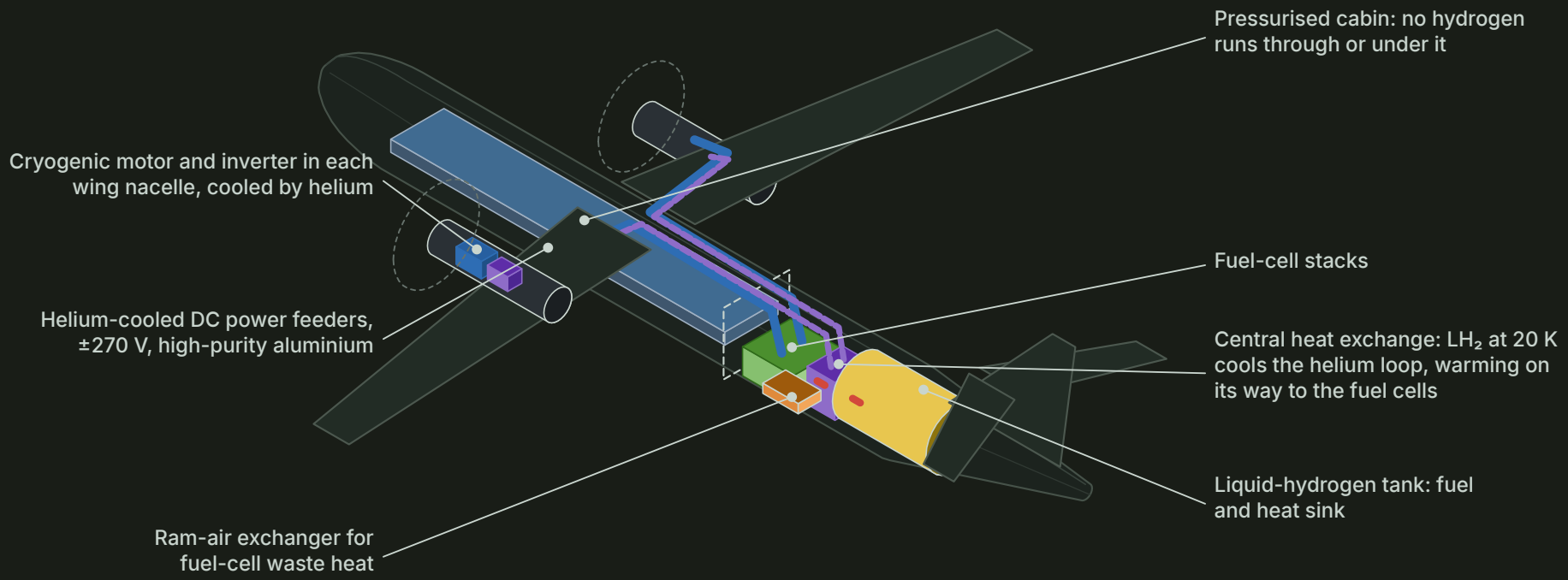
GKN Aerospace H2GEAR: one rear hydrogen zone, central helium cooling

Hydrogen never leaves the rear fuselage. Liquid hydrogen cools a helium loop; the helium cools the cables, inverters and motors out on the wing.



All hydrogen storage, conditioning, heat exchangers and fuel cells sit in one rear zone; electrical power, not hydrogen, is distributed. GKN estimates the cryogenic powertrain about 12 % lighter than a conventionally cooled one (48-seat study), with cryogenic cables 3–4 times lighter per unit length.

Hydrogen (rear zone only) · Cryogenic DC feeder · Helium loop · Fuel-cell heat

Isometric schematic (Vassal, DesignCraft) after Hales et al., H2GEAR, AIAA AVIATION 2023, doi:10.2514/6.2023-3874 (Figs 3 and 7). Notional regional aircraft; proportions indicative.