\$ 900,000</u>
Total	\$6,508,555

Project Deliverables: Status Reports
Q4 2019 report-complete, Q1 2020 report-complete, Q2 2020 report-complete