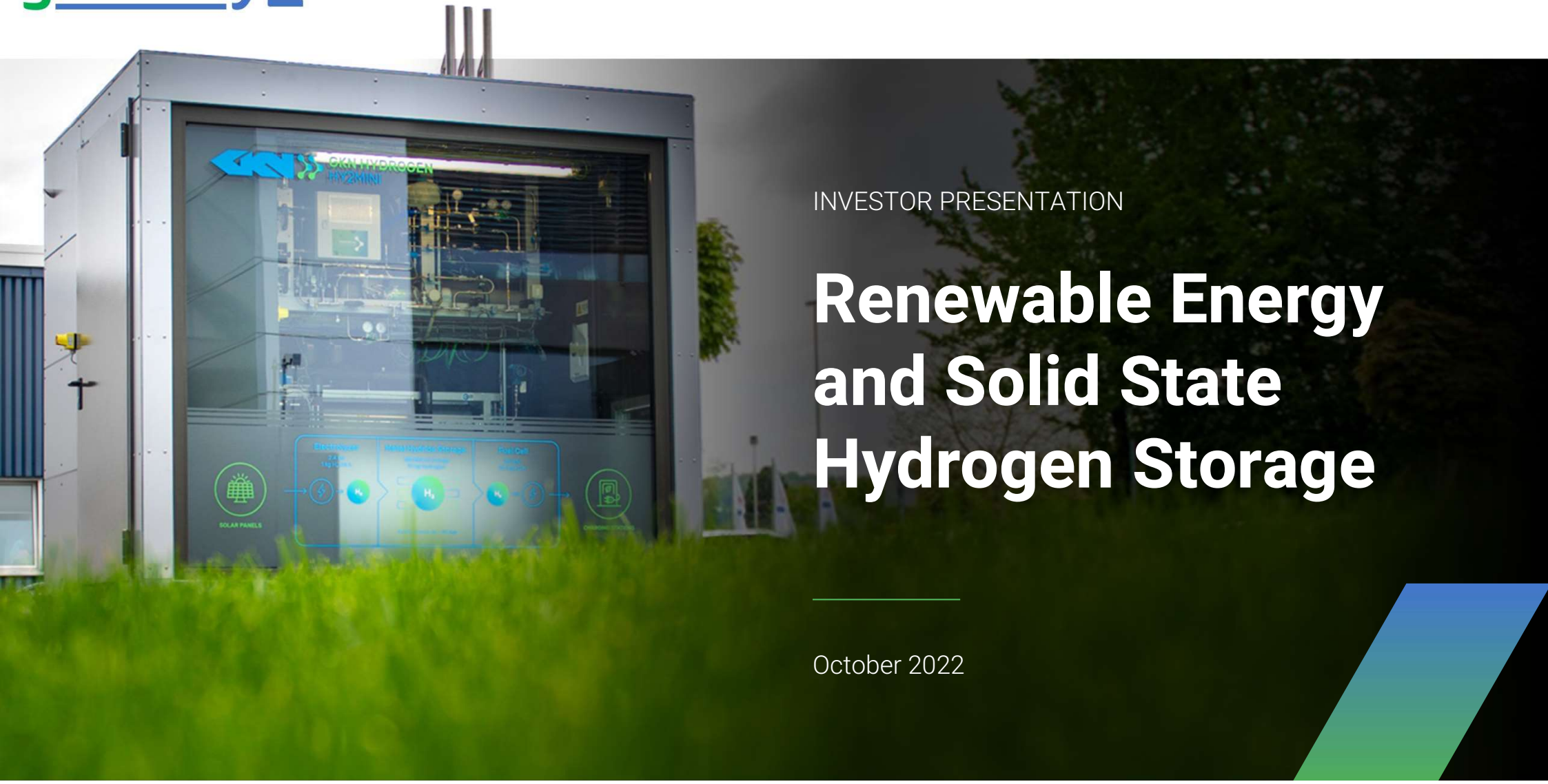
tempo greenHy2




INVESTOR PRESENTATION

# Renewable Energy and Solid State Hydrogen Storage

October 2022

# Table of Contents

## Overview

# Bringing the 100% Renewable Solid State Hydrogen Storage solution to Customers

**Tempo Australia* (GreenHy2), is commercialising the next generation of Stand-Alone Power Supplies using Solid State Hydrogen Storage Technology that will provide Australia's electricity networks with a 100% Renewable Fraction, Off–Grid, Safe and Reliable renewable energy solution.**

GreenHy2 will capitalise on the benefits of solid state storage of Hydrogen to increase energy dependability, reduce cost and strengthen Australia's renewable energy supply network.

