Fast, affordable, and everywhere!

<table>
<thead>
<tr>
<th>Disruptive economics</th>
<th>Fly to every community</th>
<th>Get there much faster</th>
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<td>40,000 airports</td>
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<td>Quiet and green</td>
</tr>
</tbody>
</table>

*50% of aviation emissions on short-haul flights
Executive summary

Zunum Aero is developing regional hybrid-to-electric aircraft and underlying propulsion technologies with disruptive economics over ranges from 700 miles at entry in 2023 to 1,500 miles by 2035. By scaling airliner-grade economics to mid-sized platforms and design for quiet door-to-door service to tens of thousands of secondary airports, our aircraft will usher in a new era of fast and affordable regional travel. Door-to-door journeys will be 2 to 4 times faster than today, reversing the stagnation of the past 50 years. Meanwhile, our hybrid-to-electric propulsion will place aviation on pathway to zero emissions on all short-haul departures by 2040, 50% of emissions generated by the sector, aligned with the goal set by the Norwegian government this year. Our technologies include hybrid-to-electric aircraft and megawatt-class quiet propulsion with unmatched economics, along with software platforms to orchestrate seamless multi-modal journeys that take the flexibility and convenience of ride sharing to 1,500 miles. We have a large, expanding IP portfolio dating to 2014 that includes blocking claims on these technologies. Our investors include Boeing HorizonX, JetBlue Technology Ventures and the State of Washington Clean Energy Fund. We have a partnership with Safran Helicopter Engines and a launch order for 100 aircraft from JetSuite.

Product. Our first aircraft, the ZA10, with a range of 700 miles will be available for delivery in 2023 offering 6 executive, 9 business or 12 economy seating. We plan to scale from the ZA10 to a 50-seat platform with range of 1,000 miles by 2027. Notable features (detail on our website):

- Direct costs 60 to 80% lower: 8 cents per seat mile or $250 per hour. Community and cabin noise 80% lower; Emissions 80% lower and on path to zero.
- Future-proof Electric and Hybrid variants, architectured to transition seamlessly from Hybrid to Electric.

Talent. We are headquartered in the Seattle area, with offices in Chicagoland and Indianapolis. Our unmatched cross-functional team of 44 engineers, 75 with contractors included, across Electrical Power, Propulsion and Aircraft have world-leading experience across ABB, Airbus, Boeing, Bombardier, Delphi, Embraer, Garmin, GE, Gulfstream, Honda Jet, Pilatus, Rolls Royce, Safran, Siemens, United Technologies. Our offices are located to enable rapid development, prototyping and test by tapping into regional ecosystems: Aircraft in Seattle, Electrical power in Chicagoland (including 400kW lab) and Propulsion in Indianapolis.

Outlook. We are a first mover to a $3 trillion market (over 20 years) for regional hybrid and electric aircraft that address vast societal challenges, ushering in a new era of high-speed mobility, community connectivity, quiet and emissions-free travel. We are raising $40-50M in Series B funds to develop the business through the end of 2019, including full-scale Flying testbeds, an Order book equal to several years of production capacity, and the Preliminary Design Review. Additional equity to bring the ZA10 to market, including a 150 unit per year production facility, is estimated at $80M net of customer deposits and production loans. At that stage, Zunum will generate positive cash to scale the ZA10 line of business indefinitely. A further raise will enable development of a 50-seat 1,000-mile aircraft in 2027. The return on these investments is very attractive. We estimate 25x returns for Series B and 10x for Series C investors through exit in 2025. Moreover, returns from opportunities triggered by the development of our technologies are far greater. This includes opportunities across the regional electric air ecosystem, secondary airports and the surrounding communities, coordination with the transport-as-a-service transformation, scalability to airliners and VTOL.
Hybrid-electric air for fast and affordable regional transit
Extending from 700 miles in 2023 to 1,500 miles in 2035

Develop turnkey powertrain built on proprietary component technologies
• Quiet-electric propulsors
• Future-proof power system
• Airframe-integrated batteries
• Optimization and control

