




Efficiency first | Compressed Hydrogen

London Road Show
11-13 September 2023

 Australia
 Norway

www.provaris.energy

ASX:PV1

Important notice and disclaimer

This presentation and these materials (together the "Presentation") have been prepared by Provaris Energy Ltd ACN 109 213 470 (ASX:PV1) ("Provaris") as a summary of Provaris' operations and results for the purposes of a presentation to existing or potential investors in Provaris. By participating in this Presentation or reviewing or retaining these materials, you acknowledge and represent that you have read, understood and accepted the terms of this Important Notice and Disclaimer.

This Presentation should be read in conjunction with Provaris' 31 December 2022 Half Year Report lodged with the Australian Securities Exchange ("ASX") on 27 February 2023 and other periodic and continuous disclosure announcements that have been lodged by Provaris with the ASX.

This Presentation may contain forward looking statements concerning projected costs, approval timelines, construction timelines, earnings, revenue, growth, outlook or other matters ("Projections"). Any such Projections are based on assumptions which may differ materially from the actual circumstances which may arise and actual results may vary materially from Projections. You should not place undue reliance on any Projections, which are based only on current expectations and the information available to Provaris. The expectations reflected in such Projections are currently considered by Provaris to be reasonable, but they may be affected by a range of variables that could cause actual results or trends to differ materially, including but not limited to: price and currency fluctuations, the ability to obtain reliable hydrogen supply, the ability to locate markets for hydrogen, fluctuations in renewable energy and hydrogen prices, project site latent conditions, approvals and cost estimates, development progress, operating results, legislative, fiscal and regulatory developments, and economic and financial markets conditions, including availability of financing.

Provaris undertakes no obligation to update any Projections for events or circumstances that occur subsequent to the date of this Presentation or to keep current any of the information provided, except to the extent required by law.

This Presentation is not a disclosure document, is for information purposes only, should not be used as the basis for making investment decisions or other decisions in relation to Provaris or its securities, and does not constitute an offer to issue, or arrange to issue, securities or other financial products. This Presentation has been prepared without taking into account the investment objectives, financial situation or particular needs of any particular person. You should consult your own advisors as to legal, tax, financial and related matters and conduct your own investigations, enquiries and analysis concerning any transaction or investment or other decision in relation to Provaris.

This Presentation, including opinions set out in it, is based on information compiled or prepared by Provaris from sources believed to be reliable, although such information has not been verified in all instances. Provaris has no obligation to tell recipients if it becomes aware of any inaccuracy in or omission from the information in this Presentation. No representation or warranty, express or implied, is made as to the fairness, accuracy, completeness or correctness of the information, opinions or conclusions contained in this Presentation. To the maximum extent permitted by law, none of Provaris, its directors, employees, advisors or agents, nor any other person, accepts any liability, including without limitation any liability arising out of fault or negligence, for any loss arising from the use of the information contained in this Presentation. In particular, no representation or warranty, express or implied, is given as to the accuracy, completeness, likelihood of achievement or reasonableness of any forecasts, Projections or prospects referred to in this Presentation.

No distribution in United States or other jurisdictions outside Australia.

This Presentation does not constitute an offer or recommendation to purchase or sell any securities in any jurisdiction, nor an invitation to apply for such securities in any jurisdiction, and will not form part of any contract for the acquisition of securities in Provaris. This Presentation does not constitute an offer to sell, or a solicitation of an offer to buy, securities in the United States. Any securities described in this Presentation have not been, and will not be, registered under the US Securities Act of 1933, as amended ("Securities Act") or the securities laws of any state or other jurisdiction of the United States and may not be offered or sold in the United States except in transactions exempt from, or not subject to, registration under the Securities Act and applicable US state securities laws. This Presentation may not be released to US wire services or distributed in the United States.

The distribution of this Presentation in other jurisdictions outside Australia may also be restricted by law and any such restrictions should be observed. Any failure to comply with such restrictions may constitute a violation of applicable securities laws. By accepting this Presentation you represent and warrant that you are entitled to receive such Presentation in accordance with applicable laws.

Non-IFRS Financial Information

This Presentation may use non-IFRS financial information. Non-IFRS measures have not been subject to audit or review. Certain of these measures may not be comparable to similarly titled measures of other companies and should not be construed as an alternative to other financial measures determined in accordance with Australian accounting standards.

This presentation was authorised by the CEO for release on 10 September 2023

\$ refers to Australian Dollars unless otherwise indicated.

Hydrogen development company focused on the simplicity and energy efficiency of compressed hydrogen

Regional supply projects under development

- > Collaborations with local partners for integrated hydrogen supply projects for delivery in 2027-28
- > Focus on supply from Norway provides strategic advantage with proximity to EU market, stable renewable power, satisfies Additionality Rules (EU Delegated Acts)

Aligns with Efficiency First Principle embedded in EU legislation

- > Most energy efficient way to transport volumes at scale over regional distances
- > Reduces the amount of renewable energy required to produce hydrogen for transport
- > Provides low-cost supply and simple delivery of gaseous hydrogen for the H2 backbone

Increasing demand and policy support for hydrogen continues

- > Germany continues to double-down on hydrogen with 50-70% of its hydrogen demand, forecast at 95 to 130 TWh in 2030, required from imports (circa. 3-4 million tonnes)
- > Premium for green hydrogen established with the EU Hydrogen Bank (up to 4.50/kg subsidy)
- > Increasing offtake discussion in 2023, with capital and operating subsidies aligned to green hydrogen to decarbonisation of industries

Proprietary design for storage and transport

- > Advanced design and approvals for two classes of bulk-scale carriers and marine storage
- > Significant investment over 3 years culminates with Final Class Approval in Q1 2024
- > Developing small-scale storage tanks to transform the cost of onshore storage

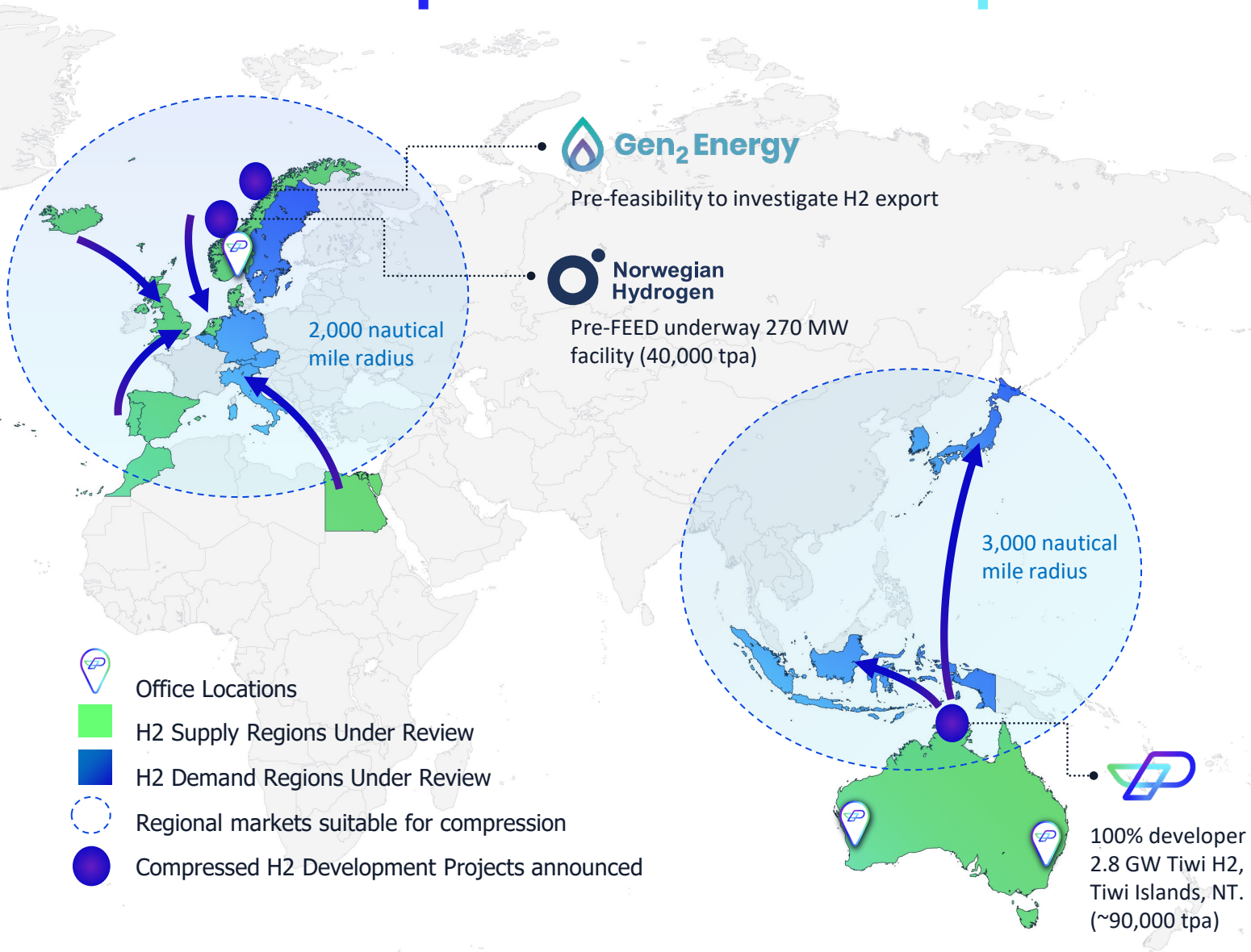
Unique IP delivers first mover advantage

