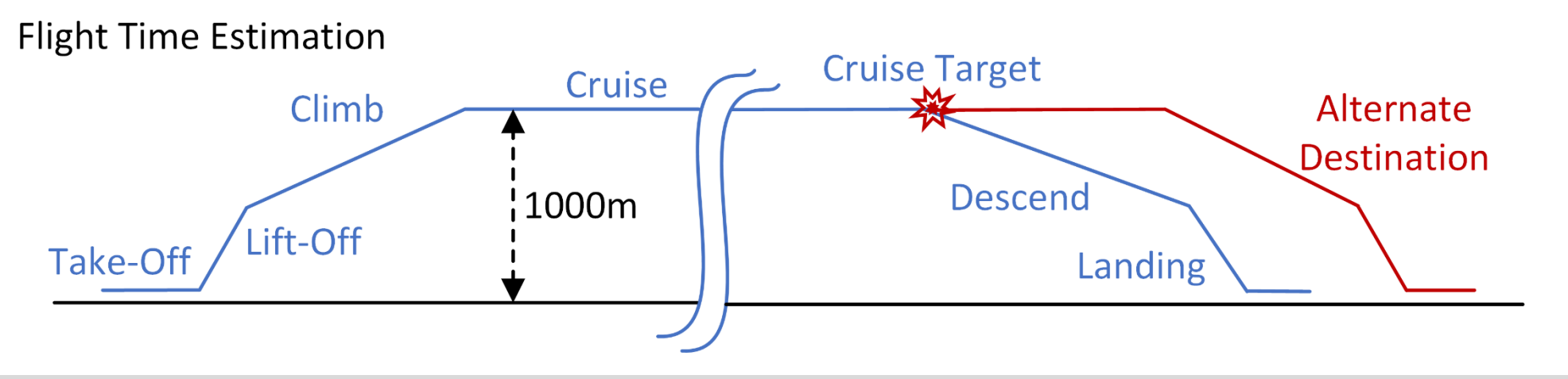


# Feasibility Study on a Fuel Cell Based Powertrain for General Aviation



## Requirements and Design