HEXAGON

Hexagon Energy Materials Ltd

Pedirka Blue Hydrogen Project

ASX: HXG, March 2021

Important Notices

DISCLAIMER

The purpose of this presentation is to provide background information to assist in obtaining a general understanding of the Company's proposals and objectives. This presentation may contain some references to forecasts, estimates, assumptions and other forward-looking statements. Although the Company believes that its expectations, estimates and forecast outcomes are based on reasonable assumptions, it can give no assurance that they will be achieved. They may be affected by a variety of variables and changes in underlying assumptions that are subject to risk factors associated with the nature of the business, which could cause actual results to differ materially from those expressed herein. This presentation is not to be considered as a recommendation by the Company or any of its subsidiaries, directors, officers, affiliates, associates or representatives that any person invest in its securities. It does not take into account the investment objectives, financial situation and particular needs of each potential investor. Investors should make and rely upon their own enquires and assessments before deciding to acquire or deal in the Company's securities. If you are unclear in relation to any matter or you have any questions, you should seek advice from an accountant or financial adviser.

All references to dollars ($) in this presentation are to Australian dollars, unless annotated otherwise e.g. US$ for USD.

FORWARD-LOOKING STATEMENTS

This presentation includes forward-looking statements that are only predictions and are subject to risks, uncertainties and assumptions, which are outside the control of Hexagon Energy Materials Limited.

Actual values, results, interpretations or events may be materially different to those expressed or implied in this presentation. Given these uncertainties, recipients are cautioned not to place reliance on forward-looking statements in the presentation as they are relevant only at or near the date of issue. Subject to any continuing obligations under applicable law and ASX Listing Rules, Hexagon Energy Materials Limited does not undertake any obligation to update or revise any information or any of the forward-looking statements in this presentation or any changes in events, conditions or circumstances on which any such forward-looking statement is based.

This presentation has been prepared by the Company. It contains background information about the Company, current at the date of this presentation. The presentation is in summary form and does not purport to be all inclusive or complete. Certain information has been sourced from Ebony Energy Limited; while steps have been taken to assess that information, no representation or warranty, express or implied is made to its fairness, accuracy, correctness completeness or adequacy. Recipients should conduct their own investigations and perform their own analysis in order to satisfy themselves as to the accuracy and completeness of the information, statements and opinions contained in this presentation. The presentation is for information purposes only. Neither this presentation nor information contained in it constitutes an offer, invitation, solicitation or recommendation in relation to the purchase or sale of shares in any jurisdiction. The presentation may not be distributed in any jurisdiction except in accordance with legal requirements applicable in such jurisdiction. Recipients should inform themselves of the restrictions that apply to their own jurisdiction as a failure to do so may result in a violation of securities laws in such jurisdiction. This presentation does not constitute investment advice and has been prepared without taking into account the recipient's investment objectives, financial circumstances or particular needs; and the opinions and recommendations in this presentation are not intended to represent recommendations of particular investments to particular persons. Recipients should seek professional advice when deciding if an investment is appropriate. All securities transactions involve risks, which include (among others) the risk of adverse or unanticipated market, financial or political developments.

To the fullest extent of the law, Hexagon Energy Materials Limited, its officers, employees, agents, and advisers do not make any representation or warranty, express or implied, as to the currency, accuracy, reliability, or completeness of any information, statements, opinion, estimates, forecasts, or other representations contained in this presentation. No responsibility for any errors or omissions from the presentation arising out of negligence or otherwise is accepted.

COMPETENT PERSONS' ATTRIBUTIONS

Mcintosh, Alabama & Halls Creek Projects

The information within this report that relates to exploration results, Exploration Target estimates, geological data and Mineral Resources at the McIntosh, Alabama and Halls Creek Projects, based on information compiled by Mr. Michael Atkinson, a Competent Person and a member of The Australian Institute of Geoscientists. Mr Atkinson is a consultant to the Company and has sufficient experience relevant to the styles of mineralisation and types of deposits under consideration and to the activities currently being undertaken to qualify as a Competent Person(s) as defined in the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves and he consents to the inclusion of this information in the form and context in which it appears in this report.

The McIntosh resource data and statement referenced in presentation have previously being logged by Hexagon Energy Materials Ltd with the ASX via announcement dated 17th April 2019. The Halls Creek historic data via ASX announcement dated 11th February 2020. The Alabama graphite data via ASX announcement dated 31 July 2019. Hexagon Energy Materials Limited is not aware of any other new information or data that materially affect the information included in the original market announcement referred to above, and that all material assumptions and technical parameters have not material changed.

Authorised for release by the Board of Directors

Contents

Pedirka Blue Hydrogen Project

Hexagon Energy Materials

01

Corporate Overview

HEXAGON ENERGY MATERIALS LTD

3 Mar 2020–2 Mar 21

ASX Code	Share Price (02/03/21)	Market Capitalisation	Shares on Issue
HXG	**A$0.095**	**A$28.6M**	**301.2M**

Options	52 week high	52 week low	Average daily volume
4M	**A$0.14**	**A$0.031**	**562,791**

TOP FIVE SHAREHOLDERS

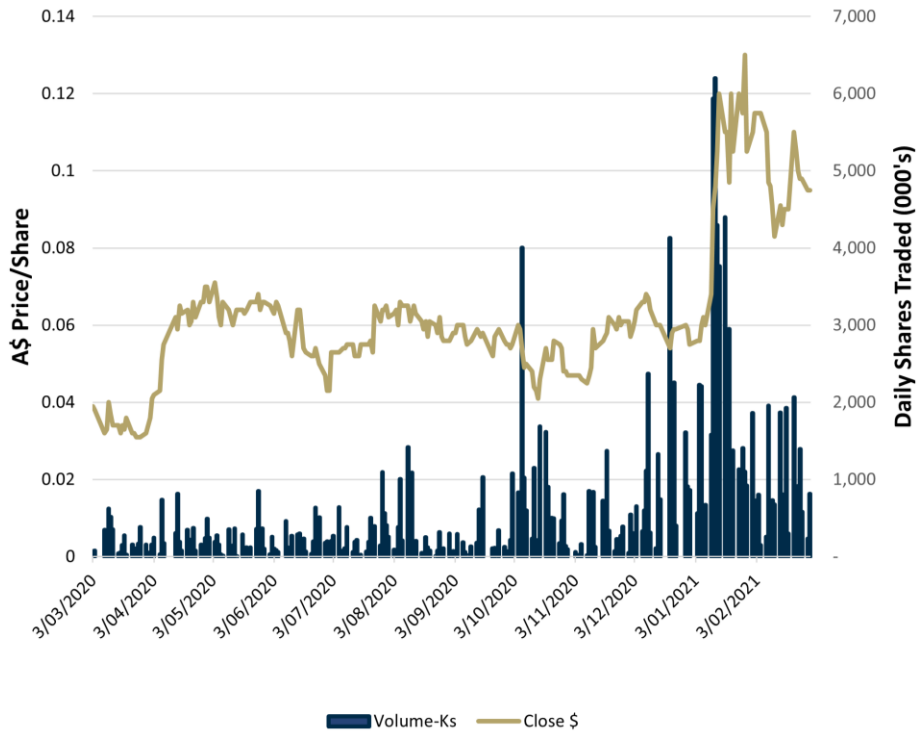
At 26 February 2021

Holder	Shares (Millions)	Holding %
Citicorp Nominees Pty Ltd	**21.90**	**7.27**
UBS Nominees Pty Ltd	**19.16**	**6.36**
HSBC Custody Nominees (Aust) Ltd	**13.62**	**4.52**
Custodial Services Ltd Beneficiaries Holding A/C	**10.52**	**3.50**
HSBC Custody Nominees (Aust) Ltd	**9.92**	**3.30**

Substantial Shareholder: Tribeca Investment Partners Pty Limited (10.75%)

HXG SHARE PRICE

3 Mar 2020–2 Mar 21



Corporate Leadership Team

Charles Whitfield

Chairman

Clean energy resource specialist. Undertook turnaround of lithium producer Galaxy Resources Ltd as Executive Director. Former MD in Investment Banking with Citigroup & previously Deutsche Bank.

Adam Bacon

Ebony Energy - Managing Director

Extensive global expertise in the energy, resources and transportation sectors. Held senior leadership roles within General Electric, UGL and most recently the Andrew Forrest backed Australian Industrial Energy.

Garry Plowright

Non-Executive Director

Extensive experience in the resource sector, a background in mining law and administration as well as regulatory process and mine development.

Lianne Grove

Commercial / BD

Extensive global expertise in project development and commercial management in Oil & Gas at AWE Ltd and Sea Trucks Group and mining experience at Rio Tinto.

Corporate Strategy

Hexagon's strategy is focused on exploration and development of clean-energy, and energy materials projects

Ownership	Ownership	Ownership	Ownership
100% (subject to compulsory acquisition)	100%	80%	100%
Project	Project	Project	Project
Pedirka Project	**McIntosh Project**	**Alabama Exploration**	**Halls Creek**
			
Material	Material	Material	Material
Blue Hydrogen	**Graphite, Nickel & PGE's**	**Graphite**	**Gold & Base Materials**

Pedirka Blue Hydrogen Project

02

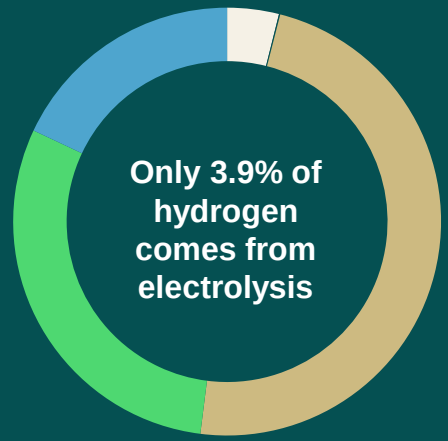
The Pedirka Project

Regionally important Blue Hydrogen

- The development basis of the Pedirka Project in the Northern Territory is ‘clean’ Blue Hydrogen - that is to say zero carbon emissions.
- Blue hydrogen will provide the gateway for the conversion to hydrogen economies over the coming decades.*
- Hexagon looks forward to developing future green hydrogen projects enabled by providing clean and economically viable blue hydrogen into the current market.
- Only hydrocarbon-based production can currently provide the volumes and cost base for viable hydrogen supply.
- “Grey” or “Brown” producers are going to become sidelined unless they move to clean hydrogen – “Blue” or “Green”.
- Currently 96% of Hydrogen production is derived from hydrocarbons. The largest component from gas, followed by oil and then coal.

*IRENA predicts that Blue Hydrogen will still account for 1/3 of Hydrogen production in 2050 (“Hydrogen: A renewable energy perspective” IRENA; 2019)
** “Hydrogen’s future: reducing costs, finding markets” December 10, 2019 by Dolf Gielen and Emanuele Taibi
Graph: Martin Khzouz and Evangelos I. Gkanas Sep 2020

HYDROGEN PRODUCTION, STORAGE & INFRASTRUCTURE DEVELOPMENT



Not all off this has a “green” energy source. By some estimates 99% of Hydrogen is produced from fossil fuels (including fossil fuelled electrolysis)**

48%	Steam reforming of natural gas
30%	Oil/naptha Reforming
18%	Coal Gasification
0.1%	Other Sources

Ebony Energy's Pedirka Project

Blue hydrogen from above ground coal gasification

Permits covering ~800sqkm held to explore the Pedirka Basin for coal, located 217km South East of Alice Springs, 1473km South of Darwin.

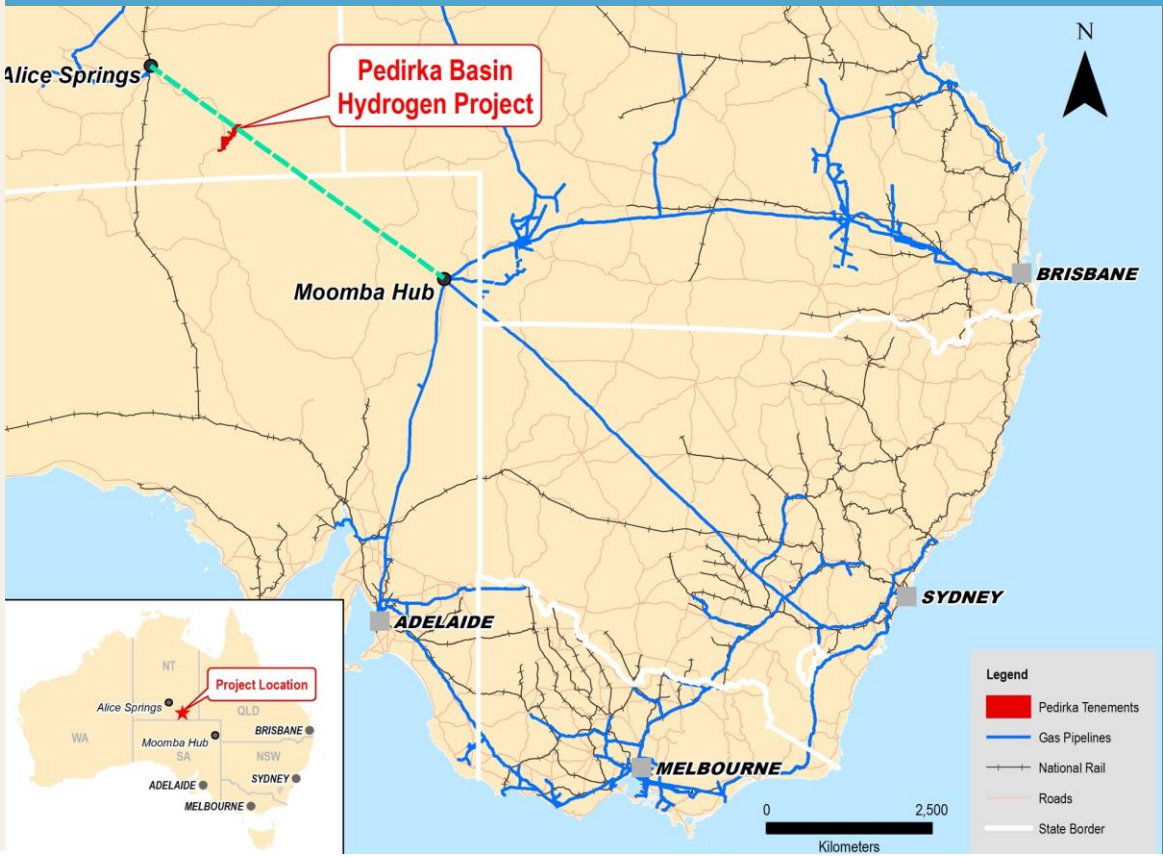
Drilling and desktop-research on historical exploration activities undertaken by Central Petroleum (CTP) and others to determine the shape, size and potential of the Basin.

