

# ALBERTA INNOVATES CLEAN RESOURCES

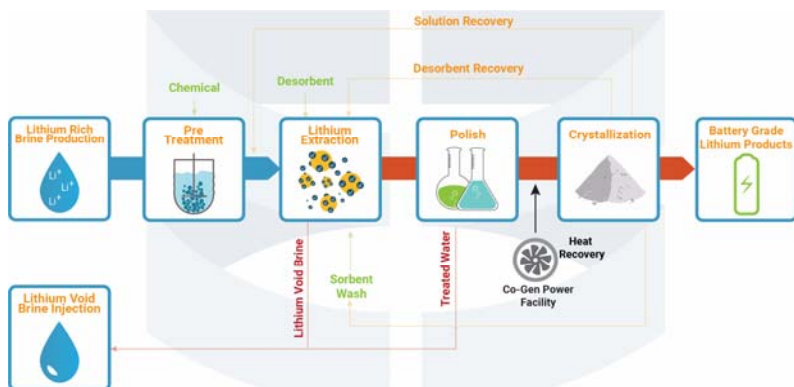
## CLEAN TECHNOLOGY

CRITICAL MINERALS & EMERGING TECHNOLOGY

## FUNDING DETAILS

### Alberta's First Direct Lithium Extraction Pilot

E3 Lithium (E3) is a resource and technology company developing a lithium project in Alberta. E3 has developed a proprietary Direct Lithium Extraction (DLE) technology that efficiently processes low-grade brine into high-grade lithium concentrate in one step, simultaneously removing more than 99% of impurities. The objective of the pilot project is to demonstrate E3's DLE technology by progressively scaling it up from the current lab application to a field pilot. By demonstrating the process at a pilot scale over numerous months, E3 plans to significantly de-risk its Alberta lithium project as it advances towards the anticipated commercial scale of 20,000 tonnes/year of lithium hydroxide monohydrate production.



**RECIPIENT:**  
E3 Lithium



**PARTNERS:**  
An oil and gas producer



**TOTAL BUDGET:**  
\$4,232,250



**AI FUNDING:**  
\$1,800,000



**PROJECT DATES:**  
MAR 2021 -  
NOV 2023



**PROJECT TRL:**  
Start: 4  
End: 7

## APPLICATION

E3 plans to produce battery-grade lithium chemicals in Alberta from lithium-enriched subsurface brine resources. Application of E3's proprietary DLE technology is expected to enable integration of conventional oilfield and lithium processing technologies. E3's goal is to commercialize its global-scale lithium resource by 2025 at 2% market penetration, delivering net-zero GHG, battery-grade lithium products to the growing electric vehicle supply chain.



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## PROJECT GOALS

The goals of this project are to:

- Progressively scale up E3's DLE technology to a field pilot, including scaling up the prototype operating within E3's Calgary lab, and operating a field pilot within E3's resource area in Alberta.
- Demonstrate the performance of E3's DLE technology at a more substantial size, over a longer time period and in a representative field environment.
- De-risk E3's Alberta lithium project as it advances towards the anticipated commercial scale of 20,000 tonnes/year of lithium hydroxide monohydrate production.

## BENEFITS TO ALBERTA

The completion of the pilot project requires several immediate, full-time and highly skilled personnel. In the longer term, E3's initial planned project, which is anticipated to produce 20,000 tonnes/year lithium hydroxide monohydrate, has the potential to:

- Directly and indirectly employ many highly skilled personnel.
- Generate ~\$380M in annual revenue, generating 10s of millions of dollars in taxes and royalties for Alberta and Canada.
- Encourage the growth of a battery supply chain within the province of Alberta.
- Contribute directly to the diversification of Alberta's economy and advance the energy transition.



**4 project jobs**



**300-400 future jobs**

## CURRENT STATUS

### MAY 2022

E3 Lithium's lab prototype has delivered successful results of up to 97% lithium recovery. E3 has scaled up production of sorbent by 10 times and is finalizing commercial-scale manufacturing methods to provide sorbent for the field pilot. E3 anticipates the design and final cost estimate of the field pilot to be completed by Q4 2022 and for construction to follow soon after.