PROVARIS

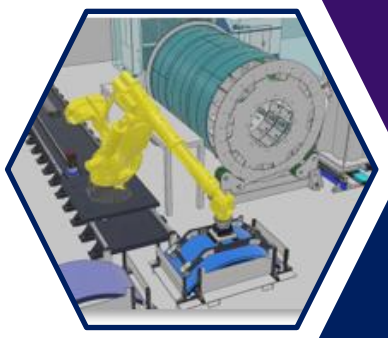
Enabling critical storage and maritime infrastructure for the energy transition

24 June 2025

ASX: PV1

Record emissions and the Energy Transition policy is driving the need for innovative large-scale storage and transport solutions

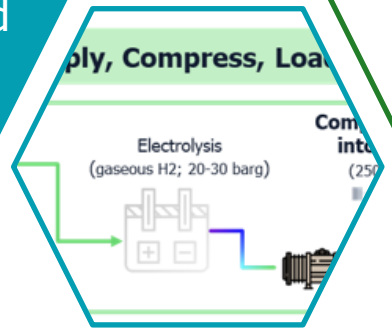
Provaris is developing critical infrastructure that scale for H2 and CO2



Innovative bulk-scale tank designs for H2 and CO2

Monetization through IP license & capital lite model

Focus on efficiency and delivered costs



Core IP

Class Approvals

Robotic Fabrication

Innovation in H2 and CO2 critical to achieving emission targets…

Bulk scale compressed H2 carriers allowing for flexible, energy and cost-effective regional hydrogen supply chains

Next generation LCO2 tanks with increased volume, lower steel weights, and designed to solve existing capacity bottleneck and lower costs

Diversification across products, timelines, revenue models…

Partnering with major industry leaders to develop efficient supply chains

Strategic focus on the European energy transition

Leveraged to the roles of both Hydrogen and CCS which are both critical to reducing carbon emissions for essential industries.

Strategic location in Europe's Green shift where robust Policy and Funding continues to propel the Energy Transition (EU Industry mandated to decarbonize)

Demand for new storage and shipping segments in both H2 and CO2 emerging to meet 2030 timelines

Proprietary tank IP, fabrication and ship designs provide unique first-mover advantages to unlock economic storage and transport

Extensive studies demonstrate **compression provides the lowest cost** for regional hydrogen supply

Advancing supply, shipping & offtake term sheet agreements for Nordic hydrogen supply, global ship owners and German utilities

Expanding tank IP and license fees with Yinson Production AS to innovate **liquid CO2 tank** and commercial for vessels

'Capital lite' model & license of IP to focus on early cash flow from license fees, recurring revenue and remove capex

Growth opportunities from a pipeline of projects and new markets for H2 and LCO2 storage tank solutions

Experienced Board & Management aligned with investors

Australian public company (ASX.PV1) with offices in Sydney & Oslo. Global experience across energy and gas infrastructure, utilities, ship newbuilds, operations, and capital markets

Martin Carolan

Managing Director & CEO

Commercial & Capital Markets

AUSTRALIA / NORWAY

Greg Martin

Chairman

Energy,, Infrastructure, Governance

AUSTRALIA

Andrew Pickering

Non-executive Director

Shipping, Newbuilds, Tankers, LNG

AUSTRALIA

David Palmer

Non-executive Director

Shipping, Commercial, Financing

ENGLAND

Per Roed

Chief Technical Officer

Newbuilds, Tankers, LNG, Ports, Operations

NORWAY

Mats Fagerberg

Business Development

Commercial, LNG, Shipbroking

PORTUGAL

Garry Triglavcanin

Product Development Director

Engineer, LNG, Project Development

AUSTRALIA

Norman Marshall

Group Commercial Manager

Legal, Commercial, Finance

AUSTRALIA

John Stevenson

Group Financial Controller

Accounting, Finance

AUSTRALIA

Jessica Roed

Operations Manager, Norway

Shipping, Logistics

NORWAY

Supported by world-class technical partners, advisors and industry organisations:

CLARKSONS · K LINE · DNV · ABS · Northern Marine · WÄRTSILÄ · CAPILANO MARITIME · Norwegian Energy Partners · Norsk Hydrogenforum · AHK

Corporate Overview – Provaris Energy (ASX.POV1)

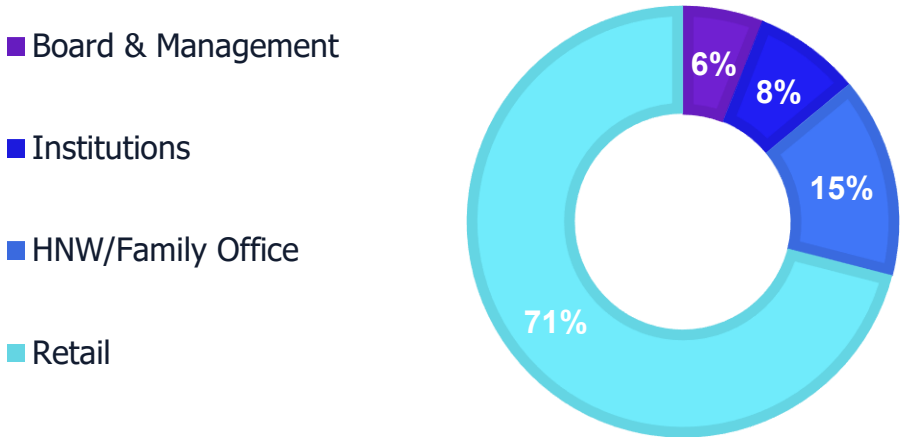
Australian public company, with offices in Sydney & Oslo

Capital Structure

Ordinary Shares on Issue (PV1.ASX; WS90.BE)	698 M
Market Capitalisation (at 1.7c)	A$ 12 M
Cash (31 March 2025)[1]	A$ 0.8 M
Macquarie Bank – Available Standby Bond Facility [2]	A$2,500,000
Convertible Bonds On Issue [2]	A$235,000
Unlisted Options [3]	40.9 M

1. Refer to March 2025 quarterly report.
2. A$3 million Two-year standby facility with Macquarie Bank, announced 3 May 2024.
3. Unlisted Options: 23.75M at 7.5c, Expiry March 2026; 8.2M at 7.5c Expiry Jul 2026; 4M at 6.6c, Expiry May 2027

Shareholding (Undiluted)



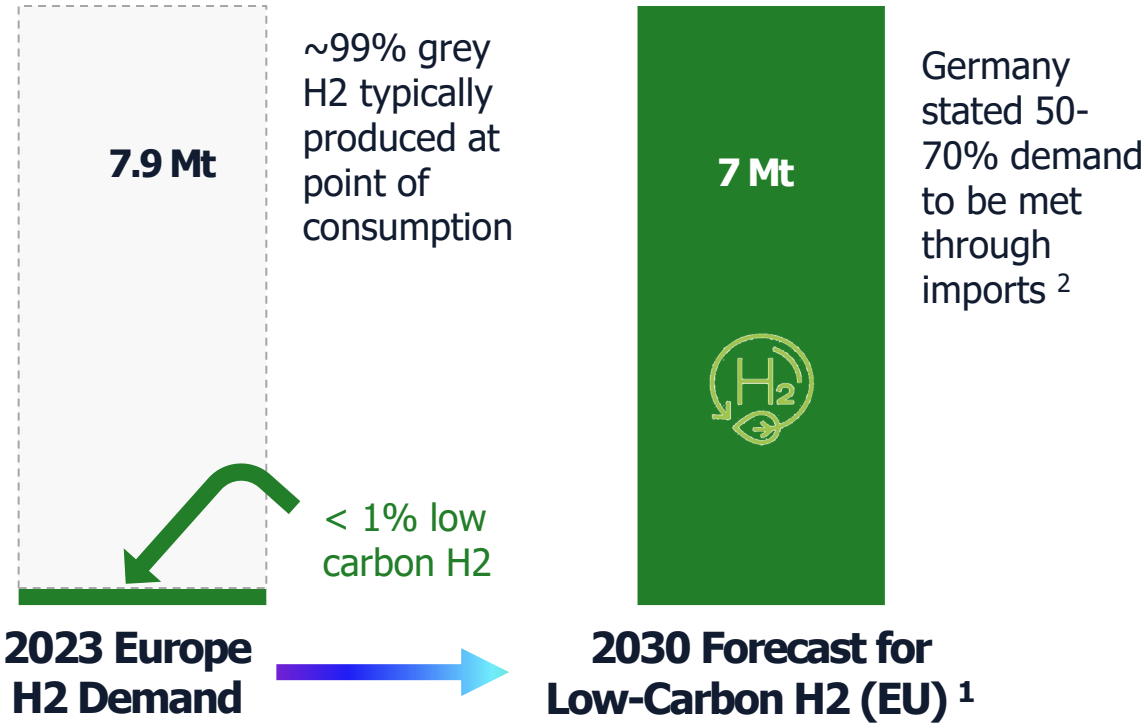
Offices in Sydney and Oslo


Advancing the scale-up of hydrogen supply for Europe

By 2030, Europe needs to import up to 70% of its hydrogen to satisfy demand

Recognition that early, scalable projects, not giga-scale will catalyze the Energy Transition

Focus on security of supply to meet ambitious targets



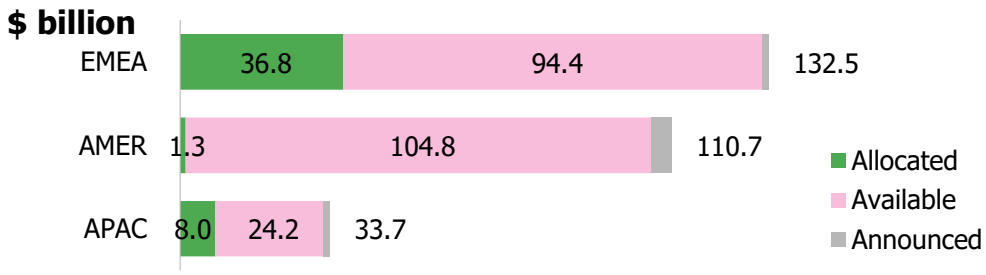
EU Policy action focused on scale up by 2030

Policy tailwinds with an easing of regulations

Infrastructure build-out for ports and pipelines

Carbon pricing to support green premium

Growth in public funding stimulating supply



BloombergNEF, March 2025

PROVARIS

Notes: 1. Hydrogen Europe: Clean Hydrogen Monitor 2024; 2. https://www.bmwk.de/Redaktion/EN/Hydrogen/Dossiers/national-hydrogen-strategy.html

Integral to hydrogen supply chains from the Nordics to Europe

In collaboration with industrial supply and offtake partners

- Provaris solution driving region supply chain development
- Strategic supply from Nordic region: renewable baseload power, regional proximity, security of supply
- Demand confirmed via 3 collaboration MOUs with German utilities
- **Term Sheet signed: Uniper & Norwegian developer** – targeting Binding SPA mid-2025 (1×H_2Leo barge, 2×H_2Neo carriers)
- **Second MOU (Mar 2025) developing Norway–Germany supply chain** – targeting Term Sheet mid-2025
- FID decisions targeted for 2026

Growing Development Pipeline

- Discussions with 4 H2 supply projects in need of a transport solution across the Nordics and Spain
- Cumulative volume of 150 Ktpa = 10 H2Neo carriers + 4 H2Leo barge

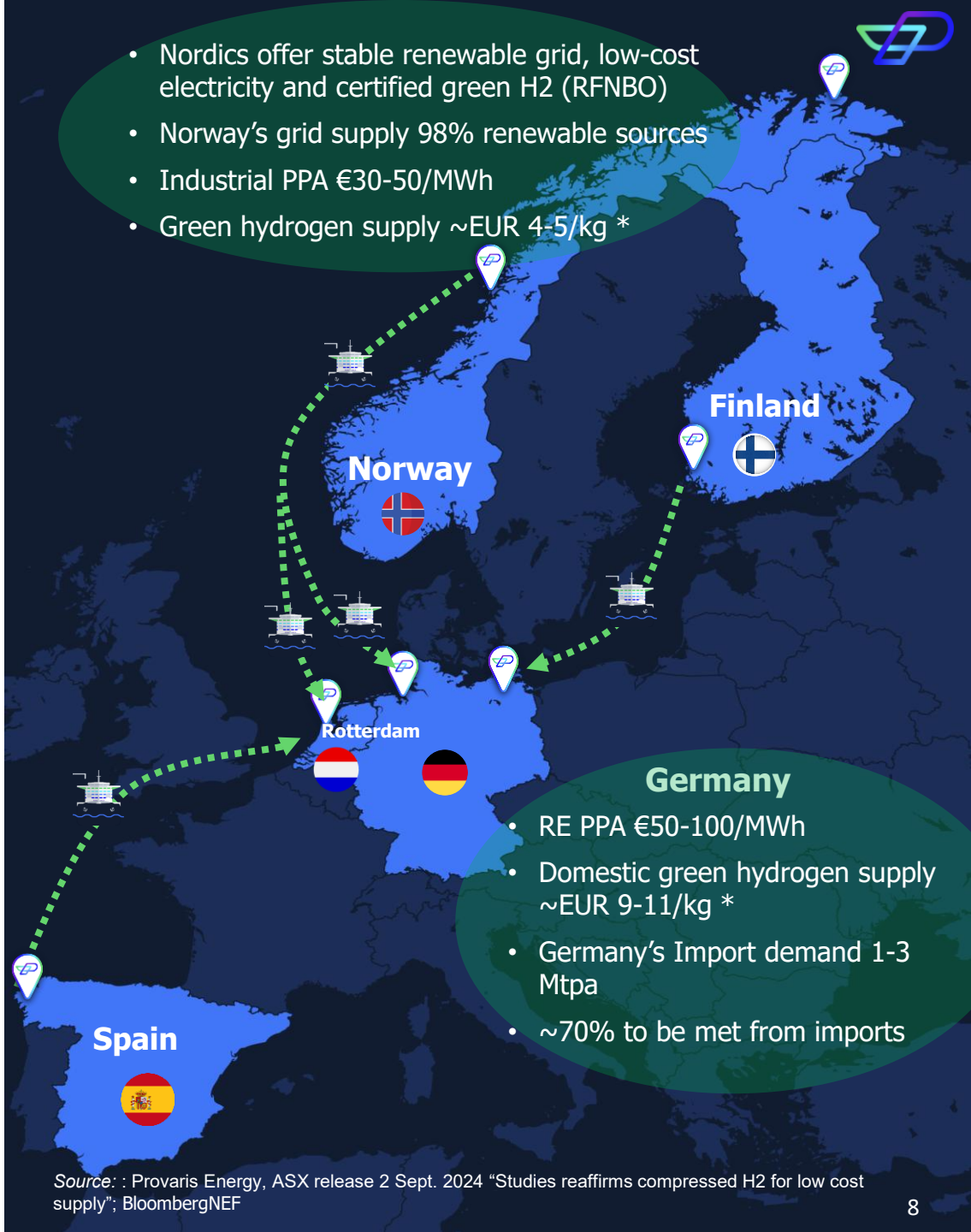
Key Milestones

2025

- Q2: Non-binding Term Sheets for supply & shipping
- Q2-Q4: Binding HPA & Shipping Agreements