- > Unique IP and knowledge on efficient supply projects now being recognised as first to delivery
- > First mover advantage not reflected company valuation





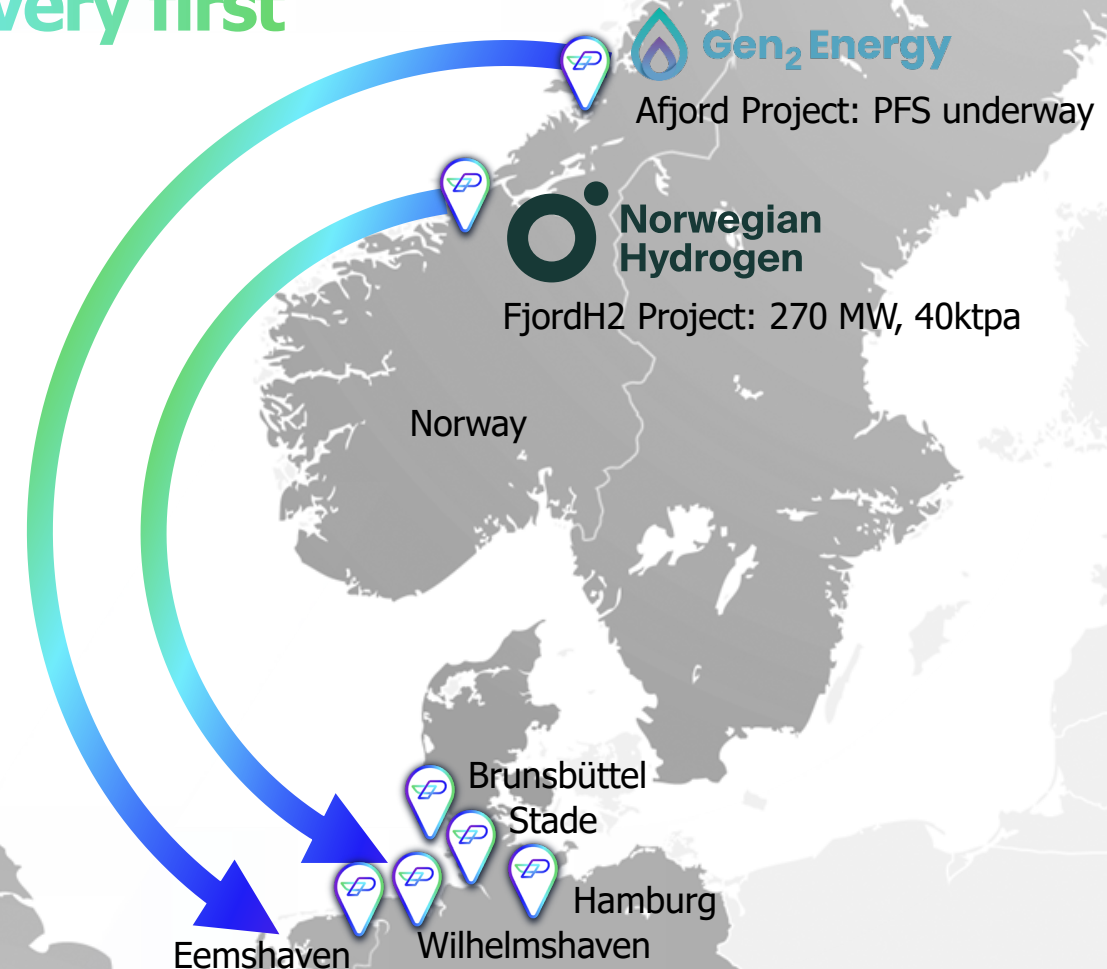
Scaling up hydrogen supply through repeatable projects and collaboration partners across Europe and Asia



- > Established in 2017 (as Global Energy Ventures) to focus on compressed natural gas solutions
- > Pivot to hydrogen in 2020/2021 with the award of AIP on two proprietary compressed hydrogen capacity carriers (H2Neo & H2Max)
- > Tiwi H2 project established in 2021
- > H2Neo achieved Construction Approval 2022 subject to tank prototype tank test
- > AIP received for barge storage solution 2022 (H2Leo)
- > Provaris Norway AS established in 2022 with two export projects under collaboration
- > Developing collaboration projects to deliver first exports in 2027
- > Global pipeline of opportunities for compression to make hydrogen transport efficient in regional markets

Collaboration projects in Norway to delivery first green hydrogen molecules to Europe

- > Norway offers a stable green grid for the supply of renewable power to generate economic hydrogen volumes for export
- > Power availability and pricing varies by regional location
- > Norway understand compression has a key role for the supply and distribution of hydrogen to decarbonise local industry
- > Two collaboration projects under development in 2023 with the ability to delivery to Europe 2027
- > **Provaris now seen as the first to deliver a gaseous solution for pipeline ready green hydrogen supply**
- > Increasing dialogues for long-term offtake with major utilities, steel, chemical or refuelling sectors.
- > H2-ready ports and the H2 backbone grid supported by Government funding



Provaris solution now viewed as “a dynamic element in the supply chain which can provide green H₂ for customers, assist with balancing power, and grid operations”

Our sights are set on the European Hydrogen Backbone for distribution of bulk-scale volumes to industrial customers

- > Open access large-scale hydrogen networks in the Netherlands and Germany
- > Establishing direct connections to large industrial consumers (steel works, chemical, refineries, mobility)
- > **FEED level solution with undertaken to integrate with hydrogen backbone network and supply gas for cavern storage**

Example of a Receiving Terminal Plot Layout



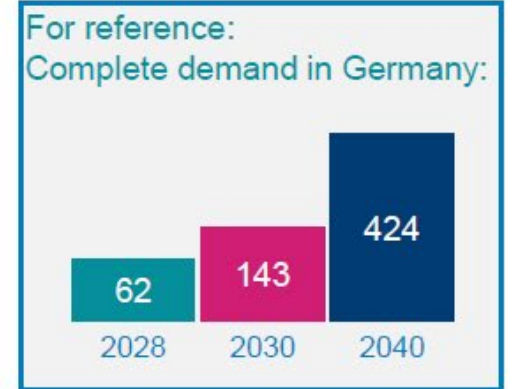
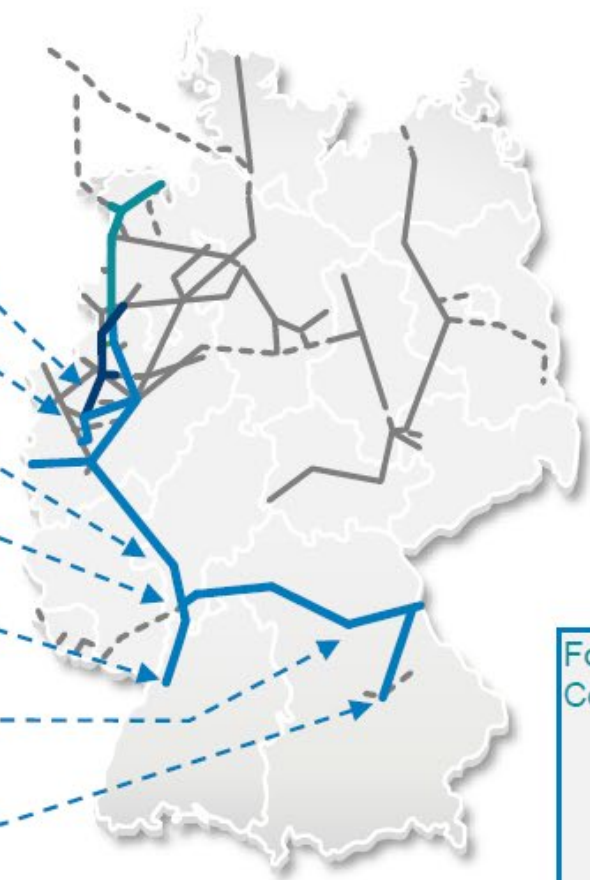
Project HyPerLink project will result in a large-scale hydrogen network (up to 7.2 GW) with a total length of ~610 km



Source: Gasunie www.gasunie.de/en/the-company/gasunie-deutschland/project-hyperlink

OGE connecting all major demand centers by 2030

H₂-Demand in the vicinity of „H2ercules“ [TWh¹]



