Public Report April 2024

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FutEra Power Corp

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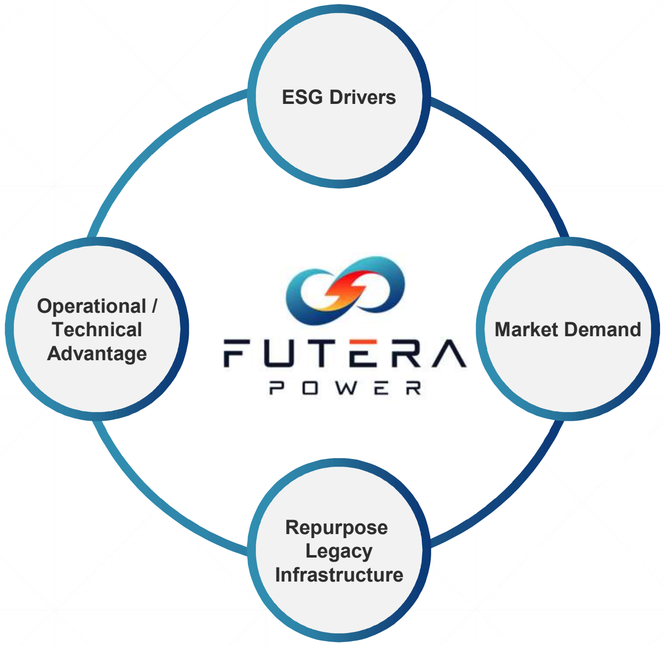
Executive Summary

FUTERA POWER

Aspiring leader in transforming the energy complex to cleaner power generation and sustainable infrastructure to meet society's desire for lower to no carbon energy solutions



CORPORATE STRUCTURE

The Alberta Investment Management Corp (“AIMCo”) has purchased most of the equity in FutEra, from Razor Energy, to create a standalone entity, with a scalable clean energy growth plan

AIMCo → FUTERA POWER

100% common equity

Special Purpose Vehicles to hold power generation assets and liabilities of projects

- **Swan Hills Geothermal Power Corp SHGPC Operating Asset**
- **Commercialize & Scale Geothermal IP Project**
- **Future: Geothermal Projects Net Zero Hybrids**
- *Other Future Projects*

COMPANY DETAILS

FutEra Power Corp is a newly formed, small enterprise or SME, which became a standalone entity June 2023

FutEra was incorporated as a wholly owned subsidiary of Razor Energy in 2018 and named Razor Power Corp. In 2019, the name of the corporation was officially changed to FutEra Power Corp

FutEra has a dedicated website at www.futerapower.com

In September 2022, FutEra received its first cash flows from the commissioning and operation of a partial power plant at Swan Hills. In January 2023, the first geothermal power revenues were added to the cash flow mix

Some noteworthy achievements include:

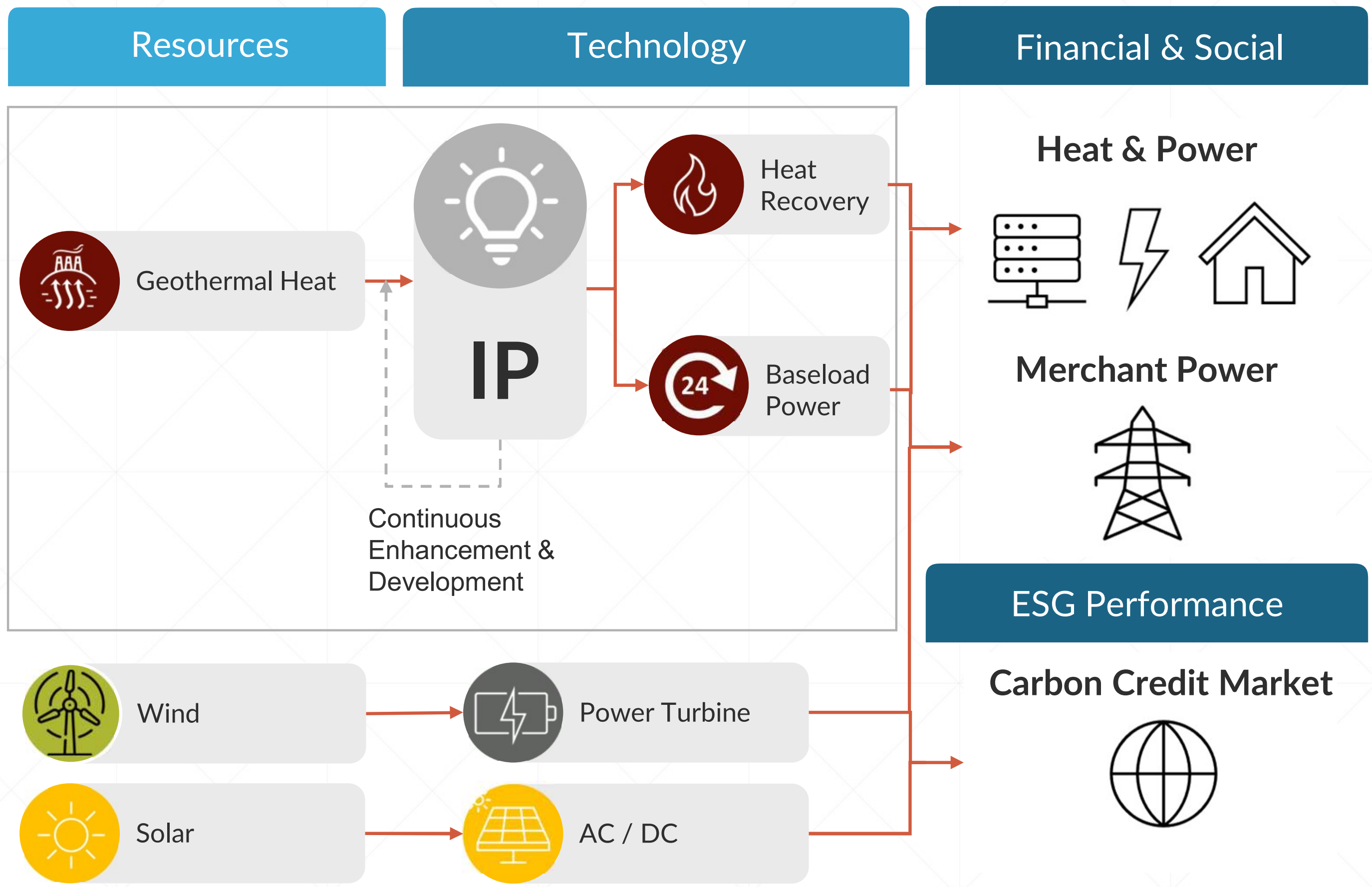
- The first geothermal electrons on grid in Canada
- Successful partnership with Alberta Innovates, Emissions Reduction Alberta and NRCan on the co-produced geothermal hybrid power project
- Significant stakeholder engagement and active participation in the development of the Alberta Geothermal Resource Act
- Active and substantial presence in many geothermal media events, panels and energy conferences in 2023
- On October 11, 2023, presented with the Energy Project of the Year (Upstream Category) in Houston, TX sponsored by GULF ENERGY EXCELLENCE AWARDS

THE FUTERA DIFFERENCE

Proprietary Advantages

- Diverse Energy Development Team
- Develop and Repurpose Existing Operating Assets
- Established Permits & Regulatory Relations
- Access to Abundant Natural Resources

FUTERA POWER



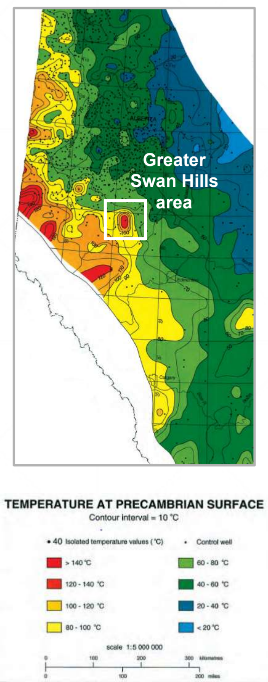
SECTION 2

Swan Hills Geothermal Power Corp

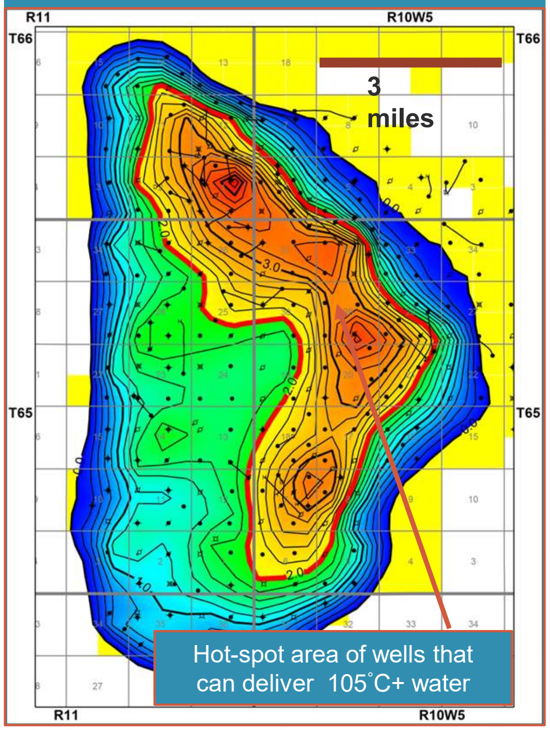
SHGPC 21 MW Plant

CO-PRODUCED GEOTHERMAL POWER

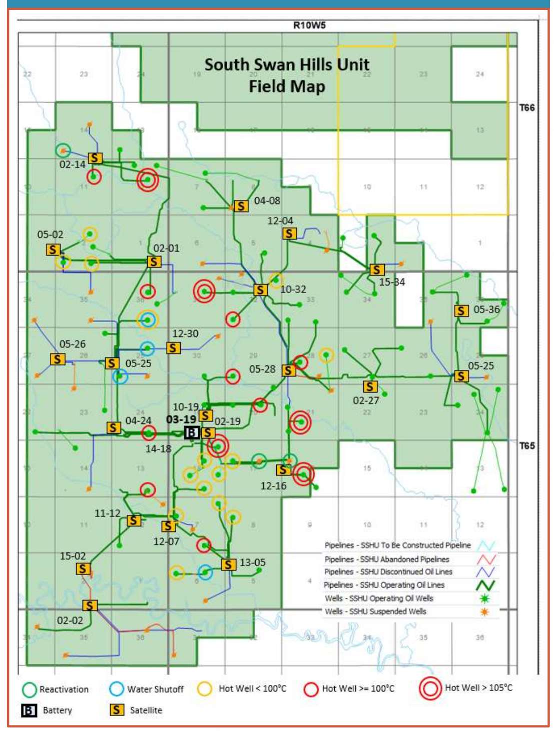
Alberta, Canada



Hot Reservoir Fluids



Existing Infrastructure



Battery and satellite are terms used to describe process facilities with different types of equipment for fluid handling and separation