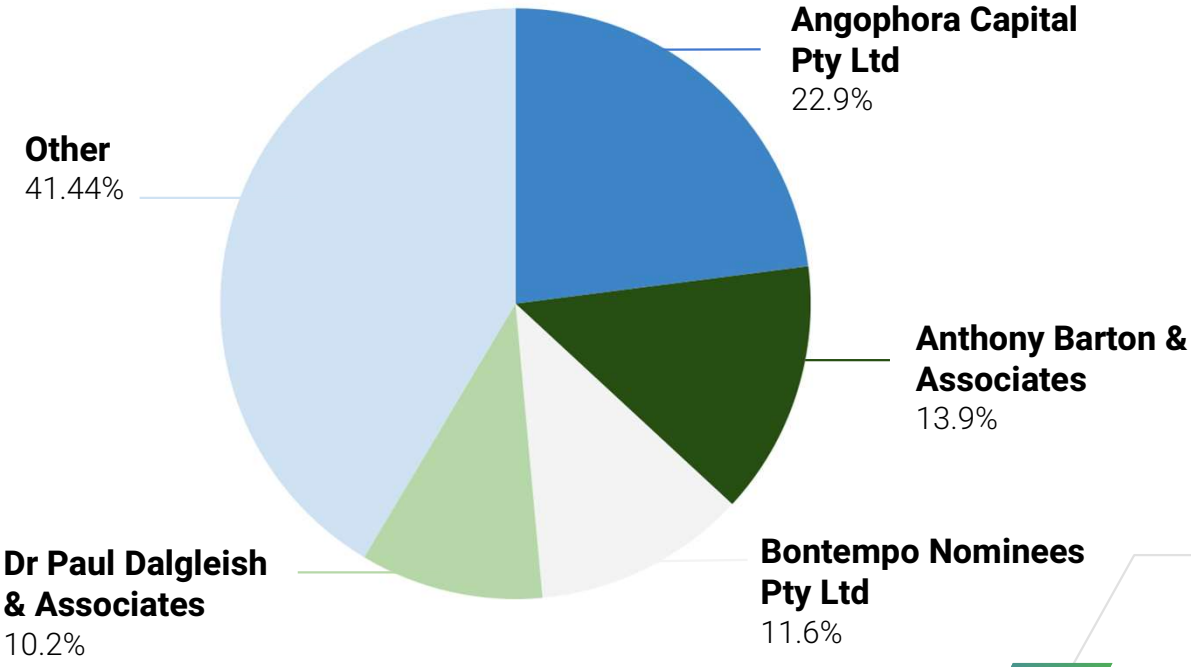
* Rebranding

# Company Snapshot

| | |
|---|---|
| **ASX Ticker** | TPP* |
| **Shares on Issue** | 364,135,506 |
| **Performance Rights on Issue** | 26.3M |
| **Options on Issue** | Nil |
| **Market Cap** | $12m |
| **Cash @ Bank** | $1.2m |
| **Debt** | Nil |
| **Enterprise Value** | $10.8m |
| **Top 20 Ownership** | 72.42% |

***Name and ticker change pending shareholder approval at EGM on 9 November to greenHy2 and ticker H2G**

## Top Shareholders



# The Board and Key Management Personnel

## Dr Paul Dalgleish

Executive Chairman

Dr Dalgleish has had over 30 years of experience in senior management roles of Engineering companies including Chief Executive and Managing Director of Public listed engineering companies for over 15 years.

Dr Dalgleish is recognised as a turnaround/start-up specialist with strengths in strategic positioning for growth; has operated across a range of sectors, from infrastructure to resources and throughout diverse geographies.

Dr Dalgleish has an Honours degree in Engineering, Doctorate in Business and is a Fellow of the Institute of Engineers and a Member of the Institute of Company Directors.

## Mr Charles Rottier

Non-Executive Director

Charles is a professional non-executive director which follows a successful executive career in engineering focussed organisations. He has most recently stepped down from the position of Chair of LogiCamms Pty Ltd, following a successful turn-around and merger.

Previously, Charles has held roles in executive management, CEO, and Chief Strategy Officer for companies including Austin Engineering, Transfield Services Design and Construction Group, MWH Australia, and CMPS&F Pty Ltd.

Charles is currently Chair of Future Fuels CRC, which is researching the transportation of low carbon fuels, and a director of Pinssar, a technology start-up Company.

Charles has an Honours degree from University of Sydney, is a Fellow of Institution of Engineers Australia, and a Graduate Member of AICD.

## Mr William Howard

Director, CFO and Company Secretary

William Howard was appointed Chief Financial Officer and Company Secretary in July 2019 and Executive Director in August 2019.

Bill brings significant experience to both these roles, having served for the past three years as the CFO of a Financial Services company in Western Sydney, realigning financial systems, operations and reporting, along with coordinating due diligence processes for interested parties on potential acquisitions.

Prior to this, Bill had performed the role of General Manager Finance to a mining services business in the Hunter Valley, whilst managing and operating his own labour hire company. The preceding decade saw Bill as Regional Operations Manager at AJ Lucas and previous to that with Lahey Constructions Pty Ltd as General Manager Finance.

Bill holds a Bachelor of Financial Administration and is a qualified Accountant.

# The Board and Key Management Personnel

## Mr Paul Thackray

Head of Group Operations

Engaged in implementation of all aspects of the operations including implementation of the core Green Hydrogen strategy for the company including divestment of non-core operations, funding and procurement of government grant and R&D funding.

Previously Paul was co-owner and CEO of a software consulting and development business from 1994 to 2012 employing 30+ staff developing bespoke software for various ASX 200 and private clients.

Paul holds a Bachelor of Commerce (Accounting, Finance & Systems) and is a member of the Australian Institute of Company Directors.