Quelle: Results of the market survey "Wasserstoff Bedarf und Erzeugung" (WEB) of FNB | ¹ TWh = Terrawatt hour



Seeking to be an integrated developer of the hydrogen value chain

Unique business model to capture multiple revenue streams and drive equity value through project development



Production of Hydrogen

- > **Developer full value-chain for export of hydrogen molecules**
- > NORWAY: Two projects under collaboration for development first export to Europe 2027/28
- > AUSTRALIA: Tiwi H2 project under development for 100ktpa export 2028
- > Equity ownership in long-term take-or-pay contracts



Hydrogen Shipping and Storage

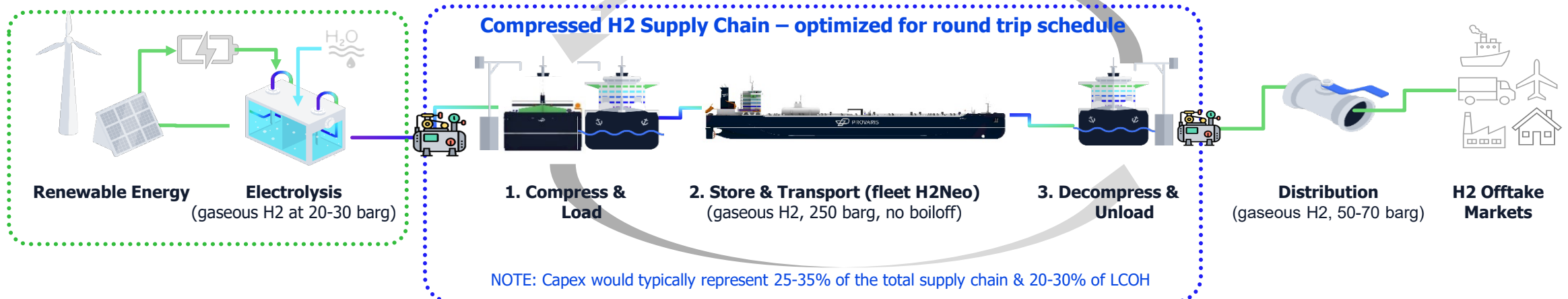
- > **Infrastructure for terminals, storage and shipping of hydrogen**
- > Partner with shipowners and infrastructure funds to own and operate based on long-term charter.



Leveraging unique IP

- > **Proprietary development of bulk-scale shipping and storage solution**
- > US Patent & world-first 'Design Approval' for compressed hydrogen carrier & floating storage
- > Development of automated tank production line for storage tanks (marine and onshore)

Producing H2 at scale with industrial 20-year offtake at agreed prices enables bankable projects



Transport of compressed hydrogen is more than just the energy content of the carrier



Minimise (re)conversion losses and capex required for alternative carriers



Does **not require base-load** renewable energy supply to be efficient

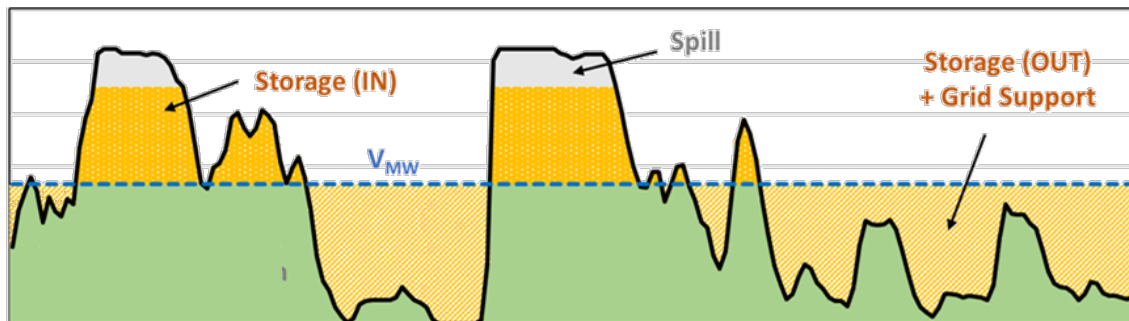


Compression can **100% load-follow** the variable renewable generation profile




Eliminates Batteries, H2 Storage, and/or 'fossil fuel' grid back-up required by other carriers for stable conversion

Avoids the Conversion of a variable wind/solar profile to flat profile



Efficiency and levelised cost needs to evaluate energy efficiency across the full supply chain

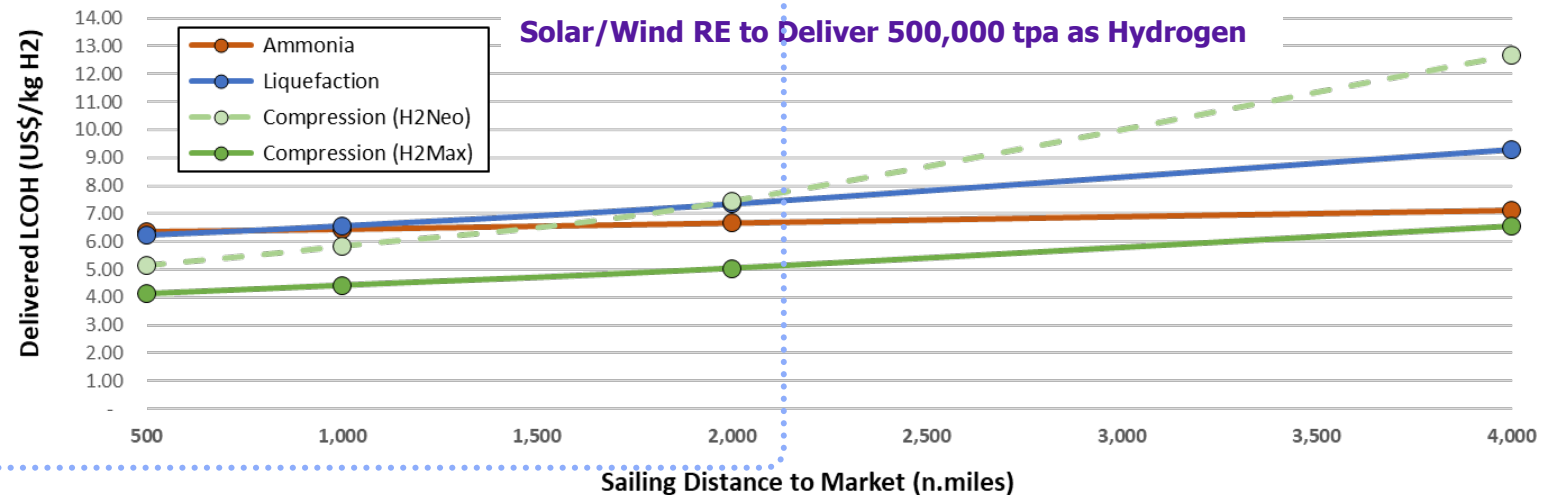
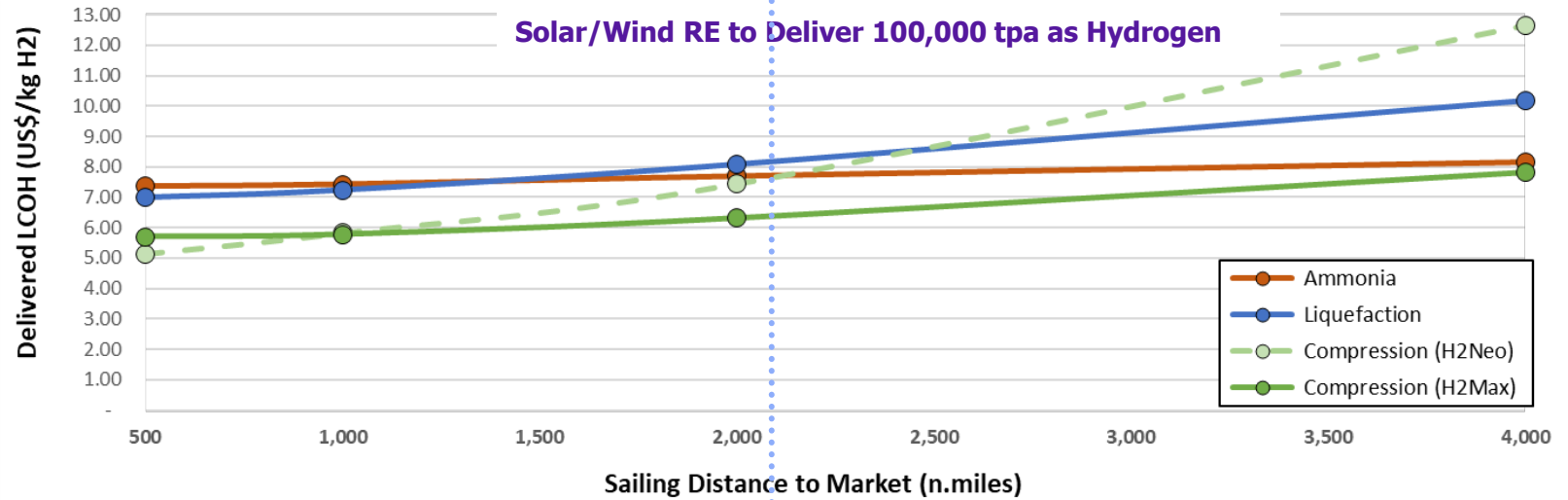
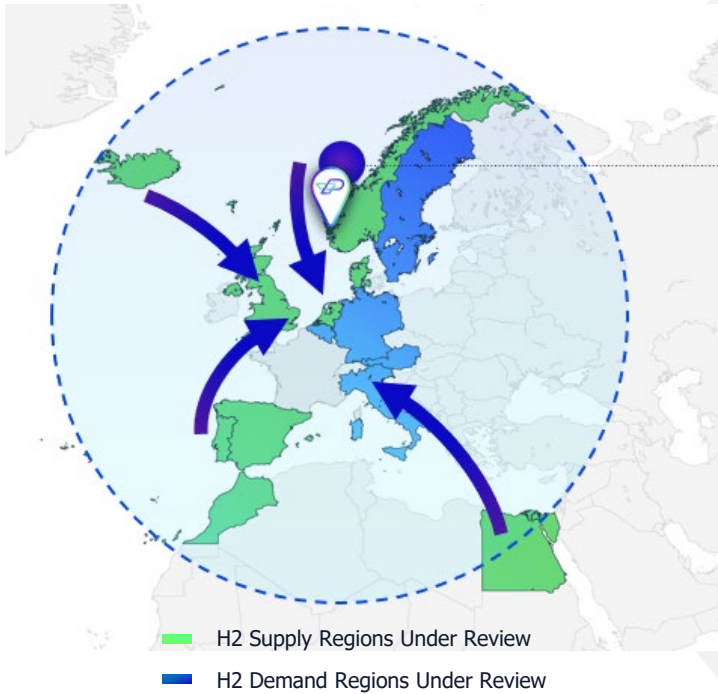
Factors that impact on LCOH of supply chain