Develop breakthrough commercial aircraft (with Aerostructures partner)
• Airline-grade economics
• Future-proof architecture
• STOL to VTOL, pilot-optional
• Passengers, cargo, military

Drive multimodal eco-system while creating options for the future
• FAA Electric Aircraft working group; FAA Innovation office
• Legislative: Norway and USA
• Uber for long-distance patent
Breakthrough series hybrid-to-electric regional aircraft
Architected to transition from hybrid to all-electric

- Operating costs: $60-80%
- Door-to-door: 2-4x faster
- Emissions: 80-100%
- Noise: 80%
- Runway: 50%

Optimization and control platforms
Quiet electric propulsors
Airframe-integrated battery packs
Hybrid-to-electric powertrain
Scaling to 80% of departure and 50% of emissions

2023: ZA10
700 miles
6-12 passengers

2027: ZA50
1,000 miles
50-60 passengers

2030+: ZA100
1,500 miles
100 passengers

Disruptive economics over short-haul
ZA10 in 2023: fast, green and affordable air travel

- **Operating cost**: 8¢/seat mile
- **Passengers**: 6 exec - 12 econ
- **Max range**: 700 miles
- **Max cruise speed**: 340 mph
- **Take-off distance**: 2,200 ft
Serious, revolutionary stuff, a new dawn for our industry

Tweet by London Oxford Airport on JetSuite order for 100 ZA10 aircraft

LondonOxfordAirport @LOXOX... · 28m
This is serious, revolutionary stuff, bringing operating costs for aircraft in this size category down massively. Quieter, environmentally far superior, altogether a new dawn for our industry, be that regional scheduled services or private charter @zunumaero #electricaviation

↓70%  Operating costs
↓70%  Travel time
↓80%  Emissions
↓80%  Noise
↓50%  Runway
### Three breakthroughs: Disruptive economics

<table>
<thead>
<tr>
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<tr>
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- **Sub-ailiner operating costs in mid-sized aircraft**
- **High-speed mobility everywhere**
- **De-carbonization**

*50% of aviation emissions on short-haul flights
Overturning the scale, range economics of aviation

Total costs per seat mile ($)

<table>
<thead>
<tr>
<th>Seating capacity</th>
<th>Phenom 300</th>
<th>King Air</th>
<th>PC12</th>
<th>Caravan</th>
<th>ATR42</th>
<th>Q400</th>
<th>ZA10</th>
<th>ZA50</th>
<th>ZA100</th>
<th>A320</th>
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<tbody>
<tr>
<td>0.10</td>
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<td>1.30</td>
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</tr>
</tbody>
</table>

Centralized utilities

Scale and range advantaged

Scale and range independent

Zunum Aero

Minimal scale or range economics

*Includes crew, fuel, batteries, electricity, maintenance, reserves and ownership
### Outstanding performance relative to best-in-class

<table>
<thead>
<tr>
<th></th>
<th>2025</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Economics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revenue seats</td>
<td>12</td>
<td>9</td>
</tr>
<tr>
<td><strong>Economy</strong></td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td><strong>Premium</strong></td>
<td>48</td>
<td>78</td>
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<tr>
<td>Operating costs (₵ per ASM)</td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td>Electric</td>
<td>Hybrid range (miles)</td>
<td>23</td>
</tr>
<tr>
<td>Electric</td>
<td>Hybrid range (miles)</td>
<td>130</td>
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<tr>
<td><strong>Performance</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum weight (lbs)</td>
<td>11,200</td>
<td>10,450</td>
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<tr>
<td>Useable load at 500 miles (lbs)</td>
<td>2,200</td>
<td>2,650</td>
</tr>
<tr>
<td>Wing loading (lbs/ft²)</td>
<td>46</td>
<td>38</td>
</tr>
<tr>
<td>Cruise (mph), 350 miles</td>
<td>300 (340)</td>
<td>280</td>
</tr>
<tr>
<td>Typical cruise altitude (ft)</td>
<td>23,000</td>
<td>23,000</td>
</tr>
<tr>
<td><strong>Footprint</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Runway with 50' obstacles (ft)</td>
<td>2,200</td>
<td>2,650</td>
</tr>
<tr>
<td>Sideline noise (EPNdB)</td>
<td>65</td>
<td>79</td>
</tr>
<tr>
<td></td>
<td>89</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td>84</td>
<td></td>
</tr>
</tbody>
</table>

