



Global Energy Ventures

Shipping solutions for the energy transition

Compression | Simplicity | Efficiency

Investor Presentation

6 September 2021

ASX.GEV

www.gev.com

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\$ refers to Australian Dollars unless otherwise indicated.

This presentation was authorised by the Board for release on 6 September 2021



Global Energy Ventures (GEV) is an energy transition company enabling the development of a trillion dollar hydrogen market through compressed shipping. Our mission is to become the leading provider of storage and transport solutions for green hydrogen.

ASX listed company (GEV), Head Office in Perth, WA

Management experienced in energy, shipping and chemicals projects

Core IP is commercialising compressed shipping solutions from concept to construction

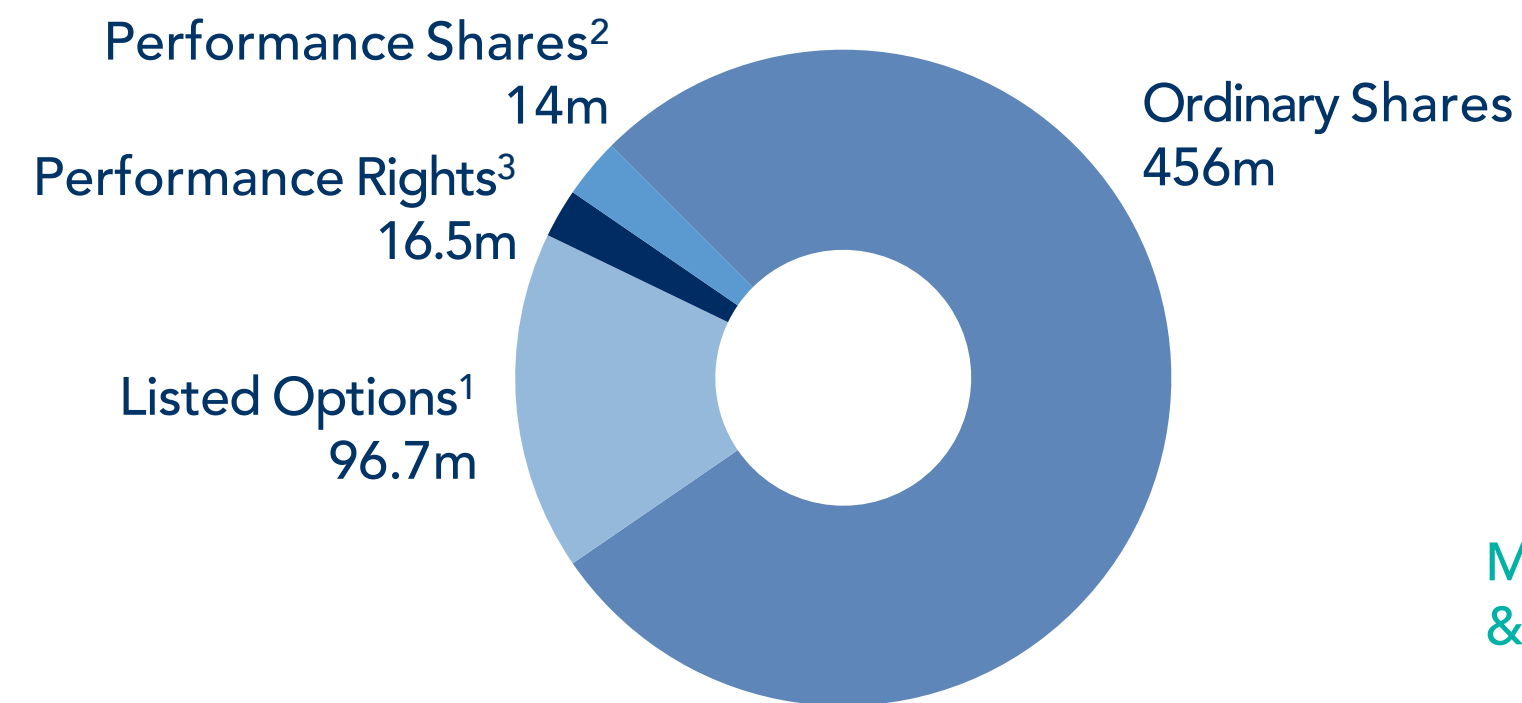
Compression delivers a simple, sustainable and cost competitive method to transport energy

Commitment to ESG principles and reporting

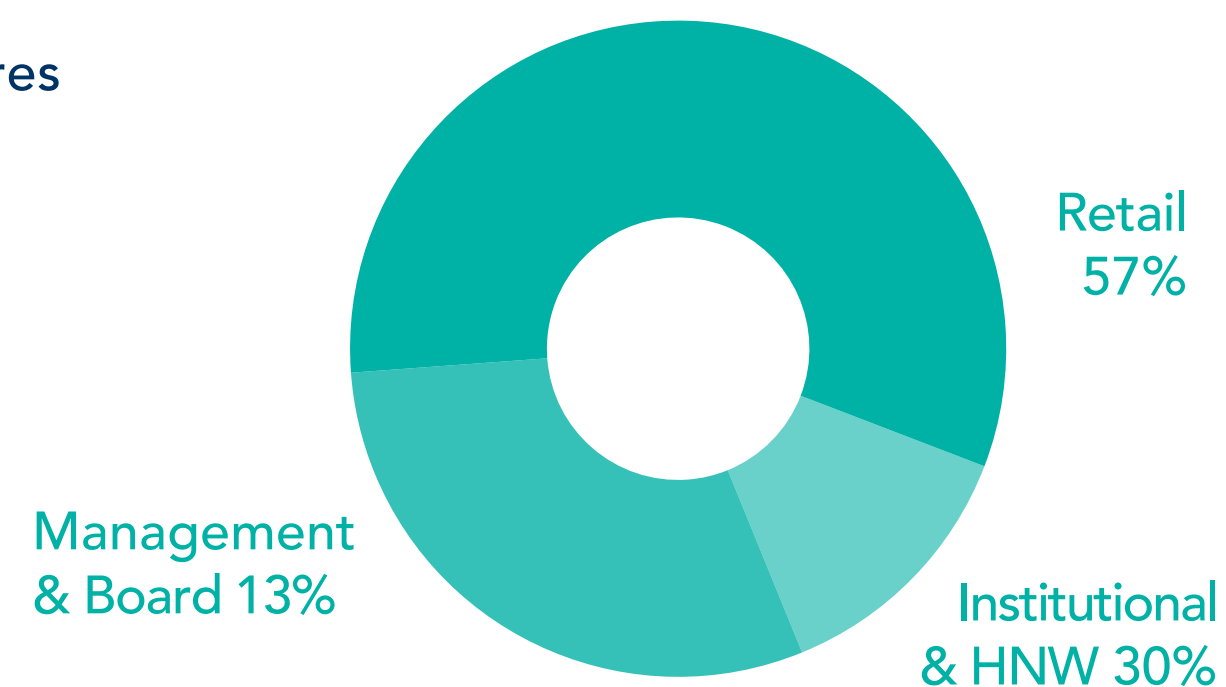
Corporate Overview

Ordinary Shares on Issue (GEV.ASX)	456m
Other Listed Exchanges	Frankfurt, FRA:WS9
Market Capitalisation	A\$34m
Cash Balance (30 June 2021)	A\$6.6m
Listed Options on Issue (GEVOA.ASX) ¹	96.7m

Capital Structure



Shareholding (Undiluted)



¹Listed Options GEVOA, expiry 26 May 2023, exercise \$0.12

²Performance Rights issued to Board, Management and Consultants

³Refer to the 30 June 2021 Annual Report for full details of all Milestone Conditions



Martin Carolan
Managing Director
& CEO



Garry Triglavcanin
Executive Director
& CDO



Maurice Brand
Non-Executive
Chairman



Andrew Pickering
Non-Executive
Director



John Fitzpatrick
Chief Technical
Officer



Dave Stenning
Chief Operation
Officer



Luke Velterop
Hydrogen
Development
Director



Emma Connor
Chief Financial
Officer



Norman Marshall
Company Secretary

Integrated business model covering the value chain for regional marine transport projects

