



MEMORANDUM

The international energy sector is rapidly shifting to clean, safe and sustainable means of energy. However, renewable energies have the inherent intermittent and off-peak generation problem requiring energy storage. Incorporating conventional electrolysis to store the energy also has issues that hinder a smooth adoption. H2 Innovation Lab (H2IL) believe we have a solution.

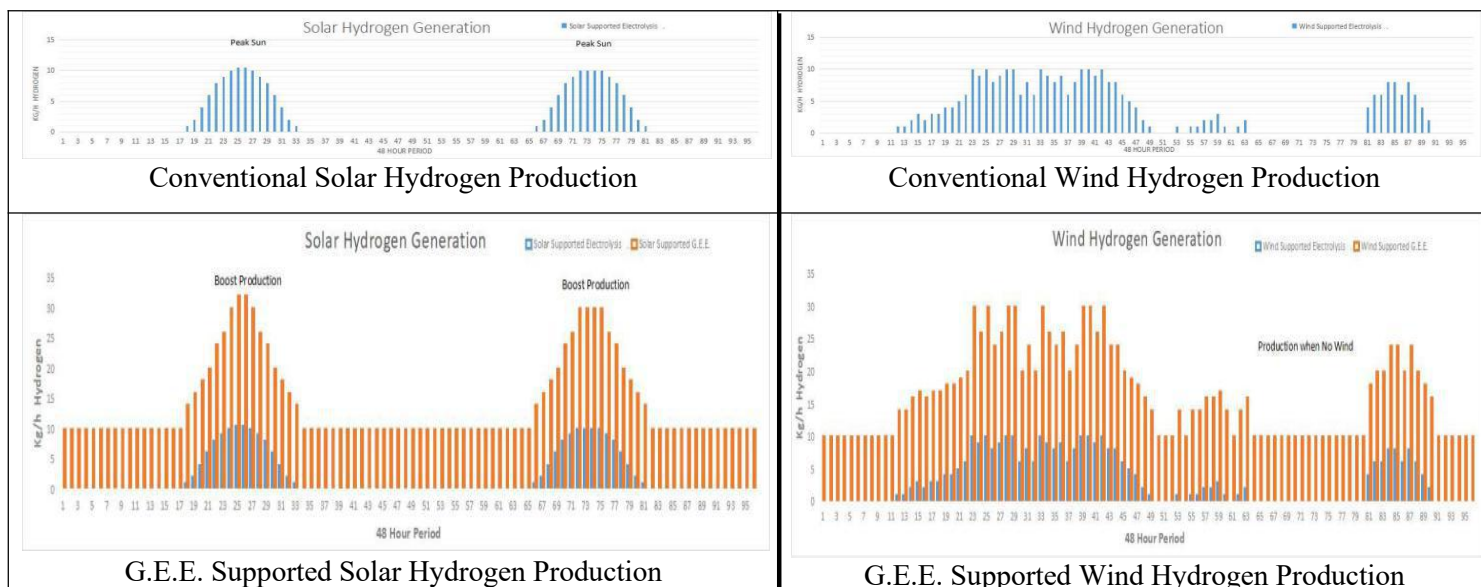
H2IL discovered a method of combining energies at an ionic level to harvest a natural galvanic energy to split water and generate huge amounts of pure hydrogen gas with no harmful byproducts.

Unlike conventional electrolysis, the energy content of the generated hydrogen is many times greater than the input catalyst energy. This enables an extremely efficient means of producing hydrogen either supported by renewable energies or even self-sustaining through a fuel cell. The technology incorporates abundant, low-cost metals and is fuelled by sea or rain water. Drawing from galvanic energy but consuming very little metal electrode material.

This technology presents a game-changing method of hydrogen production to support common renewable energies. Not just a method of storing energy but also a method of constant production. Some of the advantages of supporting renewable energies with the Galvanic Enhanced Electrolysis (G.E.E.) include:

- ✓ Over 50 times more efficient than conventional electrolysis, generates a much greater amount of hydrogen for the same wind and solar equipment.
- ✓ Constant hydrogen production even with no sun or wind.
- ✓ A secure means of energy with a reliability and consistency paralleling nuclear or fossil fuel power.
- ✓ Fully scale-able from small localised power stations up to large scale fossil fuel burner substitution in existing power plants.
- ✓ Low cost and undemanding infrastructure makes for a rapid change and ease of integration.
- ✓ Lower current draw, higher voltage, enables low cost transmission cabling or use of existing grid.

The following graphs compare methods and illustrate the constant and increased energy production.



