



## **APPROVALS PROCESS FOR COMPRESSED HYDROGEN SHIP UNDERWAY**

Global Energy Ventures Ltd (ASX: **GEV**, the **Company**) is pleased to provide the following update on the development of a new compressed Hydrogen ship (**H2 Ship**) to transport the zero-carbon fuel of the future.

### **HIGHLIGHTS:**

- **Appointment of American Bureau of Shipping (ABS) to achieve Approval in Principle (AIP) for the proposed 2,000 tonne capacity (23 million m<sup>3</sup>) H2 Ship.**
- **Capilano Maritime Design Ltd (Capilano) appointed as naval architects for the provision of marine engineering services to advance the design the H2 Ship.**
- **GEV's work program during the AIP phase will include:**
  - **Ship outline specification including the cargo containment and midship section.**
  - **Preliminary process analysis to load and unload the ship.**
  - **Preliminary HAZID analysis.**
  - **US Patent application and filing.**
- **Completion and receipt of ABS AIP is expected in the first half of 2021.**
- **The successful outcome of the AIP will demonstrate that there are no identified showstoppers that would prevent the ultimate classification of the vessel.**
- **Following receipt of the AIP, engagement with selected shipyards will commence for an estimate of costs and schedule for construction.**

**Maurice Brand, Executive Chairman & CEO commented:** *"The Company is very pleased to be working with ABS and Capilano again on the engineering and approvals for our new H2 Ship. Both groups worked with our marine engineering team for the CNG Optimum ship which successfully attained full design class approvals in early 2019. The successful delivery of Approval in Principle for the H2 Ship in the first half of 2021 will demonstrate there are no showstoppers to the proposed ship design and containment system for large scale marine transportation of compressed hydrogen.*

*GEV has been delighted with the response from shareholders since the design launch of our H2 Ship in October. The Company has received extensive enquiries from proposed hydrogen export projects and other participants in the development of the hydrogen supply chain, and we look forward to progressing discussions on the economics, logistics and potential collaborations in the coming quarters."*

### **APPROVAL IN PRINCIPLE TO DEMONSTRATE NO SHOWSTOPPERS**

The Company has made the appointments of ABS and Capilano for the next stage of engineering and design in order to achieve Approval in Principle (AIP) anticipated for the first half of 2021. The achievement of AIP will be a critical step to advancing the technical feasibility of the proposed H2 Ship, the first of its kind for the marine transport of large-scale volumes of hydrogen.

The process for AIP will follow ABS' New Technology Qualification Guidance Notes. The work will include a preliminary Hazard Identification (HAZID) analysis to identify any significant potential hazards and the future design work to mitigate these risks. The successful outcome of the AIP will demonstrate that there are no identified showstoppers that would prevent the ultimate classification of the vessel.

Following the successful achievement of AIP, the Company's project team will commence discussions with suitable shipyards for estimates of capital cost and schedule for construction.



# Compressed Hydrogen Ship

Transporting the future of energy

## COMPRESSED HYDROGEN SHIP

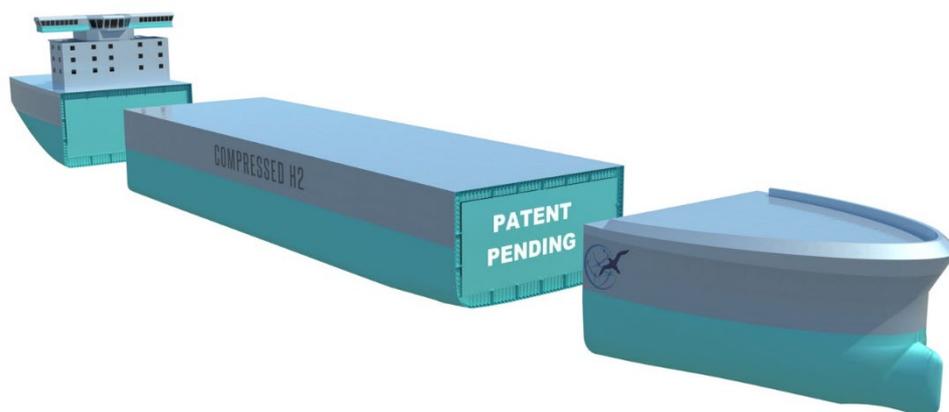
GEV's compressed H2 Ship and containment system have been designed using three key principles:

- i. Optimise the volume of hydrogen that can be stored in the hull of a ship utilising compression
- ii. Optimise the cost, availability, and constructability of the ship
- iii. Meet or exceed the design rules and safety standards established by the American Bureau of Shipping

The advantage of compression for the regional transport of hydrogen is the simplicity and energy efficiency of the supply chain, particularly when compared with the complexity and energy intensity of alternative transport methods (i.e. liquefaction and chemical carriers).