## Dr Tony Pignat

Executive General Manager

Tony has over 35 years of construction, operation and maintenance experience in the resources sector having worked in various senior management roles in Western Australia, New South Wales, Hong Kong, and the People's Republic of China.

His experience includes the management of the construction teams on large scale iron ore processing facilities for Rio Tinto, BHP and FMG. Tony has also worked as a mine manager and quarry manager for various ASX listed companies that involved various day to day operations and maintenance roles.

## Dr Luc Bodart

Manager and Chief Engineer

Over 30 years of international experience in engineering and project management within Design-Build, EPC and BOOT environments, related to major municipal and industrial water and power generation projects. Establishing new entities in Thailand, Malaysia and Indonesia, developing the strategic directions and responsible for the P&L of those new companies.

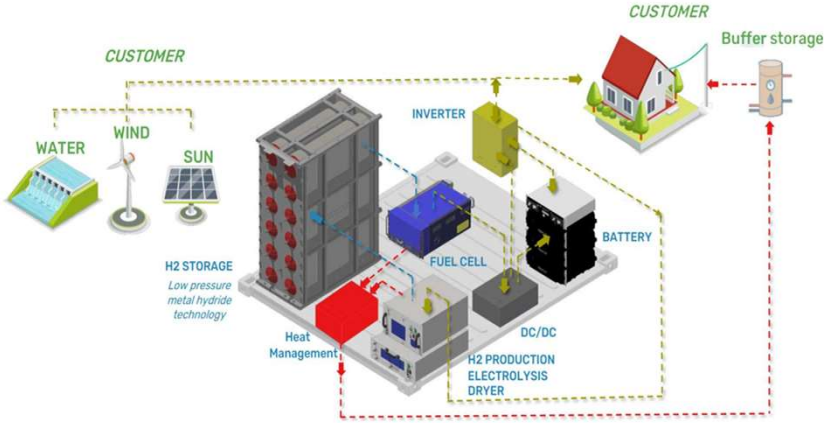
Consistently delivered higher than forecast margin and EBIT on various construction projects including the Senipah Combined Cycle Power Plant (East Kelantan, Indonesia), Thai Oil Co-Generation Plant (Thailand), Chandra Asri Refinery Utilities Boilers (East Java, Indonesia), Kaeng Khoi Power Plant WTP (Thailand), Salalah SWRO (Oman), Johor River Water Works (PUB at Kota Tinggi, Malaysia), Tamar Valley Power Plant (TAS), Pimpama WWTP Alliance (QLD).

# Intellectual Property

## Metal Hydride Technology - GKN

GKN Developed the first Commercial Solid State Storage System for Hydrogen with Integrated Electrolysers and Fuel Cells. The robust system generates green hydrogen from 100% renewable energy sources, storing it compactly and safely in metal hydride for reuse when there is no generation.

## Solar and off Grid IP – GKN and GreenHy2

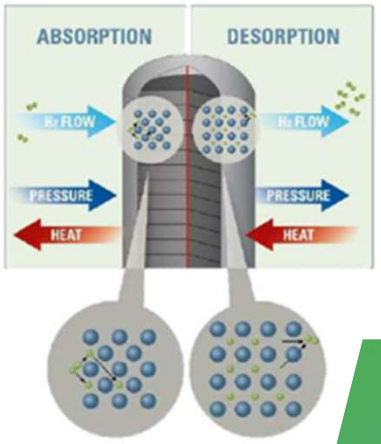


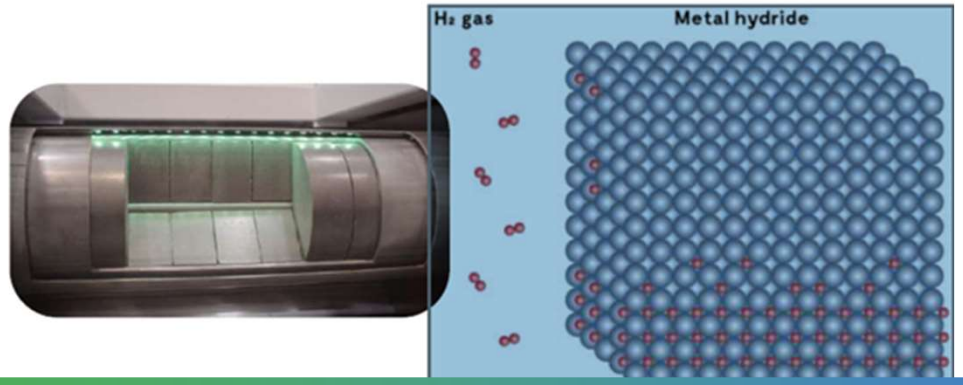

Tempo have been working with GKN over two years to provide a fully compliant solution to the Australian market. This included Design of the integrated system to meet 100% off-grid capability being fed from 100% renewable fraction; is in full compliance with Australian electrical requirements, safety standards, HAZOPs and Fire regulations; has the capability to integrate into a local solar configuration; and, be compliant with a Government Utility and National Parks regulations and requirements.

