

## **Advantage Announces Advanced Modular Carbon Capture and Storage ("MCCS") Technology, First Commercial MCCS Deployment at Glacier, and Founding of Entropy Inc.**

(TSX: AAV)

CALGARY, AB, March 31, 2021 /CNW/ - Advantage Oil & Gas Ltd. ("Advantage" or the "Corporation") and Allardyce Bower Consulting Ltd. ("ABC") are pleased to announce they have jointly developed breakthrough carbon capture and storage technology capable of commercial profitability at a carbon price below CDN\$50/tonne. The first deployment of the technology will occur at Advantage's Glacier Gas Plant near Grande Prairie, Alberta and is expected to enter service by March 2022.



The Modular Carbon Capture and Storage ("MCCS") technology can be retrofitted to most point-source industrial emissions, including sectors that are difficult to decarbonize like power generation, blue hydrogen, LNG, oil and gas processing, and production of cement and steel. In partnership with ABC, Advantage has established Entropy Inc. ("Entropy"), which will own the technology with the intent of deploying it widely in the global effort to decarbonize.

Entropy's MCCS designs include several key innovations from a research and development program that has been underway for several years, including collaboration with an accredited Canadian university. Entropy is seeking numerous patents on new technologies required to reduce the cost of capturing post-combustion carbon dioxide and storing it permanently, including innovative process enhancements and refinements that were developed over a decade of operational experience with a pre-combustion carbon capture and storage at the Glacier Gas Plant. The modular technology is extremely versatile, applicable to projects as small as 8,000 tCO<sub>2</sub>e/year allowing decarbonization to occur in easily financed increments. There is no upper limit to the scalability for larger projects. MCCS recovers approximately 90% of carbon emissions.

Highlights of the first commercial project at the Glacier Gas Plant:

- Advantage intends to substantially achieve "net-zero" scope 1 and 2 emissions using the MCCS technology at the Glacier Gas Plant in two phases. Phase 1 has been fully approved by the Advantage Board of Directors and equipment procurement is underway.
- Total cost of Phase 1 is expected to be \$27 million, with Advantage investing \$7 million (included in Advantage's 2021 capital spending guidance). The remainder of the project will be funded by a third-party in the form of non-equity, non-dilutive sponsorship.
- Once onstream (scheduled for March 2022), Phase 1 is expected to capture, store and offset approximately 46,000 tonnes of carbon dioxide equivalent per year (tCO<sub>2</sub>e/year). Captured carbon will be permanently stored in a deep saline aquifer.
- Operating income from monetizing carbon offsets is expected to be up to \$3 million per year following Phase 1, based on a carbon offset price forecast of \$50/tonne. Internal rate of return for the project at this pricing is expected to be 12%, assuming no carbon price escalation.
- Energy input and operating costs are expected to be approximately \$15/tonne.
- Phase 2 may be constructed by Entropy as early as 2023 at an expected cost of \$49 million and is designed to capture an additional 136,000 tCO<sub>2</sub>e/year.
- Advantage will begin marketing a proportion of its production as "blue natural gas" (net zero supply) once the project is online.

In addition to the MCCS project at Glacier, Entropy is pleased to announce it has been contracted to design a third-party MCCS project in British Columbia, and has been engaged to evaluate several additional projects in multiple industrial sectors in Western Canada and the United States. Entropy intends to develop and deploy MCCS projects world-wide, employing a full suite of expertise including project assessment, engineering procurement and design, storage reservoir engineering, carbon utilization engineering, compliance-based carbon offset marketing, carbon finance and regulatory expertise. While exploring strategic options to expand the business, Entropy will be led by Michael Belenkie (Director, President and CEO) and Craig Blackwood (CFO) under a services agreement while retaining their existing roles at Advantage.

Using Entropy technology, industrial emitters will have the opportunity to reduce emissions in stages to achieve targeted outcomes, and the MCCS design is specifically suited to achieving these goals while moderating the required pace of investment and delivering returns via carbon revenue.

**About Advantage Oil & Gas Ltd.**

Advantage Oil & Gas Ltd. is a low-carbon energy producer focused entirely on developing its significant position in the Montney resource play. Advantage's owned infrastructure, top-tier cost structure and capital efficiency provide a strong foundation for sustainable, disciplined production growth. Advantage's land holdings consist of 216 net sections (138,240 acres) of liquids-rich Montney lands at Glacier, Valhalla, Progress and Pipestone/Wembley. Management estimates a future drilling inventory of more than 1,400 horizontal well locations. With modern, low emissions-intensity assets and the Glacier carbon capture and sequestration asset, Advantage continues to proudly deliver clean, reliable and sustainable energy, contributing to a reduction in global emissions by displacing high-carbon fuels. Advantage's common shares trade on the Toronto Stock Exchange under the symbol AAV with its head office in Calgary, Alberta, Canada.

