

# **Advent Technologies Holdings, Inc. (ADN) Q4 2023 Earnings Call Transcript**

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**Body**

Advent Technologies Holdings, Inc. (ADN)

Q4 2023 Earnings Call Transcript

August 20, 2024, 09:00 AM ET

Company Participants

Vasilis Gregoriou - Chairman, CEO, and Acting CFO

Presentation

Operator

Good morning, everyone. I will be your conference operator today. At this time, I would like to welcome everyone to Advent Technologies' Fourth Quarter Earnings Conference Call. After the presentation, there will be a question-and-answer session. [Operator Instructions] On the call today, we are joined by Dr. Vasilis Gregoriou, Advent's Chairman, CEO, and Acting CFO.

Before we begin the prepared remarks, we would like to remind you that Advent issued a press release announcing its fourth quarter 2023 financial results shortly before the market opened today. You may access the materials on the investor relations section of the company's website at www.advent.energy.

I would also like to remind everyone that during the course of this conference call, Advent's management will discuss forecasts, targets, and other forward-looking statements regarding the company's future, customer orders, and the company's business outlook that are intended to be covered by the safe harbor provisions of the Private Securities Litigation Reform Act of 1995 for forward-looking statements. While these statements represent management's current expectations and projections about future results and performances as of today, Advent's actual results are subject to many risks and uncertainties that could cause actual results to differ materially from those expectations. In addition to any risks highlighted during this call, important factors that may affect Advent's future results are described in its reports filed with the United States Securities and Exchange Commission, including today's earnings press release. Except as required by applicable law, the company undertakes no obligation to update any of these forward-looking statements for any reason after the date of this call.

Lastly, Information discussed on this call concerning the company's industry competitive position in the market in which it operates is based on information from independent industry and research organizations, other third-party sources, and management estimates. Management estimates are derived from publicly available information released by independent industry analysis and other third-party resources, as well as data from the company's internal research and are based on assumptions made upon reviewing such data and with knowledge of such industry and markets which it believes to be reasonable. These assumptions are subject to uncertainties and risks which could cause results to differ materially from those expressed in the estimates. Please note that this call is being recorded.

Kicking off the call will be Dr. Vasilis Gregoriou. Dr. Gregoriou, I now turn it over to you.

Vasilis Gregoriou

Thank you, operator. Good morning to everyone listening in, and thank you for joining us on Advent's fourth quarter 2023 earnings call. On today's call, I will provide an update on the business and I will also review our financial performance and outlook. I would like to take this opportunity to briefly reintroduce Advent to you, what we do and what makes our technology different. At Advent, we're developing the High-Temperature PEM fuel cell technology. High-Temperature PEM, as we call it, has unique competitive advantages. Our fuel cells are optimal for using liquid yield fuels made from hydrogen like e-methanol but also biofuels and biogas.

If you're following market developments, you have recently heard these words more and more. We expect that e-methanol and biogas will dominate the investment in business plans in the next years, moving to deployment much faster than compressed or liquid-fired hydrogen applications. The reason is simple, the cost of infrastructure and the end cost of electrification. Advent's fuel cells are not limited to pure hydrogen and this makes them ideal for marine and off-grid power, both of which are turned into methanol. Furthermore, due to our high temperature operation, our fuel cells have superior efficiency that can reach 85% when the heat is used and are ideal for aviation and heavy-duty trucks. All these statements have been validated by our strong collaborations with Airbus, US Army, Hyundai, and Siemens Energy, among others, during the last year.

You are now probably following developments in the battery market and the hundreds of billions invested there. Let us give you a comparison that showcases the importance of our technology. Our fuel cell converts approximately 400 grams of methanol that carry 80 grams of green hydrogen to 1 kilowatt hour of electrical power. Thus, it is equivalent to 2,500 watts per hour per kilogram battery. As a comparison, lithium-ion batteries are at one-tenth of the power density and even futuristic batteries are at one-fifth. Moreover, unlike a battery or a hydrogen-based system, our fuel cells can be deployed on the existing infrastructure of transporting and dispensing liquid fuels globally even in the poorest countries.

