

Q3 / 2022

Shareholder Letter

VERTICAL

Pioneering Electric Aviation

Dear Vertical Aerospace Shareholders

The last three months have been an incredibly busy time at Vertical with several important milestones reached. Most importantly, we have put the British aerospace sector back on the map as we celebrated lift off with our new aircraft.

After receiving our Permit to Fly from the UK's Civil Aviation Authority, we conducted the VX4's very first airborne test. Seeing our Chief Test Pilot, Justin Paines, behind the controls of the VX4 as it lifted from the ground for the first time, was an immensely proud moment for the whole company. This airborne test was a culmination of years of design, months of intense work on build and commissioning, and weeks of rigorous flight test safety preparation. It is only the first step in the VX4's test flight campaign, with an ongoing programme of crewed and uncrewed missions planned in the months ahead.

Off the airfield, we have continued our extremely disciplined approach to managing costs. The ability to leverage our extensive partner network for both technology development and manufacture continues to give us a significant advantage, and the deepening of our industrial relationships is setting us up for future success in certification and mass production.

As we continue to invest in our capabilities, I am delighted to welcome Amy Round as Chief People Officer. Amy joins with more than a decade in leadership roles in fast-growing high performance companies. Any company's long-term success is ultimately based on its ability to attract and develop talent. Amy's energy, focus and passion will support us in building a thriving company culture.

With material test progress made and our capital spend remaining on track, we will continue to build value for our shareholders and pioneer electric aviation.

Stephen





Stephen Fitzpatrick
Founder & CEO

Dómhnal Slattery
Chairman

Q3 Highlights



CAA Permit to Fly
On 22nd September, the UK's Civil Aviation Authority (CAA) issued a Permit to Fly for the VX4, enabling us to start the airborne phase of our programme.

2022 Capital Plan Remains on Track
The 2022 capital plan continues to be on track, with net cash outflows used in operating activities for the full year expected to be c£80m, at the lower end of our range.

VX4 Successfully Completed First Airborne Test
The full-scale VX4 prototype successfully completed its first hover on 24th September with pilot Justin 'Jif' Paines on board. In total, we have conducted 14 piloted test flights by two test pilots.

Strengthened Leadership Team
We welcome Amy Round as Chief People Officer to ensure we are hiring the best possible talent to help us scale as an organisation.

01. The VX4

On 24th September, Vertical began airborne flight tests of our full-scale, piloted VX4 prototype.

We decided to conduct these flight tests with a pilot on board to demonstrate Vertical could meet the most stringent safety standards. This required a Permit to Fly from the UK's Civil Aviation Authority (CAA) which involved the submission of significant material including on design and process documents, test data and analysis, as well as in-person audits from a team of CAA airworthiness specialists to demonstrate the tests could be conducted safely.



Meeting UK politicians at our Cotswold test facility



Pre-flight briefings with flight test team



System checks in hanger prior to push-back



Chief Test Pilot Justin 'Jif' Paines

Wheels up!

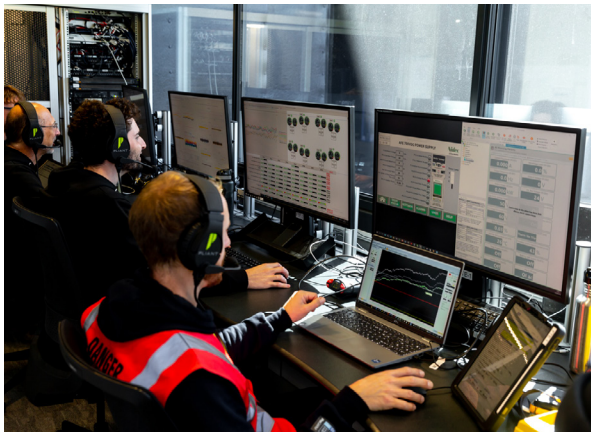


There was a huge amount of work that went into achieving our first airborne test. Following completion of the aircraft build, extensive commissioning activities were conducted to confirm system functionality and supporting telemetry data.

