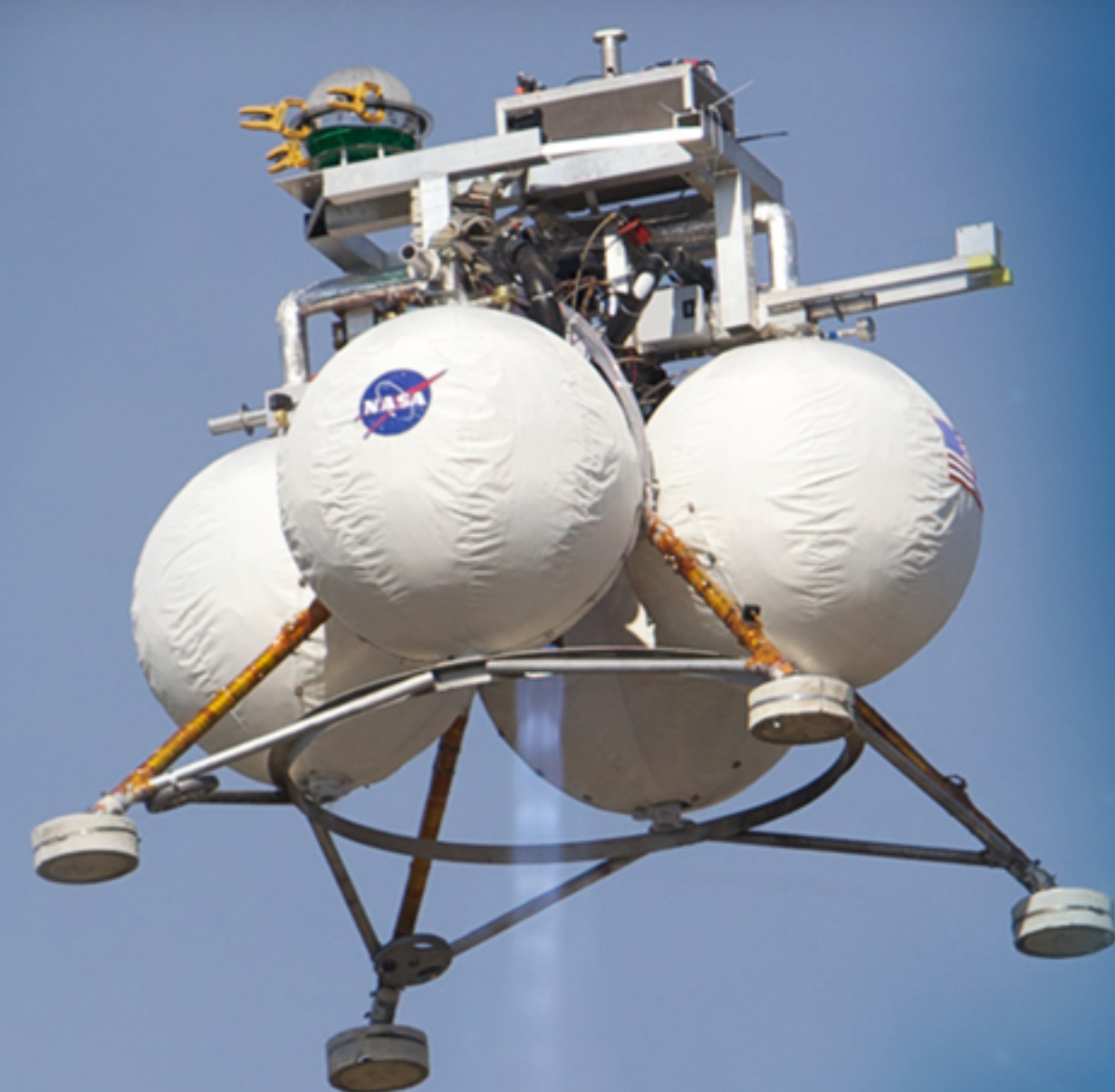


SOLID OXIDE FUEL CELL

for LOX/LCH₄ Propulsion



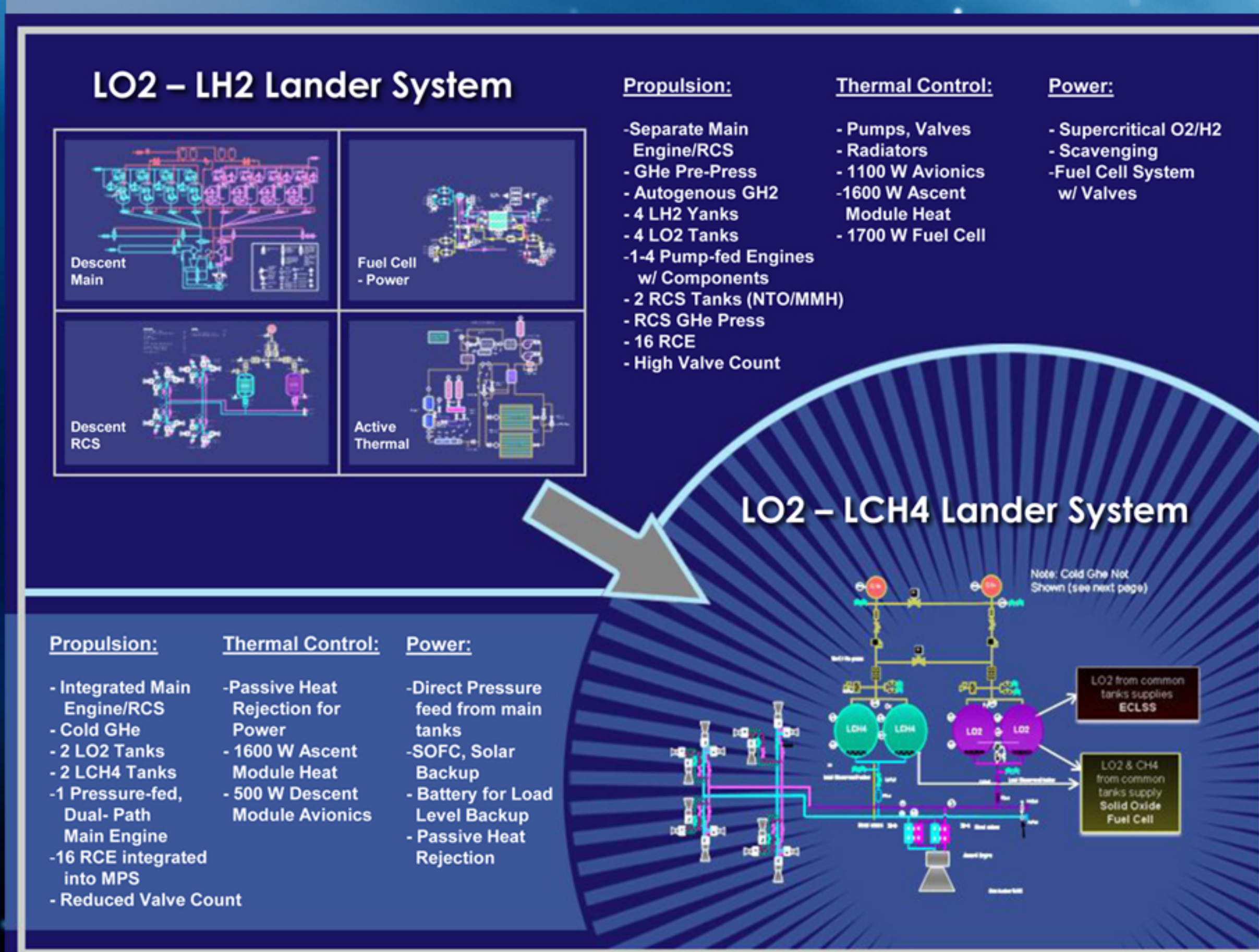
LOX Methane Lander

- Vehicle & Subsystem integration with SOFC potentially reduces size, complexity, & dry mass