Considerations Blended Wing Aircraft Concept for Power Demand Optimization



Blended Wing Fuel Cell Based eCTOL Aircraft

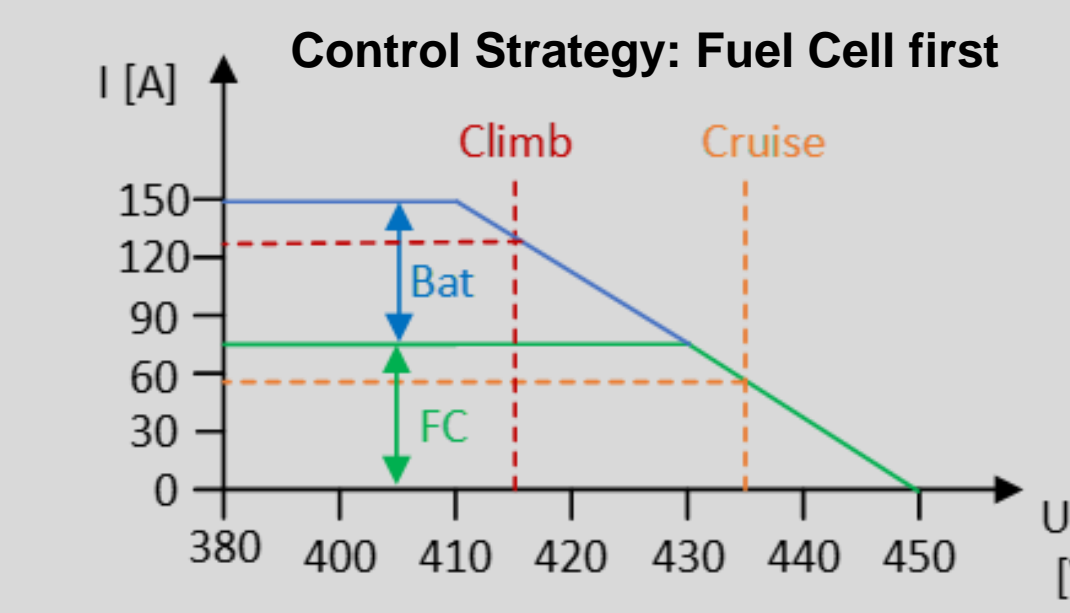