| | Compression  | Liquefaction (LH2) | Ammonia (NH3) |
|--------------------------------|--|---------------------|--------------------|
| 'Load Follow' Variable Profile | 100% | 0% | 40-100% |
| Hourly Change in Process | 100% | 0% | 5% |
| Conversion Efficiency | 1.5 kWh/kg H2 | 11 kWh/kg H2 | 9 kWh/kg H2 |
| Boil-off per day | 0% | Up to 1% | 0% |
| Reconversion Losses | 2.5% (Scavenging) | 5% (Regasification) | 25-40% (Cracking) |
| Energy Losses | <20% | +40% | +40% |
| Purity | ✓ | ✓ | ? |

Compression's ability to load follow increased efficiency and flexibility, resulting in a lower delivered cost of green hydrogen

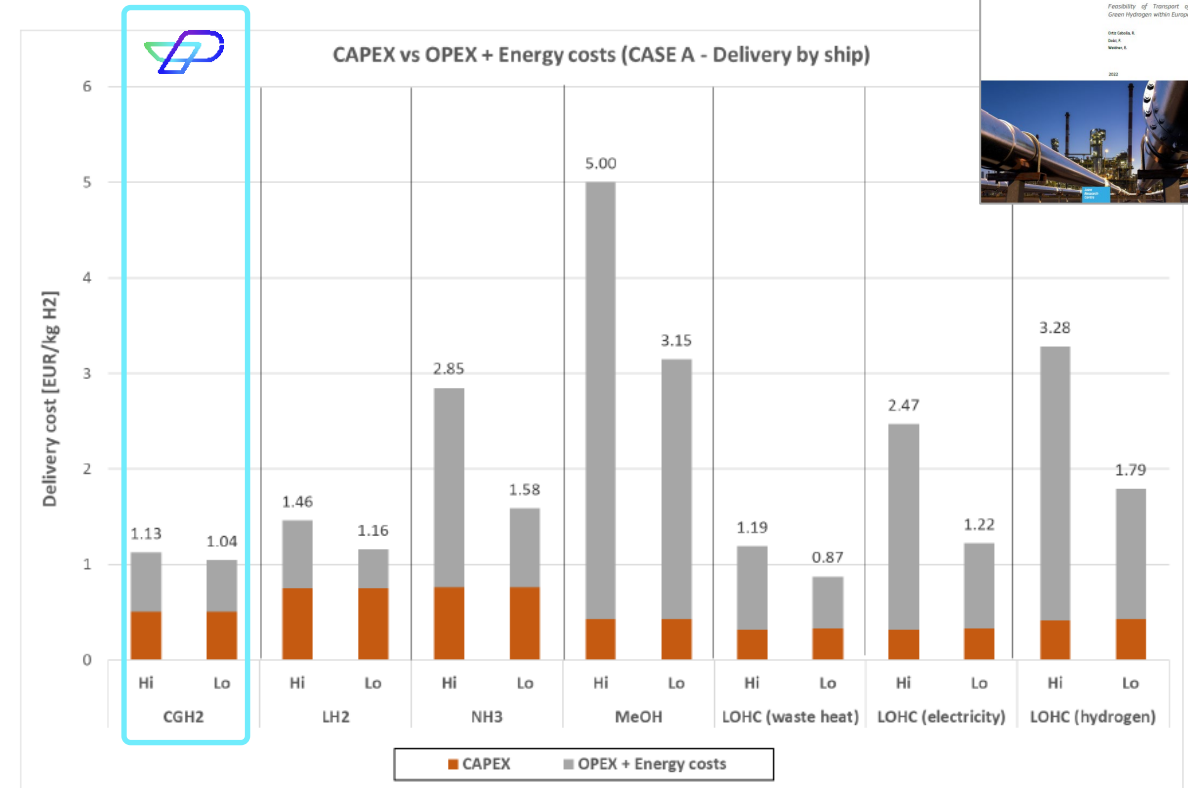
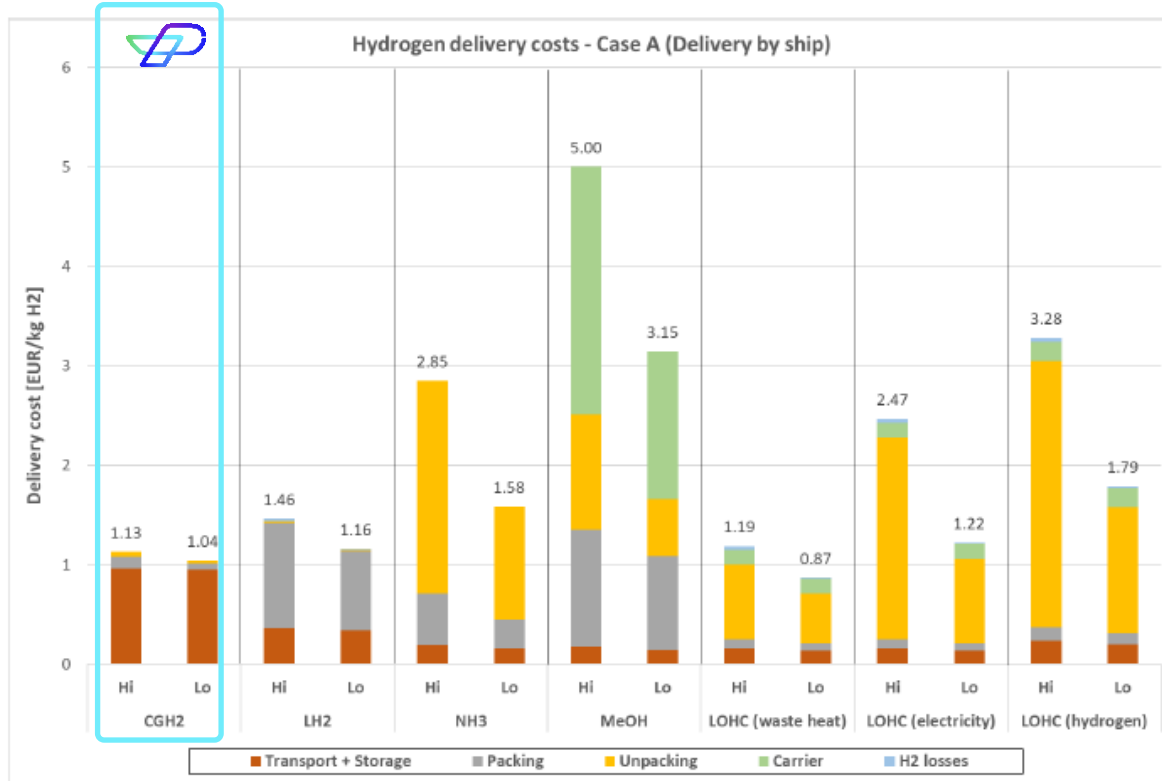
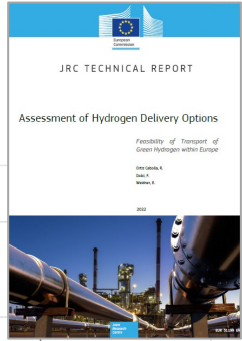
Realistic hydrogen supply chain analysis needs to account for the full value chain: RE curtailment, Vector capital & losses, Shipping, and Conversion back to gaseous hydrogen (2023 Hydrogen Transport Comparison Report, Energy)