Using a unique active front end (AFE) 1MW DC ground power source, we conducted extensive taut tether propeller turning tests, building through 300rpm, 500rpm, 750rpm and 900rpm to 1000rpm, with lift thrust confirmed at 800-850rpm. The AFE allows us to run in VTOL hover configuration for prolonged periods, greatly accelerating our pace of learning in this test phase.

It has allowed us to confirm structural behaviour throughout the propeller speed range needed for first flight and verified the operating characteristics of the electric propulsion units (EPU) under representative flight loads. After completion of our own rigorous performance and safety assessments, and those of the CAA, we began our piloted flight test programme with our Chief Test Pilot in the cockpit and at the controls for lift off.

The results have shown strong correlation to expected operating characteristics and provided the data to support the next phase of our flight test programme – Step 5: 'Low Speed Flight'.



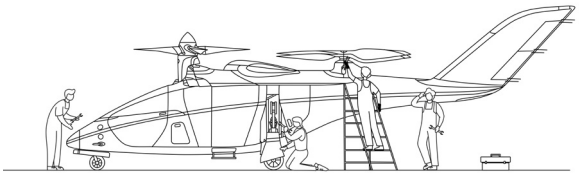
Flight Test Programme in Numbers

- Satisfied **167** separate flight test conditions prior to lift off
- Continous **5.5** hours of propeller run time during ground tests
- **14** piloted test flights conducted by two test pilots under CAA Permit to Fly
- >2TB of flight test data capturing **8,274** parameters

Intensive VX4 flight test programme

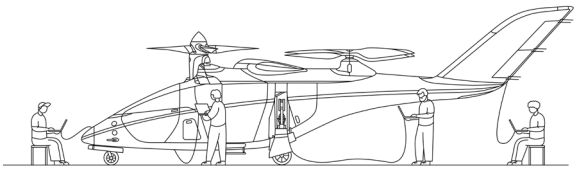
Step 1 – Build and Commissioning

The VX4 prototype was built through Q1 at our partner GKN's Global Technology Centre in Bristol where 90% of the build was completed and low voltage systems commissioned. The prototype was then dismantled and transported to our Cotswold Airport Test Facility in Q2 where it was reassembled and the remaining 10% build completed, ready for ground tests and final commissioning.



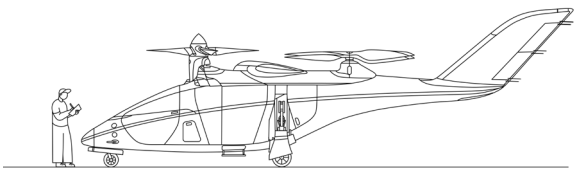
Step 2 – Ground Tests

The VX4 prototype has completed a series of rigorous ground based tests, a requirement for Permit to Fly, including vibration tests, lift load tests and propeller thrust tests to validate the build meets the design specification.



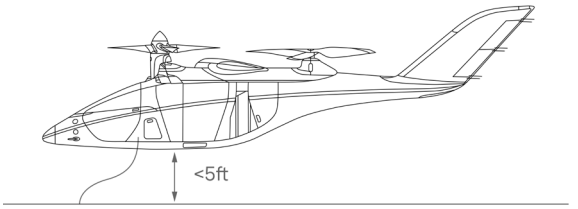
Step 3 – Permit to Fly

The CAA visited our design HQ in Bristol as well as our Cotswold Airport Test Facility, inspecting engineering design and process documentation, test data, and the aircraft itself. The CAA issued a Permit to Fly in September 2022.



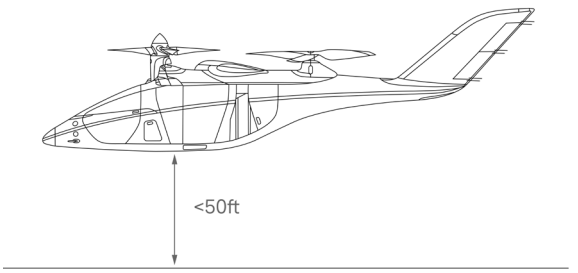
Step 4 – Tethered Hover

The first flights were a series of taut and loose tethered hovers. This important first phase of airborne testing demonstrated aircraft stability in take-off and landing, flight control systems, vibration, noise, ground effects and battery performance.



