

Clean Energy. Natural Future.

DUAL FREQUENCY
PLASMA ELECTROLYSER
TECHNOLOGY



High Efficiency



Scalable



Sustainable



Australian
Innovation

INNOVATION. SUSTAINABILITY. **IMPACT.**

WHY GREEN HYDROGEN?

We have no choice.

Whether you believe in Climate Change or not, the world is officially on the march to decarbonization, and Green Hydrogen plays a significant role in what will become an enormous market.

But there's a problem. Current Hydrogen electrolyzer technology costs too much, lacks efficiency, and isn't clean. Our innovation is driving the change and forming solutions.

Hydrogen Systems Australia overcomes major issues with our game-changing, fully patented Dual Frequency Plasma Electrolyzer technology.

Cheaper, more efficient, cleaner and made where you use it.

There are a number of ways to produce hydrogen, each delineated by a colour. Green Hydrogen is clean hydrogen.

Join us in the most exciting market on planet earth.

Size Of The Market

USD \$12 Trillion

Forecast value of global hydrogen by 2035

USD \$42.8 Billion

In HSA pre-order sales

USD \$500 Billion

Value of Electrolyzer market by 2034

THE EXCITING TRUTH ABOUT GREEN HYDROGEN

There are certain industries and applications throughout the world that require a reliable, affordable supply of Green Hydrogen.

That's a fact.

The biggest companies in the world are embracing Green Hydrogen, industries are adopting it quickly, governments worldwide have defined roadmaps, strategies and subsidies rolling out. Significant public and private investments are in full swing. So, let's be specific on where Green Hydrogen will be used. What are the "unavoidables", those specific (and huge) market segments and applications which will need Green Hydrogen to survive and thrive in a world focused on Clean Energy? Think Fertilisers (small scale and large scale), Hydrogenation, Methanol, Hydrocracking, Desulphurisation, Heavy Duty Transport, Energy Storage, Power Generation, Off-Grid.

By replacing traditional fuels and energy requirements with Green Hydrogen, industries can substantially reduce their carbon footprint and make hydrogen where they use it, shortening supply chains. But the current electrolyzer technologies being used such as Alkaline, PEM and AEM face an uphill battle on cost and efficiency. They always will. At HSA, we are confident our **Dual Frequency Plasma Electrolyzer** technology can produce Green Hydrogen significantly more **efficiently** and at a much **lower cost**.



Energy Security

Green Hydrogen is crucial for energy storage, and vital for Energy Security. This function is essential for integrating multiple renewable energy sources, ensuring a stable power supply. This is ideal for Data Centres to ensure zero interruptions.



Green Steel

One of the most promising emerging techniques is hydrogen-based direct reduction. This process involves using hydrogen gas (H_2) to reduce iron ore to iron, which is then used to make steel. Unlike traditional steel production, hydrogen-based direct reduction emits only water vapor.



Power Generation

Hydrogen can be directly used in fuel cells or generators to generate electricity, providing a clean and efficient power source. This is particularly useful in remote or off-grid areas lacking traditional power infrastructure. Hydrogen fuel cells generators are also used for providing electricity and heat in buildings and as backup power for critical facilities.



Transportation/Maritime

Green Hydrogen is being used to power heavy duty transport buses, trucks, trains, ships – while advancements are being made in FCEV (fuel cell electric vehicles) and a potential transition in combustible engines – providing a significantly cleaner alternative to fossil fuels.



Aviation

The aviation industry is turning to hydrogen as a critical component for sustainable aviation fuels significantly reducing the carbon footprint of air travel.



Industrial Heating

Green Hydrogen is ideal to serve heating needs in industrial settings.



Ammonia & Methanol

Hydrogen is also utilized in producing green ammonia and methanol, which are vital for fertilisers, and other industrial uses, as well as being an excellent energy storage vehicle.



Industrial Processes

Green Hydrogen is essential for decarbonizing industrial processes, especially in steel manufacturing, significantly lowering emissions compared to traditional methods.

THE HSA VISION

EUROPEAN-STYLE ATTRACTION MODEL LEAN MANUFACTURING PLANT 2027/2028



WHY HYDROGEN SYSTEMS AUSTRALIA?

Groundbreaking Tech

We believe HSA's **Dual Frequency Plasma Electrolyzer** technology has the potential to become a defining catalyst in the global clean energy transition. As industries accelerate towards decarbonisation, innovation will determine the pace of progress. HSA is committed to leading that evolution with breakthrough technology that delivers cleaner, more efficient hydrogen production and contributes meaningfully to the world's energy future.

Our Products

Our real pitch is Energy Security with a **"use it where you make it"** approach as our primary objective, and our play is unique, well executed, and with ambitions of playing a meaningful role in a multi-trillion-dollar sector by 2050. Our products are designed for the small to medium scale market yet can be scaled up. Think dairy farms, remote communities, island or mountain resorts, ammonia as a storage solution, and even hydrogen hub projects. In fact, anywhere diesel is required we can drop in solutions with significant points of difference: **Cheaper and more efficient Dual Frequency Plasma Electrolyzers** using clean, Green Hydrogen.



Increased Efficiency

HSA's patented technology uses **plasma** to create hydrogen instead of membranes (PEM), chemicals (AEM) or precious metals. It's a proven technology being mapped across to a different application.

Proven Technology

Technology is **completely scalable** and can be used for small, medium and large applications. Lab tests have already produced outstanding results as we dive deep into prototype development.

Low Energy Requirements

Increased value with an expected energy conversion rate down to as little as **35kWh for 1kg** of hydrogen production. We are also confident we can drive the cost to the desired USD \$2/kg at scale.