Co-Produced Geothermal

Recycle/Reuse

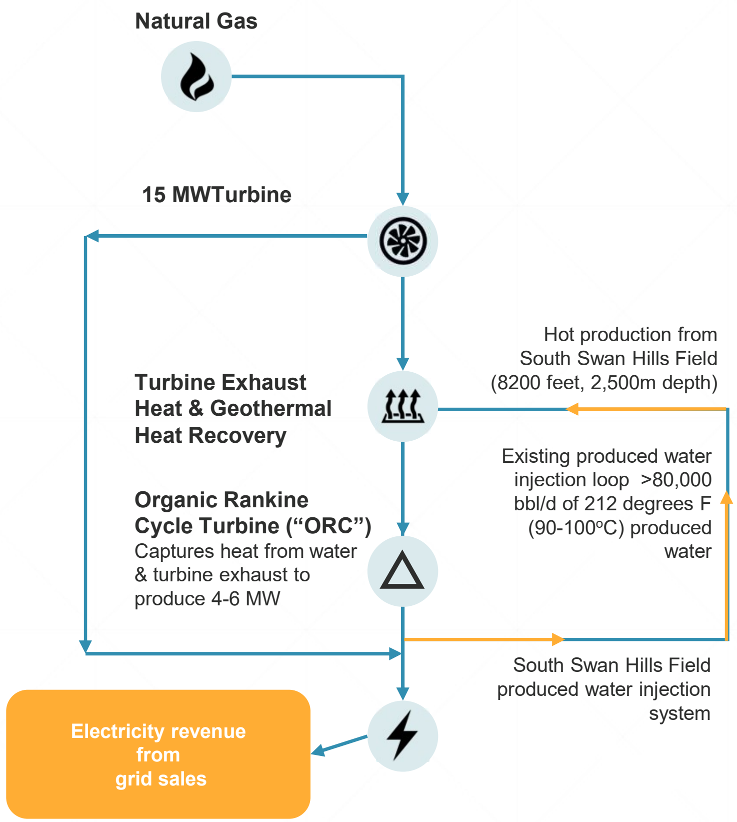
- Uniquely positioned over hot spot, hot water collected at a ‘battery’ which is a process facility
- World-class reservoir encased in shale eliminates concern of reservoir cooling and/or heat escape
- Reservoir temperature of 115°C

Reduce – no new footprint

- 84 producing wells with potential to deliver up to 120,000 bbl/d of hot water
- 108 km Razor-operated pipelines
- 60 years of production history

GEOTHERMAL NATURAL GAS HYBRID PROJECT

Power Production Process Overview



FutEra has completed construction and is operating the Swan Hills co-produced geothermal and natural gas hybrid power project:

- Grid connection of up to 21 MW of geothermal heat and natural gas generation
- Measurable GHG reduction with associated carbon revenues
- Accelerated build and efficient CAPEX from repurposing existing assets with "no new footprint", optimizing grid connected economics
- Field construction activity underway since June 2021 and completed in December 2022. Commissioning and first geothermal power to the grid since January 2024. Debugging and optimization is expected to last to the end of 2024
- Design one, build many allows improvement on design and optimization of results with application at other geothermal assets

C$49 million CAPEX

Reduces emissions by up to Up to 19,000 tC02/year

PROJECT TIMELINE

Q3 2019	**FEED Study Complete** ✓ Complete Front End Engineering Design ("FEED") study ✓ Confirm viability of heat source & water chemistry ✓ Finalize size & configuration of facility
Q2 2020	**Regulatory Approval** ✓ Full design & cost estimates ✓ Alberta Electric System Operator (AESO) grid connection ✓ Alberta Utilities Commission (AUC) utility approvals received ✓ Big Lakes County development permit issued ✓ Stakeholder consultation completed ✓ Environmental Protection and Enhancement Act (EPEA) industrial facility formal approval ✓ Alberta Energy Regulator D56 approved project plan
	Major Equipment Purchase ✓ 6 MW Organic Rankine Cycle generator package purchased – November 15, 2019 ✓ Geothermal heat exchanger design complete, field pilot test completed ✓ Long Lead electrical equipment purchase ✓ Natural gas turbine generator package purchased – signed PSA, site delivery April 30, 2022
Q2 2020 – Q3 2021	**Civil Works & Construction** ✓ Piles and concrete completed, ORC plant on site or at ORMAT for refurbishment ✓ Commence mechanical works & construction ✓ Commence electrical works & construction
Q1 2023	**Grid Connection** ✓ Complete integration & commissioning ✓ 100 day process started with site construction in February 2022 ✓ Grid connect contract to ATCO Sarah Lake substation (Q4 2021) ✓ Deliver first electrons to grid – NGT September 9, 2022, Full plant including ORC January 2023

Plant commissioned and first power to the grid January 2023

SWAN HILLS GEOTHERMAL POWER CORP - SHGPC

The table below shows plant output in real time, as reported by the Alberta Electric System Operator (AESO)

Legend

DCR - Dispatched (and Accepted) Contingency Reserve
TNG - Total Net Generation
MC - Maximum Capability

BIOMASS AND OTHER			
ASSET	MC	TNG	DCR
APF Athabasca (AFG1)*	131	81	0
Bonnybrook (BON1)*	10	0	0
Cancarb Medicine Hat (CCMH)	42	31	0
DAI1 Daishowa (DAI1)	52	41	0
Gold Creek Facility (GOC1)	5	0	0
Grande Prairie EcoPower (GPEC)	18	10	0
NRGreen (NRG3)	16	0	0
[illegible]	[illegible]	[illegible]	0
Swan Hills Geothermal (SRL1)	20	13	0
[illegible]	[illegible]	[illegible]	0
Westlock (WST1)*	18	15	0
Weyerhaeuser (WEY1)	48	41	0
Whitecourt Power (EAGL)	25	0	0

Figure 1 : AESO Market Report (real time)
ets.aeso.ca/ets_web/ip/Market/Reports/CSDReportServlet

GOVERNMENT SUPPORT & PARTNERSHIPS

Project Partnerships

From the Alberta Government:
[Website link: Geothermal Resource Development | Alberta.ca]
Alberta is positioned to attract investment in this emerging industry with a natural geographical advantage, leadership in drilling technology, and extensive oil and gas expertise.
Developing geothermal energy could promote economic development in municipalities and help enhance energy and community resiliency for First Nations, Metis Settlements and other Métis groups.
There is also potential for co-production with oil and gas development as well as repurposing inactive oil and gas well infrastructure, which could facilitate investment while limiting land impacts.

FutEra was integral voice in stakeholder group to inform and implement new geothermal regulation

Bill 36: the Geothermal Resource Development Act, builds on Alberta's strong record of responsible resource development by creating a dedicated regulatory framework to encourage investment, help diversify the economy and create jobs.

SECTION 3

Detailed Project Review

HISTORY OF PROJECT – THE GENESIS OF AN IDEA

FutEra had selected a ‘functioning geothermal site’ to host a geothermal demonstration project. Since February of 2019, FutEra, along with the asset operator Razor Energy Corp, partnered with Alberta Innovates, Natural Resources Canada (“NRCan”) and the University of Alberta to develop and advance this project through pre-FEED and FEED studies. FutEra/Razor led the studies to ensure the technical viability and economic sustainability of the Project. Large technical risks to the project are the heat transfer model and the geochemistry risk of fouling or corroding the geothermal heat exchanger. To that end, FutEra installed a heat exchange pilot in October 2019 and operated the pilot for a year to collect data. Twelve months of data collection represents valid sample size to evaluate the fouling tendencies associated with the co-produced water. Design verification and risk mitigation are direct outcomes of the heat exchange pilot data set.

In 2020, the project has received all required regulatory permits and approvals. FutEra and Razor completed full stakeholder engagement with no dissenting comments and full area support in place. Grid interconnection studies occurred with construction schedule and cost identified.

Scaling the project from the original 5MW geothermal pilot project to a 21MW hybrid geothermal and natural gas project was developed as an outcome of the FEED to add higher power revenues to offset project development cost which would advantage the first geothermal project by scale enhancing commercial outcomes, and proving investment metrics. The capital cost of the 21MW Project was estimated to allow an attractive, or commercially viable, return for investors.

The Pre-FEED/FEED study was conducted between February 2019 and September 2019, which allowed the Final Investment Decision to be approved, and long lead equipment identified. Then, a field level pilot was designed and construction to allow the following key technical and economic learnings/results:

- The South Swan Hills Unit (SSHU) waterflood operates to produce significant hot water and hydrocarbon production at surface daily. Finding a hot, wet reservoir with good porosity and permeability is usually the highest risk aspect of a geothermal project and can be ~40% of the overall project costs. Through Razor’s current operations, this Project has solved this high-risk aspect.
- The production brine chemistry is predictable and relatively benign for fouling issues, due to decades of freshwater injection into the reservoir. An appropriate heat exchange design can be selected and is commercially available.
- Based on UofA’s research, this asset is the ‘best, first test case’ for geothermal energy production in Alberta.
- FutEra and Razor have established a highly experienced team with the capabilities to manage project planning and execution.
- Preliminary modelling by the UofA confirms the SSHU reservoir can support geothermal power production > 10 MWe with minimal to no impact on the existing oil production. This reservoir has billions of barrels of fluid in place. The current production represents 1-3% of total fluid therefore the model predicts no cooling effect on the reservoir and no impact to oil sweep.
- Learning how to adapt a waterflood operation to a commercial geothermal outcome is a first in Alberta, and Canada.
- The geochemistry, the heat exchange system, the changes to infrastructure, and perhaps eventually geothermal drilling in a suspended well are the technical challenges that FutEra/Razor will have solved during the proposed project.

KNOWLEDGE/TECHNOLOGY GAPS EVALUATED DURING PROJECT

Technical Challenges

This Project targeted to solve the following technical questions and challenges:

- What is the maximum heat recoverable at a typical oil and gas facility?
- What is the optimal heat removal for reservoir performance maintenance or improvement?
- Understanding the efficiency of different cooling technologies for Canada's climate is a goal: an air- cooled system that takes advantage of our cold winters, or a water-cooled system that takes advantage of constant cooling temperatures, or a hybrid of both?
- What kind of surface engineering is required to concentrate the flow and temperature of co-produced fluids?
- To what extent can existing wells – of varying age/condition – be repurposed for geothermal co- production?
- What are the necessary geochemistry adjustments needed to allow oil and gas emulsions to be used in a heat exchanger? What surface coatings, chemical additives and heat exchanger design will prevent fouling?
- What regulatory/permitting hurdles exist in developing heat plays? What is different from current resource extraction policy/regulation?

