VYTAS RESOURCES

Green Hydrogen Strategy Stakeholder Update

JULY 2023

VYTAS ACHIEVES NEAR THEORETICAL LIMIT OF HYDROGEN PRODUCTION

- Vytas produced "On Demand Hydrogen" at Massachusetts University of Technology's Lincoln Laboratory in early May using Vytas' silicon.
- Optimisation trials achieved near theoretical limit of hydrogen, by mid-May, exceeding expectations.
- Trials confirms non beneficial water, including ocean water, can be used to produce "On Demand Hydrogen" which unlocks a range of applications.
- Vytas is moving towards commercial pilot plants with potential partners in defence, mining and energy sectors
- Vytas completes site visit of Lincoln Laboratories in Boston and progresses commercialisation pathways with US entities

This major achievement enables hydrogen reactor design for commercial pilot plants in Australia and internationally.

- Vytas' on demand hydrogen negates the need for the storage and logistics of hydrogen delivering improved safety outcomes and negates expensive infrastructure.
- Vytas seeks to reset the operating cost base for hydrogen having a low-cost natural and recyclable feedstock.
- The potential significance of this opportunity is a game changer for Vytas and may positively disrupt the global energy industry

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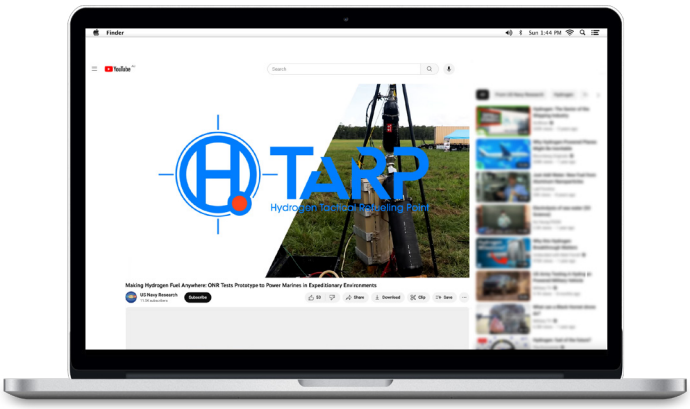
VYTAS' ON DEMAND HYDROGEN STRATEGY

Vytas' hydrogen strategy is to produce and commercialise a solid-state fuel, using nano-porous silicon, which can be used to produce "At-Source and On-Demand Hydrogen".

Please find the following YouTube link to understand Vytas' "At-Source and On-Demand" Green Hydrogen Strategy

Note: The link is using a more expensive and less efficient material than HPS, in aluminium, in the program.



GREEN, GREY AND BLUE HYDROGEN SECTOR

Grey hydrogen dominates the hydrogen sector, accounting for the majority of hydrogen produced. Grey refers to hydrogen produced from fossil fuels, typically through processes like steam methane reforming or coal gasification, without carbon capture and storage technologies.

The hydrogen market is rapidly evolving, and there is a growing focus on decarbonisation and the transition to low-carbon or zero-carbon hydrogen sources. Green hydrogen, produced through processes powered by renewable energy sources, and blue hydrogen which is produced from fossil fuels with carbon capture and storage are gaining momentum as cleaner alternatives.

THE HIDDEN COSTS & SAFETY CHALLENGES FACED BY PEERS

Traditional hydrogen strategies have hidden costs on top of production costs, as they often rely upon the storage and logistics of hydrogen:

- The target production price of hydrogen – USD$2-7/kg depending on the production method
- The shipping, conversion to ammonia and reconversion to hydrogen – USD$3/kg

Then the safety risks need to be accounted for plus any further handling and logistics.

By producing hydrogen on demand, at the source of consumption, mitigates safety and the hidden costs. For example, a purpose built hydrogen cargo vessel cost $300M with a capacity of 87t of hydrogen. One such $300M vessel caught fire on its maiden voyage, highlighting the safety issues to the ships crew and communities living around ports and hydrogen infrastructure. By comparison, 87t of hydrogen would represent just 4 traditional shipping containers of Vytas' silicon, with no handling or fire risk.

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GOVERNMENT & INDUSTRY SUPPORT

Vytas has received Western Australian government support, securing co-funding for the drilling program.

The Western Australian Chamber of Commerce has supported Vytas, promoting Vytas to local international organisations.

Vytas will apply for the R&D rebates and other industry incentives, directly or indirectly, in Australia and in the United States.

COMMERCIAL PILOT PLANTS

Vytas will work with existing partners to move towards commercial pilot plants. Details are a work-in-progress and confidential, but we have received "invitations to treat" with reputable counter parties in defence, mining and energy sectors.

UNITED NATIONS SUSTAINABILITY DEVELOPMENT GOALS

Through the development of our nanoporous silicon and its use in hydrogen production, primarily using non-beneficial or saline water, Vytas is addressing the following United Nations (UN) Sustainability Development Goals (SDGs):

- SDG 6 – Clean Water and Sanitation: by avoiding the use of fresh water in electrolysers for energy production we are conserving this precious resource for humanity.
- SDG 7 – Affordable and Clean Energy: by providing At Source and On-Demand hydrogen we are removing the associated storage and transport issues associated with hydrogen; thus producing a clean, sustainable and 'Green' energy source at an affordable price.
- SDG 11 – Sustainable Cities and Communities: by providing At Source and On-Demand hydrogen, using non-beneficial water, we are not only improving the sustainability of our cities, but we are also providing a renewable and sustainable energy source for remote communities.
- SDG 13 – Climate Action: by implementing our At-Source and On-Demand Hydrogen Production Technologies we are tackling Climate Change head-on.

