**Elemental’s Solar and Storage Project Includes Partnership With First Nation**

Just outside of Medicine Hat, a new project is not only producing solar energy, it’s storing it. The project marks an important next step in the evolving renewable energy sector in Western Canada. It also creates an innovative path for economic reconciliation.

Elemental Energy has partnered with Cold Lake First Nations (CLFN), giving them equity interest in the project, which is expected to become operational in late 2022.

“As stewards of the land, our Nation fully supports sustainable renewable energy development respecting environmental, economic, cultural and social contexts, while realizing long-term economic benefits through an ownership stake in the project,” said Chief Roger Marten.

The first-of-its-kind in Canada, the Chappice Lake Solar and Storage Project uses a game-changing DC-connected solar and flow battery system. Instead of wasting energy usually lost due to grid limitations, it will be stored and released whenever it is needed.

“Storage is a critical component in the rapid transition of the electrical grid, both here in Alberta and around the world,” says Dan Eaton, Director of Project Development for Vancouver-based Elemental Energy.

With approximately 40,000 solar panels to be installed alongside an 8.4 MWh Vanadium Flow Battery (VFB), the Chappice Lake facility showcases technology that makes better use of Alberta’s existing grid for renewable energy adoption. Emissions Reduction Alberta committed $10 million to the $40 million project.

A 21 MWp solar array will be co-located with a utility-scale VFB from Invinity Energy Systems and generate enough low-cost electricity to serve over 5,000 Albertans.

“Storage is what’s going to facilitate the rapid adoption and deep penetration of renewable energy into the Alberta grid. Renewable energy generation on its own is variable. Storage can make it dispatchable,” Eaton said.

Solar energy produced at Chappice Lake will charge the VFB during the day and release it as needed. And while Eaton says the system comes with significant up-front investment, the long-term benefits include a safer, longer battery life with minimal degradation over 25 years.

“For us, what’s exciting is bringing a new innovative project to a market that’s undergoing rapid transition,” Eaton said. “We think this project will bring a lot of value to the province and be a catalyst for more innovative dispatchable renewable energy projects. We are excited to collaborate with Cold Lake First Nations on a project that unites both purpose and profit.”

**ATCO Explores Heating Homes and Fueling Appliances with Hydrogen to Reduce Emissions**

Heating your home or business and fueling your appliances with hydrogen is on the horizon. In a first-of-its-kind project for Alberta, ATCO Gas is conducting a pilot project in Fort Saskatchewan to test a cost-effective way to keep customers comfortable with a lower-carbon energy supply.

Their $7.9 million project is based on a simple premise: blend hydrogen into natural gas. Like natural gas, hydrogen can be locally produced, stored, and is easily transported. Unlike natural gas, hydrogen has no carbon emissions when it is burned, it emits only heat and water vapour.

“Alberta is quickly progressing to be a world leader in hydrogen: skilled labour, robust pipelines, storage capacity, and carbon capture technologies. "ERA’s commitment to the project allows ATCO to demonstrate the viability of hydrogen as a heating fuel in Alberta’s climate,” says Lance Radke, Vice President of Customer Experience and Initiatives at ATCO.

ATCO’s Fort Saskatchewan Hydrogen Blending Project aligns with the Government of Alberta’s Natural Gas Strategy and Hydrogen Roadmap and moves the province forward on the path for the large-scale delivery of low-carbon energy.

**Natural Gas Challenge.**

Over 2,000 homes in Fort Saskatchewan will soon be fueled by natural gas blended with hydrogen as part of a pilot project by ATCO. ERA committed $2.8 million to the $7.9 million project.
COMMITTED TO ACTION

- ERA is a key partner in helping to achieve Alberta’s climate and economic priorities. We fund and de-risk late-stage technologies to reduce GHG emissions and help grow and create competitive industries in Alberta.

CONVENING RESOURCES FOR COLLABORATION

- For more than 13 years, ERA has been investing revenues from the carbon price paid by Large Final Emitters (LFEs) to accelerate the development and adoption of innovative and clean technology solutions.
- We work with industry, government, and technology developers to make Alberta a hub for innovative ideas that reduce GHG emissions and improve economic competitiveness.
- We convene resources and facilitate strategic partnerships with industry, government, business, academia, and other funders to foster a suite of policy, regulatory, program and business innovation tools that will help address barriers to commercialization.
- With our stakeholders, we developed a Technology Roadmap that guides investment decisions and informs our investment portfolio mix.