Financial Challenges:

This Project aims to resolve the following financial challenges:

- Capital markets have been virtually frozen in Alberta, and made decidedly worse by COVID-19, therefore co-produced geothermal energy development projects will have to find novel ways to attract external capital
- Traditional oil and gas lenders are not necessarily patient for typical utility returns, with a disjoint between perceived risks and reward
- The hybrid nature of this transition project makes it the first of its kind and therefore needs some public funding assistance to allow de-risking and partnership from traditional lenders

OVERCOMING THE CHALLENGES

Co-production will address and reduce the challenge of high up front and risked capital investment in geothermal development by:

- Reducing or completely eliminating the highest risked capital associated with exploration by using extensive public and private date historical data to verify the suitability of the reservoir
- Improve and reduce the finding and proving costs for the geothermal resource by using existing production and injection data which includes flow rates, temperatures and pressures
- Using the existing oil and gas operation (footprint, roads, pipelines, permits)
- Removing the need to drill wells
- Using an established hydro-geologic loop that has decades of production data that verify the hot resource and security of supply, has proven lifting/production strategy and injection capacity, and has known cost structures and lower new capital spend
- Understanding the geochemistry to reduce equipment fouling through the deployment of a heat exchange field pilot
- Utilizing existing infrastructure to produce a smaller, no new environmental footprint, and in the process, extending the useful life of existing assets

FUTERA POWER

ALBERTA'S GEOTHERMAL POWER MARKET POTENTIAL

- The overall market size for geothermal energy production in Alberta has been modelled in the University of Alberta report entitled "Deep Dive Analysis of the Best Geothermal Reservoirs for Commercial Development in Alberta". Within section 3.4 of that report, is the following statement, "We identified over 6,100 MWt of thermal power available to domestic, commercial and industrial end users throughout the study region for a 30-year production period. This equates to an electrical power potential of ~1,150 MWe. This is enough to meet more than 20% of Alberta's renewable power being brought online by 2030."

- **The limiting factors for this addressable market are resource temperature and flow rates and high upfront capital cost for geothermal power, which is why hybrid co-produced geothermal natural gas power is an ideal candidate.**

The Target Market

- The target market is hybrid co-produced geothermal natural gas power. Alberta can be a springboard market for this innovation as proving the technology in Alberta should allow application of similar outcomes in other jurisdictions.

- The federal government has employed a Pan Canadian Framework on Climate Change which relies on a carbon tax and policy to reduce emissions. The baseload nature of geothermal makes it an ideal candidate to participate in this power grid transformation. That ideal is further enhanced by the co-production technique of the project.

- It should be noted that this project is the type of 'transformation' of oil and gas assets and the grid, that provides synergies to both industries: cleaner power generation and re-purposing and retooling of existing legacy oil and gas infrastructure and work force.

- The changing mix of generation types in Alberta's power market demand can be viewed in Figure 1

Changes in the Supply Mix

For more details refer to aeso.ca/grid/forecasting

The future supply mix will be dominated by different types of natural gas-fired generation, supplemented with wind and solar renewable generation.	Total Capacity (MW)	Change in Capacity (MW)			Total Capacity (MW)	Change in Capacity (MW)		
	Reference Case	Clean-Tech	Robust Global Oil and Gas Demand	Stagnant Global Oil and Gas Demand	Reference Case	Clean-Tech	Robust Global Oil and Gas Demand	Stagnant Global Oil and Gas Demand
Year	**2031**	**2031**	**2031**	**2031**	**2041**	**2041**	**2041**	**2041**
Average Load	10,483	(217)	543	(593)	10,615	781	897	(903)
Distribution-Connected (< 5 MW) Generation								
Solar	396	628	–	–	729	1,321	–	–
Gas	123	26	–	–	161	50	–	–
Wind	41	7	–	–	48	11	–	–
Total Distribution-Connected (< 5 MW) Generation	**560**	**661**	–	–	**939**	**1,382**	–	–
Grid-Connected and Distribution-Connected (5 MW or greater) Generation								
Wind	4,617	(120)	(90)	(710)	4,907	540	(120)	(750)
Solar	1,054	910	160	–	1,254	1,680	320	–
Simple Cycle	1,351	99	–	47	1,461	515	(140)	233
Combined Cycle	2,648	2,174	–	–	3,772	737	–	(479)
Coal to Gas Conversion	4,122	(3,187)	–	(2,387)	–	–	–	–
Coal	–	–	–	–	–	–	–	–
Cogeneration	6,579	–	720	(585)	6,669	135	990	(675)
Other	423	20	–	–	423	100	–	–
Hydro	894	–	–	–	894	–	–	–
Energy Storage	100	1,030	–	–	150	1,370	–	–
Total Grid-Connected and Distribution-Connected (5 MW or greater) Generation	**21,788**	**926**	**790**	**(3,636)**	**19,530**	**5,077**	**1,051**	**(1,672)**

Figure 1 Long Term Outlook, AESO, Supply Mix

FUTERA - OTHER ASSET POWER POTENTIAL

FutEra and Razor envision transitioning its traditional operations to lower the carbon footprint, and FutEra will be leading its transition to a new energy complex. Through this project, and future projects like this, FutEra will create competitive advantage in the domestic and global market, attracting new kinds of capital and investor interest as a publicly traded company.

The target market for **Razor's assets, and other Greater Swan Hills assets,** have been modelled by the University of Alberta, identifying that the assets have the potential to develop a median power target of ~43 MW of geothermal power, as shown in Table 1 below, which has a higher end output of up to 180 MW

Parameter	Carson Creek	Judy Creek	Kaybob Beaverhill Lake Unit One	Kaybob South Beaverhill Lake Units	Kaybob South Triassic Units	South Swan Hills Unit	Swan Hills Unit 1	Virginia Hills Unit 1
Thermal Power Range (MW)	9.97 - 138.88	5.62 - 77.39	3.15 - 39.43	21.23 - 212.36	1.01 - 12.90	4.92 - 73.69	6.44 - 117.43	3.05 - 36.33
Thermal Power Median (MW)	47.02	28.12	13.96	76.97	4.73	26.63	43.83	13.3
Thermal Power Mean ± SD (MW)	49.23 ± 18.52	29.17 ± 10.48	14.55 ± 5.34	79.42 ± 28.06	4.96 ± 1.84	27.74 ± 10.40	45.77 ± 16.88	13.91 ± 5.08
Electrical Power Range (MW)	0.84 - 45.68	0.54 - 16.12	0.27 - 9.57	2.68 - 52.29	0.07 - 2.05	0.24 - 20.23	0.03 - 27.27	0.30 - 7.03
Electrical Power Median (MW)	6.04	4.22	2.53	16.29	0.6	4.43	6.99	2.05
Electrical Power Mean ± SD (MW)	6.80 ± 3.91	4.48 ± 1.85	2.68 ± 1.25	17.07 ± 6.66	0.63 ± 0.29	4.73 ± 2.26	7.44 ± 3.35	2.17 ± 0.90

Table 1 Review of Geothermal Energy Potential for Razor assets

GEOTHERMAL POTENTIAL GREATER SWAN HILLS AREA

Co-produced geothermal natural gas hybrid power generation is likely to be the most favourable commercial development strategy for most of the project developments in Alberta due to the improvement of economic outcomes.

In addition, the number of locations that meet the standard target reservoir temperatures and surface temperatures of 90-110 degrees Celsius can be increased by using the co-produced strategy that employs a hybrid heat combination of geothermal and waste heat recovery.

When this project succeeds in establishing a geothermal strategy, the secondary market opportunities are global in their reach. Geothermal co-production and hybrid projects could be built anywhere the existing oil and gas industry has the resident contributing components of hot reservoirs, reservoir data, production/injection infrastructure, numerous drilled locations and solution/natural gas sources. Shared operations will also improve investment returns.

Market Potential - Greater Swan Hills Geothermal Potential

- The prolific reservoirs of the Swan Hills reef trend create unique opportunity for co-produced geothermal power projects. The Swan Hills trend occurs in an area of elevated geothermal gradient producing higher than average reservoir temperatures. Five other potential project sites have been identified and are depicted in Figure 2:
  - **Swan Hills Unit #1** – (Razor owned, not operated) Two projects identified with unit production split between two central production facilities. Total unit flow is ~ 22,000m³/d and reservoir temperature is 110 – 115°C.
  - **Judy Creek Units** – (owned and operated by others) a project has been identified at the central production site. Total unit flow is ~ 19,000m³/d and reservoir temperature is 105 – 110°C.
  - **Carson Creek North Unit #1** – (owned and operated by others) a project has been identified at the central production site. Total unit flow is ~ 9,000m³/d and reservoir temperature is 90 - 95°C.
  - **Virginia Hills Unit #1** – (Razor owned, suspended) a project has been identified at the central gathering site. The unit is capable of ~ 16,000m³/d of total flow. Reservoir temperature is 100 - 105°C.
- Potential for up to 180MW of power to be developed across the Swan Hills trend. These projects will help extend the economic life of the existing oil and gas operations, create incremental and continuing employment, and provide low carbon intensity power to the area and to the Alberta electricity grid.