2026

- First Project FID
- Newbuild orders
- License Fees

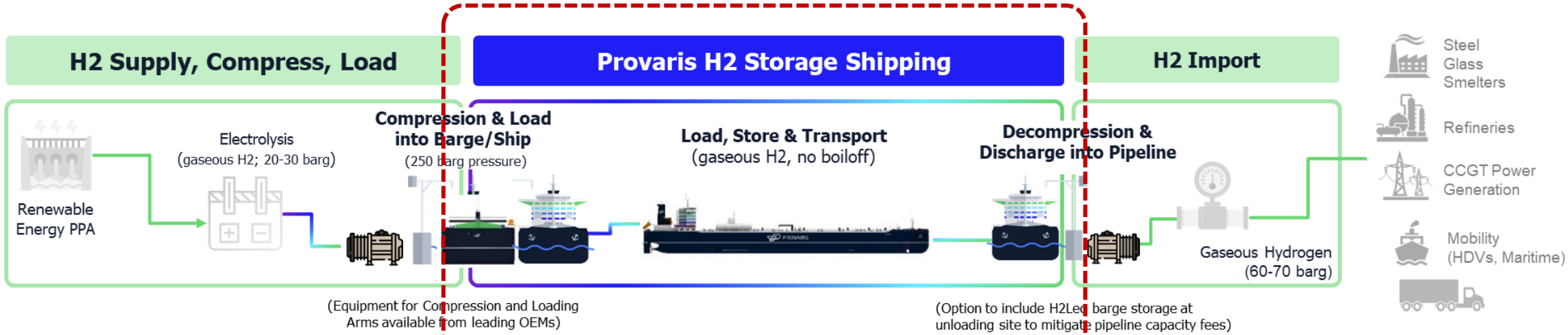


Source: : Provaris Energy, ASX release 2 Sept. 2024 "Studies reaffirms compressed H2 for low cost supply"; BloombergNEF

Compressed hydrogen, flexible and stable supply for buyers

Hydrogen molecules — not ammonia carriers — is Europe's starting point for supply

- **Compression enables critical infrastructure** required for transporting large-scale regional gaseous hydrogen supply.
- **Working with industrial partners** to create effective supply chains and generate initial cash flow through a licensing approach.
- **Multiple supply chains are in various stages of development**, moving towards term sheets that present revenue-generating opportunities.
- **Initial Term Sheet signed with Uniper Global Commodities** (January 2025) underscores the importance of the Provaris solution.
- **Cooperation with global shipping operator "K" LINE** to accelerate commercialisation of hydrogen carriers



Benefit to the Supplier:
Flexibility on Hydrogen Produced per MW installed
= Higher Project Returns

Cooperation with "K" LINE to develop midstream shipping for future ownership and operating models for hydrogen transport

"K" LINE
KAWASAKI KISEN KAISHA, LTD.

Benefit to the Buyer:
More Hydrogen Delivered + Flexible Import Solution
= Lower Delivered Cost

Regional supply model delivers 50% more hydrogen at a 20% Lower Cost !

Compression eliminates capital and energy intensive steps of alternative carriers

50% more gaseous hydrogen

delivered to the customer
(~3% used for compression vs +30% for ammonia)

~20% lower delivered cost

(~€ 1.40/kg discount)

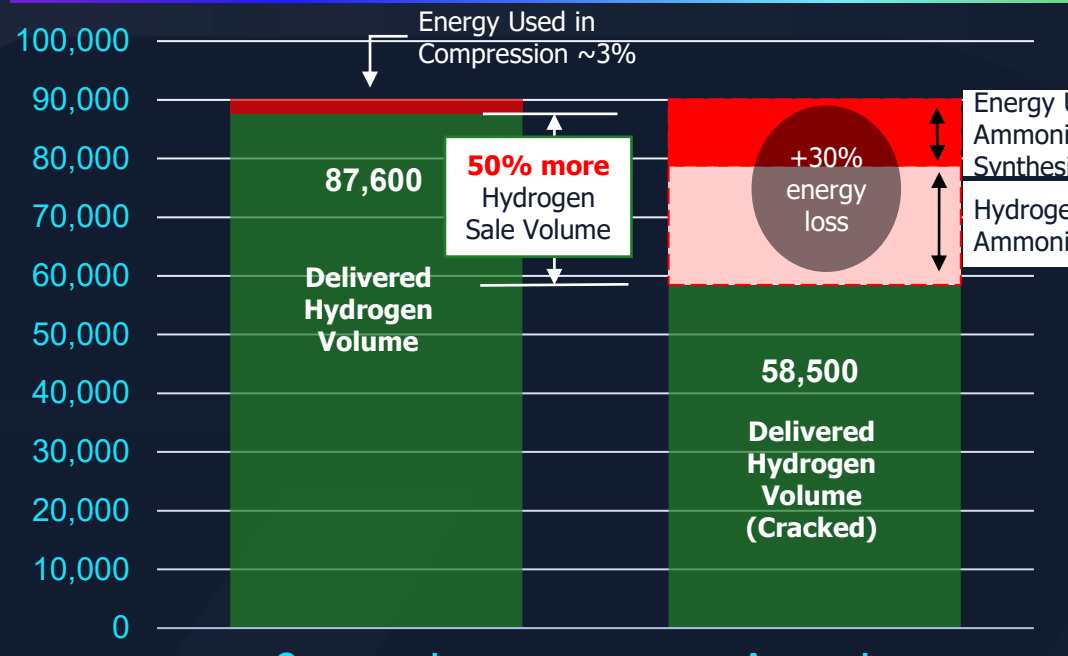
20% reduction in capital intensity

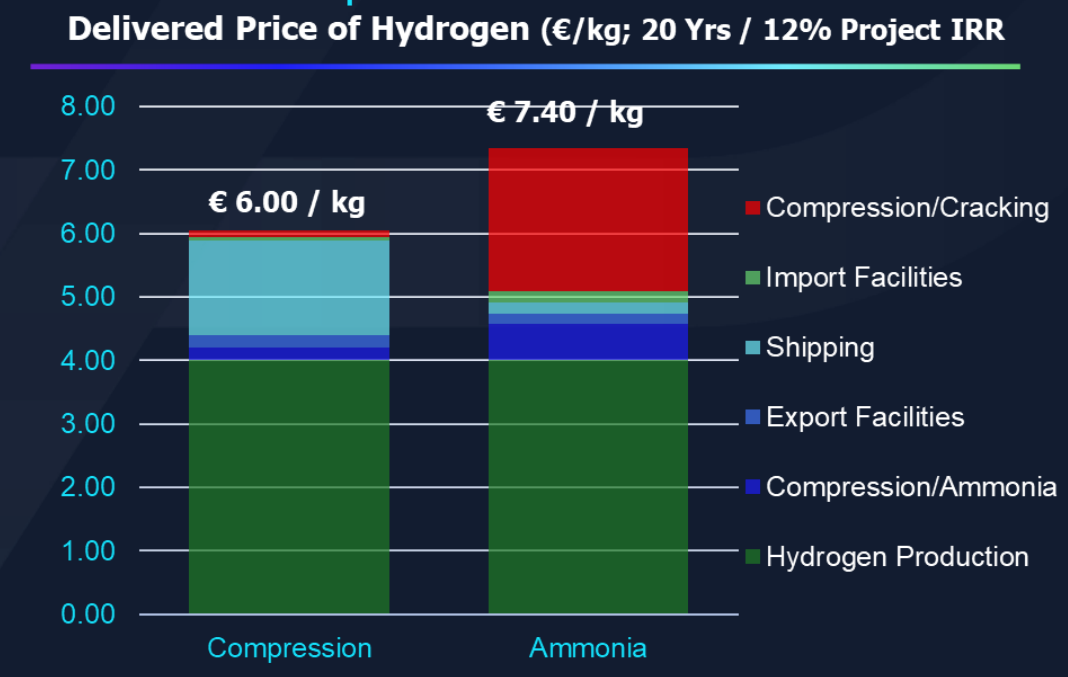
(€/kg H2 delivered)

10x reduction in energy loss

(when delivered as gaseous H2 modecules)

Source: Provaris Energy, ASX release 2 Sept. 2024 “Studies reaffirms compressed H2 for low cost supply”. Outcomes for a 540MW renewable grid connected site, sailing 1,000 Nm, when compared to the ammonia supply chain (delivered as gas); Compression confirmed by Compressor OEMs; Excludes port owners' costs.





Benefits of compression recognised as a viable option for hydrogen supply

Addressing the key challenges that are restricting the scale-up of industrial supply

Use **less renewable energy** to deliver more hydrogen

Compression = 3% energy loss; vs Ammonia = +30% energy loss (synthesis + cracking)

Compression of Hydrogen is **proven technology**

(Equipment available from leading OEMs up to 700 bar)

Eliminates complex & capital-intensive supply chain processes

(ie. Compression vs conversion and cracking)

Offers the **lowest delivered cost** from regional supply projects

Delivers <u>hydrogen</u> aligned with Europe's demand & policy ambitions

(examples of recent binding contracts have been for hydrogen)

Flexible import solutions for off-takers to balance market demand

(Modest capex and scale enables multiple ports aligned to development of pipeline network)

Market leading carrier for hydrogen, focused on cost efficient fabrication and supports modular infrastructure development

Cooperation with global shipping leader "K" LINE for technical, commercial, and operational experience

H2Neo Compressed Hydrogen Carrier targeting final approvals 2025

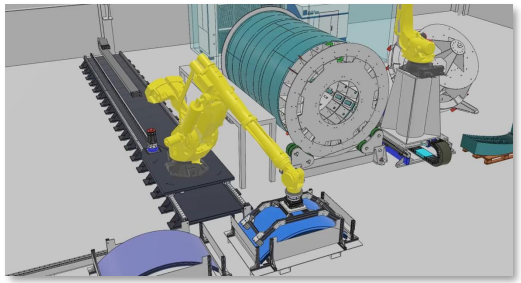
- **First Mover Advantage:** Four years of IP development. Approved Class Design, risk and safety studies — prototype final stage.
- **Supply Flexibility:** Modular ships + barges enable multi-port hydrogen imports aligned with pipeline rollout.
- **Partnership with global operator "K" LINE:** to develop operational cost models, ship newbuild program, and charter terms.

Technical Partners & Advisors include:

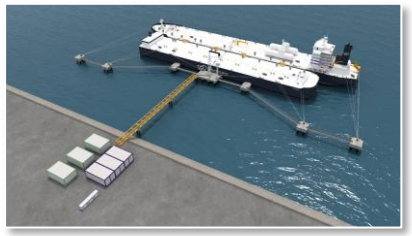
PROVARIS WÄRTSILÄ Northern Marine DNV ABS CLARKSONS "K" LINE

Automated fabrication using robotic laser-hybrid welding

- Robotic laser-hybrid welding technology proven to lower costs, increase productivity and reliability.



Proven compression technology & loading arms enables flexible and low capex jetty solutions



H2Leo barge storage for loading and discharge sites
Received AIP from Class (300-600 t H2)

Breakthrough term sheet with Uniper and Norwegian Hydrogen

42,500 tpa RFNBO-compliant hydrogen – Supply, Shipping & Offtake Framework Agreed

Norwegian Hydrogen

Hydrogen Supply

- **Norwegian Hydrogen responsible for supply**
- **42,500 tonnes per annum**
- **RFNBO compliant H2** based on EU regulations
- *FEED decision pending Power Capacity Reservation*

Storage & Transport

- **Provaris to provide H2 barge & carriers and arrange shipping**
- 2* H2Neo carriers and 1* H2Leo barge for storage and round-trip transport
- Long-term charter aligned to Hydrogen SPA tenure (10-15yrs)
- **Target newbuild order 2026 to trigger License Fees.**

Hydrogen Offtake

- **Uniper to offtake volumes, nominate import location**
- 10-year term (+5 yr options);
- Fixed price DAP; Take-or-pay obligations
- First cargos early 2029

Source: Norwegian Hydrogen AS

De-risking Milestones in 2025

> Draft Hydrogen SPA (conditional)

> Key Terms for Shipping Time-Charter;

> Shipyard LOI & Newbuild capex; Unconditional Hydrogen SPA

'Capital Lite' model to focus on early cash flow without large-scale capex

Capital efficient growth model through upfront license fees + equity share in fleet, without owning ships

- Targeting maiden Technology Fees aligned with project FID/Construction decisions in 2026.
- Long-term recurring Origination Fees based on 10-15yr Time Charter agreements operational from 2029.

For each H2 supply project

Technology License Fee

5% on Capex for H2Neo carrier & H2Leo barge for our proprietary ship and tank design

- Based on proven LNG tank containment revenue model.
- Provides early cash flow and revenue payments during construction of the H2Neo and H2Leo newbuilds.

