

# ALBERTA INNOVATES

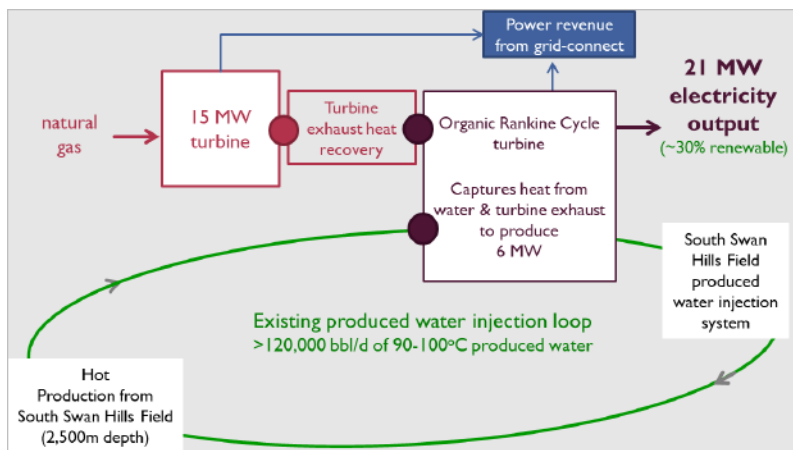
## CLEAN RESOURCES

### CLEAN TECHNOLOGY

RENEWABLE AND ALTERNATIVE ENERGY – ELECTRICITY GENERATION

## FutEra Power Geothermal Co-Production from an Active Legacy Oil Field in Swan Hills, Alberta

FutEra Power Corp has deployed a commercial-scale project to produce economic, geothermal power with co-produced hydrocarbon fluids in a Swan Hills oil and gas asset in Central Alberta. This project proves the thermal co-production concept on a commercial scale, opening the doors for widespread deployment of such systems by hydrocarbon producers throughout the Western Canadian Sedimentary Basin. Expertise and experience gained through deploying geothermal co-production technology in Alberta will lead to significant global export opportunities for Alberta-based know-how. Results from this project will support the entire hydrocarbon value chain, while simultaneously providing FutEra with a sustainable energy income stream and competitive advantage in a rapidly changing geothermal energy market.



### FUNDING DETAILS



**RECIPIENT:**  
Swan Hills  
Geothermal Power  
Corp (a subsidiary  
of FutEra Power)



**PARTNERS:**  
Natural Resources  
Canada  
Emission Reduction  
Alberta  
University of Alberta



**TOTAL BUDGET:**  
\$15,555,146



**AI FUNDING:**  
\$2,000,000



**PROJECT DATES:**  
FEB 2019 – APR  
2024



**PROJECT TRL:**  
Start: 7  
End: 9

### APPLICATION

FutEra Power is targeting applications for both geothermal heat and power. On the power side, the power generated is sold directly to the Alberta electricity grid. The establishment of a commercial geothermal power industry opens a new type of energy for the Alberta energy story and will entice new business to participate. Power revenue provides an additional revenue stream to FutEra Power and will solidify the company mandate to develop a sustainable energy mix. On the heat side, the geothermal heat generated could be sold to industrial or agricultural heat users, with FutEra developing new business outcomes. The geothermal energy target audience is vast and new business can be envisioned anywhere oil and gas is produced.

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# ALBERTA INNOVATES CLEAN RESOURCES

## CLEAN TECHNOLOGY

### RENEWABLE AND ALTERNATIVE ENERGY – ELECTRICITY GENERATION

#### PROJECT GOALS

- Design, implementation and continuous operation of the geothermal heat transfer system to validate the heat exchange model, the heat exchanger maintenance and water treatment costs, while demonstrating safe operation and regulatory compliance.
- Validation of the thermodynamic, energy production and economic modeling to illustrate cost-competitive geothermal energy generation
- Design, construction and operation of a 5-7 MW geothermal co-production power plant.
- Confirmation of neutral to improved hydrocarbon production.
- Significant GHG emissions reduction for FutEra Power, and Alberta, over the life of the project

#### BENEFITS TO ALBERTA

- Initiation and development of the geothermal power industry in Alberta with FutEra deploying this technology throughout its Western Canadian assets.
- Improved sustainability of Alberta's energy industry through co-produced geothermal energy with traditional hydrocarbon operations.
- Local economic diversification and job creation through all project phases including development, construction and operations.
- Demonstrate that good business is green business through improved operating returns at the field level and reduction in GHG emissions.
- Extended life of existing oil and gas wells with some of the additional revenue supporting lower economic thresholds for aging infrastructure and addressing well-life reclamation.
- Creation of new business ventures aimed at geothermal



2 Publications



3-5 Students  
Trained



11-100 Project  
Jobs



101-1000 Future  
Jobs



2-3 New  
Products/Services



1-2 Spinoff  
Companies



10-100 kt/yr Project  
GHGs Reduced



>1000 kt/yr Future  
GHGs Reduced

#### APR 2024

The thermal natural gas/geothermal co-production facility was designed, constructed and commissioned during the project. Natural gas electricity generation commenced September 2022 and geothermal co-production commenced January 2023. Mechanical issues, which are not unusual in the first year of operating a new and novel facility, and third party well owner production issues have required temporary suspension of co-production operations. The facility is expected to be in full operation by December 2024.