The plan is to extract coal as a feedstock to a gasification plant, converting the coal to produce hydrogen for export or domestic markets

Uniquely located with respect to oil & gas infrastructure to offer unique advantages for large scale hydrogen gas production with CCUS

Zero carbon emissions through CO_2 sequestration and enhanced oil recovery projects

Ideally located near existing infrastructure to transport product and undertake CCUS of CO_2



A world class Blue Hydrogen project

Major contributor to the Northern Territory's hydrogen strategy

- JORC compliant Exploration Target identified by Central Petroleum (CTP) with potential for > 300 billion tonnes of coal at depths <1000m below the surface.*
- The CTP tenements that were the subject of these targets incorporate the Pedirka Project.
- The Company has developed plans to produce blue hydrogen or ammonia for export and for injection into the Australian pipeline networks to significantly reduce Australia's carbon footprint.
- Plans are consistent with Nov-19 National Hydrogen Strategy and 2020 Low Emissions Technology Statement.

NT is an ideal export hub for the the Asian market

*Source: ASX:CTP announcement 8.3.2012, pages 26 and 27

Pedirka Blue Hydrogen Project

The case for Blue Hydrogen

03

The role of blue hydrogen

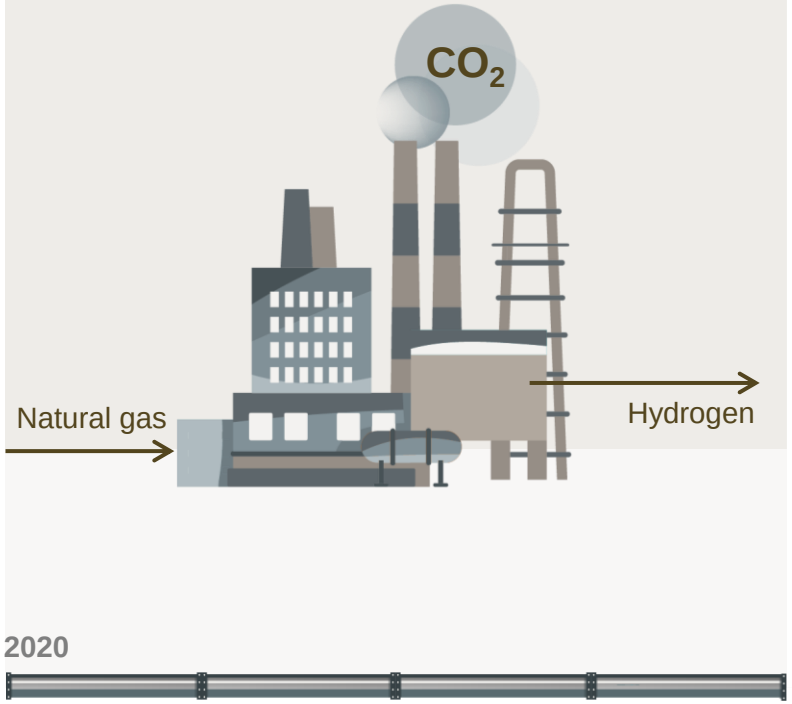
HEXAGON

THE DIFFERENT COLOURS OF HYDROGEN

Hydrogen

Brown / Grey

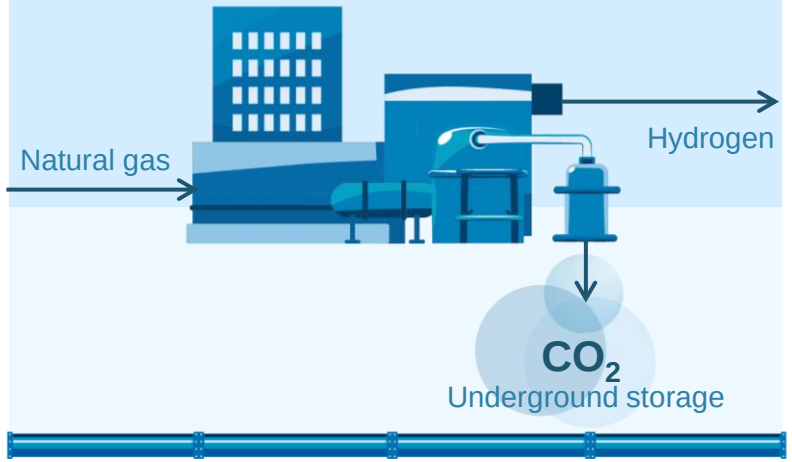
- Most hydrogen produced is derived from fossil fuels
- Most common is steam methane reforming of natural gas, coal gasification common in China



Hydrogen

Blue

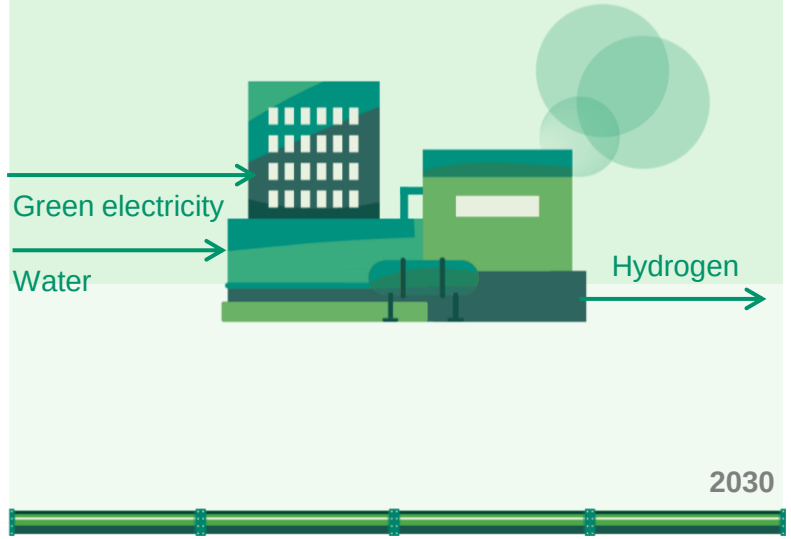
- Blue hydrogen uses traditional production method with CCUS (carbon capture, utilisation & storage)
- Increase in hydrogen cost driven by CCUS solution and easier to scale currently
- Ebony has designed a production process that captures CO_2 and also converts CO_2 to syngas and methane



Hydrogen

Green

- Green hydrogen produced from electrolysis of water using renewable energy
- Not yet cost competitive at commercial scale, but a significant focus for governments



The role of Blue Hydrogen

To develop supply chain infrastructure and end-markets seeking to transition to a hydrogen economy

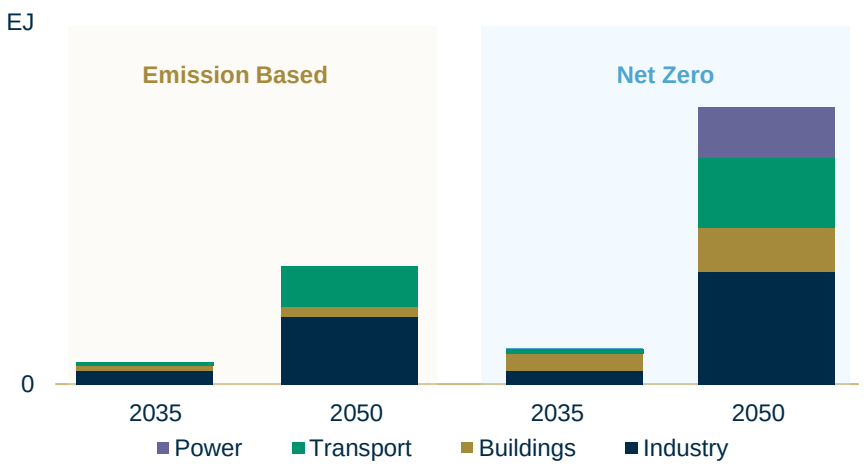
Key end markets such as Japan and the EU highlight the need for blue hydrogen in the near-term

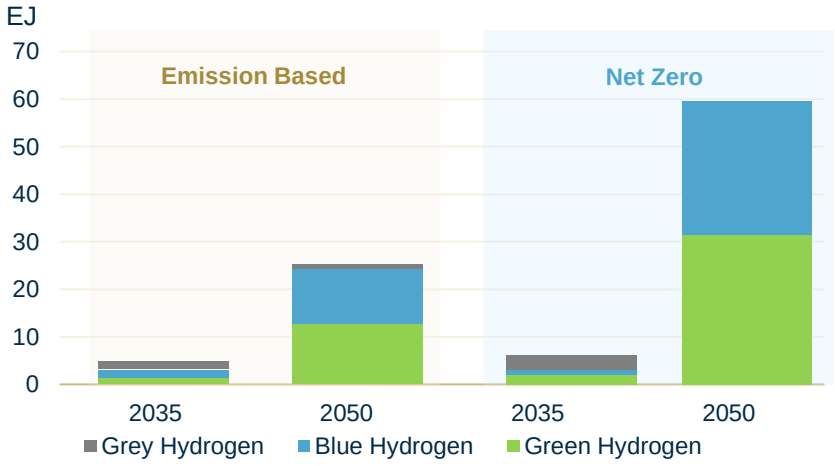
- As above, Japan still sees a need for blue hydrogen post 2030
- EU Hydrogen Strategy (July-20) states low-carbon (blue) hydrogen is needed to “rapidly reduce emissions from existing hydrogen production and support the parallel and future uptake of renewable [green] hydrogen”
- The cost of green hydrogen would preclude rapid uptake by industry

Drivers are cost competitiveness and ability to achieve scale

- This is critical for developing supply chain infrastructure and end-markets
- In the medium/long-term, blue hydrogen growth should allow faster ramp-up of overall hydrogen use than green hydrogen alone due to the already significant required increase in renewable energy capacity (source: BP)
- Economically viable transition to a hydrogen economy is reliant on Blue hydrogen

HYDROGEN USE BY SECTOR AND HYDROGEN PRODUCTION BY SOURCE

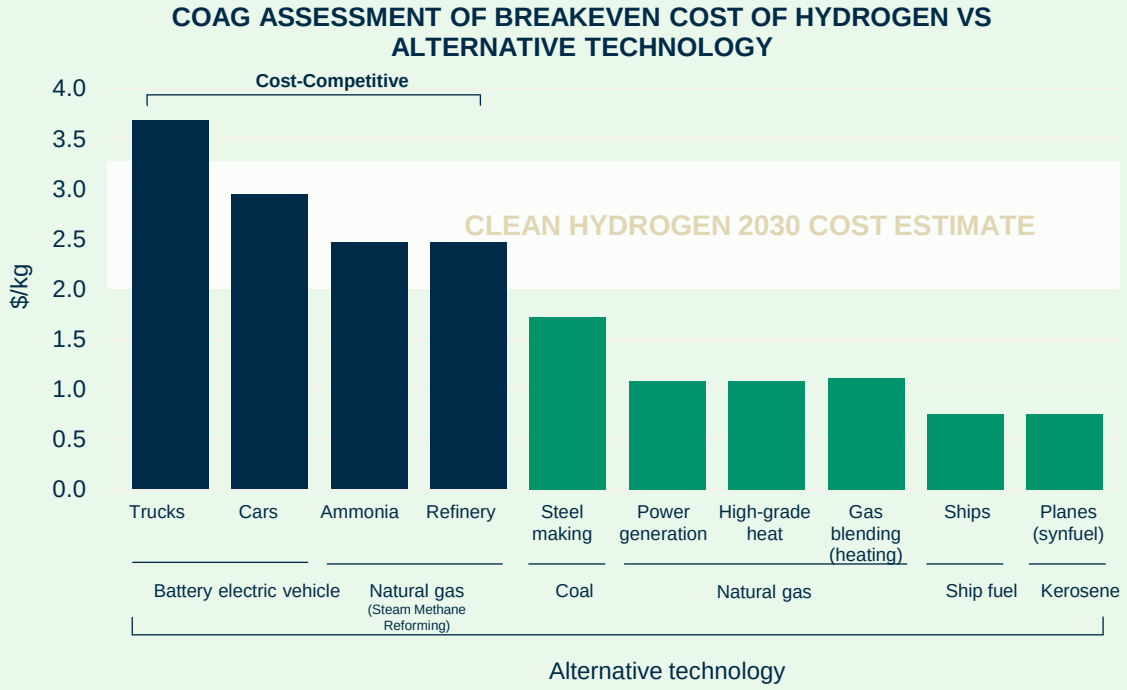




Source: BP

Australian developments

Australian government is technology neutral between blue and green hydrogen production



National Hydrogen Strategy and Low Emissions Technology Statement are technology neutral

Australian government aiming to reduce costs to increase competitiveness

- Critical for developing supply chain infrastructure and end-markets

Woodside, Santos and AGL are commencing with blue hydrogen projects

- AGL's project is coal gasification and has support from governments of Australia, Victoria and Japan
- Woodside will use natural gas in first instance – has significant agreements with Japanese and Korean companies
- Santos will use natural gas and CCUS in Moomba

Source: Australia's National Hydrogen Strategy, Nov-19

The role of Blue Hydrogen

Policy framework evolving to make Blue Hydrogen cost competitive

CF Industries and Yara, the top two global producers of ammonia, have both indicated that they are investing in decarbonisation of production