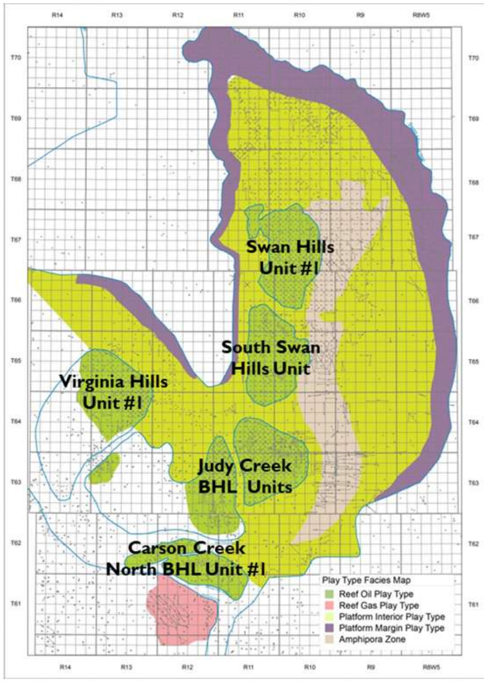


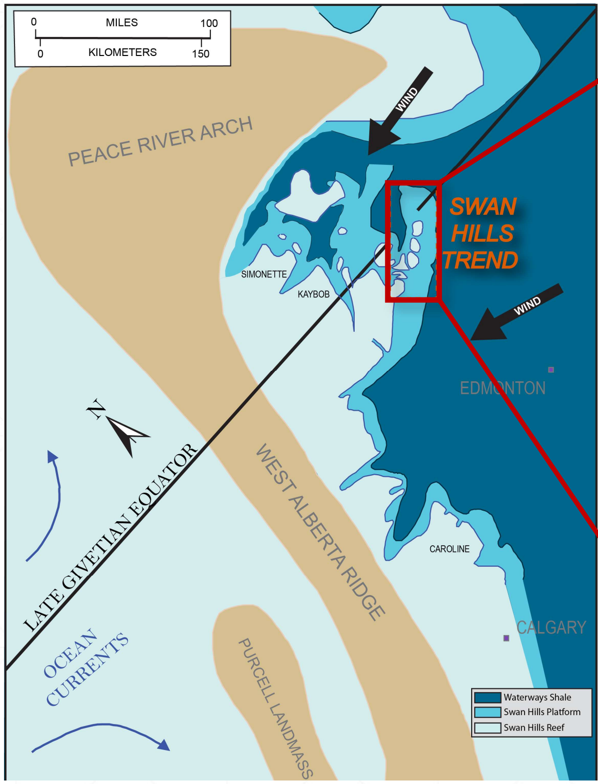
Figure 2 Greater Swan Hills Reservoirs

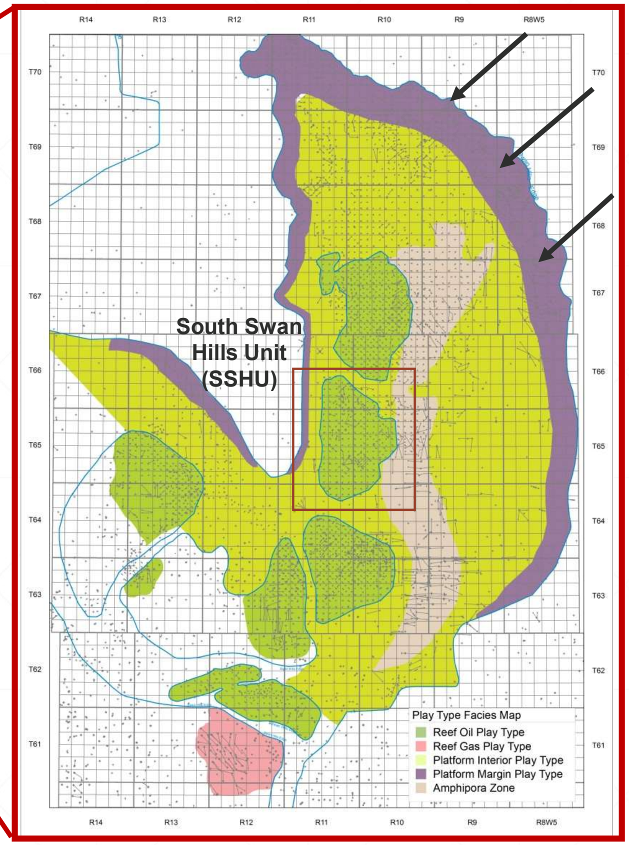
GEOLOGY - INTRODUCTION

- Discovered in 1959, the Swan Hills Member reef at South Swan Hills is among the largest individual oil pools in Alberta
  - Total reservoir pore volume of 1.3 billion barrels or 207 million cubic meters
  - Over a billion barrels of original oil in place and 396 million barrels of oil recovered to date
  - Razor produces 90,000 bbl/d total fluid (~2.5% of total reservoir volume annually)
- The high permeability & high porosity of the reef margin and capping shoals of this reef have dominated the flow regime in this pool
- The Swan Hills oil pools are located on a geothermal hot spot within the Western Canadian Sedimentary Basin creating elevated reservoir temperatures

GEOLOGY – DEVONIAN REEFS - SWAN HILLS TREND

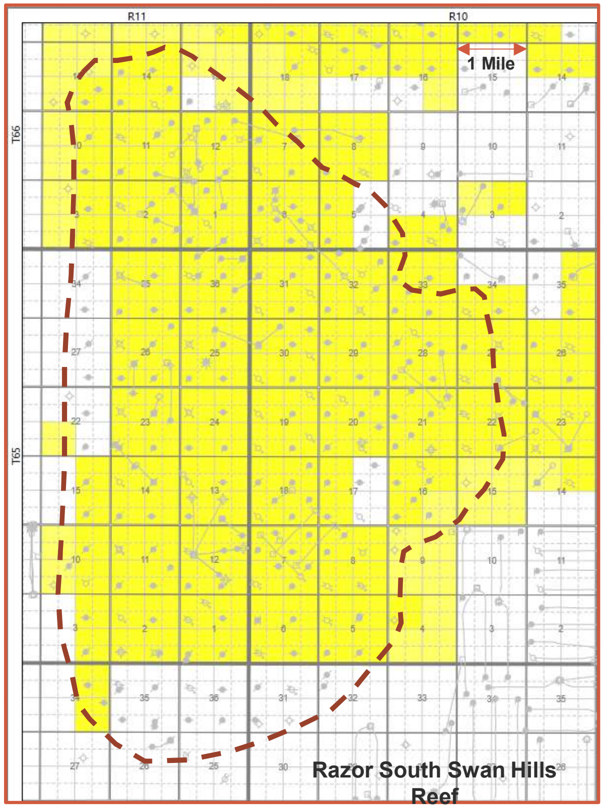
SWAN HILLS PALEOGEOGRAPHY

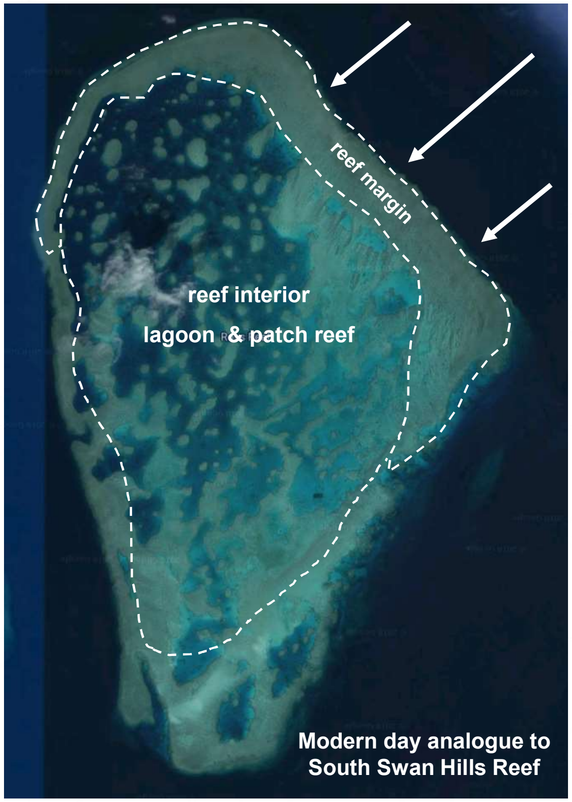




- The Swan Hills reservoir trend comprises a large platform ‘reef’ sequence with the main margin being to the NE due to dominate wave/wind direction
- Several large ‘reefs’, which is a geologic description of the underground topography, grew on this platform creating large high porosity/permeability reservoirs upwards of 100m in height
- These reefs are capped by shoal deposits before being flooded over and encased in deeper marine mudstones

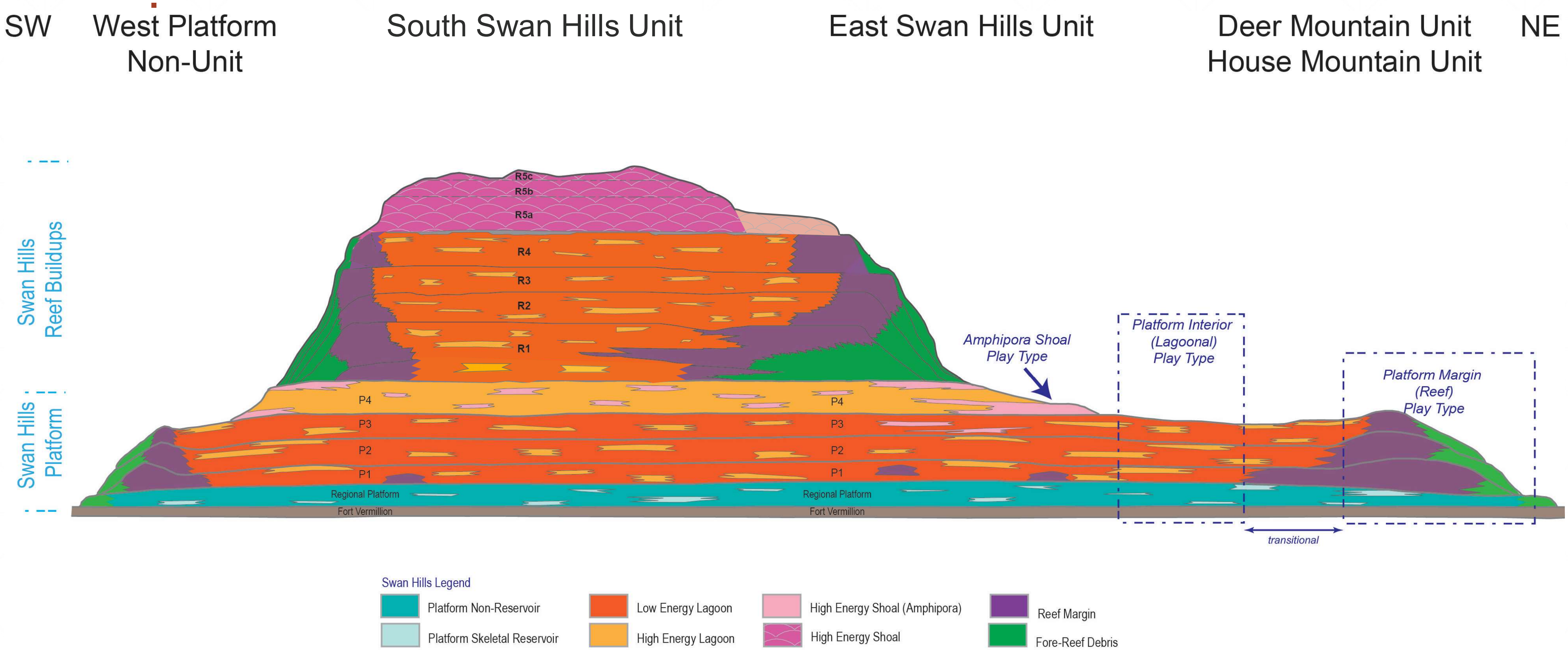
MODERN ANALOGUE FOR SOUTH SWAN HILLS REEF