For more information: [www.advantageog.com](http://www.advantageog.com)

### **Advisory**

*The information in this press release contains certain forward-looking statements, including within the meaning of applicable securities laws. These statements relate to future events or our future intentions or performance. All statements other than statements of historical fact may be forward-looking statements. Forward-looking statements are often, but not always, identified by the use of words such as "anticipate", "continue", "demonstrate", "expect", "may", "can", "will", "believe", "would" and similar expressions and include statements relating to, among other things, Entropy's position, strategy and development and deployment plans and the benefits to be derived therefrom; Advantage's expectations generally and with respect to Entropy's project development and future plans; anticipated timing of deployment of the MCCS technology; the anticipated benefits to Advantage from the MCCS technology at its Glacier Gas Plant, including the effect of the technology on emissions; anticipated costs for Phase 1 and Phase 2, including the expected sources of funding; and expected carbon capture, operating costs, internal rates of return and energy output from the project. Entropy's and Advantage's actual decisions, activities, results, performance or achievement could differ materially from those expressed in, or implied by, such forward-looking statements and accordingly, no assurances can be given that any of the events anticipated by the forward-looking statements will transpire or occur or, if any of them do, what benefits that Entropy and Advantage will derive from them.*

*These statements involve substantial known and unknown risks and uncertainties, certain of which are beyond Advantage's and Entropy's control, including, but not limited to: changes in general economic, market and business conditions; industry conditions; actions by governmental or regulatory authorities including increasing taxes and changes in investment or other regulations; changes in tax laws, carbon pricing regimes and incentive programs; Entropy's success at generating business; changes in commodity prices, currency exchange rates, capital expenditures, the occurrence of unexpected events involved in Entropy's business, including hazards such as fire and explosion, each of which could result in substantial damage to facilities, other property and the environment or in personal injury; delays in anticipated timing of Phase 1 and Phase 2; anticipated costs are higher than expected; failure to achieve the anticipated benefits from the MCCS technology; the amount of carbon dioxide captured, stored and offset varies from expectations; competition from industry participants; the lack of availability of qualified personnel or management; credit risk; changes in laws and regulations including the adoption of new environmental laws and regulations and changes in how they are interpreted and enforced; ability to comply with current and future environmental or other laws; market valuations; liabilities inherent in oil and natural gas operations; competition for, among other things, capital and skilled personnel; incorrect assessments of the value proposition on specific projects, technical and sequestering problems and other difficulties in CCS operations; ability to obtain required approvals of regulatory authorities; Entropy's ability to obtain patents for its technology; and ability to access sufficient capital from internal and external sources. Readers are also referred to risk factors described in other documents Advantage files with Canadian securities authorities.*

*With respect to forward-looking statements contained in this press release, Advantage has made assumptions regarding, but not limited to: conditions in general economic and financial markets; effects of regulation by governmental agencies; current and future carbon prices and royalty regimes; future exchange rates; future operating costs and internal rates of return; availability of skilled labor; availability of equipment; timing and amount of net capital expenditures; the impact of increasing competition; the price of carbon credits; that the Corporation and/or Entropy will have sufficient cash flow, debt or equity sources or other financial resources required to fund its capital and operating expenditures and requirements as needed; that Entropy's conduct and results of operations will be consistent with its expectations; that Entropy will have the ability to develop and deploy the projects in the manner currently contemplated; current or, where applicable, proposed assumed industry conditions, laws and regulations will continue in effect or as anticipated; the estimates of Entropy cost structure and the assumptions related thereto are accurate in all material respects; Entropy's ability to obtain patents for its technology; and the anticipated amount of carbon dioxide captured, stored and offset is consistent with expectations. Readers are cautioned that the foregoing lists of factors are not exhaustive.*

*Management has included the above summary of assumptions and risks related to forward-looking information above in order to provide shareholders with a more complete perspective on Advantage's and Entropy's future operations and such information*

*may not be appropriate for other purposes. Advantage's and Entropy's actual results, performance or achievement could differ materially from those expressed in, or implied by, these forward- looking statements and, accordingly, no assurance can be given that any of the events anticipated by the forward- looking statements will transpire or occur, or if any of them do so, what benefits that Advantage and Entropy will derive there from. Readers are cautioned that the foregoing lists of factors are not exhaustive. These forward-looking statements are made as of the date of this news release and Advantage disclaims any intent or obligation to update publicly any forward- looking statements, whether as a result of new information, future events or results or otherwise, other than as required by applicable securities laws.*

*The information in this press release in respect of the anticipated costs, operating income and internal rates of return from the project may constitute a financial outlook within the meaning of applicable securities laws. Such information has been prepared by management based on a number of assumptions, including the assumptions discussed in this press release, to provide an outlook of the results and benefits of the project and may not be appropriate for other purposes. The actual results of operations and the resulting financial results may vary from the amounts set forth herein, and such variations may be material. Advantage and Entropy believe that such information has been prepared on a reasonable basis, reflecting management's best estimates and judgments. Such information is made as of the date of this press release and each of Advantage and Entropy disclaims any intent or obligation to update publicly the financial outlook contained herein, whether as a result of new information, future events or otherwise, unless required pursuant to applicable law.*

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