SHARE PURCHASE PLAN (SPP) ROADMAP TO REINVENTION AND PROFITABILITY





FUELLING THE HYDROGEN ECONOMY



HYDROGEN IS PLACED TO BE THE FUEL OF THE FUTURE

Demand for hydrogen is on the increase. A growing global market is realising the benefits of a fuel with **zero emissions**, which can be produced CO_2 free.

For the past year Carbon Energy has focused on adapting the use of its proven **key**seam_® **technology** by utilising existing oil & gas technology.

Increased understanding, research and engineering have uncovered greater capability in the area of hydrogen production and given rise to a shift in the Company's focus.

keyseam_• **technology** is perfectly suited to produce high quality low cost hydrogen. With relatively simple advancements Carbon Energy is set on being one of the key players with $98\%^1$ CO₂ free hydrogen production.

¹ Based on average results from concept studies.







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SHAREHOLDER SUPPORT CRITICAL FOR HYDROGEN PRODUCTION

Carbon Energy needs your support to fund a genuine opportunity to become a major Australian hydrogen producer.

- 1. We need all our shareholders to support the SPP to enable progress on the development of $98\%^1 CO_2$ free hydrogen in South Australia and projects in South Africa.
- 2. Without strong individual shareholder support the unique and proven keyseam_® technology and the 98%¹ CO₂ free hydrogen IP currently under development could be lost from Australia
- 3. South Australia presents great opportunity as there are suitable tenements available and approvals for a 3 month trial of Leigh Creek Energy's Deep Coal Gasification (DCG) project are already in place to start production in Sept/Oct 2018.



¹ Based on average results from concept studies.





Energy carrier Hydrogen
nize rt
nize industry use
feedstock ptured carbon
arbonize heating



HYDROGEN CAN BE USED ACROSS ALL ENERGY SECTORS (CO₂ FREE)



2 For aviation and freight ships

3 Trains and tramways

3 Percent of total methanol, olefin, BTX production using olefins and captured carbon

SOURCE: Hydrogen Council

Source: Hydrogen Council



Bubble size indicates hydrogen potential in 2050 in EJ (1 EJ)

Market share potential in segment





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1 Mass market acceptability defined as sales >1% within segment in priority markets 3 DRI with green H₂, iron reduction in blast furnaces and other low-carbon steel making processes using H2 SOURCE: Hydrogen Council

4 Market share refers to the amount of feedstock that is produced from low-carbon sources

LOW COST 98%¹ CO₂ FREE HYDROGEN PRODUCTION

Low Cost Hydrogen for the transition to the new Hydrogen Fuel Economy

- Carbon Energy has identified a low cost hydrogen production opportunity utilising deep stranded coal for steam reforming.
- Carbon Energy's unique and proven keyseam_® technology can be combined with proven oil & gas technology to produce gas with up to 68.6% H_2 (MOL% dry gas).
- This high quality H₂ rich gas production can then be refined into either streams of pure H_2 and/or ammonia.
- Headline estimated production costs:
 - Hydrogen production cost < A\$1.80/kg (market A\$16-20/kg)
 - Ammonia production cost < A\$190/t (market A\$650-700/t)
- Attractive project economics payback period of 4 years and **IRR of 37%.**
- Resource tenure has been investigated and identified in the Cooper Basin in South Australia.
- Gas exploration production is targeted to commence from 2020.













CARBON ENERGY 98%¹ CO₂ FREE H₂ PROCESS **H**₂**O Steam** 9 **key**Seam® Deep Stranded Coal

¹ Based on average results from concept studies.



LOW COST 98%¹ CO₂ FREE HYDROGEN PRODUCTION

Deep Coal Hydrogen Production (Coal Steam reforming)

Low cost 98%¹ CO₂ Free Hydrogen Production

- Lower production cost than Methane Steam Reforming
- Production cost of < \$1.80/kg (market rate of \$A16-20/kg)
- Cost effective production prior to green hydrogen scaling up
- Utilisation of stranded uneconomic deep coal resource
- Readily transported in the form of ammonia
- CO₂ production is planned to be utilised for Enhanced Oil Recovery (EOR)

Cooper Basin deep coal resource

- Hydrogen production of up to 20 MT H_2 pa for over 50 years South Australia is positioned to be a global leader in H₂ production,
- Carbon Energy plans to provide cash flow and infrastructure for the scaling up of Green Hydrogen Production at the same location

Carbon Energy's keyseam technology can produce low cost H₂

¹ Based on average results from concept studies.





