

Investing in the Future Fuel

Developing a low-cost green hydrogen production system

HYDROGEN
FUTURE INDUSTRIES

Hydrogen is critical to combatting climate change

- It can provide the lowest-cost decarbonisation solution for 22% of final energy used by 2050, roughly equivalent to the role electricity takes in today's global energy mix (hydrogen council)

- Our unique, highly efficient wind turbine, combined with our high-performance electrolyser, aims to generate green hydrogen for under \$2/kg
- Our business model focuses on reducing production costs by reducing the cost of renewable energy to produce hydrogen
- Commercialisation paths include hydrogen power systems for off-grid and remote energy supply for heavy industry and EV charging, and establishing offshore wind-to-hydrogen energy hubs

The Hydrogen Council estimates by 2050...



Global
Hydrogen Market



Annual CO₂
Abatement



Global Energy Demand Met
By Hydrogen

Our system: wind turbine

Advanced aerodynamics and rotor blade design

- Features advanced aerodynamics and rotor blade design
- Smaller, quieter, safer, more efficient alternative to existing open rotor wind turbines
- Proprietary rotor blade design with optimised cowling directs airflow across blades, creating multiple factor increase in wind speed
- Years of numerical modelling and wind tunnel development have indicated **3x increase in energy generation over existing open rotor wind turbines** due to unique design spreading energy across rotor blades
- No gearbox or generator required: reduces weight and cost of nacelle; simplified installation and maintenance; standardised transportation
- Phase I and II testing with 1 metre diameter prototype completed in Montana, USA; Phase III testing of upgraded turbine to measure energy output and gather data is underway with initial data supportive of the system's capacity to produce low-cost renewable energy and therefore affordable green hydrogen
- Acquisition of patents in 2022 significantly enhances IP around key features of the energy system and have potential wider commercial applications in the renewable energy sector



Our system: high-performance electrolyser

Our electrolyser aims to improve power efficiency, longevity and cost; testing at up to **97% efficiency**

- Developing an Anion Exchange Membrane Water Electrolyser (AEMWE) without platinum group metal catalysts – cheaper and more readily available materials
- Features include:
 - 50% cheaper than Proton Exchange Membrane (PEM)
 - Variable Cell technology that optimises the electrolyser to the available energy, works with renewable energy
 - 7-10 year membrane life
 - Zero Gap
 - Carbonised material electrodes
 - No wash-off of catalysts provides exceptional electrode life without output efficiency depletion over time as with PEM
- Completed build of two electrolyser test cells – achieved exceptional efficiency of up to 97%
- Concept testing led by quantum-physicist Dr Nicholas Blake in California
- Patent searches and application writing underway

Our team

Neil Ritson, *Non-Executive Chairman*

Energy sector professional including 20 years in technical and managerial positions with British Petroleum.

Daniel Maling, *Executive Director*

Member of the Chartered Accountants of Australia & New Zealand with over 20 years' corporate experience.

Fungai Ndoro, *Non-Executive Director*

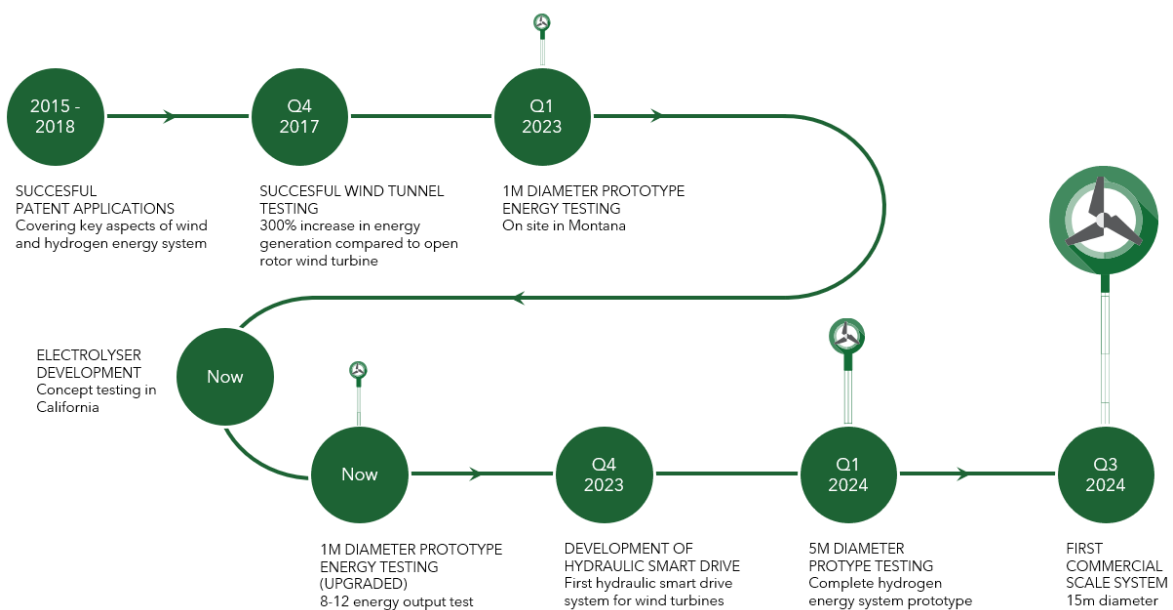
Experienced growth companies corporate financier in the resources, technology and life sciences sectors.



Tim Blake, *CEO, HFI Energy Systems*

Considerable experience in development of efficient turbine systems for over a decade including multiple patents.

Development Roadmap



Contact

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