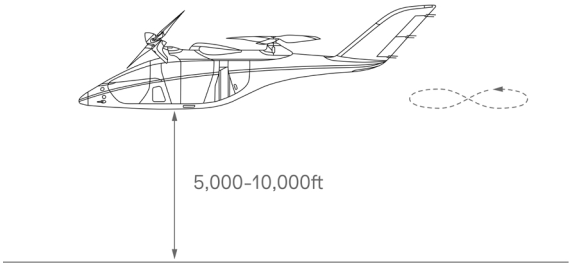
Step 5 – Low Speed Flight

We start a series of untethered tests at heights of up to 50ft and speeds of up to 40kts. These multi-axis manoeuvres continue to expand the flight envelope, testing stability and control, the flight control system, propeller to propeller interactions, loads, vibrations and system operation during low speed transition.

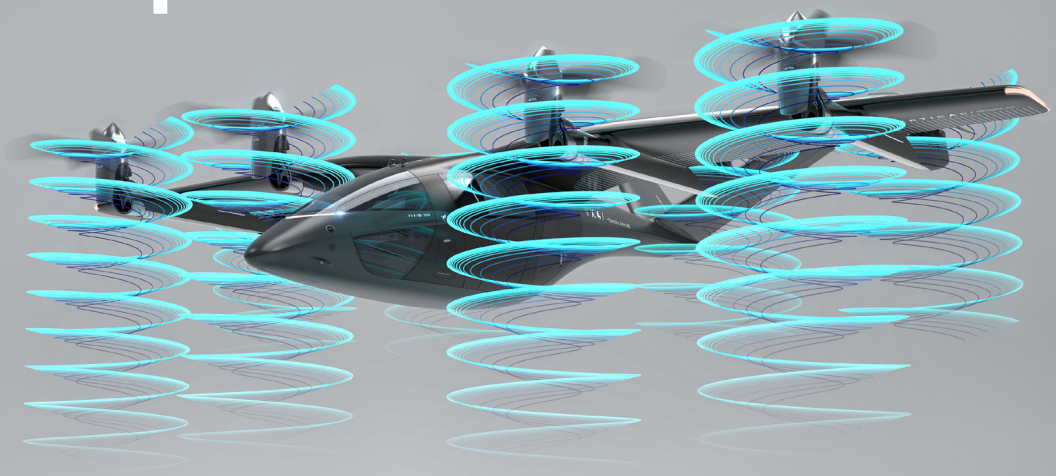


Step 6 – Transition and Envelope Expansion

Following Step 5, a key milestone, transition involves moving from hover to wing-borne cruise and back, at heights of between 5,000ft and 10,000ft, at speeds of up to 145kts, expanding the flight envelope fully and proving the simulation work on aerodynamics, structure, powertrain and flight control systems.



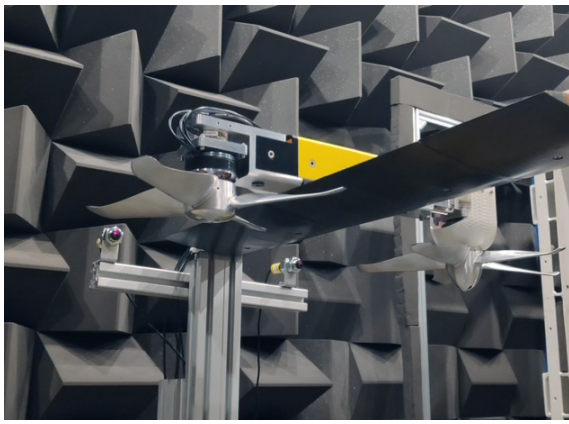
Next Generation Propellers



Vertical has invested significantly to in-house expertise and testing capability to deliver best in class propellers, enabling our aircraft to be both extremely quiet and safe.

Extremely Quiet

To enable eVTOL flight operations in and out of urban environments without the same restriction as helicopters a low noise threshold is required. Low noise requires very low propeller tip speeds (Mach ~0.4 compared with Mach ~0.8). Low tip speeds require high solidity (wide blades) and a unique blade shape to provide the required thrust for vertical take-off and landing. We have been developing the blade profile for our eVTOL flight for over six years across three different flying prototypes, and conducted numerous sub-scale rotor rig tests to refine our propellers' noise profile. We are targeting less than 70db in hover, the same as a low-level city traffic, and less than 50db in cruise which is likely to be unnoticeable in an urban environment.



