avanti energy

Investor Presentation TSXV: AVN | OTC: ARGYF

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We're going to be looking back and thinking, I can't believe people just used to fill up their balloons with it, when it's so precious and unique

Peter Wothers - Cambridge University - Chemist -





Helium

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Why Helium

As a noble gas Helium is not combustible and has properties that make it irreplaceable for industrial applications like fibre optic cables, data centres, semiconductor manufacturing, medicine / MRI machines, cooling & cryogenics. Helium is the second most abundant element in the universe but extremely rare on earth. Avanti is focused on developing large scale projects to extract Helium deposit trapped within the earth.





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Global shortage, it's estimated the supply will not keep up with the demand for the next 20 years



Canada has large reserves in the world. A handful of producers are extracting helium in Saskatchewan



Industry demand CAGR of 11% each year through 2037

Fastest Growing Uses



MEDICAL INDUSTRY

Helium is mandatory for MRI machines which require 800 litres of Helium. Heliox mixtures in respiratory treatments.



CRYOGENICS

Helium is the only element that can come close to reaching absolute zero.



MOBILE PHONE If a device contains a semiconductor, it must contain helium. **COMPUTERS** Helium filled hard drives offer 50% higher storage capacity with 23% lower operating power.



WWW High Speed Internet, fibre optic cables must be manufactured in a pure helium environment



ELECTRONICS

Electronics & Semiconductors require helium to be used at different stages in the production process.





CAR AIR BAGS Helium is the gas of choice for effecting the near instantaneous deployment of airbags in cars.

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Fueling the High Tech Future



THE REACTOR OF THE FUTURE

Superconducting coils are cooled with helium They are used everywhere strong magnetic fields are needed.

Wendelstein 7-X, the world's largest stellarator device which is used to evaluate the main components of a fusion power plant, uses helium for cooling.



HELIUM COOLING PARTICLE ACCELERATORS

At the European Organization for Nuclear Research (CERN), liquid helium also plays a central role.

It is cooling the superconducting magnets that keep particles on their track. CERN operates the biggest "refrigerator" in the world.



WORLD'S LARGEST DILUTION REFRIGERATOR

Quantum computing relies on incredibly low temperatures.

Goldeneye is IBM's internal codename for the world's largest dilution refrigerator, which will house a future 1,000,000 qubit quantum processor.

FIBRE OPTIC CABLE MANUFACTURING

After fiber-optic glass is drawn into fine strands, it is shielded with helium while the cladding is applied to prevent the newly formed glass surface from reacting with the contaminants present in ambient air.

Helium can also be used during the bubbling process for molten glass to improve refining since it has the fastest bubble rise time of any gas.

Where is Helium Found?



Helium is found by drilling wells, similar to natural gas. It is formed from radioactive decay of heavy elements like Uranium and Thorium



Helium can be trapped deep under hard nonporous rock where it cannot escape. Gravity can't trap helium from escaping the atmosphere



Our focus is on helium-bearing non-hydrocarbon sources in Western Canada and Montana



Once helium is found it is purified by Cryogenic, Membrane or Pressure Swing Adsorption processes that can produce ultra-pure helium





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U.S. Helium Production

The US is the world's largest producer, accounting for roughly 40% of supply. However, the US National Helium Reserve in Amarillo, Texas, the world's single largest source of helium for the past 70 years, is now exhausted. Where will the replacement helium come from?

Helium Stewardship Act Expires Sept 2021 requiring the BLM to auction off all remaining Helium Reserves. BLM's exit from the market will eliminate the current price ceiling.

Canada is estimated to have the 5th largest Helium reserves in the world, and they are virtually untapped.

Historical Pricing







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"In a world full of game players, the only way to set yourself apart is to be a game changer"

Matshona Dhliwayo

Management Team

CHRIS BAKKER MBA

MBA, CEO

Chris Bakker has over two decades of experience in oil and gas, most recently working as a commercial negotiator with Encana/Ovintiv for major facilities and pipelines in the Montney gas play. His expertise includes all facets of Natural Gas Exploration like land acquisition, exploration, drilling, well production and facility integration and construction. Chris also has start-up experience taking a tech gaming company from conception to market as well as acting as an advisor for start-ups. Prior to Avanti, Mr. Bakker cofounded Terrelium Resources as a pureplay helium company.

ROB GAMLEY

President

Rob Gamley's career spans over a decade in corporate finance and consulting, providing corporate strategy and communications services to public companies across a broad range of industries including biotech, oil and gas and natural resource exploration and development. He has been a board member of several TSXV-listed companies and brings extensive capital markets experience and a considerable network of both retail and institutional contacts. Gamley graduated in 1998 with a Bachelor of Science from the University of British Columbia.

