



**INVESTOR ANNOUNCEMENT**  
**New Energy Technology Ltd**

**6 April 2022**

## **STARFIRE ENERGY DEVELOPS TWO NEW IMPORTANT GREEN HYDROGEN TECHNOLOGIES**

### **Highlights**

- **Starfire Energy has developed two new ammonia cracking technologies optimised for power generation and pure hydrogen markets**
- **Prometheus Fire innovation produces a burnable ammonia-hydrogen blend that replaces natural gas in off-the-shelf power turbines**
- **Prometheus Hydrogen innovation produces high purity H<sub>2</sub> suitable for use in existing fuel cell technology**

New Energy Technology (“**NET**”) is pleased to announce that green ammonia technology venture Starfire Energy (“**Starfire**”), of which NET is a 9% shareholder, has developed two additional ammonia cracking technologies that produce ready-for-end-use green fuel.

Starfire’s first technology invention, “Rapid Ramp”, produces green ammonia - a zero-carbon hydrogen-rich fuel optimal for transport, storage, and power generation. Some end-use markets, such as particular power generation combustion and fuel cell applications, require hydrogen to be available in a pure form, rather than in the form of ammonia. The solution to this is ‘cracking’ the ammonia to extract pure hydrogen for end use.

Starfire has invented two crackers to address this emerging large market need. Starfire’s Prometheus Fire cracker produces a burnable ammonia-hydrogen blend (70/30) that is optimized for power generation, while Starfire’s Prometheus Hydrogen cracker produces ultra-high purity H<sub>2</sub> for use in fuel cells and industrial applications such as green steel.

Combined with Starfire’s existing “Rapid Ramp” carbon-free ammonia production technology, this brings Starfire’s product offering to three lines across both ends of the green fuel value chain.

### **Prometheus Fire**

Starfire’s Prometheus Fire technology cracks ammonia using exhaust heat to produce a burnable ammonia-hydrogen blend optimized for power generation.

Starfire has verified that a blend of 70% ammonia + 30% hydrogen (cracked ammonia) can burn well in a conventional natural gas burner for utility-scale power generation applications.



The Prometheus Fire ammonia-hydrogen blend can be used directly in off-the-shelf turbines as the fuel source, replacing natural gas and the getting rid of the associated carbon emissions.

### **Prometheus Hydrogen**

Starfire's Prometheus Hydrogen utilizes the same core Prometheus technology with the addition of ammonia adsorption and hydrogen compression to produce high purity, high pressure hydrogen by cracking ammonia. This can be used to service markets where pure H<sub>2</sub> is required, such as in green steel manufacturing and for fuel cells.

Typically, obtaining pure H<sub>2</sub> via fully cracking ammonia is challenging. Fully cracked ammonia still retains several thousand parts per million of ammonia due to thermodynamic limitations, and residual ammonia can damage proton exchange membrane devices, such as fuel cells.

Starfire's patented adsorption ammonia removal process can provide a cracked ammonia stream delivering ultra-high-purity hydrogen - with nominally 0 parts per million ammonia, making it a leading option for use in fuel cells and other proton exchange membrane devices.

Starfire is in advanced discussions with multiple major global turbine manufacturers to integrate Starfire's cracker in their turbines, to allow the turbines to be sold and used as ammonia-ready for zero carbon power generation.

**- ENDS -**

For further information, please contact:

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### **About New Energy Technology**

NET is a diversified hydrogen business led by a global team of green fuel experts. NET invests in and commercialises critical green fuel technologies to accelerate the hydrogen economy, develops large scale green fuel infrastructure projects, and consults to other businesses seeking participation insight and strategy in the emerging green fuel landscape.

### **About Starfire Energy**

Starfire Energy is a green fuel technology provider and developer of the world's most advanced green ammonia production technology that is fully compatible with intermittent renewable energy. Current investors include Mitsubishi, Chevron, Osaka Gas, and APVentures.