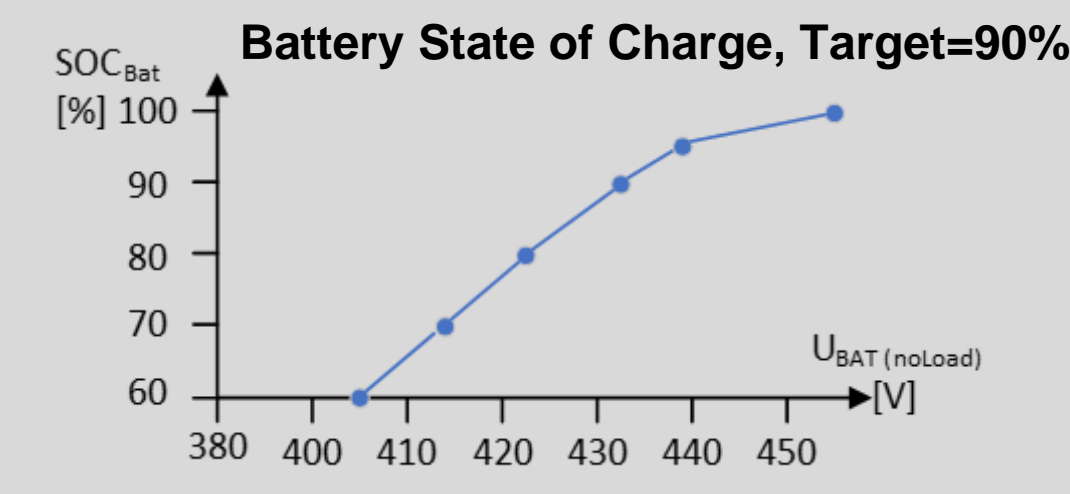
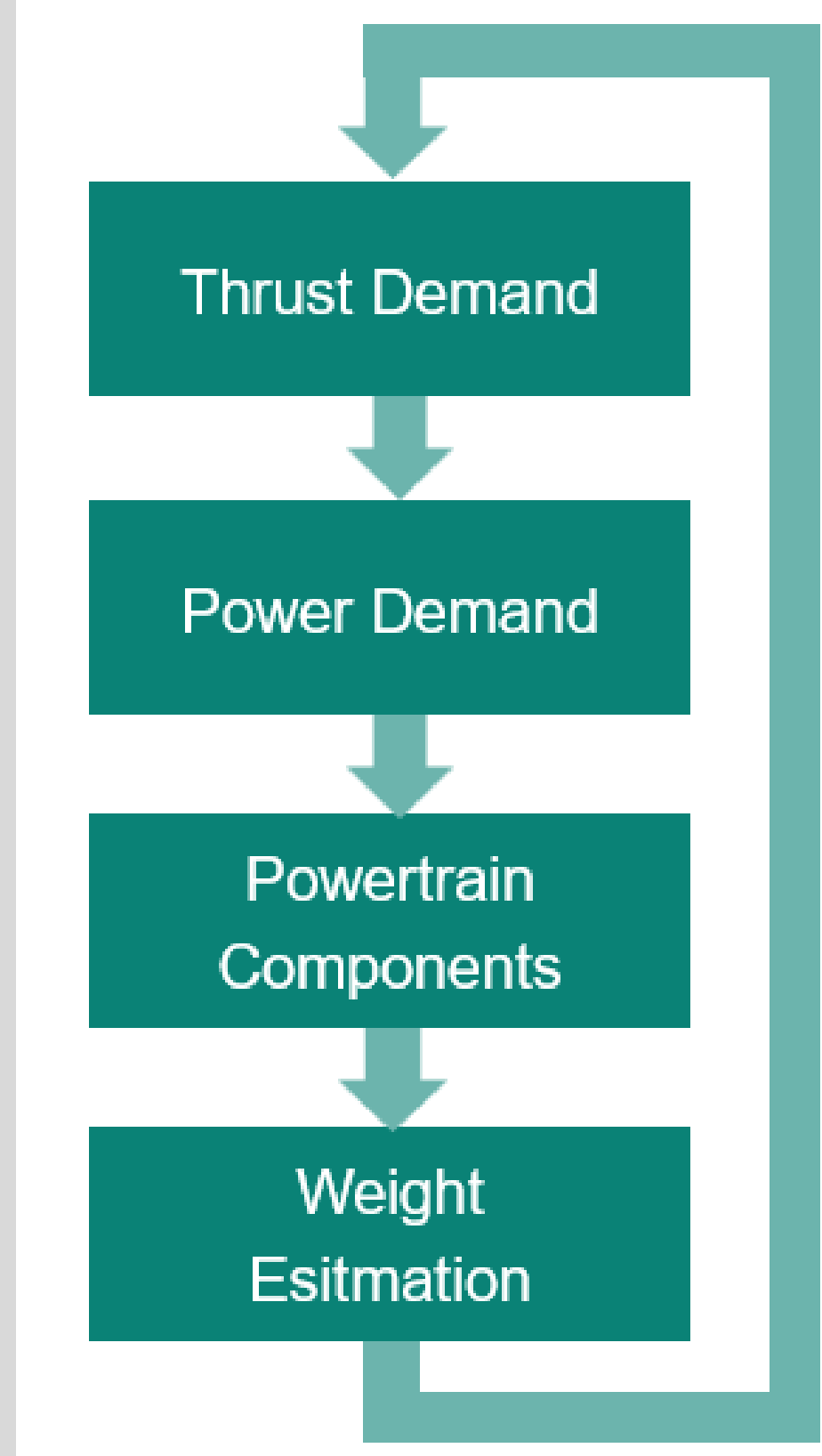


Blended Wing Fuel Cell Based eVTOL Aircraft Version