Acoustic testing

Extremely Safe

Helicopter flight requires highly complex rotors, gear boxes and critical systems to achieve hover and forward flight. This complexity often requires major aircraft inspections every 100 hours of flight time, resulting in costly maintenance, lots of aircraft downtime and a high operating cost per seat mile.

The VX4 uses eight sets of propellers with simplified pitch control. This level of redundancy and simplicity allows us to strive for the same high-levels of safety standards as large commercial aircraft, a 10-9 probability of catastrophic failure. This has two benefits, the first being a safety standard that is accepted globally, enabling Vertical to access the largest possible addressable market. The second is long intervals between inspections, high uptime and as a result much lower operating costs than a helicopter.



Wind tunnel testing

Industrial Partner Spotlight

GKN Aerospace

GKN Aerospace and Vertical are working together to develop and certify the aerostructures and electrical wiring interconnection system (EWIS) for the VX4.

GKN is a Tier 1 aerospace supplier, developing and certifying components for every major OEM and with content on-board more than 90% of aircraft produced today. It is a world leader in additive manufacturing and lightweight, sustainable composite structures, such as thermoplastics. GKN is also at the forefront of design for high-rate manufacture, with proven ability to meet the rapid time-to-market required in the advanced air mobility market.

With its UK Global Technology Centre (GTC) less than 10 miles from Vertical's Bristol HQ and with over 15,000 engineers globally, GKN has been a key industrial partner as we design for manufacture and certification of the VX4.







Since the formalisation of our partnership in September 2021, our two companies' engineers have developed a strong collaborative relationship. We have co-located teams, with Vertical leveraging GKN's integration expertise and industrial capability by assembling the VX4 prototype airframe at GKN's GTC in Bristol. Vertical and GKN have now begun working on the critical definition phase of the certification wing for the VX4, combining the experience of Vertical and GKN's engineers.

Beyond the wing and the EWIS, we are working collaboratively on other areas of development to deliver a light-weight, high-performance and certifiable aircraft that will critically be enabled for production at scale. Such areas include specialist thermoplastic and additive manufacturing technologies to improve performance, and integrated simplified EWIS designs to save weight.

"Working so closely together enabled fast learnings for both us and Vertical. This collaboration meant that when confronted with challenges, we could overcome them together, leading to great solutions such as joint technical support on flight test instrumentation"
Russ Brigham, Programme Director at GKN Aerospace



People Spotlight

Alison Green

Head of Structures

Alison has worked in the aerospace industry for 25 years and leads our airframe team, responsible for designing, producing, and certifying the main large composite parts of the VX4. Alison's team of multifunctional engineers works closely with our strategic industrial partners, who will develop and manufacture many of the VX4's structures - our certification wings with GKN, fuselage with Leonardo and the composite materials with Solvay. Together with these partners the airframe team is building the key capabilities that will be used to design and certify the final certification aircraft and support high-rate manufacture.

Whilst many engineers work in a singular technical function, Alison has worked across all functions whilst developing aerostructures for the A320 at Airbus as well as manufacturing turbine blades at Rolls-Royce. She has covered deep technical roles as well as certification and airframe design and testing. This exceptional experience makes Alison uniquely qualified to lead and develop the airframe for the VX4, and we're proud to have her on our team.

