Enabling sustainable aviation for airports
Electric aircraft are coming!
Electro.Aero SmartHangar key staff

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Problem

- Electric aircraft are already here but most airports don’t have the required charging infrastructure
- Upgrading airport substations and grid-hangar connections can cost millions
- Our background in aviation equips us to provide tailored solutions that would not be in the scope of a typical utility company or automotive charging company

Archer eVTOL (Electro.Aero customer)  
Typical automotive charger

Up to 1MW of peak load required per aircraft!
Solution

- SmartHangar enables electric aircraft charging using locally generated energy
- Fully compatible with the new global standard for electric aircraft charging SAE AS6968
- Zero emissions, smart peak load management, and grid-based top-up at cheapest time-of-day

![Basic SmartHangar](Image 1)
![Advanced SmartHangar concept](Image 2)
SmartHangar components

- SmartHangar comprises solar panels, inverter, energy storage system (batteries) and software
- Multiple SmartHangars can form a *Virtual Power Plant* (VPP) for energy trading
- VPPs enable new revenue streams for airports from energy generation and distribution fees
SmartHangar benefits

- Immediate electricity cost savings
- Electric airport attracts new business and reduces carbon emissions
- Electric aircraft ≈ 90% reduction in aircraft noise, zero pollution
- Blackout protection with on-site instant backup power
- Electrify airport ground fleet for major fuel and maintenance savings

New revenue streams:

- Fees from providing aircraft charging services with cheap energy
- Fees from local energy trading via VPP (“behind the gate meter”)
- Fees from supplying external grid via VPP (where allowed)
- Potential to generate green hydrogen locally and on-sell to aircraft

All of this for much lower CAPEX vs major infrastructure upgrades
Electro.Aero is the world leader in aviation charging and supplies industry leaders globally.

Our chargers are powerful, mobile and upgradeable and will soon include a payments platform.

Charger owners can offer their chargers for public use and receive a commission on all payments.

**RAPID Charger: 30-80 kW**
Suitable for fixed-wing light aircraft
Currently in production

**CHARGEBOT Charger: 200 kW+**
Suitable for eVTOL & heavy duty users
Currently in design phase
Example benefits scenario

**Electricity cost savings**
- Maintenance hangar @ 200 MWh/yr
- Current power bill = $30k/yr
- SmartHangar @ $100k CAPEX, 15yr life
- 70:30 SmartHangar / grid power mix
  - SH amortized = $7k/yr = $0.05/kWh
- New power bill = $0.08/kWh = $16k/yr
- Annual saving = $14k
- Payback period = 7 years

**Enable electric aircraft**
- 90% reduction in aircraft noise
- 100% reduction in aircraft pollution
- Attract new business
- Attract positive media coverage

**Revenue from charging**
- RAPID 60 @ $40k CAPEX, 15yr life
- Example scenario:
  - Charge 10 aircraft/day @ 1hr/charge
  - 300 flying days/yr = 180 MWh/yr
  - Revenue = $30/charge @ $0.50/kWh
  - Electricity cost = $0.15/kWh or less
- Assume 1,000 MWh/yr traded
- Airport fee @ $0.05/kWh
- Airport revenue = $50k/yr

**Revenue from local VPP**
- Assume 1,000 MWh/yr traded
- Revenue = $30/charge @ $0.50/kWh
- Airport fee @ $0.05/kWh
- Airport revenue = $50k/yr
- Electricity cost = $0.15/kWh or less
- Other costs (txn, SaaS) = $0.12/kWh
Electric airport upgrade path

- **Stage 1:** Install SmartHangars at viable sites within the airport precinct (no export to grid)
- **Stage 2:** Trade energy P2P within the airport precinct (airport to facilitate and / or sell own power)
- **Stage 3:** Initiate VPP that aggregates to external grid (airport to facilitate and / or sell own power)
Next steps

- Our feasibility study will assess and compare your upgrade options
- We will provide multiple scenarios for size, cost and staged roll-out of upgrades
- Our advanced modelling software will estimate your cost savings and revenue opportunities

What we need from you:
- Site plans for your airport
- Details of your grid connection and tariffs
- 12 months electricity bills
- Access to site for us to inspect and take photos

Report cost is $20,000 paid in advance

What you will get:
- Proposed locations of SmartHangar sites
- Multiple options for staged upgrades
- Indicative pricing for staged upgrades
- Estimated cost savings and revenue scenarios

We will ensure you have all the info you need
Considerations

- What is the mix of airport-owned and tenant-owned hangars and other buildings?
- How do you currently connect to the grid and what are your tariffs?
- What hangar power connections do you currently have?

Solar-powered eVTOL terminal concept

Advanced SmartHangar concept
Contact me to further discuss sustainable solutions

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