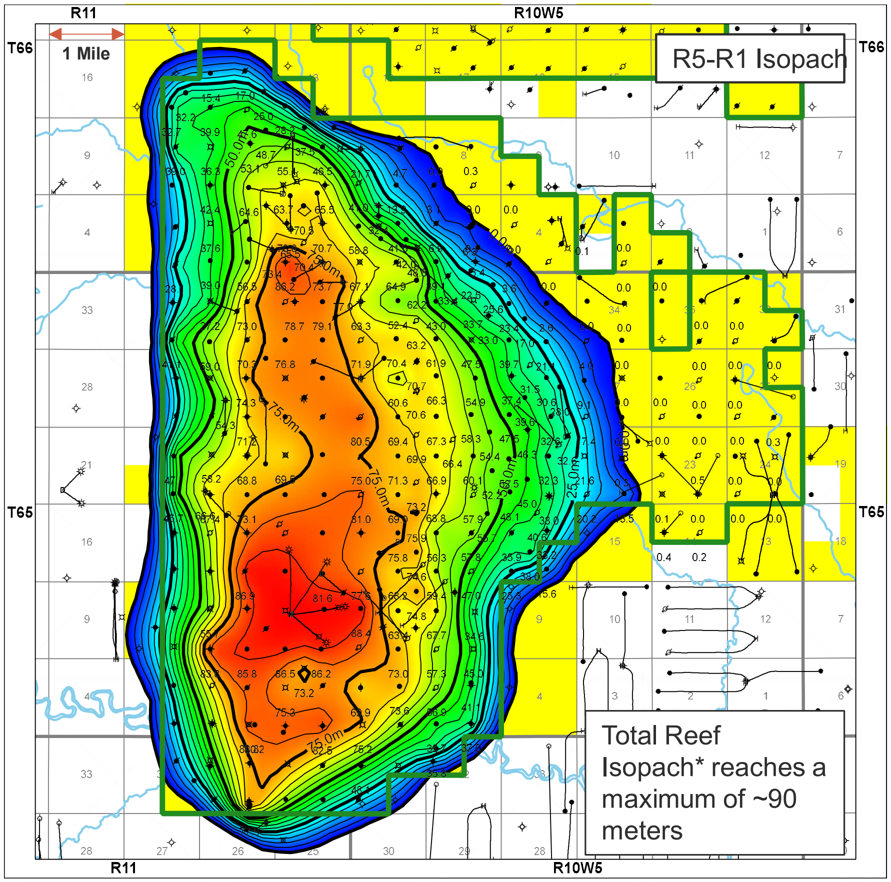


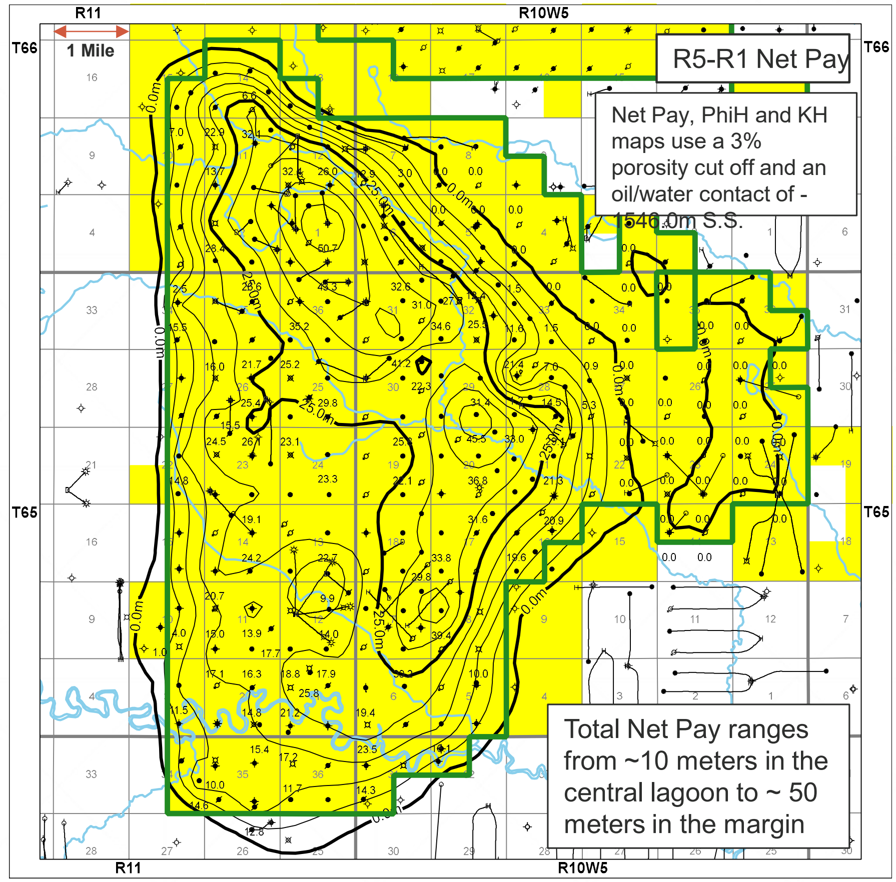
- Geologists typically endeavour to have a analog that can be studied today at surface to model the deep reservoir characteristics
- Dominant paleo wind & wave direction from the NE to the SW
- Reef margin consists of well-connected high reservoir quality rock
- Reef interior consists of a mix of moderate reservoir quality patch reefs in a matrix of lower reservoir quality lagoonal sediment

SWAN HILLS GEOLOGY MODEL (CROSS SECTION)



TOTAL NET PAY (HYDROCARBON ZONE)

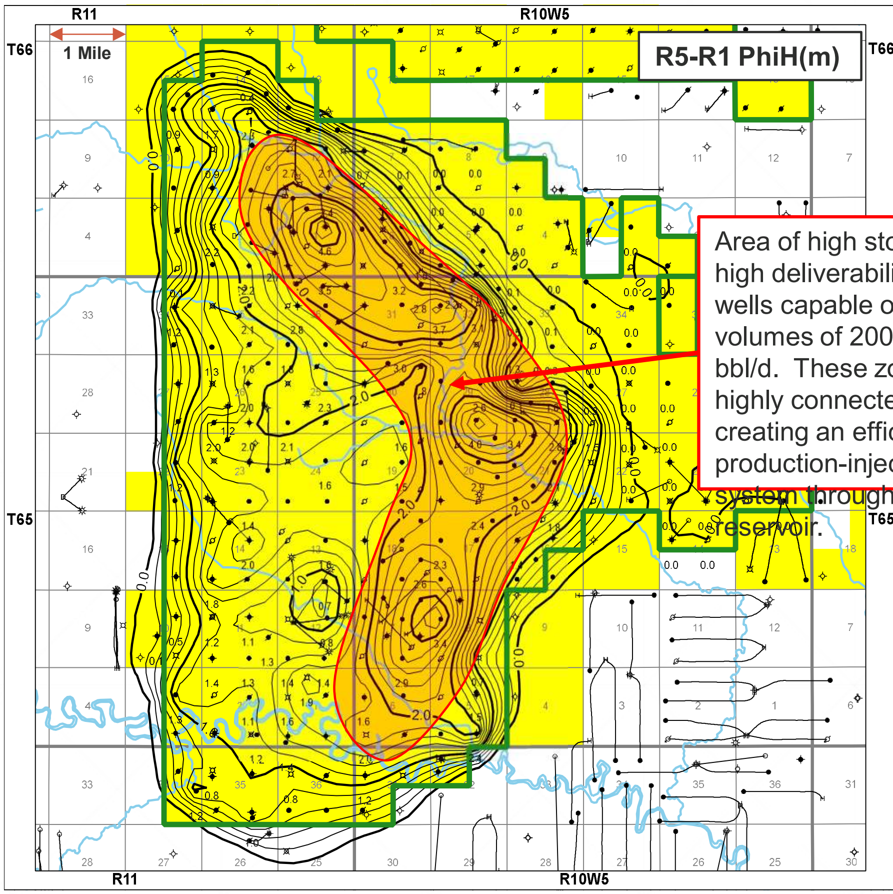


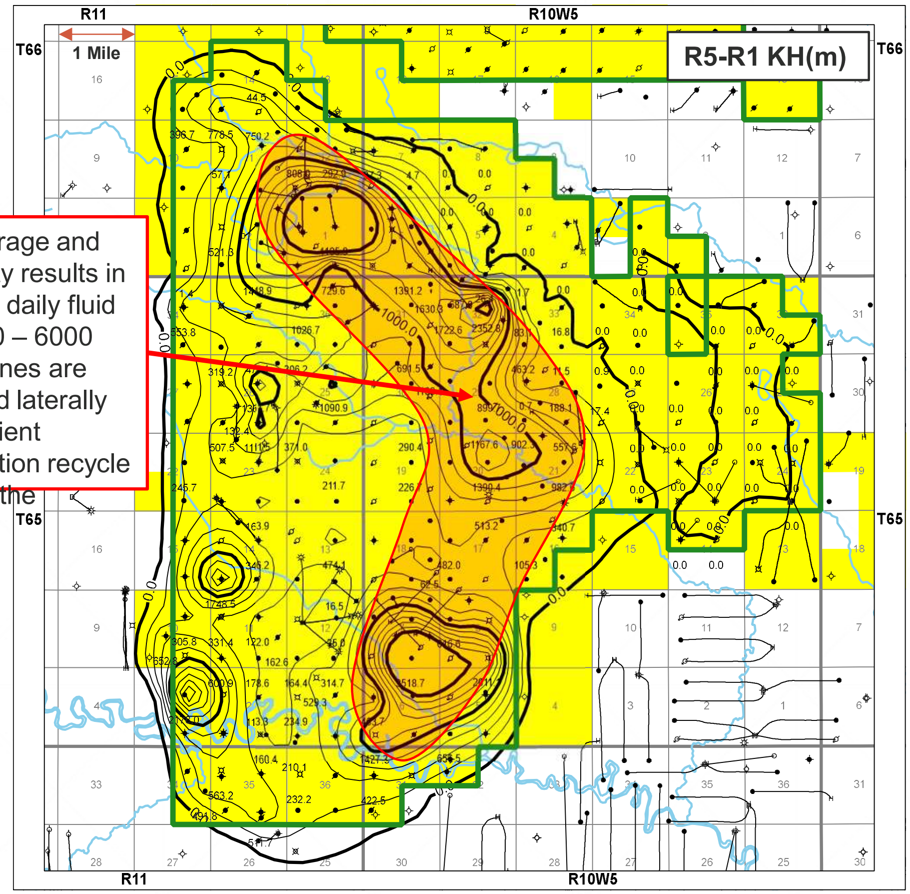


*Isopach is defined as a line on a map or diagram connecting points beneath which a particular stratum or group of strata which has the same thickness