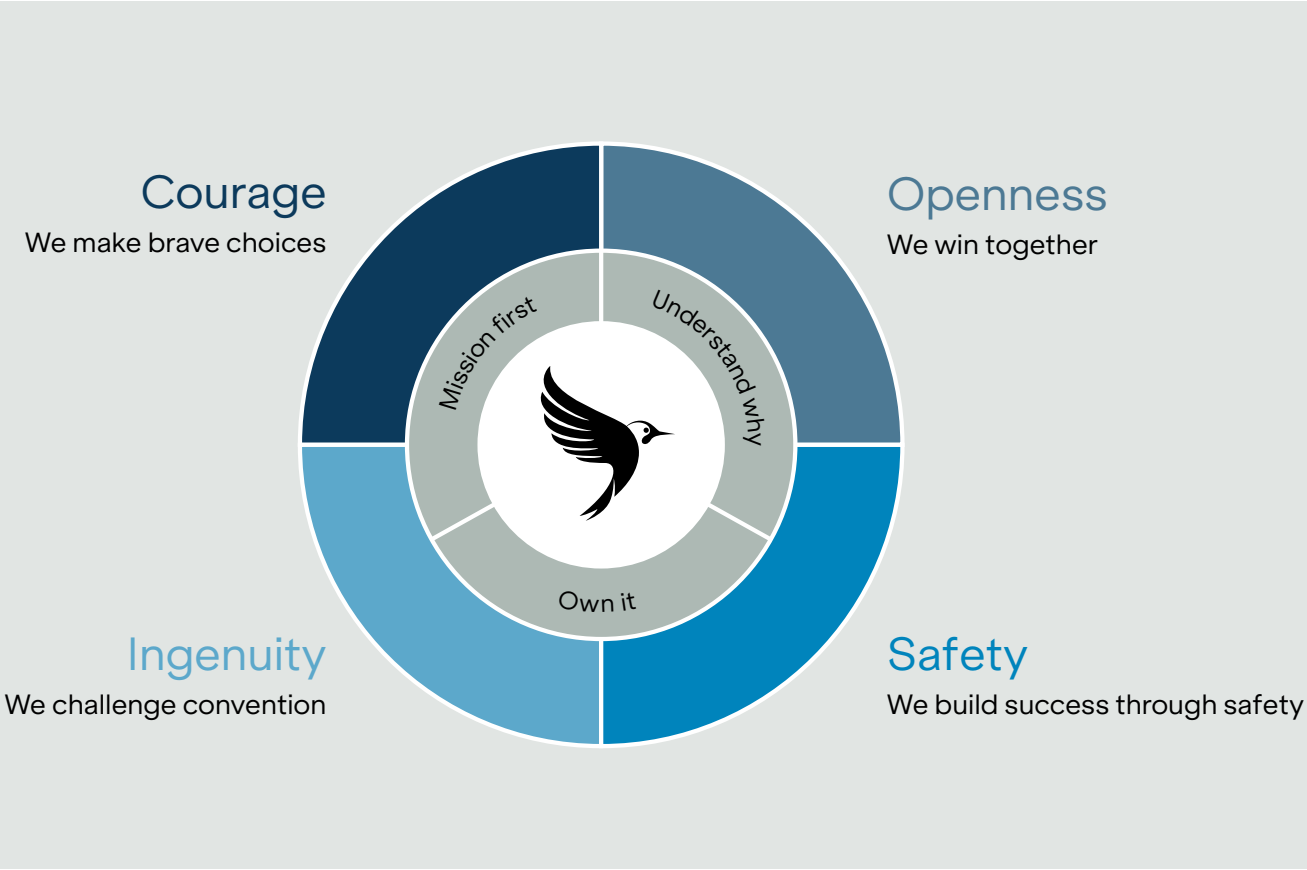
02 The Vertical Way

Having successfully founded and built OVO Group, Europe's largest independent energy and technology company, from a blank sheet of paper to a business with over $8 billion in revenues and 6,000 employees in under a decade, Stephen Fitzpatrick, our Founder and CEO, knows how to scale up organisations and take them from start-up to blue-chip.

We have been working hard to learn from our founding team about what they think makes Vertical unique and what it means to be a part of our company. In September, we brought all our 300 people from across the globe into an all-hands company event to launch the Vertical Way, a codification of our innovative, entrepreneurial unique culture.

We know and have seen the value of keeping innovation at the heart of a company whilst setting the right cultural blueprint to scale as we deliver success. Whilst we have now built and flown three prototype aircraft and have lots to be proud of, we know that as we develop into a larger aerospace company, capable of holding type certification for the VX4, now has been the right time for us to create and implement our cultural values to support growth and keep creating equity value for shareholders.