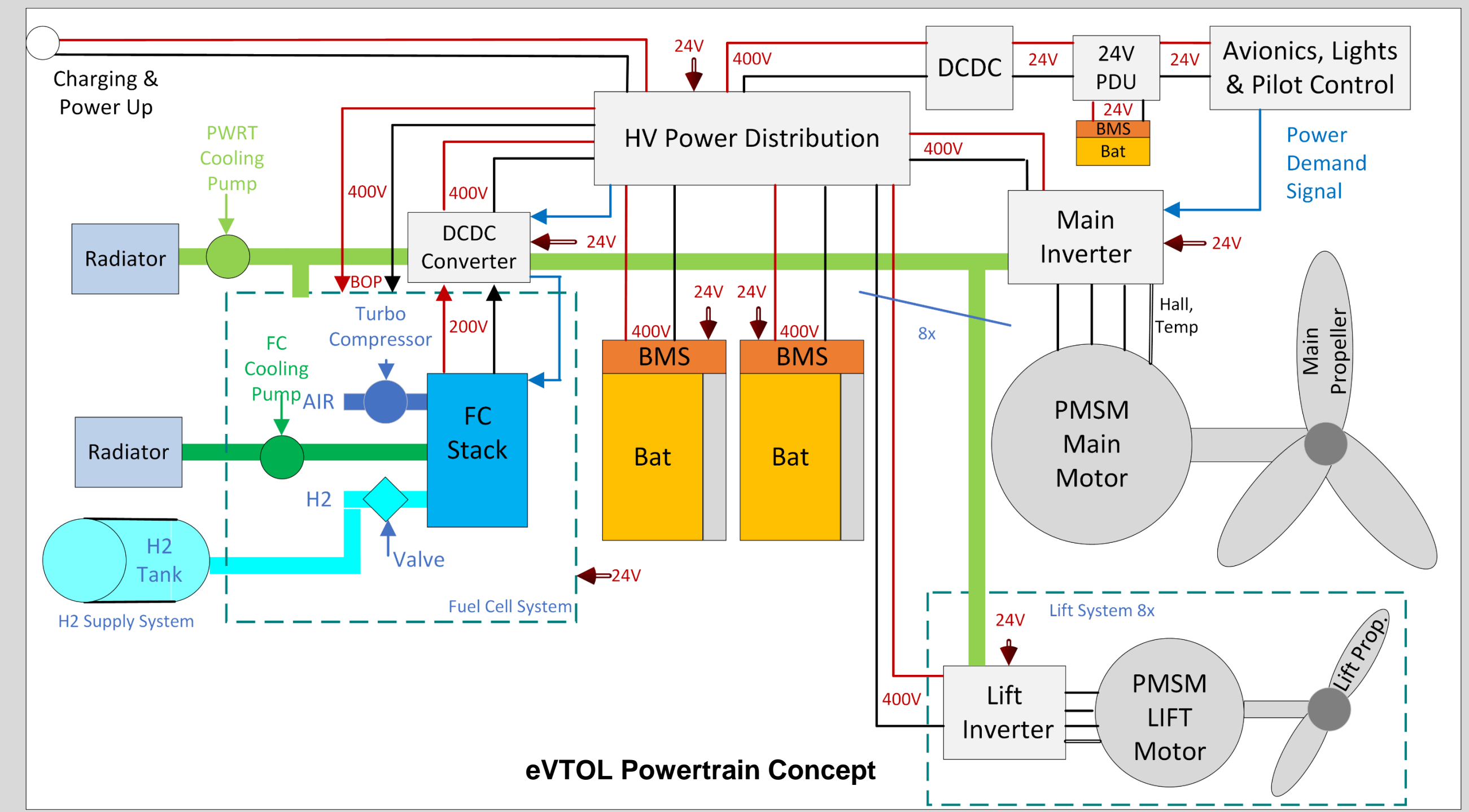
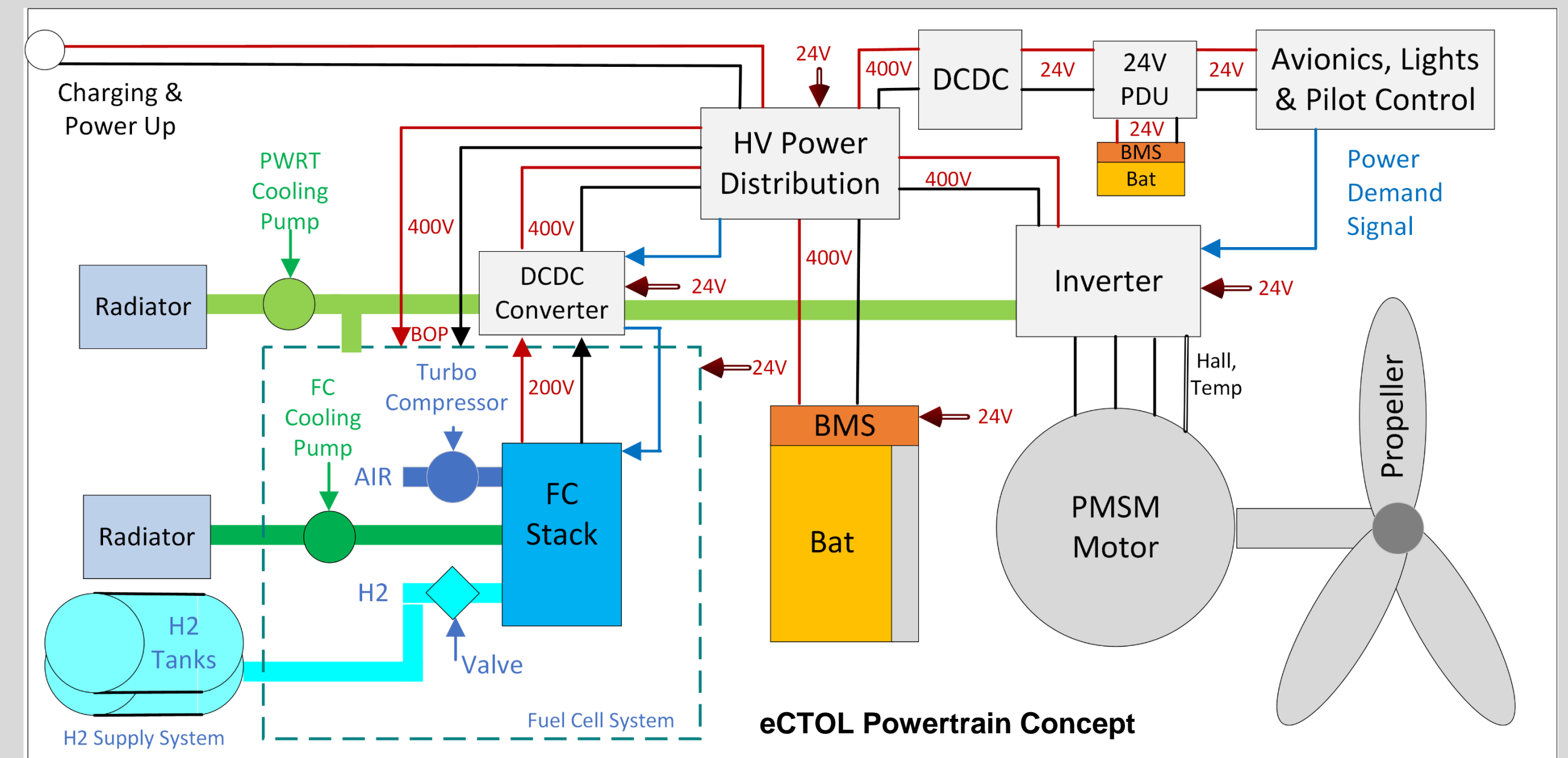


Blended Wing 1:2 Model Plane for Aerodynamic Testings

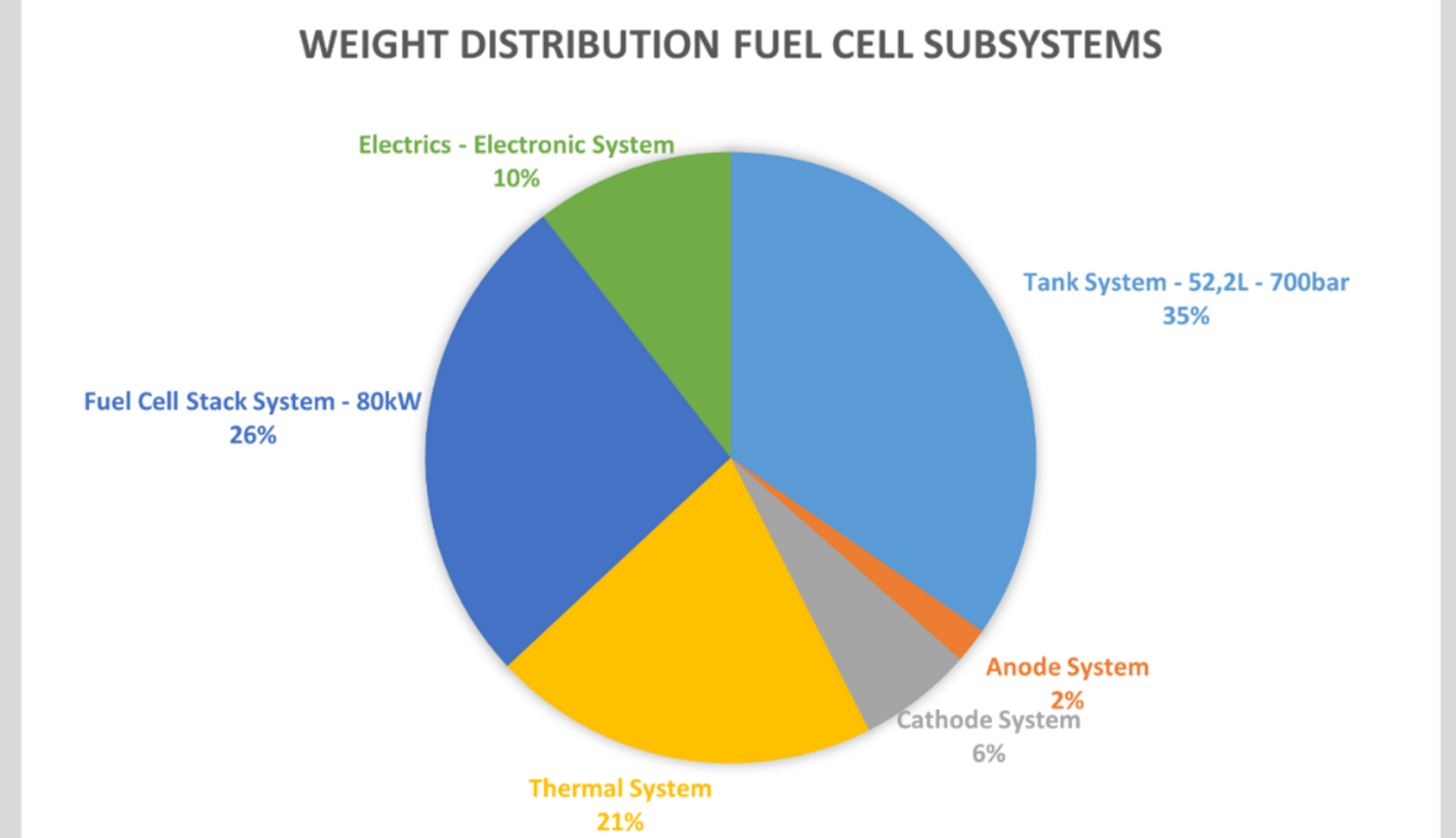