# Technology
## Solid State Hydrogen Storage in Metal Hydrides

### Key Features

- The technology for creating the Metal Powder Lattice is patented
- Hydrogen is stored as a solid within the Metal Powder Lattice
- Metal Powder retains its lattice structure permanently and does not degrade




H2 is stored as metal hydride / solid state

Low pressure (<40 bar) - inherent

Low temperature (<65°C)

# Technology
## Solid State Hydrogen Storage in Metal Hydrides

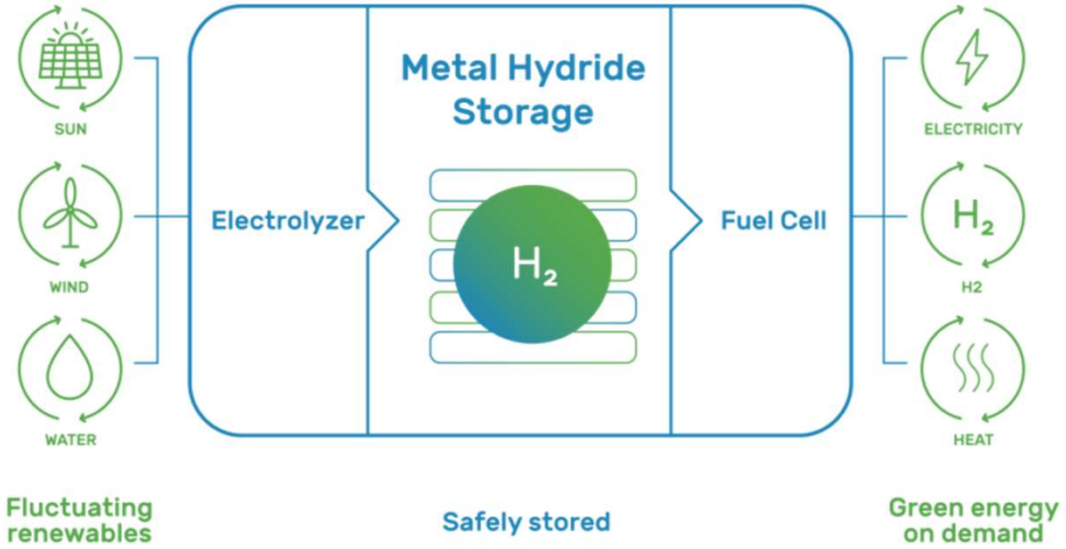
## Why is hydrogen the answer

**100% sustainable**
Green hydrogen is an emission free fuel

**Versatile**
Multiple energy pathways

**Transportable**
Distribute energy across sectors and regions

**Storable**
Easily stored and provides an energy buffer to increase system resilience




Enables large-scale renewable integration and power generations

# Technology
## Solid State Hydrogen Storage in Metal Hydrides

## Key Advantages

**Very High Energy Density**

3 times compressed Hydrogen at 700 Bar and up to 10 times Lithium

**Cost Advantage**

Storage cost is significantly cheaper than lithium and diesel and has at least a 20 year life

**Extremely Safe**

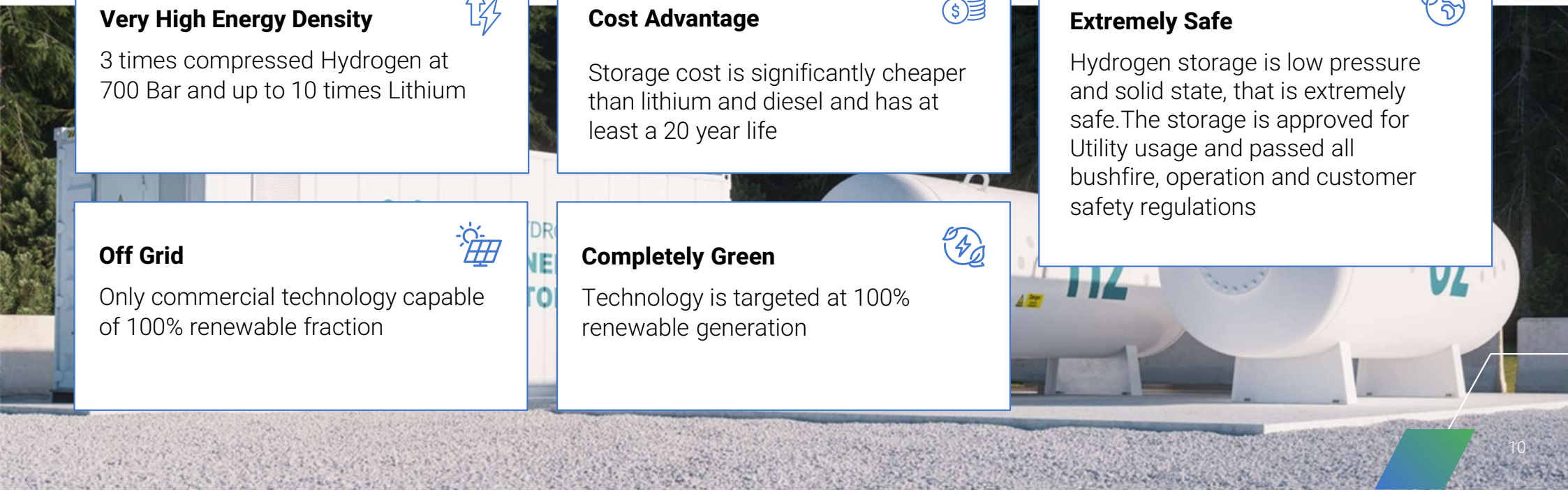
Hydrogen storage is low pressure and solid state, that is extremely safe.The storage is approved for Utility usage and passed all bushfire, operation and customer safety regulations