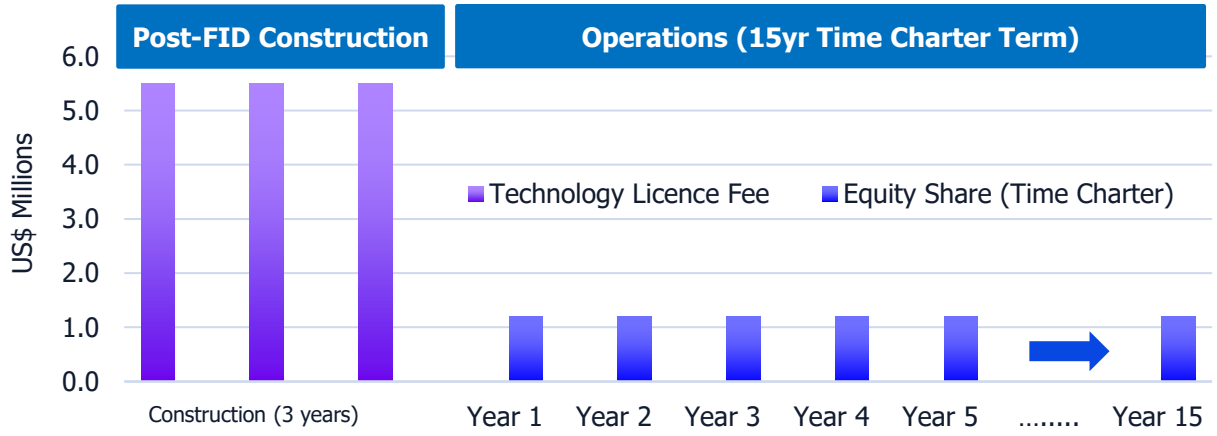
Origination Fee

5% as carried equity Ownership Interest in each H2Neo carrier and H2Leo barge

- Experienced ship owners or SPV to finance and operate the fleet.
- **Optional upside:** Provaris can co-invest in future offtake-linked projects.

Illustrative Returns (Per Supply Project - 2 x H2Neo carriers & 1 H2Leo barge):^

License and Origination Fee Income per supply chain project with a binding 15yr Time Charter. No capital contributions/outlay.

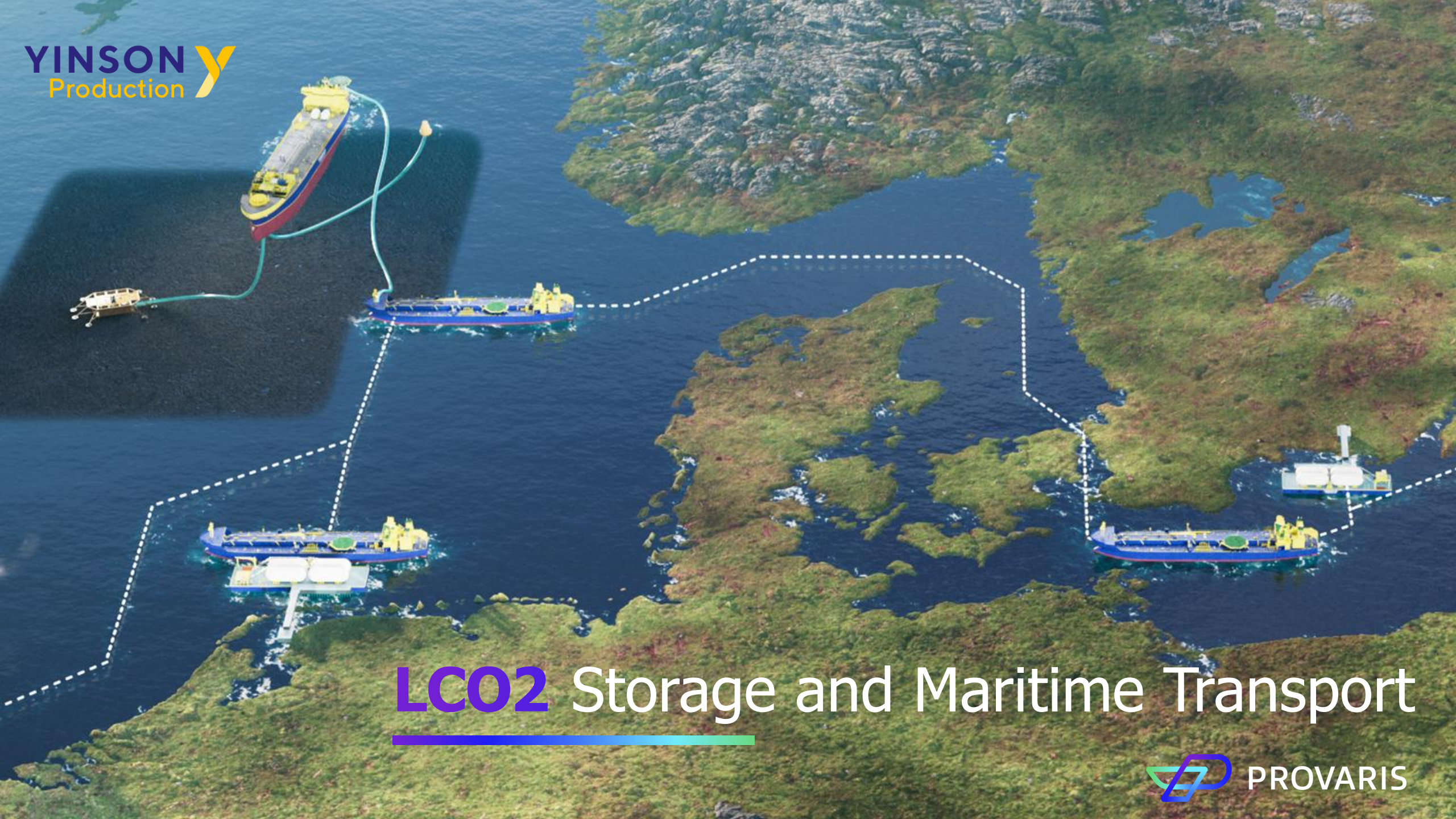


Per Supply Project [1]	Income USD Million	NPV_8 at FID USD Million
Technology License Fees [2]	16.5	14.4
Equity share of Time Charter Fees [3]	18.0	7.9
Total Fees Per Project	**34.5**	**22.3**
	~54 (AUD M)	~35 (AUD M)

^ **Notes**:
1. Supply Project comprises of 2 x H2Neo carrier and 1 x H2Leo barge. All fees allow delivered cost estimates negotiated for delivered cost to be maintained in Term Sheet discussions.
2. The technology license fee is based on Clarksons Norway AS market knowledge on LNG tank containment license fees and industry charter models. Fee is based on newbuild price of USD 125 million per H2Neo carrier and USD 80 million for H2Leo barge. Fee payable in milestones over 30 months from signing Shipbuild Contract. Fees are pre-tax.
3. Based on an illustrative charter model developed with Clarksons Norway AS, which estimates a 'Bareboat Charter' rate of ~USD 51,000/day for each H2Neo carrier and USD 32,000/day for H2Leo barge (excluding O&M, commissions, port fees and fuel consumption) to deliver shipping investors a target levered equity rate of return of ~15%, over 15 years, 70% gearing. FID 2026. Fees are pre-tax.

Targeting early-mover supply of hydrogen, with a model that is clear and scalable

Multiple catalysts targeted for 2025


YINSON
Production
LCO2 Storage and Maritime Transport
PROVARIS

Why is Provaris innovating LCO2 tank solutions?

Global Challenge

- Global CO2 emissions from energy combustion and industrial processes reached record highs in 2024
- **Energy majors committing to produce more fossil fuels will boost investment in Carbon Capture and Storage (CCS)** to cut CO2 emissions
- Existing **infrastructure for liquid CO2 (LCO2) capture is mature, however limited in capacity** and high in cost based on existing industry needs

Industry Hurdles

- Primary CO2 transportation methods over longer distances are pipelines and shipping
- **Shipping of LCO2 limited to 7,500 cbm vessels**, with new orders for 22,000 cbm vessels, and demand for +30,000 cbm capacity
- **Cost efficiencies requires larger scale storage and vessels** to meet growing CO2 marine transportation requirements

Provaris Partnership with Yinson

YINSON Production

- Yinson is a global operator of energy infrastructures assets with strong financial position
- Leveraging Provaris' proprietary storage and marine transportation design and construction methodology
- **Design of new bulk-scale LCO2 tank and integrated shipping solutions**
- **Fully funded development program** with key milestones in 2025/26; includes fee income to Provaris
- Yinson bring access to immediate market opportunity through its joint development of the 10 Mtpa Havstjerne CCS, Norway

Benefits

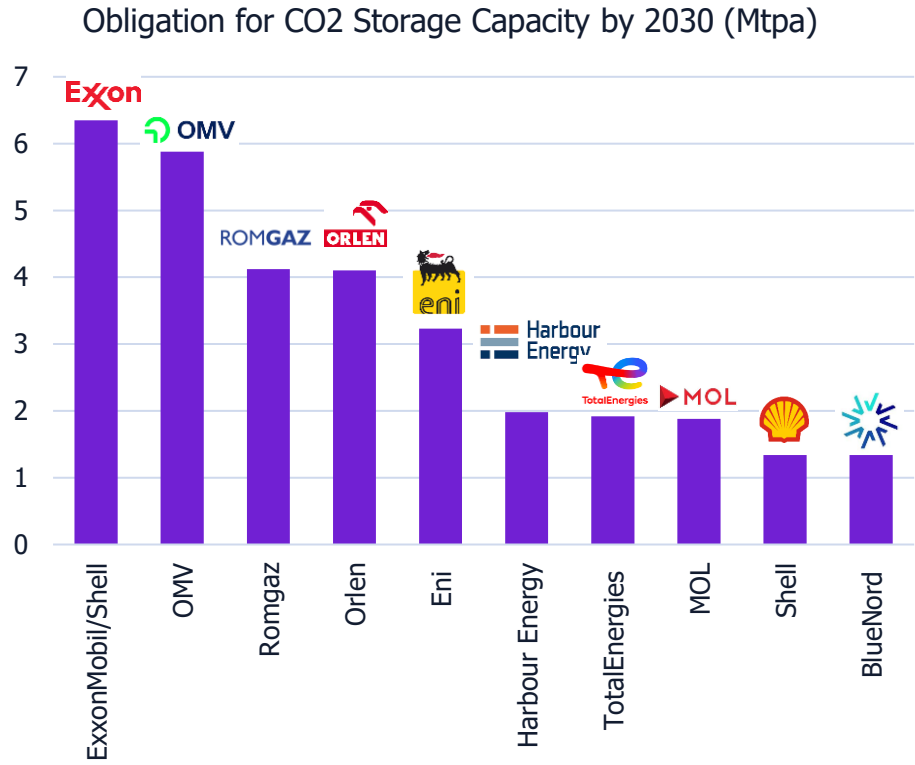
- Lower capital and operating costs per cbm of LCO2 storage
- Global pipeline of CCS projects advancing to FEED and FID will need low-cost cost storage and transport solutions
- **Offers Provaris growth in License Fee** for tanks required in floating storage, shipping, and land-based storage solutions

CCS recognized as a necessity to meet Net Zero targets

Europe mandating 44 Oil & Gas producers to establish 50 Mtpa of storage capacity by 2030

- 2024 global **CO2 emissions reached a record high 37.8 Gt CO2**, primary increases from natural gas and coal.
- Global **energy companies boosting investment in Carbon Capture and Storage (CCS) to cut CO2 emissions**
- **Europe's industrial plants rely on CCS for decarbonization**; limited pipelines, hence reliance on shipping and offshore sequestration.
- **CO2 is a waste product (cost to industry)**, necessitating investment in efficiency and scale. Initial projects likely require funding support to deliver economics to meet policy.
- EU implementing price incentives with the Carbon Border Adjustment Mechanism (CBAM) to drive Emission Trading System (ETS) pricing from 2026.
- **Norway first mover** for offshore injection with the 'Northern Lights' CCS project at 1 Mtpa; with EU reliant on shipping and offshore storage.