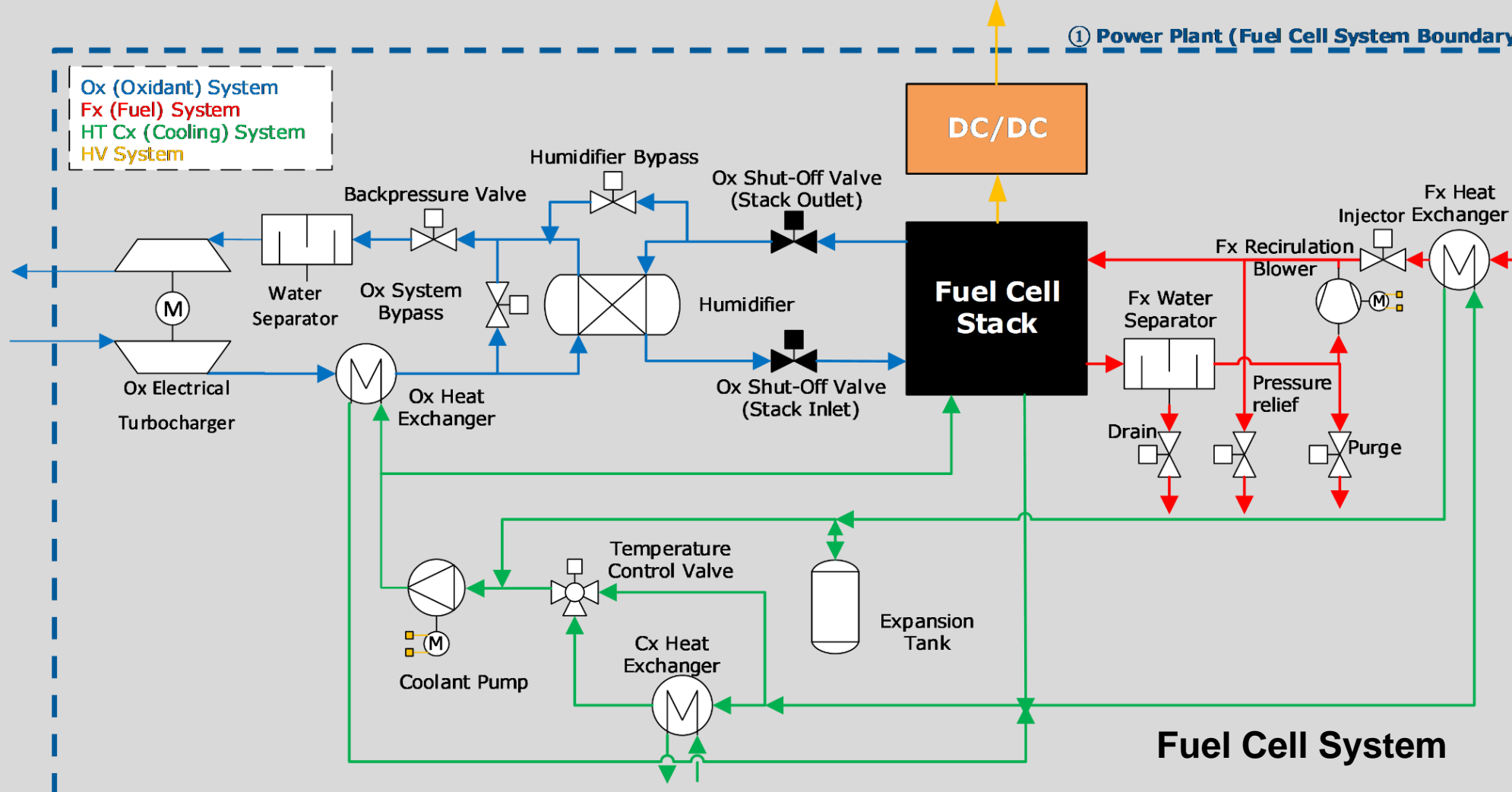
### Conceptual Design Interactions



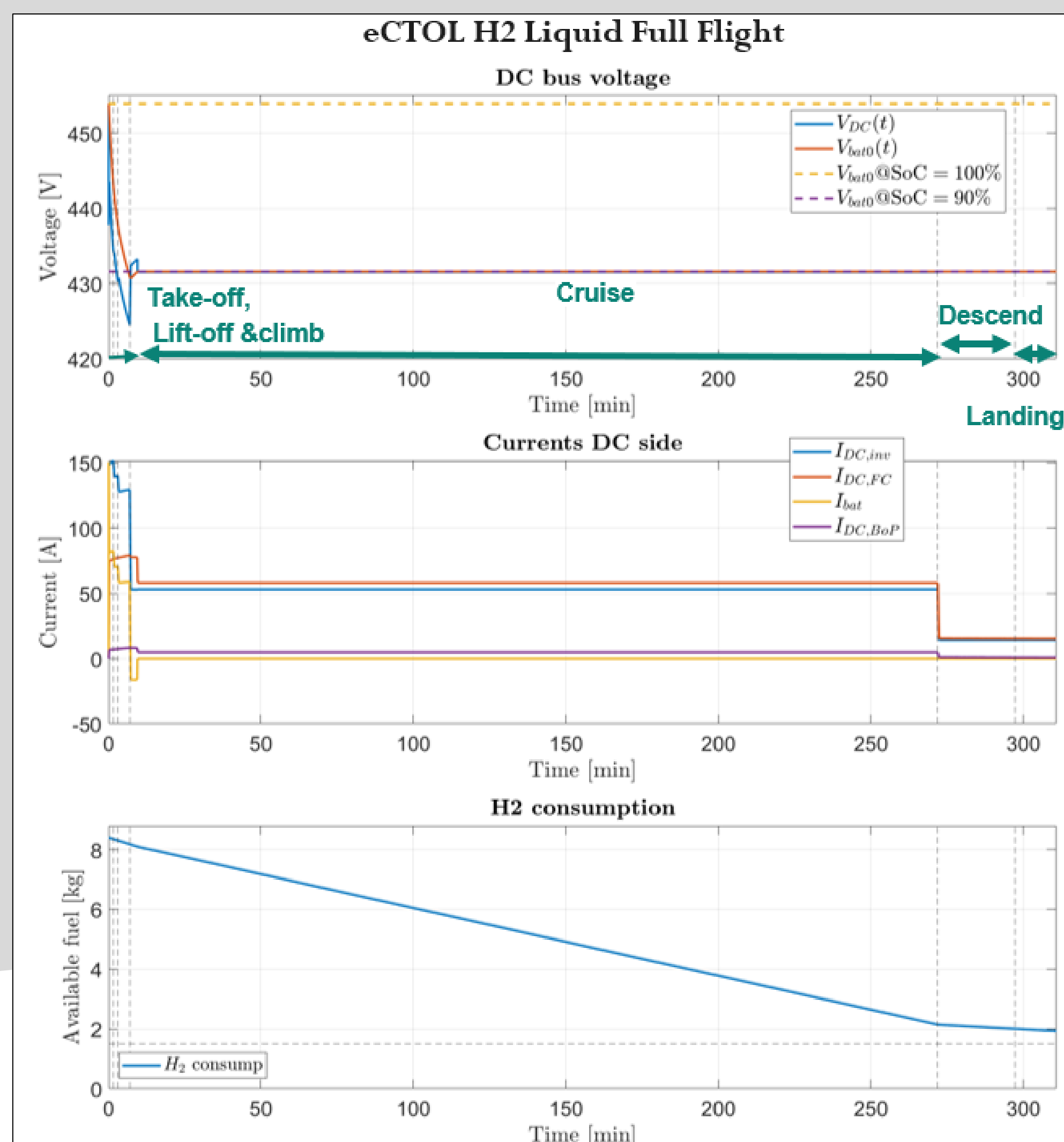
