VERTICAL

Fact Sheet

June 2021

Team

- Over 120 engineers, with more than 1,200 years in-house aerospace and advanced automotive experience.
- World class team has already certified and supported 30+ aircraft and propulsion systems.
- Stephen Fitzpatrick, Founder and CEO
    - Founded OVO Energy in 2009 and led its growth to become the largest independent energy provider in the UK.
    - Founder of Kaluza, an intelligent energy platform driving the global transition to a distributed and secure, zero-carbon grid.
    - Launched the Zero Carbon campaign in July 2019, which aims to ensure that the UK Government achieves its 2050 net zero commitment.
- Michael Cervenka, President
    - Over 20 years of civil and military aerospace experience at Rolls-Royce.
    - Co-developed Rolls-Royce's electrical strategy and led future technologies programmes
- The team also includes:
    - Michael Cervenka, former Head of Future Technologies at Rolls-Royce
    - Eric Samson, former VP Engineering and Chief Engineer at General Dynamics
    - Tim Williams, former Chief Engineer of Rolls-Royce
    - Madhu Bhabuta, former Chief Technology Officer of the UK's Ministry of Defence
    - Dr. Limhi Somerville, former Technical Manager at Jaguar Land Rover responsible for the cell facility, battery functional safety and advanced cell development
    - Paul Harper, former UK Chief Airworthiness Engineer at Airbus, and
    - Eduardo Dominguez, former CEO of Airbus' Urban Mobility.

Business case and UAM market

- Asset-light business model and a fast and clear path to profitability.
- B2B OEM business with mature partner ecosystem, driving low capital investment and asset intensity.
- Anticipating rapid scaling post-certification as a result of partner scale and ecosystem.
- 86 aircraft sales per year to achieve cash flow break-even with 302 total aircraft sale to recover investment.
- c.$1.6m fully loaded cost of production per aircraft.
- Rapid scaling - target production of 1,000 per annum by 2026; 2,000 per annum by 2028.
- Medium term opportunity from growing and recurring service revenues
- Low costs per mile, c.$1 per seat mile over a 25-mile journey, turning the VA-X4 into an affordable transport option.
- Long term target revenue of over $7bn by 2028.
- One of the most advanced commercial strategies in the industry.
    - Conditional pre-orders for up to $4bn and 1000 eVTOL aircraft, from Avolon, American Airlines and a pre-order option from Virgin Atlantic.
    - Agreements provide Vertical with access to around 200 million passengers through American.

- Virgin Atlantic and Vertical expect to work together to explore the joint venture launch of a Virgin Atlantic branded short haul eVTOL network, including operations and infrastructure development.
- Over 140 airline relationships globally through Avolon, the second largest aircraft lessor in the world.

Partnership ecosystem

- Honeywell co-developed next generation flight controls and avionics with simplified vehicle operations minimising pilot workload and operating costs and leveraging technology from the F-35 VTOL combat jet.
- Rolls-Royce developed world's lightest and safest electric powertrain. Rolls-Royce has already powered 1,500 electric aircraft flights and delivered 170,000 kWh of electrical performance.
- Solvay is providing the advanced composites and adhesives for the VA-X4 to help design structures that are tailored to the very demanding weight constraints inherent to a battery-powered aircraft.
- GKN is developing the electrical wiring interconnection systems (EWIS). GKN's world-leading capabilities have helped to design similar systems in some of the world's most complex aircraft, such as the F-35 VTOL fighter jet.

Path to certification

- Extensive collaboration with the UK's Civil Aviation Authority (CAA) and EASA dating back to 2018.
- EASA has mandated eVTOLs have same safety levels for "enhanced category" vehicles, which is the same as large commercial airliners, meaning lowest failure rates of no more than 1 in 1 billion flying hours.
- Unique battery certification experience and priority technology already demonstrated through EASA-witnessed tests.
- Vertical's Head of Battery leads eVTOL EuroCAE battery certification panel and sits on EASA eVTOL certification board's battery division.
- Flight tests later this year.

VA-X4

- Four passengers, one pilot.
- Zero emissions, near silent when in flight, over 200mph and range over 100miles.
- Proprietary battery design utilises the latest commercial cells and will be certified to have the highest safety standards, delivering leading range and vehicle economics.
- 4 tilting rotors at the front and 4 stowable rotors at the rear enable high efficiency in all phases of flight and support a vehicle noise signature which is 15dBA lower than a comparable helicopter.