Develop

Identify and develop projects through GEV and partner networks

Build

Modular development of projects aligned with the hydrogen market

Load > Store/Transport > Unload

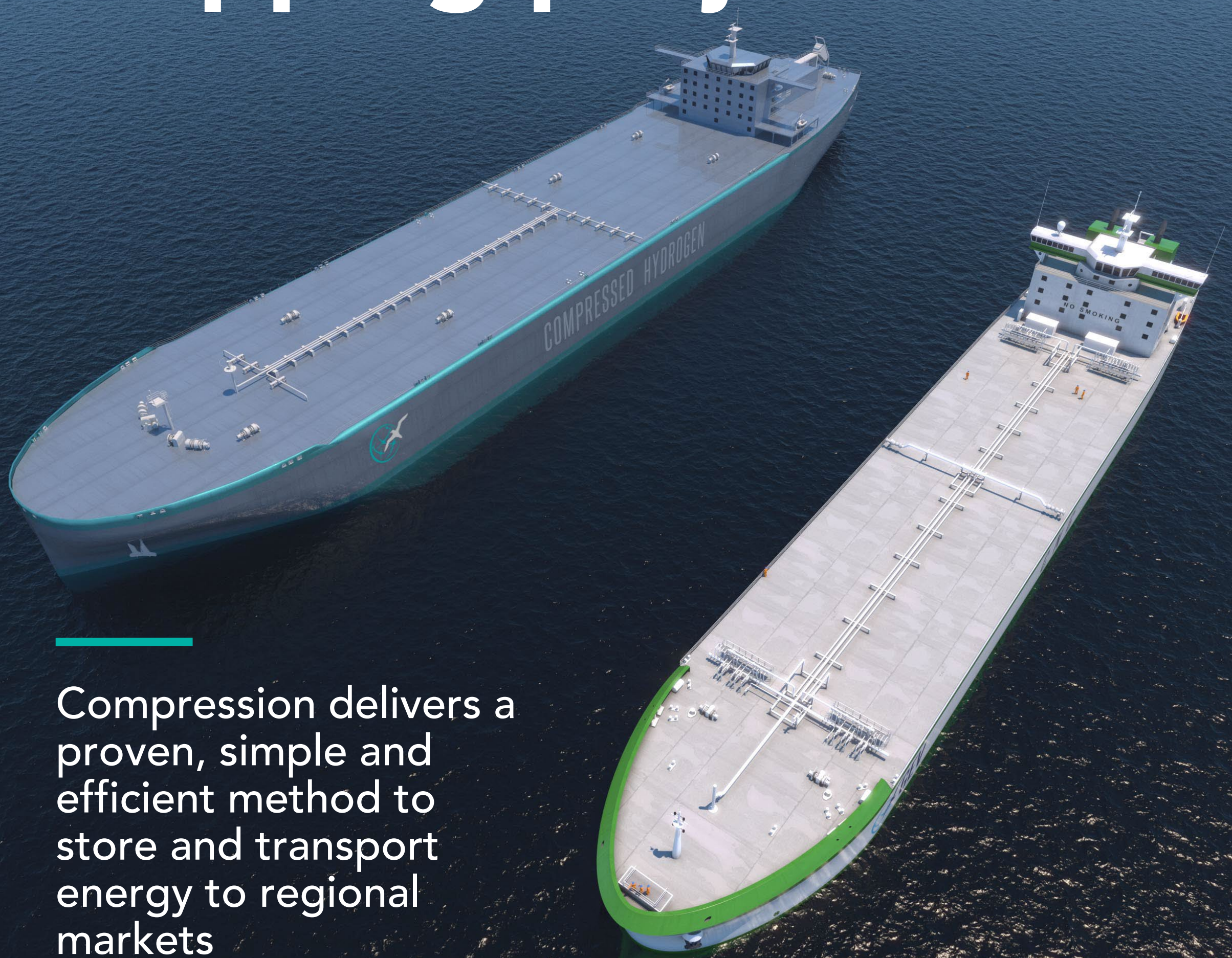
Own

Stable long term cash flows for project partners and financial optimisation

Operate

Sustainable, safe and reliable operations

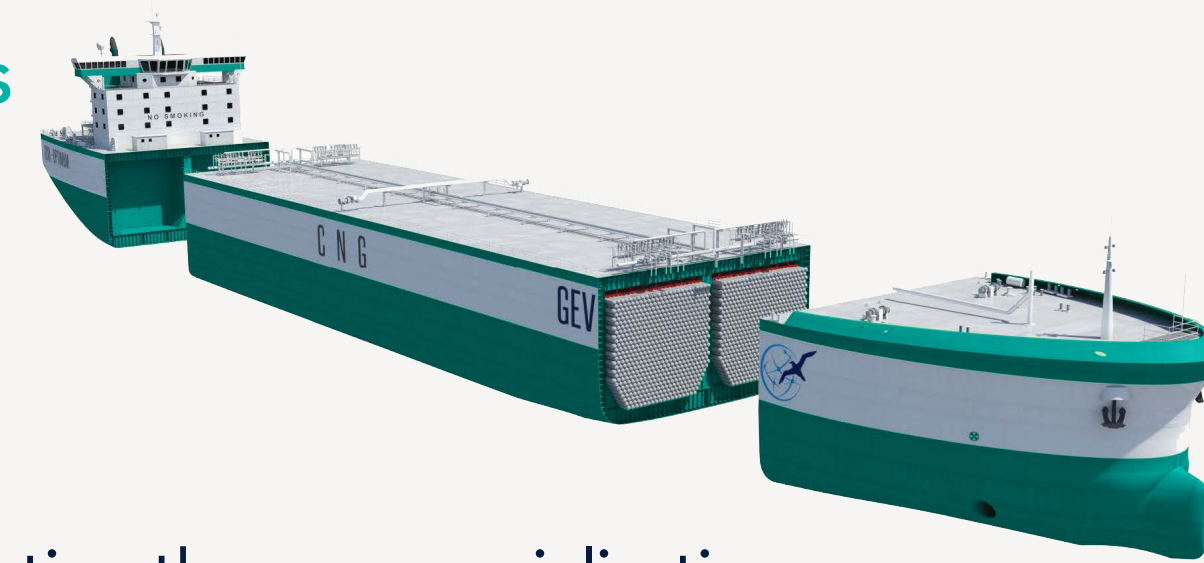
Global developer of integrated compressed shipping projects



Compression delivers a proven, simple and efficient method to store and transport energy to regional markets

CNG Optimum for Natural Gas

- > Ready for Commercialisation
- > Patented design for 200MMscf
- > Full construction design approval
- > Low CO2e supply chain emissions



Targeting FEED level acceptance

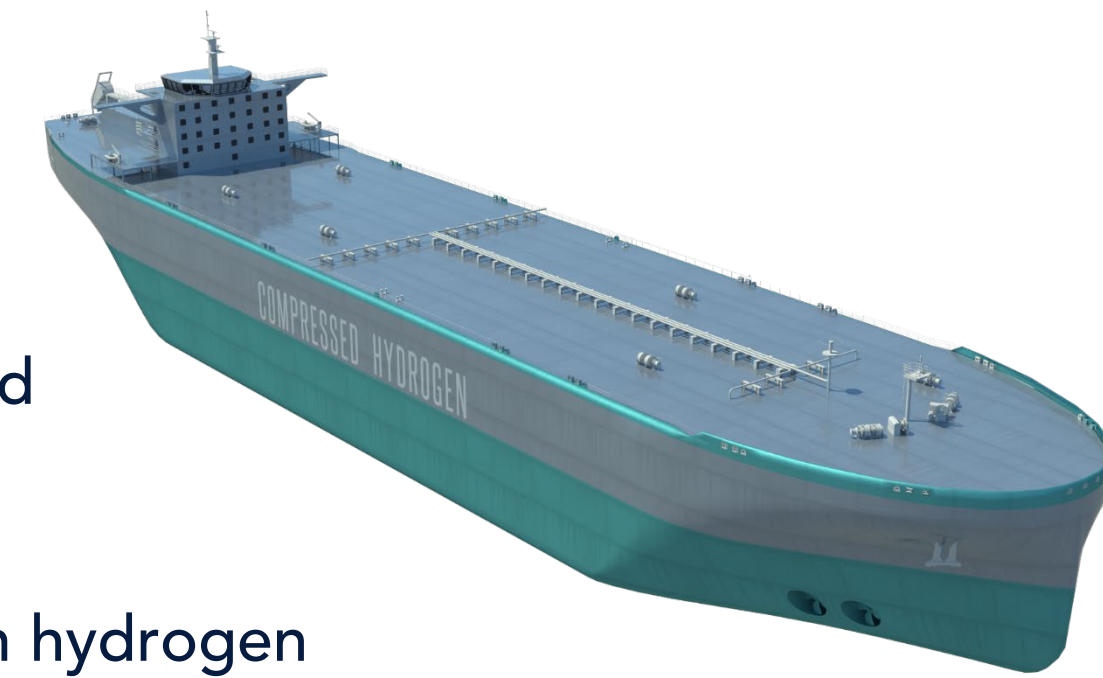
- > Multiple development projects targeting the commercialisation of stranded gas reserves

Partners include:



C-H2 Ship for Hydrogen

- > In development – World First
- > 2,000 tonne hydrogen capacity
- > Approval in Principle & US Patent Filed
- > Zero-carbon hydrogen supply chain



Targeting full design approvals in 2022

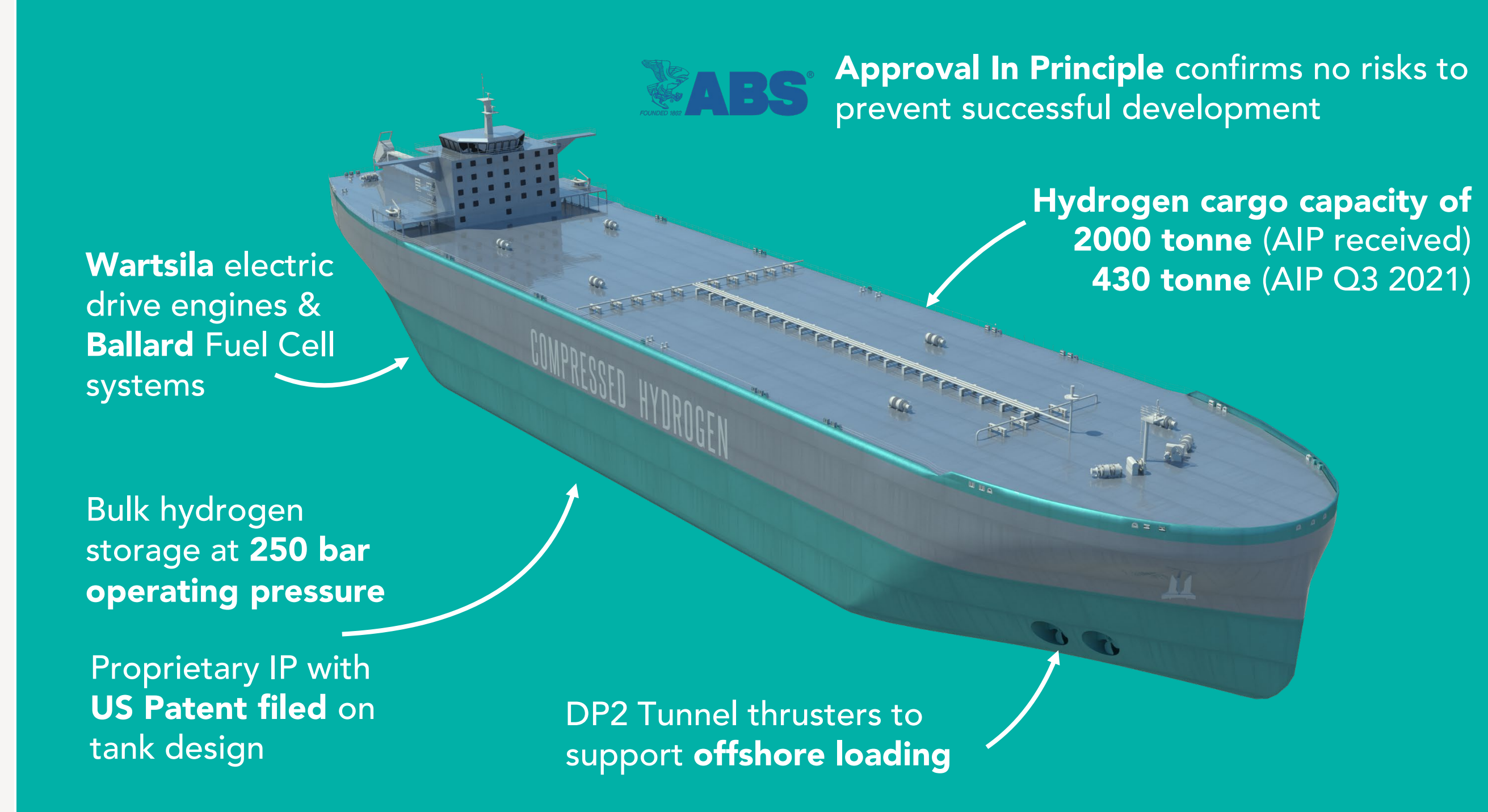
- > Solution for large-scale regional green hydrogen transport

Partners include:



World first compressed hydrogen ship and zero carbon marine transport for hydrogen

- > Compression is a **proven, safe and reliable** method of storing hydrogen – currently used for onshore applications at pressures up to 700 bar
- > Supply chain is simple, energy efficient and cost competitive to regional markets up to 4,000 nautical miles
- > Stores, transports & delivers hydrogen in high purity gaseous form
- > Minimal technical barriers to commercialise
- > Avoids the energy and capital intensive processes to convert hydrogen to a liquid / chemical state
- > Zero emission shipping solution through the use of electric drive engines fuelled by onboard fuel cells
- > First commercial scale hydrogen exports by 2026

