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NEWS RELEASE

Advent Technologies Launches M-ZERØ™ Fuel Cells to Significantly Cut Wellhead Methane Emissions

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Advent's Systems Can Result in Fast Decarbonization of the Oil and Gas Industry

BOSTON--(BUSINESS WIRE)-- Advent Technologies Holdings, Inc. (NASDAQ: ADN) ("Advent" or the "Company"), an innovation-driven leader in the fuel cell and hydrogen technology space, today announced the launch of the M-ZERØ™ family of products.

An Advent fuel cell system operating at a Canadian wellhead (Graphic: Business Wire)

The Advent M-ZERØ™ products, designed specifically to generate power in remote environments, will offer the ability to drop methane emissions to effectively zero where they replace methane polluting pneumatic injection technology. The overall methane emissions related to wellheads approaches 40 million tons of carbon dioxide emissions per year, which is equivalent to the carbon footprint of more than eight million passenger cars. M-ZERØ™ will initially be featured mainly in Canada and the United States with the aim of providing remote power to up to 185,000 oil and gas wellheads.

In the winter, fuel cell systems are expected to operate at extreme freezing temperatures, powering the electronic injection of methanol (process power) and the Supervisory Control and Data Acquisition ("SCADA") monitoring hardware of each wellhead. Until now, remote wellheads have relied on a pneumatic injection of methanol -- a process that vents approximately six tons of methane per wellhead per year.

The family of products includes the M-ZERØ™ 50W and 150W models with plans for power levels up to 400W by the end of 2022. Advent has additional plans, pending the closing of the acquisition referenced below, to develop alongside Serenergy A/S ("SerEnergy") an M-ZERØ™ 5kW fuel cell system to be rolled out in 2022. The M-ZERØ™ 50-400 systems include advanced features from Advent's subsidiary UltraCell's new Reformed Methanol Fuel Cell

("RMFC") technology, which allows the system to run on methanol. Methanol is used in the oil and gas industry as a gas line antifreeze and is already available at each wellhead.

As the oil and gas industry continues to move to cleaner energy solutions, demand is increasing for electric systems and sensors to help drive down methane emissions, increase well productivity and safety, and decrease maintenance costs. Advent's M-ZERØ™solution will help the industry align with Canada's 2025 target to cut emissions by 40 – 45% from 2012 levels. In addition, by 2023, all wellhead controllers must be non-emitting or low bleed and emit less than six standard cubic feet per hour ("SCFH"), or vent gas that is captured and combusted (including 100% of new wellhead controllers non-emitting in British Columbia and 90% of new wellhead controllers non-emitting in Alberta).

Meeting these requirements poses challenges for Canada's oil and gas industry, especially as onshore drilling continues to grow in off-the-grid, remote areas. These efforts become even more challenging due to the fact that the standard solar-plus-battery storage solution does not perform well either in freezing conditions or in hard-to-reach areas, including mountains and forested regions.

Advent's fuel-cell generators guarantee power to well sites year-round – offering a perfect "Any Fuel. Anywhere." solution. The M-ZERØ™fuel cells can work throughout the year, including during the winter (when temperatures can drop to -40oC), and only need to be refueled as infrequently as once a year.

Advent's Chairman and CEO Dr. Vasilis Gregoriou noted, "The M-ZERØ™family of products has shown the value of Advent's flexible "Any Fuel. Anywhere." option. Our technology provides constant remote power in hard-to-reach locations with extreme conditions where batteries have simply failed. We are especially proud of the potential of this solution to drive methane emissions to zero in the oil and gas industry and move towards our goal of a cleaner world. Our remote power solutions are a real game changer for the oil and gas industry and the global market of off-grid power."

Advent estimates that the global market for fuel cell solutions in oil and gas wellheads has the potential to be a substantial growth market, with a significant part of the opportunity in North America. Advent expects to expand its remote power generation solutions for wellheads, mines, telecom towers, construction sites and other critical infrastructure remote locations with the addition, upon the acquisition's closing, of SerEnergy's 5kW fuel cell systems based on the same high-temperature polymer electrolyte membrane ("HT-PEM") technology.

The next key step in bringing fuel cells to well sites includesagreements to trial 10 50W systems in Alberta with oil and gas companies, with an initial deployment in Canada by October 2021 and mass deployment by 2022-2023.