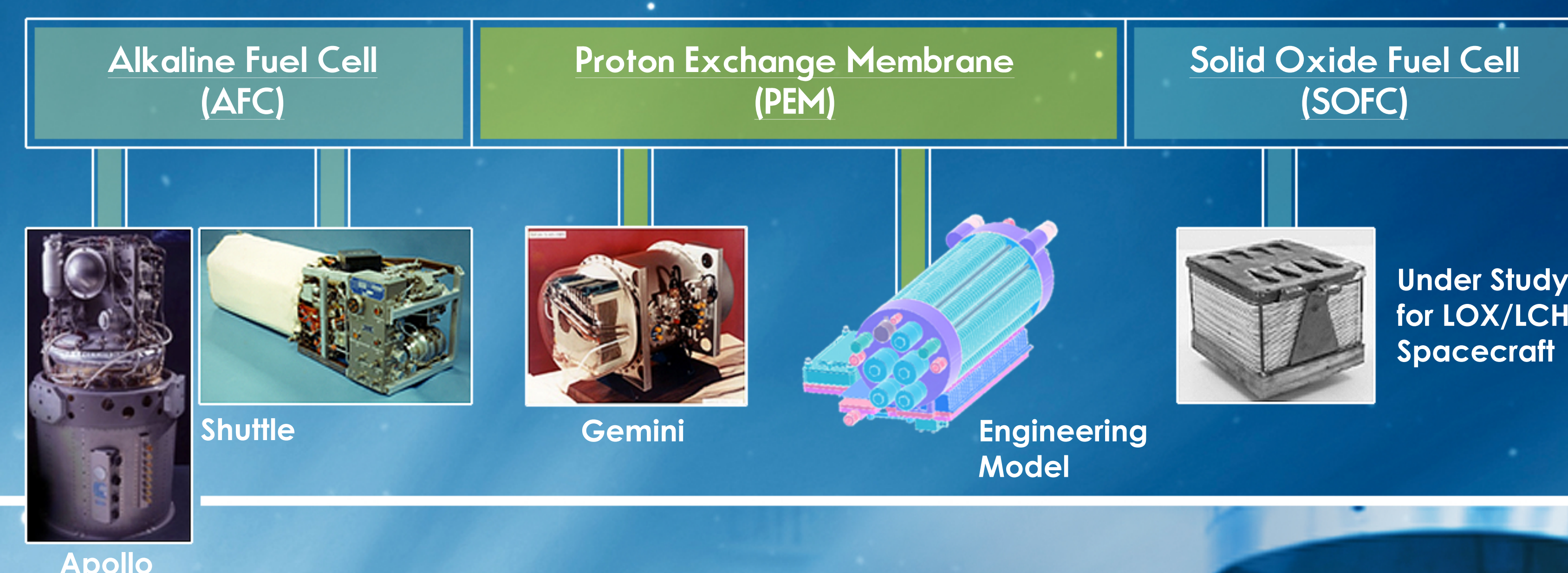
Conceptual Designs



System Complexity



Fuel Cell Chemistries of Interest for Spacecraft Application

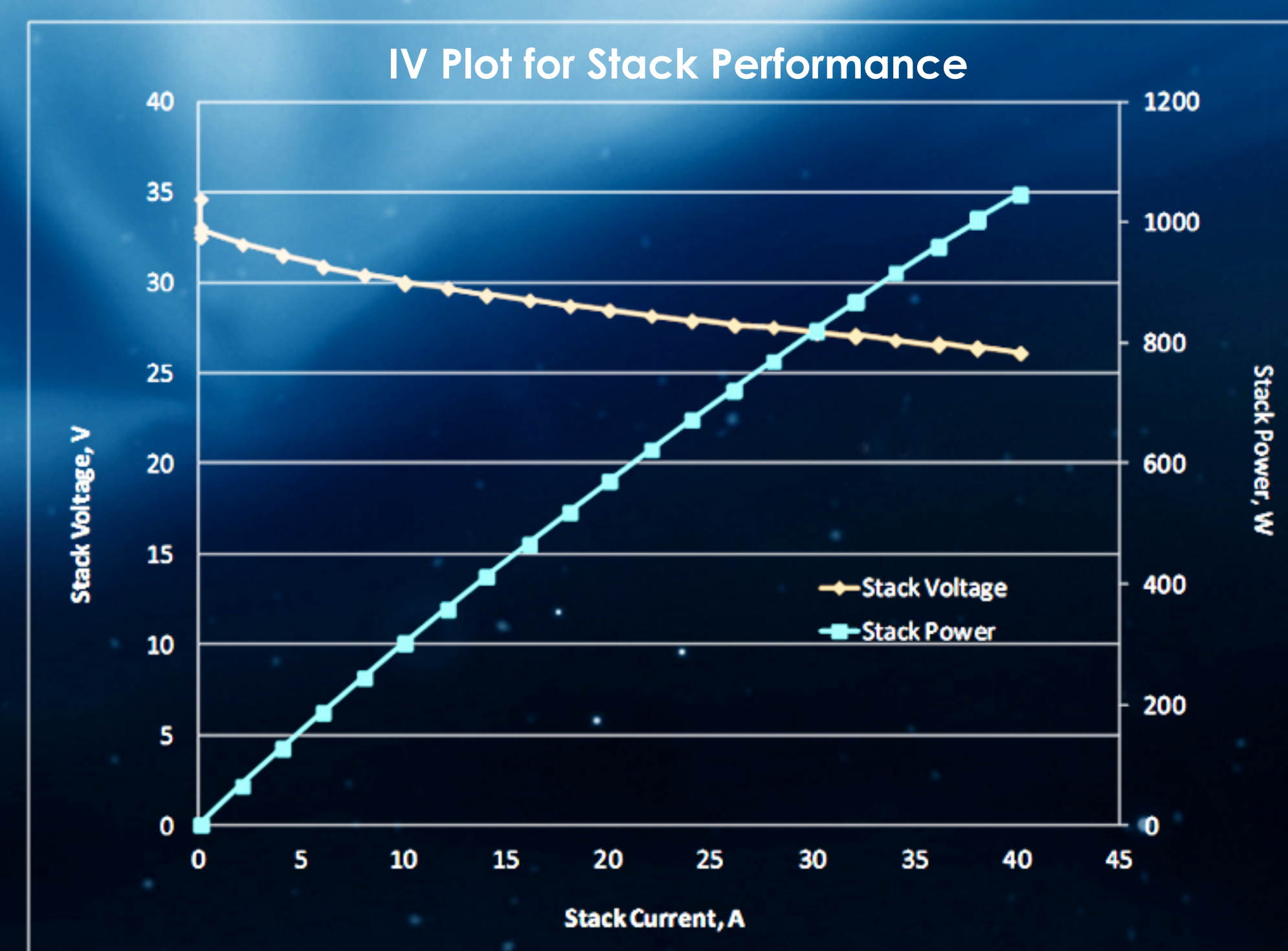


NASA SOFC Evaluation

- Pure O₂ / CH₄ Operation
- Simulated Lander Profile
- CPOX Reformer



CPOX Reformer



30-cell Stack

Feeds to the CPOX reformer were 3.3 L/min O₂ & 4.9 L/min CH₄. Cathode Inlet Feed was 5.5 L/min O₂

SOFC Test Stand