HYDROGENUS Energy Limited

February 2026

Hydrogenus Energy

Modified Internal Combustion Engine

“HYE-ICE”

“Zero Carbon Electricity, On Demand at a lower cost”

HYDROGENUS
Energy Limited

At Hydrogenus Energy, we are enabling a renewable energy future.

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About Hydrogenus Energy

Introduction

Hydrogenus Energy Limited (Hydrogenus) is an engineering company at the forefront of combustion-engine innovation. Hydrogenus has developed and patented the modifications required for an Internal Combustion Engine (ICE) to be safely, effectively, and efficiently operated using hydrogen, injected at low pressure, as its only fuel.

Hydrogenus Energy Limited, ACN 163 460 884, is an Australian unlisted public company.

The early years

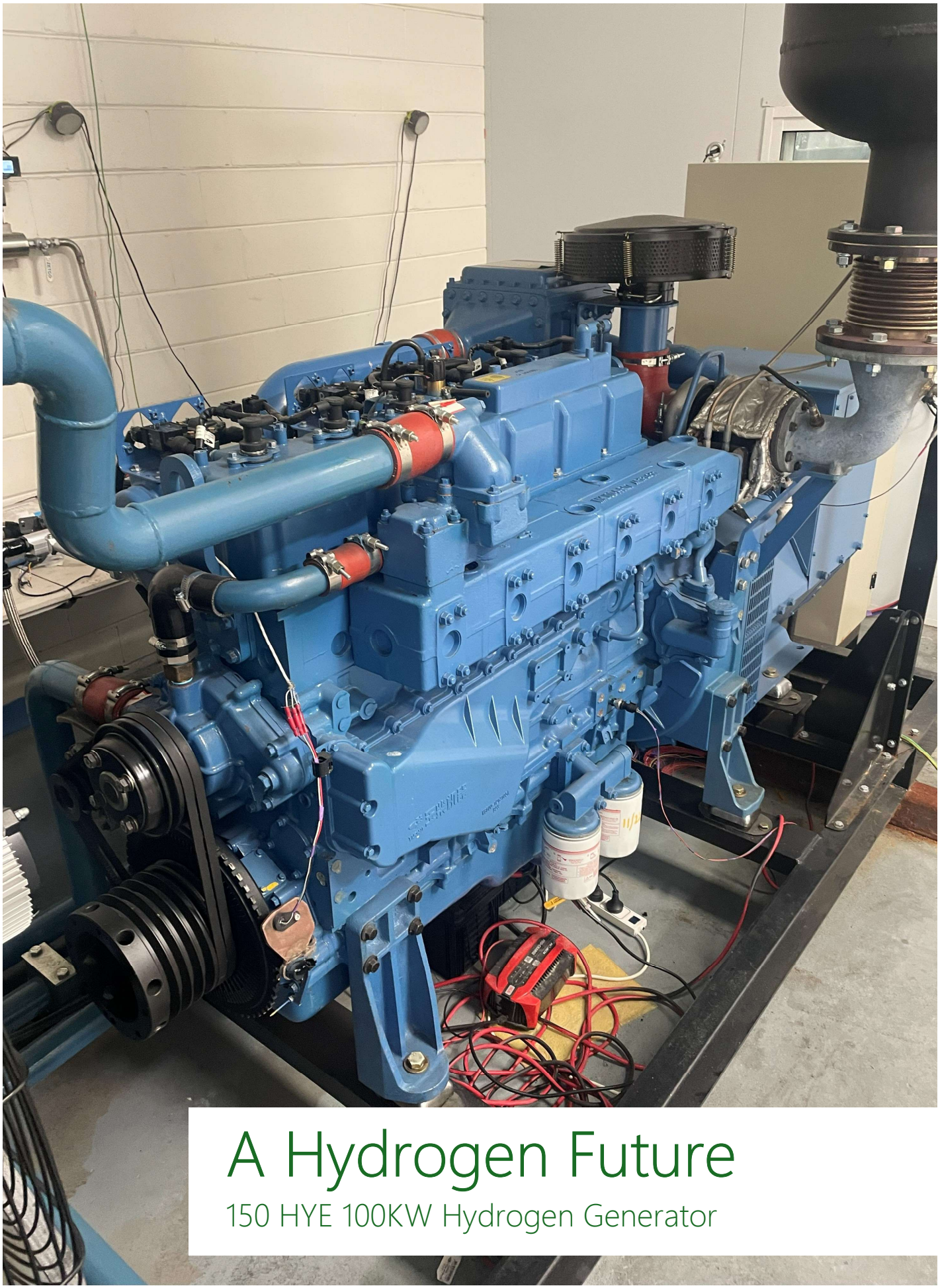
Hydrogenus was initially known as Bennett Clayton Pty Ltd and was established in 2008 by John Bennett and Marcus Clayton, combining decades of expertise in engine performance, alternative fuels, and advanced engineering.