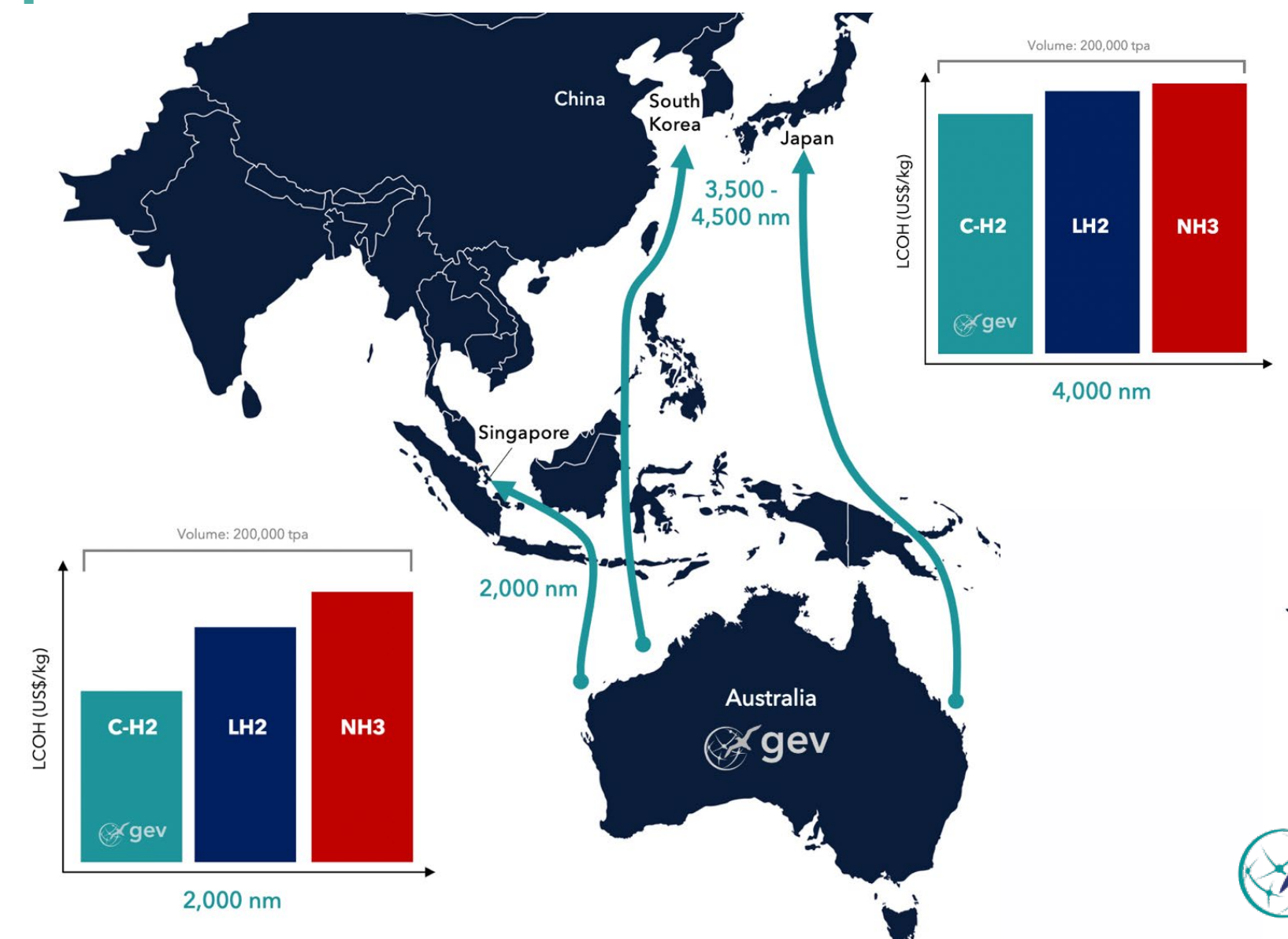


Scoping Study confirmed compression delivers a competitive delivered cost with zero emissions

100% green supply chain analysis for hydrogen

Export volumes of 50,000 to 400,00tpa

Market distances of 2,000 to 6,000 n.m.

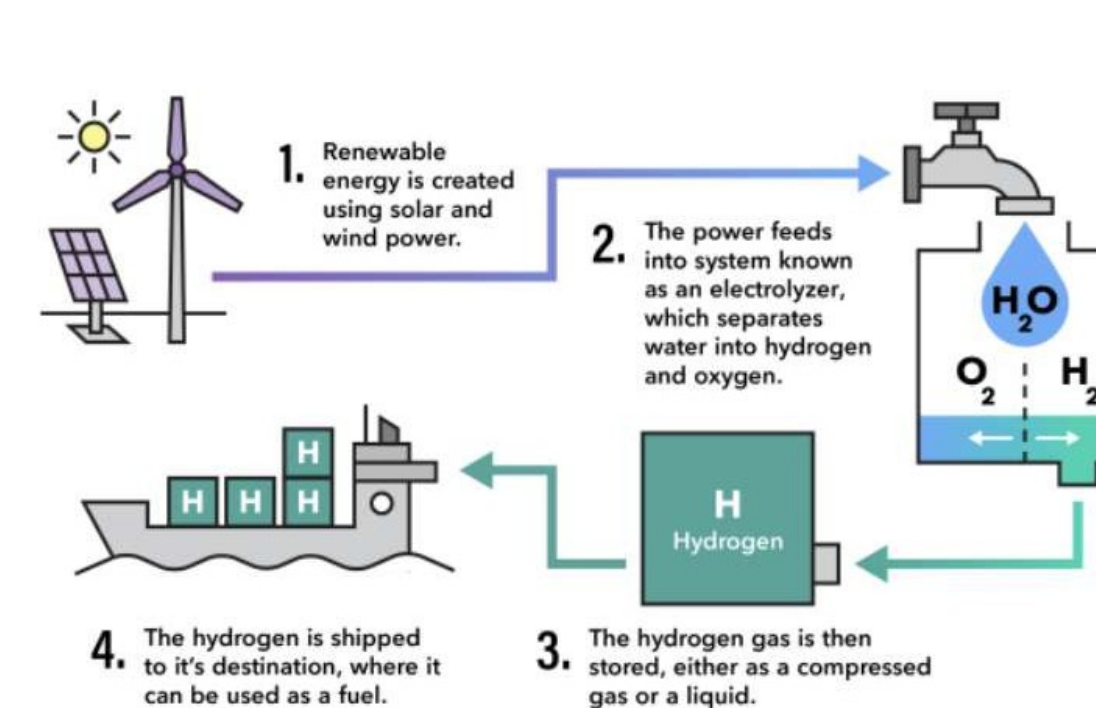


Hydrogen market set for remarkable growth through to 2050

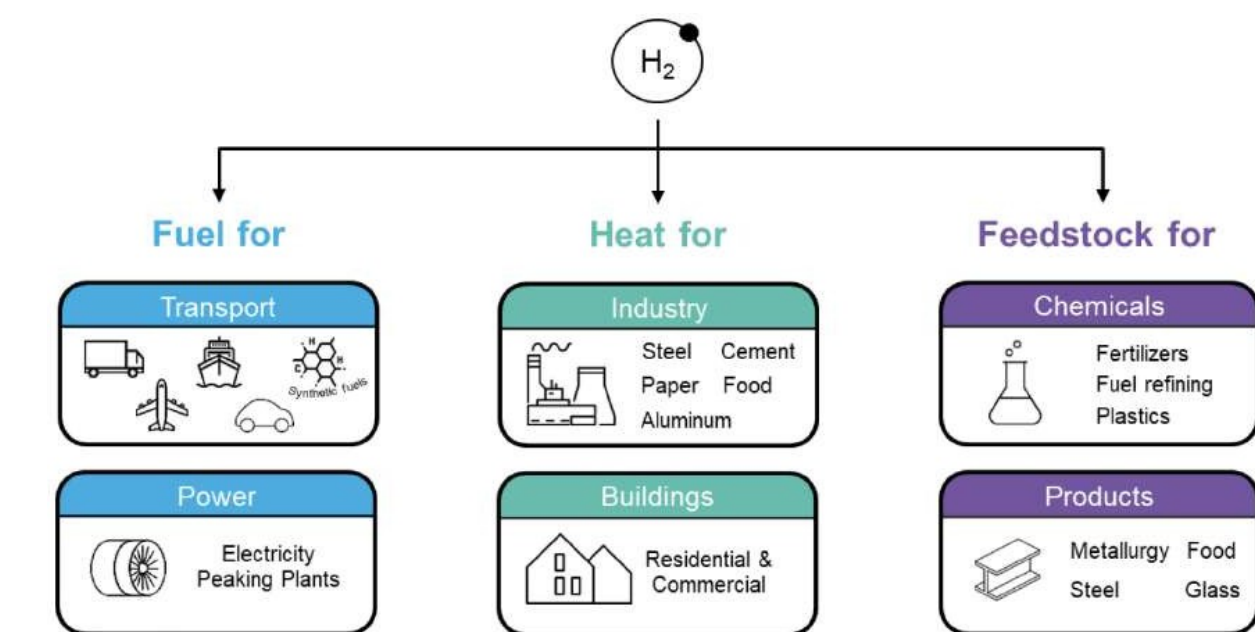
- > Green Hydrogen is a clean molecule to decarbonise heavy emitting industries
- > +30 countries established hydrogen strategies
- > USD 70 billion in public funding committed
- > Net-zero climate targets being legislated by governments and mandated by corporates
- > Falling costs of renewables and hydrogen technologies to make green hydrogen cost competitive by 2030
- > Timing and pricing of carbon will assist with economics
- > Development of efficient methods of storage and transport remains key

“A once-in-a-generation opportunity could give rise to a €10 trillion addressable market globally by 2050.”
 — Goldman Sachs, February 2021

Green H2 production

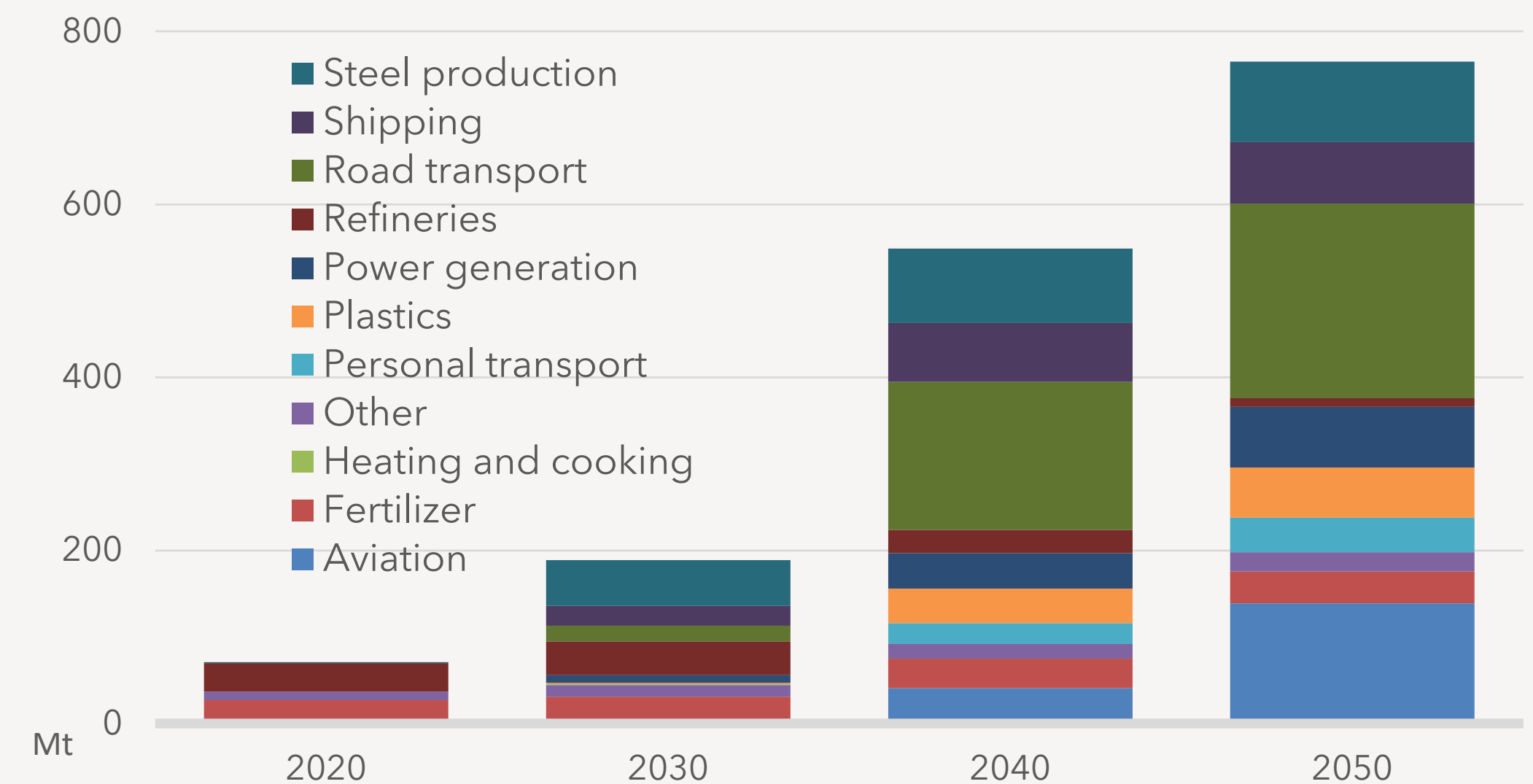


Hydrogen uses



Source: BloombergNEF

Industry demand forecasts will vary based on scenarios of government policy and incentives