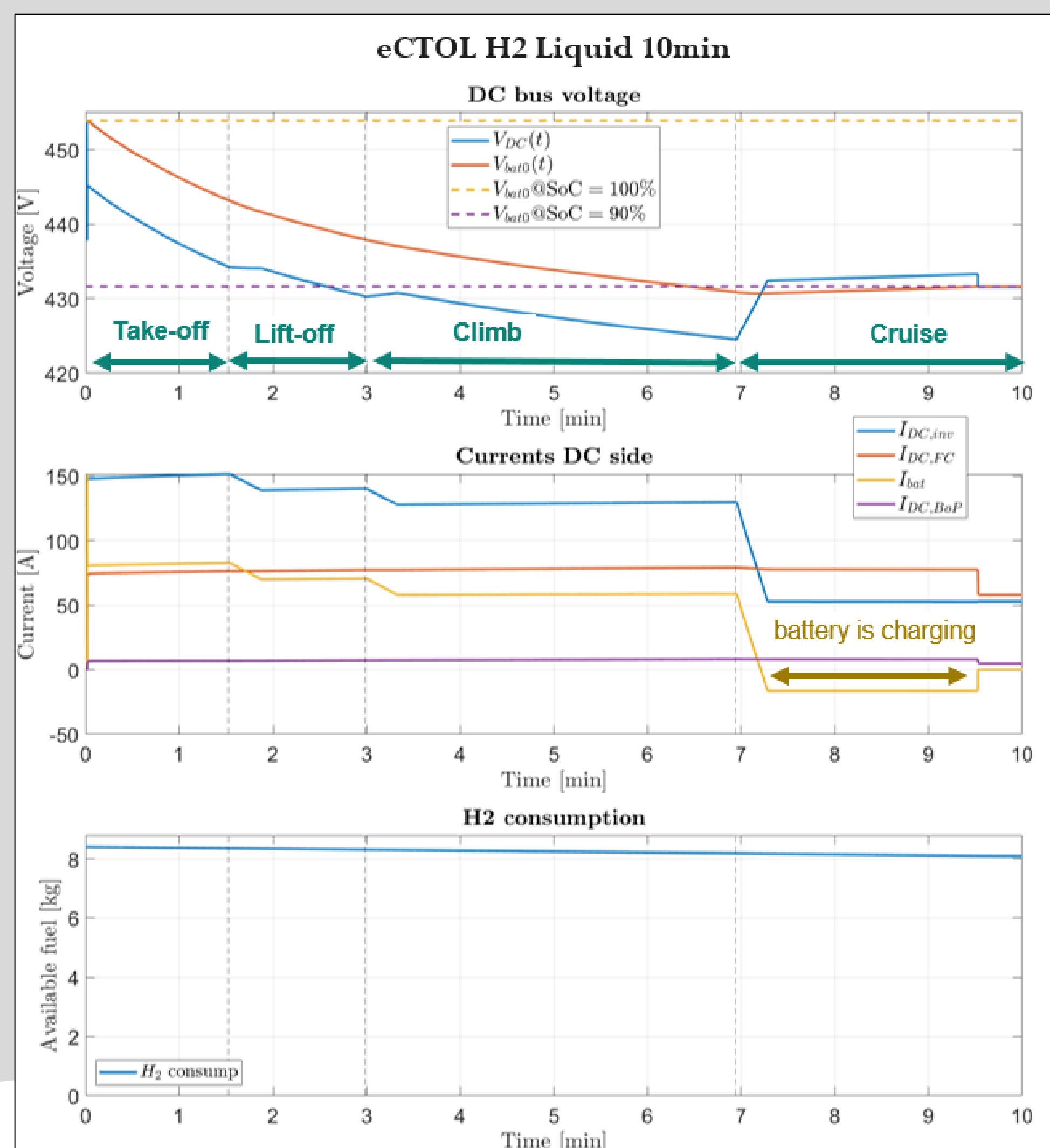
## Powertrain Concepts for eCTOL and eVTOL Design Versions



Fuel Cell Specific Data:  $30\text{kW}_{el}$ ,  $240\text{V}_{0\text{kW}}/200\text{V}_{30\text{kW}}$ ,  $\eta=45\% @ 30\text{kW}$ ,  $\text{H}_2\text{-cons.}=2.4\text{kg/h} @ 30\text{kW}$



Transient Simulation Results: eCTOL achieves >4.5h of cruise flight time with 8.4kg liquid H2



Power Estimation Results:  
30kW Fuel Cell sufficient for eCTOL & eVTOL cruise

