# Entropy Inc. Announces Technology Development and Funding Agreement with Clean Energy Technologies Research Institute

**(TSX: AAV)**

CALGARY, AB, May 3, 2021 /CNW/ - Advantage Oil & Gas Ltd ("Advantage") is pleased to announce that its subsidiary Entropy Inc. ("Entropy" or the "Corporation") has signed a Technology Development and Funding Agreement (the "Agreement") with the University of Regina's Clean Energy Technologies Research Institute ("CETRI"), which secures exclusive ownership of a new generation of carbon capture solvents.

Highlights of the Agreement include:

- Entropy has secured exclusive rights to a novel solvent designed specifically for Entropy's post-combustion carbon capture and storage ("CCS") systems. This solvent technology is the product of over 25 years of research, and provides large cyclic capacity, high stability, and low operational issues. CETRI test results to date show a step-change reduction in energy requirements and circulation rates compared to all solvents that are currently available.
- Engineering professors Dr. Raphael Idem (founding director of CETRI and SaskPower Clean Energy Research Chair), and Dr. Paitoon Tontiwachwuthikul (co-founder of CETRI) will act as advisors to Entropy. Dr. Idem and Dr. Tontiwachwuthikul are international experts and pioneers in the field of post-combustion carbon capture. Dr. Tontiwachwuthikul's work has been cited over 12,500 times and Dr. Idem's research has been captured in over 200 publications. For more than 20 years, their research has been fundamental to advancing solvent-based CO2 capture processes globally and has been integrated into carbon capture facilities in Norway, Canada, USA, Thailand, China, and the Netherlands.

By establishing the Agreement with CETRI, Entropy has secured access to state-of-the-art equipment and deep experience in post-combustion carbon capture, which has been critical in helping drive the cost of CCS down to the point where it is commercial below $50/tonne. Entropy is seeking patents on several new technologies required to reduce the cost of capturing carbon and storage, including the new solvent class. Entropy's CCS technology was developed jointly by Advantage and Allardyce Bower Consulting Inc. ("ABC") and is applicable 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.

CETRI is one of only a few facilities in the world with full capability of developing and testing CCS solvent technology. CETRI researchers began developing post-combustion carbon capture technology almost 30 years ago for an enhanced oil recovery project at Weyburn, Saskatchewan, which is now the largest existing carbon capture project in the world. CETRI is located in the University's Greenhouse Gas Technologies Center, which houses the following technology and experimental facilities:

- Several versatile carbon capture modules including bench scale, pilot scale and demonstration scale
- Flue gas synthesis to simulate various emissions chemistries and conditions
- Specialty solvent development and testing laboratory including the full spectrum analysis of all aspects of amine performance, including degradation of amines, emissions from amine solvents, foaming behavior, and corrosivity
- Mass transfer studies and testing of a variety of advanced random and structured column packings
- Full catalyst synthesis, characterization, and testing laboratory
- Small-scale catalytic reactors (with H2S and SO2 testing capabilities)
- Specialty solvent synthesis and testing laboratory
- Floor scale catalyst aided carbon capture rigs
- In addition to CCS research and development, the CETRI research team are advancing zero-emission hydrogen (H2) technologies and waste-to-renewable fuels and chemicals

"The University of Regina is excited to embark on this collaboration with Entropy, developing and advancing a high-performance solvent for Entropy's carbon capture and storage system," commented Dr. Hussameldin Ibrahim, Director of CETRI.

Since announcing the founding of Entropy (see Advantagepress release of March 31, 2021), Entropy has been engaged by numerous third parties to evaluate and design MCCS projects in multiple industrial sectors. The Corporation looks forward to providing updates on these projects as they progress, independently from Advantage corporate updates.

About Entropy Inc:
Entropy is a privately-owned company, founded by Advantage to apply sophisticated science and engineering to commercialize CCS. Entropy's technology is expected to deliver commercial profitability at a carbon price below CAN$50/ton, using proprietary modular carbon capture and storage ("MCCS") technology. Entropy intends to deploy this technology in the global effort to reduce and eventually eliminate carbon emissions.

About Advantage Oil & Gas Ltd:
Advantage is a low-carbon energy producer focused on developing its high quality Montney resources. Advantage's owned infrastructure, top-tier cost structure and capital efficiency provide a strong foundation for sustainable, disciplined production growth. 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.

About Allardyce Bower Consulting Inc:
ABC is a Calgary-based engineering, procurement and construction management company with leading expertise in several aspects of gas processing and modularization. ABC's Principles Brent Allardyce and Rick Bower provide over 75 years of related experience in designing, troubleshooting, and operating gas processing facilities with innovative professional services and unique capability.

About The University of Regina:
With campuses located on Treaty 4 and Treaty 6 territories, the ancestral lands of the Cree, Saulteaux, Dakota, Lakota and Nakoda nations and the homeland of the Métis—is a comprehensive, mid-sized university that traces its roots back to the creation of Regina College in 1911. Today, more than 16,600 students study within the University's 10 faculties, 25 academic departments/schools, 18 research centres and institutes, and three federated colleges (Campion College, First Nations University of Canada, and Luther College). The University of Regina has an established reputation for excellence and innovative programs that lead to undergraduate, master, and doctoral degrees. The University of Regina was named the Research University of the Year in 2020 (undergraduate category) by Research Infosource.

***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, the terms of the Agreement with CETRI; Entropy's plans to seek patents on new technologies; CETRI test results; expected benefits of Entropy's technology; and Entropy's plans for its technology. Advantage's and Entropy'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 Advantage or Entropy 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 and incentive programs; changes in carbon tax and credit regimes; competition from other producers; 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; stock market volatility and market valuations; failure to achieve the anticipated benefits and results of Entropy's technology; failure to achieve the anticipated benefits of the Agreement with CETRI; ability to obtain required approvals of regulatory authorities; and ability to access sufficient capital from internal and external sources.*

*With respect to forward-looking statements contained in this press release, Advantage and Entropy have made assumptions regarding, but not limited to: conditions in general economic and financial markets; effects of regulation by governmental agencies; current and future commodity prices and royalty regimes; future exchange rates; royalty rates; future operating costs; availability of skilled labor; timing and amount of net capital expenditures; the impact of increasing competition; that Advantage and 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*

*expectations; that Entropy will have the ability to develop its technology in the manner currently contemplated; current or, where applicable, proposed assumed industry conditions, laws and regulations will continue in effect or as anticipated; and the anticipated benefits and results from Entropy's technology are accurate in all material respects. 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 Entropy's future operations and such information may not be appropriate for other purposes. 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 neither Advantage or Entropy 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.*

SOURCE Advantage Oil & Gas Ltd.

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