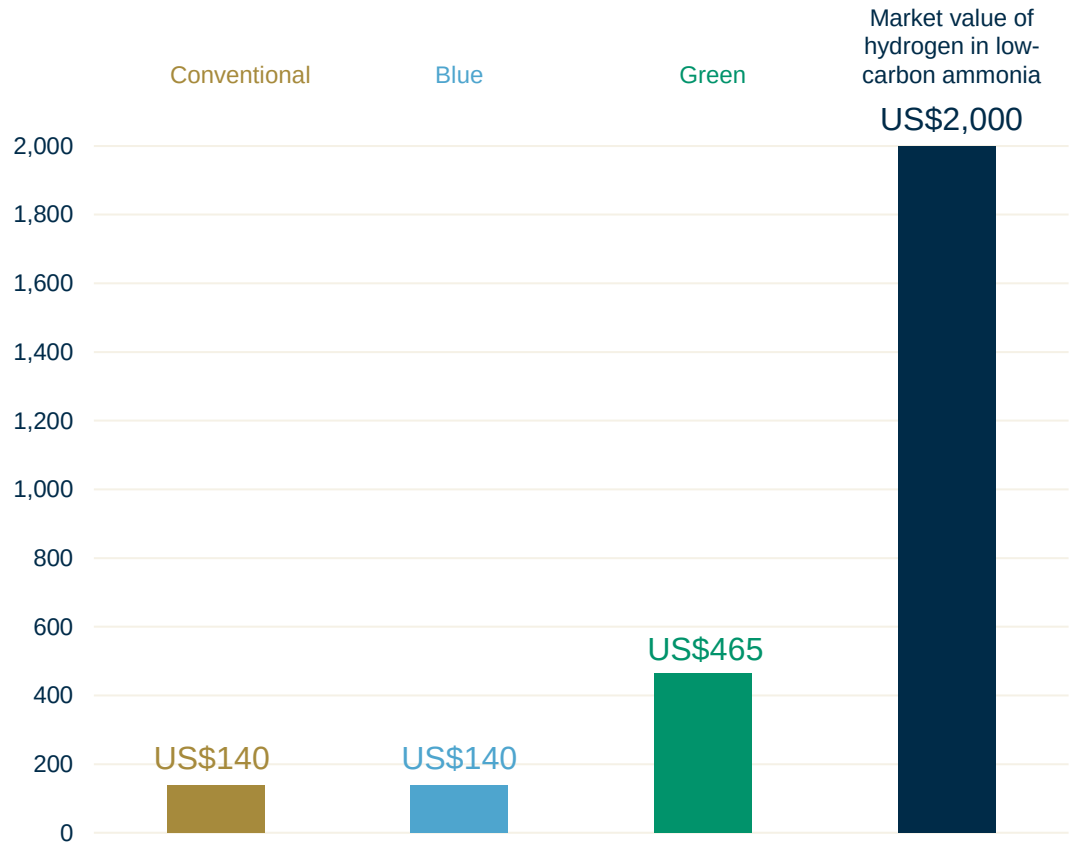
The Australian Government is supporting incentives for clean Hydrogen production, with the introduction of the CCUS ERF Methodology which management has been actively engaged in

CF Industries has highlighted that blue hydrogen can be a similar cash cost to conventional production

The key driver is US Section 45Q tax credits, which offset the incremental cost of CCUS

Note the market value shown is based on the California retail refuelling markets and is unlikely to be reflective of the value received once production is scaled

AMMONIA USD CASH COST PER TON FOR CF INDUSTRIES



Source: CF Industries

The case for Blue Hydrogen

The blue hydrogen is central to the transition to decarbonisation

Production Cost

EU Hydrogen Strategy used IEA data to estimate costs of brown/grey hydrogen of €1.5/kg

Compared to blue hydrogen of €2.0/kg and green hydrogen of €2.5-5.5/kg*

According to Platts Analytics, grey hydrogen can be produced at a cost less than US$1/kg

Compared to blue hydrogen at US$1.40/kg and green more than tripling the cost to US$4.42/kg**

* 2020 A Hydrogen Strategy for climate neutral Europe
** Cost, logistics offer 'blue hydrogen' market advantages over 'green' alternative SPG Global Platts, Mar 2020

Scale

Currently only Blue hydrogen projects can provide the volumes of hydrogen required by the current and forecast market demand

As technology improves Green projects should will become larger
- currently the largest operating green hydrogen project is only 3,000 tonnes per annum
- Bécancour plant operated by Air Liquide in Canada

By contrast the largest Blue hydrogen project currently is 3,000,000tpa

Constant Supply

For users to adopt hydrogen they require a constant supply

Hydrogen storage is currently expensive so, rather than having stockpiles fed by intermittent renewable sources, consistent production is required

To economically utilise the capital-intensive plant, 24/7 operation is required, so in the future even as renewable energy is more widespread, plants will have to operate on a “co-gen” basis utilising non-renewable sources

Pedirka Blue Hydrogen Project

Technical Focus

04

The Pedirka Blue Hydrogen Project

The Four Pillars for an Economic Blue Hydrogen Project

Access to Market

Australia is ideally placed to be a major supplier to the huge and growing market for Hydrogen in Asia-Pac

Within the Australian context, although remote, Pedirka is extremely well served by existing Pipeline infrastructure (including the Moomba hub, via the proposed CTP pipeline) as well as rail to Darwin, which is the preferred export hub for gas to Asia

CO_2 Solution

While many projects are claiming to be “Blue” by means of carbon offsets, the Pedirka team has already achieved meaningful progress to having a fully controlled Carbon Capture and Storage “CCS” solution allowing the project to be truly zero emissions

This puts Pedirka in the clean Hydrogen category, the same basis as a “Green” hydrogen plant with respect to CO_2

Resource

Although the planned plant will only require 3.5mtpa for phase one of the project, one of the components of the upcoming PFS will include a drill program to seek a JORC compliant resource

Work to date on the tenement and surrounding area has shown considerable volumes of coal, suitable for gasification, which we believe will be far in excess of requirements

Social License

Hexagon is focussed on best of class in terms of environmental impact, working practices and technology usage

The focus on a real and practical CO_2 solutions rather than offset is a key tenant of the strategy

The Management team has engaged with Government bodies and industry leaders in each component of the value chain to assure these goals are met

Managing Green House Gases

Hexagon aims to produce the cleanest Blue Hydrogen

Hydrogen produced via fossil fuels with a carbon capture solution are termed “blue” hydrogen. The only existing commercially viable means of producing hydrogen at scale has CO_2 as a by-product. The proposed Pedirka gasification process will create approximately 4Mtpa of CO_2.

The Company is well advanced in ways to capture and mitigate all the CO_2 from the process, considering 3 alternatives:

- Enhanced Oil Recovery in the Cooper Basin (QLD/SA) and to Central Petroleum (NT)
- Carbon Capture and Storage – via Santos project in the Cooper Basin (QLD/SA) or Central Petroleum (NT)
- Reprocessing CO_2 to create further H_2 – via NCF process

Australian developments

Explicit support for CCUS

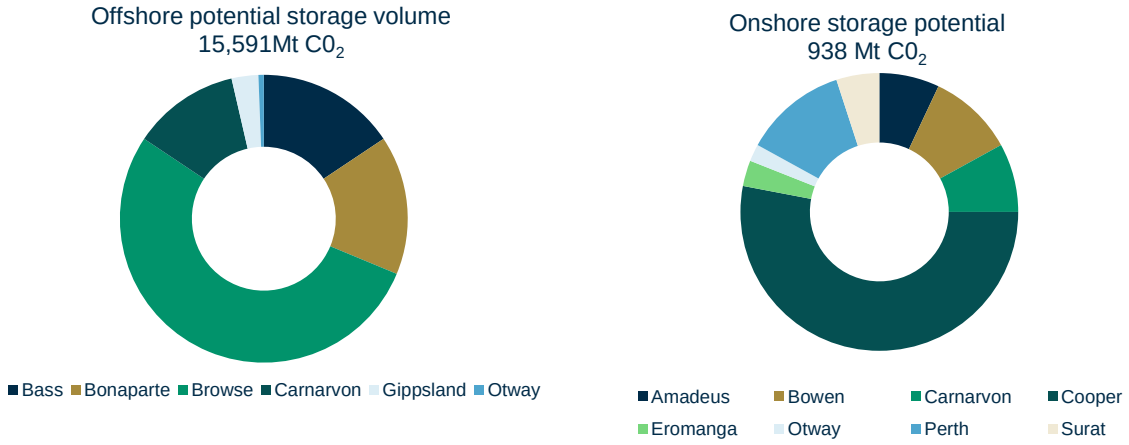
Low Emissions Technology Statement set two related targets relevant to the Pedirka blue hydrogen project

- Reducing hydrogen production costs to $2/kg
- Reducing the cost of CCUS to <$20/t of CO_2
- Santos has highlighted the importance of Australian Carbon Credit Units to business case

Pedirka appears well located

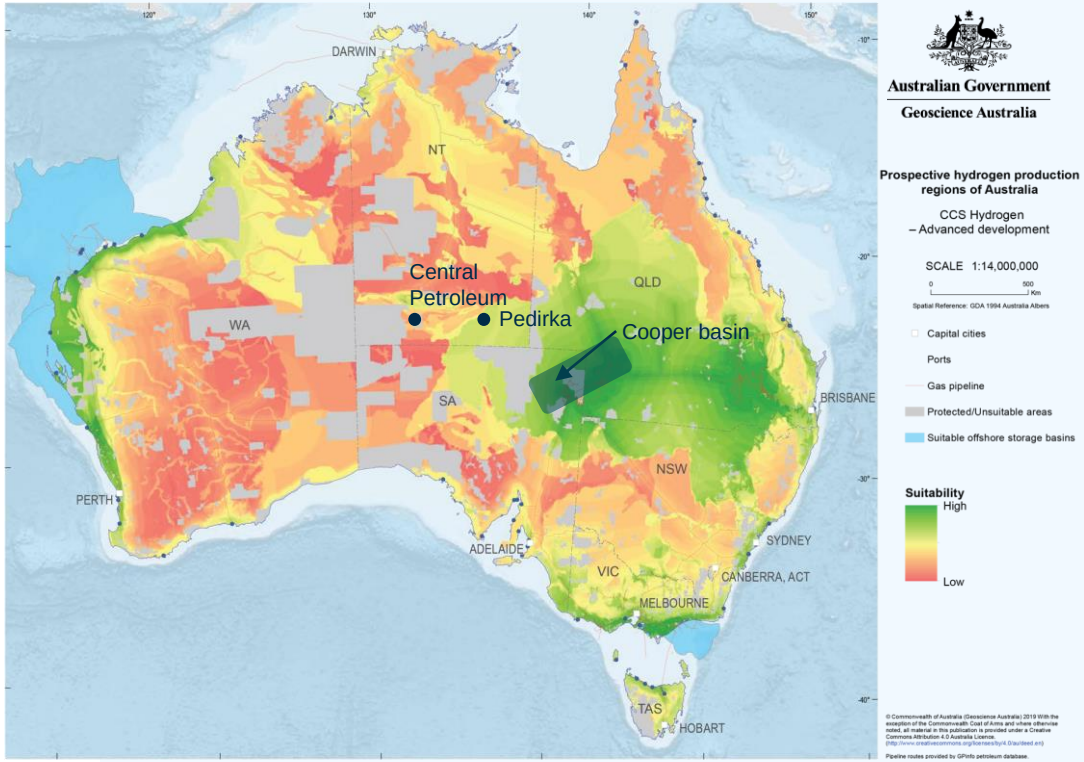
- Green is best onshore CCUS locations
- Cooper Basin has scale storage potential

Australia's offshore and onshore CO_2 storage potential by basin



Source: Australian Carbon Storage Taskforce report, 2009

Australia's most prospective CCUS locations, considering infrastructure availability



Source: Australia's National Hydrogen Strategy, Nov-19

Social License

Involving Key institutions

The project team has been developing the Pedirka Blue Hydrogen Project since 2019

Engagement with key government and public sector offices at Territory and Federal level to raise awareness and contribute to emissions reduction methods and applications

Advancement of partnerships with key groups including, technology, CO_2 solution, and transportation providers

Advanced Partnerships

Governments: Northern Territory and Federal

Technology: Global gasification and CO_2 management technology

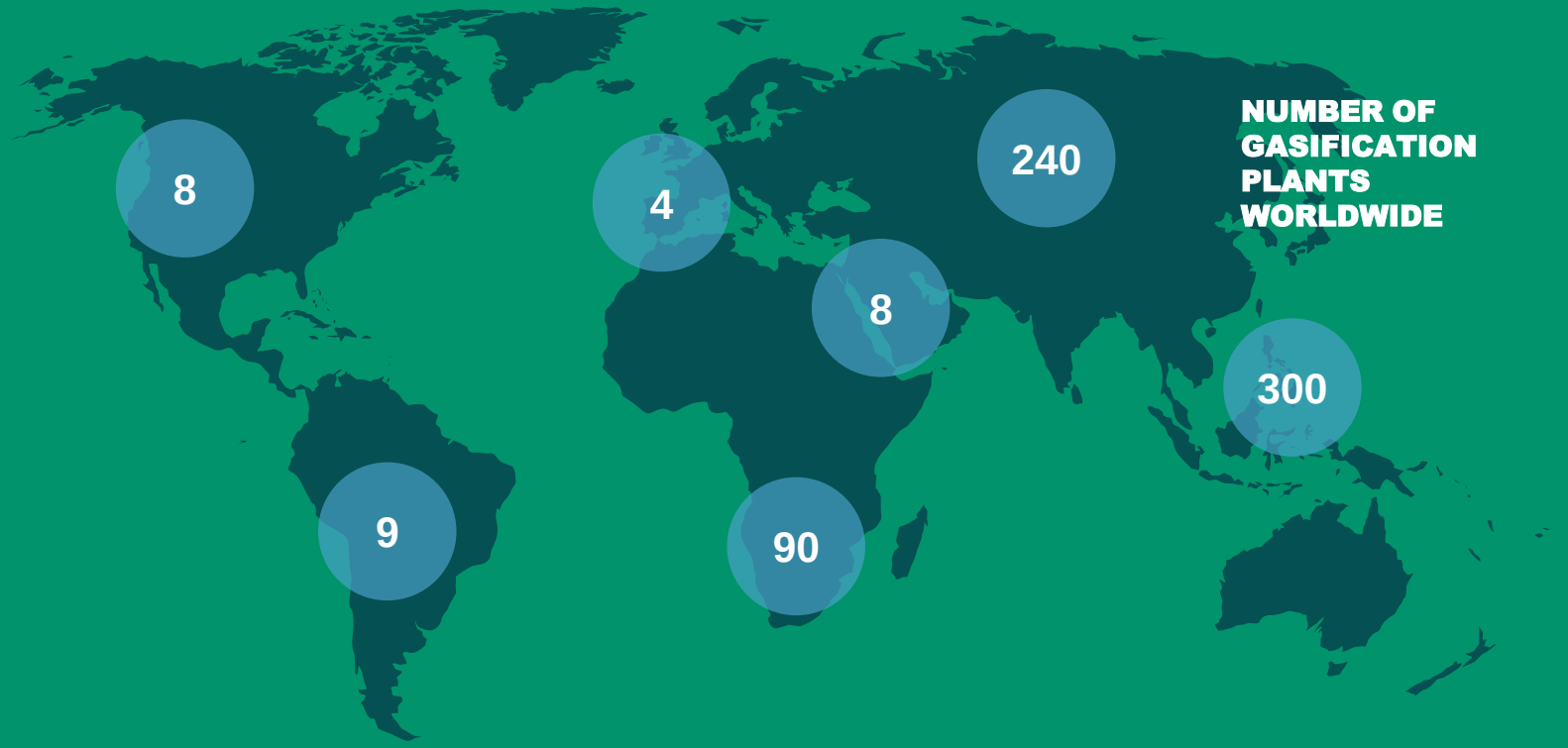
CO_2 solutions: Carbon capture, utilisation and storage (CCUS)

Transportation: Process and product transportation options

A clean Blue Hydrogen solution is supported by off takers in Asia and Europe

The Australian Hydrogen Council recognises the need for policy advocacy to ensure Australia advances its ambitions in the Hydrogen Export economy

Established Technology



Gasification is widely used on a global scale

Coal gasification combines high pressure and high heat in a controlled-oxygen environment to produce syngas from coal which can then be converted to hydrogen.