10Mt Market Opportunity for Compressed Hydrogen into Europe



Independent research supports the cost advantage and efficiency of Compressed H2 over regional distances

Case Study: 1Mtpa continuous delivery over a 2,500km shipping



Source: JRC analysis

Source: JRC analysis

“In the case of compressed hydrogen delivered by ship, it can be seen that the final cost is dominated by the transport costs. Due to its lower density, transport of compressed hydrogen requires a bigger and more expensive fleet than any other packaging mode. However, the packing and unpacking costs (i.e. compression costs) are low enough to compensate for the higher transport costs. **This makes compressed hydrogen by ship an attractive option, for Case A, with a delivery distance of 2,500 km**” Source: JRC, 2022





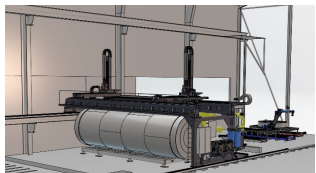
**Innovative tank design, final class approvals
and collaboration projects to unlock pathway to
commercialisation**

Development pipeline for Shipping and Compressed Hydrogen projects to unlock multiple milestones, revenue pathways and liquidity events

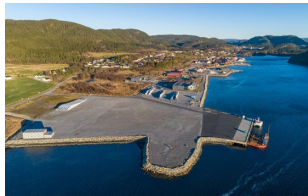
Provaris Norway AS (100% subsidiary of Provaris Energy) established as the holding company for future operating assets

Multiple pathways for commercialisation

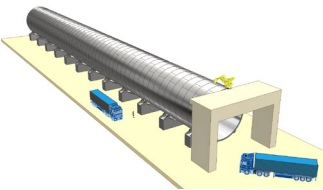
Final Class Approvals



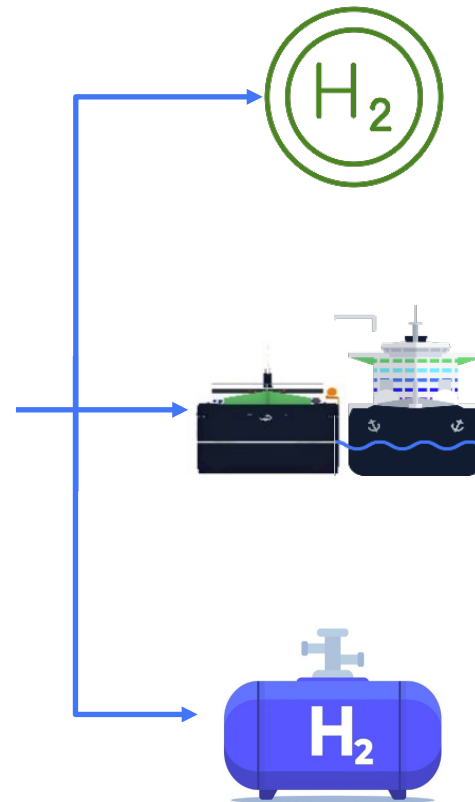
Collaboration Projects



Storage Tank Production



Equity ownership and flexibility to finance at project or asset



Equity ownership of individual export hydrogen project SPVs

- 20yr Hydrogen offtake contracts
- EU & Norway Capex schemes
- Project financing at SPV

License fees to shipyards for integrated ship/tank design (ie. GTT LNG tank model)

- Project SPV is the long-term charterer of vessels
- Option to hold equity stake in vessels
- Option for ship management co.

JV (60%) in robotic tank production facility in Norway (supported by Innovation Norway)

- Sale of large-scale tanks for H2Neo and H2Leo carriers (230 tonne)
- Sale of tanks for onshore storage (1-50 tonne capacity)
- Sale of future robotic production lines to Asia yards

Development of 270 MW green hydrogen plant, Ålesund, Norway

Collaboration with Norwegian Hydrogen AS, located at Ørskog in Ålesund municipality



- > **Pre-feasibility completed March 2023 for 270 MW production capacity with export volume 40,000 tpa**
- > Competitive delivered cost based on 2022 volatile electricity price range of EUR 35-45 MWh
- > ~760 Nm sailing distance to Germany
- > **Provaris marine transport cost range of EUR 1.00-1.50/kg (compression, 1 barge, 2 carriers decompression)**
- > 20 MW power capacity granted + 250MW power reservation request
- > Compression enables plant design with high degree of flexibility to assist with balancing the power grid in periods of high demand
- > Reduces CO2 emissions by 500,000 tonnes annually
- > Supportive local community with significant regional value created with +50 jobs and district supply of heat and oxygen
- > **Target first export late-2027**



Development of a large-scale European hydrogen supply chain, Åfjord Norway

Collaboration with **Gen2 Energy AS**, located Trøndelag region



- > **Collaboration Agreement signed June 2023**
- > Collaboration will benefit from the synergies of Provaris and Gen2 Energy's approach to using compression as an energy efficient carrier for green hydrogen
- > **Prefeasibility study commenced in August 2023** to include detailed feasibility of a large-scale export supply chain from Norway to Europe based on the use of Provaris compressed hydrogen supply chain.
- > ~760 Nm sailing distance to Germany
- > **Prefeasibility Report finalized early 2024**

Åfjord project in Trøndelag region, Norway



World first Design Approval for bulk hydrogen carrier

Low emission shipping through green fuels for power generation, including Fuel Cell and Hybrid integration



- > **Standard MR tanker** with two integrated tanks to store hydrogen at 250 bar pressure. **US Patent filed** on tank design.
- > **Critical safety studies**, process and risk analyses carried out.
- > **'Design Approval' from ABS** based on FEED-level package sufficient for shipyards to quote with confidence
- > **Prototype tank test** to be undertaken in Norway, Q1 2024.
- > Integration with flexible jetty solutions and offshore loading delivers a package to third party feasibility studies.



Two Carriers under development

| H2Neo | H2Max |
|--|---|
| Cargo carrying capacity: 26,000m ³ (430t) | Cargo carrying capacity: 120,000m ³ (2,000t) |
| Project export capacity¹: 200,000 tpa | Project export capacity¹: 900,000 tpa |
| Shipping range: Up to 2,000 Nm | Shipping range: Up to 3,000 Nm |
| <ul style="list-style-type: none"> ✓ AiP Received: 2021 ✓ FEED Approval: 2022 • Shipbuilding Contract: 2024 • Prototype & Final Approvals: Q1 2024 • First operations: 2027 | <ul style="list-style-type: none"> ✓ AiP Received: 2021 • Final Approval - tbc • Shipbuilding Contract - tbc • First operations: Target ~2030 |
| <p>Assumptions:</p> <ul style="list-style-type: none"> • Unloading in 18 hours • Fleet Ships is based on project production rates and distance to market • Actual importation volumes can be multiples of the above "fleet" production facility capacities. | |

Note: Illustrations are concept designs for unloading at Jurong Island, Singapore

Launch of bulk-scale compressed hydrogen floating storage

“H2Leo” provides the hydrogen industry with an energy efficient and cost-effective storage solution



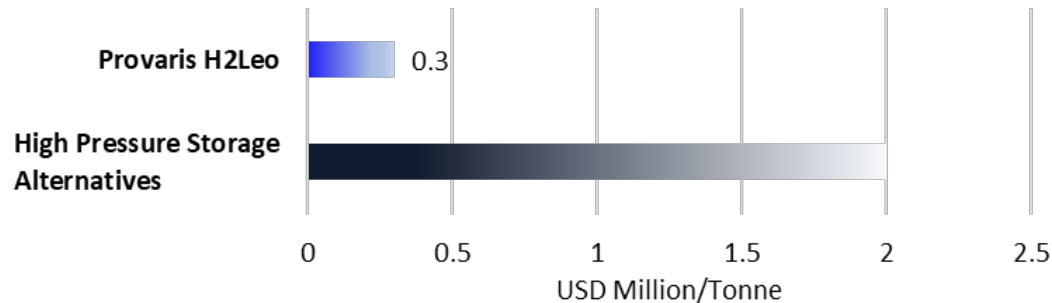
- > **‘Approval in Principle’ received from ABS, April 2023**
- > Approved design capacity range of 300 to 600 tonnes of hydrogen, expandable to up to 2,000 tonnes
- > ‘Buffer storage’ delivers flexibility and optimization of compressed hydrogen supply chain projects = lower delivered cost
- > Target for first production unit 2025



Industry-wide applications:

- > Bunkering for the maritime sector
- > Storage of gaseous hydrogen supply required for NH₃/LH₂ process during periods of no, or low, renewable energy generation
- > Long-duration storage for excess renewable energy