The company's mission was to pioneer LPG and natural gas conversions for heavy-duty engines and to develop clean energy systems for buildings and agriculture. The company has consistently delivered reliable, efficient, and environmentally responsible solutions.

Their projects span high-efficiency tri-generation systems for commercial buildings, innovative engine refurbishments for transport and industry, and custom conversions that help clients reduce emissions and operational costs. Bennett Clayton’s commitment to research, technical excellence, and sustainable energy has earned them industry recognition and a reputation for setting new benchmarks in clean technology across Australia.

Experience in engine and microgrid applications.

The Company achieved nominations for the 2012 CleanTech Award by taking a 10 Storey office block in North Sydney off-grid. The building achieved a NABERS 6 star rating, without using green power, and set a benchmark for the lowest emissions when completed in 2012



A Hydrogen Future

150 HYE 100KW Hydrogen Generator

A Hydrogen Future

Development of a modified Internal Combustion Engine ("ICE") began in March 2021. Hydrogenus is now able to demonstrate a hydrogen fuelled Electrical Generator that:

- Operates safely and efficiently using Hydrogen as its only fuel
- Emits zero carbon, SOx, NOx and zero particulate matter
- Has been developed to be robust and easy to maintain, using low pressure hydrogen injection
- Has a very high block load capability, staying within 1% of the targeted speed even as the load is changed from 20kW to 90kW
- Output remains at about 50Hz, with no perceptible change in engine speed; and
- Achieves an efficiency of 43% of electrical output compared with the energy of the fuel consumed. This is already better than any combustion engine, and we believe we can improve this further.

The Hydrogenus solution is scalable, portable, and integrates easily with existing infrastructure, meeting the Environmental, Social, and Governance (“ESG”) obligations of organisations operating in a net-zero environment.

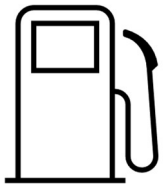
Hydrogenus patents cover the modifications required to operate an ICE safely, effectively, and efficiently using hydrogen as its only fuel, injected into the combustion chambers at low pressure. As the hydrogen is injected at low pressure into an ICE, it is not necessary for the hydrogen to be of high purity.

Intellectual Property extends beyond the patent to include the code and the firmware of the Engine Control Unit (“ECU”). Hydrogenus used ECU research from MoTeC, a subsidiary of the German Engineering Company Robert Bosch GmbH. This ECU provides for a high level of secure remote communication and engine control.

The Hydrogenus Energy Internal Combustion Engine (HYE-ICE)

As a zero-carbon fuel, hydrogen offers immediate benefits over traditional fossil fuels: the engine oil remains fresher and maintains its viscosity for longer, resulting in lower maintenance requirements and costs.

HYE-ICE attributes include:



Superior fuel efficiency to diesel

Low pressure injection

No carbon particulates

Virtually instantaneous response

No bore glazing

Low maintenance requirements

Partners

Technical Partner

Hydrogenus has a binding Heads of Agreement with DW Controls to provide certification to Australian Standards and the manufacturing expertise required to modify an ICE using Hydrogenus's intellectual property.