THE TEAM

The Vytas technical team has delivered beyond expectations and set Vytas up to the next phase of the company's future being commercialisation. There is much work to be done but this will be tackled with enthusiasm and energy!

Regards,

David Cornell
Managing Director

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ABOUT VYTAS RESOURCES

Vytas is an emerging producer and supplier of High Purity Quartz (HPQ), High Purity Alumina (HPA) and High Purity Silicon (HPS) and silica-based Technology Materials to provide solutions to global challenges to transition to a renewable economy.

Vytas' flagship projects consist of the Moora Silica Sand Project, the Tambellup Kaolin Project, White Peaks and Ajana Projects.

Preliminary metallurgical test work confirms that High Purity Quartz (HPQ) and High Purity Alumina (HPA) can be cost effectively produced. In addition, preliminary metallurgical test work at the White Peaks and Ajana Projects confirms that the feedstock is amenable to conversion to silicon that has potential application as an anode material in lithium batteries.

HYDROGEN

If Australia gets it right, we could produce 15.94 Mt of renewable hydrogen each year, with exports worth A$47.3bn pa. Crucially, the decline of our fossil fuel industries would be matched by the growth of new clean industries, minimising transition challenges for regional Australia (Deloitte Access Economics, 2023)

> "This new technology material venture will place Vytas at the forefront of the renewable technology industry."

VYTAS HIGH PURITY ALUMINIUM (HPA) AND HIGH PURITY QUARTZ (HPQ) STRATEGY

CSIRO's (2021) Critical Energy Minerals Roadmap includes both aluminium (HPA) and silicon (HPQ) as critical minerals needed to transition to a renewable economy. Both materials are in high demand due to their manufacturing benefits and use in Solar PV, Wind Turbines, Concentrated Solar Power (CSP), Hydrogen Production and Batteries.

This new technology material venture will place Vytas at the forefront of the renewable technology industry.

The Global HPA market was valued at US$1.3 billion in 2019 and is projected to reach US$4.8 billion by 2026, growing at a CAGR of 20.7 % from 2020 to 2026 (Allied Market Research, 2020).

Similarly, the Global HPQ market had a value of US$672 million in 2019 and is expected to reach US$1,234 million by 2027 growing at a CAGR of 7.9 per cent during the forecast period (Research and Markets, 2021).

Appendix - JORC 2012 Exploration Targets and Mineral Resource

White Peaks Project - Exploration Target*

Tonnes (Mt)	SiO_2 (%)	Al_2O_3 (%)	Fe_2O_3 (%)	CaO_2 (%)	Porosity (%)	LOI (%)
240 – 320	73 – 88	6 – 9	0.2 – 7	0.1 – 5	58 - 69	3 – 9

Moora Silica Project - Exploration Target*

Tonnes (Mt)	SiO_2 (%)	Al_2O_3 (%)	Fe_2O_3 (%)	TiO_2 (%)	LOI (%)
272 - 408	97.1 – 99.8	0.01 – 1.4	0.02 – 0.5	0.1 – 0.2	0.01 – 0.7

Tambellup Kaolin Project - JORC-2012 Mineral Resources (Inferred)

Tonnes (Mt)	ISO Brightness (%)	Al_2O_3 (%)	SiO_2 (%)	Fe_2O_3 (%)	LOI (%)
12.48	> 80	36.64	48.42	0.37	12.19

Tambellup Kaolin Project - Exploration Target*

Tonnes (Mt)	ISO Brightness (%)	Al_2O_3 (%)	SiO_2 (%)	Fe_2O_3 (%)	LOI (%)
54 – 108	79 - 87	34.2 – 38.1	46.9 – 50.5	0.1 – 0.8	10.9 – 13.4

* The potential quantity and grade of the Exploration Target is conceptual in nature and therefore is an approximation. There has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource. The Exploration Target has been prepared in accordance with the 2012 edition of the JORC Code.

Competent Persons' Statements

The information in this Stakeholder Update that relates to the technical assessment of the Mineral Resources, Exploration Results and Exploration Targets is based on, and fairly represents, information and supporting documentation prepared by Dr Andrew Scogings and Mr Serik Urbisinov, both who are employees of CSA Global and are Competent Persons who are member of the Australian Institute of Geoscientists. Both Dr Scogings and Mr Urbisinov have sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration, and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves.

As at the date of this Stakeholder Update, neither Dr Scogings nor Mr Urbisinov have a relevant interest in any Securities.

Forward Looking Statement

Any statements, estimates, forecasts or projections with respect to the future performance of Vytas Resources and/or its subsidiaries contained in this announcement are based on subjective assumptions made by Vytas Resources management and about circumstances and events that have not yet taken place. Such statements, estimates, forecasts and projections involve significant elements of subjective judgement and analysis which, whilst reasonably formulated, cannot be guaranteed to occur. Accordingly, no representations are made by Vytas Resources or its affiliates, subsidiaries, directors, officers, agents, advisers or employees as to the accuracy of such information; such statements, estimates, forecasts and projections should not be relied upon as indicative of future value or as a guarantee of value or future results; and there can be no assurance that the projected results will be achieved.