Onshore static storage cost-prohibitive for large-scale hydrogen derivative projects



Innovative hydrogen tank prototype and automated production line for tank construction in Norway

Use of 'robotics' to 'crack the code' on efficient and cost-effective storage and shipping

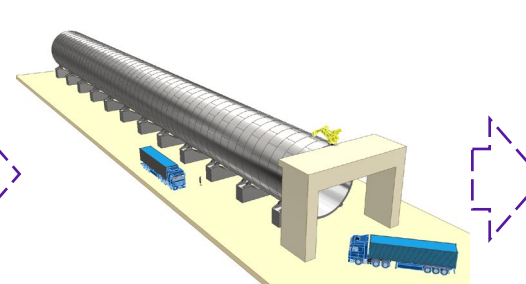
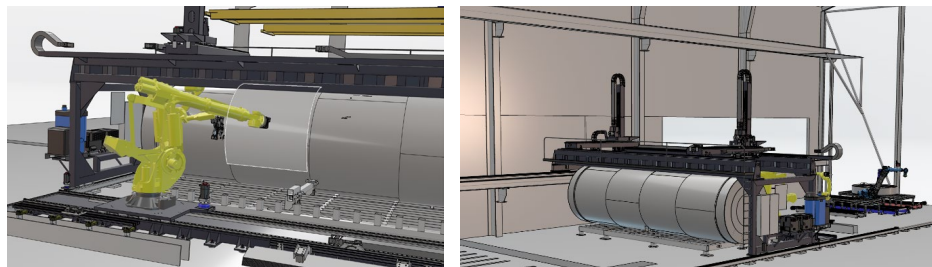
- > **Prodtex AS** to construct and test a prototype scaled tank, alongside SINTEF, DNV and ABS for fatigue testing testing
- > Completion of testing and Final Class Approval target for Q1 2024
- > Demonstrate automated tank fabrication line results in shorter construction period, lower costs, and higher level of quality assurance
- > Extension of IP and business case for significant market requirement for small-scale storage tanks (1 to tonnes).



Q1, 2024: Prototype Tank construction & Fatigue Test complete & final class approval



2025: New Large Scale Production Line operational in Norway, providing tanks for shipping and storage



Supported by collaboration partners:



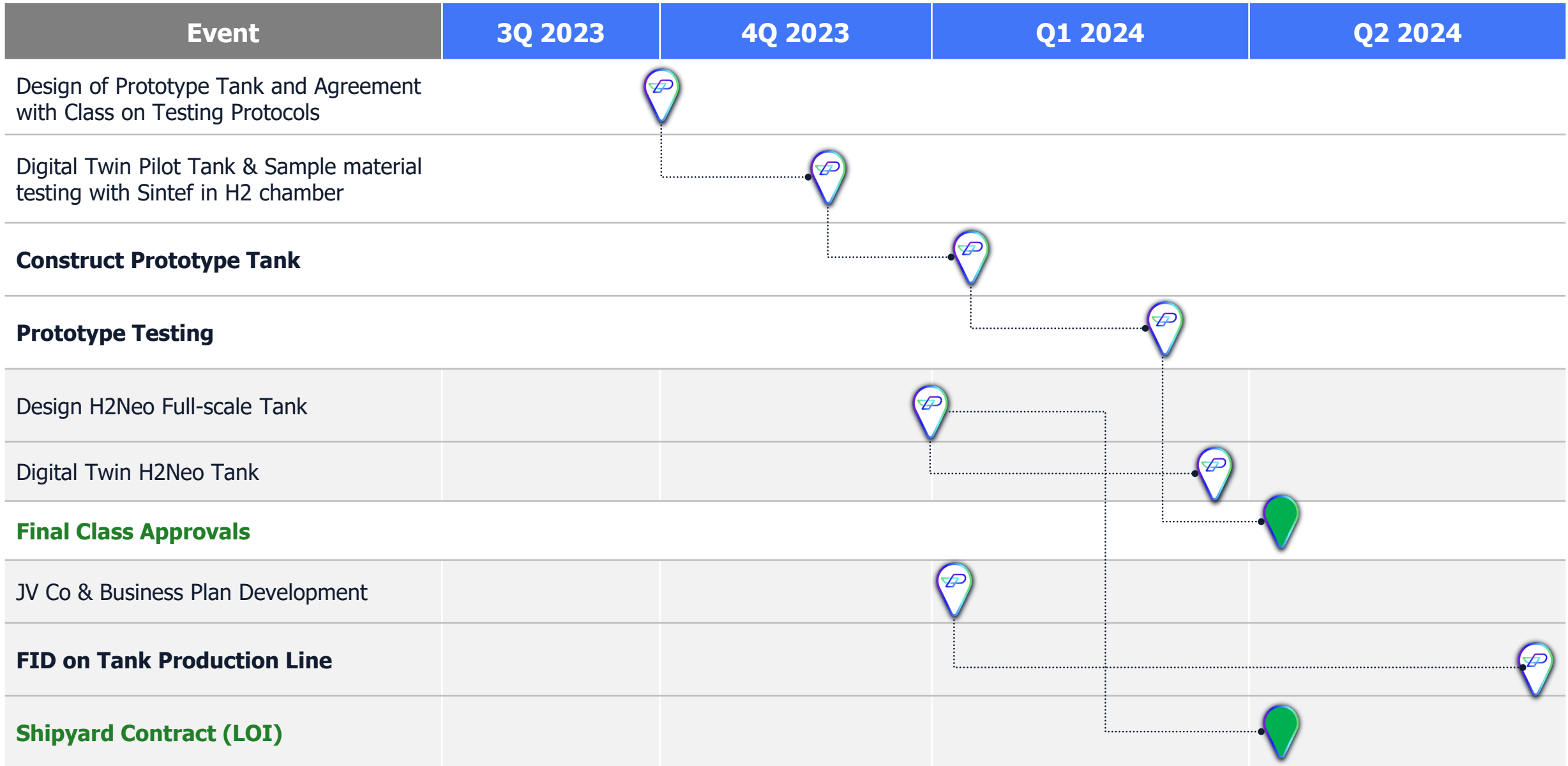
Opportunity to develop low-cost storage solutions required for onshore or maritime hydrogen distribution networks to scale

Fully robotic tank production cell offers significant cost advantages over existing composite solutions in the market. Updates in the December 2023 quarter on the development of tank design and can range from 1 to 10 tonnes for use in buffer or small-scale storage applications such as marine bunkering.

| | Hexagon Purus: www.hexagonpurus.com | Umoe: www.uac.no | Provaris JV (Prodtex) |
|----------------------------|--|---|---|
| Type | Composite – carbon fibre Container | Composite - Glass fibre Container | Carbon Steel Tank |
| Storage Capacity | 1,029 kg 500 bar pressure | 850 kg 350 bar pressure | 1 to 50 tonne 250 bar pressure |
| Cost | USD 750,000 | USD 350,000 (targett) | 1 tonne: ~200,000 USD 10 tonne: ~2,500,000 USD |
| Cost / kg H2 | 730 USD | 400 USD (target) | Target below 200 USD |
| Market Applications | Mobility, refuelling, remote sites | Mobility, refuelling, remote sites | Static solutions (e.g. marine, shore based, buffer, distribution) |



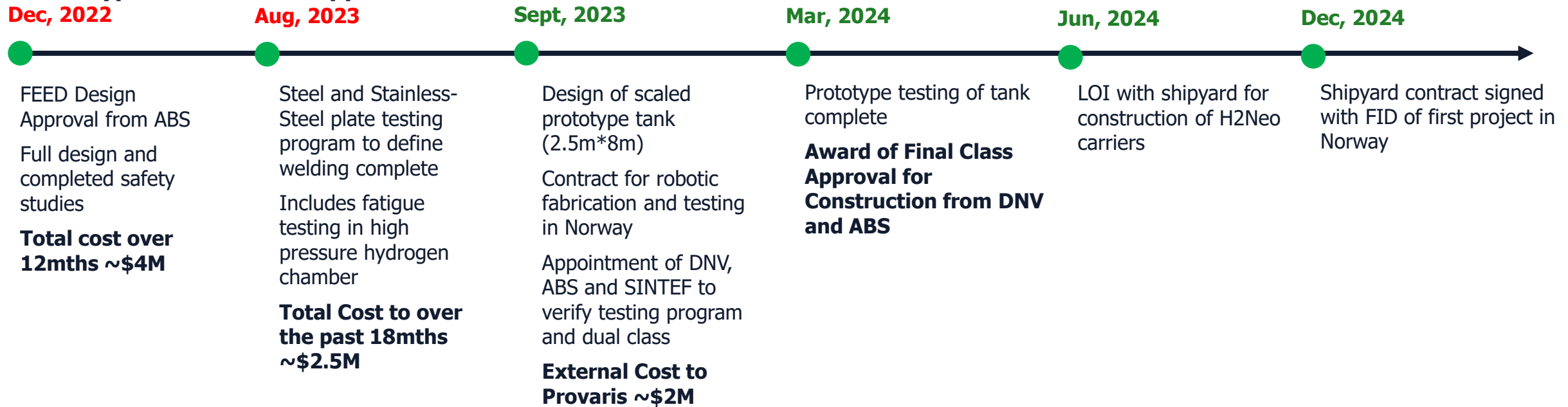
Near term milestones for prototype test and final class approval for H2Neo aligned with commercialization in Norway