GENGA NADARAJU

VP – Subsurface

Genga Nadaraju holds over two decades of diverse professional experience in the oil and gas industry that includes asset exploitation, strategic planning, investor relations, and technical innovation. Most recently, she was the lead technical advisor for the Montney gas field and has extensive experience in natural gas Geology, Geophysics & Reservoir Characterization. Nadaraju brings strong project management and organizational skills with the ability to interact effectively with all stakeholders within the organization, both internally and externally.

ALI ESMAIL

P.ENG, VP - Engineering

Ali Esmail has spent the past 13 years specializing in reservoir engineering including reserves evaluation, oil and gas development economics, production analysis and petroleum data analytics. His broader experience includes working in upstream and midstream oil and gas with Shell, Husky, and SemCAMS. Esmail provides a diverse perspective with 11 years of operations and process engineering experience at Dow Chemical and Nexen. He has also been recognized by the SPE and CSChE for his contributions in facilitating research between academia and industry.

DR. JIM WOOD

PHD, Director - Geoscience

James Wood has over 30 years of experience as a geologist who specializes in reservoir characterization. His Geoscience and Petroleum Engineering research focus is on developing practical applications for enhanced evaluation and economic development of gas and liquid hydrocarbons in conventional and unconventional resource plays. Wood specializes in applied research in Geosciences and Petroleum Engineering; his research has received over 100 publications and has been cited over 1,300 times.

CARTER CHALMERS

VP – Corporate Development

Carter Chalmers is a senior business leader with over a decade of experience in business development and corporate development, include marketing and investor relations across a wide range of mediums from mining, technology and oil and gas data solutions. He is experienced in all aspects of corporate development and investor relations for multiple start-ups and TSXV and CSE-listed companies. Prior to Avanti, Chalmers co-founded Terreliumresources as a pure-play helium company.

RICHARD BALON

B.S.C, P. Geoph, Senior Geophysicist

Richard Balonhas over 30 years of experience in the Western Canadian Sedimentary Basin. He is a technically focused geophysicist with a proven track record working extensive analysis of 2D and 3D seismic data across some of the largest oil and gas fields in Canada. Balon holds a B.Sc. Geophysics from the University of Manitoba and is a member of APEGA (P.Geoph.), SEG, CSEG, CSPG.

CHAD LERNER

Director – Land & Business Development

Chad Lerner has over 23 years of experience in many aspects of energy exploration. He has extensive experience in commercial agreements, joint ventures, business development and land acquisition strategy. His experience has focused on junior and emerging energy companies having been involved in both private and public energy entities. Lerner is a graduate (1998) of the University of Calgary, holding a Bachelor of Commerce Degree with a major in Petroleum Land Management.

KEVIN MORRISSETTE

P.GEOL, Senior Geologist

A professional geologist with over 15 years of diverse exploration, development, and operational experience across the Western Canadian Sedimentary Basin. Prior to joining Avanti Energy, Kevin was previously with Penn West Exploration and Gain Energy.

Kevin received his Bachelor of Science Degree from the University of Calgary and is a member in good standing of APEGA, CSPG and the CSEG.

MORGAN KEANE

Geologist in Training

Ms. Keane has over 4 years of relevant experience as a Geologist in Training in the energy industry where she has developed diverse skills working in a wide variety of environments including US Basins, unconventional plays, conventional plays, oil sands and offshore exploration. She has been involved with a handful of oil and gas companies, most recently working at CNOOC Int. (formally Nexen). Ms. Keane is a University of Calgary graduate (2017) with a Bachelor of Science with a major in Geology, minor in Geophysics and a petroleum concentration.



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Avanti Energy is Focused on the Exploration, Development and Production of Helium Across Western Canada and the United States

To date Avanti has completed the acquisition of several helium prospective assets within the Greater Knappen area. Avanti continues to evaluate and identify additional helium prospects in western Canada and the United States

Strategic Evaluation

We employ a targeted approach and selection methodology to evaluate and prioritize multiple helium assets across Western Canada and the United States.

Diversified Portfolio

Our strategy is to diversify our helium assets, where each asset carries a different risk profile for helium exploration.

Focused Acquisition

Our targeted approach focused on assets with highly prospective helium reservoirs and economic helium concentrations.







Our Process

- G&G team is building a geological model to understand helium migration and accumulation at a fundamental level.
- Approach and methodology is similar to that used to identify and assess the Montney.
- 80/20 split of opportunities between "elephants" and assets similar to others in the industry.
- Our proprietary system-level understanding designed to lead to larger, longer-lived resources in a different zones and accumulations (80% land target). Others are simply chasing deeper Cambrian traps & high points (20% land target).
- Reviewed 30+ opportunities and high-graded to 10 for further review while simultaneously initiating the acquisition process.