EU's Net Zero Industry Act places obligation on 44 Oil & Gas producers to create CO2 injection capacity by 2030



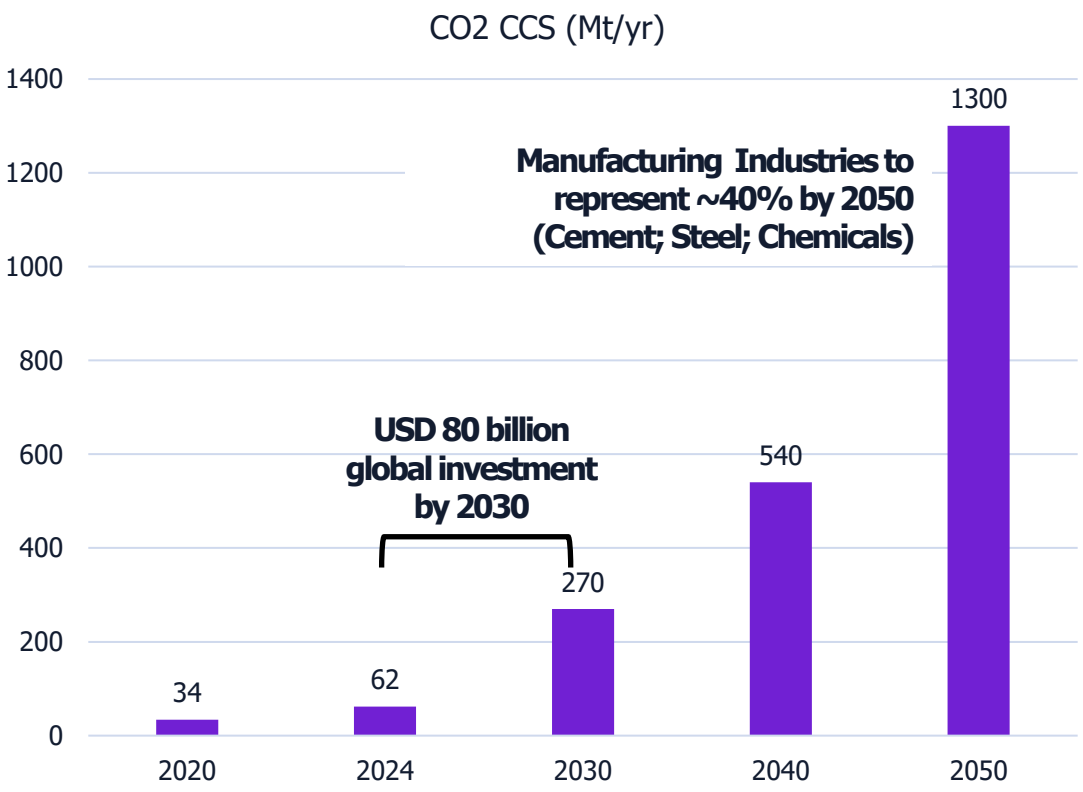
EU's 2030 carbon storage target, June 2025: Additional companies with obligations exceeding 1 Mtpa include Oldenburgische Erdölgesellschaft mbH, NAM Offshore BV, INA-INDUSTRIJA NAFTE d.d., and TotalEnergies EP Danmark A/S

Note 1: https://www.gminsights.com/industry-analysis/carbon-capture-and-storage-market

Global CCS outlook driving demand for large scale LCO2 carriers

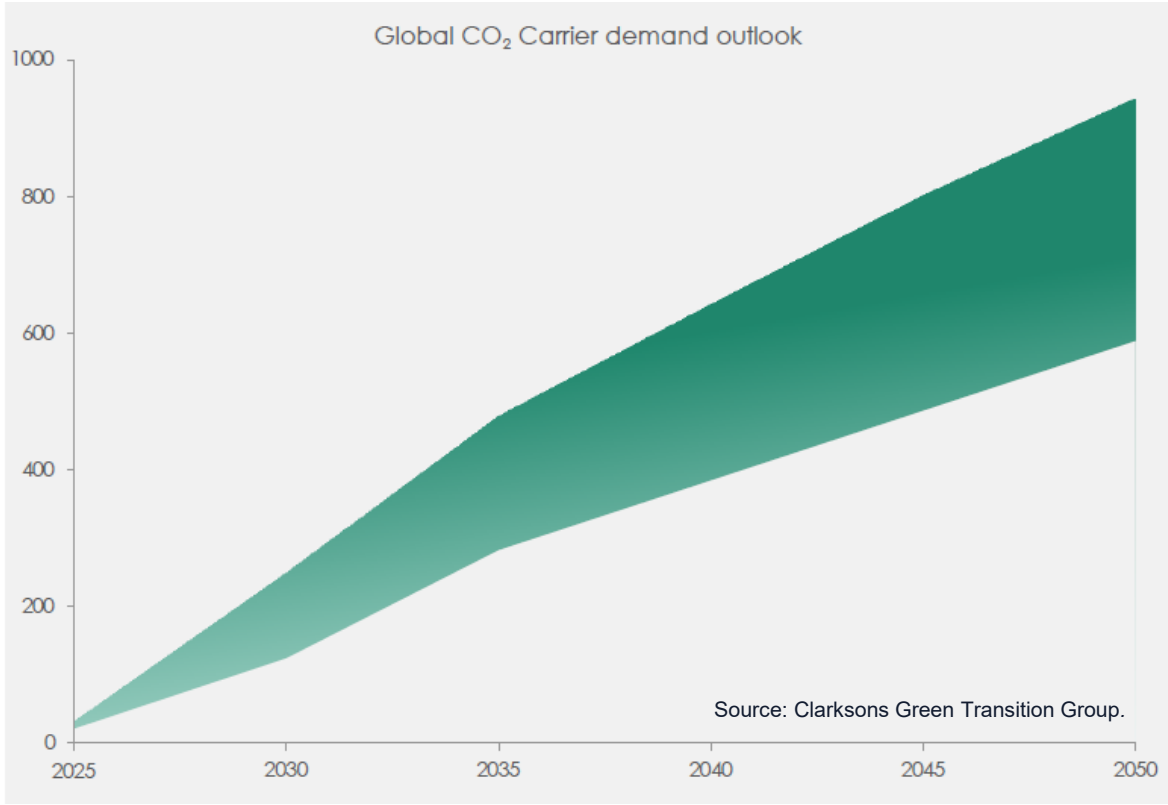
Opportunity for Provaris to secure an early role in a new growth shipping sector

Rapid growth in CCS capacity through to 2050



Source: DNV CCS Outlook, 2025.

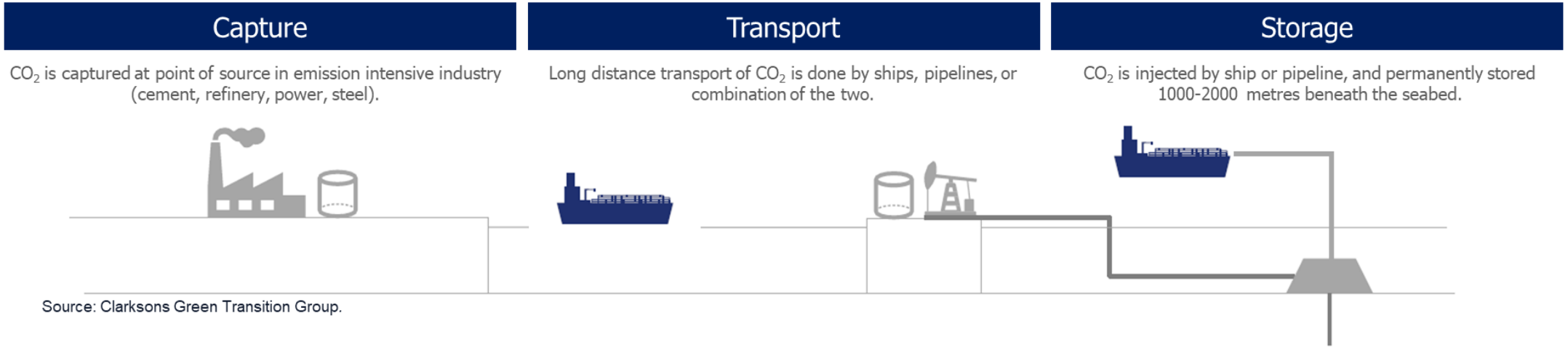
Translating to Demand for Specialised LCO2 Carriers



"In our view, scaling up global CCS capacity will require a fleet of specialized tankers with the ability to collect CO2 from capture sites operated by many different industrial segments."

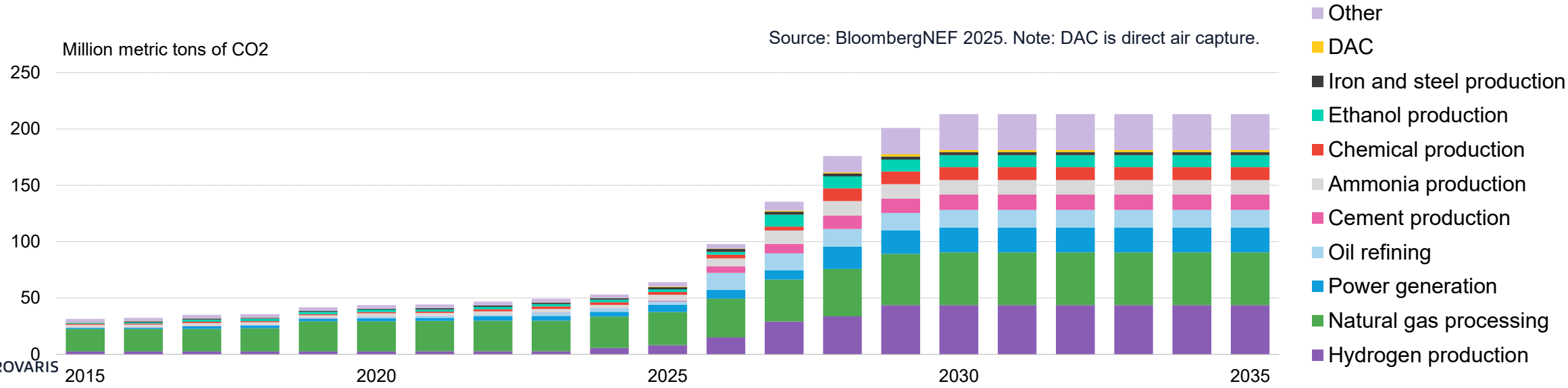
Carbon Capture and Storage (CCS) value chain is well understood

Established infrastructure for CO2 liquefaction, storage, and transport technologies need to scale



Source: Clarksons Green Transition Group.

Growth in industrial Carbon Capture Capacity requires infrastructure to scale...



Provaris and Yinson innovating bulk-scale LCO2 storage

Offers Provaris growth in License Fee for floating storage, shipping, and land-based storage solutions

Leveraging Provaris IP to fast-track CO2 tank design

- **Yinson Production - Global energy infrastructure leader** (FPSOs, CCS, Renewables). 2024: Operating 9 FSPOs; USD 1.6 B revenue; ~USD 1 billion private placement
- **Fully funded Joint Development Agreement** to deliver bulk liquid CO2 tank for floating, onshore, and ship-based storage applications
- **Solving industry bottleneck** = LCO2 tank capacity limited to ~7,500 cbm
- Scope includes large low pressure tank design to increase hull utilitisation, lower vessel capex, and target lower freight cost.
- Global opportunity to license tank designs to maritime, offshore and storage applications from 2026

Provaris is Advised by Clarksons Norway AS, Energy Infrastructure Group

Yinson commit to full-scale development of CCS in Norway

- 2025 acquisition of Stella Maris CCS, includes development of **10 Mtpa Havstjerne CCS** Reservoir (Norway's continental shelf)
- JV partner is Harbour Energy PLC; €200M EU Innovation grant funding
- **Access to immediate market opportunity** to commercialise new tank design across vessels for storage, transport and injection
- **Partnership with "K" LINE for offshore injection and transport solutions**

Source: Yinson Production AS.

Why the need for new tank designs?

The bigger the tanks, the bigger the SAVINGS in associated capital equipment & operating costs

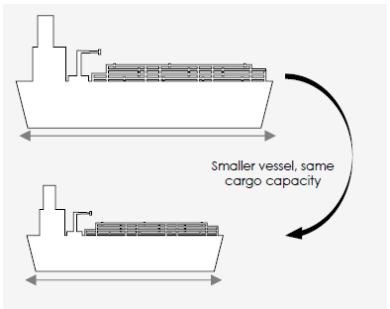
Industry problem: larger tanks require new materials

- Liquid CO2 stored at low pressure typically use Type C tank solution.
- Tank capacity restrained to **at 5,000 to 7,500 cbm capacity (60 to 70 mm plates)**. Beyond that … steel thickness becomes unmanageable unless new carbon steel materials are used.
- Increasing tank diameter requires new material to handle tank thickness. Higher 'yield stress' = higher material cost.

Standard Material Type C

Increasing tank diameter

Increase Wall Thickness or New Materials to be 'approved'



Source: Clarksons

Provaris Solution: layered designs using approved material

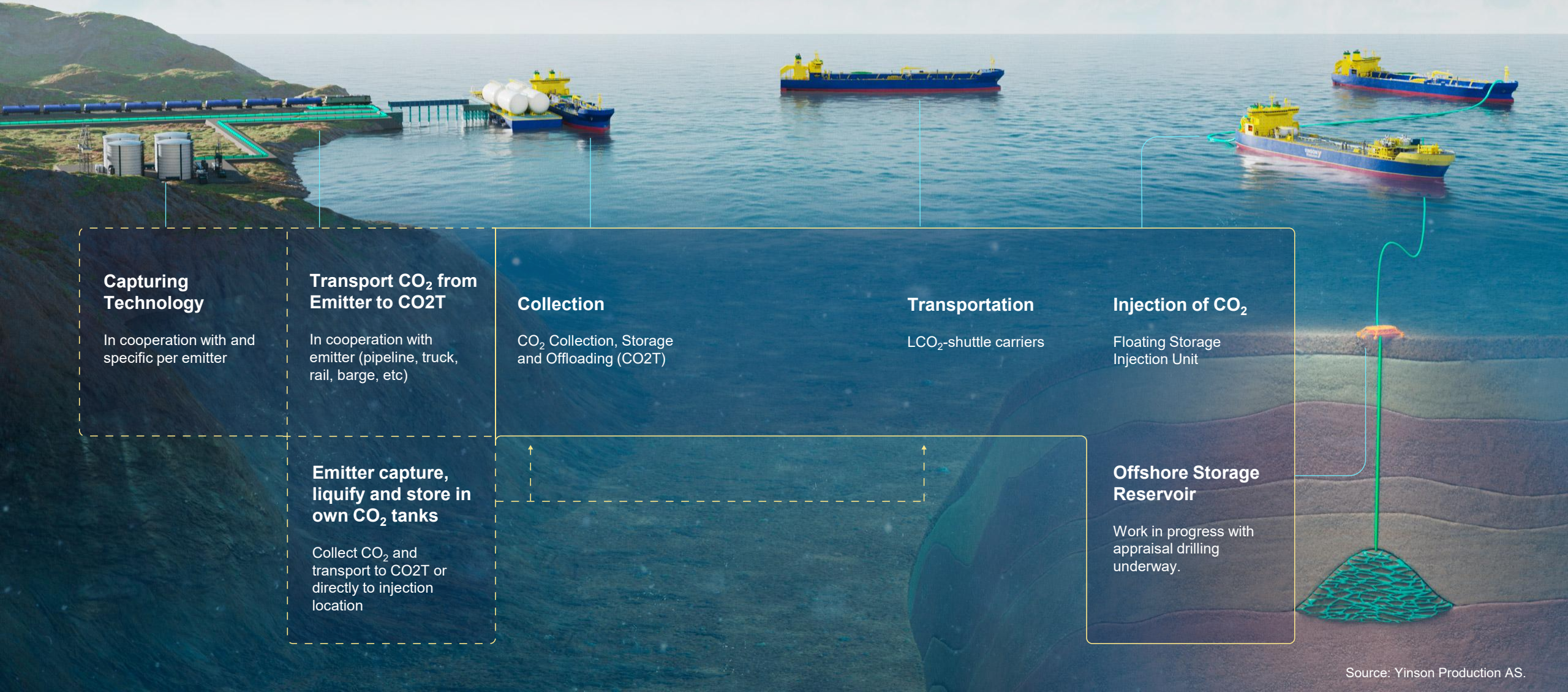
- Accelerated development timelines through knowledge of novel designs and Class approvals.
- Use of standard carbon steel materials; low pressure and temperatures.
- Storage capacity at multiples of existing designs reduces equipment capex/opex (eliminating pumps, manifolds, piping, control systems, vapor, etc)
- Lower tank construction costs.