Source: Rystad Energy HydrogenCube – high case scenario

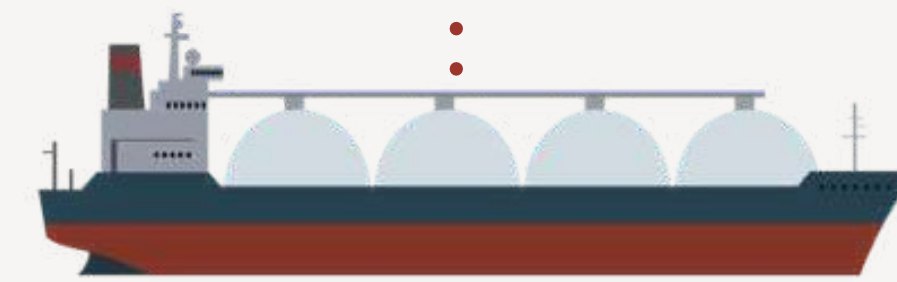
Opportunity for GEV to be a market leader

- > Marine industry will need significant investment in supply chains to transport equivalent energy as hydrogen
- > Only one demonstration ship (pending sea-trials) designed for liquefied hydrogen, built by Kawasaki Heavy Industries (80-ton capacity)
- > Two ship yards with Approval in Principle for liquefaction storage design at scale
- > GEV targeting first operations mid-2020's for pilot scale ship (430-ton capacity)

"The shipping industry needs to develop new technologies, fuels and infrastructure for net zero emissions at a pace never previously seen."
-- Shell, Global Head of Shipping & Maritime 2020

NOW: FOSSIL FUELS

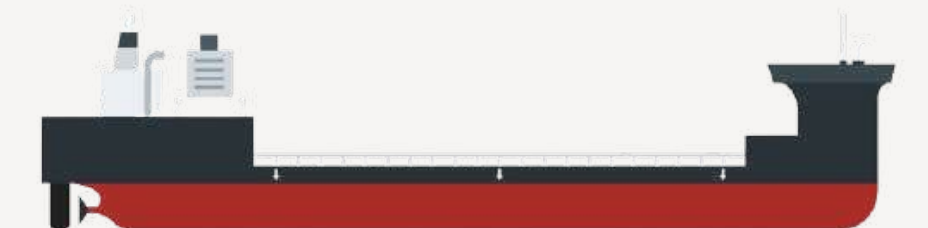
Thousands of ships moving natural gas, oil & coal



637 carriers transporting natural gas



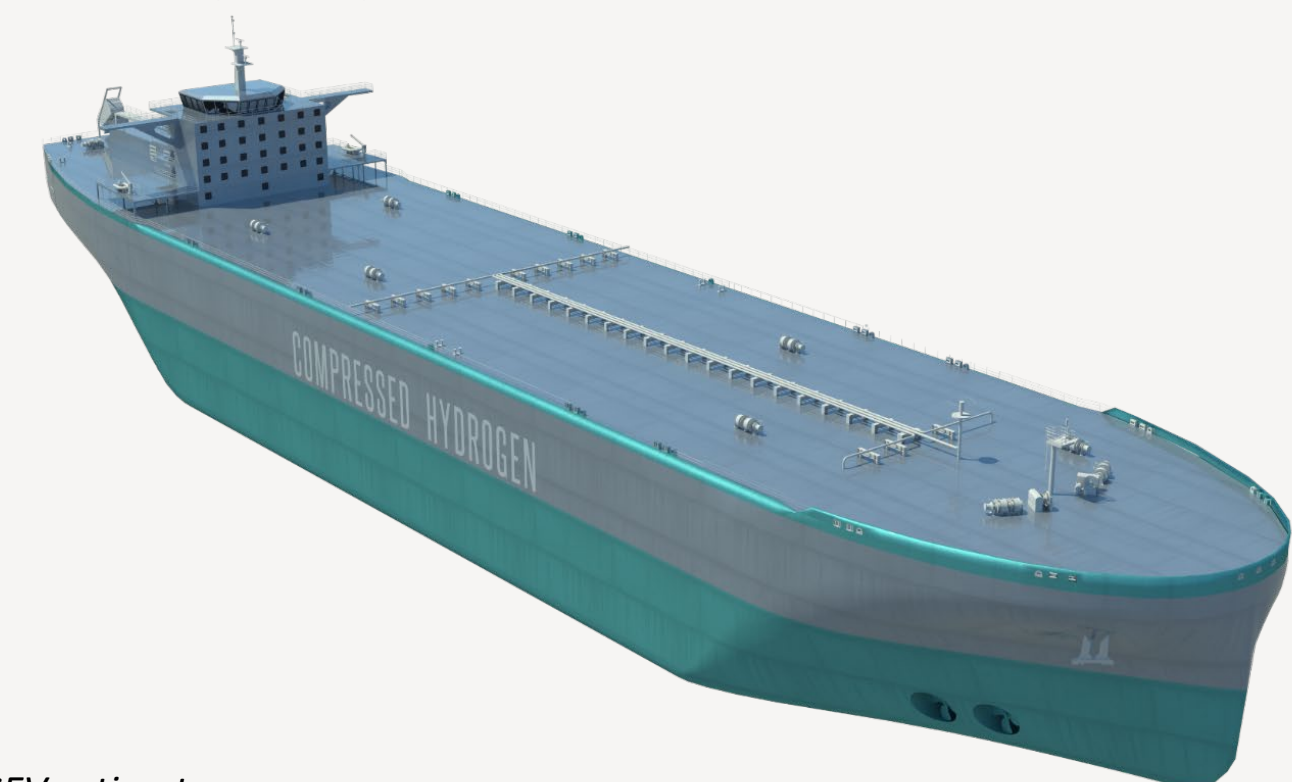
100s dry bulk carriers transporting coal



2,193 tankers transporting petroleum

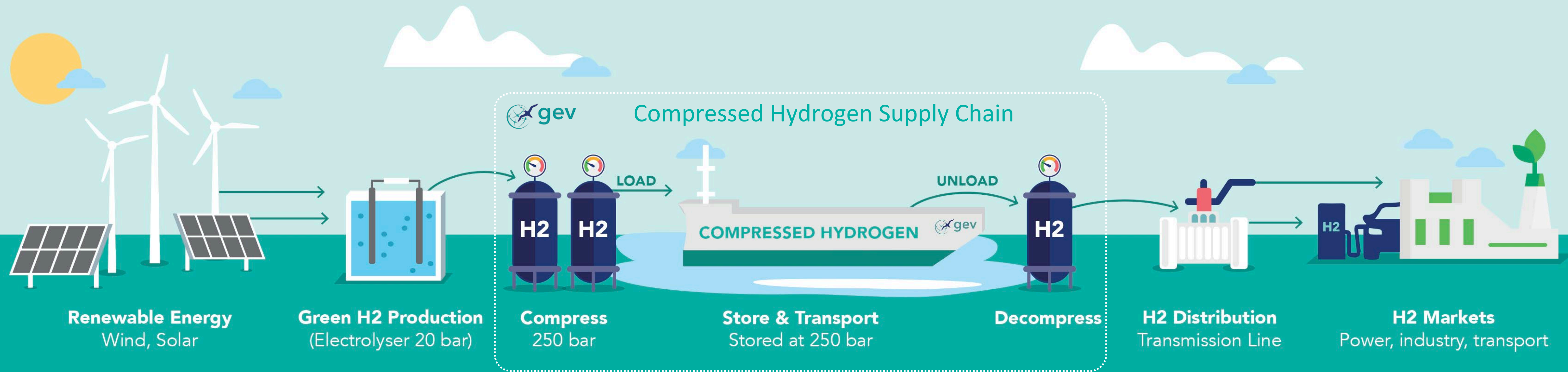
2030 HYDROGEN

GEV targeting first operations mid-2020's



[^] Clarksons Platou Research; GEV estimates

Compression provides a simple and energy efficient supply chain for green hydrogen transport



3 simple steps in a 'pipe to pipe' hydrogen supply chain

1. COMPRESS / LOAD

Hydrogen gas from the electrolyser to 250 bar operating pressure of the ship

2. STORE / TRANSPORT

In its pure gas form, using electric drive propulsion powered by on-board fuel cells

3. UNLOAD / DECOMPRESS

Deliver into a grid/pipeline using the ship's pressure, with minor scavenging to drawdown pressure

