



"Zero Carbon Electricity, On Demand at a lower cost"

- Zero CO₂, Zero particulates, Zero NO_x, Zero SO_x;
- Emissions are only (pure) water
- Using low-pressure hydrogen, avoiding the need for exotic materials and compression;
- Using less than pure Hydrogen, giving a much lower fuel cost;
- As it is easy to operate, like a diesel making it ideal for remote locations;
- Responding very easily to changes to load, from 20% to 100% virtually instantaneously;
- Maintaining very tight control on output; always 1,500rpm +1%/-2%;
- Lower maintenance; zero carbon in the fuel means less wear and the oil has a longer life;
- Our modifications do not involve any moving parts;
- Operates very well at low load; NO bore glazing as no carbon in the fuel

Our Competitive Advantages

- Lower operating cost;
- Fuel security, when HYE has finished developing its ammonia cracker, then use either hydrogen produced on site or ammonia imported, or both;
- Ease of maintenance;
- Price competitive;
- Long duration storage lower cost if need at least 3 hours.

Hydrogenus Energy Limited

Company Profile

October 2025

Hydrogenus Energy ("HYE") has developed and patented the Intellectual Property of the modifications to be made for an Internal Combustion Engine ("ICE") to be able to operate safely, effectively and efficiently using Hydrogen, of almost any quality, injected at low pressure, as its fuel. The attributes of this development include:

- Superior fuel efficiency, by 10 – 15%, to comparable diesel engines;
- Modified diesel engine and low pressure injection mean simple, robust operation and less maintenance;
- Only emission is water; no carbon particulates, NO_x, SO_x or CO₂, and;
- Maintains very good control over output, with very high block load capacity.

Energy Source

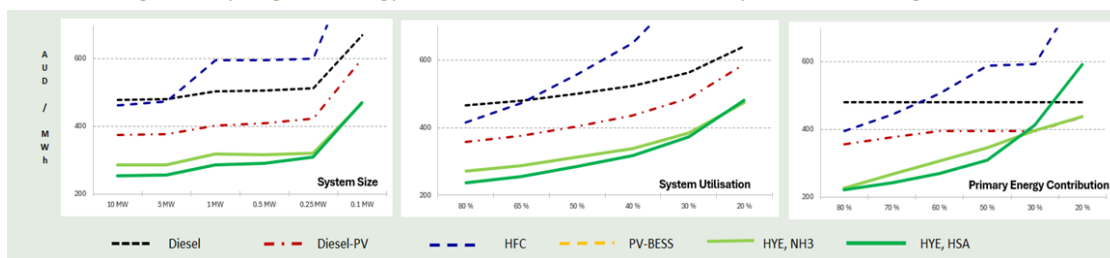
The Hydrogenus Energy modified Internal Combustion Engine ("HYE-ICE") operates use hydrogen as its fuel. Hydrogen can be sourced from:

- Supply from "bottles" at pressure from 200 atmospheres (steel alloy) to 700 atmospheres (carbon fibre), which are very heavy for the hydrogen contained, and expensive;
- Produced on-site, using electricity from wind turbines and/or PVs, which, for much of the Australian mainland, using 2025 electrolyzers, yields a fuel cost about the same as that of delivered diesel; or
- Cracked from ammonia, stored on site as ammonium hydroxide, giving about the same fuel cost as diesel.

Off-Grid Applications, Grid Firing and Back-Up

As shown in Figure 1, HYE-ICE give the lowest cost electricity on demand for off-grid areas.

Figure 1: Hydrogenus Energy calculated all-in costs for electricity on demand, off grid areas



Note: All in costs include a fair value for debt + Equity, sustaining capital, maintenance and operations.

The World Energy Review, 2023 ("WER 2023"), shows that, globally, 720m MWh of electricity was generated using liquid fuels. HYE assesses the sustainable addressable market to be about 73% of this, or 530m MWh.

As intermittent renewable electricity increases its share of the total, the requirement for back-up increases. This is currently being done using diesel-fuelled generators, which are higher cost and less responsive than the HYE-ICE.

Fossil Fuelled Generation

According to WER 2023 6,518m MWh of electricity was generated from gas and 10,244m MWh from coal. Grey ammonia prices are competitive with diesel; new technologies, proven in the lab but not yet commercially available, promise to reduce the cost of green ammonia to be competitive with LNG.

If this is achieved, the potential market for the HYE-ICE increases about 10 fold.

Workshop

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Grid Forming

Grid Firming adds energy to the grid, often achieved by using batteries, but batteries cannot correct for under or over voltage and grids are adding synchronous condensers to provide this capability.

If the HYE-ICE is operating at a load of 20%, it can respond virtually instantaneously to any changes in load and maintain control. As the HYE-ICE uses hydrogen, it does not suffer from bore glazing; the only cost of operating at low load is the fuel cost; about \$A 2.3/hr.

HYE has teamed up with a company that is very experienced in adding capacity to the grid. This is a lower cost, safer, more effective and localised method to ensure grid reliability.

This device can provide secure, reliable back-up for electrical power for Data Centres.

HYE Business Model

There are potentially 5 revenue streams from projects using the HYE-ICE: margins on the cost of equipment supplied; management fees for ongoing operations; returns to capital providers; a share of the difference between costs and revenues (see Figure 1) and a share of any available "green" benefits.

HYE will focus on its IP and applications and seek to partner with in-market partners and providers of complementary technologies.

Sales Revenue

HYE has its first contract for a 100kW unit, which is expected to be installed in October. This unit will synchronise with the grid for grid firming. HYE has a legally binding agreement for a further 400kW after the initial unit has been successfully commissioned. This second agreement includes a commercial return to HYE.

These will use an electrolyser, powered by the grid when prices are low.

HYE has been advised to expect further contracts for 600kW in October and for 500kW and 1,500kW in early November. HYE has also been advised that when our 30kW engine has been tested and proven, to expect orders for 15 to 20 each month, on-going.

At current staffing, on-going working capital costs are more than covered by sales of 2 units each month.

Conclusion

HYE is a public company with 3.976m shares on issues across 42 independent shareholders. It has 3 Directors, 2 of whom are Executive, and a non-executive Chair. The Directors are the 3 largest shareholders, holding 51.3% in total.

HYE is currently seeking to raise funds which will be used for:

- Completion of the development of an appropriate ammonia cracker (commercially available units are large and expensive as they produce high purity Hydrogen; HYE is developing a much lower-cost model that fits within the envelope of our engine, producing hydrogen good enough for the HYE-ICE, but not pure enough for other uses);
- Development of a 30kW model of our current 100kW unit, responding to demand for a smaller unit (200 a year, on-going), a 250kW model and a 1MW HYE-Forming Box, while further development will be funded from operating cashflow; and
- General working capital costs until sufficient sales revenue, which is received over a 3 month period, has been received.