FUTERA POWER

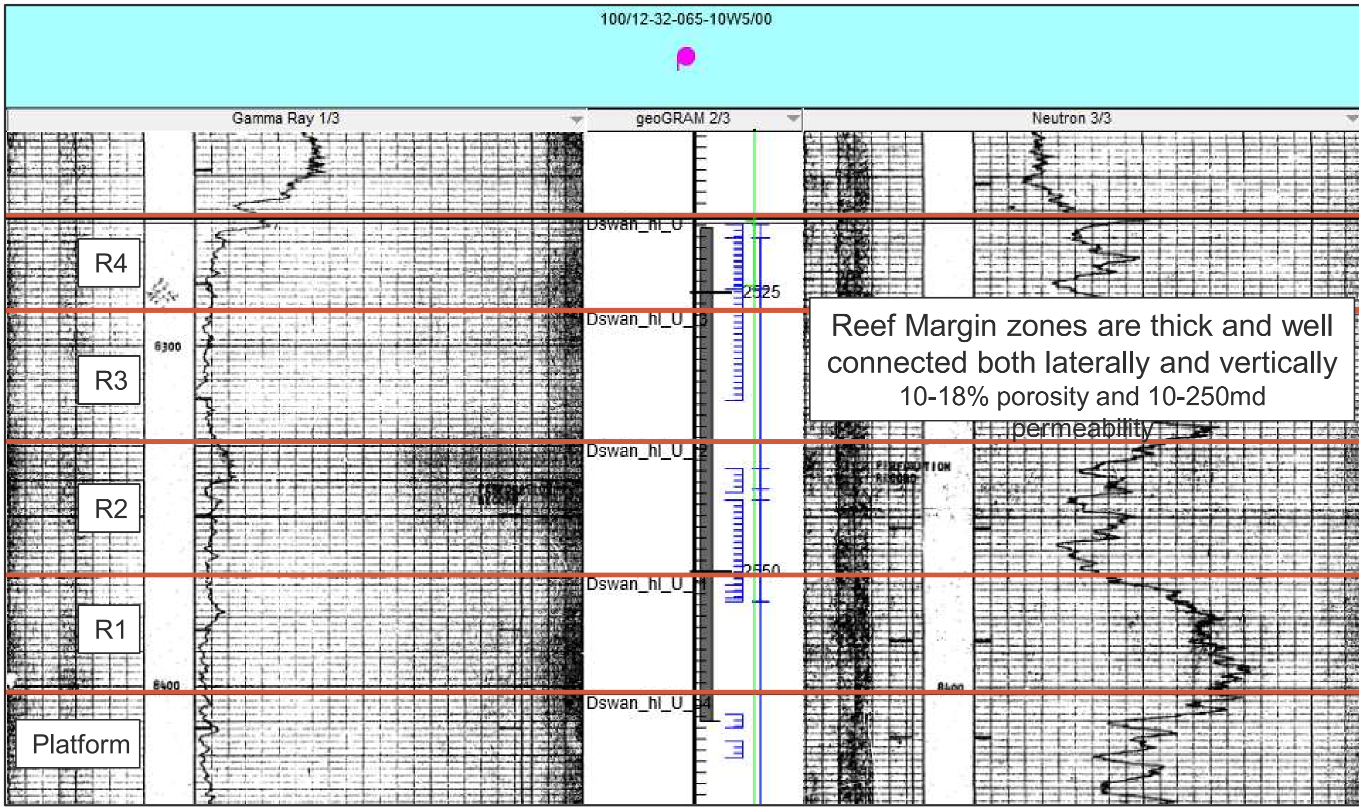
THE GEOLOGY NEEDED TO DELIVER HIGH VOLUME



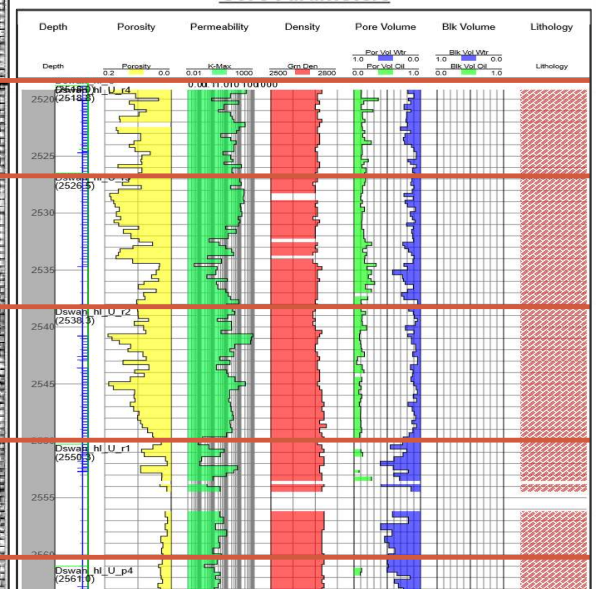


Area of high storage and high deliverability results in wells capable of daily fluid volumes of 2000 – 6000 bbl/d. These zones are highly connected laterally creating an efficient production-injection recycle system through the reservoir.

REEF MARGIN TYPE WELL RESERVOIR – WELL LOG

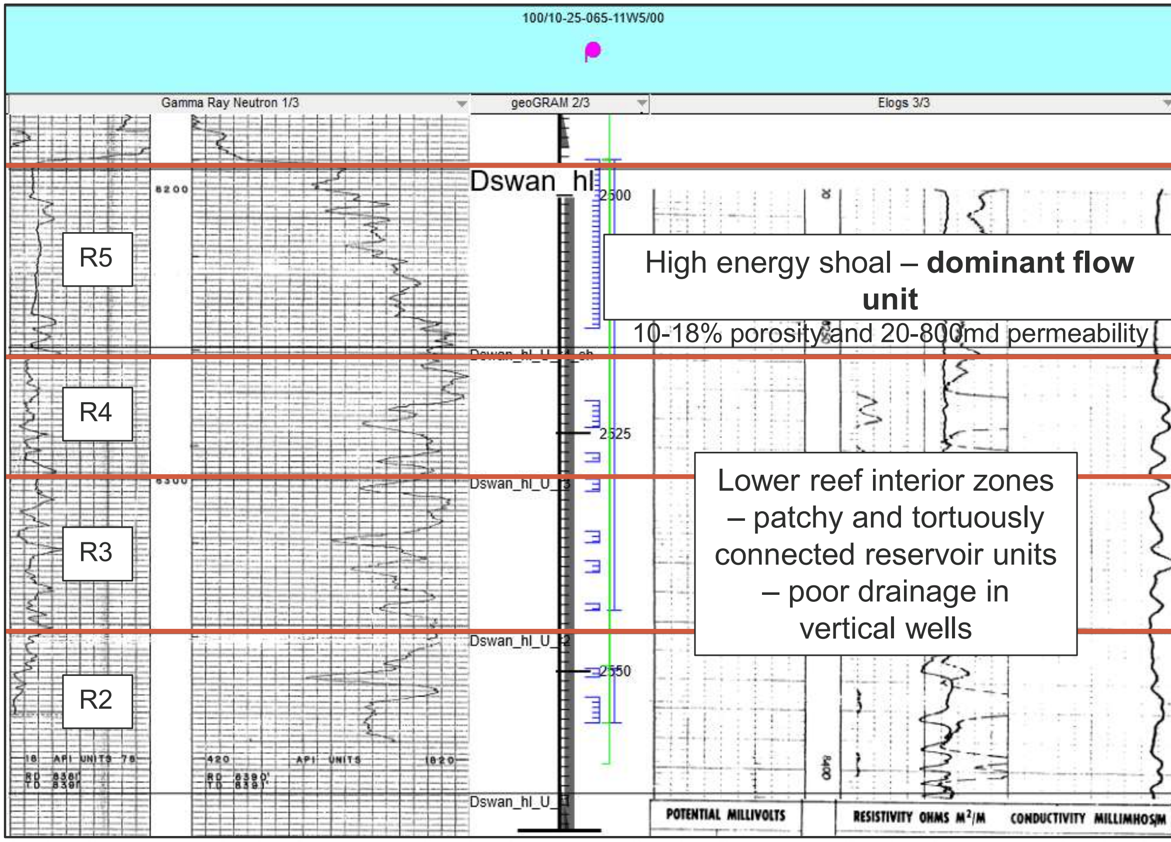


Core Parameters

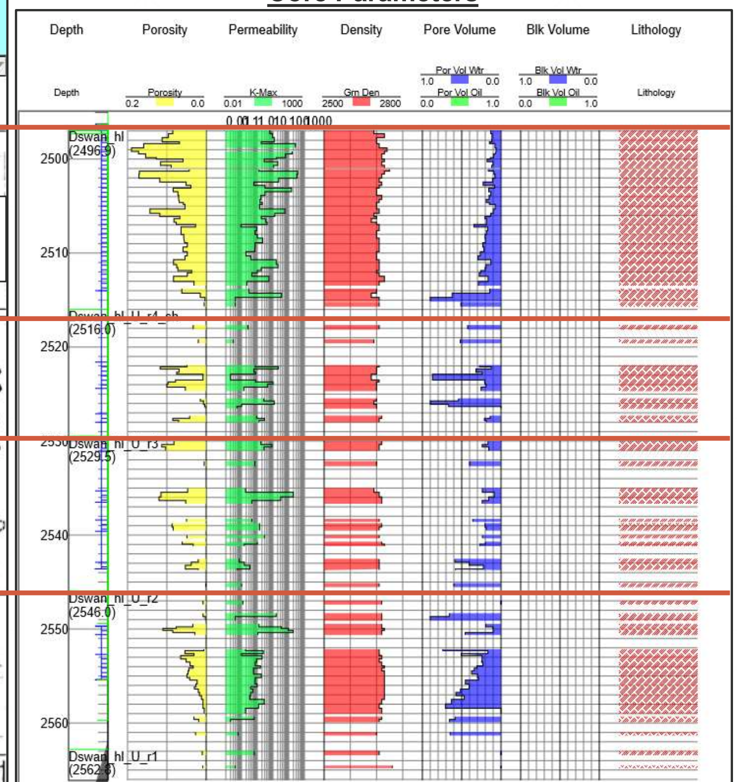


Well logs are one of the most fundamental methods for **reservoir characterization**, in the oil and gas industry as well as geothermal industry, as an essential method for geoscientist to acquire more knowledge about the condition below the surface by using physical properties of rocks

