

ASX Announcement

21 October 2021

2H Resources – Natural Hydrogen activity update

The following update is for the activities of 2H Resources, a wholly owned subsidiary of Buru Energy Limited (Buru).

Considerable progress is also being made on Buru's other Energy Transition activities: Geovault - Carbon Capture and Underground Storage ("CCUS"), and Battmin - Battery minerals exploration in the Kimberley. Updates on these growth opportunities will be provided as they are advanced.

2H Resources

2H Resources is a leading explorer for Natural Hydrogen and associated Helium.

Natural hydrogen is produced from underground accumulations in the earth and not manufactured, so it has the potential for supply of low cost and low carbon intensity hydrogen.

More details of natural hydrogen and the activities of 2H Resources are set out in the accompanying presentation and on the 2H Resources website at 2hresources.com.

2H Resources current activity

Acreage acquisition

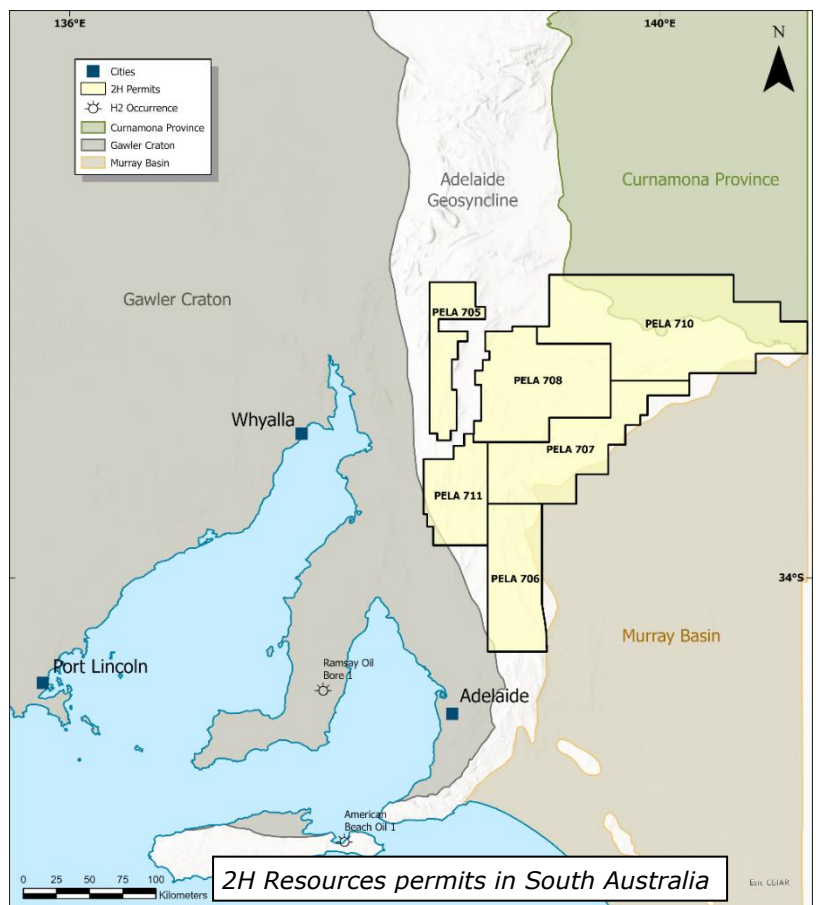
2H Resources initial focus is in South Australia where it has recently been granted over 29,000 sq km of permits that are on geological trend with legacy natural hydrogen discoveries (noting that Buru's tenements in the Canning Basin cover a gross 22,000 sq kms).

2H Resources plans to undertake on-ground initial prospecting work on these South Australian permits using in-house capabilities and technology, including hydrogen measuring equipment, once appropriate approvals are in place.

Regional and development work:

2H has developed internal geological expertise in the search for natural hydrogen, and is engaging with globally recognised specialists and consultants.

We are assessing opportunities both onshore Australia and globally, and this may lead in due course to the



establishment of activity in international jurisdictions that have established a regulatory framework for the exploration and production of natural hydrogen. 2H Resources is also in discussions with potential partners to further expand its activities and technical capabilities.

