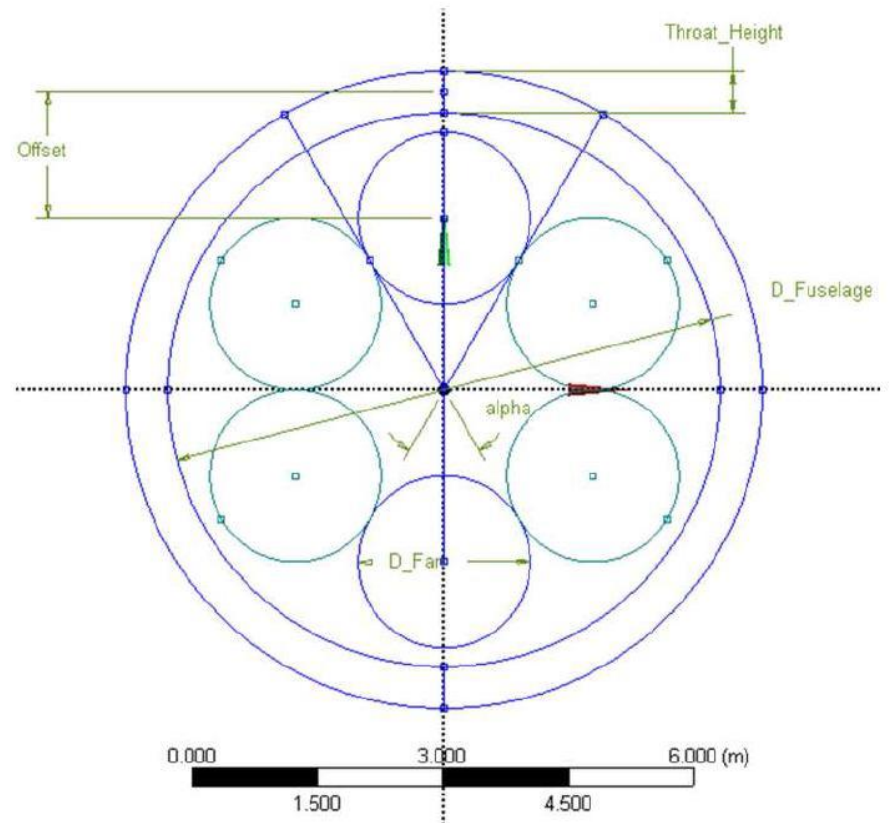


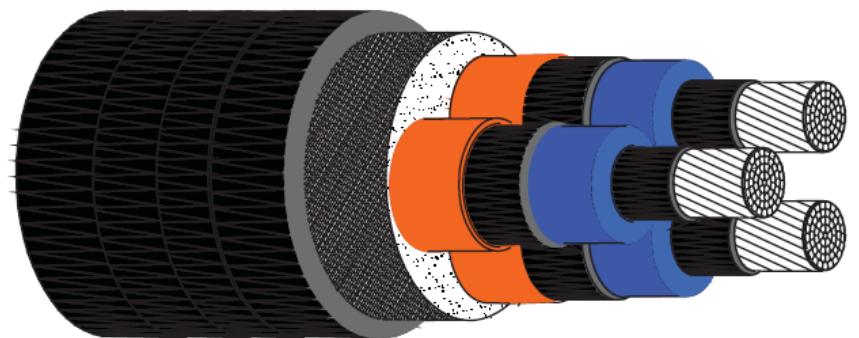
Phase 1 – Assessment of the feasibility of using existing Li-Ion battery technology to power 6 off Boundary Layer Ingestion (BLI) fans, at 250kW each for a short period only.

Phase 2 – Replace battery with a novel, separate power supply with large generators or larger engine driven generators for continuous operation.

- 1.5MW for 10 minutes is 900MJ (250kWh).
- Energy battery not power battery (6C).
- Battery is centre point earthed (Boeing 787 dc voltage is $\pm 270V$ dc) at $\geq \pm 500V$ dc.
- Battery energy density is around 120 Wh / kg or 120 kWh / m³
- 10 minute battery weighs the same as 23 people plus their bags.
- Alternative battery technologies not considered.



Cables between the inverters and the 6 motors at 690V could be 6 off three core aluminium 300mm² cables which would weigh 22.5 kg / m (for all 6).



Current battery energy densities mean a 10 minute battery could be used to support a flying demonstrator to validate modelling and wind tunnel tests at full scale.

Battery cells need to be reconfigured for the required voltage and for even weight distribution around the aircraft. Battery dc voltage will be at least twice the existing aircraft dc voltages.