You might wonder why High-Temperature PEM has not been more widespread in the past. The issue was the maturity of the technology. Other than using a next-generation membrane and electrode structure called Ion Pair MEA has achieved in 2024 2x the power of previous state-of-the-art fuel cells per square centimeter. We also have concrete data that we will achieve 2x the lifetime of competing High-Temperature PEM systems. These accomplishments can lead to massively lower cost of electrification. And we believe that at scale and in cooperation with OEMs and Tier 1s, we can achieve a levelized cost of electricity, including hardware, fuel and service, in the range of $0.20 to $0.30 per kilowatt hour. This, of course, will not be competitive versus the grid, but it will be highly competitive for all off-grid and backup markets and also for all heavy-duty mobility markets. In fact, it will be the lowest cost solution when compared to battery-only, compressed hydrogen or even fossil fuel alternatives.

The relentless pursuit of low-cost green energy is what drives us, and it's our mission. The development of the Ion Pair MEA was and is the core mission of Advent since its public market entry. We're happy to announce that in 2024, we're on pace to meet the demands of the global OEM leaders in the fuel cell industry, companies like Airbus and Hyundai Motors, which have been highly successful in meeting all the milestones we set with our key OEM partners, and I will discuss this in more detail later.

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An Advent High-Temperature PEM fuel cell with equivalent to 2,500 watt hours per kilogram battery performance is ideal for enabling electrification in heavy duty mobility and also off-grid power, large-scale stationary power and backup applications like data centers. We see our fuel cells as the key technology for covering the other 50% of the market that will not and cannot be addressed by batteries or direct electrification.

In the marine off-grid power but also in the defense markets, we see methanol as a practical solution today. Methanol is the fuel of tomorrow, available today. We already deploy systems using natural gas-based methanol that is a low-cost interim solution, and it drops emissions 40% lower than this. Tomorrow, as hydrogen and subsequently e-methanol costs drop, we see our fuel cells being highly competitive in most applications while providing net zero green power without pollutants. Already there are 130 renewable methanol production projects around the world, 250 marine vessels and we project for the demand for marine and automotive markers will further accelerate the trend.

The Ion Pair MEA technology is a core differentiator for us. Any OEM or Tier 1 manufacturer that has access to our MEA has the capability of producing state-of-the-art High-Temperature FEM fuel cells for completely different applications from data center backup power to heavy duty trucks and from [diode] (ph) electrification to aerospace propulsion. Our business model will from now on focus exclusively on the MEA innovation, IP and MEA manufacturing scale, a business that requires low CapEx, is highly protected by Advent's specific know-how and can have a healthy margin.

Moving to the operational side, over the past year, we have encountered a mix of positive as well as challenging events. On the positive side, the interest for methanol fuel cells and clean power solutions has reached unprecedented levels from a variety of markets. However, the financial markets have not been favorable to clean energy investments lately. Consequently, infrastructure loans and grants from the UN and the US have become the most viable routes for financial support through the entire lengthy bureaucratic processes. In response to these delays, we have proactively streamlined our operations by reducing operational facility expenses. We've made the difficult decision to close subsidiaries and facilities that were not profitable and negatively impacted the company's future trajectory. Accordingly, in 2024, we eliminated our Boston, Denmark, and Philippines operations. Through the years in post-acquisitions, especially for Serenergy, we have developed hardware technology and we have successfully managed to sell 1,200 hardware systems, primarily to the telecom industry. This know-how is utilized to accelerate partnering OEMs through technology transfer and license agreements, but is not our intent to become an end product OEM in multiple markets, a fee that will require hundreds of millions in investment and a long time to market. This is the reason we have decided to discontinue operations of certain subsidiary facilities that have been focusing on net system production and were demanding more and more cash for low or even negative margin revenues. The Danish subsidiary especially, which was developing systems based on all their High-Temperature PEM technology, had a production cost exceeding $2,000 per kilowatt while we expected that OEMs with the Ion Pair MEA technology can develop systems that with a cost approach in $500 per kilowatt at scale. These are all dollars. This will happen from the product plants that will deliver Ion Pair MEAs with 3x the lifetime and 3x the power per square centimeter. The Ion Pair makes all the difference between mass market scale-up and an unprofitable low volume business. These strategic actions position us for a more sustainable and profitable future, allowing us to focus on our core strengths and continue leading in the clean power solutions market.