WE CONVENE RESOURCES AND FACILITATE STRATEGIC PARTNERSHIPS WITH INDUSTRY, GOVERNMENT, BUSINESS, ACADEMIA, AND OTHER FUNDERS TO FOSTER A SUITE OF POLICY, REGULATORY, PROGRAM AND BUSINESS INNOVATION TOOLS THAT WILL HELP ADDRESS BARRIERS TO COMMERCIALIZATION.

FUNDING OPPORTUNITY

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<td>TECHNOLOGIES TO TRANSFORM CO₂ FROM WASTE TO VALUE-ADDED</td>
<td>$30M</td>
<td>2 projects awarded $5M each in the final round</td>
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<td>NEW METHANE DETECTION AND REDUCTION TECHNOLOGIES</td>
<td>$23M</td>
<td>11 projects funded worth $60M in total project value</td>
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<td>LATE-STAGE, GHG-REDUCING TECHNOLOGIES TO HELP ALBERTA’S OIL SANDS INDUSTRY REMAIN COMPETITIVE</td>
<td>$36M</td>
<td>6 projects funded worth $370M in total project value</td>
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<td>TECHNOLOGIES TO INCREASE EFFICIENCIES FOR LFE INDUSTRIAL FACILITIES</td>
<td>$56M*</td>
<td>9 projects funded worth $235M in total project value</td>
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<td>GHG-REDUCING TECHNOLOGIES IN BIOTECHNOLOGY, ELECTRICITY, AND SUSTAINABLE TRANSPORTATION</td>
<td>$76M</td>
<td>13 projects funded worth $297M in total project value</td>
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<td>UNLOCKING INNOVATION ACROSS ALBERTA’S NATURAL GAS VALUE CHAIN</td>
<td>$58M</td>
<td>20 projects funded worth $158M in total project value</td>
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<td>$28M</td>
<td>16 projects funded worth $136M in total project value</td>
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<td>SUPPORT FOR COMPANIES READY TO IMPLEMENT LEADING-EDGE TECHNOLOGIES IN APPLICATIONS FOR BOTH GREENFIELD AND BROWNFIELD OPERATIONS</td>
<td>$166M*</td>
<td>16 projects funded worth over $2B in total project value</td>
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<td>EVALUATING PROMISING GHG-REDUCING PROJECTS REFERRED TO ERA BY TRUSTED PARTNERS</td>
<td>$66M*</td>
<td>17 projects funded to date worth over $1.2B in total project value</td>
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<td>SUPPORT FOR SMALL- AND MEDIUM-SCALE INDUSTRIAL AND COMMERCIAL BUSINESSES FOR COST-SAVING AND EMISSIONS REDUCING PROJECTS</td>
<td>$55M*</td>
<td>$23 million in incentive obligations to date</td>
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HIGHLIGHTS

- We convene resources and facilitate strategic partnerships with industry, government, business, academia, and other funders to foster a suite of policy, regulatory, program and business innovation tools that will help address barriers to commercialization.
- With our stakeholders, we developed a Technology Roadmap that guides investment decisions and informs our investment portfolio mix.

INVESTING IN A DIVERSE PORTFOLIO

230 Projects

- Cleaner Oil & Gas (74 Projects)
- Low Emitting Electricity System (32 Projects)
- Food, Fibre, & Bioindustries* (59 Projects)
- Low Carbon Industrial Processes & Products (65 Projects)

*Cumulative Project Emissions Reductions

CUMULATIVE PROJECT EMISSION REDUCTIONS

- 6.1 Mt CO₂e Total by 2020
- 40 Mt CO₂e Total by 2030

LEVERAGING FUNDING AND CREATING JOBS

Technology is the engine of environmental and economic opportunity. For every ERA dollar we commit to advancing new technologies, $6.90 has been invested by funding partners.

- 31,900 PERSON-YEAR® JOBS IN ALBERTA BY 2025
- $4.6 BILLION GDP IMPACT TO ALBERTA BY 2025
- 43,600 PERSON-YEAR® JOBS IN CANADA BY 2025
- $6 BILLION GDP IMPACT TO CANADA BY 2025

*In 2012, ERA provided funding for three adaptation projects in consultation with Alberta Environment and Parks.

*This program is funded in part by the Government of Canada’s Low Carbon Economy Leadership Fund.

*Savings for emissions reducing projects