**Off Grid**

Only commercial technology capable of 100% renewable fraction

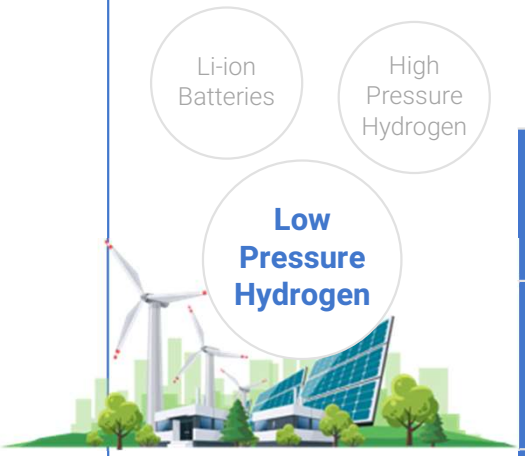
**Completely Green**

Technology is targeted at 100% renewable generation



# Technology
## Metal Hydrides vs Traditional Battery Storage

## Comparison to Lithium Batteries and Compressed Hydrogen




| | Lithium-ion Battery | High-pressure Hydrogen | Metal Hydrides | |
|---|---|---|---|---|
| Safety | Medium risk | Medium risk | Low risk ✓ | No depth of discharge limits |
| Recyclability | **5%** Current range of recyclability | **70%** Issue are carbon fiber materials | **100%** Just standard metals ✓ | + No capacity fade |
| Lifespan | **Medium** < 10 years | **Medium** > 10 years | **High** > 20 years ✓ | No self-discharge |

**Safety**
Safest way to store hydrogen

**Sustainability**
100% recyclable

**TRL**
Commercially available now

**Costs**
Long life & potentially eliminates compression

tempo greenHy2

# Technology
## Hydrogen Storage Commercial Systems

## HY2 Product Suite and Scalable Applications

### HY2MINI


- 10 – 25 KG
- 170 - 425 KWH Electrical
- Maritime Transport
- Industry / Transport