Figure 1 is an illustration of GEV's compressed H2 Ship. The ship and its innovative cargo system are in the patent process and GEV expects to receive broad patent protection for this novel ship, further extending our intellectual property suite. The containment system will store ambient temperature hydrogen at an operating pressure of 3,600 psi (or 250 bar). GEV's H2 Ship will have a storage capacity of up to 2,000 tonnes (23 million m<sup>3</sup>) of compressed hydrogen. Smaller capacity ships will be evaluated by GEV for demonstration purposes based on specific pilot export projects. With the rapid advancements in both marinized fuel cells and hydrogen internal combustion engines, GEV intends to fuel the vessel with hydrogen, providing a 'zero-carbon' shipping solution.

**Figure 1: Illustrative ship design - Compressed H2 Ship**



- END -

**This ASX announcement has been authorised by the Board.**

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## Compressed Hydrogen Ship Transporting the future of energy

### ABOUT GLOBAL ENERGY VENTURES LTD

Global Energy Ventures Ltd was founded in 2017, with the Company's mission to create shareholder value through the delivery of integrated compressed shipping solutions transporting energy to regional markets. The business model is to build, own and operate integrated energy transport projects for either natural gas or hydrogen.

The primary focus is the development of integrated Compressed Natural Gas (CNG) marine transport solutions with the Company's construction ready **CNG Optimum ship**. CNG is a well proven gas transport solution with design and commercial advantages along with being safe and a 'lower emission' solution for the transport of gas than in the form of liquified natural gas (LNG).

With the world's focus on Energy Transition to zero-carbon fuels, the Company has also introduced the world's first large-scale **Compressed H2 Ship** design that will support the transport of hydrogen as a green energy fuel of the future. Hydrogen's role in the future energy mix will greatly assist governments and corporations with their respective 'net-zero carbon' targets through the decarbonisation of heavy emitting industries.

### Value creation for shareholders will be achieved by:

- Continue to maintain global leadership in marine pressure vessel designs and intellectual property.
- Pursue a portfolio of CNG Optimum projects to improve and mitigate against binary outcomes and offer CNG project stakeholders' flexible commercial arrangements.
- Advance the future transport of green energy through the development of the compressed H2 Ship.
- Employ world class management and staff that are leaders in their chosen discipline.
- Maintain the highest standards of efficiency, safety and environmental responsibility.

For more details on the Company please visit [www.gev.com](http://www.gev.com)

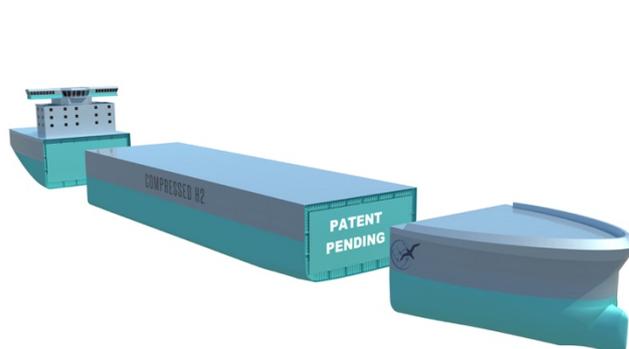
### CNG Optimum Ship

Approved for Construction & Ready for Commercialisation



### Compressed H2 Ship

Under Development



**DISCLAIMER:** This announcement may contain forward looking statements concerning projected costs, approval timelines, construction timelines, earnings, revenue, growth, outlook or other matters ("Projections"). You should not place undue reliance on any Projections, which are based only on current expectations and the information available to GEV. The expectations reflected in such Projections are currently considered by GEV 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 gas supply, gas reserve estimates, the ability to locate markets for CNG, fluctuations in gas and CNG 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. GEV undertakes no obligation to update any Projections for events or circumstances that occur subsequent to the date of this announcement or to keep current any of the information provided, except to the extent required by law. 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 GEV.

\$ refers to Australian Dollars unless otherwise indicated.