Current drilling activity:

In addition to routine mudlog hydrocarbon gas detection and logging on current Canning Basin wells, a specialised hydrogen mudgas detection unit has been installed to monitor hydrogen and helium. This unit measured a zone of up to 6% hydrogen percentage in mudgas over an interval of approximately six metres in the Currajong 1 well. It has also detected intervals with up to 4.9% hydrogen in the currently drilling Rafael 1 well.

The significance of these hydrogen indications needs to be further evaluated, but together with a number of legacy wells that encountered hydrogen, they demonstrate the widespread occurrence of natural hydrogen in the Canning Basin.

Authorisation

This ASX announcement has been authorised for release by Eric Streitberg, the Executive Chairman of Buru Energy.

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Resources

2H Resources

Natural Hydrogen to
power the world





Resources

2H Resources is a leading explorer for Natural Hydrogen and associated Helium

Natural Hydrogen is produced from underground accumulations in the earth and not manufactured, so has the potential to be a low cost and low carbon hydrogen supply.

Natural Hydrogen is often associated with Helium in the subsurface and both can be produced at the same time providing complementary value.

The enormous potential of Natural Hydrogen has only recently been recognised and 2H Resources is at the forefront of the search for and exploitation of these valuable resources.



Natural Hydrogen – Energy of the future



Resources

Natural Hydrogen accumulations are formed in the earth by geological processes and have been observed and produced from seeps and wells (boreholes) around the globe.

The processes that form potentially commercially exploitable accumulations are currently poorly understood and 2H Resources is leading the way in understanding these processes and identifying these accumulations.

Hydrogen is also the energy source that is most suited to using the existing large scale fossil fuel infrastructure to drive the transition to zero emission fuels.

Natural Hydrogen production will be amongst the lowest carbon intensity fuel sources as the exploitation, production and transport will ultimately all be driven by hydrogen fuelled infrastructure.

Natural Hydrogen is likely to be similar in production cost to natural gas providing energy at about one eighth of the cost of today's other Hydrogen production methods.





Resources

Natural vs. Manufactured Hydrogen – an overview

(The colours of hydrogen are used to distinguish the production method - all hydrogen is a colourless gas)

Black or Brown hydrogen is produced by using coal where the CO₂ emissions are released to the air.

Grey hydrogen is produced from natural gas where the associated emissions are released to the air: this is the most common industrial process for producing hydrogen.

Blue hydrogen is Grey hydrogen with the CO₂ emissions captured using carbon capture and utilisation including underground storage (CCUS).

Green hydrogen is produced from the electrolysis of water powered by renewable electricity and needs substantial scale to be commercially competitive.

Turquoise hydrogen is produced from natural gas broken down into hydrogen and solid carbon or with CO₂ absorbed onto minerals. This process is at the experimental stage.

Pink hydrogen is generated through electrolysis of water by using electricity from a nuclear power plant.

Natural Hydrogen (Gold or White Hydrogen) is formed and accumulates underground by natural processes and can be produced from boreholes.

Production of hydrogen is currently dominated by industrial processes using fossil fuels (Grey and Blue Hydrogen). These methods produce large quantities of greenhouse gases, currently some 830 million tonnes of CO₂ a year, or equivalent to the emissions of the UK and Indonesia combined (IEA).



*Methane steam reforming hydrogen production plant
(Grey Hydrogen)*

2H Resources Capability

The 2H team is actively developing the geological and operational expertise to ensure we are able to be effective explorers and producers of natural hydrogen.

We are developing expertise in identifying hydrogen accumulations by their surface expressions through our own exploration programs and co-operatively with CSIRO. This includes using our own hydrogen meters to enable detection of hydrogen in surface seeps.

We also measure hydrogen in oil and gas exploration wells and have detected significant hydrogen occurrences in current wells. 2H Resources is the only company in Australia actively monitoring drilling wells for Hydrogen.

We are also developing remote sensing expertise for regional screening of prospects.

The location and appraisal of commercially significant deposits of Natural Hydrogen and associated Helium requires the application of similar skills to those used in hydrocarbon exploration and production, with 2H resources having direct access to those skills sets.



