



# Sparc Ultra-Green Hydrogen

November 2021

ASX: SPN

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Transformational Technology for Global Industries

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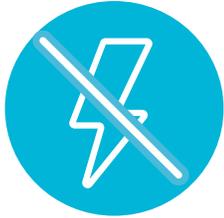
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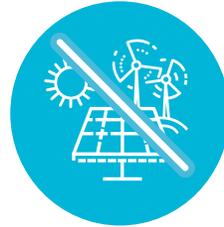
# Sparc Ultra-Green Hydrogen



*Next Generation technology to transform global hydrogen production*

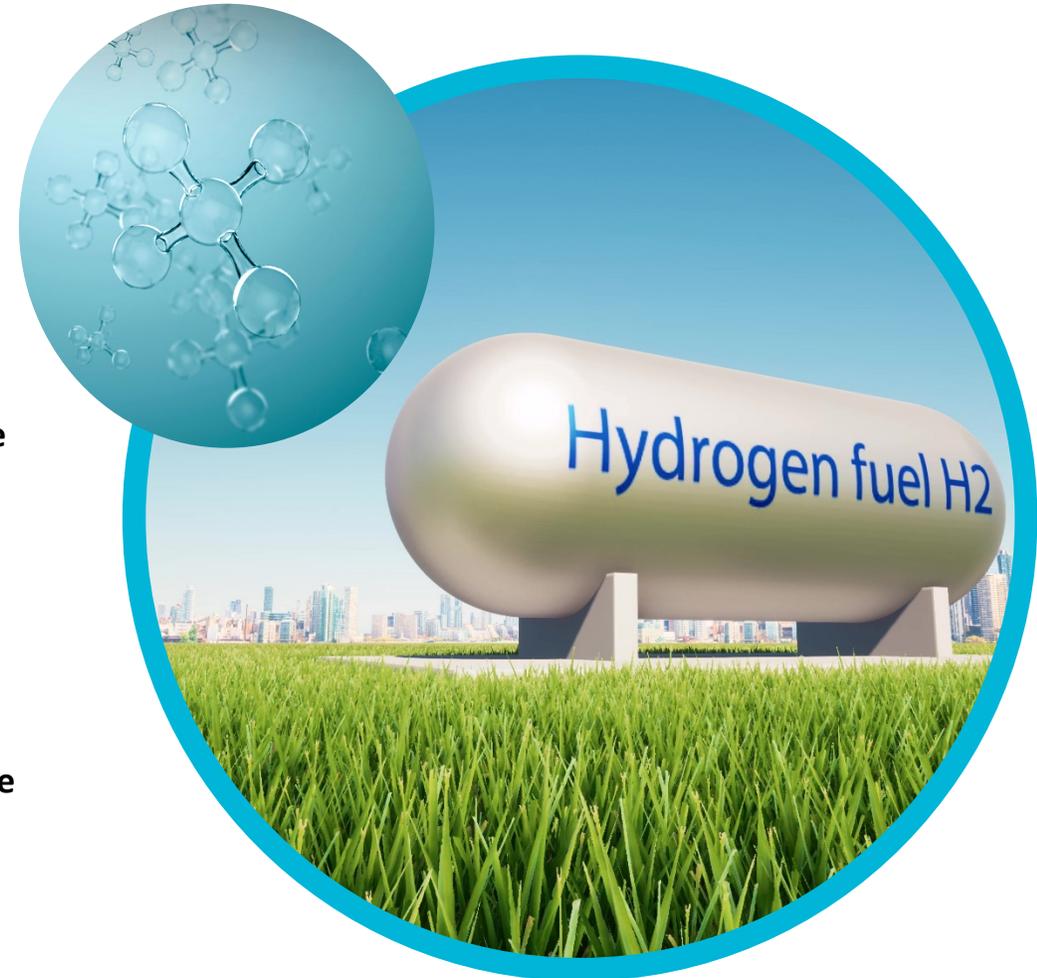