Advantages of compression

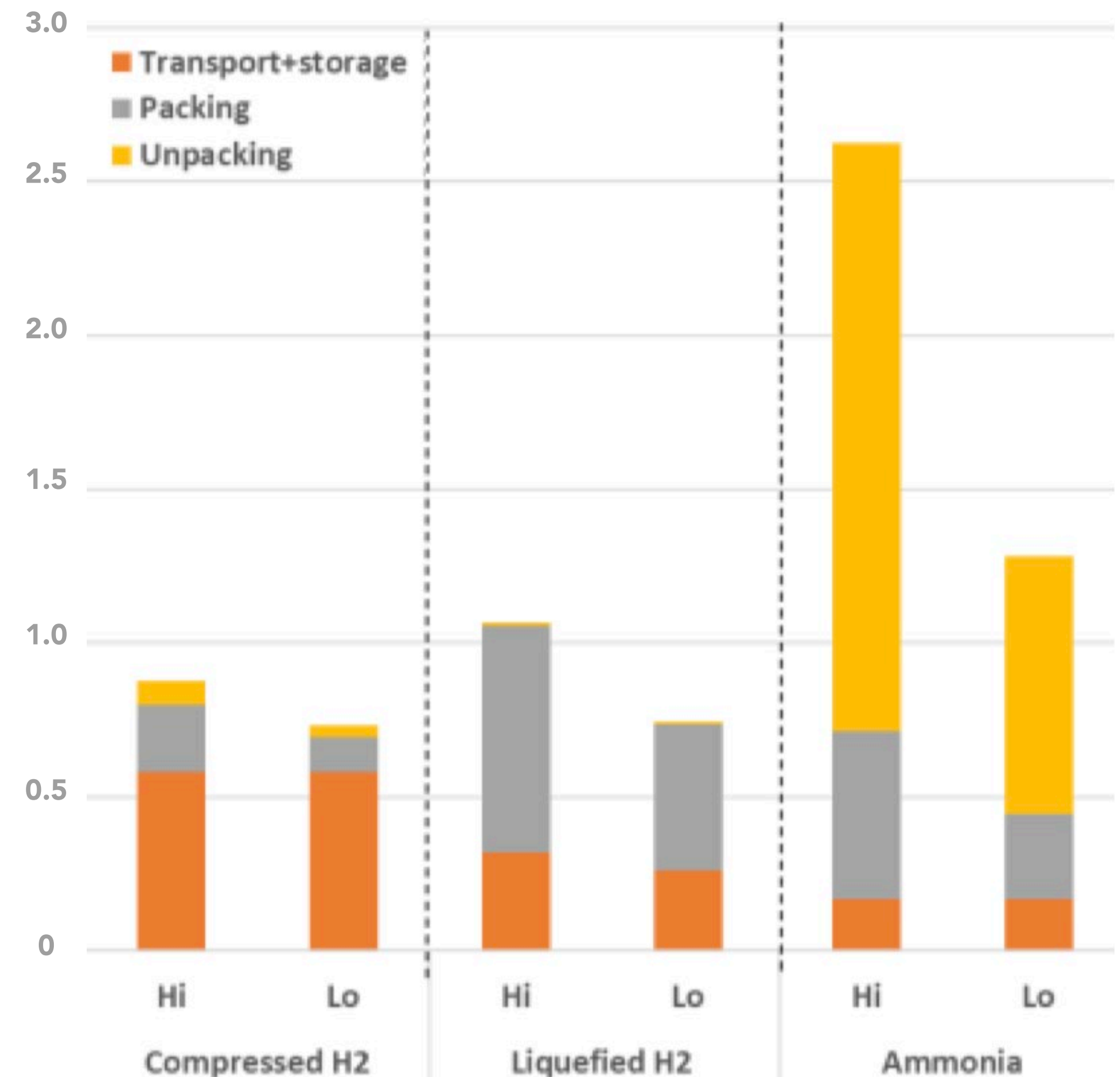
- > Proven application of compression to deliver Hydrogen at a competitive cost
- > Commercial at low volumes - doesn't require economy of scale
- > Small footprint compared to hydrogen liquefaction and/or ammonia facilities
- > Loading via onshore berth facilities or offshore buoy systems
- > Modular development aligns with market growth

Compressed hydrogen shipping demonstrated as competitive at scale

- > European Commission Joint Research Centre completed a comprehensive study evaluating the delivery of 1 million tonnes of renewable hydrogen per year to a single industrial customer over a transport distance of 2,500 km
- > Analysis confirmed simplicity of Compressed H2 shipping is highly competitive with liquefaction and Ammonia
- > Simplicity of compression removed the high cost processes to pack and unpack hydrogen
- > Findings are supportive of the outcomes of GEV's Scoping Study released on 1 March 2021



Hydrogen delivery costs (EUR/kg H2) - 1Mt H2/year, 2500km



^ Published June 2021.

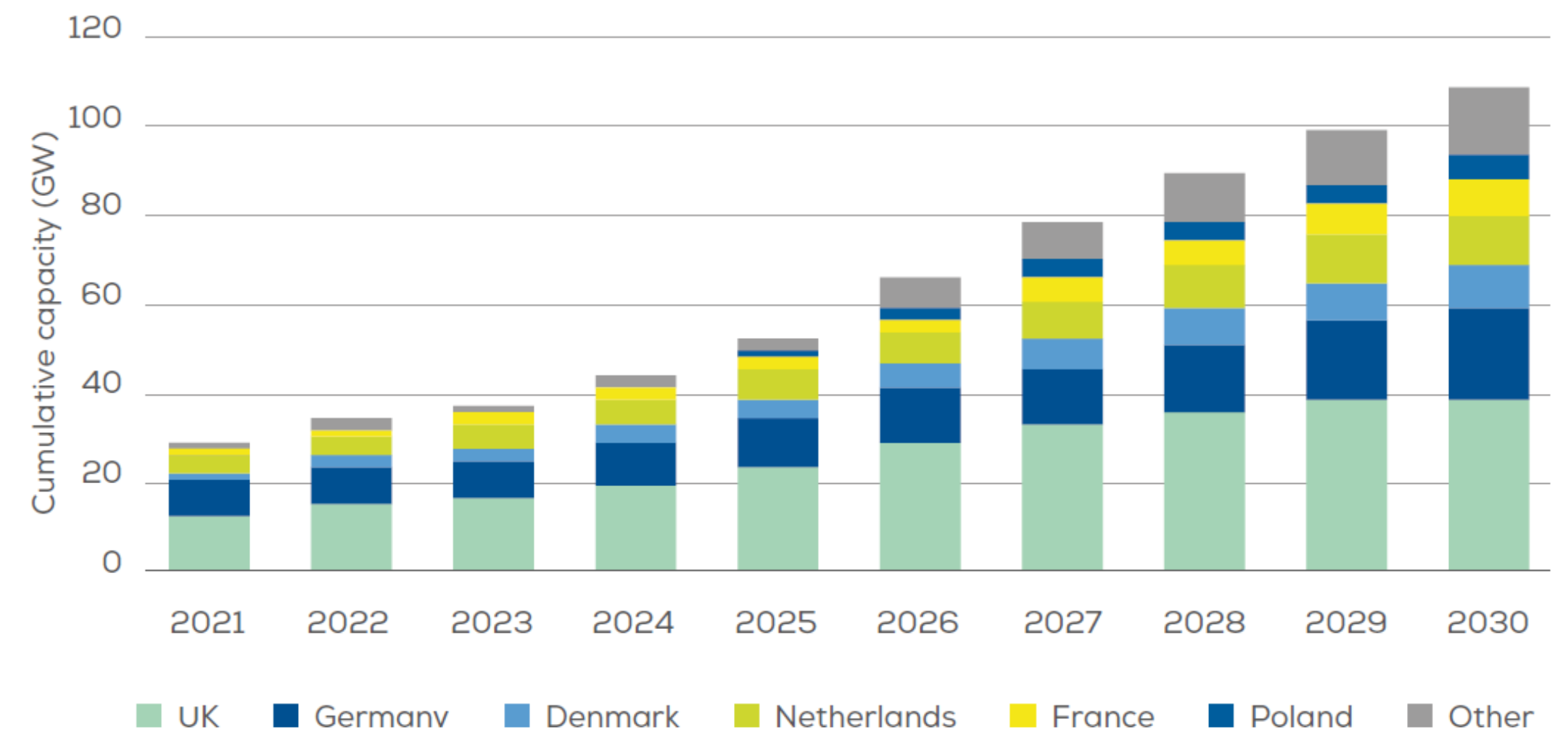
<https://ec.europa.eu/jrc/en/news/renewable-hydrogen-long-distance-supply-can-be-competitive>

Compression is a solution for offshore green H2 production

GEV currently evaluating compression to transport hydrogen produced by "off-grid" offshore wind farms

- > Government commitments across Europe >100 GW of offshore wind capacity by 2030.*
- > Hydrogen accounts for <2% of Europe's energy consumption, although its role is expected to achieve 9% by 2050
- > Offshore hydrogen production can relieve congestion and allow for a faster uptake of wind energy
- > Transmission grid build-up and availability are key barriers to the expansion of wind energy
- > Use case for a GEV's hydrogen transport solution would apply in all jurisdictions contemplating offshore wind where pipelines are unavailable

Cumulative installations for offshore wind farms (GW)*







Scope of GEV's C-H2 supply chain

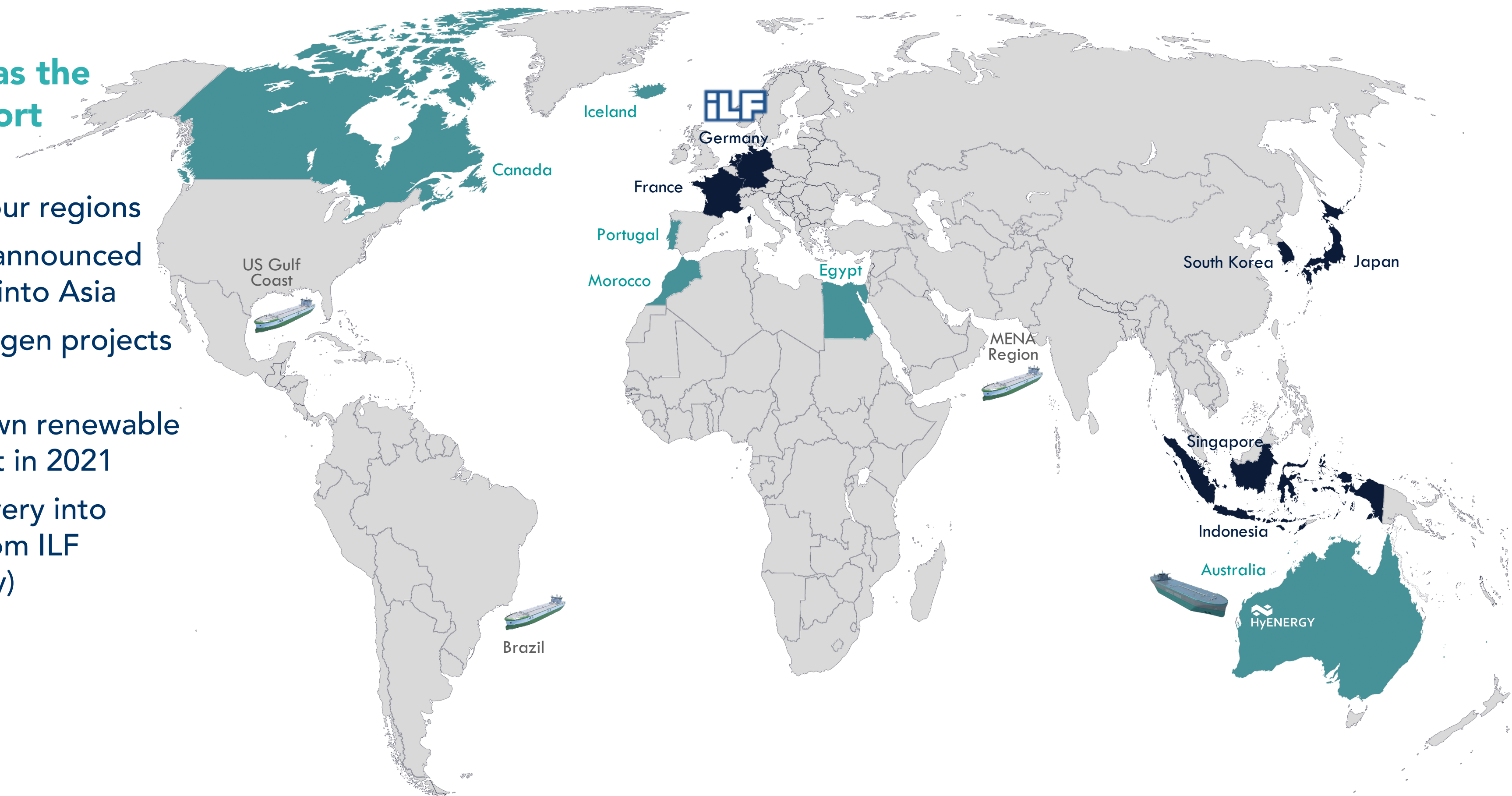


Global pipeline of project development opportunities in support of the drive towards a zero-carbon future

Screening of project opportunities continues to position compression as the solution for regional energy transport