Coal gasification is a proven technology, currently in use in numerous countries around the world, including the USA, Russia, South Africa and China.

Gasification process via steam reformation is the most common method of hydrogen production on the planet.

Clear pathway to carbon neutrality for Australia's first Blue Hydrogen project.

Steam reformation process enables ease of carbon capture without separate technology, only requiring compression into a pipeline.

Focused Operational Approach

Ebony Energy's low-cost production approach has driven the focus in selecting technologies and technical partners

DIRECTIONAL DRILLING FOR COAL

The size and structure of the Pedirka Project has the potential to utilise low-cost mining methods including directional drilling where coal is pumped to a surface gasification plant via moveable feeder pipes (much like the umbilicals on a sub-sea tree for extracting oil to a platform).

COAL TO GAS SURFACE PLANT

The surface gasification plant is a conventional technology that is employed in almost 700 different facilities globally. Ebony has been in discussions with a world leader in building and commissioning similar plants.

Project Location

Ideally geographically located

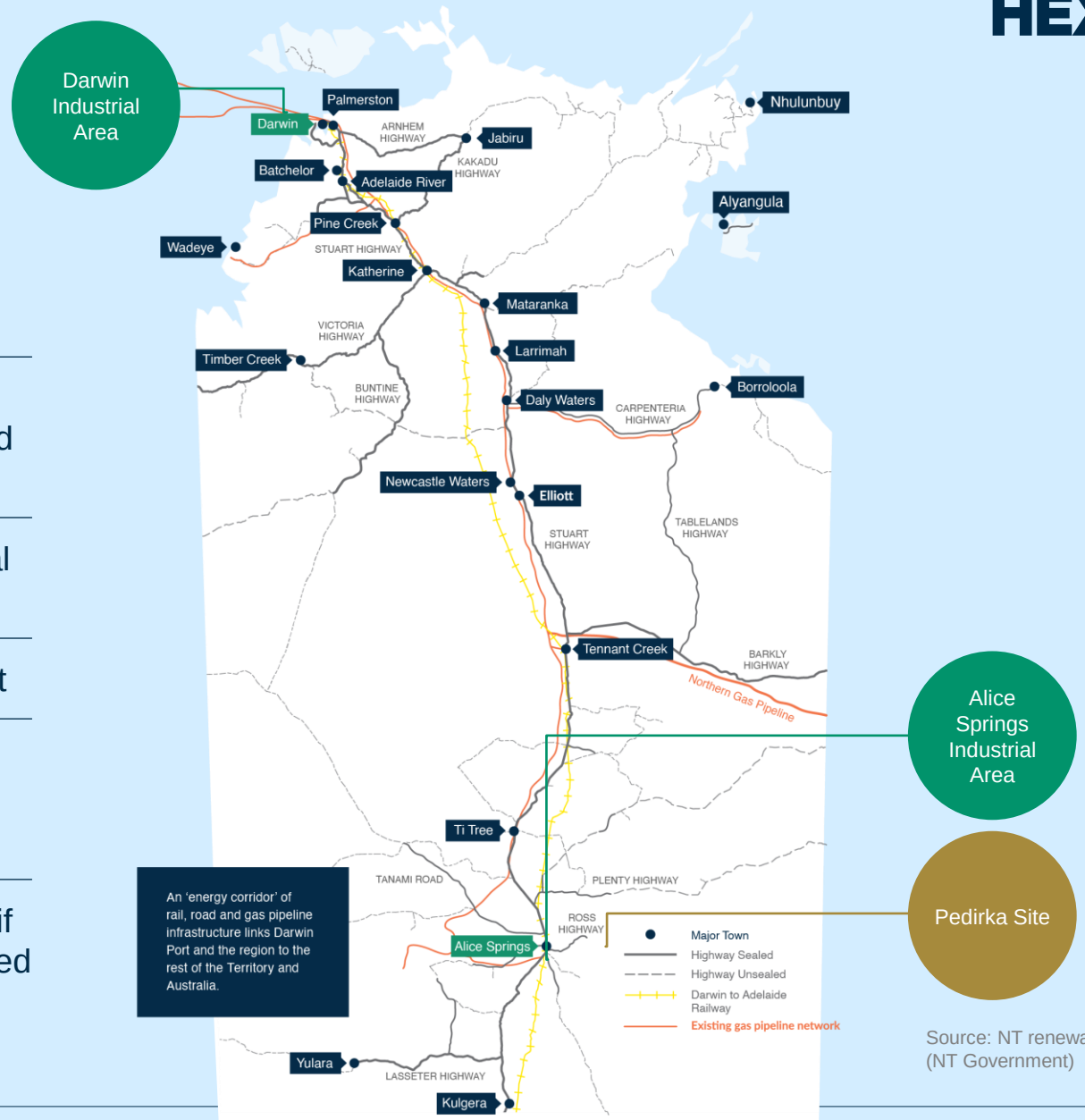
Workforce availability due to the proximity to Alice Springs, with processing plant to be located on the outskirts of the town

Strong indications of support from both Federal and Territory Governments

Potential for Territory, Federal and NAIF support

Easy access to existing pipeline infrastructure offers a number of options to access undersupplied markets

Underutilised rail is also a supply chain option if hydrogen derivative such as ammonia is produced



Source: NT renewable hydrogen strategy (NT Government)

Pipeline Infrastructure

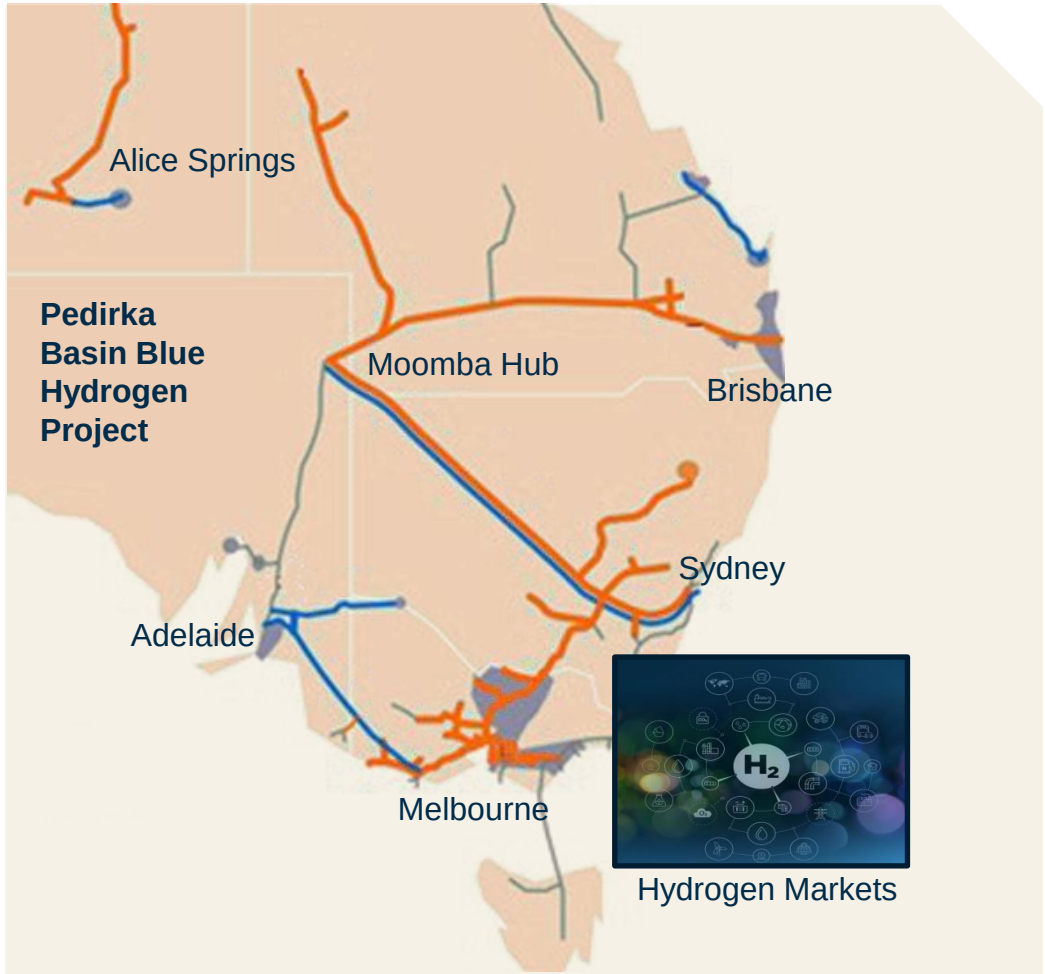
Existing Pipeline Network

The Company has undertaken studies and received quotations for connections from the project to numerous pipelines

Easy access to numerous CCUS storage facilities

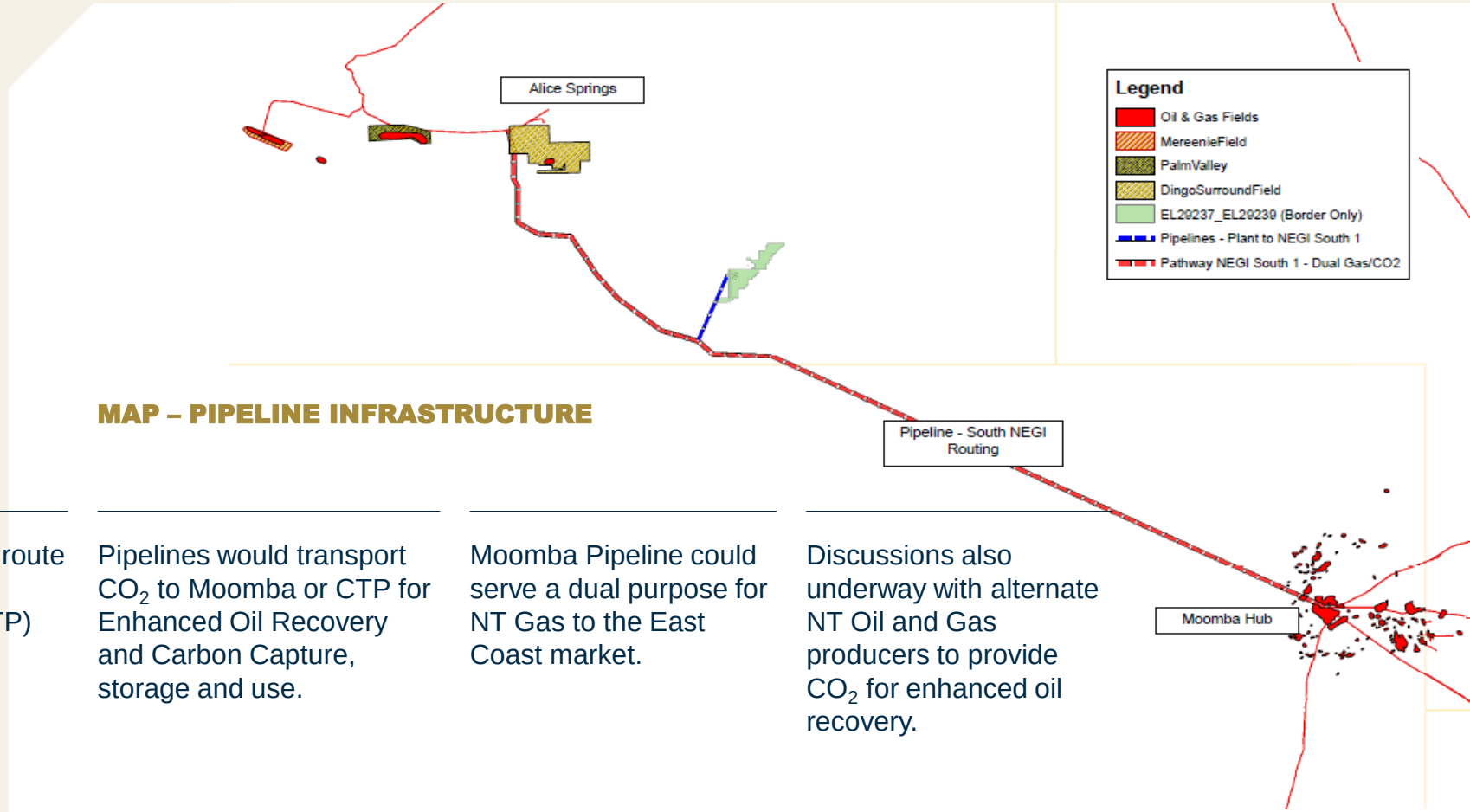
Pedirka's central location and infrastructure provides wide and efficient distribution options to serve customers

Potential to connect to Moomba, via the proposed Alice Springs to Moomba pipeline, enabling additional revenue streams



Transportation

Well advanced pricing and negotiations for the optional pipeline and transportation usage and extensions



MAP – PIPELINE INFRASTRUCTURE

MoU with OSD Pipelines to build, own and operate a 670km pipeline to Moomba hub (one option for supplying H_2 and CO_2 to Moomba).