The Vertical Way establishes our culture as a way of delivering our shared passion for electric aviation through values and behaviours. Our values are Courage; Ingenuity; Openness and Safety. These guide the decisions our teams make every day and are underpinned by our behaviours: Mission first; Own it and Understand why, which support how we should act. The Vertical Way will be the foundation of our people experience and the reason they are able to and want to deliver for Vertical day in, day out.

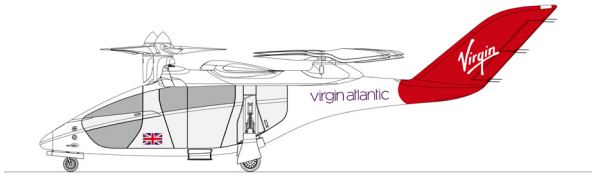
Our people are our greatest asset, and we are committed to delivering the best possible experience for them. With the support of our new Chief People Officer, Amy Round, we will build on the progress we have made to date.



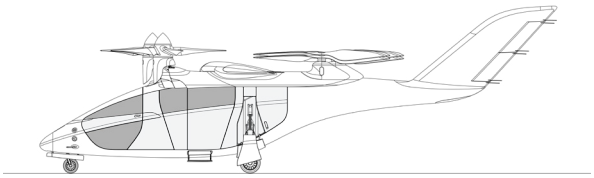
Amy led talent within Google's EMEA people team, helping the company grow from c.10,000 people to over 150,000 world-wide during her time there. She has spent the last few years on the executive team at OVO Energy, driving its scale-up from 1,000 people to 6,000.

1.400+ pre-orders

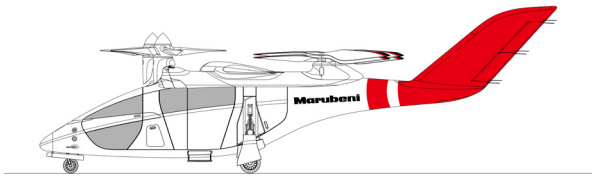
We have extremely strong demand for the VX4 and have secured conditional pre-orders from some of the world's leading airlines, aircraft leasing firms, helicopter operators, tourism groups and business aviation companies. The global reach of our pre-order book demonstrates the market confidence in Vertical's design and certification credibility as we target entry into service in 2025.



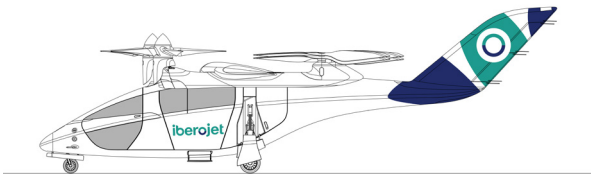
Virgin Atlantic
Up to 150 VX4s



American Airlines
Up to 350 VX4s



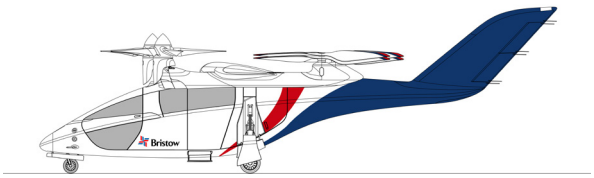
Marubeni
Up to 200 VX4s



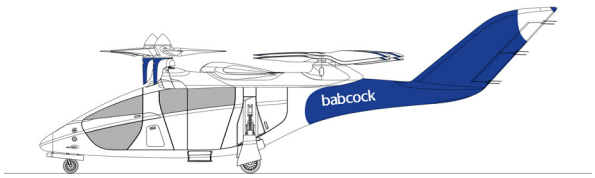
Iberojet
Up to 100 VX4s



FLYINGGROUP
Up to 50 VX4s



Bristow
Up to 50 VX4s



Babcock
Joint Working Group

Avolon
Up to 500 VX4s of which 550 have already been placed by Avolon



GOL
Up to 250 on lease



Japan Airlines
Up to 100 on lease



AirAsia
Up to 100 on lease



Gözen Air Services
Up to 100 on lease

Q3 / 2022

Financials

2022 Outlook on track vs prior guidance

Following the continued investment and build of the VX4 Prototype we are excited with achieving our first piloted airborne flight test.