- > Advancement of CNG projects across four regions
- > First Compressed Hydrogen Feasibility announced with HyEnergy Project, WA for markets into Asia
- > Screening other Australian export hydrogen projects for compression as preferred transport
- > Advancing the identification of GEV's own renewable hydrogen production and export project in 2021
- > Screening of hydrogen projects for delivery into European markets, including support from ILF Consulting Engineers (based in Germany)

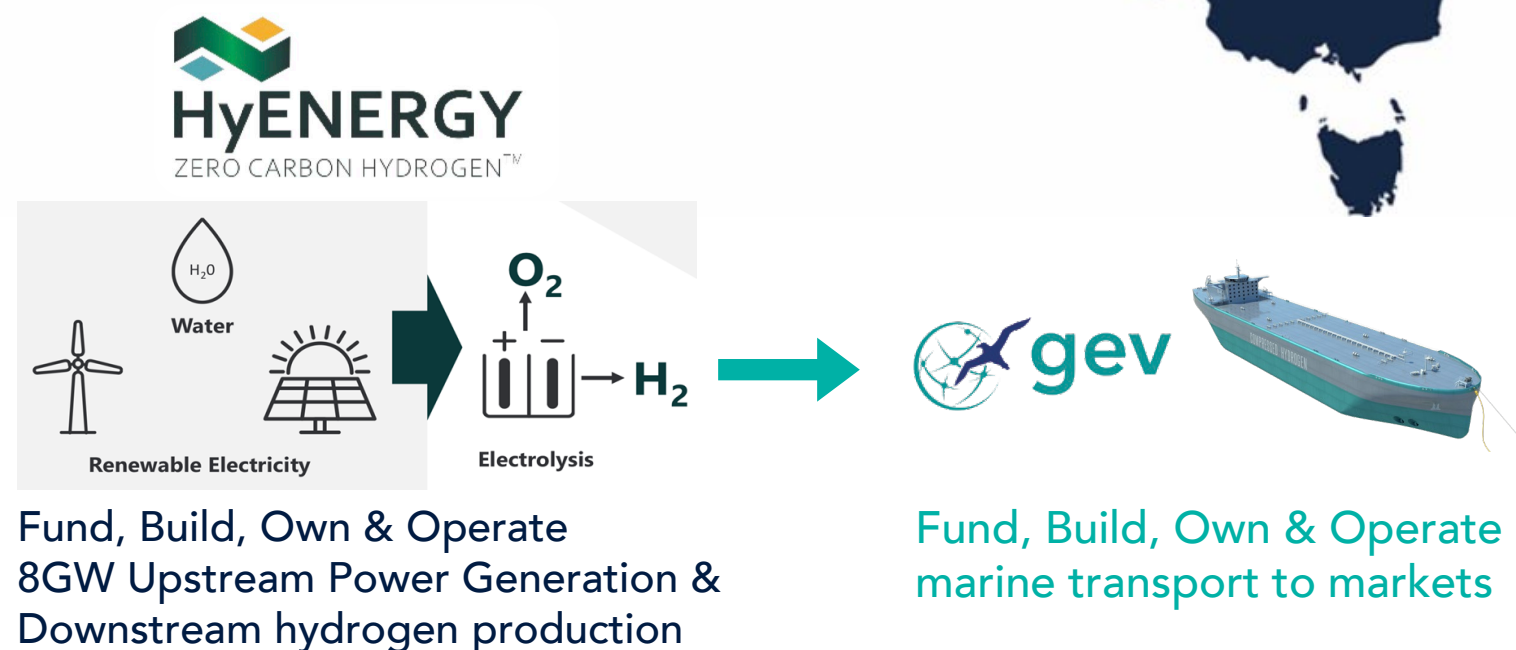
-  Green H2 Supply Regions Under Review
-  Hydrogen Demand Hubs Under Review
-  Announced Compressed Hydrogen Project
-  Announced Compressed Natural Gas Project



MOU with 8GW HyEnergy Project to evaluate export of green hydrogen to Asia-Pacific



- > Objective is to position Compressed Hydrogen as the preferred export method for the HyEnergy Project
- > Feasibility Study to evaluate the technical feasibility and delivered cost of green hydrogen to nominated markets in the Asia-Pacific region
- > HyEnergy is well suited for compressed hydrogen export due to the proximity to market, suitability of coastline for offshore loading and multi-phased approach to hydrogen production
- > Feasibility Study will leverage the outcomes of GEV's Scoping Study (March 2021) which demonstrated the advantages of compression for marine transport of hydrogen from Northern Australia to Asia
- > Feasibility Study scheduled for completion in 1H 2022

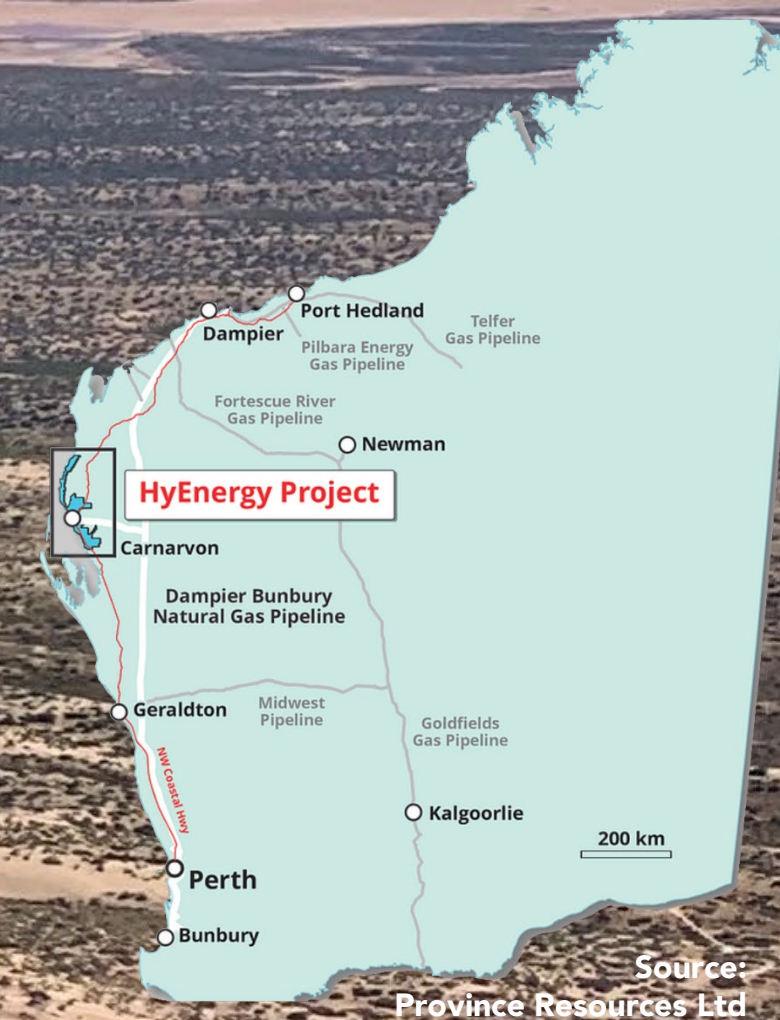


GEV project developments in the September Quarter

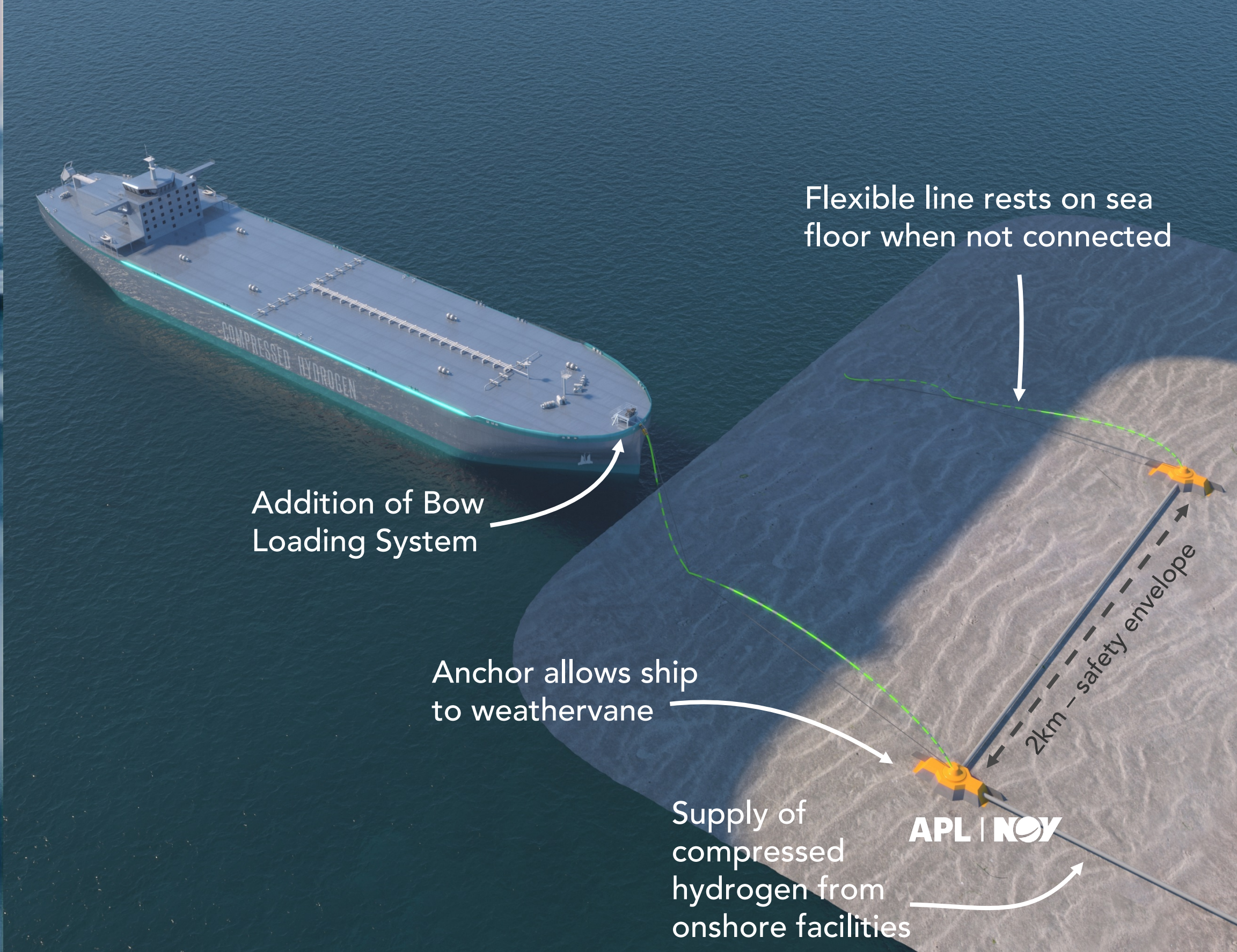
- ✔ Site assessment and introduction to key stakeholders in Carnarvon
- ✔ Presentation to WA Government and Minister for Hydrogen
 - › Formally engage global suppliers for compressors, piping and offshore loading system
 - › Appointment of key technical and environmental advisors to undertake feasibility
 - › Assessment of offshore loading terminal site to commence

Project location benefits:

- › Simple access to coast from the proposed onshore electrolysis and compression facilities
- › Near-shore access to a 12m water depth
- › Suitability of metocean conditions for offshore loading



Offshore loading is low cost, simple and safe. It avoids the commercial & environmental challenges of a traditional port



Compressed hydrogen does not require cryogenic pipelines and is uniquely suited for offshore loading

