

PowerCell and ZeroAvia to collaborate on next generation fuel cell stack development

PowerCell Group has signed a new Memorandum of Understanding (MoU) with ZeroAvia to collaborate on next generation fuel cell technologies. The partners are to explore co-development of fuel cell technologies for aerospace applications and other segments in need of heavy-duty fuel cell systems with high energy output. Joint R&D will focus on medium and high temperature fuel cells which will open up more energy intensive applications such as large fixed-wing aircraft and rotorcraft.

The two companies have been working together for the last few years, with PowerCell fuel cell stacks forming part of the prototype ZeroAvia powertrains that have powered both of the breakthrough fuel cell flight demonstrators flown by ZeroAvia.

ZeroAvia is designing a bespoke multi-stack balance-of-plant architecture using PowerCell's low temperature proton exchange membrane (LT-PEM) stacks applicable to aviation applications. PowerCell is a key supplier for ZeroAvia's first 600kW powertrain (ZA600) designed for up to 20 seat aircraft.

ZeroAvia's high temperature PEM fuel cell (HT-PEM) stacks - part of the roadmap to delivery of ZA2000 powertrain for 40-80 seat aircraft and a key part of the company's component offering to other clean flight innovators - are already demonstrating industry record power density in excess of 2.5 kW/kg at the cell level, with a clear pathway to reaching 3+ kW/kg at the system level in the coming months.

Increasing the operating temperature of fuel cell systems can allow for a reduction in cooling and humidification required, simplifying the architecture and improving the amount of power for a given unit of weight.

PowerCell has several ongoing projects with the heavy-duty fuel cell stack, (Heavy Duty Stack - HDS), both for Aviation and Marine applications. The HDS is optimized for a high energy to weight ratio and is designed to be modular between 300 kW and 1 MW to support increased demand for larger installations while bringing down cost, weight and size. HDS stack is suitable for applications in our different segments including Aviation, Marine, Power Generation, Off-road and On-road and has been proved to provide high energy density in short stack testing, >5kW/kg with full stack testing in the coming months.

The collaboration will leverage PowerCell's long experience industrializing hydrogen-electric technologies to push advanced fuel cells solutions to high Technology Readiness Levels (TRL). For ZeroAvia, it will provide the opportunity to exploit its technology in different sectors, while retaining its core focus on aerospace.

Val Miftakhov, Founder and CEO, ZeroAvia, said: "In PowerCell, we have found a likeminded and collaborative partner over the last few years, with a shared passion for advancing hydrogen fuel cell technologies for more power-hungry aircraft. Working together we can deliver change in this industry faster, as well as using these extreme use cases to advance the capabilities of solutions for myriad other transport and non-transport sectors."

Richard Berkling, CEO PowerCell Group, said: “We’re confident that the first hydrogen-electric aircraft will be flying commercially in the upcoming years. When that happens, it will have a snowball effect as the environmental and operating cost benefits become clear to airlines and their passengers. For PowerCell, this is a key future market, and we are delighted to be deepening our partnership with the leader in this space to develop solutions to enable more clean flights, removing more emissions.”

“ZeroAvia **has already extensively tested** a prototype of its first ZA600-engine aboard a Dornier 228 aircraft at its UK base and submitted its certification application for the ZA600 to the UK Civil Aviation Authority (CAA) at the end of last year.” The company has also performed advanced ground tests in the US and UK for the key building block technologies for the ZA2000 system, including cryogenic tanks or LH2 and proprietary high-temperature PEM fuel cell and electric propulsion systems. ZA2000 will support up to 80 seat regional turboprop aircraft such as the ATR72 or the Dash 8 400.

About ZeroAvia

ZeroAvia is working to deliver the clean future of flight for the entirety of aviation by enabling electric propulsion. With a primary focus on developing hydrogen-electric (fuel cell-powered) engines, ZeroAvia has submitted its first powertrain for up to 20 seat planes for certification and is working on a larger powertrain for 40–80 seat aircraft. Founded in California and now with thriving teams in Everett, WA and the United Kingdom, ZeroAvia has secured experimental certificates to test its engines in three separate testbed aircraft with the FAA and CAA and passed significant flight test milestones. The company has signed a number of key engineering partnerships with major aircraft OEMs and has nearly 2,000 pre-orders for engines and its component systems from a number of the major global airlines, operators, and OEMs with future revenue potential over \$10bn. For more, please visit ZeroAvia.com, follow @ZeroAvia on [Facebook](#), [Twitter/X](#), [Instagram](#), [LinkedIn](#), and [YouTube](#).

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About PowerCell

PowerCell is a world leader in hydrogen electric solutions with unique fuel cell stacks and systems. With decades of experience, we use our expertise to accelerate the transition to an emission-free, more sustainable world. We target industries such as aviation, marine, off-road, on-road and stationary power generation. With our cutting-edge products we help our customers to reach net zero emissions already today.

We are headquartered in Gothenburg, Sweden with sales globally. PowerCell is listed on Nasdaq Stockholm.

To read more about our products and services, visit powercellgroup.com.

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Attachments

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