Illustration: Provaris LCO2 Type C tank concept at low (10 barg) pressure and -40 to -55 deg C

Larger Tanks → Better Hull Utilisation → Lower Vessel Capex/Opex → Lower Freight Cost

To get CSS costs down, large scale flexible solutions are required!

Infrastructure planned can handle ≥ 10 mtpa of CO_2



Capturing Technology

In cooperation with and specific per emitter

Transport CO_2 from Emitter to CO2T

In cooperation with emitter (pipeline, truck, rail, barge, etc)

Collection

CO_2 Collection, Storage and Offloading (CO2T)

Transportation

LCO_2-shuttle carriers

Injection of CO_2

Floating Storage Injection Unit

Emitter capture, liquify and store in own CO_2 tanks

Collect CO_2 and transport to CO2T or directly to injection location

Offshore Storage Reservoir

Work in progress with appraisal drilling underway.

Source: Yinson Production AS.

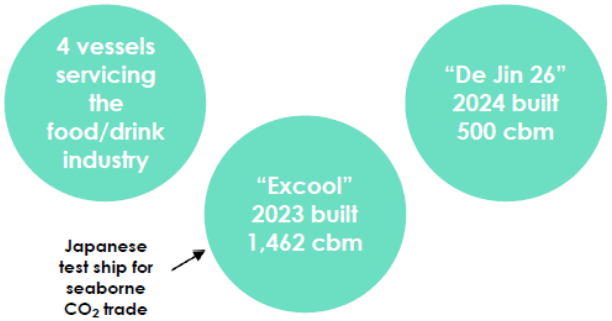
CCS projects driving demand for newbuild injection units and carriers

Storage and containment design typically based on existing Type C tank design limited in storage capacity

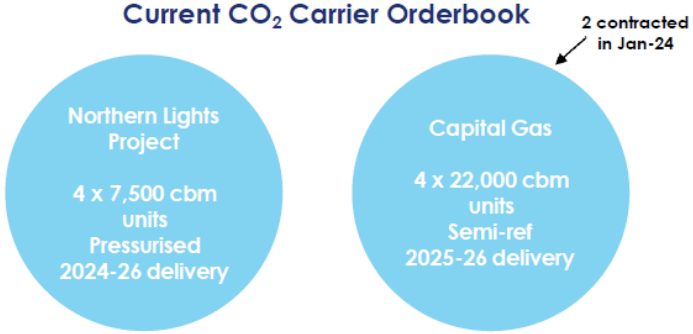
Order Potential – CO_2 Carriers

6 units in the fleet and 8 on the orderbook at present; several new projects in various stages of development

Current CO_2 Carrier Fleet



Current CO_2 Carrier Orderbook



Significant Newbuild Order Potential, Selected CO_2 Projects

Selected CO_2 Projects	Project Type	Status	Country	CO_2 Injection Capacity	FID Year/ Expected FID Year	Expected Start-Up Year	Vessel Size Assumption	Implied Vessel Requirement*
Northern Lights CO_2 Storage	Offshore CO_2 Injection	Install & Comm	Norway	1.5 mtpa	2020	2024	7,500 cbm	6^
Coda Terminal CCS	Onshore CO_2 Injection	Pre-FEED	Iceland	0.5-3 mtpa	2022	2026+	24,000 cbm	5
Greensand CCS (Nini West)	Offshore CO_2 Injection	Pre-FEED	Denmark	1.5-8 mtpa	2023	2025	22,000 cbm	12
Borg CO_2	Offshore CO_2 Injection	Pre-FEED	Norway	0.6 mtpa	2023	2026+	5,000 cbm	3
Luna CCS	Offshore CO_2 Injection	Appraisal	Norway	5 mtpa		2028+	7,500 cbm	23

Source: Clarksons Research. *Assumes 95% utilisation of project, speed of 15 knots and standard assumptions around e.g. port time. Not reported vessel requirements. ^4 units already on order.

CLARKSONS Clarksons Energy Infrastructure Group 10

Case Study:

Shell announced AiP for 74,000 cbm LCO2 carrier (March 2025)

- DNV awards Approval In Principle (AiP) to Shell and Brevik Engineering; LCO2 at around -50°C and 6–8 barg
- **15 cylindrical type C tanks** (pumps, manifolds, piping, control systems, vapor, etc.)

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2025 Catalysts and Long-term Development Program underway

Fully funded by Yinson under Joint Development Agreement

YINSON Production

Phase 1: Concept Design Complete

- Accelerated concept design leverages Provaris' development of novel tank designs.
- Basis of Design for large-scale LCO2 tank.
- USD 200,000 technology fee received.
- **COMPLETED MARCH 2025.**

Phase 2: Pre-FEED (In Progress)

- Detailed design for LCO2 tank & fabrication.
- Integration with Floating Storage Injection Unit (FSIU).
- Ongoing fee income to Provaris for management, design and QA services.
- Ongoing management fees & design costs.
- **June-2025 milestones PENDING**:
  - Completion of Design Report
  - Integration with FSIU vessel design
  - Preliminary Type Approval (Pending early Q3 2025)

Phase 3: FEED 2025/26

- *Planning underway for scope and key terms*
- *Target commencement in August 2025 (completion mid-2026)*
- *Integrated development plan with FSIU vessel for Havstjerne CCS hub*
- ***Target commercialisation late-2026 aligned with FID on FSIU & CCS project***

Joint Venture Company

- *50/50 JV to own all LCO2 tank designs and IP*
- *Targeting new markets in maritime vessels onshore storage*
- ***IP license revenue model***

Diversity to development milestones offers a lower risk pathway and speeds up commercialization activities.

Reducing dependency on a single project or technology milestone

H2: Shipping, Approvals, Newbuilds

Appoint Shipping Partner; Charter Terms; Yard LOI

Target FID 2H 2026; Newbuild Contract

construction

Target Operations mid-2029 aligned with HPA Offtake

Complete Prototype Tank & Final Class Approvals

Aligned with H2 Project Developments…

Term Sheet for Hydrogen SPA. Q1 2025

Binding Hydrogen SPA 2H 2025

Target FID 2H 2026

construction

Target Operations 2H 2029

2025 **2026** **2027** **2028** **2029**

LCO2 Tank Development

Concept Design & AiP Class Approval (pending)

FEED Design, Integration with FSIU & Final Class Approval

Target FID 2H 2026

construction

Target Operations 2029

LCO2 product development and new markets…

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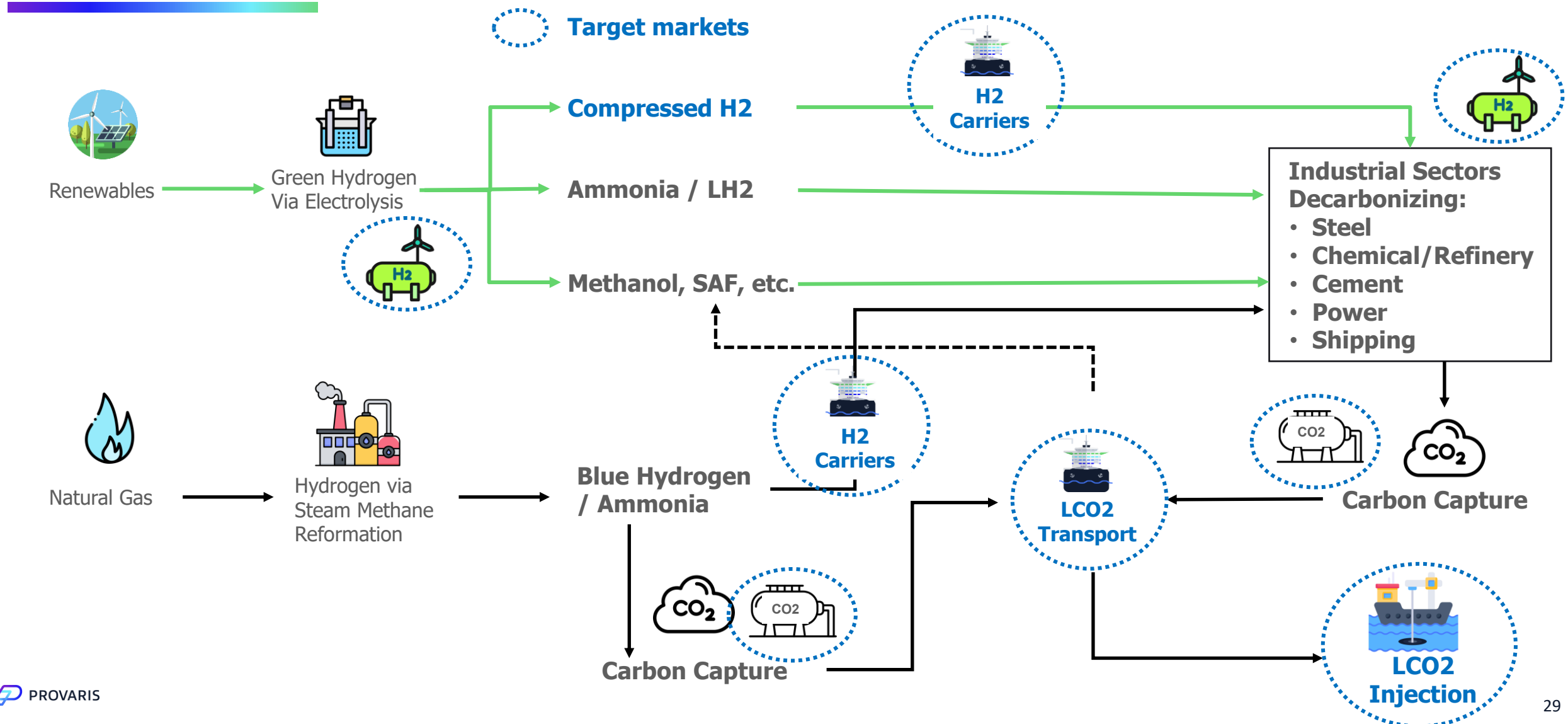
Appendices

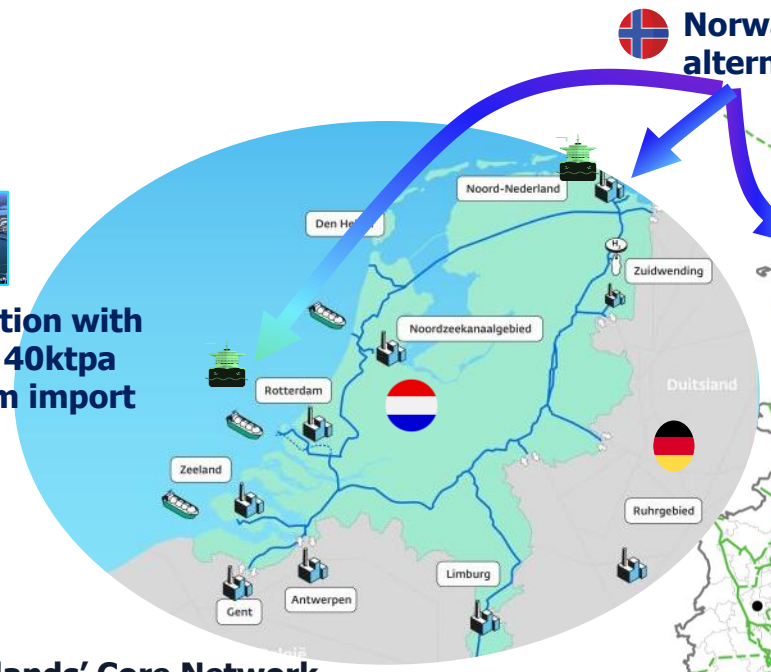
Storage and maritime transport solutions are the backbone for the emerging trades of H2 and CO2 to support industrial decarbonisation

Leveraging core IP and skills, enabling two markets to lower cost, diversify commercialisation and avoid single project risk



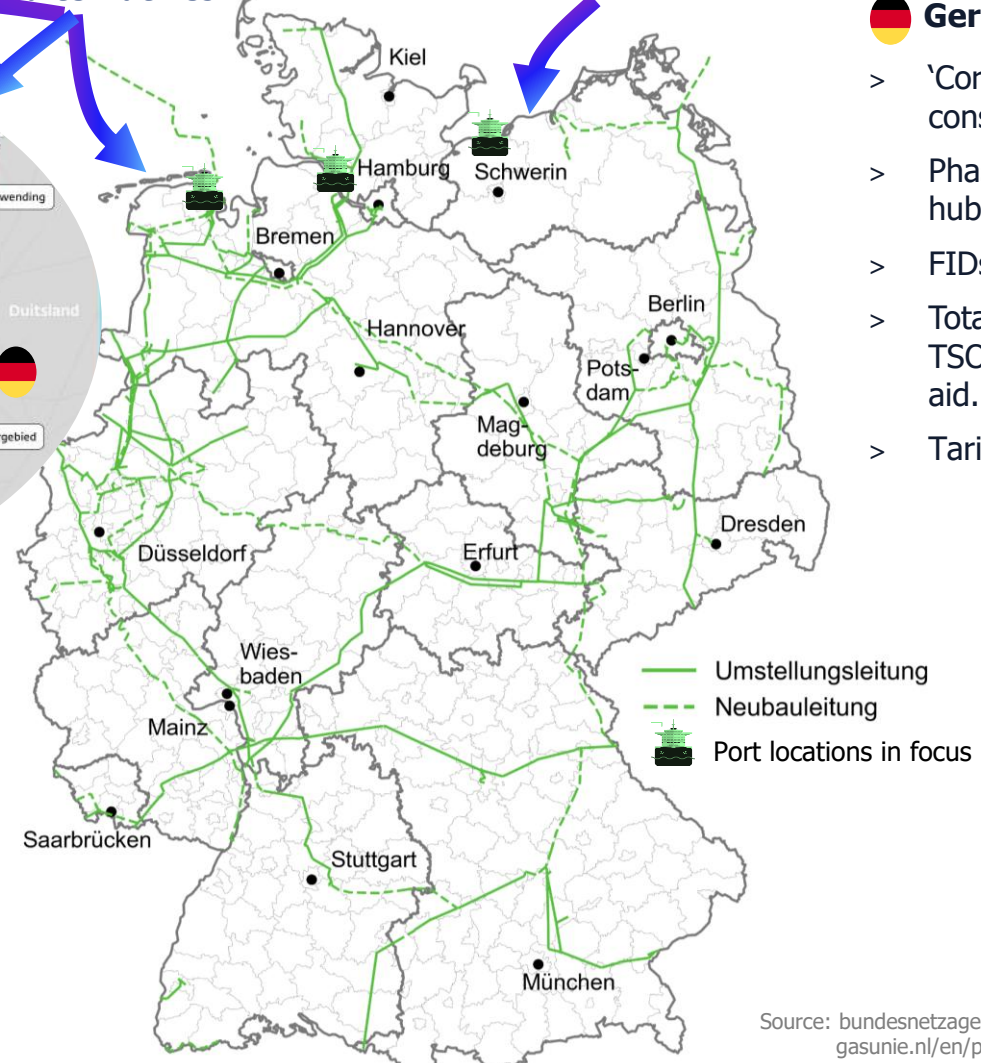
Germany now construction its hydrogen network to cut emissions from hard-to-electrify heavy industries such as steel and chemicals.