D W Controls Pty Ltd, ACN 112 155 727 ("DWC") is a Ballarat-based family business of 50 years' standing that, as part of its business activities, manufactures electrical switchboards. DWC has also connected over 1,000 diesel fuelled generators to the Australian grid for grid firming and forming applications.

Engine Partner

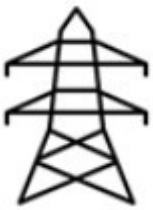
Hydrogenus sources our engines from NPT in China—a recognised leader in internal combustion engines.

Weifang Naipute Gas Genset Co., Ltd, known as NPT, is a globally recognised leader in the production of internal combustion engines, with NPT engines being exported to nearly 40 countries and regions, such as Germany, the United Kingdom, America, Japan, Czech, Spain, Sri Lanka, Italy, Australia and France. More than 100 projects have been carried out and are in operation.

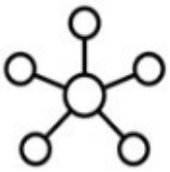
Hydrogenus Applications

Hydrogenus Energy delivers a practical, actionable solution for organisations that need net-zero carbon energy on demand. Applications include:

Grid Forming

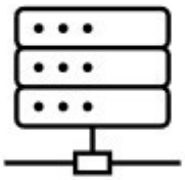


Grid Firming

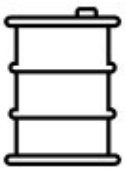


Microgrids

Industry & Built Environments



Data Centres



Diesel Replacement

Technical Specifications: 150 HYE 100KW Hydrogen Generator

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Hydrogenus engines can operate with hydrogen fuel of varying purity.

Engine	**Model**	NYD103D17 (AVL Yuchai Base)
	Type	In Line 4 Stroke Water Cooled, Turbo Charged Intercooled, Full Authority ECU Control, 6 Cylinder
	Bore & Stroke (mm)	123 x 145
	Total Displacement (cc)	10,337
	Rated Power (kW)	100
	Rated Speed (RPM)	1500
	Speed Regulation Mode	Electronic
	Starting	24V Electrical
	Max Oil Consumption (g/kwh)	0.4

Technical Specifications 150 HYE 100KW Hydrogen Generator

Alternator	**Brand**	Mecc Alte
	Model	ECP34 2M4C 135kVA MD35 SAE 1
	Load kVA	135
	No Phase	¾ wire
	Climate	Tropical
	RPM	1,500
	Number of Poles	4
	AUX	Yes
	AVR (J1939 or Two Wire)	Yes
	Single Bearing	Yes
	50/60Hz	Yes
	Can be converted to single phase	Yes
	Ambient	45
	Altitude	<1,000M ASL
	Insultation	Marine Varnish (EG43)

Technical Specifications 150 HYE 100KW Hydrogen Generator

Generator	**Model**	150HYE
	Structure	Integral
	Excitation	AVR Brushless
	Rated Power (kW)	100
	Rated Current (A)	165
	Rated Voltage (V)	240/415
	Rated Power Factor	0.8 Lag
	Fuel	100% Hydrogen
	Max Electrical Efficiency	>39%
	Voltage Recovery Time (sec)	<3
	Steady State Voltage Regulation	<+- 1%
	Transient Voltage Regulation	<-15% + 20%
	Steady State Frequency Regulation	<0.5%
	Transient Frequency Regulation	<+-10%
	Frequency Stabilisation Time (sec)	<5
	Line Voltage Distortion	<2.5%
	Overall Dimension (LxWxJ) (mm)	2580 x 1100 x 1800
	Net Weight (dry) (kg)	1980

Contact

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For further information and a quote, please get in touch on info@hydrogenus-energy.com or visit our website:

www.hydrogenus-energy.com