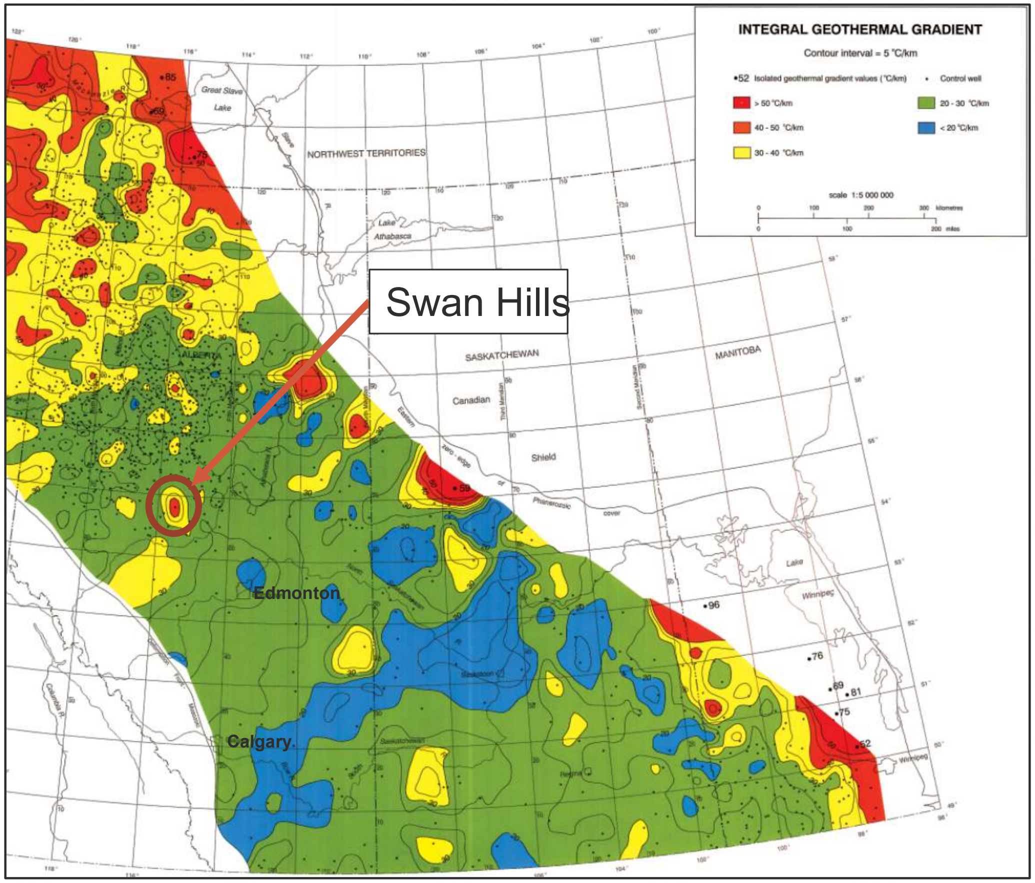
UPPER SHOAL TYPE WELL RESERVOIR (LOGS)



Core Parameters



GEOTHERMAL GRADIENTS

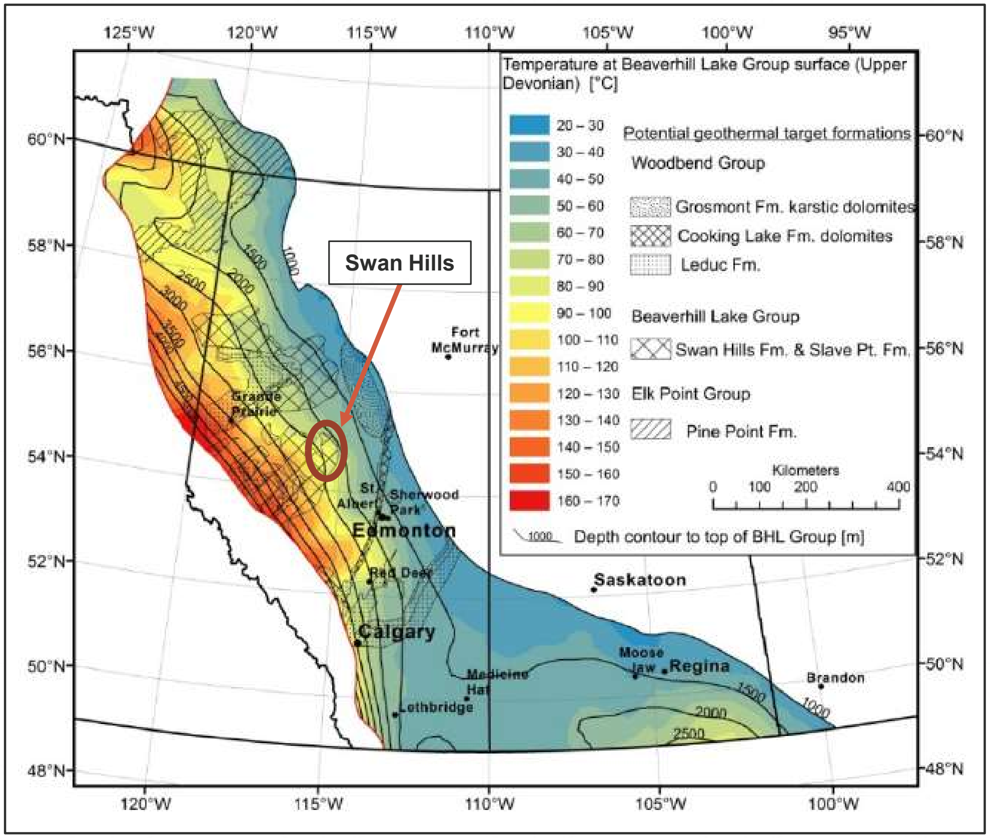


- Historical and recent work has shown that the Swan Hills area sits on an elevated geothermal gradient
- The gradient at Swan Hills is 40-45°C/km of depth versus the regional gradient of ~ 25°C/km of depth
- This higher gradient is a result of radiogenic heat generation in the Pre-Cambrian basement due to the radioactive decay of elevated concentrations of Uranium and Thorium in those rocks

Mossop, G.D. and Shetsen, I., comp. (1994): Geological atlas of the Western Canada Sedimentary Basin; Canadian Society of Petroleum Geologists and Alberta Research

RESERVOIR TEMPERATURE

- There are many ways bottomhole temperature can be measured – DST's, openhole wireline logs, cased hole temperature wireline logs, bottomhole static pressure gradient measurements, etc.
- The most accurate are bottomhole static gradients where static conditions have been maintained for 10 days or more
- Pressure/temperature gauges are run downhole and take measurements at predetermined intervals and are held at total run depth to create gradient data with depth and confirm static conditions
- This data set in the South Swan Hills Unit once corrected for run depth to mid point perforation depth shows the reservoir temperature to be 110°C to 115°C
- This data matches the gradient data of 40-45°C/km of depth and slightly higher than some of the recent temperature mapping using DST and log data



* Top of the Beaverhill Lake group is ~ 100m above the mid point of the Swan Hills member porosity

Figure from Weides, Simon & Majorowicz, Jacek. (2014). Implications of Spatial Variability in Heat Flow for Geothermal Resource Evaluation in Large Foreland Basins: The Case of the Western Canada Sedimentary

GEOTHERMAL RESERVOIR TEMPERATURE

Well	Test Date	Shut-in Time (Days)	Mid-Point Perf Temp (°C)
100/16-30-065-10W5	July 10, 2003	2075	110.3
100/16-18-065-10W5	August 8, 2009	20	110.5
100/02-18-065-10W5	Sept 24, 1973	109	111.7
100/07-06-066-10W5	August 12, 2009	180	111.0
100/10-29-065-10W5	January 20, 2011	18	115.6
100/12-29-065-10W5	June 8, 2000	100	112.6
100/12-20-065-10W5	July 10, 2003	293	111.8
100/10-25-065-11W5	March 30, 2010	114	113.9
100/10-31-065-10W5	April 20, 1974	6	113.3
100/10-31-065-10W5	April 9, 2000	14	113.1

- Downhole static gradient tests provides the most reliable reservoir temperature readings due to the prolonged period the sensors are downhole
- The data collected throughout the productive life of the South Swan Hills unit show consistent reservoir temperatures
- The pool began enhanced waterflood recovery in 1966 injecting cool surface water and reinjecting produced water that has also been cooled
- Reservoir temperatures have remained static throughout time
- Average Reservoir Temperature is **110 – 115 °C**

10-31 had static gradients run 26 years apart showing the temperature has not changed and the well produced over 29 million bbl of fluid during that time

GEOLOGY SUMMARY

- South Swan Hills field is a prolific oil reservoir producing consistently for more than 60 years
- Reservoir properties of the South Swan Hills Reef drives the high fluid production that is achieved across the field
- Greater Swan Hills sits on an area of high geothermal gradient and this results in a reservoir temperature of 110 – 115°C at the South Swan Hills Unit
- The confluence of a fully delineated, high deliverability reservoir and high formation temperatures creates the opportunity for a low-risk geothermal projects

CANADIAN GEOTHERMAL POTENTIAL

Broader Alberta Market and Canadian Market.

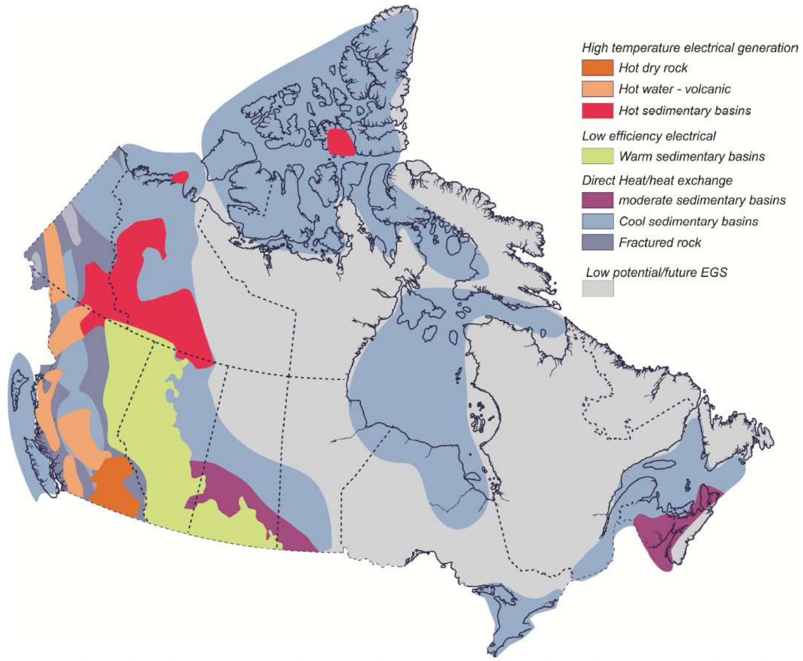
The geothermal resources range from high potential to low potential across Canada. There are several geologic settings that could employ geothermal direct heating or electrical generation.