### HY2MEDI


- 30 - 120KG
- 0.5 – 2 MWH Electrical
- Power Backup

### HY2MEGA


- +260 KG
- 8.6 MWH Energy
- Micro Grids & Buildings
- Off-Grid

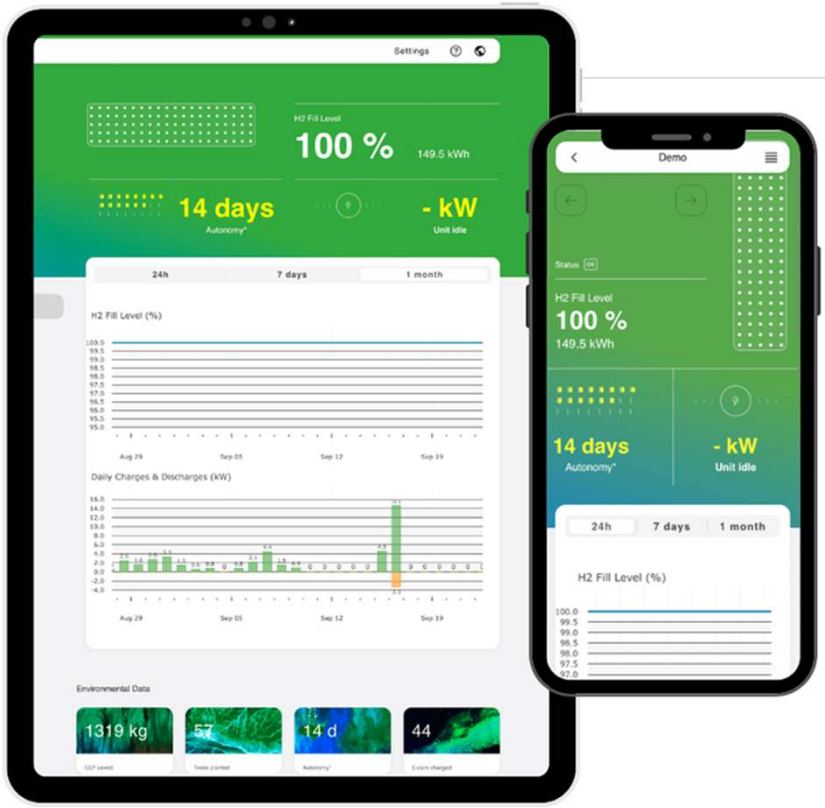
SYSTEMS

STORAGE

Technology
Digital Platform

# Digital Platform and Building Blocks

# Technology
## Digital Platform




## Digital Roadmap and Services

Basic system monitoring and status tracking

Maintenance and alert notification

Advanced performance monitoring

Systems and unit comparison

Efficiency analysis powered by advanced analytics

Operating model improvements

Data pipeline sanity check and tracking

# Digital RoadMap and Services - System Definition

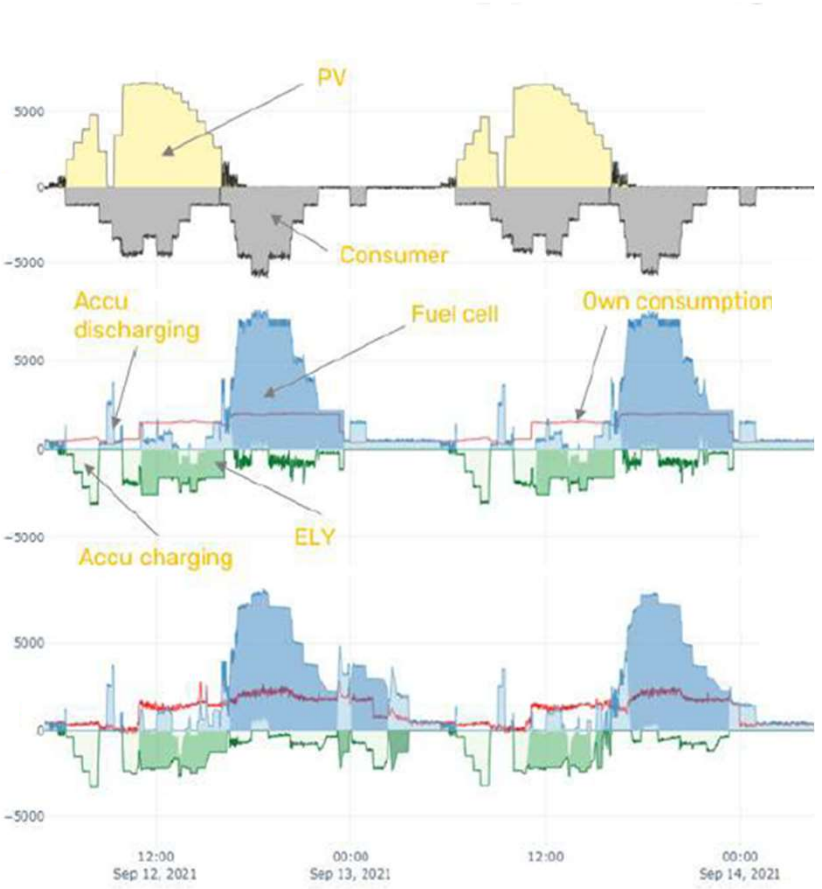
## Analysis

- Base simulation and modelling
- Parameter driven system definition
- Advanced closed loop simulation
- Extended simulation (+ Heat)

Input/Output

Simulation

Measurements



# Market Scope

## Why Australia Needs greenHy2

Australia is a large continent which is sparsely populated making it impossible to have an economic National Grid.  Most existing power networks have significant numbers of uneconomical customers requiring large infrastructure for limited users. In Australia Floods, cyclones and bushfires are common hazards, that can cause damage to costly energy infrastructure required to power remote Australia. Transmission and distribution lines also have an inherent Bushfire risk.

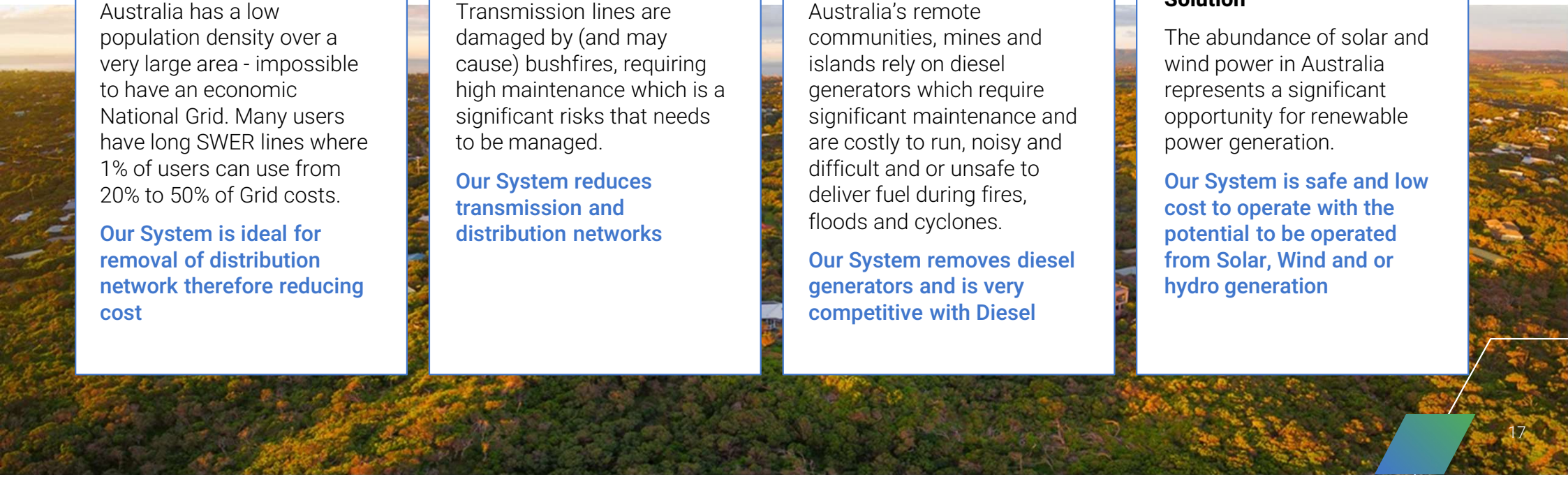
Australia is gifted with sunshine and wind that can power renewable generation

Remote users and communities such as Farms, Mining Towns, Islands and Settlements are common

The Transmission Network includes many Single Wire Earth Return Connections to small loads

# Infrastructure Demand
## Australian Strategic Influences

## The Solid State Hydrogen Storage is a strategic fit for Australia for the following reasons



**Fragile Grid System**

Australia has a low population density over a very large area - impossible to have an economic National Grid. Many users have long SWER lines where 1% of users can use from 20% to 50% of Grid costs.