*All ZAs delivery 80 to 100% lower emissions*
### Three Breakthroughs: High-Speed Mobility Everywhere

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*50% of aviation emissions on short-haul flights
Reducing door-to-door times by factors of two to four

- 13,500 airports
- 40,000 world-wide
Addressing a vast transport gap over regional ranges
Driven by 70-year shift to large airliners serving fewer hubs

96% of air traffic in 1% of airports
96% of regional trips on ground

Air

Door-to-door times worse today than 50 years ago
1,000s of communities without high-speed links
Inflexible and capital-heavy alternatives, e.g., HSR
### Scheduled commercial

Fast and affordable regional air
2 to 4 times faster door-to-door than today

<table>
<thead>
<tr>
<th>Image 1</th>
<th>Image 2</th>
<th>Image 3</th>
</tr>
</thead>
</table>

### Regional cargo

Same and next-day delivery via close-in air at ground costs

<table>
<thead>
<tr>
<th>Image 4</th>
<th>Image 5</th>
<th>Image 6</th>
</tr>
</thead>
</table>

### Business and on-demand

Quick, comfortable all-hours flights to more destinations, at 60 to 90% lower cost

<table>
<thead>
<tr>
<th>Image 7</th>
<th>Image 8</th>
<th>Image 9</th>
</tr>
</thead>
</table>

### Military tactical transport

Versatile, survivable and sustainable intra-theatre platforms

<table>
<thead>
<tr>
<th>Image 10</th>
<th>Image 11</th>
<th>Image 12</th>
</tr>
</thead>
</table>

Fast door-to-door mobility will drive a $3 trillion market
Unlocking immense value in the existing air infrastructure

“We envision a short-haul system capable of operating from every runway and urban area V/STOL port in the United States and very comfortable in an environmental sense”

John Shaffer, FAA Administrator, 1970

- U.S. DOT 20-year strategy targeted short-haul air
- $800M investment in an innovative short-haul air system:

<table>
<thead>
<tr>
<th>US Government</th>
<th>Aerospace OEMs</th>
<th>Major airlines</th>
</tr>
</thead>
<tbody>
<tr>
<td>US DOT</td>
<td>Boeing</td>
<td>PanAm</td>
</tr>
<tr>
<td>FAA</td>
<td>McDonnell Douglas</td>
<td>American</td>
</tr>
<tr>
<td>NASA</td>
<td>Lockheed</td>
<td>Eastern</td>
</tr>
<tr>
<td>US Air Force</td>
<td>DeHavilland</td>
<td>Florida</td>
</tr>
<tr>
<td>US Army</td>
<td>Grumman</td>
<td></td>
</tr>
<tr>
<td>Universities</td>
<td>General Dynamics</td>
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</tr>
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- Halted due to 1973-74 oil crisis, poor economy
## Three breakthroughs: Decarbonization

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*50% of aviation emissions on short-haul flights
Early mover with unmatched talent and market traction

1. Unique talent across Electricals + Propulsion + Aircraft with powerful partnerships
2. Prototype propulsion with world-class performance in fabrication and test
3. Unmatched traction with carriers, legislators and brand world-wide
4. Rapidly expanding patent portfolio from 2014 including blocking claims granted
5. Strong regulatory progress: Rulemaking 2014, FAA early resourcing 2017
6. Moderate capital and rich returns from journey to deliver vast societal benefit
Rapid prototyping underway, leveraging rich ecosystems

Seattle

Chicagoland

Indianapolis

Aircraft
- Flight Sc
- Structures
- Systems
- Certification
- Thermals
- Controls

Power
- Electric motors
- Power system
- Power electronics
- Controls

Propulsion
- Aerodynamics
- Configuration
- Mechanical
- Test

ZUNUM Aero
World-class launch customer and turbogenerator partner

- Orders for up to 100 aircraft for charter (JetSuite) and scheduled (JetSuiteX)
- Scaling nationwide with financing from leading global airlines

