

Grant Round Application for LRC LXXX (80)-E

TECHNICAL ADVISOR'S SUMMARY and RECOMMENDATION

LRC-LXXX (80)-E

“Carbon Capture & Utilization Using "VCCSTM Cycle" Technology - Phase I: Mineralization of Acidic Flue Gas CO₂ via Chemical Reaction with Alkaline Lignite Fly Ash + Extraction of Marketable Minerals & Other Commodities from Lignite Fly Ash”

Submitted by: Expansion energy

Request for: \$45,000; Total Project Costs: \$145,000

Principal Investigator: David Vandor

Description of the Project:

Expansion Energy LLC (“XE”), with participation and support from Great River Energy (“GRE”), proposes a Phase I project (“Project”) to design and estimate the capital costs for a modular pilot plant (“Pilot Plant”) utilizing XE’s patented “VCCSTM Cycle” carbon capture & utilization technology, which neutralizes CO₂ from power plant flue gas by chemically reacting it with alkaline lignite coal ash, yielding marketable solid mineral materials, including high-value rare earth elements and metals. The VCCS technology also has the potential to reduce the need for SO₂ and particulate emissions control systems at lignite-fired power plants.

Technical Advisor’s Recommendation: Fund

Fund subject to the following:

- Matching Funding received from all the parties
- Technical advisor participates in Advisory group

Conflict of Interest:

Great River Energy