Our operating loss for the period was £18.6m, resulting in total investment over the first 9 months of 2022 of £58.1m. We expect our total capital spend in 2022 to be c.£80m (c.$90m), at the lower end of the range previously anticipated. We continue to focus on delivering our engineering, certification and commercial objectives. Our disciplined spend is the result of Vertical's competitive cost base and our strategic approach of leveraging our industrial partnerships, which is demonstrating clear efficiencies.

We selectively utilised the equity subscription line (ESL) put in place with Nomura earlier this summer for an aggregate gross purchase price of $8.9m at an average share price of $8.04. The ESL, as a whole, is further enhanced by the strengthening of the dollar (15% over the year) with our cost base predominantly in GBP.

Our partnership approach, unique amongst our peers, is bearing fruit as we retain a controlled capital spend whilst reaching and continuing to meet significant engineering milestones.





Vinny Casey
CFO

Vertical's Attendance at Upcoming Conferences in Q1 2023

Cowen 43rd Annual Aerospace/Defense & Industrials Conference
Arlington, VA
February 15-16, 2023

Raymond James & Associates' 44th Annual Institutional Investors Conference
Orlando, FL
March 5-8, 2023

JP Morgan Industrials Conference
New York, NY
March 14-16, 2023

Unaudited Condensed Consolidated Interim Statements of Operations and Comprehensive Loss

(in pounds thousands, except share and per share data)

	3 months ended September 30,		9 months ended September 30,	
	2022	2021	2022	2021
Revenue	-	66	-	132
Cost of sales	-	(40)	-	(65)
Gross profit	**-**	**26**	**-**	**67**
Research and development expenses	(9,747)	(5,120)	(29,143)	(11,627)
Administrative expenses	(9,783)	(5,247)	(33,249)	(30,377)
Related party administrative expenses	(15)	12	(15)	(115)
Other operating income	916	1,920	4,323	11,606
Operating loss	**(18,629)**	**(8,409)**	**(58,084)**	**(30,446)**
Finance income	238	14	238	14
Finance cost	(99,504)	(109)	(77,070)	(146)
Related party finance costs	-	-	-	(483)
Net finance income/(costs)	**(99,266)**	**(95)**	**(76,832)**	**(615)**
Loss before tax	**(117,895)**	**(8,504)**	**(134,916)**	**(31,061)**
Income tax expense	-	-	-	-
Net loss for the period	**(117,895)**	**(8,504)**	**(134,916)**	**(31,061)**
Foreign exchange translation differences	8,947	-	18,429	-
Total comprehensive loss for the period	**(108,948)**	**(8,504)**	**(116,487)**	**(31,061)**
Basic and diluted loss per share	£(0.66)	£(0.07)	£(0.76)	£(0.26)
Number of shares	178,427,999	129,727,235	178,376,519	120,003,967

Unaudited Condensed Consolidated Interim Statement of Financial Position

(in pounds thousands)

	September 30, 2022	December 31, 2021
Non-current assets		
Property, plant and equipment	1,712	1,834
Right of use assets	2,007	1,969
Intangible assets	3,776	4,208
	7,495	**8,011**
Current assets		
Trade and other receivables	18,397	12,658
Short term deposits	61,076	-
Cash at bank	83,686	212,660
	163,159	225,318
Total assets	**170,654**	**233,329**
Equity		
Share capital	16	16
Other reserve	90,047	63,314
Share premium	256,837	248,354
Accumulated deficit	(384,980)	(250,123)
Total equity	**(38,080)**	**61,561**
Non-current liabilities		
Long term lease liabilities	1,588	1,580
Provisions	99	95
Derivative financial liabilities	179,459	112,799
Trade and other payables	7,210	5,975
	188,356	**120,449**
Current liabilities		
Short term lease liabilities	430	362
Warrant liabilities	12,764	10,730
Trade and other payables	7,184	40,227
	20,378	**51,319**
Total liabilities	**208,734**	**171,768**
Total equity and liabilities	**170,654**	**233,329**

Unaudited Condensed Consolidated Interim Statement of Cash Flows

(in pounds thousands)