Collaboration with GES for a 40ktpa Rotterdam import terminal



Norway supply alternatives…

Nordic supply route…



Netherlands' Core Network

- New rollout plan published late 2024.
- Phased development starting with Rotterdam 2026.
- DRC link to GER now expected 2032.
- Investment €3.8 Billion, with tariffs to be announced 2025.

Germany's Core Network

- 'Core Network' 9,040 km approved for construction at the end of 2024.
- Phased COD 2025-2032 for delivery to industrial hubs.
- FIDs taken for TSOs with 2028 delivery.
- Total investment of €18.9 billion committed by TSOs, with €3 billion support by German state-aid.
- Tariffs to be published in 2025.

Source: bundesnetzagentur.de/EN/Areas/Energy/HydrogenCoreNetwork; gasunie.nl/en/projects/hydrogen-network-Netherlands; Provaris research

Provaris and GES partner in developing a bulk-scale hydrogen import facility within Rotterdam's global energy hub

- Supported by Bluewater Energy and White Deer Energy, leaders in new energy storage operating four storage assets
- Strategically located in the world's largest energy terminal an established H2 market hub
- Located next to the HyNetwork H2 pipeline under construction with access to road, rail and barge for port-wide distribution
- Pre-feasibility study complete Q2 2025 and co-marketing for during 2025
- Targeting **full** access to European markets by 2028

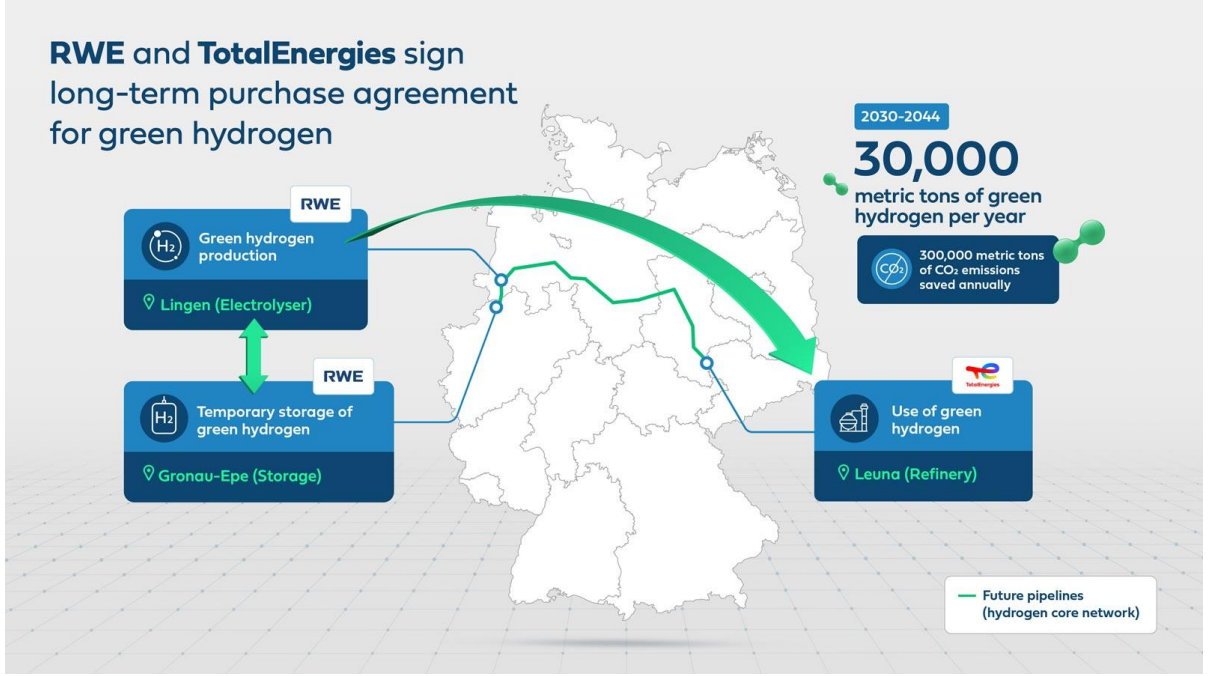
www.gesgroup.global

GES will finance and own the multi-product terminal, with operations targeted for 2028

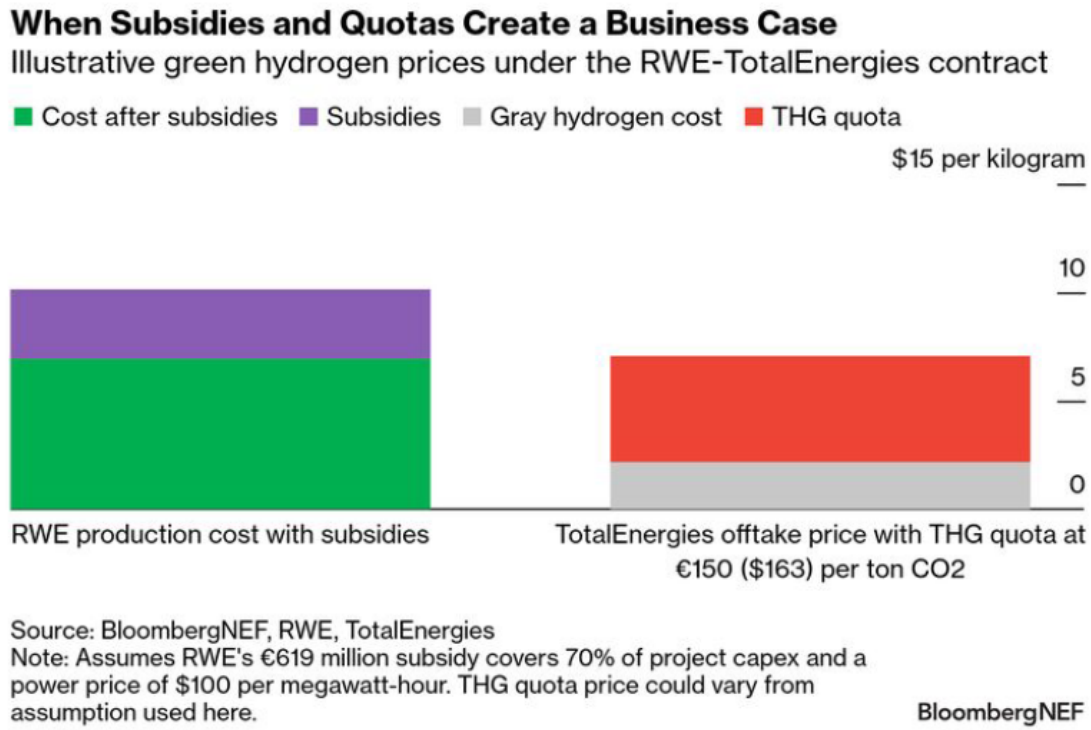
First binding contract for hydrogen supply in German supports Provaris model for regional imports

TotalEnergies will purchase around 30,000 metric tons of green hydrogen per year from RWE (15 years)

- RWE to supply 30,000 metric tons of green hydrogen annually from 2030 to 2044
- Total refinery in Leuna becomes anchor customer for RWE's electrolysis plant in Lingen
- Important impetus for hydrogen ramp-up and decarbonisation of refineries; indicates confidence in pipeline network being in place.



Deal demonstrates the demand is for hydrogen… (not ammonia)



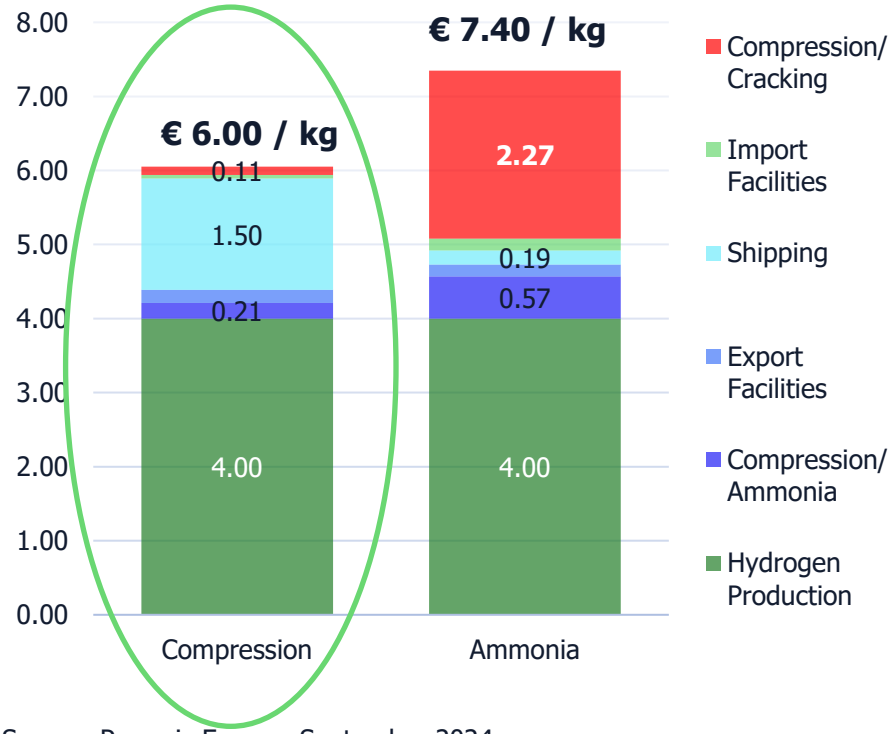
Source: BNEF, February 2025

Agreement is a signal for the German market 'has a willingness to pay' because fuel suppliers such as refineries are encouraged to gradually reduce their greenhouse gas emissions over time.

Industry analysis for delivered costs of green hydrogen reinforce the cost advantage of compression

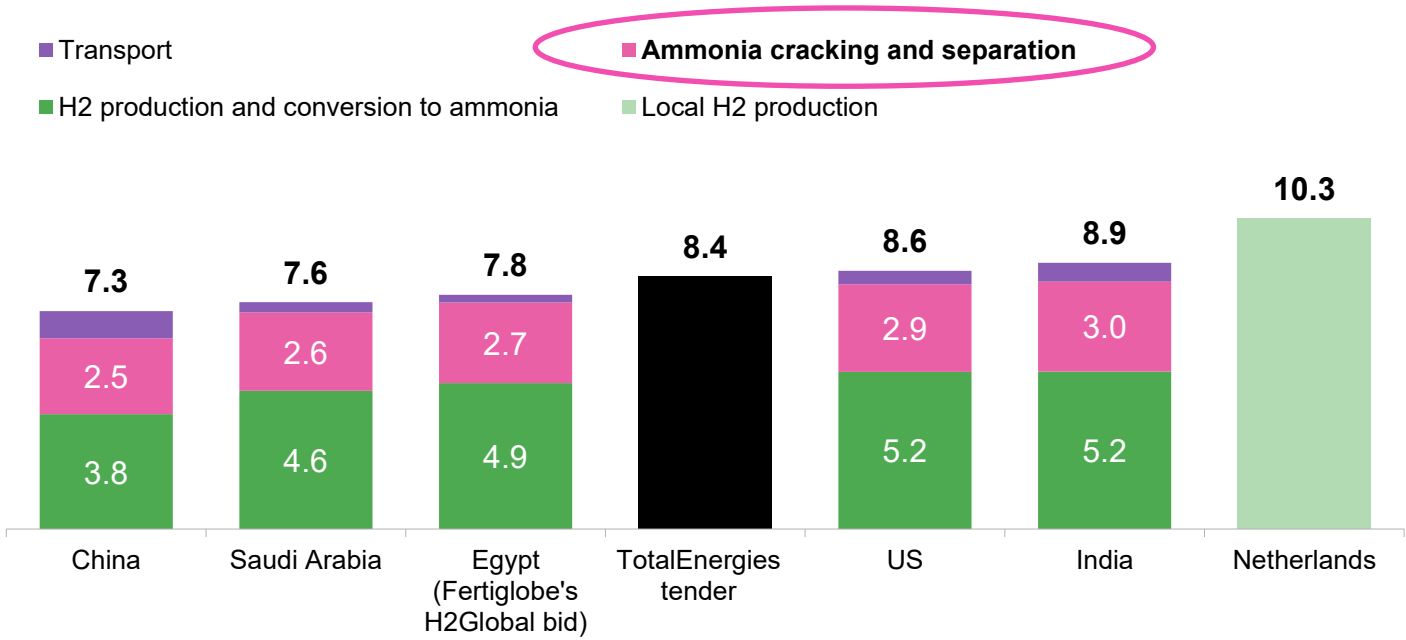
Provaris' studies demonstrated leadership in our understanding of the 'real' costs of delivered hydrogen