The business model shift is significantly reducing Advent's current OpEx and future CapEx needs and keeping a scalable global, [civil-executive] (ph) business model. Despite the challenges of last year, Advent has been extremely successful in its MEA development, where it would make very considerable strides. Our High-Temperature PEM fuel cell technology is gaining recognition from world-leading companies, demonstrated by our collaborations with Airbus, US Army, Hyundai Motor Company, and other top automotive leaders. We're proud to have delivered on our contractual agreement with all aforementioned partners. These strategic partnerships underscore the industry's confidence in our technology and are the first phase before the commercial scale-up planned for 2026. Additionally, our defense solution under development, the Honey Badger 50, is anticipated to transition to mass production by 2026. We expect that with the introduction of the Ion Pair technology, OEMs will be able to pack 50 kilowatt to 80 kilowatt of power in a small cabinet and combine multiple cabinets for multi-megawatt solutions aimed at data centers, remotely recharged stations, virtual power plants, and microgrid support systems.

When it comes to new business development, we are seeking to develop joint ventures for technology transfer and license agreement with large-scale local integrators, Tier 1s, and OEMs. Some of the discussions are in the advanced stage. And our technology transfer and license model makes sense to all parties. Under this model, we intend to continue to manufacture the MEA and potentially even the fuel cell stack for some markets, but will license out the complete balance of plan and net system product. This can allow a multitude of different Tier 1 manufacturers to scale up different user specific product configurations with a [codeword Advent inside] (ph) High-Temperature PEM MEA in all products. Such a model can be highly scalable, low CapEx and high gross margin for other.

In the automotive market we're already active in the first level of collaboration, the technology as mentioned in the phase, with four of the top 10 of the world's leading auto manufacturers in terms of annual vehicle production. This is all we can announce and not the names at this point, as every world-class partner has its own specific strategy and goals. We have announced a fifth partner, Hyundai Motor, as they have already moved to the next stage of a joint development agreement. Our goal is to conclude the technology assessments by the end of 2024 and then move with one or more of the other companies into a joint development agreement that can provide a significant budget for scaling up. The High-Temperature PEM technology shows unique promise primarily for the truck and heavy-duty vehicle market. The high temperature operation can result in efficient heat rejection, which means that the trucks will be able to run optimally in many countries around the world where there is extreme heat for periods of time. Moreover, they will run more efficiently as the cooling requirements are lower. The balance of plant is simpler than a low temperature PEM and there is no water management issues that other fuel cells have And the promise of also using directly a liquidated fuel is also a promising feature. Our intent is to enter into strategic agreements in 2024 to 2025 that have one or more automatic partners that can become a strong pillar of support for Advent.

The aerospace market situation is very similar to the automotive one. The one strong difference is that there we have already forged a $13 million strategic partnership with Airbus to fast track the development of Avent's Ion Pair MEA. The goal is to achieve the performance targets required for aviation standards. Our primary focus is on enabling Airbus in its endeavor to power aircraft solely with fuel cells. So far, we have managed to achieve the first milestones of the program and we're very optimistic that the progress towards achieving the performance goal that Advent Airbus has set. The joint development agreement duration is two years, calendar years 2024 and 2025, and we at Advent intend to have a follow-up phase that will bring us closer to our hardware system and eventually test flights in the next few years. Airbus has communicated publicly a lot of information about the progress of this formal project and you can find a lot of online about their intentions, timeframes, et cetera. While the aerospace and automotive markets are not primed for mass production in the 2024-2026 timeframe, they provide the potential strong R&D support and path to massive scale under the same model of Advent manufacture and MEA and potentially license some of its fuel cell stack and system technology. Furthermore, as these markets move to -- scale up, they bring the market potential to hundreds of megawatts. A pragmatic market estimate and analysis for the High-Temperature PEM technology is also provided in our recent investor presentation.