**1KG MODULE
(35KWH)**

Novel Approach

**3KG MODULE
(105KWH STANDARD)**

Core Technique

**1MW BLOCK
(10 X 3KG MODULES)**

Performance Improvements

Experienced Team

HSA has an impeccable team in place with vast experience comprising decades of proven expertise in Hydrogen, Science, Leadership, Lean Manufacturing, Engineering, Marketing, Business Development and the Start-Up space. Culture is in our DNA as we implement our '**HSA Spirit**' framework built on solid foundations, a people first approach, as we pursue our vision to clean up the planet and provide a better world for our children and future generations. Our HSA Spirit strategy focuses on community engagement, shareholder communication, team respect and a mission of prosperity for all.



Left to right: Greg Waugh - Senior Engineer, Michael Magelakis - Strategy and Customer Service, Brian Power - Founder & CEO, Freya May Shaw - Strategic Finance Executive and Renee VanderWerf - Executive Assistant to the Director.

Built Different

We're built different at Hydrogen Systems Australia. A Melbourne-based head office, and with a world-leading R&D science team, and connections all over the globe including a UK subsidiary focused on the creation of hydrogen hub projects. HSA offers feasible, affordable, **efficient and cheaper solutions** while on the march to help hit global targets in the rush for Energy Security. Already we have **\$42.84 billion** in pre-order discussions, with regional license holders around the globe lining up.

Investment

Lead investment offers are on the table, and they will provide value beyond the dollar in so many exciting ways. Though fundraising was always going to be a challenge starting from scratch with a unique technology, volatile economic times, and during and after a pandemic, we've been consistent, true to our word and successful in our mission. And we were prepared to say no to investors who weren't the right fit or who didn't align with values. HSA has qualified for and received R&D Tax Incentives domestically and globally as approved by AUS Industry.

HSA has USD \$42.8 Billion pre-orders in place (MOUs).

Big Vision

No hype. No unrealistic goals. No square pegs in round holes. The hydrogen sector is being dubbed the “new gold rush” or “new oil”, which are good analogies, but with that comes lofty claims, unsuitable industry or application ambitions, and turbo-charged greenwashing. At HSA we’re clear on our vision, have a great team and impressive advisory board offering sound guidance. In simple terms, we are enabling an **inexpensive and efficient** means to provide the world with a reliable and affordable supply of Green Hydrogen where it’s needed.

HSA Spirit

Our **values** will allow Hydrogen Systems Australia to flourish in an emerging market where many do well, but none do it best. We have the framework, the know-how, the creativity and the passion to be the leaders in our field.



Honesty & Integrity

We commit to honesty and integrity in all interactions. By being transparent and ethical, we build trust with each other and with everyone we serve, creating a foundation of respect, reflection and reliability.



Accountability & Ownership

Taking responsibility is key to our culture. We hold ourselves accountable for our actions and behaviour, taking ownership of our work and striving for excellence in every task we undertake.



Fun & Play

We value fun and playfulness as essential to a healthy work environment. By balancing hard work with enjoyment, we create a positive atmosphere that fuels creativity and builds camaraderie.



Innovate, Learn, Adapt & Grow

We are committed to continuous improvement. Through innovation, learning, and adapting, we evolve as individuals and as a team, staying agile and resilient in a constantly changing world.



Respectful & Supportive

We treat everyone with respect and care, fostering a supportive environment where individuals feel valued and understood. Our team members feel heard and uplifted, creating a space where everyone can thrive.



Curiosity, Creativity & Clarity

We embrace curiosity as a pathway to discovery, nurture creativity to find unique solutions, and communicate with clarity to ensure we’re always aligned. Together, these qualities fuel our passion for innovation and progress.



Teamwork

Collaboration is at the heart of our success. We believe in the strength of working together, recognising that each team member brings valuable skills and perspectives with the HSA Spirit. This makes us stronger as a whole.



Proactive Knowledge Sharing

We believe in the power of shared knowledge. By actively sharing insights and skills, we empower each other to grow and ensure that our collective knowledge benefits everyone on the team, creating true legacy.

JOIN HSA

In the most exciting market on earth

Welcome to an Australian-made, best practice global company with exciting rewards in store for those who join us on the journey.

Hydrogen Systems Australia has a **groundbreaking technology**, **Lean Manufacturing** principles, an **excellent team** including world leading scientists, and an attraction model elevating us beyond previous commercial principles from years gone by.

Why would you invest or partner with an Aussie company like us in the manufacturing space? Because we have a pedigree, and a modern, very exciting and different way of addressing the market.

Green Hydrogen innovation has emerged as a vital transformative solution in the quest for clean energy and decarbonisation. Its potential to replace fossil fuels across various sectors, small, medium and large, positions it as a critical component of **global sustainability** strategies.

The significant growth projections for the Green Hydrogen market underscore its importance, driven by technological advancements and innovation. Due to the unique, affordable and **groundbreaking** nature of our technology and early market pull Hydrogen Systems Australia is well placed as a major player in an enormous market for decades to come.

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*We believe the **future of hydrogen** will be defined by technologies that improve energy security while delivering commercial value. Through a **make-it-where-you-use-it** model, innovation, engineering excellence and strategic partnerships, Hydrogen Systems Australia is creating solutions that strengthen sovereign **energy resilience** and accelerate the global transition to clean energy.*

Brian Power
Founder and Chief Executive Officer



Join us on HSA's quest to enable true **Energy Security** with mass production of Green Hydrogen on a **global** scale.



**Hydrogen
Systems
Australia**

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