Alternative pipeline route is 280km to Central Petroleum (ASX:CTP)

Pipelines would transport CO_2 to Moomba or CTP for Enhanced Oil Recovery and Carbon Capture, storage and use.

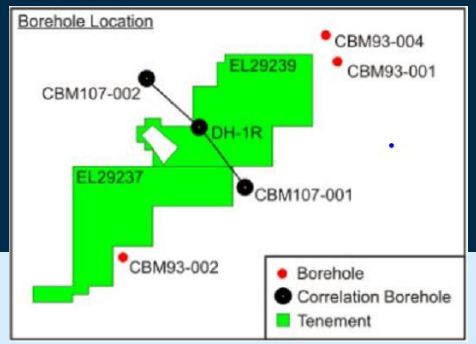
Moomba Pipeline could serve a dual purpose for NT Gas to the East Coast market.

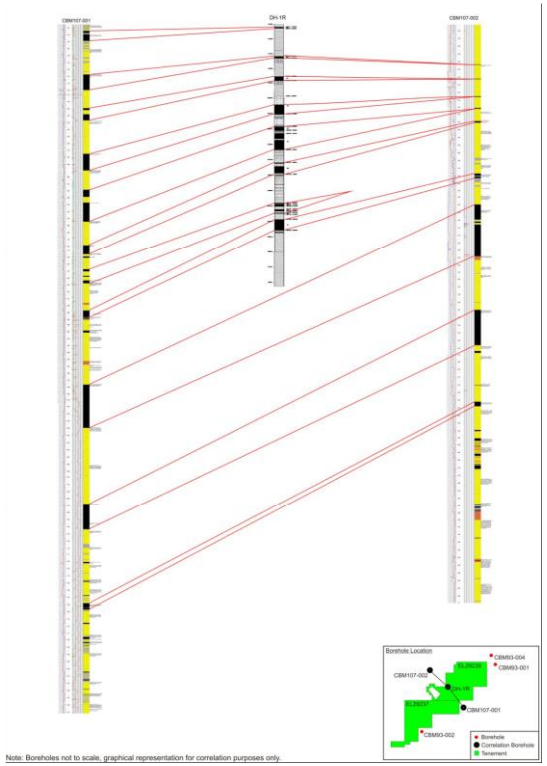
Discussions also underway with alternate NT Oil and Gas producers to provide CO_2 for enhanced oil recovery.

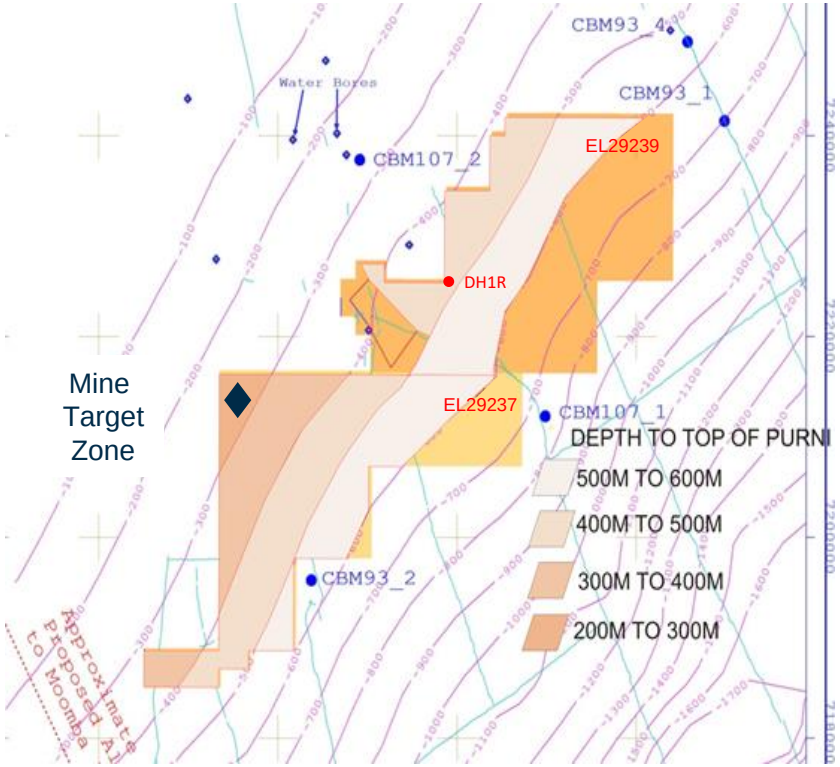
Resource Details

Central Petroleum drilling incorporates Pedirka

- CTP drill holes (CBM 93_1, 93_3, 93_3, 107_1, 107_2)
- Pedirka drill hole (DH1R)
- Cross-section CTP Drill holes intersects through Pedirka drill hole DH1R







Source: Tamplin Resources

Ownership

100%

(subject to completion of Ebony Energy takeover)

Tenements

Pedirka Project (Granted)

EL29237/EL29239

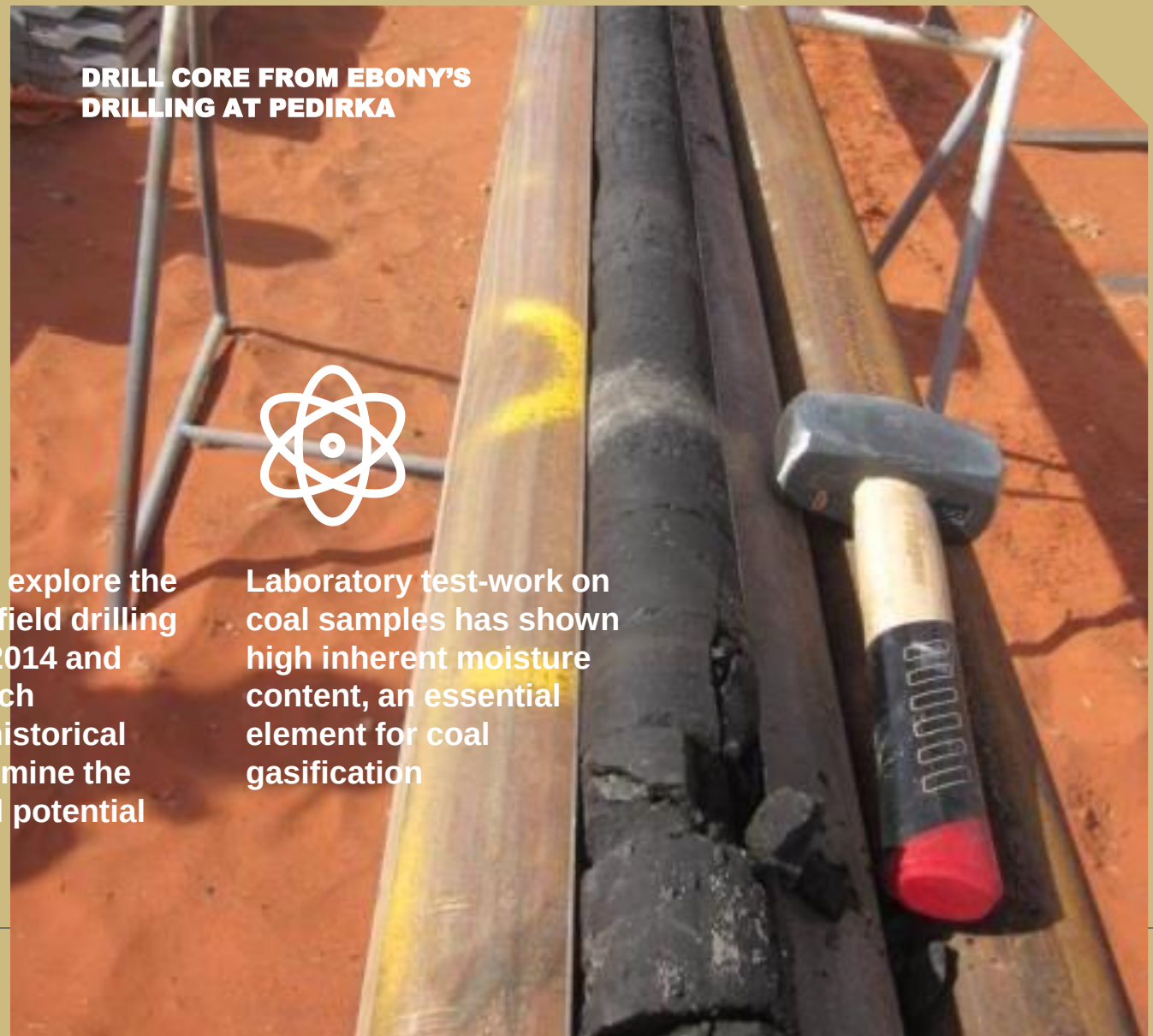
Area

796km²

Alice Springs, NT

Project Resource

Pedirka Basin tenements cover an area of just under 800sqkm. There is significant raw material for long term production and expansion



DRILL CORE FROM EBONY'S DRILLING AT PEDIRKA

Drilling program aimed to establish JORC Compliant Resource during Pre-Feasibility stage

- **Planned 12-15 drill holes**
- **Hole depth 400-500m**

Permits held to explore the Basin for coal, field drilling undertaken in 2014 and desktop-research completed on historical drilling to determine the shape, size and potential of the Basin

Laboratory test-work on coal samples has shown high inherent moisture content, an essential element for coal gasification

Pedirka Blue Hydrogen Project

Development Path

05

Next Steps
Hexagon

Fund Raising

Capital Raise, funding for project advancement

Other funding opportunities

- Potential gasification partner, finance plant and equipment for the Pedirka Project
- JV potential on exploration assets

Advance Pedirka Project including

Drilling of coal deposits aimed at defining a JORC compliant resource

Complete a Pre-Feasibility Study

Advance partnership discussions:

- Gasification technology
- Offtake agreements
- Access to pipeline infrastructure
- Government funding for CO_2 conversion
- CO_2 sales for EOR or access to depleted reservoirs for CCS

Undertake exploration activities at McIntosh, Alabama and Halls Creek

Critical Success Factors

Development is ongoing, progress to be reported

01
Further engagement with Australian and NT governments to ensure project continues to be consistent with hydrogen strategies for domestic use and export, and approval process is in a commercial timeframe

02
Confirm technology partner for gasification process

03
Determine coal reserves and hydrogen production potential

04
Develop carbon capture utilisation & storage (CCUS) solution to ensure production of blue hydrogen, with support from the Federal Government

05
Determine optimal supply chain for transportation of product to Darwin by working closely with pipeline and rail owners and operators

06
Determine whether hydrogen or hydrogen derivatives such as ammonia are the best route to market

07
Progress customer discussions on offtake at competitive cost of delivery to end-markets

Capital Raise

HEXAGON

$8.5m

capital raise via share placement (March/April)

Key projects advancement

PFS ~ Pedirka Blue Hydrogen Project

Value creation

Exploration Activities with a focus on the Kimberly region

- McIntosh ~ Graphite, Nickel & PGE's
- Halls Creek ~ Gold and base metals

USE OF FUNDS		000's
McIntosh/Graphite Projects	550	
Halls Creek Project	850	
Pedirka Project	1,500	
Total Exploration Activities	**2,900**	2,900
Pre-Feasibility Study		3,750
Working Capital		1,350
Transaction Costs		500
Total Capital Raise		**8,500**

Summary
Key Points

Hexagon focused on clean energy and energy materials with Australian projects

Clear pathway to carbon neutrality for Australia's first Blue Hydrogen project

Strong growth forecast for hydrogen in both domestic and regional markets

Pedirka has several distinct comparative advantages:

- Clean, zero emissions
- large scale stage 1 project for long term hydrogen supply
- Domestic gas shortages with pipeline access
- No competing land use, proximal road, rail and pipeline infrastructure

A blue hydrogen project economically viable in the current market, enabling the pathway to future green hydrogen project development.

Highly prospective gold, nickel and PGE prospects in the Kimberley

- Major drilling campaigns planned for 2021

Capital raise circa $8.5M for March/April

Experienced Board and management team

ADAM BACON

Ebony Energy - Managing Director

adam.bacon@ebonyenergy.net

+61 412 087 347

LIANNE GROVE

Chief Commercial Officer

info@hxgenergymaterials.com.au

+61 (08) 6244 0349

hxgenergymaterials.com.au

Pedirka Blue Hydrogen Project

Appendix 1 - The Hydrogen Market

A1

Hydrogen is gaining momentum

Versatility a key positive in global decarbonisation efforts

The use of Hydrogen is very broad, however it is currently mostly used as an industrial gas in ammonia production and oil refining.

Hydrogen can be used as a source of energy or feedstock. When used for energy, the material by-product is water vapour. It can also be transported and used as a gas or a liquid.

Key global drivers include

- Action to reduce GHG emissions, carbon pricing increasing
- Increasing recognition around the limitations of electrification, particularly for industrial sectors
- Air quality
- Fuel security
- Opportunity for downstream, energy-intensive industries
- Opportunity for innovation and technology leadership

Why now?