Nordic Grid Supply of Hydrogen to Germany (€/kg; 20 Yrs / 12% Project IRR)



Source: Provaris Energy, September 2024

Cost of green hydrogen cracked from imported ammonia in 2028 versus local green hydrogen production costs in the Netherlands



Source: BNEF, February 2025

Understanding of the complete value chain costs for ammonia is resulting in an increase in demand for compressed hydrogen to be assessed for hydrogen supply

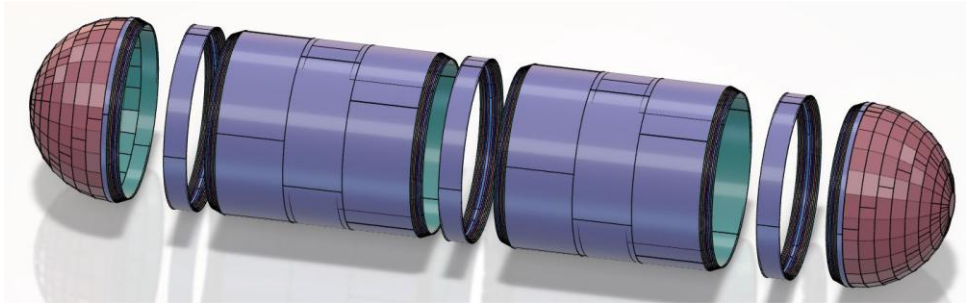
Choice of automated robotic laser welding to 'crack the code' on low-cost storage tanks through industrial scale production

Use of proven laser-hybrid welding procedures and materials approved for use by DNV for marine and industrial applications

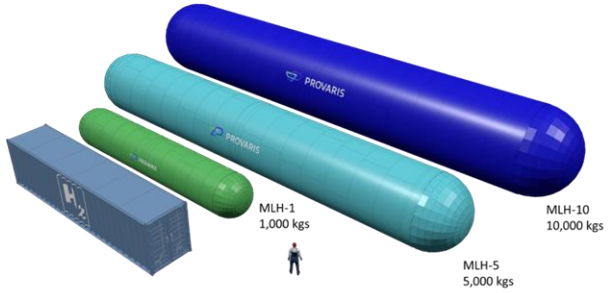
- Increased productivity (~20x vs manual TIG)
- 100% quality assurance (NDT)
- Reduction in construction costs
  capacity from the same production cell)
- Reduced heat & energy costs
- Reduction in CO2 footprint
- Extends IP to new applications (tanks 1-5t

Fiska, Norway

Construction of a prototype scaled tank underway, following by fatigue and pressure testing to achieve Class Approvals



Prototype Tank Specifications:
2.5m * 11m
650 kg H2 capacity at 250 bar
Constructed as 4 sections and then joined for final assembly
8 layers of 10mm Carbon Steel;
Internal liner of 3mm Stainless Steel.



Small Scale Tanks:
Layered carbon steel
Phase 1: 1 to 5 tonne capacity (2.5m diameter)
Phase 2: 10 tonne capacity (4m diameter)

Supported by:

DNV ABS SINTEF PROVARIS

Robotic Production Cell located in Fiska, Norway …

Prototype targeting resumption in Q1 2025, with Provaris to own and operate a tank production facility also strategic for the completion of CO2 prototype/pilot tanks

- Choice of hybrid laser welding key to unlocking low-cost compressed hydrogen tanks
- Ownership of facility strategic to protect IP and ensure competitive advantage in R&D, with future expansion based on a license model to industrial partners.
- Facility also suitable for CO2 Tank development including a pilot or prototype tank construction and testing facility.

- **December 2022:** FEED Design complete. Construction Approval subject to 'tank prototype'.

March-December 2023:

- Planning & Design of Prototype Tank. Selection of robotic laser-hybrid welding.

February-May 2024:

- Fabrication of Prototype underway, then stopped due to Bankruptcy of Contractor.

January 2025:

- Lease terms agreed for 1,000m2 of Fiska facility (12-24 mths).
- Agreement to acquire Production Cell from secured lenders (in final agreed form for signing).

March 2025:

- Execute agreements to own and operate facility
- Plan restart of fabrication

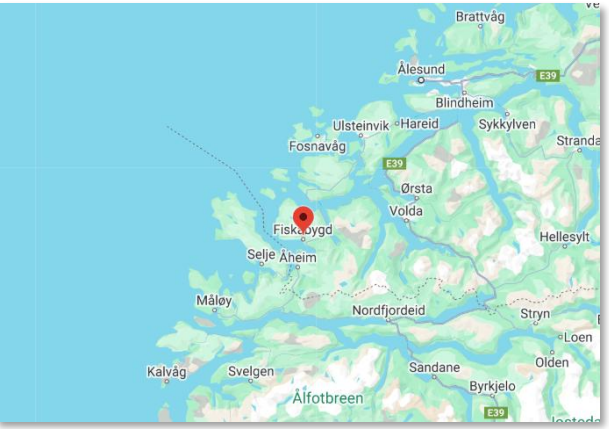
Q3/Q4 2025:

- Fabrication complete

Q4 2025:

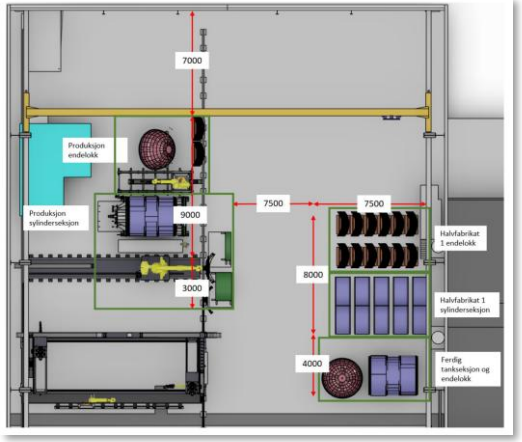
- Testing complete
- Class to issue 'Approval for Construction'
- **Facility available for CO2 tank pilot/prototype utilizing same robotics and laser equipment**

Fiska, located in Romsdal county, Norway



Production Facility (tank manufacture and testing)

Design of Robotic Production Cell



Installed Production Cell and tank sections partially complete

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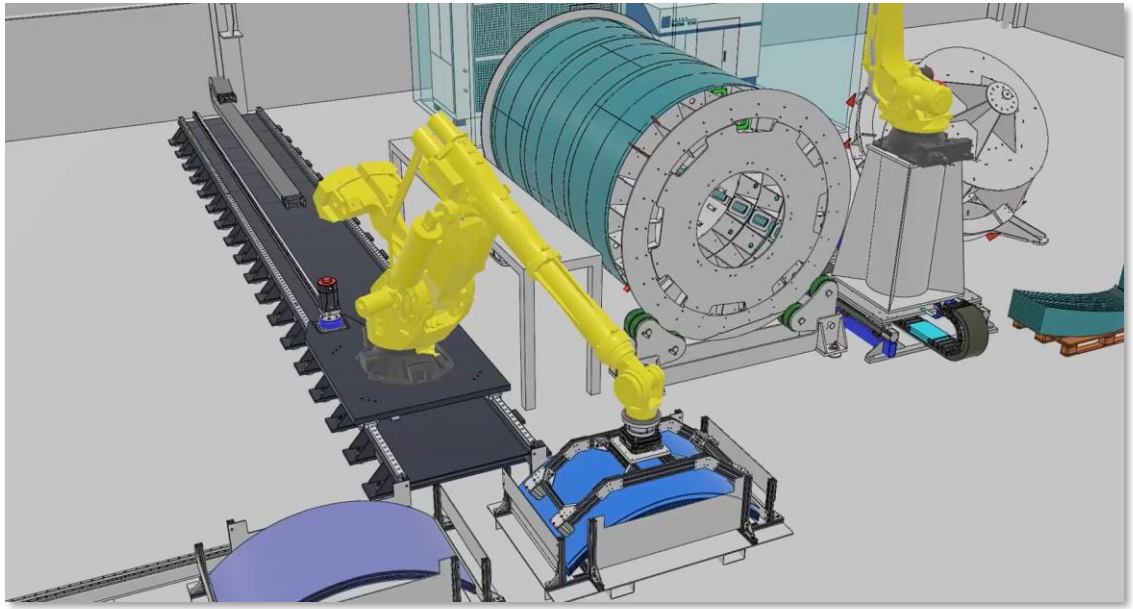
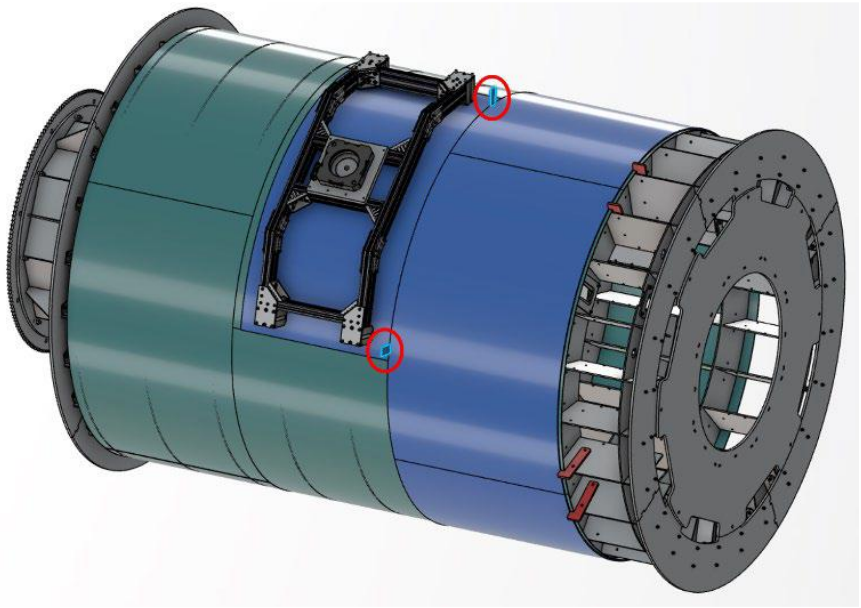
Robotic-laser welding is key to lowering the capex for the tanks and by eliminating significant amount of labour cost.

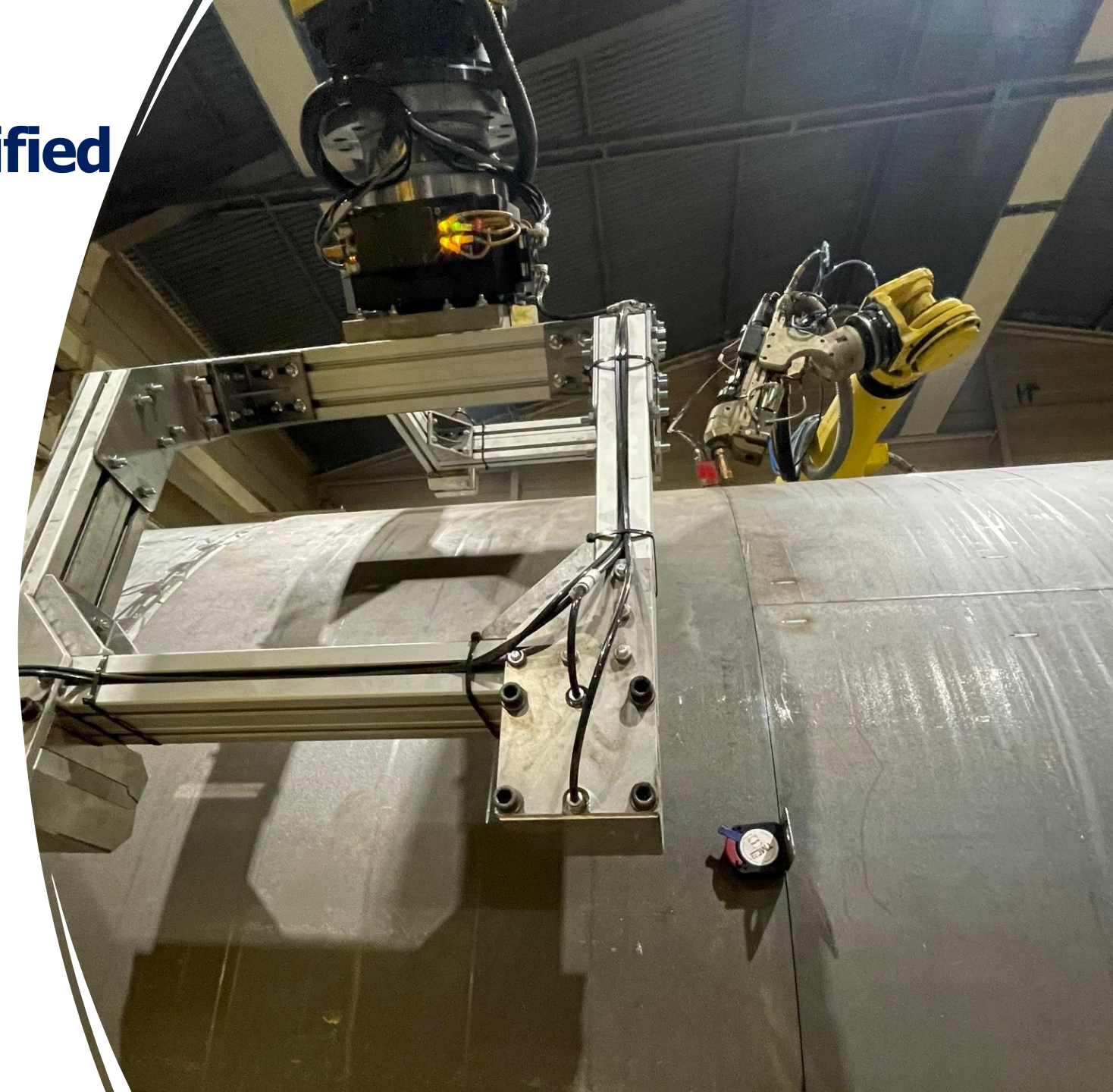
Provaris target 25% vs Industry standard 50%.