Draeger
portable
hydrogen
meter



Wellsite
hydrogen
sample
system

2H Resources Projects

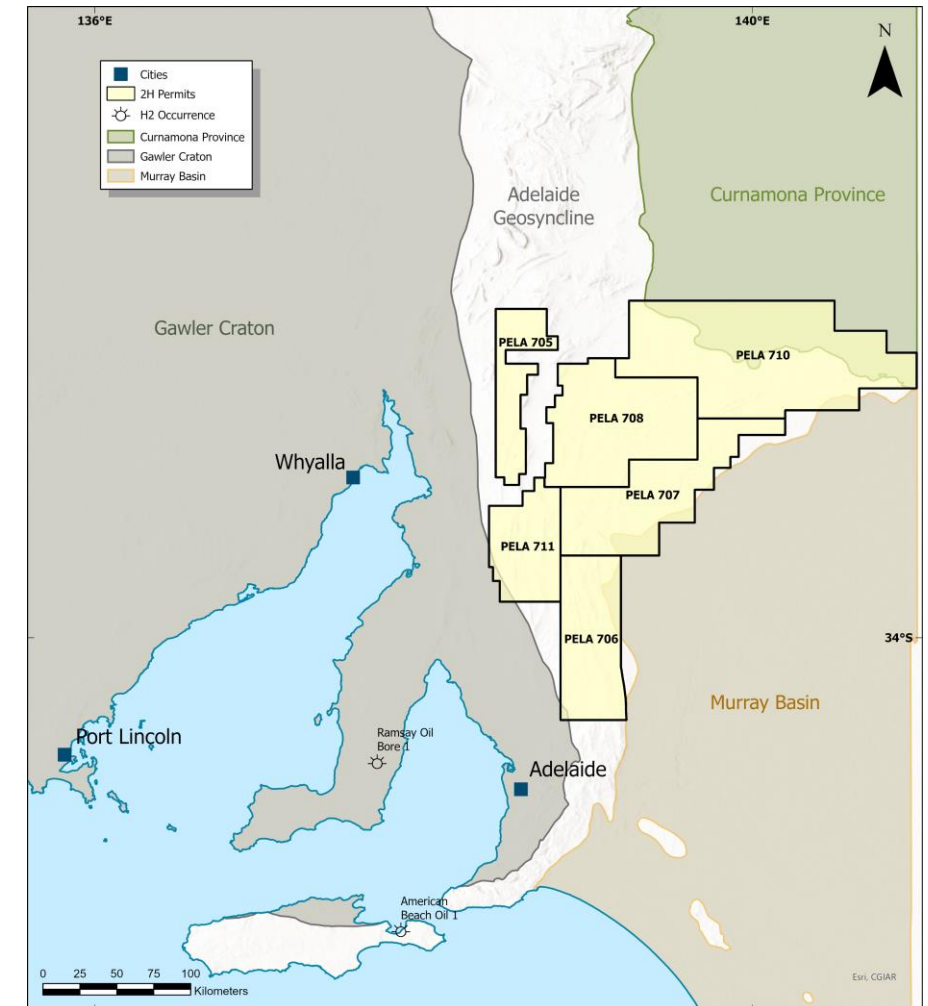
Natural Hydrogen is widespread in Australian basins with occurrences noted in every state.

Australian legislative frameworks vary, with the most well developed in South Australia and we are working proactively with other Australian jurisdictions to establish a first mover advantage.

We have moved quickly to establish a position in onshore Australia in jurisdictions that support Natural Hydrogen and currently have over 29,000 sq kms of permits in South Australia that are prospective for natural Hydrogen.

The permits are on geological trend with legacy hydrogen discoveries and will be the subject of low intensity on ground surveys to develop and refine geological models. The outcomes will then be used to high-grade areas for subsequent 2H exploration drilling

2H Resources has a global brief with its activity driven by the confluence of prospectivity, tenure and commercialisation potential, and is currently reviewing a number of international opportunities.



2H Resources Business Model



Resources

2H aims to be an integrated Natural Hydrogen company from wellhead to final user with an initial emphasis on the exploration and appraisal of Natural Hydrogen deposits.

2H has access to geoscientists and partners with world leading knowledge and experience in exploration and exploitation of naturally occurring Hydrogen and Helium.

We are developing relationships with engineering and commercial partners who can provide the technology to produce, transport, and sell Hydrogen produced from underground reservoirs.

2H Resources will look to include partners who bring knowledge, expertise, assets and finance to develop a diversified and full cycle portfolio and capability.

2H Resources is currently supported by Buru Energy who have the expertise and commercial and HSE capabilities to give 2H the initial ability to operate effectively and efficiently.





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