Underpinned by mature technologies that means market activation can proceed (CSIRO)

ENERGY

- Heat
- Transport
- Electricity

Export

FEEDSTOCK

- Ammonia
- Chemicals
- Petrochemical
- Food
- Glass manufacturing
- Synthetic fuels
- Metal Processing

Hydrogen is gaining momentum

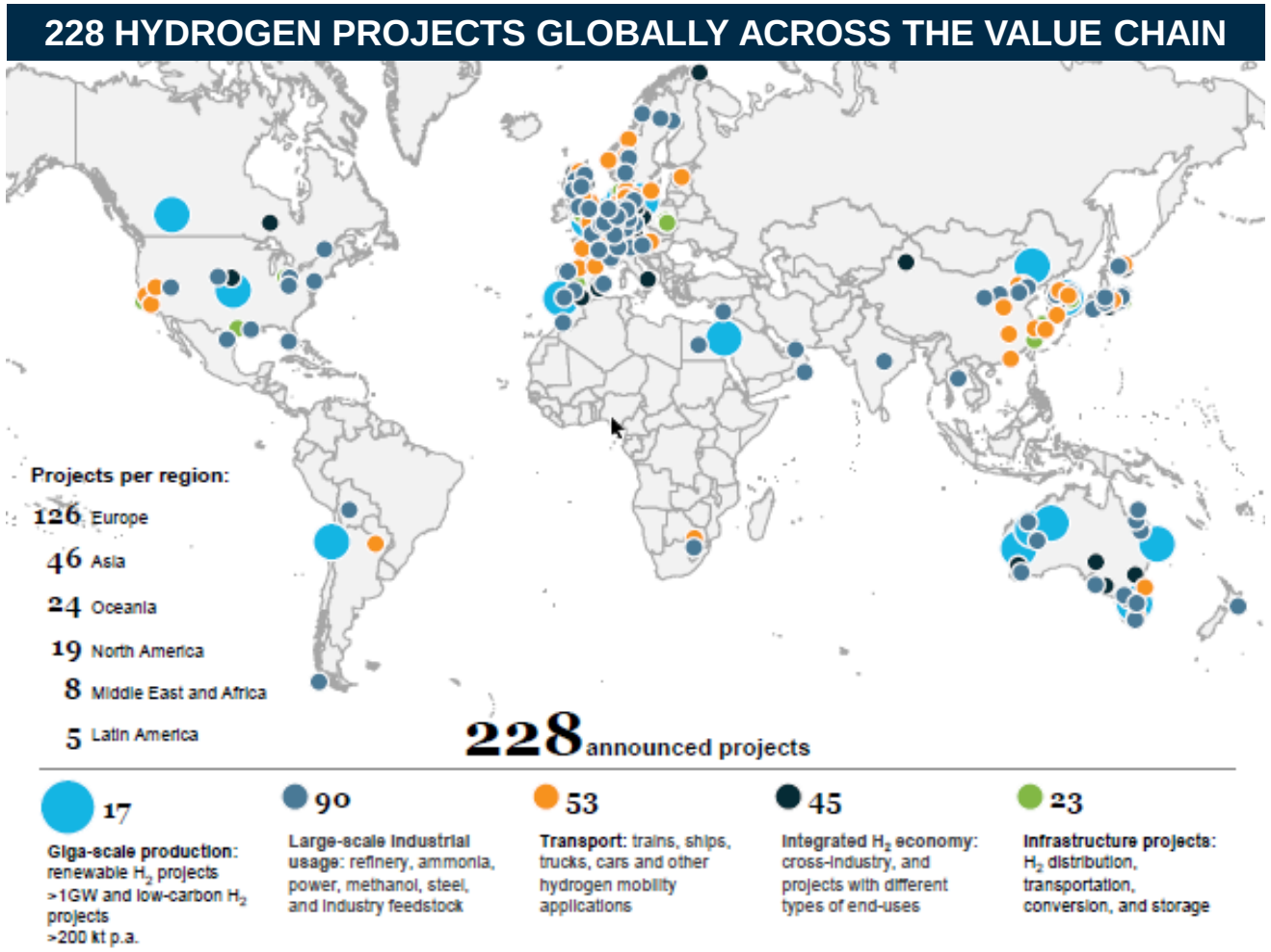
Hydrogen Council highlighted 228 active projects currently

Largest projects in Europe, Australia, Middle East and Chile

Asia and Oceania are 2nd and 3rd in number of projects after Europe

Most of the Asian projects are for usage of hydrogen, rather than production

Critical source of demand for Australian projects



Source: Hydrogen Council

Hydrogen is gaining momentum

Australian governments have lofty ambitions

Australia launched its National Hydrogen Strategy in Nov-19, with 2030 goals including

- One of the top three exporters of hydrogen to Asian markets
- A destination of choice to international investors
- Major offtake or supply chain agreements in place with importing countries
- Demonstrated capability in all links of the supply chain and economic benefits to the domestic market

States/territories with consistent policies

SA, QLD, WA

TAS, NT, ACT

Intersection with post Covid-19 priorities

- Investment in low emissions technologies
- Gas-fired recovery
- The electricity trilemma (affordability, reliability, security)
- Modern manufacturing
- Fuel security
- National resources and downstream processing
- Future fuels

LARGE SCALE MARKET ACTIVATION FROM 2025

Identify signals that large-scale hydrogen markets are emerging

Build and maintain robust and sustainable export and domestic markets and supply chains

Scale up projects to support export and domestic needs

Enable competitive domestic markets with explicit public benefits

Build Australian hydrogen supply chains and large-scale export industry infrastructure

Supply chain infrastructure includes powerlines, pipelines, storage tanks, refuelling stations, ports, roads and railway lines and any other facilities needed for hydrogen supply.

Source: Australia's National Hydrogen Strategy, Nov-19

Demand forecast to be strong

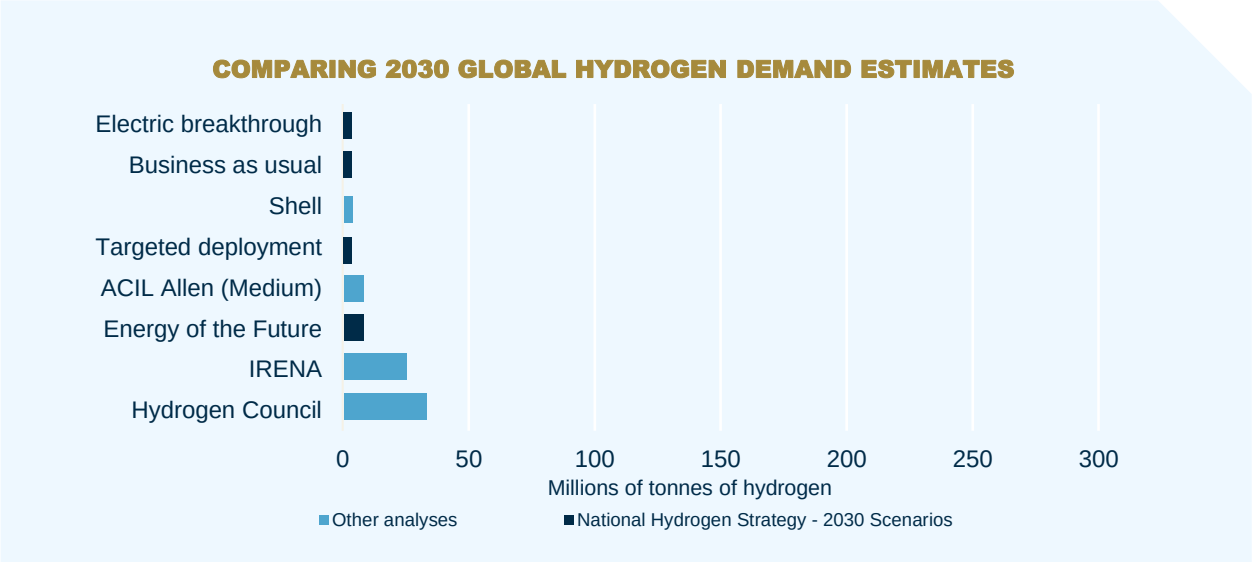
From a current market of ~70mtpa, incremental demand expected to be meaningful

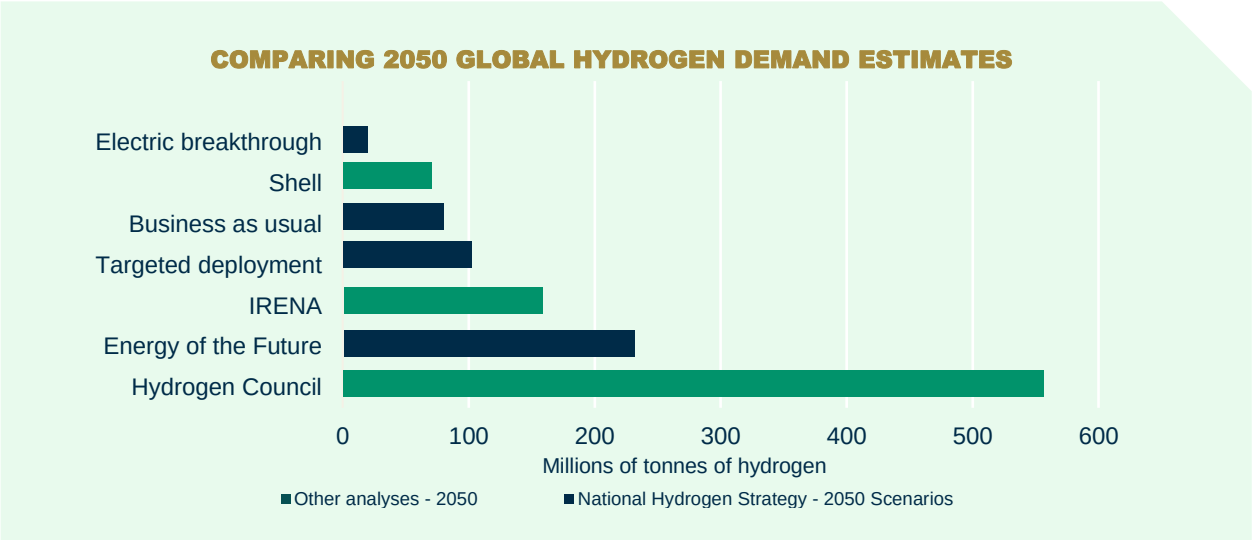
Australia's National Hydrogen Strategy (Nov-19) scenarios highlighted demand pathways as technology adoption and decarbonisation efforts gather pace

- Incremental 2-9mtpa by 2030
- Incremental 20-230mtpa by 2050

It also recognised that there were a wide range of potential outcomes from other sources

- Hydrogen Council includes power generation, transport, industrial energy, building heat/power and new feedstocks





Source: Australia's National Hydrogen Strategy, Nov-19

Demand forecast to be strong

Australian demand will develop in hubs, but regional demand will be larger

The Australian government is looking to develop hydrogen hubs to de-risk developments and drive domestic benefits

- NT strategy highlights opportunity at Middle Arm Industrial Precinct at Port of Darwin

Japanese utilities demonstrating progress in co-firing ~20% ammonia in coal-fired power plants

- IEA estimated if all Japanese coal-fired plants did so, it would add ~20% to global demand for ammonia (~180mtpa)
- Japan's METI has indicated expected incremental hydrogen demand of ~300ktpa by 2030 and >10mtpa by 2050

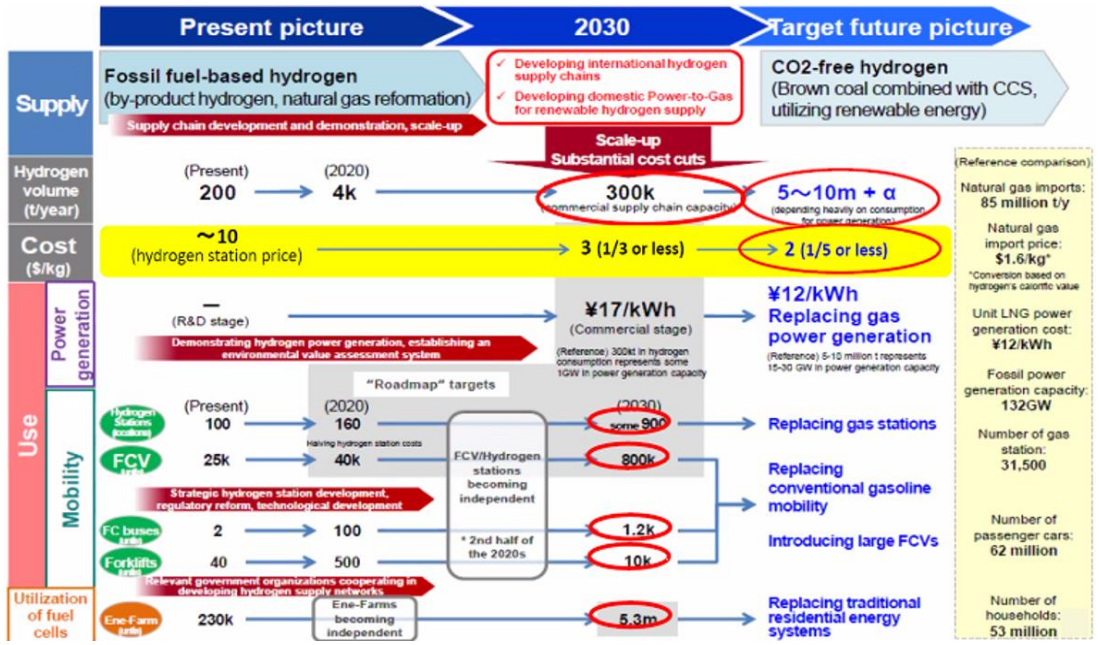
South Korea particularly focused on transport sector applications

- Expects imports of >5mtpa by 2040

Asia fast developing demand for hydrogen, not production

Gas blending is a large potential use-case (see over)

JAPANESE HYDROGEN GOALS FOR 2030 AND BEYOND



Source: Japan's METI (Ministry of Economy, Trade & Industry), CFAA

Demand forecast to be strong

Research firm[1] estimates hydrogen market will grow from US$135bn (2018) to US$199bn (2023). Highest CAGR China, Japan & Korea; gas blending is material

China's demand for natural gas is expected to grow by over 80% by 2030 and remain as the second largest importer of LNG in the world (behind Japan). Replacing 10% of the natural gas in China with hydrogen would result in a potential market of 7,319,000 tonnes pa. However, based on the forecast 510Bcm to be used in 2030 (27.4bcf/day in December 2018 rising to almost 60bcf/day in 2030), the amount of hydrogen for a 10% replacement increases to 16,056,000 tonnes per year.

Korean domestic demand for gas stands at 5.4bcf/day; at 10% replacement with hydrogen, this equates to 1,363,000 tonnes per year.

Japan uses 11bcf/day of gas. Replacing 10% of this with hydrogen equates to a potential hydrogen market of 2,953,000 tonnes per year.

Singaporean domestic gas demand is 1.2bcf/day, resulting in a potential market of 320,000 tonnes of hydrogen per year based on 10% replacement.

Australian domestic gas demand is around 430PJ per year. Replacing 10% of this with hydrogen would require 315,000 tonnes of hydrogen per annum.