Ship development capital and pathway to final Class approvals, shipyard contract & financing

H2Neo program to undertake prototype test in Q1 2024 to achieve final class approval from DNV and ABS

Prototype Tank & Class Approvals



JV Tank Production Facility (all internal costs excluding legal advisors)





Tiwi H2 the only gaseous green hydrogen export project for Australia



Tiwi H2 Project demonstrates scale for a compressed hydrogen supply chain in proximity to key markets

Strategic decision to develop both upstream hydrogen molecules and integrate with compressed hydrogen supply chain

2.6 GW
Solar Generation

2028
Target for first export

~90,000 tpa
Green Hydrogen

~500 construction
and up to **~100**
operational jobs



Strategic Location to Markets



Existing Port Infrastructure



Solar Intensity & Water Access



Traditional Land Ownership



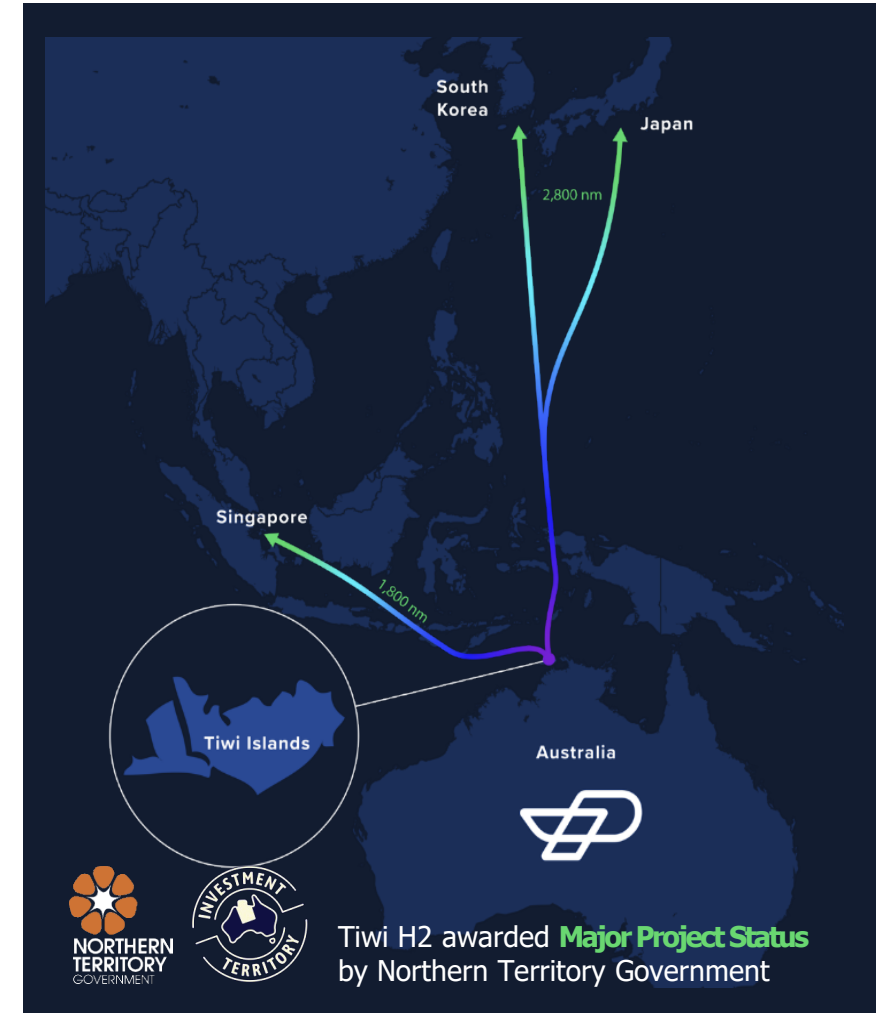
Low Environmental Impact



Landowner & Government Support



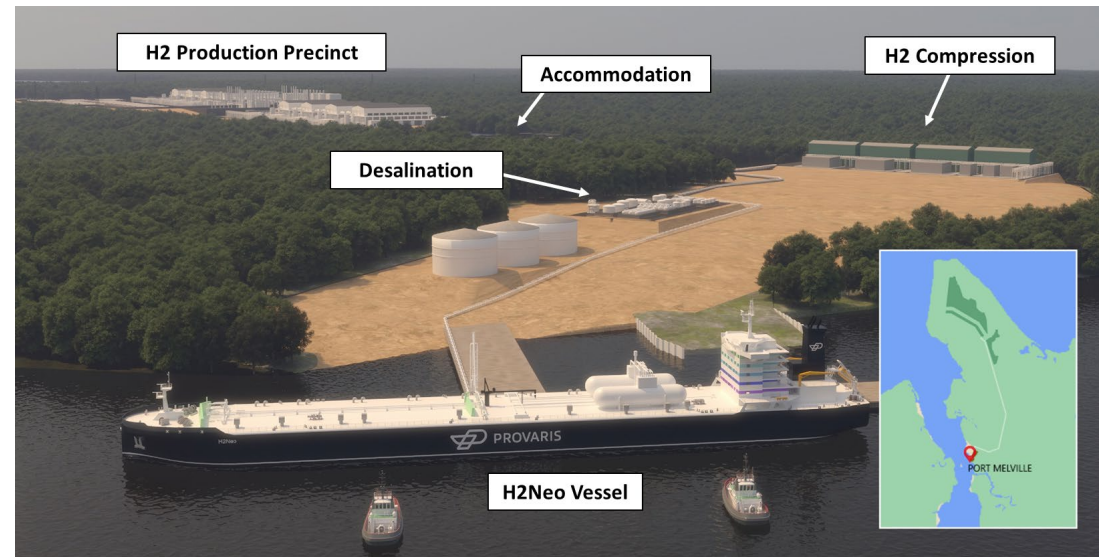
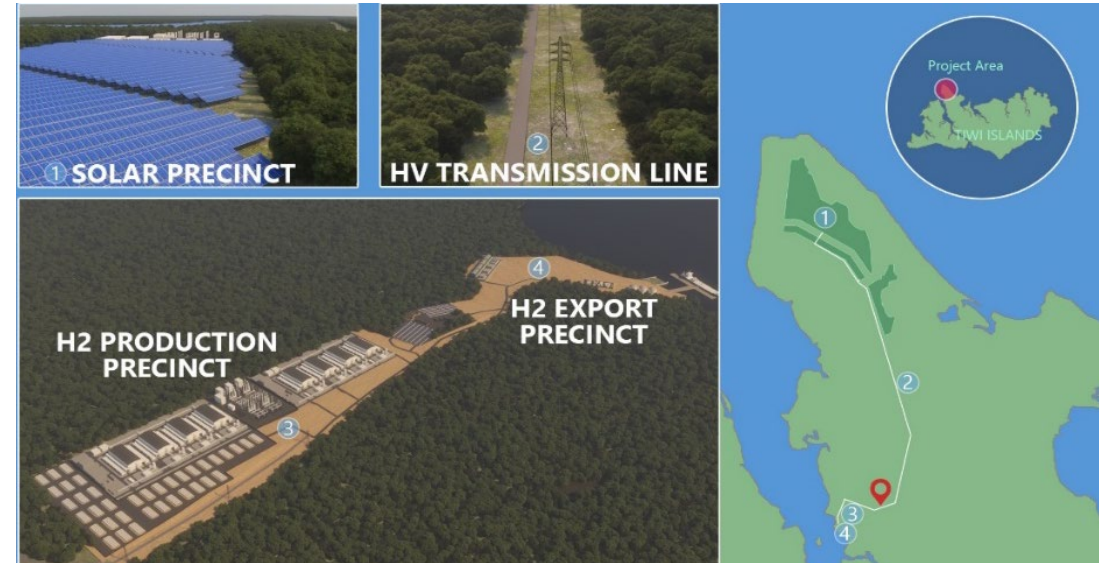
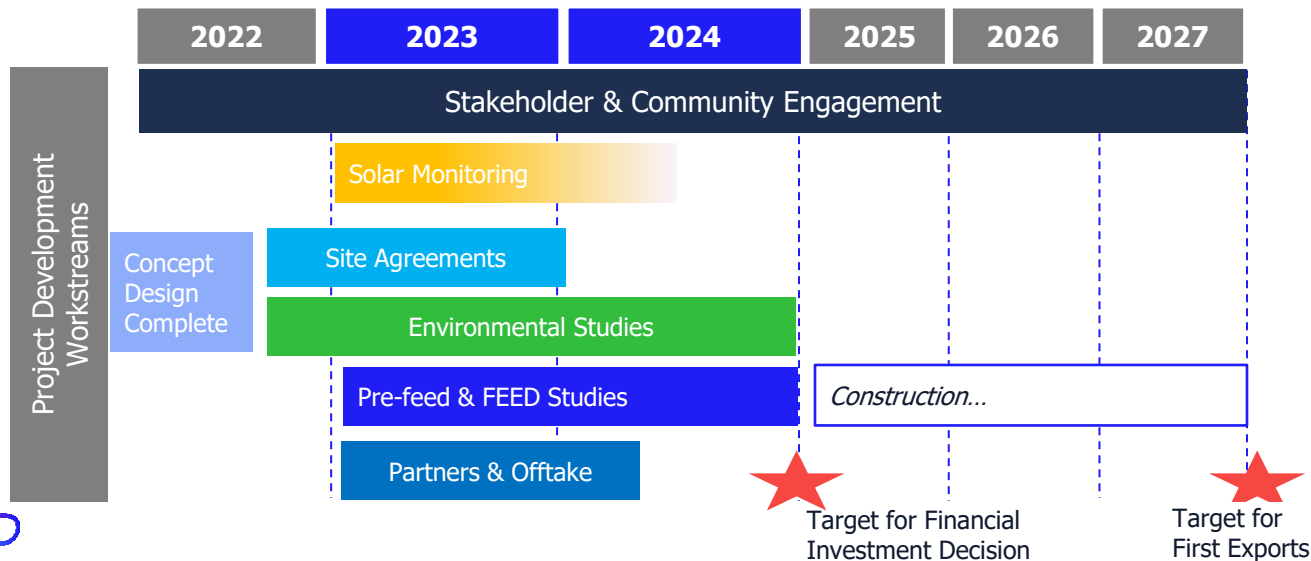
Strong ESG credentials for project financing & government funding



