Entropy Inc. Announces Commissioning of the First Phase of the 200,000 TPA Glacier CCS Project and Provides Corporate Update

(TSX: AAV)

CALGARY, AB, July 5, 2022 /CNW/ - Entropy Inc. ("Entropy" or the "Corporation"), a subsidiary of Advantage Energy Ltd. ("Advantage"), is pleased to announce that it has begun commissioning its first post-combustion carbon capture and storage ("CCS") project at the Glacier Gas Plant in Alberta, effective June 27, 2022. Commissioning of the first phase (47,000 tonnes per annum of CO2e ("TPA")) is expected to take several weeks with "first carbon" expected to be injected into permanent geological storage within four weeks. Entropy believes that this will be the world's first commercial project to capture and sequester carbon dioxide from the combustion of natural gas.

Phase 1 of the Glacier project includes one train of Entropy's patent-pending Modular Carbon Capture and Storage™ ("MCCS™") process equipment in addition to the installation of all waste heat recovery equipment required for the full 200,000 TPA project. The final total installed cost of Phase 1 is expected to be approximately $31 million, which is approximately 10% higher than Entropy's original budget as a result of recent inflation, primarily in steel and copper pricing.

Entropy will begin by gathering performance data on the proprietary process design using standard MEA (monoethanolamine) solvent for approximately one month prior to switching to its patent-pending Entropy23™ solvent for complete performance benchmarking. Operational updates on Phase 1 performance will be announced as various milestones are achieved.

Final Investment Decision Reached for Glacier Phase1b

Entropy is pleased to announce final investment decision ("FID") for Glacier Phase1b, which is designed to capture and store an additional 16,000 TPA at an expected cost of approximately $8 million. Phase 1b will be the first deployment of Entropy's Integrated Carbon Capture and Storage™ ("iCCS™") product, whereby a new 5,000 horsepower gas compressor package will come directly from the fabricator with built-in carbon capture equipment, reducing energy intensity and total installed cost significantly below the cost of a retrofit installation. Phase 1b equipment is being procured and is scheduled to come on-stream by the second quarter of 2023.

Glacier Phase 2 Update

Glacier Phase 2 is designed to capture an additional 136,000 TPA and is expected to reach FID by the fourth quarter of 2022 and come on-stream by the end of 2023. Once complete, Entropy expects to capture approximately 200,000 TPA of CO2 (over 90% of total emissions) from the facility and permanently sequester it in a regulator-approved local saline aquifer. The original cost estimate for Phase 2 will be updated in advance of FID to account for inflation. All phases of the Glacier project are anticipated to be eligible for the recently announced refundable investment tax credit of 50% from the Canadian government.

Athabasca Leismer Update

Entropy and Athabasca Oil Corp. have made substantial progress on preparing to install MCCS™ at Leismer with FID for the first phase expected during the third quarter of 2022. The total projected capture rate is over 440,000 TPA to be installed in two phases. The first phase is designed to capture 156,000 TPA with cost estimates being finalized in the coming month. This project relies on a local geological storage zone so construction will be predicated on timely regulatory approvals. This is the first commercial CCS project on a once-through steam generator ("OTSG") which are widely deployed in thermal oil operations globally.

Entropy23™ Testing Results

Long-term testing of Entropy23™ solvent, by the University of Regina's Clean Energy Technologies Research Institute ("CETRI"), has thus far provided the following key data points on Entropy23™:

- confirmed superior degradation characteristics versus MEA
- average liquid mass transfer coefficient (K_L) of 426% higher than MEA at 110°C, potentially increasing the capacity of a regeneration tower by more than four times
- average gas mass transfer coefficient (K_G) indicated that the contactor tower segment height may be reduced by approximately 50% versus one designed to use MEA

With these test results and imminent data gathering at the Glacier MCCS™ facility, Entropy will be able to integrate new learnings into the final designs of future projects, helping us further reduce capital costs, operating costs and energy intensity.

Commercial Update

Entropy's pipeline of CCS projects continues to grow rapidly. In addition to the short- and medium-cycle CCS projects that have been previously announced, Entropy has been formally engaged in various capacities, including pre-FEED analysis and project evaluations, for five separate investment-grade counterparties on global-scale projects. In aggregate, Entropy is approaching 10 MMTPA of projects under development in different levels of maturity and different forms of engagements.