1 – Markets and Markets

HEXAGON

Critical supply chain issues

This is a critical path item for the hydrogen industry to ensure cost competitiveness

Hydrogen has low volumetric density in natural gaseous form so this is overcome by;

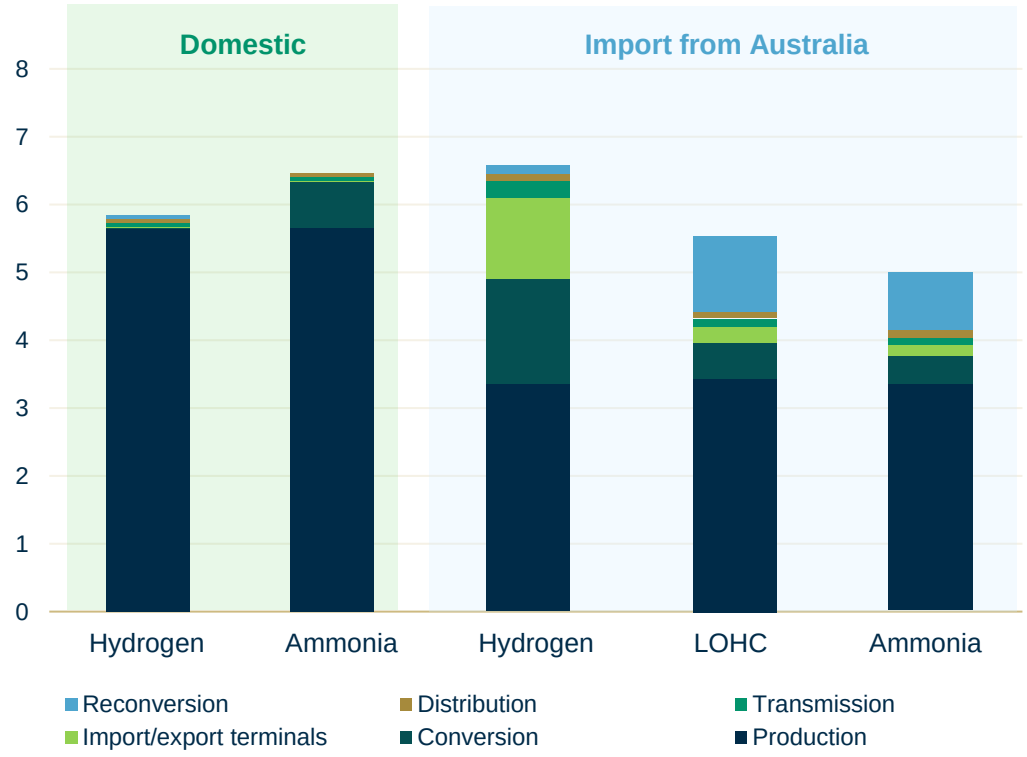
Compression – enables more effective storage and transportation (particularly via pipelines)

Liquefaction – one option for shipping

Chemical carrier – ammonia appears the most popular given it has a well established supply chain

Gas pipelines can be used for hydrogen, but likely require some retrofitting

COST OF DELIVERING GREEN HYDROGEN/AMMONIA FROM AUSTRALIA TO JAPAN BY 2030



Japan is building supply chains to receive hydrogen in liquefied and chemical carrier form

Kawasaki has built a liquefied hydrogen ship and import terminal in Kobe

To avoid reconversion costs in Japan, it is developing end-markets for ammonia in power generation (co-firing ammonia in current generation facilities) and shipping fuel

MAN is targeting delivery of first ammonia ship engine in 2024; Maersk is currently sourcing ammonia

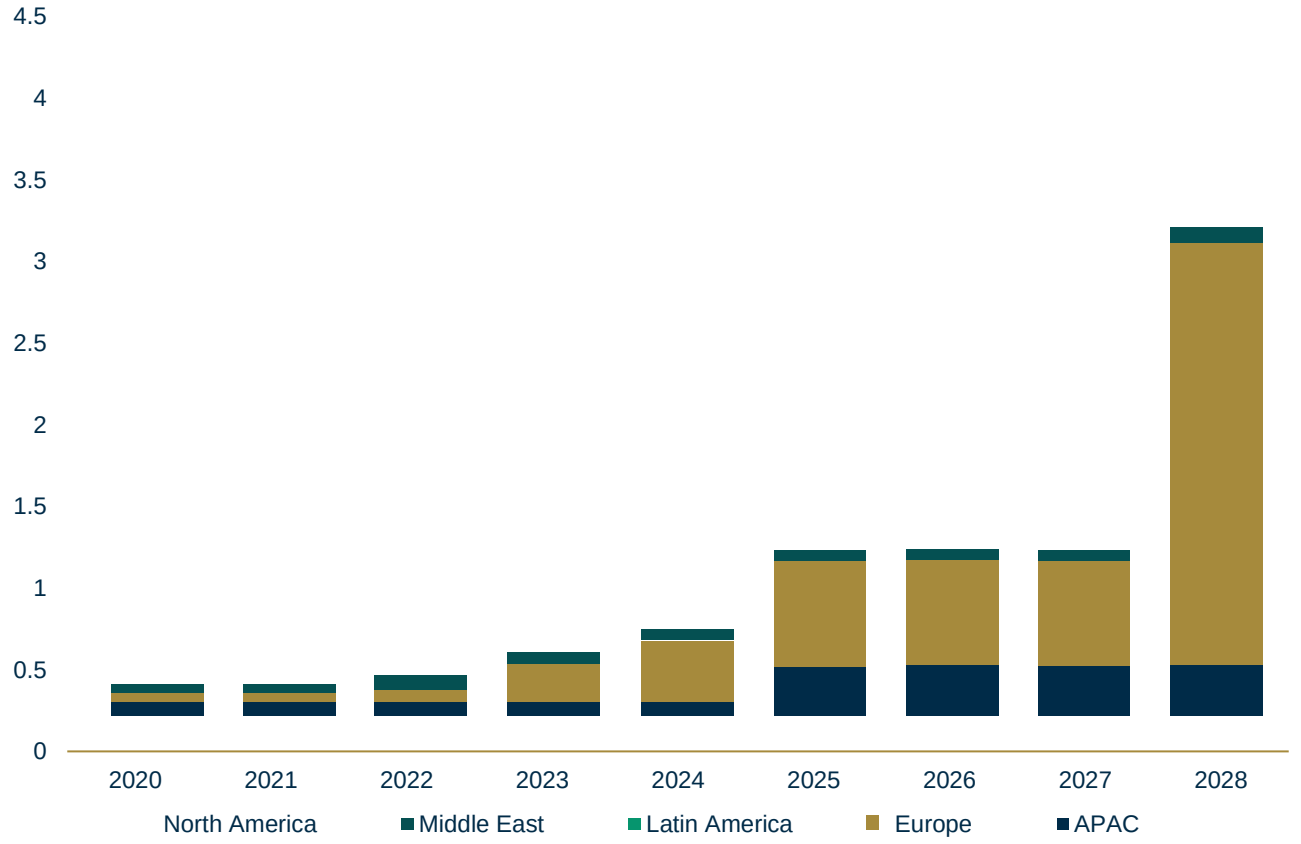
Source: IEA, Future of Hydrogen, June-19

Global Production Capacity

Growing demand globally

Production capacity of blue hydrogen is expected to grow significantly over the next decade, dramatically outpacing planned capacity for its more costly alternative, green hydrogen

BLUE HYDROGEN GLOBAL PRODUCTION CAPACITY, ANNOUNCEMENTS BY REGION



Source: “Cost, logistics offer 'blue hydrogen' market advantages over 'green' alternatives” S&P Global Platts Analytics Mar 2020

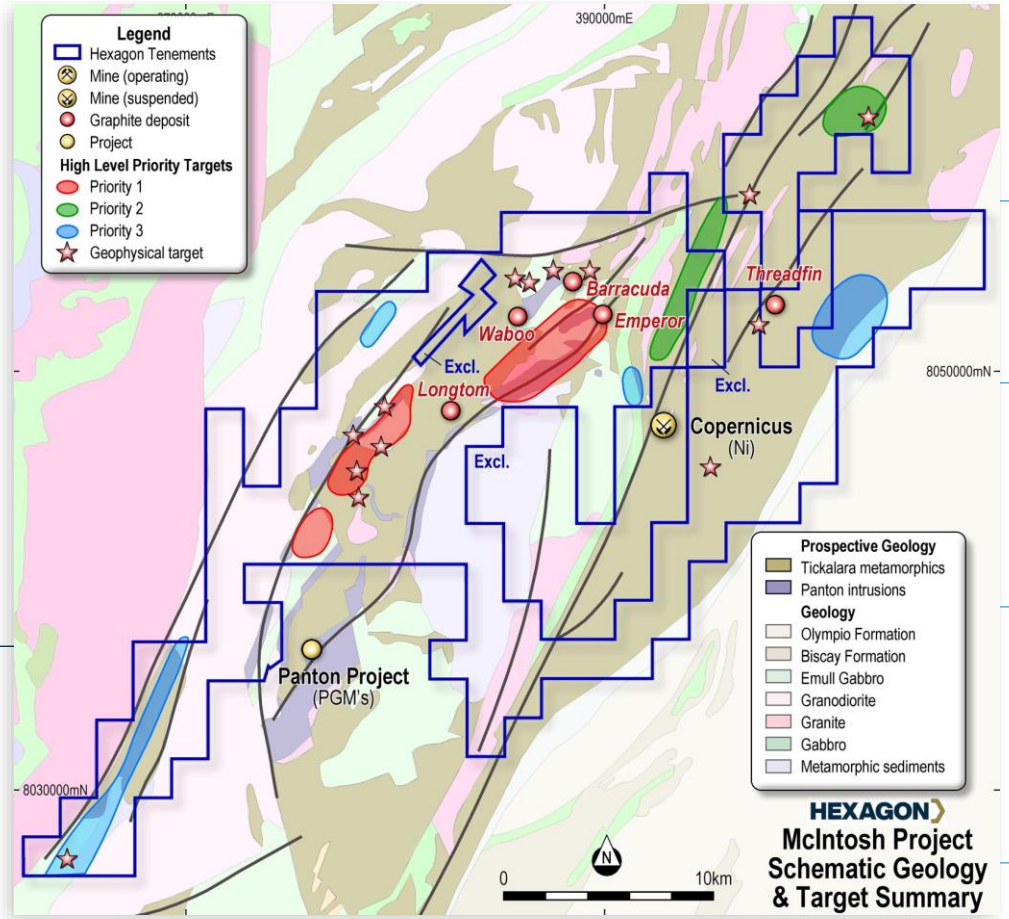
Pedirka Blue Hydrogen Project

Appendix 2 - Other Projects

A2

Hexagon's McIntosh Project

Highly prospective nickel and PGE targets with existing graphite resources



15-year hiatus of Ni exploration creates opportunity to utilise new exploration technology such as enhanced geophysics and new deposit models to make new Ni and PGE discoveries

Significant consolidate land package comprising 17 Exploration Tenements 542sqkm

Similar geology that hosts the Savanah Nickel Mine* to the North, the Copernicus Nickel – Copper deposit* and Panton Sill PGE deposit to the south, recently sold for A$12 million**

Geological mapping including high priority targets due to commence Q2 of 2021 (end of Wet Season). Potential ground geophysical surveys and drilling testing to be undertaken in Q3 2021 subject to review findings

*owned by Panoramic Resources Ltd ASX (PAN)
**See Panoramic Resources Ltd ASX (PAN) ASX Announcement 7 December 2020

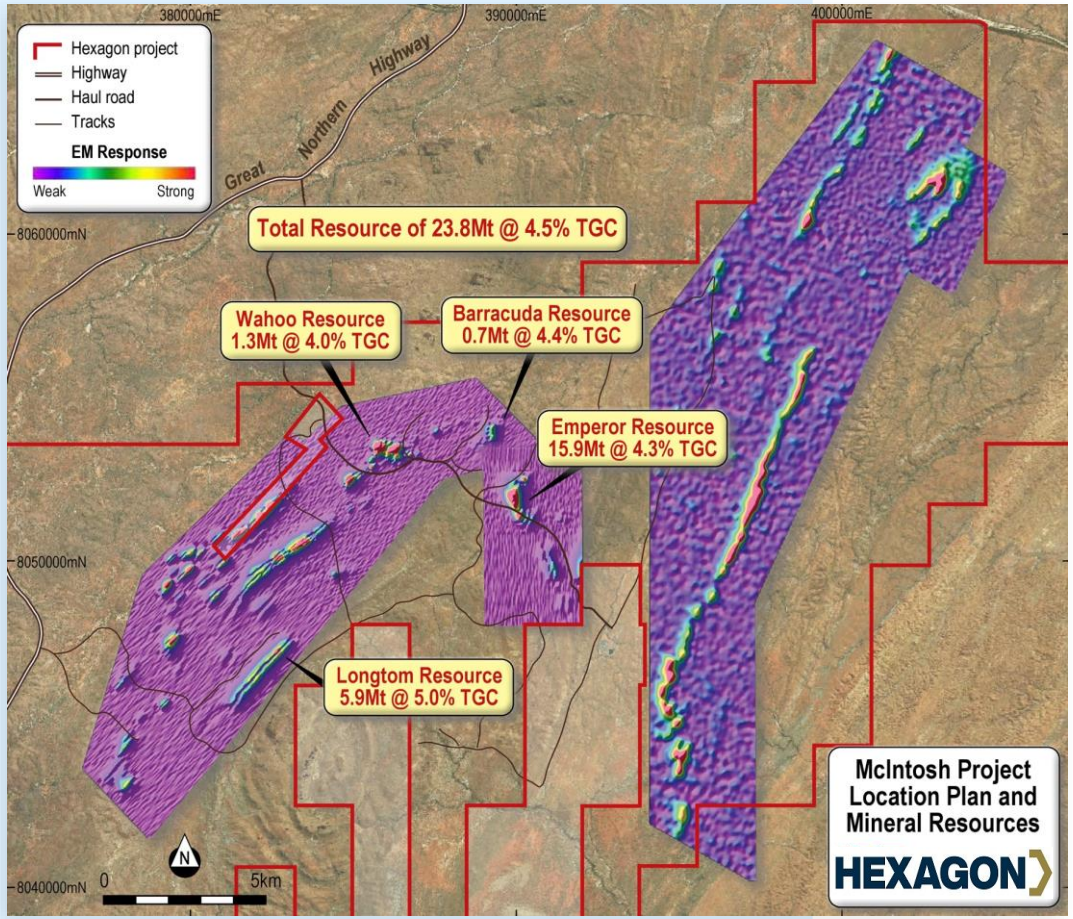
Hexagon's McIntosh Project

Combined Graphite Resources 23.8 Million tonnes grading 4.5% TGC

McIntosh Flake Graphite Project Mineral Resource as at March 2019 reported by deposit and above a 3% TGC cut-off grade