- Ardiden-3Z turboshaft tailored for Zunum 500kW turbogenerator
- Long-term development-sales-service contract, offering disruptive economics
These 9 Airplanes Transformed Flight Over the Last Century

On the anniversary of the Wright brothers’ flight, see how flying has evolved since—and the otherworldly models that may be in our future.
On track for first flight in 2019 and delivery in 2023


Ground testbed  
Flying testbed  
Conforming prototype

FAA/ASTM Electric aircraft group  FAA engagement  Certification basis closed  Type Certificate application

Certified

50-seat regional

Partners

ZUNUM Aero
Scaling revenues to $1B+ by 2026

**Capital required, ZA10: $40-50M Series B + $80M Series C; ZA50: $100M Series D**

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<td>42</td>
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<td>(4)</td>
<td>(10)</td>
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<td>27</td>
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<td>27</td>
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<tr>
<td>Cashflow</td>
<td>(5)</td>
<td>(29)</td>
<td>(45)</td>
<td>(67)</td>
<td>(57)</td>
<td>(75)</td>
<td>(16)</td>
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<td>81</td>
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<td>75</td>
<td>101</td>
<td>171</td>
<td>248</td>
<td>368</td>
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</tbody>
</table>

Flying testbed

ZA10 aircraft

ZA50 aircraft

Confidential
# Forecast raise cycles for ZA10 and ZA50 programs

<table>
<thead>
<tr>
<th>Seed</th>
<th>Series A</th>
<th>Bridge to B</th>
<th>Series B</th>
<th>Series C</th>
<th>Series D</th>
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<tbody>
<tr>
<td>2014-17</td>
<td>April 2017</td>
<td>April 2018</td>
<td>Q4/Q1 2018-19</td>
<td>Q4 2019</td>
<td>Q3 2021</td>
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<td>$2M</td>
<td>$7M</td>
<td>$6M</td>
<td>$40-50M</td>
<td>$80M</td>
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<tr>
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<td>Boeing</td>
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<td>$500K minimum</td>
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<td>JetBlue</td>
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<td></td>
<td>WA Clean Energy</td>
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</tr>
</tbody>
</table>

### Return multiple to 2025 Exit:
- 25x
- 10x
- 3x

- **Conservative** $4B exit based on conventional airframer, neglects value of Propulsion and breakthrough proposition, vast market opportunity
- Range of potential acquirers, e.g., Airframers, Engine OEMs, Electrical majors, Ground EV majors, New mobility attackers, Aerospace Tier 1s

Exit via IPO or acquisition with initial plant at full production
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*50% of aviation emissions on short-haul flights
Founders and executive leadership

**Ashish Kumar,** Ph.D., Founder and CEO
Senior executive and versatile entrepreneur with rich experience as GM at Microsoft, COO Americas at Google, GM at Dell, management consultant at McKinsey. Early career in tech R&D as Professor of Engineering at Brown University and scientist at Sandia National Labs.
- MS and PhD, Mechanical and Aerospace Engineering, Cornell University
- BS, Mechanical Engineering, Indian Institute of Technology, Delhi

**Matt Knapp,** Founder and CTO Aircraft
Senior aircraft designer with extensive experience in design, aerodynamics, performance, S&C, and certification. Lead Designer and Director of Flight Sciences for the Javelin high performance jet, and for Pioneer Rocketplane sub-orbital spacecraft. Extensive consulting across Lockheed, Boeing, aero OEMs, NASA, DARPA. Certified flight instructor.
- BS and MS, Aerospace Engineering, MIT

**Waleed Said,** Ph.D., CTO Power
Senior EE leader with 30 years of experience with power and electronics for commercial and military aircraft at UTC Aerospace Systems. Led development and deployment of Boeing 787 and Lockheed Martin F35 electric systems. Led Tiger team to improve aviation products focused on High voltage, Plasma/Partial discharge, Electric arcs.
- PhD, Electrical Engineering, University of Loughborough