Areas of the country where the basement granite formations are exposed at surface (grey areas in figure below) currently have low potential due to the hardness of these rocks and the depth to geothermal resources.

The sedimentary basins of western Canada, southern Ontario, southern Quebec, and parts of the Maritimes provide potential for abundant district or direct heating.

The fracture/fold belt of the Rocky Mountains in the Yukon, NWT, and BC have the opportunity for high temperature electrical generation.

In the Western Canadian Sedimentary basin, specifically: southern Saskatchewan, western Alberta, NE BC, southern Yukon and southern NWT all have the potential for stand alone or co - produced geothermal electrical generation.



VALUE PROPOSITION TO ALBERTA AND CANADA

The value proposition to FutEra, Razor, the geothermal industry, governments and power consumers includes:

- Attracting Capital: Capital investment in Alberta, especially in the junior oil and gas sector, has been challenged. Changing the dialogue to provide evidence of transitioning oil and gas facilities to lower GHG intensity can unlock new sources of capital.
- Industry Diversification: Initiation and development of a geothermal power industry could attract other industries to Alberta. For example, the data storage industry, with its energy dependent data centres could benefit from lower GHG power and our colder ambient temperatures. Other new industries would be attracted to geothermal based on direct heat sales, or sales as green power, such as greenhouses, kiln drying for frac sand drying, etc.
- Increase Competitiveness and Sustainability of Alberta's Energy Industry: Heat capture, with a revenue attached to it, could decrease the cost of hydrocarbon infrastructure and allow producers to improve economic thresholds.
- Local Community Development: Development in the Swan Hills area, and other remote areas, would help local area economic diversification
- Retooling and Retraining: Existing oil and gas workforce could add geothermal energy to their list of skills in resource production.
- End of Life Energy Infrastructure Assets: Green energy from legacy assets could assist with end of life strategies.

COMMERCIALIZATION PATHWAY

Commercialization Pathway - The pathway to full market adoption of geothermal energy development in Alberta includes technical, business, financial and regulatory hurdles:

- Technical - the largest hurdle for geothermal development is generally the technical risk of validating reservoir heat, and flow, getting heat to surface and security of supply. This project overcomes those hurdles by co-production. The addition of the natural gas hybrid to the project helps level out any bumps in heat supply from the reservoir and allows better operation of the binary ORC system. The geothermal energy is added to the natural gas exhaust heat and has more predictable outcomes. In addition, the 'made in Alberta' solution that uses both natural gas and geothermal energy as complementary heat sources opens up more reservoirs/plays to this kind of geothermal development. The geological condition threshold is lowered to include more reservoir temperatures more common in the Western Canadian Sedimentary Basin (90-120 degrees Celsius). Combination with natural gas generation, which is common everywhere, allows for better commercial outcomes for geothermal, and cleaner power generation for natural gas.

- Business - Integrating utility type project with oil and gas activities is not impossible, and it is common practice in heavy oil mining. Utility power is necessary at nearly every oil and gas facility, and this utility power production from an oil and gas facility makes sense for the industry.

- Financial - The hybrid nature of the project means that traditional banking/lenders have a learning curve to overcome. A successful project, with data to justify investment returns, will help others develop geothermal co-production, and even greenfield projects. The oil and gas lenders can find data on mixing stable utility returns will high volatility oil and gas returns. Utility lenders can find a new source of 'transition' type projects where the high upfront capital costs are reduced and geothermal power is a competitive power generation type.

- Regulatory and policy - This project used existing regulations to get fully permitted, while struggling through some untested hurdles for geothermal development. On the policy front, the project has served as a springboard to establish a clear geothermal regulatory framework which includes, but is not limited to, heat permitting, liability management, surface lease adaptations, geothermal carbon credits and other resource development regulations.

- This project will establish a technical and commercial path to show that scaled geothermal heat to power is possible in this province. The time frame was ‘fast’ in terms of power development and can also inform the need to reduce red tape and create simpler pathways.

- Successful competition of this project is evidence of commerciality. The next commercial geothermal co-production hybrid project is being evaluated currently. Data from operation of this first demonstration project could mean that the next project could be started quickly because of demonstration of success.

- Razor had created a wholly owned subsidiary Futera Power to deploy power projects. FutEra is a standalone entity as of June 2023. FutEra Power will take a build, own and operator approach to the Project. Due to the integrated nature of the project with an existing oil and gas operation, it was the best commercialization path to select to take advantage of the synergies available to the project from the oil and gas assets. FutEra has invested in the project and required a return on investment. The capital debt partner expects a return of capital as well as debt service.

SECTION 4

Project Benefits

GHG BENEFITS

GHG Impacts: Green heat recovery includes the 4-6 MW of power generated through heat to power via an ORC . Thus, this contribution to grid power has a calculated GHG emissions reduction as shown below.

Project GHG Reduction: This project will reduce emissions in this oil and gas field, and in the Alberta power generation market by 11,122 – 18,966 tCO2* per annum. With a project life expectancy of 28 years, the project will have reduced emissions by projected median total of 346,942 tCO2 of emissions reduced over the minimum life of the plant. Note: early underperformance as compared to estimated projections is due to the lengthy commissioning and optimization process.

Year	Baseline Emissions @Year (tCO2e)	Project Emissions @Year (tCO2e)	Estimated Annual Production (if applicable)	Unit of Production	Emissions Reduction @Year (tCO2e)
2022	468	0	882	MWh/year	468
2023	944	0	1,782	MWh/year	944
2024	-	0	-	MWh/year	-
2025	4,741	0	8,946	MWh/year	4,741
2026-2033	18,966	0	35,785	MWh/year	18,966
2034-2050	11,122	0	35,785	MWh/year	11,122*

*It is important to note that the project green energy outcome in MWHs has not been reduced from the original grant application, but the GHG standard against which it is compared has been lowered.

SUMMARY OF PROJECT BENEFITS

Job Creation: This new 21 MW power plant, with a full budget of $49 million, has created new work and new jobs at FutEra and with our service vendors through the development phase (5-10 positions). In addition, construction added another 20-40 jobs for its duration of 12 months. The power plant will operate for at least 20 years with 5-10 jobs associated with the plant.

Development of New Commercial Opportunities: This project will allow baseload geothermal energy development to flourish in the Alberta market. With this development will come new commercial opportunities in the areas of geothermal heat sales, geothermal power sales, geothermal IP (intellectual property) development around co-production techniques and 'widgets' needed to adjust current resource production to efficiently recover heat, and development of new heat centric industry including greenhouses, etc. FutEra's pipeline for future power projects is at least 100-125MW.

New Economic Sectors: This project should open the gate to other geothermal success. This could include the development of ideas such as a commercial greenhouse. Silvaculture (growing tree seedlings) is an obvious option as the project is sited in the area of vast logging areas.

Attraction of New Investment: The media and the investment community has cited improved ESG outcomes as crucial to reinvigorating capital market interest in the Alberta energy story. It is important that this project demonstrate that the oil and gas industry is evolving, through transition projects like this one, to the cleaner energy outcomes that the world demands as it addresses ongoing climate change. This project has external funding. The most important part of the external funding is establishing a long-term continued investment in future projects.

Increased Exports: Canada could be rewarded for a its work on a lower carbon future by increased energy exports. Lowering the carbon footprint oil production could be a selling feature. Geothermal co-production presents a unique opportunity for Alberta to market itself as a progressive, and cleaner, hydrocarbon. And, Alberta can claim to be decarbonizing is power grid.

Future Employment: This project will add jobs and revenue to the Alberta economy for at least 20 years and will escalate with future projects. FutEra is forecasting to build additional power projects with an associated job creation of construction jobs, and permanent positions.

Retraining: All of FutEra and Razor's staff, the University of Alberta and all vendors will have been retrained from typical oil and gas development to geothermal energy development. It is an exciting addition for all team members to add a renewable project work term to their energy development arsenal of skills.

Development of High Quality & Skill People (HQSP): The project has strong affiliation with the University of Alberta with the aim of assisting in the training of a new field of engineering and environment science around geothermal energy development. The legacy of the project will pay dividends with the development of HQSP. U of A had at least 3-4 graduate or higher level students working on geothermal research.

SUMMARY OF PROJECT BENEFITS

Social and Health Benefits

- The societal gains of a green energy story embedded in traditional energy production should not be underestimated. A strong, vibrant energy industry that gains world favour for its responsible plan to address climate change and current GHG emissions contributes to all of Canada.

- A continued 'cleaning up' of our oil patch earns our ability to export Canadian oil to a global market, we can erase our differential, or commodity price discount to world market prices. It may allow Canada to sell a responsible product to world markets through a recognition of our responsible production practices. Cleaner Canadian oil and gas, and the funds generated by its production, is the first step in moving away from our global dependence on the worst forms of pollution intensive energy. It's up to us to insist that we fund the transition toward a cleaner future and not cede the oil business to despots, tyrants and worse. Demand does not go unanswered. Alberta should heed the call.

- Other provinces would benefit from a successful geothermal project in Alberta. The projects identified in SK and BC would be assisted in the quest to attract investment dollars. The geothermal model needs a successful first project as an endorsement to the capital markets.

- Alberta has used stakeholder engagement with the FutEra team to inform its newly minted Geothermal Resources Act, with associated regulatory and policy reforms.

Land, End of Life, Water and Wildlife Impacts

- This project will have no new land footprint as it takes advantage of existing underground assets, and existing facilities and pipelines. In addition, the surface lease has not been enlarged but only upgraded. There is a caveat in that the grid interconnection required new pole placement from the mainline, but it is a relatively small incremental environmental impact. The work to put the line in was limited to winter work and frozen conditions to mitigate any area impacts.

- There is an ongoing debate around managing end of life assets in the oil and gas industry. This project shows a commercialization strategy to ensure Albertan taxpayers get as much energy from a drilled location as possible before retiring a production or injection well. The project wells are already drilled, and no new net drilling in this project limits the creation of new long-term liability. Taxpayers would like to see responsible energy development and long-term reclamation of all oil and gas assets, but they would also like continued revenues to provincial coffers. The rules around clean up and reclamation must remain intact for geothermal developers.

- FutEra has been through an extensive air and water impact review through the Environment Protection and Enhancement Act approval process. We have successfully met all criteria with no water impacts expected. We received a letter regarding local wildlife impacts, which are nil, and it is included in the EPEA approval. The report also establishes our monitoring requirements over the operational life of the project. Finally, the EPEA approval is very specific about the reclamation activities and reporting requirements for end of life of the asset.

Negative Impacts

- No new negative impacts were identified in the development of this project. Full regulatory approvals were sought and received. All potential for negative impact will be monitored according to permitting approvals and reported on as required.

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