Advent entered into a definitive agreement late June to acquire the fuel cell systems businesses of **fischer Group**,

including **SerEnergy**, based in Aalborg, Denmark, and **fischer eco solutions GmbH**, ("FES"), based in Achern, Germany. SerEnergy is a leading manufacturer of HT-PEM fuel cells globally, with thousands of systems shipped around the world. FES provides fuel-cell stack assembly and testing as well as the production of critical fuel cell components, including membrane electrode assemblies ("MEAs"), bipolar plates, and reformers. The transaction, pending regulatory approval and standard closing conditions, is expected to accelerate the implementation of Advent's business plan and to expand the company's growing revenue base in full fuel cell stacks and systems.

The Advent Solution allows for the below key benefits:

- Fuel Availability: M-ZERØ™ is fueled by technical grade methanol, which is widely available at many wellheads, where it is commonly used as an anti-freeze. There is no need for expensive imported proprietary methanol blends.
- Fuel Efficiency: Up to 10x higher efficiency than thermoelectric generators and 5x more efficient than internal combustion engine generators.
- Success in Extreme Conditions: Based on a military-specified design, M-ZERØ™products can be quickly transported and deployed wherever necessary, including under rough oil and natural gas field conditions.

Advantages that fuel cells bring to well sites:

- Significantly Lower Total Cost of Ownership than Thermoelectric Generators: 50%+ savings at scale due to lower fuel costs (including 90% fuel savings relative to thermoelectric generators), lower installation costs and reduced maintenance costs.
- Clean Energy: 10x less greenhouse gas emitted vs. traditional combustion generators, including zero nitrogen oxides, sulfur oxides and particulate emissions.
- Compelling Financial Model: 50%+ product gross margins at scale.
- Flexibility: M-ZERØ™ works seamlessly in parallel with solar panels, providing wellhead power during low solar load northern winters and or bad weather.
- Adaptability: M-ZERØ™ uses industrial-grade methanol that is already available at most sites.

About Advent Technologies Holdings, Inc.

Advent Technologies Holdings, Inc. is a US corporation that develops, manufactures, and assembles critical components for fuel cells and advanced energy systems in the renewable energy sector. Advent is headquartered in Boston, Massachusetts, with offices in the San Francisco Bay Area and Europe. With 120-plus patents issued (or pending) for its fuel cell technology, Advent holds the IP for next-generation high-temperature proton exchange

membranes (HT-PEM) that enable various fuels to function at high temperatures under extreme conditions – offering a flexible "Any Fuel. Anywhere." option for the automotive, maritime, aviation, and power generation sectors. For more information, visit **www.Advent.energy**.

Cautionary Note Regarding Forward-Looking Statements

This press release includes forward-looking statements. These forward-looking statements generally can be identified by the use of words such as “anticipate,” “expect,” “plan,” “could,” “may,” “will,” “believe,” “estimate,” “forecast,” “goal,” “project,” and other words of similar meaning. Each forward-looking statement contained in this press release is subject to risks and uncertainties that could cause actual results to differ materially from those expressed or implied by such statement. Applicable risks and uncertainties include, among others, the Company’s ability to realize the benefits from the business combination; the Company’s ability to maintain the listing of the Company’s common stock on Nasdaq; future financial performance; public securities’ potential liquidity and trading; impact from the outcome of any known and unknown litigation; ability to forecast and maintain an adequate rate of revenue growth and appropriately plan its expenses; expectations regarding future expenditures; future mix of revenue and effect on gross margins; attraction and retention of qualified directors, officers, employees and key personnel; ability to compete effectively in a competitive industry; ability to protect and enhance our corporate reputation and brand; expectations concerning our relationships and actions with our technology partners and other third parties; impact from future regulatory, judicial and legislative changes to the industry; ability to locate and acquire complementary technologies or services and integrate those into the Company’s business; future arrangements with, or investments in, other entities or associations; and intense competition and competitive pressure from other companies worldwide in the industries in which the Company will operate; and the risks identified under the heading “Risk Factors” in our Annual Report on Form 10-K/A filed with the Securities and Exchange Commission on May 20, 2021, as well as the other information we file with the SEC. We caution investors not to place considerable reliance on the forward-looking statements contained in this press release. You are encouraged to read our filings with the SEC, available at **www.sec.gov**, for a discussion of these and other risks and uncertainties. The forward-looking statements in this press release speak only as of the date of this document, and we undertake no obligation to update or revise any of these statements. Our business is subject to substantial risks and uncertainties, including those referenced above. Investors, potential investors, and others should give careful consideration to these risks and uncertainties.

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