



NEWS RELEASE

Advent Technologies Signs Strategic Joint Development Agreement with Siemens Energy to Expedite the Decarbonization of the Maritime Sector

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BOSTON--(BUSINESS WIRE)-- Advent Technologies Holdings, Inc., an innovation-driven leader in the fuel cell and hydrogen technology sectors, is pleased to announce that its wholly owned subsidiary, Advent Technologies A/S ("Advent"), has signed a Joint Development Agreement ("JDA") with Siemens Energy, one of the world's leading energy technology companies.

The newly signed JDA outlines the collaboration between Advent and Siemens Energy, combining Advent's HT-PEM fuel cell 50kW modules utilizing its innovative Ion-Pair™ membrane electrode assembly (MEA) technology with Siemens Energy's electrification and automation solutions for hybrid and electric vessels.

The goal is to develop an integrated 500kW High-Temperature Proton Exchange Membrane ("HT-PEM") fuel cell solution for maritime applications and then evaluate to scale down/up the system to fit with market requirements from motor and Giga Yachts to ferries and container/commercial ships.

The innovative clean energy solution resulting from this multi-year collaboration is expected to initially address the power needs of large yachts. Subsequently, plans are underway to broaden its application to include ferries and commercial/container vessels.

The initial prototype testing for the HT-PEM fuel cell module is expected to take place at Siemens Energy's testing facility in Erlangen, Germany, in 2025, with the testing of the first fuel cell module scheduled for completion in 2026. Advent is currently engaging with world-leading customers in the maritime industry and anticipates signing commercial term sheets in the near term to pursue upcoming Requests for Proposals (RFPs).



This agreement builds upon the strong collaboration between Advent and Siemens Energy, which began in February 2022 with the Sanlorenzo Life Ocean pilot project. In this project, the companies jointly developed a marine HT-PEM fuel cell solution to provide clean power for hotel functions aboard a **50-meter Sanlorenzo superyacht**. Additionally, in March 2024, Advent and Siemens Energy deepened their collaboration by joining as consortium partners in the **RiverCell 3** research and development project, which is partially funded by the German Federal Ministry for Digital and Transport as part of the National Innovation Programme Hydrogen and Fuel Cell Technology.

Advent Technologies' HT-PEM fuel cells utilizing the innovative Ion Pair™ MEA technology, offer high-temperature operation between 80°C and 240°C. This advancement extends their lifespan by at least threefold and doubles the power density compared to earlier Advent systems. Additionally, Advent's HT-PEM fuel cell technology enables the use of liquid green fuels like eMethanol, enhancing efficiency by utilizing both heat and electricity, resulting in high resilience. These fuel cells can function with impure hydrogen, impure air intake, and in extreme ambient temperature and humidity conditions, making them an ideal choice for widespread adoption in the maritime industry.

As the world advances towards extensive green hydrogen production, eMethanol emerges as a leading choice for marine fuel in the maritime industry, promising a potential 100% reduction in CO2 emissions. Methanol and its derivatives function as versatile energy carriers and storage solutions, efficiently releasing hydrogen catalytically through fuel reformers. With its efficient storage capabilities, ease of handling, and utilization of existing infrastructure for transportation, methanol stands as a secure and economically viable alternative to fossil fuels.

Advent's Chairman and CEO, Dr. Vasilis Gregoriou, commented: "The Advent team is thrilled to witness Siemens Energy's recognition of the immense potential of HT-PEM fuel cell technology in maritime applications. After two years of intensive collaboration, we stand prepared for the next stage, with the goal of positioning HT-PEM fuel cell technology as a pivotal element in global decarbonization initiatives, working towards achieving net-zero emissions in the maritime sector by 2050. We look forward to maintaining our collaborative momentum, combining our extensive fuel cell expertise with Siemens Energy's unparalleled experience in electrification and automation solutions, to collectively pave the way for a more sustainable future in maritime operations worldwide."

About Advent Technologies Holdings, Inc

Advent Technologies Holdings, Inc. is a U.S. corporation that develops, manufactures, and assembles complete fuel cell systems as well as supplying customers with critical components for fuel cells in the renewable energy sector. Advent is headquartered in Boston, Massachusetts, with offices in California, Greece, Denmark, Germany, and the Philippines. With more than 150 patents issued, pending, and/or licensed for fuel cell technology, Advent holds the

IP for next-generation HT-PEM that enables various fuels to function at high temperatures and under extreme conditions, suitable for the automotive, aviation, defense, oil and gas, marine, 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 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 Advent’s corporate reputation and brand; expectations concerning its relationships and actions with 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 Advent’s Annual Report on Form 10-K filed with the Securities and Exchange Commission (“SEC”) on March 31, 2023, as well as the other information filed with the SEC. Investors are cautioned not to place considerable reliance on the forward-looking statements contained in this press release. You are encouraged to read Advent’s 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 the Company undertakes no obligation to update or revise any of these statements. Advent’s 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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