**Our System is ideal for removal of distribution network therefore reducing cost**

**Hazard Prevention**

Transmission lines are damaged by (and may cause) bushfires, requiring high maintenance which is a significant risks that needs to be managed.

**Our System reduces transmission and distribution networks**

**Dependence on Diesel**

Australia's remote communities, mines and islands rely on diesel generators which require significant maintenance and are costly to run, noisy and difficult and or unsafe to deliver fuel during fires, floods and cyclones.

**Our System removes diesel generators and is very competitive with Diesel**

**Low Cost and Economic Solution**

The abundance of solar and wind power in Australia represents a significant opportunity for renewable power generation.

**Our System is safe and low cost to operate with the potential to be operated from Solar, Wind and or hydro generation**

# Market Analysis Sectors

## Predominant current markets are

- Stand Alone Power Supplies (SAPS and SPSs) for Government Utilities
- Remote Telecommunications Installations (AUS and NZ)
- Diesel Substitution for Remote Communities Mines, Islands etc.
- Current off grid installations
- Micro Grids for smaller communities
- Islands for environmental sustainability and substitution of diesel

# Market Analysis Customers

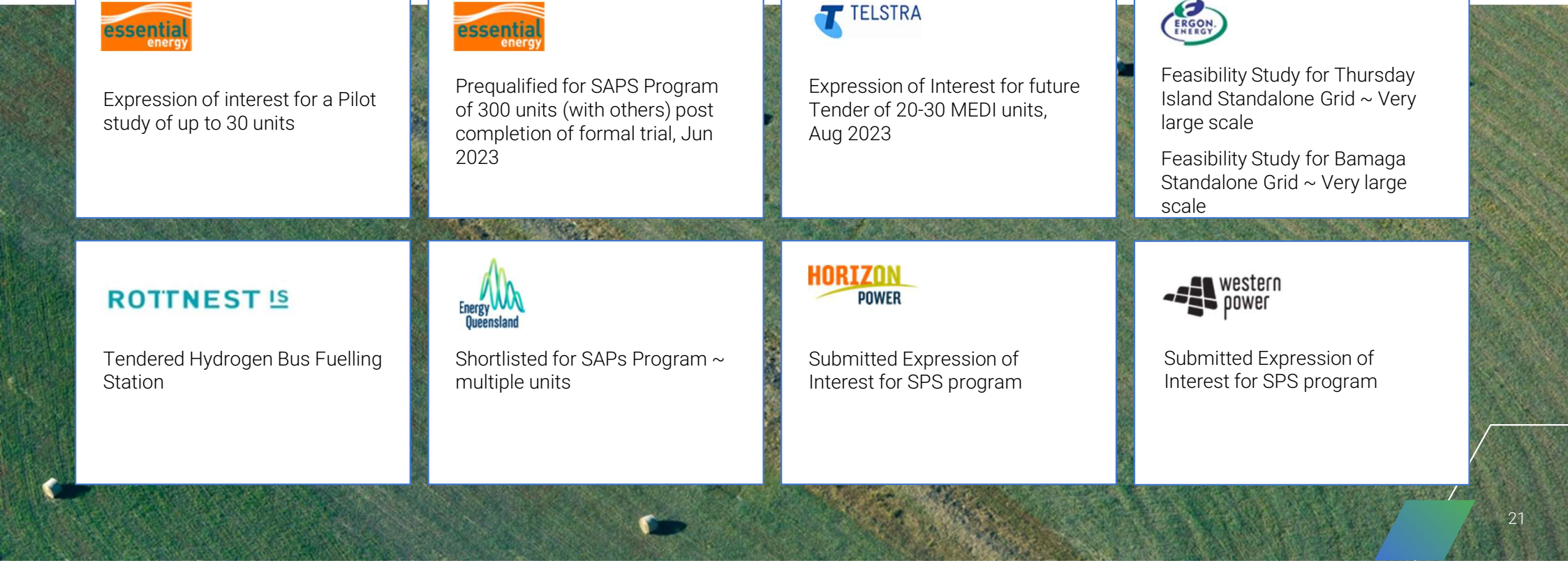
| Customer | | Market | Status of engagement with greenHy2 |
|---|---|---|---|
| | **Essential Energy** | ○ 1% of Customers are uneconomical with respect to grid costs<br>○ 1% of Customers is 9,000<br>○ Future Investment if converting to SAPs > $2B | ○ Prequalified with others for 300 units<br>○ Commitments around Mid to late 2023 |
| | **Western Power** | ○ 1% of Customers are uneconomical with respect to grid costs<br>○ 1% of Customers is 23,000<br>○ Future Investment if converting to SPSs > $5B | ○ Slow acceptance of the Technology |
| | **Horizon Power** | ○ 57,000 Customers heavily supported by microgrids and diesel power stations<br>○ Future Investment if converted to SPSs > $5B | ○ Visited Cutler's Cottage early September 2022<br>○ Currently Evaluating Applications |
| | **Energy Queensland** | ○ Currently reviewing technology for SAPS | ○ Completed Feasibility Study for Thursday Island and Bamaga ($400M)<br>○ Reviewing Demonstration Plant |
| | **Telstra** | ○ Currently reviewing technology for SAPS | ○ Current submitting EOI for approximately 20 MEDI units for off grid installations |