The attached verification report brief illustrates the efficiency and scale-ability of the technology. Extensive information is presented on the H2 Innovation lab website. Simply Google H2IL or www.h2innovationlab.com



Verification Test Report Brief

Performance testing the desktop verification and demo unit using a PEM Fuel Cell. The pure hydrogen generated from the H2IL Galvanic Enhanced Electrolyser is fed directly into a fuel cell stack to convert the gas back to electricity and enable energy efficiency monitoring. Input power supply and output programmable electronic load are data-logged with one second samples. All tests are performed in a lab environment with 8 camera CCTV footage recorded.

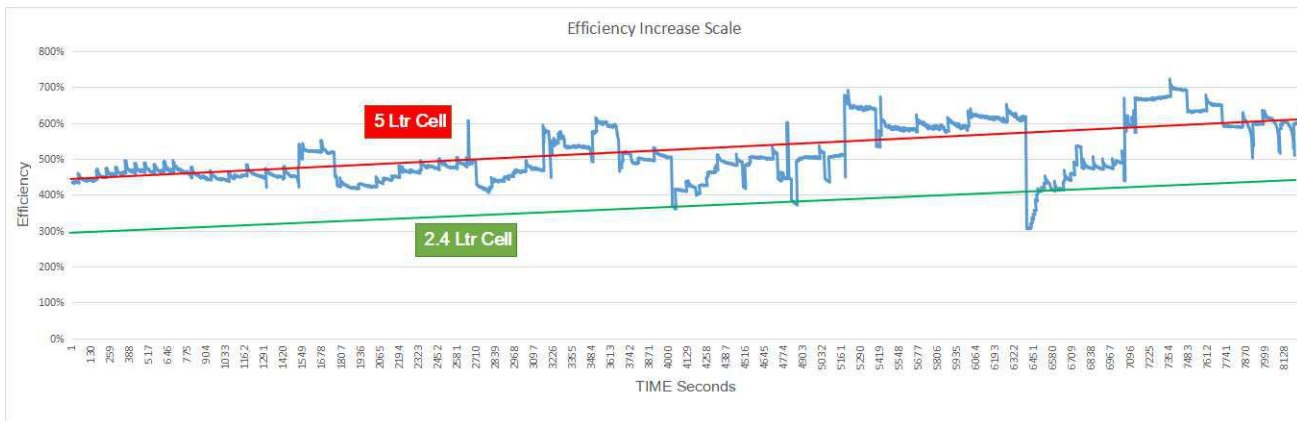


Chart .1. Recorded data from verification testing a 5 liter cell and comparing the performance to that of a 2.4 liter cell. From this comparison we calculate the scale-ability of the technology with increased volume of galvanic energy. For complete data please refer to the on-line report.

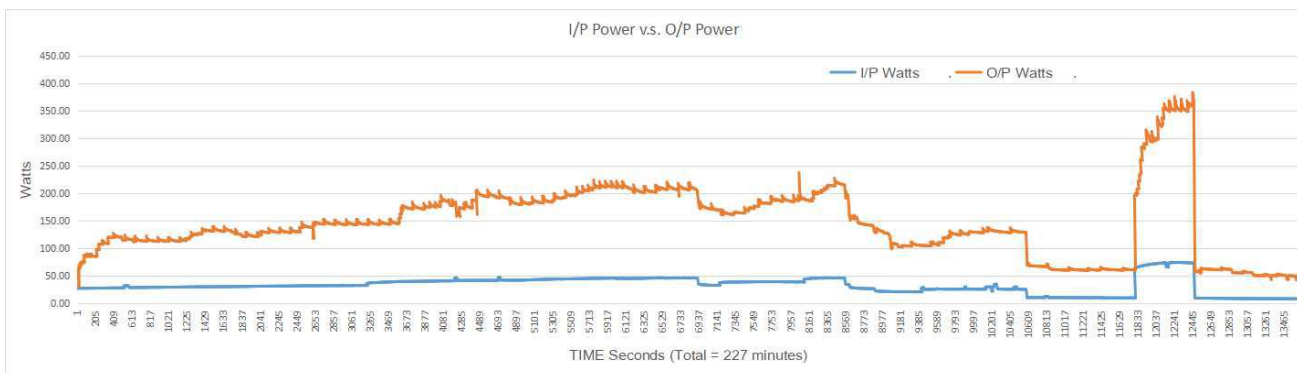


Chart .2. Recorded data from verification testing a 5 liter cell showing the input power (bottom line) compared to the hydrogen generated output converted power (top line). The chart also demonstrates the ability of the technology to ramp up and down in alignment with wind or solar peaks..

Example of Power Scale:

Chart .1. Illustrates a proven performance increase of 150% with a power scale factor of x2.9 achieved by a size increase of x2.2. For complete data please refer to the on-line report . We therefore draw the conclusion that a 24 cubic meter cell would have a power generation capacity of **944 kWh** output for just 19kWh of input energy. The technology require less input catalysis power per x2 scale, as the cell size increases. Larger the cell, greater the power generation capability with **NO LIMITS!**