About Entropy Inc:

Entropy is a privately-owned company, founded by Advantage Energy Ltd. to apply sophisticated science and engineering to commercialize CCS. Entropy's technology is expected to deliver commercial profitability with an industry-leading cost structure using proprietary modular carbon capture and storage technology. Entropy intends to deploy this technology in the global effort to reduce and eventually eliminate carbon emissions. Further information is available at www.entropyinc.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, the anticipated timing of the commissioning of the first phase of the Glacier project; Entropy's expectations of when "first carbon" will be injected into permanent geological storage; Entropy's belief that the Glacier project will be the world's first commercial project to capture and sequester carbon from the combustion of natural gas; the anticipated installation costs of Phase 1; that Entropy will gather process performance data using MEA for approximately one month prior to switching to its patent-pending Entropy23™ solvent for complete performance benchmarking; that Entropy will provide operational updates on Phase 1 performance as various milestones are achieved; the TPA expected to be captured and stored at Glacier Phase 1b and the anticipated costs thereof; that Glacier Phase 1b will reduce energy intensity and total installed cost significantly below the cost of a retrofit installation; the anticipated timing that Phase 1b's equipment will be procured and the anticipated on-stream date; the anticipated timing of the Glacier Phase 2 FID and on-stream date; the TPA expected to be captured from Glacier Phase 2 and that it will be permanently sequestered in a local saline aquifer; that Entropy's cost estimate for Phase 2 will be updated in advance of FID to account for inflation; that all phases of the Glacier project are anticipated to be eligible for the recently announced refundable investment tax credit of 50% from the Canadian government; the anticipated timing of the installation of MCCS™ at Leismer and the anticipated timing of FID for the first phase; the anticipated total projected capture rate at Leismer and the anticipated costs in connection therewith; that the results from the long-term testing of Entropy23™ will be integrated into the final designs of future projects and the anticipated benefits to be derived therefrom including that the same results will accrue on commercial applications; the anticipated benefits to be derived from Entropy's test results and the additional data gathered at Glacier; and Entropy's focus, strategies and plans for its technology. 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 Entropy or Advantage will derive from them.

With respect to forward-looking statements contained in this press release, Entropy has made assumptions regarding, but not limited to: that the Glacier project will successfully capture and sequester carbon from the combustion of natural gas; that the installation costs of Phase 1 will not be greater than anticipated; that Entropy will achieve its anticipated Phase 1 performance milestones; that Entropy will receive the regulatory approvals required in connection with the Leismer project and the anticipated timing thereof; that Entropy's existing engagements, including pre-FEED analysis and project evaluations, will lead to completed projects; that Entropy's CCS projects will reach final investment decision; 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; the impact of increasing competition; that Entropy will have sufficient cash flow, working capital, 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.

These statements involve substantial known and unknown risks and uncertainties, certain of which are beyond Entropy's control, including, but not limited to: that the commissioning of the first phase of the Glacier project and the injection of the "first

carbon" into permanent geological storage may not occur when anticipated, or at all; that the Glacier project may not be the world's first commercial project to capture and sequester carbon from the combustion of natural gas; that the installation costs of Phase 1 may be greater than anticipated; that Entropy may not achieve its anticipated Phase 1 performance milestones; that Glacier Phase 1b may not store and capture the volume of TPA anticipated at the costs anticipated; that Glacier Phase 1b may not reduce energy intensity and total installed cost below the cost of a retrofit installation; the risk that Phase 1b's equipment may not be procured or come on-stream when anticipated; the risk that Glacier Phase 2's FID and on-stream date may be later than anticipated; the risk that Glacier Phase 2 may capture less TPA than anticipated; the risk that not all phases of the Glacier project may be eligible for the recently announced refundable investment tax credit of 50% from the Canadian government; the risk that the installation of MCCS™ at Leismer and the FID for the first phase in connection therewith may not occur when anticipated; the risk that Entropy may not receive the regulatory approvals required in connection with the Leismer project when anticipated, or at all; the risk that the long-term testing of Entropy23™ may not lead towards lower installed costs and energy intensity once fully integrated; the risk that Entropy's test results and the additional data gathered at Glacier may not drive engineering designs or result in lower capital costs or improved energy efficiency and associated operating costs; the risk that Entropy's engagements, including pre-FEED analysis and project evaluations, may not lead to completed projects; the risk that there may not be a significant pipeline of projects available to Entropy; 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; intellectual property and patent risks; 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 Entropy's relationships with third parties; ability to obtain required approvals of regulatory authorities; and the ability to access sufficient capital from internal and external sources.

Management has included the above summary of assumptions and risks related to forward-looking information above in order to provide readers 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 Entropy or Advantage will derive therefrom. 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 Entropy and Advantage disclaim 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 Energy Ltd.

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