DEPOSIT	JORC CLASSIFICATION	TONNES (MT)	TGC %	CONTAINED GRAPHITE (KT)
Emperor	Indicated	12.1	4.28	518
	Inferred	3.8	4.35	165
	Total	15.9	4.30	684
Wahoo	Indicated	1.3	3.97	51
	Inferred	-	-	-
	Total	1.3	3.97	51
Longtom	Indicated	5.1	4.93	253
	Inferred	0.8	5.25	40
	Total	5.9	4.97	293
Barracuda	Indicated	0.7	4.40	32
	Inferred	-	-	-
	Total	0.7	4.40	32
Total	Indicated	19.2	4.44	854
	Inferred	4.6	4.50	206
	Total	23.8	4.45	1,060

Note: Rounding may result in differences in totals for tonnage and grade



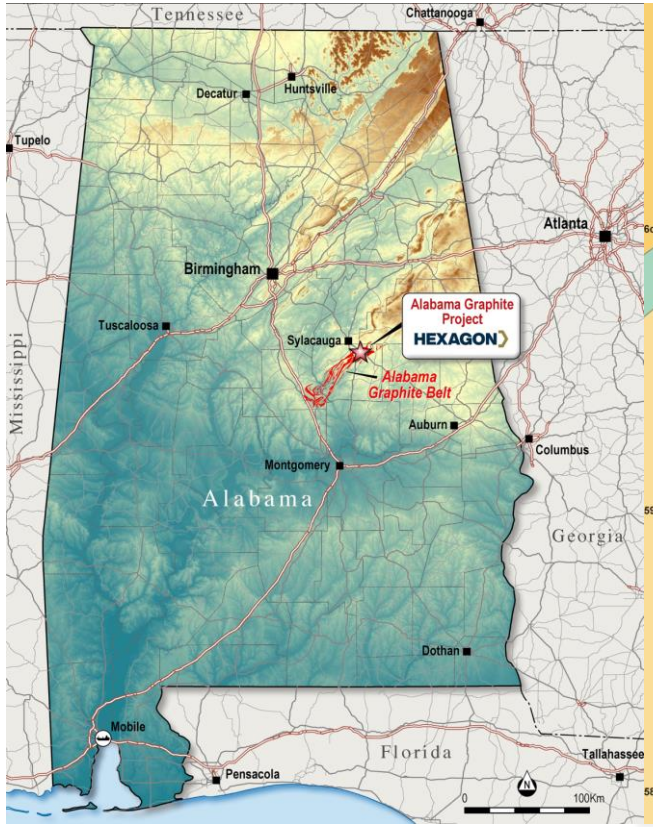
Hexagon's Alabama Project

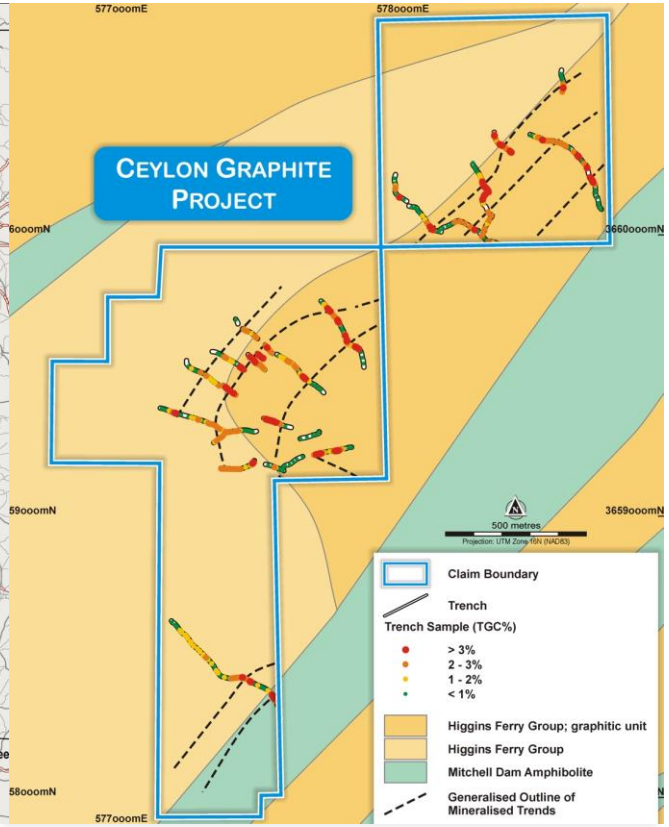
Entry into the North American battery supply chain

- Located in past-producing Alabama Graphite Belt incorporating the historical Ceylon mine
- Exposed graphite mineralisation in historical pit and extensions
- Geological mapping and trenching complete
- Abundant at surface graphite mineralisation identified over a strike length of circa 1km

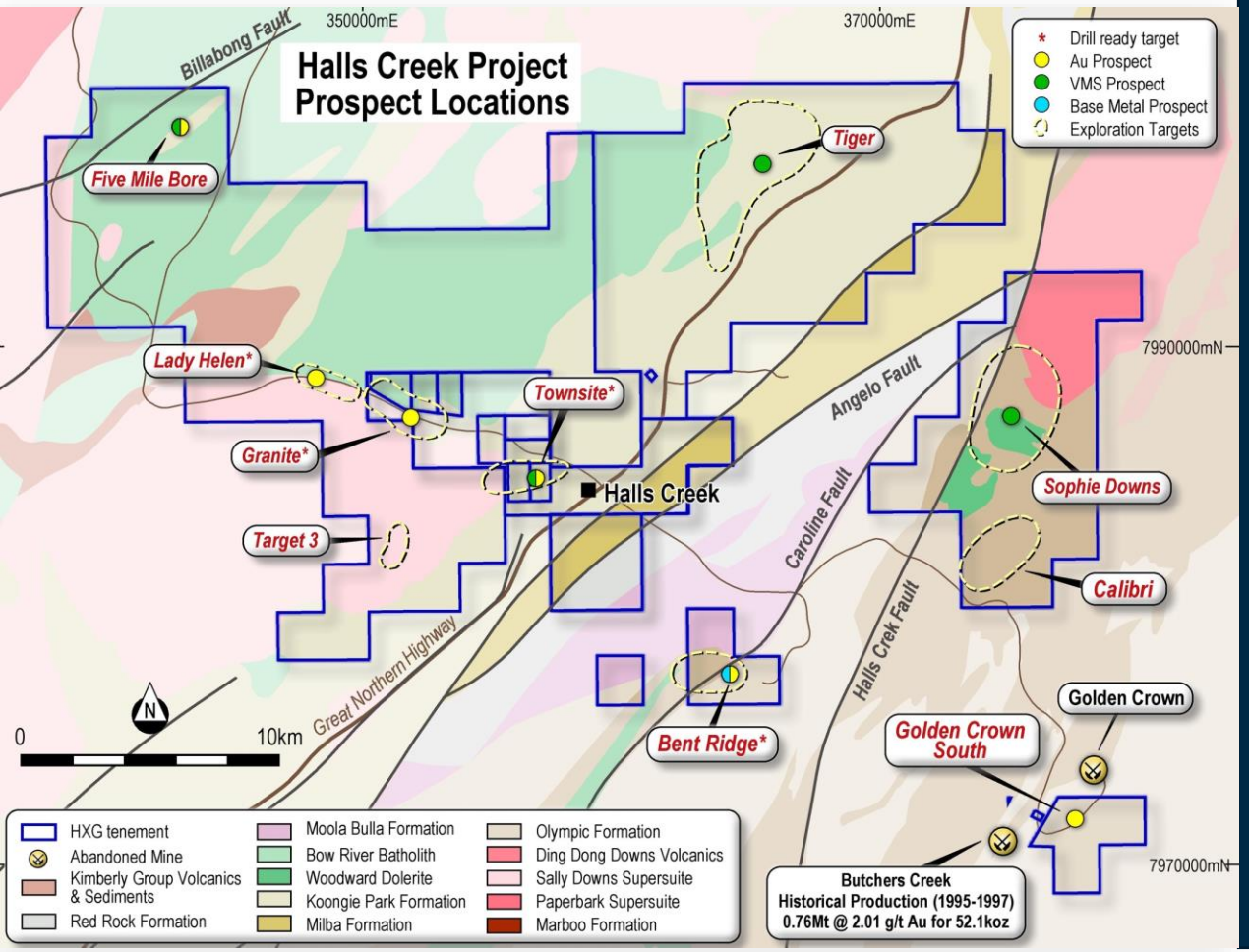
4.93% Graphite content of up to 4.93% TGC

100tn bulk sample for marketing test work





Hexagon's Halls Creek Project



High-grade gold targets and base metal prospects

The Halls Creek Project involves thirteen granted tenements spanning approximately 430sqkm, hosting known gold and base metal surface mineralisation.

HISTORIC SURFACE SAMPLING INCLUDES:

Lady Helen	Townsite	Granite	Bent Ridge
56g/t Au from trench sample and 36.5 g/t Au from rock chip sample	26.1g/t Au	11.5 g/t Au	1.38 g/t Au

2020 work identified the Golden Crown South prospect with Au in soil anomalies over lengths of 1.4 km. Mapping confirming the prospect is associated with similar fault structures to the nearby historical Golden Crown and Butcher Creek Gold Mine.

2020 results at Bent Ridge defined two target zones of 0.8 km and 2.4 km in strike-length within an overall 3.5km trend of Au anomalies. Coincident arsenic and base metal anomalies.

Hexagon's Halls Creek Project

2021 Exploration Program

First pass drilling planned for Bent Ridge, Townsite, Granite and Golden Crown South prospects (Q3, 2021)

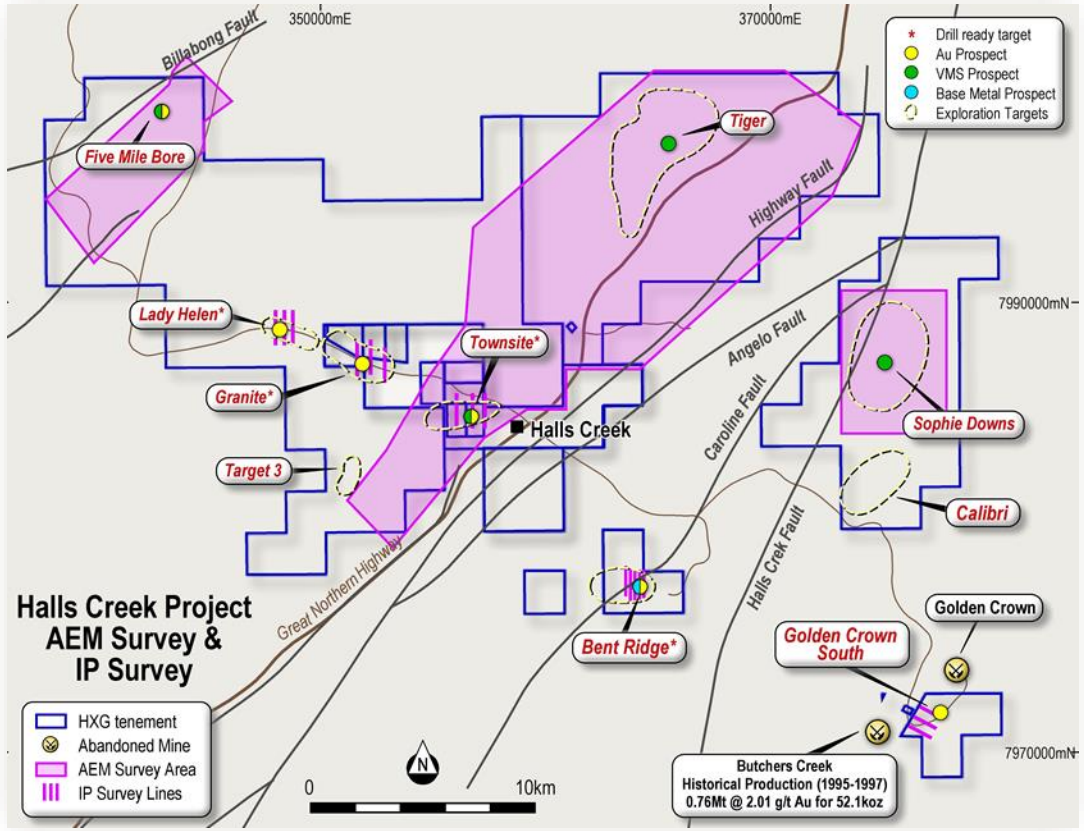
Hexagon successful in its application for co-funding through the WA Government's Exploration Incentive Scheme to drill test the Bent Ridge prospect

External historic Geochemical review currently being undertaken by ex Gold Fields chief geochemist, Dr Heidi Pass from Element Insight Consulting (Q1 2021)

Significant Aero Electromagnetic (AEM) to be conducted targeting VMS- style mineralisation in the Koongie Park Formation (Q2, 2021)

Subject to results of AEM follow up ground EM and geochemical surveys budgeted (Q3, 2021)

3D Inverse Polar (IP) Survey to be conducted at Lady Helen, Townsite, Granite, Golden Crown South and Bent Ridge to aid in refining planned drill program (Q2, 2021)



Further reading

Hydrogen: A renewable energy perspective IRENA, Sep 2019

“Green hydrogen a major opportunity for GCC market” Strategy-me, 15 July 2020

“Cost, logistics offer 'blue hydrogen' market advantages over 'green' alternative” S&P Global, J. Robinson, March 2020

“Green or Blue Hydrogen: cost analysis uncovers which is best for the Hydrogen Economy” Energypost.eu by Schalk Cloete, November 9, 2020