Let's go to the defense market. Coming to the defense market, we signed back in September and December of 2023 contracts totaling $5 million with the US Department of Defense. These contracts refer to the Honey Badger 50 project. In essence, Honey Badger 50 strands as an ultra-compact fuel cell delivering quite lightweight power for soldiers on the move. With over 70% weight reduction compared to batteries, it operates on a versatile range of fuels including methanol and even windshield washer fuel. We're currently in the process of integrating the Ion Pair MEA technology into the Honey Badger 50, enhancing specific components and improving manufacturing process. The objective is to facilitate the shift from low-volume -- low-prototype volume to manufacturable scale volume. The program is advancing steadily with daily collaboration with the US Department of Defense. All milestones today have been successfully achieved. Our dedicated team is now focused on refining the manufacturing process for the enhanced Honey Badger 50 fuel cell system with the objective of achieving high volume production capacity by 2026.

Maritime market. One great example of the above strategy is our entry into the maritime market. Our technology is already installed in San Lorenzo's 50Steel methanol fuel cell superyacht, the Almax, which was officially launched in May 2024. We're confident that methanol, especially its greener variants, biomethanol and e-methanol, are the keys to decarbonizing the marine industry, serving as liquid green fuels and efficient carriers of green hydrogen, they hold immense potential. It certainly is widely shared as evidenced by the approximately 130 methanol projects currently underway, with the majority, 60%, dedicated to e-methanol and the remaining 40% to biomethanol. Projections indicate that methanol production capacity will reach 20 million tons by 2028. Advent expects a significant number of yachts to benefit from its High-Temperature PEM fuel cell technology in the near future. This includes both existing yachts looking to retrofit, approximately 10,800 currently upload, and newly built ones around 275 were built last year.

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Data centers. When it comes to new markets, we're targeting collaborations with OEMs for the data center off-grid power market, as we see a unique advantage for our fuel cell technology in this sector. Currently, data centers worldwide consume 1% to 2% of overall power, but this percentage is expected to rise to 3% to 4% by the end of the decade, reaching 1,000 terawatt hours per year. Even at trial levels, the demand for fuel cell is going to be significant. In the US and Europe, this increased demand will drive substantially increased growth, a trend not seen in a generation. As a result, the carbon dioxide emissions of data centers may more than double between 2022 and 2030. To reduce latency, data centers need to be located close to the fiber optic frontline and have dual independent feeds from the power grid. These requirements often place data centers within corporate hubs where launch prices are the premium. Implementing a fuel cell technology can significantly reduce complex investments and accelerate time to market as it eliminates the need for grid updates, solar power permits and build-ups. Our fuel cell can play a primary role at the beginning of a data center project, transitioning to a backup or secondary backup role as demand increases. This flexibility allows data centers to maintain dependence, enhance resilience, and negotiate better terms with all parties involved. Additionally, our fuel cells can optimize seasonality by operating primarily during peak electricity demand periods and shutting down when demand is low. Our High-Temperature PEM fuel cell technology is ideal for data centers for several reasons. Multi-fuel capability allows immediate deployment with methanol fuel tanks and fuel cell installation, and the system can switch to hydrogen, natural gas, and other fuels without redesign. It can adapt to different levels of methane and fuel of hydrogen, optimizing cost and environmental impact without infrastructure changes. It achieves up to 45% thermal efficiency in a heat pump solution, providing AC and cooling and bringing overall efficiency to above 80%. With its minimal footprint, especially when considering e-fuel or methanol, our technology offers green, quiet power that perfectly fits the evolving needs of data centers. By leveraging our technology, data centers can achieve faster deployment, greater efficiency, and improve environmental performance. We're currently in discussions with multiple companies looking to benefit from a High-Temperature PEM technology in all scale scenarios.

Despite the vast differences in all these markets, the Advent business challenge and plan is singular and highly focused. All our product efforts are in the common underlying fuel cell technology and MEA that targets heavy duty automotive and large scale stationary. MEA's success leads to unlocking all of these markets from a technology point of view. The right partnership will also unlock them from a commercial point of view. Our recent restructuring efforts have been crucial in massively reducing costs and we are targeting total costs below $20 million in 2024 versus $50 million in 2023, a 70% reduction. As a consequence of the change in strategy and the reduction of direct sales effort, especially in more countries, we've seen a reduction in revenue in 2023 and we refrain from mission revenue guidance.

Then, now to our financial results. We delivered a revenue of $1.5 million in the fourth quarter compared to $2 million in the prior year quarter. The year-over-year results are due to the decline in orders for the company's stationary fuel cell systems. R&D expenses were $4 million in the fourth quarter, primarily related to internal R&D costs can current needs of our businesses, as well as our cooperative research and development agreement with the Department of Energy. Administrative and selling expenses were $6.7 million in the fourth quarter. Combined with R&D expenses, total operated expenses were $10.7 million, a year-over-year decrease of $1 million.