Provaris acknowledges that its proposed Tiwi Islands Green Hydrogen Export Project is located on the traditional lands of the Munupi people. It is a privilege to have the support and such a close working relationship with the Tiwi Land Council and Munupi Landowners.

Concept Design Study confirms Tiwi H2 can fast-track green hydrogen exports to capitalize on growing demand in Asia

- > **Concept Design Study (August 2022) confirmed feasibility** for compressed hydrogen production for 100,000 tpa export project
- > **Permitting advancing** with Federal and Territory EIS submission scheduled for Q4 2024
- > **Design Feasibility complete** for Solar Farm and transmission pre-FEED and Owners Engineer appointed
- > **Project and land agreements** and benefits package submitted to Tiwi Land Council
- > **JV partner process underway** to 'farm-in' and maximise shareholder value





Contacts



Martin Carolan

Managing Director & CEO

mcarolan@provaris.energy



Per Roed

Chief Technical Officer

proed@provaris.energy



www.provaris.energy



ASX.PV1



@ProvarisEnergy



Provaris Energy Ltd.



Sydney, Perth, Oslo



info@provaris.energy

Corporate Overview

Capital Structure

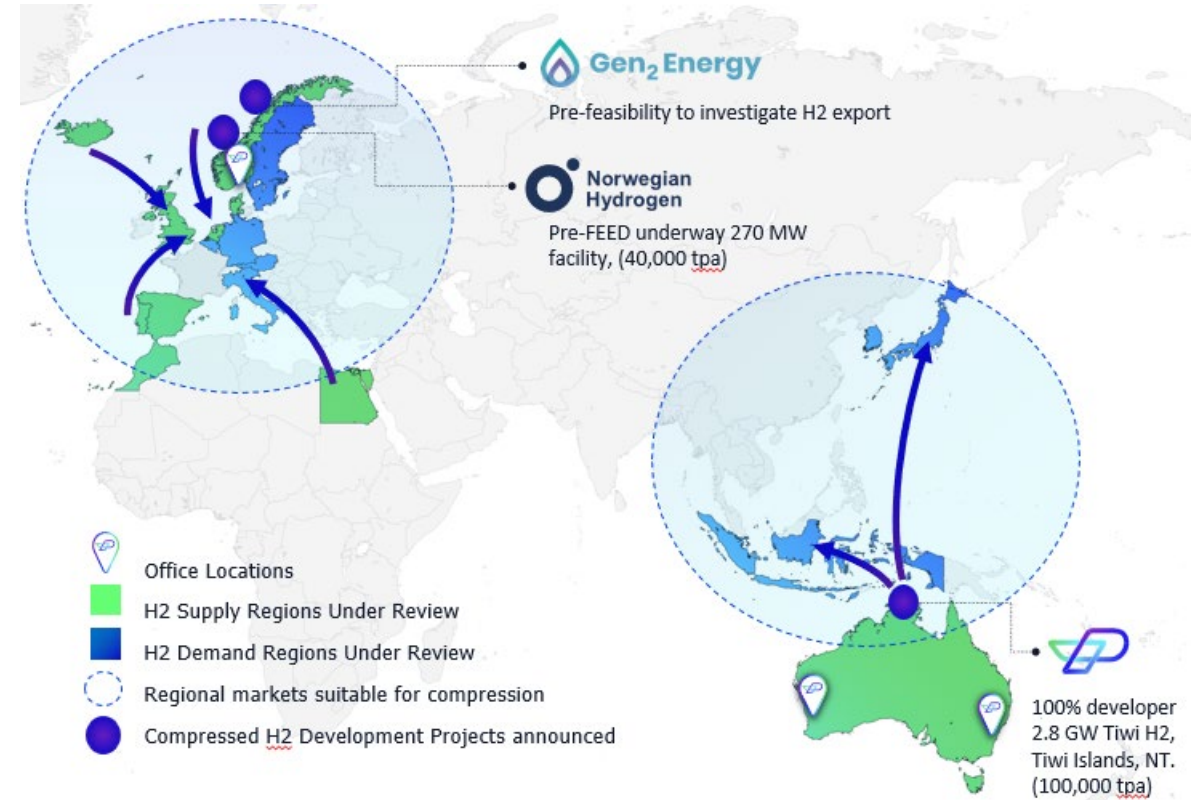
| | |
|---|-----------------------|
| Ordinary Shares on Issue (PV1.ASX) | 548 Million |
| Market Capitalisation (at 6.5 c) | A\$ 35 Million |
| Cash (at 30 June 2023) | A\$ 5.1 Million |
| Performance Rights ² | 24.0 Million |
| Unlisted Options ³ | 9.0 Million |

Shareholding (Undiluted)

| | |
|---------------------|-----|
| Institutional & HNW | 18% |
| Management | 5% |
| Total top 20 | 33% |

1. Listed Options PV10A, expiry 26 May 2023, exercise \$0.12
2. Performance Rights issued to Management
3. Broker options exercisable at 18.75c, Expiry November 2024

Regional Office Locations Servicing Europe & Asia (Sydney, Perth, Oslo)



Board & Management

Global experience in energy infrastructure, utilities, ship newbuilds, operations, and capital markets



Martin Carolan

Managing Director
& CEO

Commercial
& Capital Markets

SYDNEY



Garry Triglavcanin

Executive Director & Chief
Development Officer

Engineer, LNG, Project Development

PERTH



Greg Martin

Chairman

Business Leader, Energy, Infrastructure,
Governance

SYDNEY



Andrew Pickering

Non-executive
Director

Shipping, Newbuilds,
Tankers, LNG

SYDNEY



David Palmer

Non-executive
Director

Shipping, Commercial, Financing

LONDON



Per Roed

Chief Technical Officer

Newbuilds, Tankers, LNG, Ports,
Operations

OSLO



Mats Fagerberg

Business Development - Europe

Commercial, LNG, Infrastructure,
Shipbroking

LISBON



Norman Marshall

Commercial Manager

Legal, Commercial,
Project Finance

PERTH



John Stevenson

Group Financial Controller

Accounting,
Finance

SYDNEY



Dave Stenning

GH2 Carrier
Development

Class Approvals,
Commercial

CALGARY



John Fitzpatrick

Naval Architect
& Inventor

Ship Design,
Class Approvals

CALGARY



Progressing our commitment to ESG reporting for a fair and sustainable future, connecting the world to a clean energy future

Provaris has adopted the World Economic Forum (WEF) framework to report material and non-material Environmental, Social and Governance (ESG) matters

Our purpose is to produce and develop renewable hydrogen supply chains that are simple & efficient providing energy security and enabling net-zero targets to be achieved



- **ANTI BRIBERY/CORRUPTION**
We maintain the highest standards of integrity and honesty in our business.
- **MODERN SLAVERY ACT**
We adhere to legislative obligations relating to modern slavery and human trafficking.
- **DIVERSITY AND INCLUSION**
We advocate the principles of an inclusive work environment and a diverse workforce.

