

# Provaris engages DNV for H2Neo carrier FEED review and prototype tank construction and testing

## HIGHLIGHTS:

- **World-leading Classification Society DNV engaged to issue a Front-End Engineering Design Statement (FEED Statement) for Provaris' proprietary H2Neo carrier design and approval of its proprietary Prototype Tank.**
- **Provaris to commence the construction and testing of a Prototype Tank in Q1 CY2024.**
- **Successful completion of Prototype Tank testing secures all necessary design and technology development approvals to commit to shipbuilding projects for Provaris' H2Neo compressed hydrogen carriers.**
- **New revenue opportunity for the production and sale of small-scale tanks is now under development for late CY2024.**

**Provaris Energy Ltd** (ASX: **PV1**, **Provaris** or the **Company**) is pleased to advise the engagement of leading classification society DNV to apply its expertise towards the review and approval of Provaris' H2Neo carrier's proprietary hydrogen cargo containment system.

DNV will leverage their long-term experience with maritime storage and deep understanding of the transportation of numerous gases in compressed and liquid forms with resources from its Gas Carrier Excellence Centre throughout the construction and testing process. DNV also have intimate knowledge of, and experience with, Prodtex's manufacturing processes and capabilities for complex steel structures, allowing for an effective collaborative effort to successfully execute on the multilayered welded steel plates required in the Prototype Tank construction and testing program. Construction remains on track to commence in Q1 CY2024 with completion expected by the end of Q2 CY2024.

Provaris will work together with DNV to qualify the H2Neo design and hydrogen containment tanks. Additional parties involved in the work program located in Norway include Prodtex AS for construction and SINTEF, who will be responsible to perform the prototype testing and reporting.

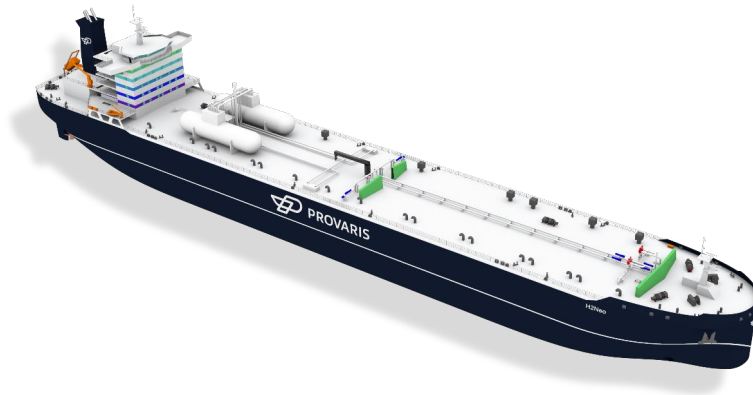
**Provaris' Chief Technical Executive Officer, Per Roed commented:** *"The Prototype testing program is an exciting phase of our technical and H2Neo approvals program. We continue to see an increasing demand for safe and cost-effective solutions to store and transport gaseous compressed hydrogen, and to be able to validate our proprietary solution through Prototype testing can be a game changer to unlocking a significant market opportunity. Our focus has been to establish a strong team of contributors and partners on this journey, and the engagement of DNV will further strengthen the H2Neo Class approval."*

**DNV's Global Business Director Gas Carriers, Martin Cartwright added:** *"Transporting hydrogen securely and efficiently is going to be one of the linchpins of the energy transition. To make sure that this market can really take off, we need to draw on the lessons we have learned from other fuels and build from a sound technical foundation. This is why we are very pleased to be working with Provaris, bringing DNV's experience, expertise, and cooperative spirit to help them deliver this innovative concept."*



The H2Neo carrier received FEED design approval in December 2022, with final approval for construction subject to the completion of a prototype of the proprietary containment tank design being constructed and tested to the satisfaction of Class requirements.