Eliminates need for onshore storage tanks with the ship used as the storage tank loading directly from the hydrogen facilities

APL systems have been proven for over 25 years, used by energy majors in all types of metocean conditions for loading and unloading high pressure gases and well fluids

APL | NOV

GEV and APL have entered into a strategic alliance agreement to support engineering and commercial analysis

GEV is proposing a dual loading buoy system for continuous operation - the second ship arrives and connects before the first ship is full

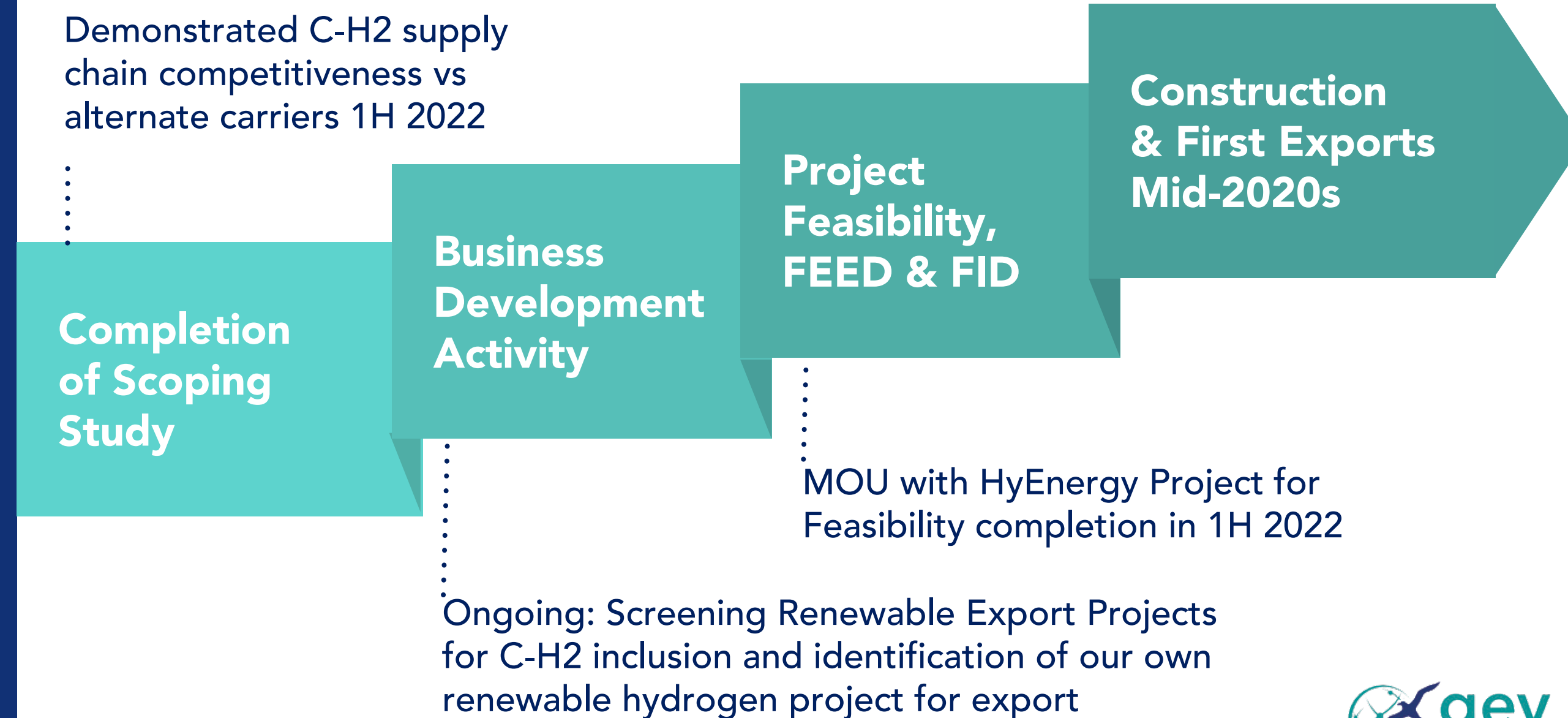
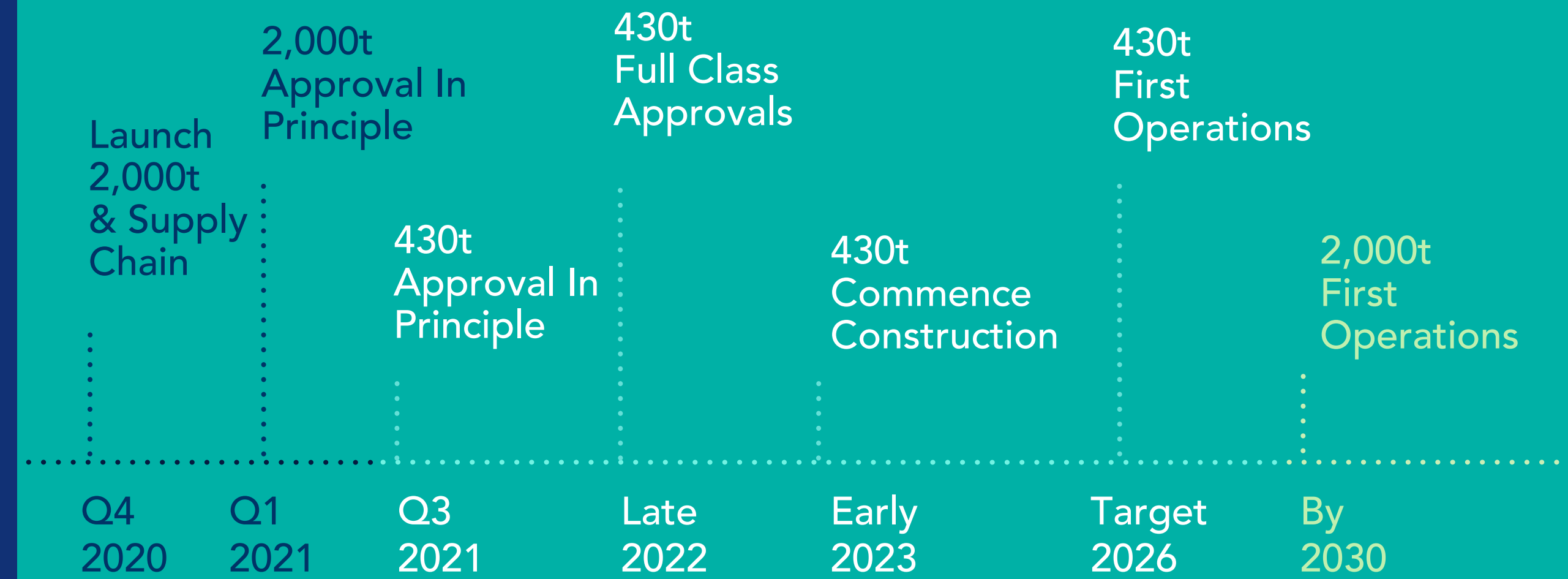
Loading system has a small footprint, with a flexible pipeline installed on the seafloor to sufficient water depth

Development Timeline and Milestones

Detailed program to position GEV as first to market for hydrogen marine transport

- > Development of a pilot scale 430t capacity ship
 - Approval In Principle Q3 2021
 - Construction Approval Q4 2022
- > Project Feasibility underway for the HyEnergy Green Hydrogen Project, WA for completion in 1H 2022
- > Screening additional third party hydrogen export projects for confirmation in 2021
- > Due Diligence on site selection for GEV's own hydrogen production and export project in Northern Australia

Shipping Engineering and Approvals



Investment Summary

Creating the fundamentals required for the storage and transport of hydrogen

Hydrogen is now a top 10 global investment thematic and future trillion dollar market

Very large market need for economic storage and marine transport solutions

Scoping Study confirms compression provides a competitive, zero emission supply chain for green hydrogen

Compression reduces the technical barriers (time and capital) to be commercialised

Global pipeline of business development opportunities across regions of H2 supply & demand

Funded to execute current 12 month development program

Experienced team in value creation and material ownership of equity aligned with shareholders

Implementation of long-term sustainable ESG standards and practices



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Appendices

Scoping Study confirms compression delivers a competitive cost with zero emissions

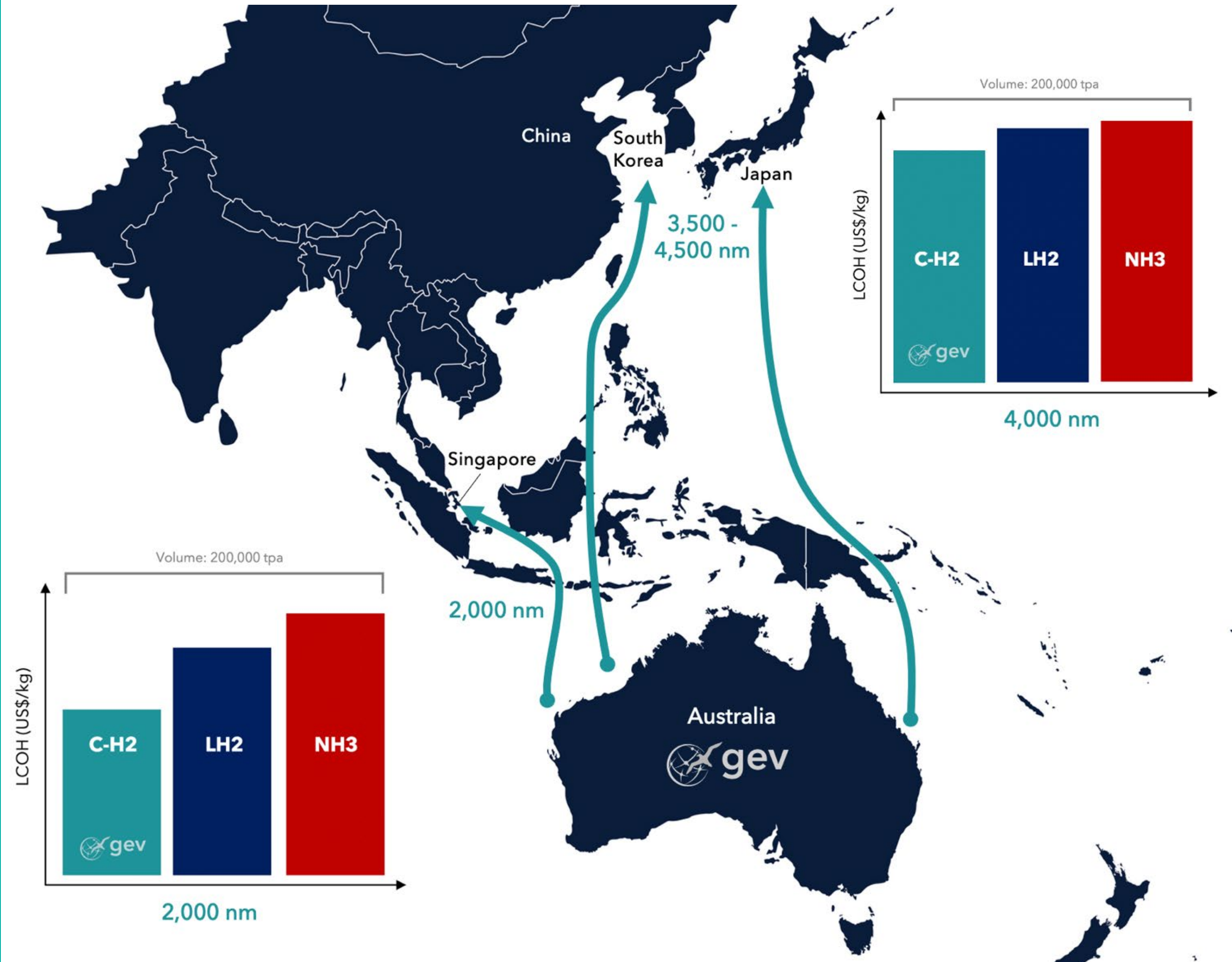
100% Green supply chain analysis:

- > Export volumes of 50K; 200K & 400K tonnes pa
- > Market distances of 2,000; 4,000 & 6,000 n. miles

Conclusions:

- > Very competitive Levelised Cost of Hydrogen (LCOH) for distances of 2,000 nautical miles & remained competitive to 4,500 nautical miles
- > Compression delivers a simple and energy efficient supply chain, benefitting from maintaining hydrogen in a pure gaseous form
- > Compression had minimal technical barriers for commercialisation to meet export market timelines.
- > Compression is an ideal solution for volatility in renewable generation, with the ability to “load follow”, whereas LH2 and NH3 could not

Levelised cost for Compressed Hydrogen, Liquefied Hydrogen & Ammonia

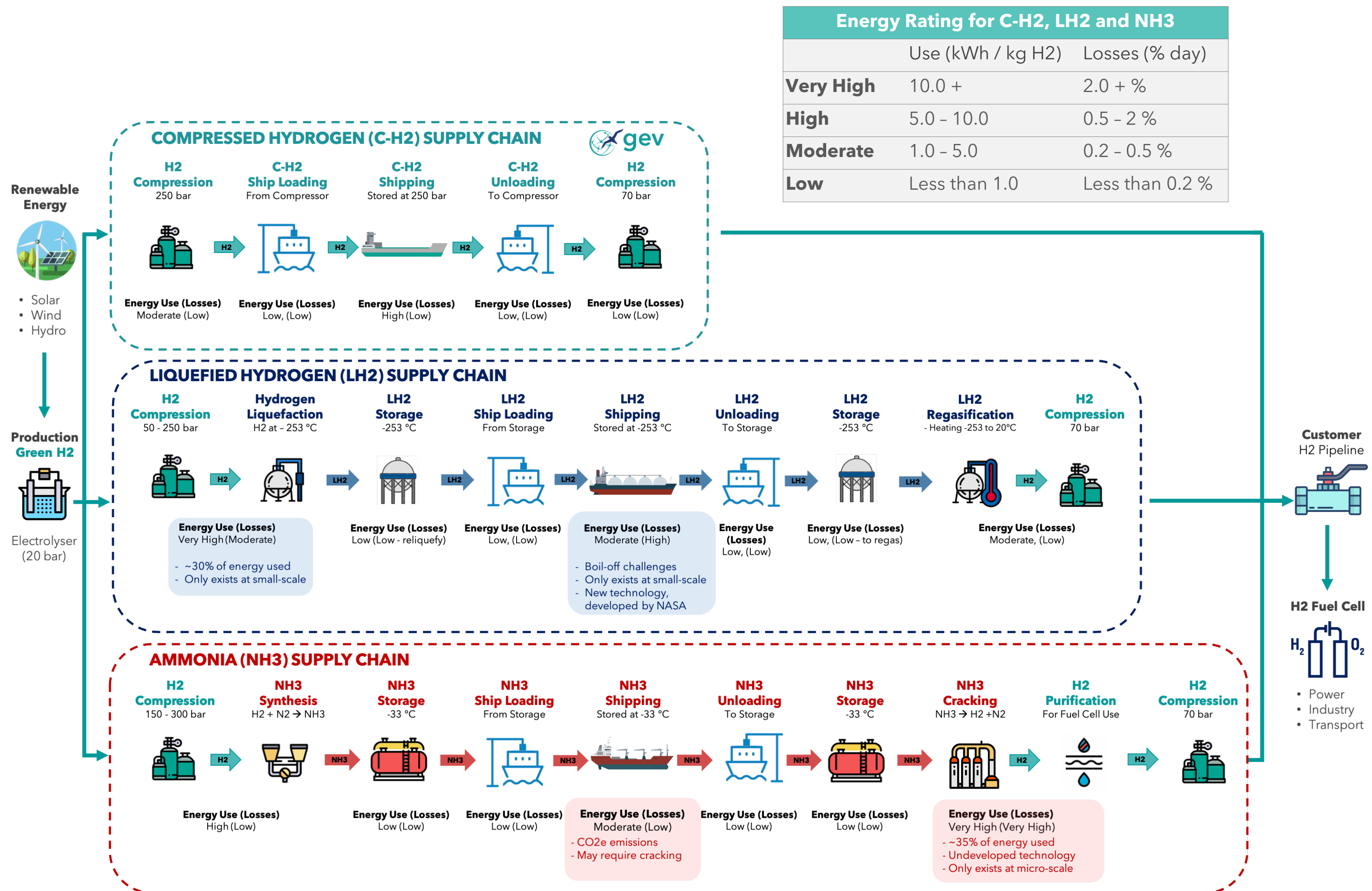


Supply chain efficiency has significant impact on delivered cost

Key findings

- › Compression is integral to all three supply chains to increase the volumetric energy density of H2
- › C-H2 supply chain has minimal technical barriers, with ship classification approvals being key
- › LH2 supply chain is significantly more complex with additional energy intensive processes as well as onshore storage requirements
- › NH3 supply chain uses predominately mature and well-developed technologies. However, if the end user requires high purity hydrogen, then technical barriers exist to crack and purify Ammonia

Compression is the most energy efficient solution for delivery of green hydrogen over regional distances

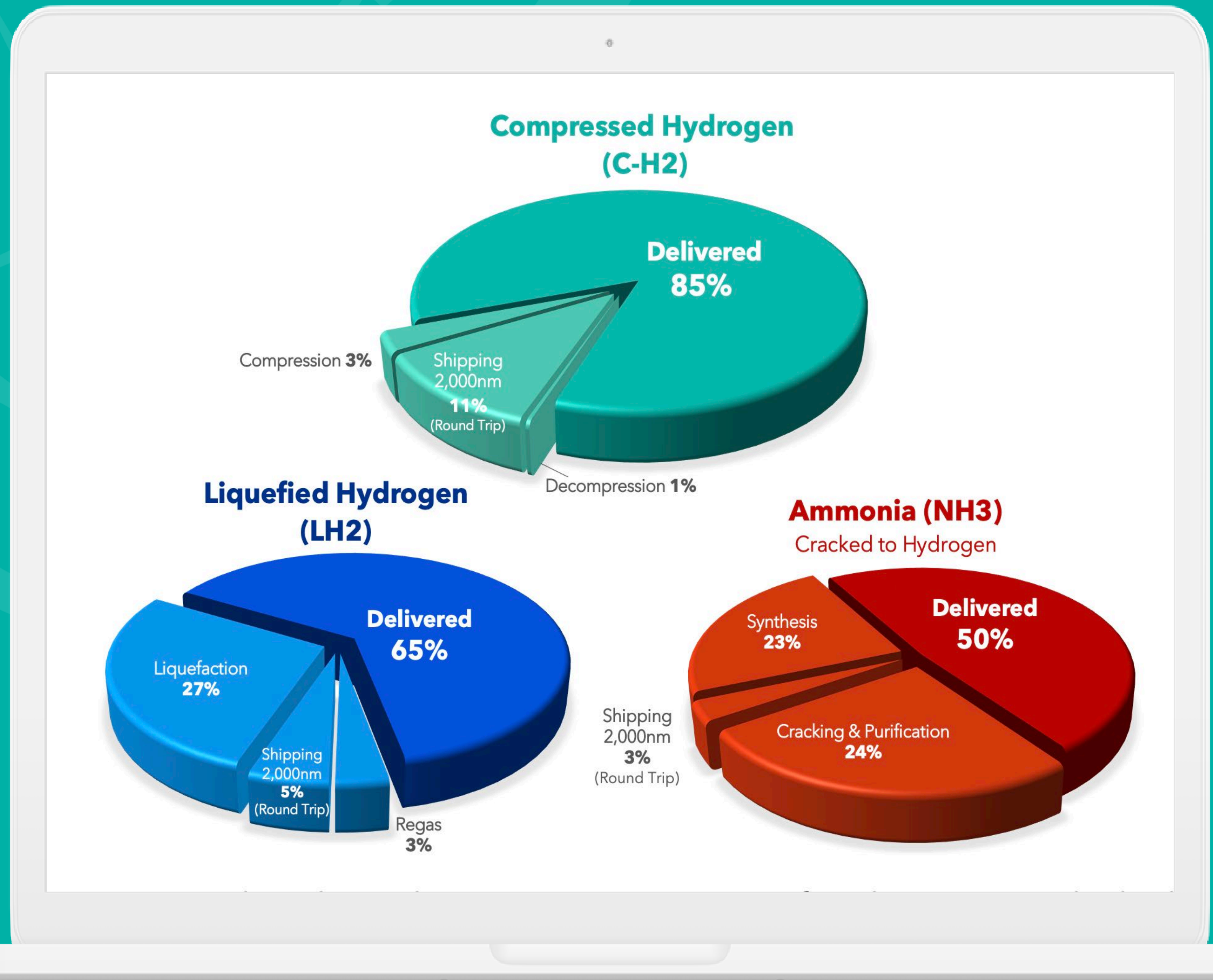


Breakdown of energy usage (% of hydrogen delivered)

Yes, C-H₂ has low energy density but the supply chain is energy efficient

Illustrative example to demonstrate the energy penalty of each process in the hydrogen supply chain. Based on the delivery of 200ktpa of green hydrogen over a distance of 2,000 nautical miles

(Source: GEV)



Marine CNG remains relevant to the energy transition

CNG Ship

Optimum Storage System

190m Length

200MMscf Net Sales Volume

17.0m Depth

250 bar Operating Pressure

31.8m Breadth

X80/ERW Pipe Grade & Weld Type

9.4m Full Load Draft

20" Pipe Diameter

47,500mt Displacement

100 m Individual Pipe Length

14knots Service Speed

130 km Total Length of Pipes

Advantages of Marine CNG

- > Highly competitive marine transport for regional distances (< 1000nm)
- > Replaces large upfront capital investment with modest shipping tariff
- > Significantly less environmental permitting than pipelines
- > Technically feasible to load and transport rich gas

Challenges ahead of natural gas

- > New, 20-year term investments in LNG are becoming increasingly challenging
- > Undeveloped and stranded gas reserve will be come increasingly difficult to commercialize

Advantages of Marine CNG

- > Less carbon emissions than the LNG supply chain over regional distances
- > Rapid CNG project development (3 years)
- > Minimal fixed infrastructure (CNG fleet >75%+ of project capex) At the end of field or project life or change in market conditions, ships can be re-deployed



Offshore loading



CNG validated as a solution for commercialising stranded gas

GEV's CNG Commercialisation Plan (2020) concluded no technical 'show stoppers'

- > CNG established as a viable alternative to deepwater pipelines or reinjection
- > Gas is compressed on FPSO and loaded via a dual STL system with a fleet of up to 5 ships to match the export rate
- > Proposal is for a 15+ year charter for gas delivered to a dedicated terminal
- > Operator engaged to evaluate CNG transport for in-development fields

- > Technical acceptance of the proposed export solution to load, store, transport and unload the rich gas specification.
- > CNG ship fleet provides a reliable, available and maintainable solution for continuous gas export.
- > Commercial model provides competitive charter rates.