Extensive design and programming to complete a ‘digital twin’ prior to construction. Optimisation through the prototype phase results in a fully automated robotic cell ready for full scale production line.



Robots programmed for nano-meter accuracy, verified through construction, and allowing for a very high quality of welding





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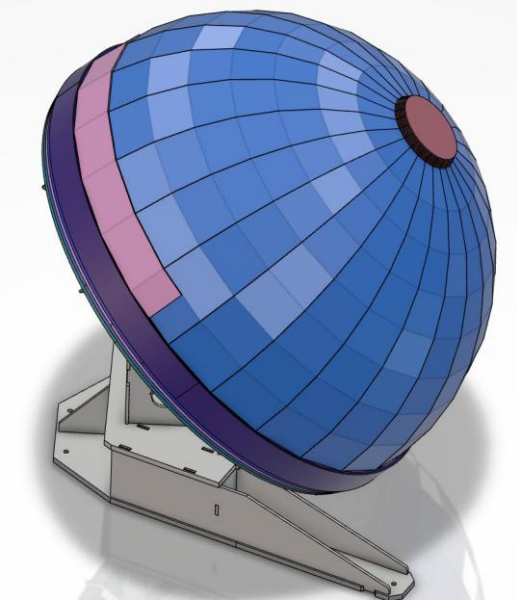
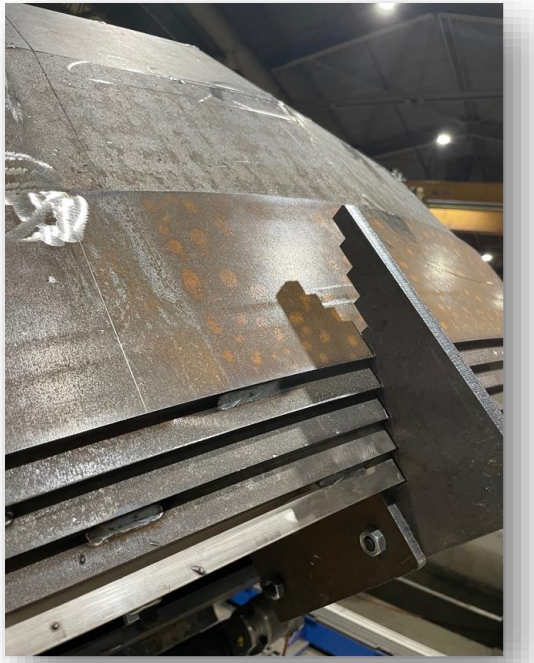
Proprietary “igloo” shaped end cap, unique to the IP, built up in multiple layers with stainless liner. Layers arranged to avoid «weld-on-weld» and geometry optimized to safely utilize the performance and capacity of the steel under pressure.





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Europe continues to prioritise hydrogen for the energy transition with >50% demand to be met through from imports

Europe continues to establish policy and funding initiatives to stimulate supply and demand

- **Policy and legislation mandating decarbonization** of hard-to-abate industries requires hydrogen (by 2030)

Steel
Glass
Smelters

Refineries

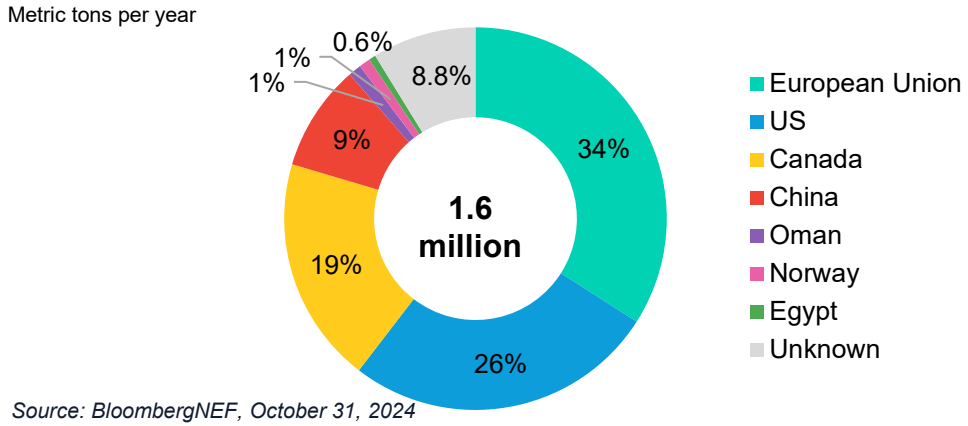
Power
Generation

Mobility
(HDVs, Maritime)

- **EU committed €138 billion to support industry** (Innovation Fund; Horizon Europe; EU Hydrogen Bank; H2Global)
- **Legislation sets quotas for use of green (RFNBO) hydrogen,** with subsidies only available for green hydrogen
  - Renewable Energy Directive (RED III) driving demand with 42.5% of hydrogen by 2030 must be RFNBO compliant
- **'Core H2 network' for transport infrastructure** under development connecting ports and industrial users, with €18 billion private investment committed
- **EU Taxonomy** to increase demand for green hydrogen produced regionally (CBAM creates a favourable environment for regional hydrogen, increasing subsidies for regional green H2)

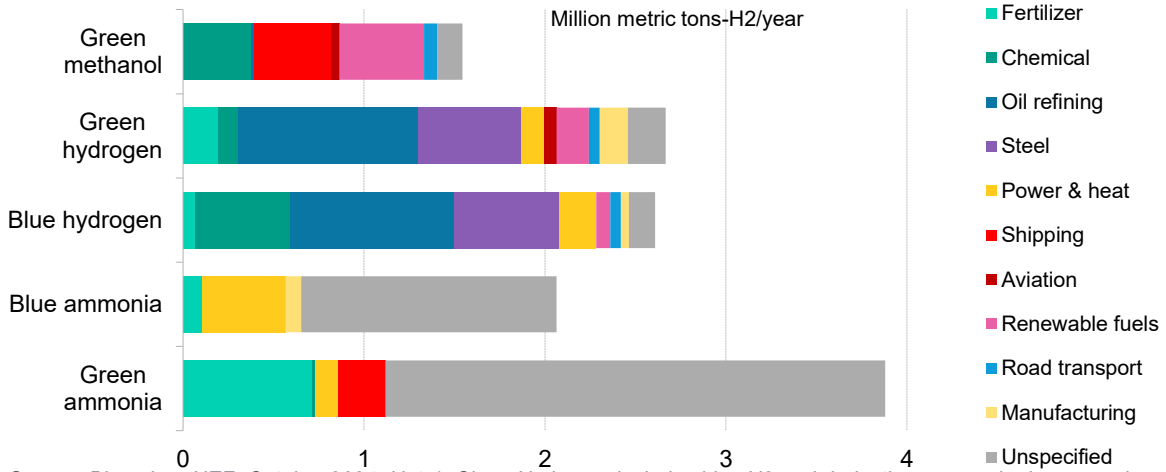
"Meeting German demand solely through domestic supply would neither be technically nor economically viable". Germany' NHS 2023

Europe is the largest market for binding offtake



Source: BloombergNEF, October 31, 2024

Clean hydrogen* binding offtake by type & end use (Global)



Source: BloombergNEF, October 2024. Note: Clean Hydrogen includes blue H2 and derivatives, green hydrogen and derivatives.*

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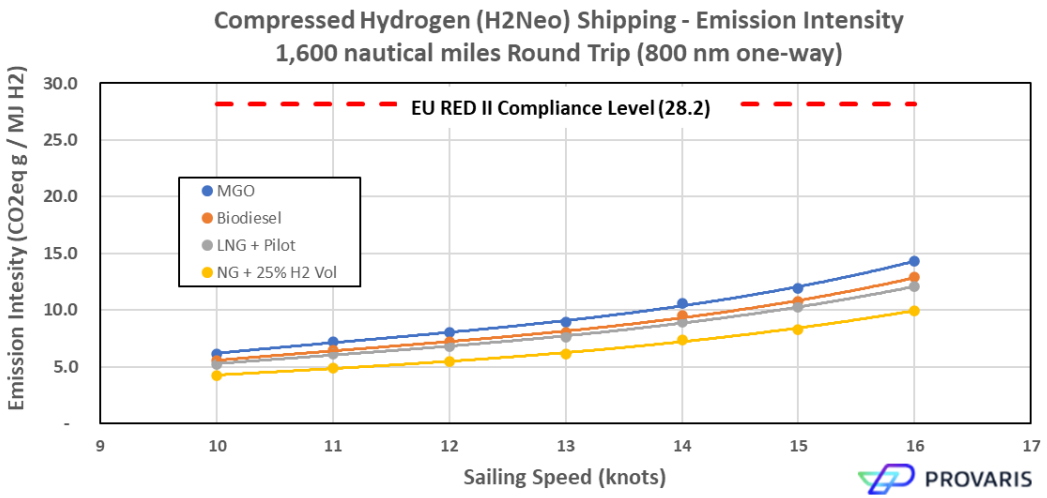
RED II Compliance demonstrated for Compressed H2 supply chain

Compressed hydrogen supply comfortably below the stringent requirements set forth by the EU's RED II and RFNBO, based on 1,600 Nm round trip, Norway to Germany

Required carbon intensity for EU REDII compliance	**28.2 g CO2e/ MJ H2**
Estimated carbon intensity emission level for H2Neo	**7.6 g CO2e/ MJ H2**

Emission intensity results illustrated below vs. speed for differenting fuel types:



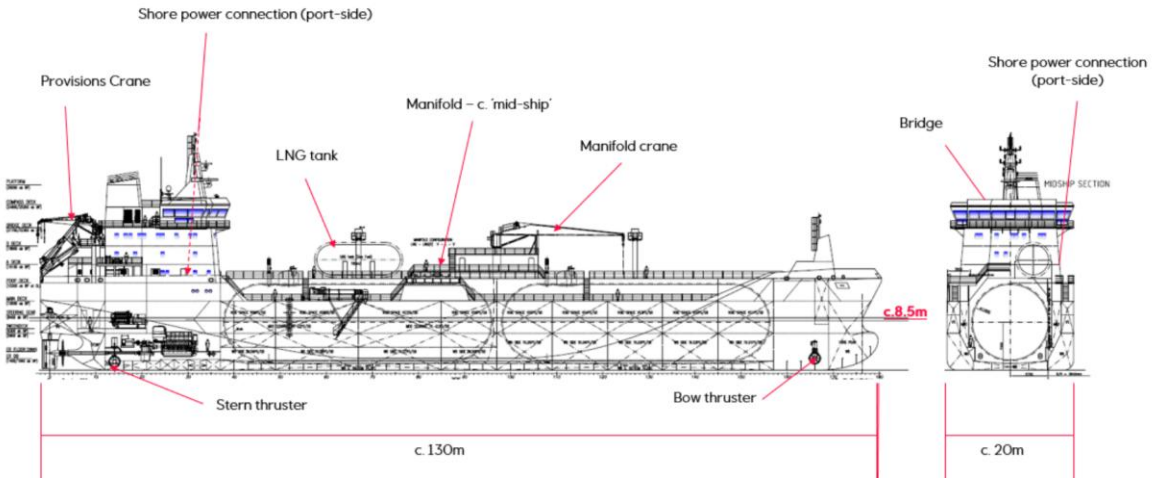
- **Supporting analysis from Wärtsilä** in estimating the CO2e emission per kg H2, including methane slip values from test bed.
- **Selection of available hybrid electric propulsion plant with modern 4-stroke LNG Dual Fuel generating sets**. Options for future hydrogen blending also assessed based on existing generator set options, and further for when fuel cell / and generating set technology matures.
- **Carbon (equivalent) intensity** estimated for proposed ”LNG +pilot” propulsion plant over a 1,600 nautical mile roundtrip; typical sailing speed of 13 knots.
- **Further 20-30% emission reduction identified** through future technology including 3,000 kW hydrogen fuel cell into the propulsion plant.

Industry Considerations and example of existing LCO2 tank application

Storage and containment design typically based on existing Type C tank design

Northern Lights - Leading the way

- World's first cross-border CO2 transport and storage as a service
- JV development Equinor, Shell and TotalEnergies
- Phase 1 1.5 Mtpa CO2 capacity starting 2025; expanding to 5 Mtpa
- **Fleet of 4 purpose built 7,500 cbm LCO2 carriers**, managed by K Line, short distances from capture to storage site
- **Two cargo tanks** with 19 barg operating pressure and - 35 deg C; ~50mm wall thickness



Shell receives AiP for 74,000 cbm carrier (March 2025)

- DNV awards Approval In Principle (AiP) to Shell and Brevik Engineering for a 74,000 cbmLCO2 carrier
- **15 cylindrical tanks** that store 74,000 cbm of liquid CO2 at around -50°C and 6–8 barg, a low-pressure

***DNV**: "This AiP underscores the importance of joint innovation and collaboration in advancing solutions that support the development of the wider CCS value chain. Scale is essential to drive down the cost of CCS and this work demonstrates the feasibility of large CO2 carriers with a low carbon footprint."*

***Shell**: "We are excited to see how innovations like this can potentially enhance safety, achieve scalability and flexibility to drive cost competitiveness in the implementation of large-scale cross-border CCS."*

DNV awards Approval in Principle for LCO2 carrier design developed by Shell and Brevik Engineering

DNV has awarded a detailed Approval in Principle (AiP) to Shell International Trading and Shipping Company Limited and Brevik Engineering for their design of a 74,000 cubic metres (cbm) liquid carbon dioxide (LCO 2) carrier. The vessel is specifically designed for the Asia Pacific market to enable cost competitive transport of CO2.

Published: 14 March 2025

Contact: Margrethe Andersen

CONTACT US

Thank you

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