	9 months ended September 30,	
	2022	2021
Cash flows from operating activities		
Net loss for the period	(134,916)	(31,061)
Adjustments to cash flows from non-cash items:		
Depreciation and amortization	1,320	565
Depreciation on right of use assets	294	105
Finance (income)/costs	76,832	56
Related party finance costs	-	483
Share based payment transactions	8,025	16,815
Income tax expense/(benefit)	-	-
	(48,445)	**(13,037)**
Working capital adjustments:		
Decrease/(Increase) in trade and other receivables	1,652	(9,778)
(Decrease)/increase in trade and other payables	(31,808)	5,972
Net cash flows used in operating activities	**(78,601)**	**(16,843)**
Cash flows from investing activities		
Increase in short term deposits	(60,835)	-
Acquisitions of property plant and equipment	(256)	(620)
Acquisition of intangible assets	(464)	(1,001)
Net cash flows used in investing activities	**(61,555)**	**(1,621)**
Cash flows from financing activities		
Proceeds from secured convertible notes	-	25,000
Proceeds from the issuance of share capital	215	-
Proceeds from related party borrowings	-	2,208
Payments to lease creditors	(358)	(132)
Net cash flows (used)/generated from financing activities	**(143)**	**27,076**
Net (decrease)/increase in cash at bank	**(140,299)**	**(8,612)**
Cash at bank, beginning of the period	**212,660**	**839**
Effect of foreign exchange rate changes	11,325	52
Cash at bank, end of the period	**83,686**	**9,503**

Forward-Looking Statements

This letter contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Any express or implied statements contained in this letter that are not statements of historical fact may be deemed to be forward-looking statements, including, without limitation, statements regarding the certification and the commercialization of the VX4 and related timelines, expectations surrounding pre-orders and commitments, Vertical's differential strategy compared to its peer group, the features and capabilities of the VX4, the transition towards a net-zero emissions economy, the sufficiency of Vertical's cash and cash equivalents to fund operations, expected financial performance and operational performance for the fiscal year ending December 31, 2022, as well as statements that include the words "expect," "intend," "plan," "believe," "project," "forecast," "estimate," "may," "should," "anticipate," "will," "aim," "potential," "continue," "are likely to" and similar statements of a future or forward-looking nature. Forward-looking statements are neither promises nor guarantees, but involve known and unknown risks and uncertainties that could cause actual results to differ materially from those projected, including, without limitation: Vertical's limited operating history without manufactured non-prototype aircraft or completed eVTOL aircraft customer order; Vertical's history of losses and the expectation to incur significant expenses and continuing losses for the foreseeable future; the market for eVTOL aircraft being in a relatively early stage; the potential inability of Vertical to produce or launch aircraft in the volumes and on timelines projected; the potential inability of Vertical to obtain the necessary certifications on the timelines projected; any accidents or incidents involving eVTOL aircraft could harm Vertical's business; Vertical's dependence on partners and suppliers for the components in its aircraft and for operational needs; the potential that certain of Vertical's strategic partnerships may not materialize into long-term partnership arrangements; all of the pre-orders Vertical has received for its aircraft are not legally binding, conditional and may be terminated without penalty at any time by either party, and if these orders are cancelled, modified, delayed or not placed in accordance with the terms agreed with each party, Vertical's business, results of operations, liquidity and cash flow will be materially adversely affected; any potential failure by Vertical to effectively manage its growth; the impact of COVID-19 on Vertical's business; Vertical has identified material weaknesses in its internal controls over financial reporting and may be unable to remediate the material weaknesses; Vertical's dependence on our senior management team and other highly skilled personnel; as a foreign private issuer Vertical follows certain home country corporate governance rules, is not subject to U.S. proxy rules and is subject to Exchange Act reporting obligations that, to some extent, are more lenient and less frequent than those of a U.S. domestic public company; and the other important factors discussed under the caption "Risk Factors" in our Annual Report on Form 20-F filed with the U.S. Securities and Exchange Commission ("SEC") on April 29, 2022, as such factors may be updated from time to time in Vertical's other filings with the SEC. Any forward-looking statements contained in this letter speak only as of the date hereof and accordingly undue reliance should not be placed on such statements. Vertical disclaims any obligation or undertaking to update or revise any forward-looking statements contained in this letter, whether as a result of new information, future events or otherwise, other than to the extent required by applicable law.