

ALBERTA INNOVATES CLEAN RESOURCES

ADVANCED HYDROCARBONS

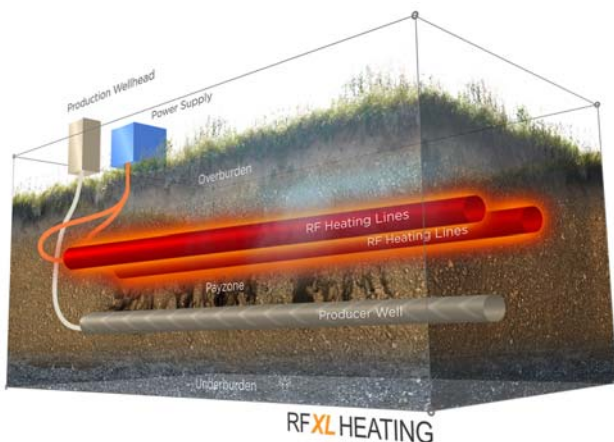
CLEANER HYDROCARBON PRODUCTION – RECOVERY TECHNOLOGIES

FUNDING DETAILS

Radio Frequency Enhanced Oil Recovery – RF XL Commercial Pilot Test

Acceleware's commercial scale pilot in Marwayne, Alberta, will validate its patented and patent-pending RF XL (Radio Frequency XL) system; an all-electric, highly efficient heating system that can be applied to economically and cleanly produce heavy oil and oil sands, and that can be deployed and become operational quickly.

The pilot will demonstrate RF XL's heating capabilities, and immediate and sustainable environmental, economic, and social benefits. Requiring only half the energy of SAGD, these include very significant operating and capital cost reductions, near-zero GHG emissions through direct or indirect use of renewable power, no freshwater requirements, and no added solvents.



RECIPIENT:
Acceleware Ltd.



PARTNERS:
ERA, SDTC, Suncor
Energy, Broadview
Energy



TOTAL BUDGET:
\$21,496,000



AI FUNDING:
\$5,000,000
(TIER ERP)



PROJECT DATES:
JAN 2021 –
APR 2022



PROJECT TRL:
Start: 7
End: 9

APPLICATION

The target market for RF XL comprises any upstream heavy oil or oil sands operator seeking clean and profitable production of their reserves. Operators in Alberta and Saskatchewan will be initially targeted. Secondary targets including international markets where heavy oil deposits are being developed with a focus on reducing cost and improving environmental performance. RF XL can be deployed in greenfield projects, as well as in brownfield projects where existing processing infrastructure can be leveraged.

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PROJECT GOALS

- Validate the ability to drill and complete a functioning RF XL heating well, showing that the technology can generate heat to the reservoir.
- Validate system performance, high power operations, efficiency, and radiation patterns of the technology.
- Further de-risk and address limitations that have historically constrained RF heating.
- Monitor formation temperature and pressure as well as oil production levels and stability of the downhole RF XL components.

BENEFITS TO ALBERTA

- Lower emissions intensity: with less than half the energy required by SAGD, RF XL could immediately lower GHG emissions by up to 50%, producing near zero GHGs when using renewable power.
- Other environmental benefits: freshwater use can be eliminated, land use reduced, and there is no requirement for solvents.
- Greater cost competitiveness for Alberta's oil: capital and operating costs are expected to reduce by ~ 40% each.
- Creation of jobs: Alberta's economy requires maintenance of existing jobs and creation of highly skilled jobs, including jobs for Indigenous peoples.
- Expanded market opportunities: RF XL could open the door to clean production of bitumen by-products such as petrochemicals, carbon fibre, and hydrogen, and increase export potential.



23+ Patents



16 Project Jobs



2500+ Future Jobs



1 New
Products/Services



~416,000 ktCO₂e
Total Emissions
Reduction to 2030

CURRENT STATUS

SEP 2021

The RF XL producer well was spudded on August 12, 2021, followed by the heating well on August 13, 2021. Spud to completion of both the heating well and the producer well, barring unforeseen delays, is expected by late Q3. Facility installation will commence immediately thereafter, and RF XL heating starting shortly after final commissioning.