



Cranfield University

UNDERPINNING A NEW HYDROGEN ECONOMY IN THE UK

Professor Chris Fogwill Email: Chris.Fogwill@cranfield.ac.uk

www.cranfield.ac.uk

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HvPER Bio-HyPER

Sorbent elutriates through reactor to filter while heavier catalyst remains

 CO_2 absorbed by sorbent forcing more CO_2 to form (Water-Gas Shift)

Steam Methane Reforming produces H_2 , CO & CO₂







Water management for electrolysis

An example of how we work across 'conventional' hydrogen production



958 Million litres of water required each day



Linking source water to treatment options for safe provision of high quality water



Science on new tech for electrolyser water supply

WATER TECHNOLOGIES



Establishing water quality thresholds for electrolyser application



Integrating electrolysers on-site with existing treatment technology









Manufacturing & Materials Composites & Advanced Materials Centre

national**grid SLEVIDIAN**[®]



Multifunctional graphene coatings for pipeline protection (G-COAT)



A project designed to support National Grid on the comprehensive upgrade of their gas pipeline network for the future transition to pure hydrogen transmission.

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240kW hydrogen fuel cell system in each nacelle, including fuel cell stacks, balance of plant and control unit

220kW Electric Propulsion Units in each nacelle; motor + inverter-controllers Propellors: conventional, 3-blade, variable pitch, max RPM 2300

Hydrogen Fuel Distribution System: pipework & devices to distribute H2 fuel from tank to fuel cell

Human Machine Interface: modified controls & displays

Thermal Management System: one per nacelle; advanced heat exchanger, providing integrated liquid cooling for HFCS, EPU & PDS

HYDROGEN

Hydrogen Fuel Tanks: stored at 700 bar gaseous Power Distribution System (PDS):

Power Distribution System (PDS): conversion & distribution of electrical power output from HFCS to EPU, HFCS balance of plant & 28V aircraft systems

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Distance, nautical miles





Thank you for your attention, do reach out if you want to partner with us *

JET ZERO



https://hydex.ac.uk Chris.Fogwill@cranfield.ac.uk

H2 INNOVATION

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H2 INTEGRATION