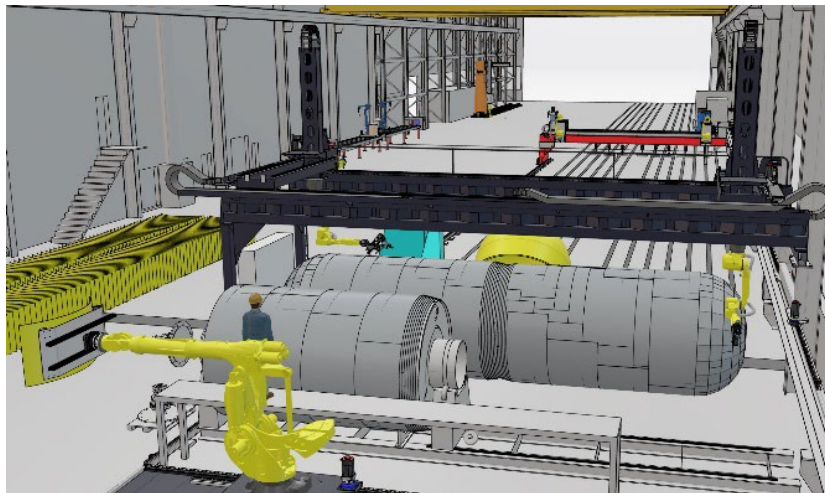
*Figure 1: Illustration of the H2Neo CGH2 Carrier Class*



An illustration of the prototype tank to be constructed in Prodtex's production facility located in Fiskå, Norway, is presented in Figure 2 below. Construction will include the use of two laser welding robots, one material handling robot, and a scalable, custom hydraulic jig that will be employed during construction. The tank is a multilayered 2.5m diameter tank and is 9m in length with a capacity to store 800 kg of hydrogen using the design pressure of 250 barg. The prototype tank design combined with the automated construction process, which utilizes robotic laser welding, will enable Provaris to scale tanks up from 1-tonne capacity to the full-scale tanks required for the H2Neo carrier.

A production cell located in Norway, using robotic laser welding can achieve significant cost benefits through a reduction in energy and labor content, achieve rigorous quality assurance, safety and regulatory standards, and reduce the CO2 footprint when compared to manufacturing alternatives in Asia.

*Figure 2: Illustration of Prodtex's robotic cell for the construction and testing of the Prototype Tank*



### **Opportunity for production and sale of small-scale tanks in 2024**

Provaris has received numerous inbound enquiries over the past 2 years about the potential to supply small-scale hydrogen storage tanks using our proprietary carbon steel containment tank design. Typically, the requirement has been for industrial applications at a scale of 1 to 5 tonnes of hydrogen capacity.

Together with Prodtex, planning is underway to confirm construction time and costs for 1-tonne capacity tanks based on the Prototype Tank design and using the proprietary design of a multi-layered carbon steel tank with liner. Suitable industry applications include marine bunkering and on-board storage tanks for new or modified ships implementing compressed hydrogen as the fuel source. Discussions are under way with ship designers and owners seeking alternatives to carbon fiber type 4 tanks stacked in containerized solutions.

An example of a large addressable market includes bulk-storage at Hydrogen Refueling Stations (HRS) that require a minimum daily capacity of 1-tonne of storage as specified by the recent Alternative Fuels Infrastructure Regulation (AFIR) legislation passed by the European Union in September 2023. The EU has identified 657 HRSs sites to be deployed across the 27 member states by 2027, meaning deployment must start in 2025.

Subject to the successful completion of the Prototype Tank, the production and sale of tanks could provide Provaris with an early revenue and cash generating business in late calendar year 2024. Discussions are underway with various European industrial partners regarding their hydrogen storage requirements.

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**This announcement has been authorised for release by the CEO of Provaris Energy Ltd**

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## About Provaris Energy

For more information: [www.provaris.energy](http://www.provaris.energy)

Provaris Energy Ltd (ASX: PV1) is an Australian public company developing a portfolio of integrated green hydrogen projects for the regional trade of Asia and Europe, leveraging our innovative compressed hydrogen bulk storage and carrier. Our focus on value creation through innovative development that aligns with our business model of simple and efficiency hydrogen production, storage and transport can establish an early-mover advantage for regional maritime trade of hydrogen and unlock a world of potential. In August 2022 Provaris Norway AS was established with an office in Oslo to advance the development of regional hydrogen supply in Europe.

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