# Market Analysis Competitors (SAPS)

| Company | | System | Stage | Region | Entirely renewable? |
|---|---|---|---|---|---|
| | **greenHy2 (GKN Hydrogen)** | Solar – Metal Hydride | Commercialisation | Australia | Yes |
| | **LAVO** | Solar – Metal Hydride | Early stage Commercial | Australia | Yes |
| | **H2Planet** | LaNi Hydride | Small Scale | Europe | No |
| | **Boundary Power** | Solar – Li – Diesel Solution | Commercialisation | Australia | No |
| | **Pacific Energy** | Solar – Li – Diesel Solution Investing in Compressed Hydrogen | Commercialisation | Australia | No |

# Potential Opportunities Pipeline

## Over >$1B of Projects in Pipeline with specific projects listed below



| | | | |
|---|---|---|---|
| Expression of interest for a Pilot study of up to 30 units | Prequalified for SAPS Program of 300 units (with others) post completion of formal trial, Jun 2023 | Expression of Interest for future Tender of 20-30 MEDI units, Aug 2023 | Feasibility Study for Thursday Island Standalone Grid ~ Very large scale<br>Feasibility Study for Bamaga Standalone Grid ~ Very large scale |
| Tendered Hydrogen Bus Fuelling Station | Shortlisted for SAPs Program ~ multiple units | Submitted Expression of Interest for SPS program | Submitted Expression of Interest for SPS program |

# Case Studies

**Off Grid**
Only Commercial Technology Capable of 100% Renewable Fraction

**Completely Green**
Technology is using 100% renewable generation

**Cost Advantage**
Storage cost is significantly cheaper than Lithium and diesel and has at least 30 year life

**Extremely Safe**
Low Pressure solid state hydrogen storage that is extremely safe, has been approved for Utility usage and passed all bushfire, operation and customer safety regulations for use in a Utility Network. Operates at ambient temperature and low pressure.

**MINI Systems**

25kh H2 Capacity
Stand Alone Solar Power System
Demonstrator

# Case Studies
## Decentralised Solutions

**Application**
100% Off-Grid

**System**
MEDI

**2MWh**
Stored Energy

**60kg**
H2 Storage

**16kW**
Nominal Power

**12kW**
Electrolyzer

- Remote shelter 2,000m above sea-level – extreme conditions.
- 100% off-grid with remote management.

**Application**
Residential e-Charging

**System**
MEDI

**2MWh**
Stored Energy

**120kg**
H2 Storage

**16kW**
Nominal Power

**24kW**
Electrolyzer

- Decentralized energy system to charge 20 cars off-grid feeding green power as range extender into coupled small 120 kW battery.

# Case Studies
## Decentralised Solutions

**Application**
Micro Grid

**System**
MEGA


**17MWh**
Stored Energy

**500kg**
H2 Storage

**1MW**
Nominal Power

**1.5MW**
Electrolyzer

- Two HY2MEHA's added to the mega-watt class hydrogen assets at the ARIES facility on NREL's Campus, CO.
- Validate and simulate grid scale use-cases.

**Application**
100% Off-Grid

**System**
MINI

**1MWh**
Stored Energy

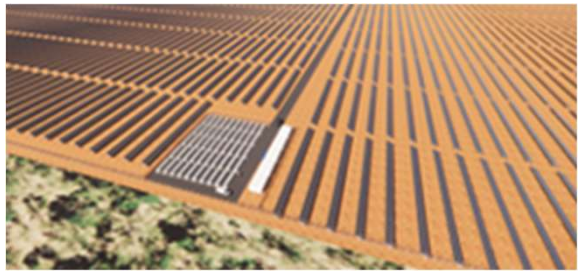
**25kg**
H2 Storage

**8kW**
Nominal Power

**10kW**
Electrolyzer

- Replacement of current grid connection and back-up diesel gen-set. New decentralized clean energy system based on purely PV and green hydrogen storage to power the cottage emission-free.

# Case Studies

| Project | Details | Status | Next Steps |
|---|---|---|---|
| **Groote Eylandt**<br>  | MEGA System x 3<br>Large Mine and Aqua Culture<br>Island Mine<br>10MW Solar | Finalising design<br>Reviewing funding<br>Expression of Interest | Final design<br>Final investment decisions |
| **Ergon Thursday Island and Bamaga**<br>  | MEGA System x 20<br>19GW / year<br>Island and Remote Settlements | Prequalified and shortlisted<br>Feasibility study won | Feasibility study submitted and under review |

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