Net loss in Q4 was $25.7 million or $12.04 per share. Adjusted net loss was $22.1 million or $10.32 a share. The adjusted net loss excludes a $0.03 million gain from the change in the fair value of our outstanding warrants, a $3.71 million goodwill and intangible asset impairment charge. Our restricted cash reserves were $3.6 million as of December 31, 2023, which is a decrease of $0.1 million from September 30. Our existing cash balances and projected cash flows are not expected to be sufficient to support planned operations for the next 12 months. We are exploring opportunities to raise additional capital and expect to provide an update on this very soon. In the meantime, we will continue to manage our costs closely and capitalize on opportunities to reduce costs where possible.

I will now turn to our outlook. Advent ended 2024 with a strong pipeline of opportunities. As we all know, however, not every opportunity in the pipeline will transpire due to factors that are beyond our best control. Opportunities may not materialize or could be delayed. Due to the long-term contract nature of our business model, the time of our revenue can also be difficult to predict. Due to the level of uncertainty caused by these factors, we're not providing a revenue outlook for 2024 at this time.

With that, I will now make some closing remarks. The second half of 2023 and the first half of 2024 are a restructuring year for Advent. We have focused our business model on strategic partnerships and believe we are on the right track. Airbus in aerospace, five top automakers, and the US Department of Defense have done extensive due diligence and have thoroughly scanned the market and our competitors. They have all concluded that the Advent High-Temperature PEM technology has significant advantages, and we believe they will bring products to the market soon, some faster than others. Moreover, we have managed to do all this by significantly cutting any fat and not sacrificing our core capabilities, creating a very lean highly technical team that's focused on product development, strategic technology transfer, and joint development relations with world-leading firms. Our lean structure is essential to have the greatest runway possible until the market scales up and to ensure that we can get to EBITDA positive operation by 2025 while having the IP and the leading position in one of the most promising clean energy technologies.

I will summarize now what you should expect from Advent during the next 18 months. Advent has recently announced that it has raised funds and furthermore we have massive cut costs. We are in the process of hiring a new CFO and appoint a new Board. These developments have been delayed and have caused a delay in results announcement. During the next 18 months, we'll focus solely on our partnership relationship with Airbus, US Army, automotive partners, and potentially data center partners, and primarily on developing our MEA further, and licensing out our hardware technology. We're not going to focus on achieving revenue targets at any cost or going after negative margin activities. We want to maintain a minimum to zero cash burn and hopefully see some progress on receiving the dissipated R&D funds from Europe and further apply for funds in the US. We would have been a lot more aggressive in our strategy if the Greek government had approved the awarded IPCEI funds, but despite this unexpected delay, we're doing our best to maximize shareholder value in an unfair competition environment where all the other major European hydrogen companies have received the funds from their local governments already. Previous revenue targets are not valid anymore and we have shut down the end product Denmark factory. The inflection points for massive adoption of the high temperature PEM and MEA technology are set to 2026 and beyond now. We believe that the demand for methanol based fuel cell will be and already is beyond anyone's expectations. But what we have learned is that unless our Ion Pair MEA technology coupled with the power of a global OEM brings the cost below $1,000 per kilowatt for fuel cells, venturing into massive cells and manufacturing is a cash burn exercise. We intend to secure the maximum runway for the company and will be providers of a leading world technology in 2026 when the massive scale-up will come.

Finally, I would like to say that Advent's management has recently restructured its compensation to significantly lower levels and has never sold any stock or profited from the stock price of Advent, for tax-related purposes that has to do with stock rank and stock options. Management remains fully committed to running and developing this technology that's crucial for world decarbonization, operate as close as possible to breakeven, innovate beyond expectations of our most demanding OEM partners, and anticipate growth inflection post 2026.

I would like to thank you all for joining us today. We're now ready to answer questions. Thank you very much.

Question-and-Answer Session

Operator

Operator

As there are no questions at this time, this will conclude today's conference call. We thank you for joining. You may now disconnect your lines.

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