WHY COOPER BASIN DEEP COAL?

- South Australia's regulatory environment provides support for in-situ coal gasification and energy innovation
- Identified available low cost, stranded deep coal resource
 - Resource lease cost equates to < \$0.01/GJ
 - VM3 seam is 1500-1800m deep
 - VU Upper seam is 1800-2000m deep
 - Suitable deep coal resource of over 25,000 MT coal
 - Access to 780 MT coal identified

CO₂ sequestration into existing reservoirs

- Cooper Basin is ideal for CO₂ sequestration utilising existing depleted deep oil & gas reservoirs
- Deep coal seams present future storage for CO₂ sequestration
- Native Title framework in place with other operators in the Cooper Basin









HYDROGEN PRODUCTION PLANT CONCEPT STUDY



LOW COST 98%¹ CO₂ FREE HYDROGEN PRODUCTION

	2018 Completed ✓ Cooper Basin geological ass keyseam _® panel CAPEX est ✓ keyseam _® panel gas productor ✓ Hydrogen Production Facility
	Q4 2018 Capital raising for Hydrogen P • To fund Hydrogen Project F • Capital Raising via SPP and
20	Q1 2019 Acquisition of Cooper Basin PEL
Project	 2019 Exploration drilling Q2-Q3 2019 Exploration production testing 2019 PL approval for hydrogen product Hydrogen project FID 2020 Commercial hydrogen production
	2030 Full scale commercial produ

¹ Based on average results from concept studies.

Study completed July 2018 essment by Carbon Energy imatiion for 1600-1800m deep coal tion simulation by Carbon Energy Concept Study by thyssenkrupp

roduction Project Q4 2018 EED Study starting Q4 2018 d other funding options

n Q1 2019

20 tion 2020

2022

iction of green H₂





LOW COST 98%¹ CO₂ FREE HYDROGEN PRODUCTION - SUMMARY

Hydrogen Production Group Pty Ltd

- Wholly owned subsidiary of Carbon Energy Ltd
- Will own IP for $keyseam_{\mathbb{R}}$ technology and all patents for Australia

Carbon Energy's keyseam_® technology

- Unique IP and technology to produce high hydrogen content gas at typically 58-68.6% (MOL% dry gas)
- Patents in place for Australia

Hydrogen production project in Cooper Basin, **South Australia**

- Access to extremely low cost coal
- 98%¹ of CO₂ produced during coal steam reforming can be captured and sequestrated into existing oil & gas reservoirs for Enhanced Oil Production resulting in being virtually CO₂ free
- Native Title framework in place with other operators in the **Cooper Basin**

Attractive economics

- Gas production cost \$0.60-\$1.00/GJ
- Hydrogen production cost of < \$1.80/kg

Carbon Energy's keyseam_® technology has been demonstrated to be Environmentally responsible



¹ Based on average results from concept studies.





BRYAN O'DONNELL MANAGING DIRECTOR & CEO - CARBON ENERGY +61 7 3156 7712 bodonnell@carbonenergy.com.au

KEY CONTACT





QUESTIONS











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Carbon Energy presently does not have sufficient funds to undertake activities beyond the activities necessary to initiate the proposed project. The Company will require significant additional funding (beyond its current financial resources including the funds raised under the SPP) to progress the proposed project including acquiring tenure and approvals, undertaking exploration drilling and exploration production testing, obtaining production licence approvals, undertaking hydrogen production financial investment decisions and ultimately commercialising hydrogen production.

As Carbon Energy has not completed any studies beyond a initial concept studies, assessments and simulations, there can be no assurances that the proposed project will successfully demonstrate that hydrogen production using Carbon Energy's **key**seam_® technology is commercially viable even if the proposed project is fully funded, tenure and all approvals are obtained, and the technology is successfully refined, and implemented. Please note that, in providing this presentation, Carbon Energy has not considered the objectives, financial position or needs of the recipient. The recipient should obtain and rely on its own professional advice from its tax, legal, accounting and other professional advisers in respect of the addressee's objectives, financial position or needs.

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