



Opportunity Knocks

A CASE TO BE MADE FOR

Lithium Brine & Brine-Hosted Material Extraction

In 2022, the Regional Economic Development Initiative (REDI) commissioned Municipal Experts—an Alberta-based consulting company specializing in economic development and municipal projects—to research the feasibility of 10 business opportunities tailored for the REDI Region.

The following business opportunities are in the lithium brine and mineral extraction space, which could potentially benefit the region as the global market increasingly moves to means of alternative energy.

Lisa Wardley, REDI Chair and Mackenzie County Councillor, says the REDI Board feels it is essential to highlight the unique business opportunities that build upon the region's competitive advantage.

"The would-be lithium extraction industry is the existing oil and gas wells, the infrastructure, the expertise, and a workforce with transferable skills that would enable the harvest of our brines for lithium concentrations and breathe new life into our energy-based communities," said Wardley.

There is a lot of enthusiasm due to advances in lithium extraction technology.

"Extracting the metal has traditionally been



characterized as slow. However, emerging extraction technologies are gaining traction for lithium-dependent markets such as the electric vehicle industry," said Wardley.

Paul Salvatore is the CEO of Municipal Experts. His team researched and prepared these business cases for REDI, so they could present them to local entrepreneurs and investors and gauge interest.

"Business prospects could encounter unique opportunities and challenges during the planning and preparation," said Salvatore. "We hope aspiring local businesses can get excited about moving forward with these opportunities."

Lithium Brine Extraction

REDI encourages investment in the development of lithium assets in the region. The existing oil and gas wells show potential as a significant source of lithium, which has an increasing global demand for use in lithium batteries to power everything from cell phones and computers to electric vehicles and more.

"The REDI region is a good fit for lithium brine production as there are many oil and gas workers in the area who are familiar with the operation of the fields, which can be retrofitted for lithium extraction," said Salvatore. "[Research strongly suggests] the demand for responsibly mined lithium will continue to increase."

The year-over-year price of lithium is currently up 200% from November 2021 and is expected to hold that value or increase depending on the pace of future mining activity.

Though lithium brine extraction was once thought of as too costly to pursue, conditions and technology have changed, and extraction opportunities in and around Rainbow Lake and Zama City are now more desirable. This is largely due to increasing demand and advancements in technology.

As oil and gas companies re-evaluate the market, there is opportunity for local entrepreneurs to be proactive and partner with lithium brine development firms at a time when lithium extraction technologies are being perfected and the commercial production of lithium is ramping up.

Local knowledge of the oil and gas wells and facilities, and an experienced local labour force, puts REDI communities in a good position to attract



future interest in these opportunities.

According to the business case, the economic impact of this opportunity would be similar to the benefits of the oil and gas industry. It would create jobs and a need for storage and transportation (rail, trucking and commercial shipping) as well as a demand for construction, housing, retail and recreation.

Brine Hosted Material Extraction

The Alberta Geological Survey identified the following brine hosted materials, which could be important to the economic future of the REDI Region: cobalt, copper, gallium, germanium, lithium, molybdenum, nickel, rare earth elements (REEs), scandium, uranium, vanadium and zinc.

Necessary when manufacturing cell phones, computer hard drives and electric vehicles, these materials are abundant in



Lisa Wardley, REDI Chair

the REDI Region's existing oil and gas well brines, so there is money to be made if they can be adequately extracted.

According to the Alberta Energy Regulator, the REDI Region has over 5,000 existing oil and gas wells. Of these wells 3,300 are abandoned, 1,075 have suspended production and 625 are producing. As extraction technologies develop, the abandoned and unused wells could represent massive untapped revenue potential.

"Repurposing oil and gas wells for the extraction of brine hosted minerals takes advantage of existing infrastructure and investment while also



Paul Salvatore, CEO of Municipal Experts

adding another layer of value," said Salvatore. "The race to supply REEs around the world will continue to drive the price of these commodities upwards, so early development is very important to the region."

This is a unique opportunity for the REDI Region, not only because of the ability to breathe new life into existing infrastructure and dormant potential, but also because the region has a long history in the oil and gas industry, which would result in a capable workforce. While extraction technologies are not yet highly effective, this developing opportunity could mean the creation of high-paying jobs and

an increased demand for a specialized workforce. As with lithium extraction, brine hosted material extraction has the potential to have a huge impact on the local economy.

Currently, the global demand for these materials is strong—and growing—but the vast majority of the supply comes from China. By developing and mining these valuable materials in Alberta, investors and developers could secure a local supply chain and garner more strength in the new energy industry.

Interested in one of these business opportunities?



For more information, follow the QR Link or visit REDIREGION.CA