Greater Knappen



Opportunity Highlight

~69k 100% ~1-2% Stacked Pay

Operatorship

Acres of Helium Prospective Land Helium Content

Helium Target Zones



LAND ACQUISITION

- Strategic and targeted approach in Alberta and Montana
- Focused in high-graded area for helium exploration.



GEOLOGY AND HELIUM POTENTIAL

- Multiple target zones in the Cambrian and Devonian
- Nitrogen rich and potential economic concentration of Helium
- Geological structure to trap the Helium



INFRASTRUCTURE

- Existing oil & gas road and wellsite infrastructure
- Available off-gas disposal pipelines
- Available power for Helium purification



TECHNICAL TEAM

- Veteran team with exploration and development experience in both the conventional and unconventional plays
- Rapid staged approach to evaluating the opportunities.
- Extensive risk assessment evaluation on all opportunities
- Continue to look at additional opportunities to diversify Avanti's portfolio of assets

Greater Knappen Resource and Development Potential



- Avanti's geological interpretation of AOI outlined in red gives an estimated undiscovered resource potential of:
- Low Case : 1.4 bcf Helium
- Mid Case: 4.4 bcf Helium
- High Case: 8.9 bcf Helium
- AOI 5 & 6 outlined in blue have not yet been estimated and still being worked through Avanti's proprietary geological modelling
- Estimates are undiscovered and un-risked.
- Exploration plans has been initiated in Aden and Sweetgrass





ARGY OTC:

*Beacon Securities Analysis

Chart is preliminary as it can vary depending on a few factors:

- Timing of New Walls
- ► # of Required Wells
- ► EUR of Each Particular Well

An industry well nearby produced 55 mcf/d of helium from the Beaverhill Lake formation during June 2021. That well had 1.4% He in the raw gas stream, which is consistent with the data that AVN has provided.

Using those parameters as a starting point, the matrix provides a range of possible un-risked NPV10 values for the helium resource, based on wells that average 50 mcf/d IP30. We estimate that AVN would require between 10 and 100 wells to produce the 1-9 bcf of helium.

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Greater Knappen Resource and Development Potential

| NPV 10 to Avanti Enerav | (C\$ Billion) - Basec | d on 50 mcf/d IP30 | per well |
|---------------------------------------|-----------------------|--------------------|----------|
| A A A A A A A A A A A A A A A A A A A | | | |

| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | \$250 | \$0.1 | \$0.3 | \$0.4 | \$0.6 | \$0.7 | \$0.9 | \$1.0 | \$1.2 | \$1.3 |
|))) | \$300 | \$0.2 | \$0.4 | \$0.5 | \$0.7 | \$0.9 | \$1.1 | \$1.2 | \$1.4 | \$1.6 |
| 2 | \$350 | \$0.2 | \$0.4 | \$0.6 | \$0.8 | \$1.0 | \$1.2 | \$1.4 | \$1.6 | \$1.8 |
| | \$400 | \$0.2 | \$0.5 | \$0.7 | \$0.9 | \$1.1 | \$1.4 | \$1.6 | \$1.8 | \$2.1 |
| | \$450 | \$0.2 | \$0.5 | \$0.7 | \$1.0 | \$1.2 | \$1.5 | \$1.7 | \$2.0 | \$2.2 |
| | \$500 | \$0.3 | \$0.6 | \$0.8 | \$1.1 | \$1.4 | \$0.7 | \$1.9 | \$2.2 | \$2.5 |

Recoverable Helium Resource - bcf



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Project Timeline 2021-22









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Avanti Energy

Greater Knappen Geology Highlight

Structure & Seal **Helium Trapped**

Stacked Reservoir Helium Target Zone

DEPOSITIONAL MODEL







1-2% / up to 98% Helium / Nitrogen Content

Proven Production Helium Production

GAS DATA









Helium Generation and Trapping Mode

- Helium is generated by the decay of 1. uranium and thorium in the basement rocks
- 2. Once released from the source rock, helium can interact with formation water
- 3. Formation water carries the dissolved gases as it ascends
- 4. When the water contacts a pre-existing gas cap (containing methane or carbon dioxide), Helium partitions out into the gas cap.
- 5. Helium concentration varies going up the stratigraphic rock column



Modified from On The Hunt for Helium, Physics World (2017)



Avanti Share Capital

Issued

Warrants 3,190,000 @\$0.20 | 430,000 @\$0.60 | 285,3

> Options 1,500,000 @\$0.30 | 1,395,000 @\$1

> > Fully Diluted

Current Cash

Debt

| | 48,743,540 |
|-------------|------------|
| 300 @\$1.00 | 1,506,178 |
| 1.45 | 4,595,000 |
| | 54,844,728 |
| | ~7,500,000 |
| | \$0 |

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THANK YOU!

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