**No  
Electrolysis  
Required**



**No Wind or  
Solar Farms  
Required**

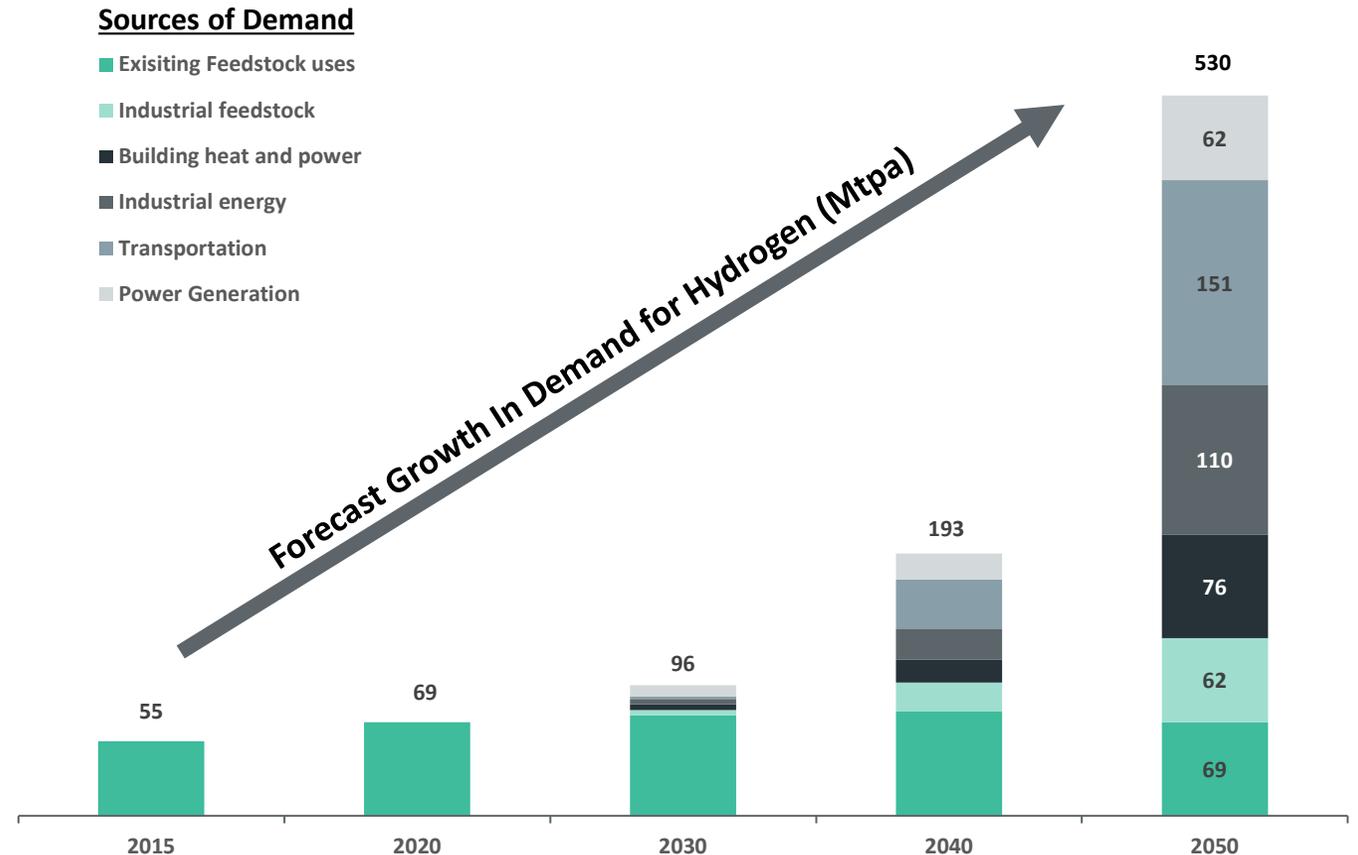
- ▶ **Globally Disruptive, Ultra-Green Hydrogen technology developed by University of Adelaide and Flinders University.**
- ▶ **Ultra-Green Hydrogen produced directly from sunlight and water**
  - ▶ **Photocatalytic water splitting coupled with solar radiation used to produce hydrogen**
  - ▶ **Predicted very low CAPEX and OPEX**
- ▶ **No electrolysis required**
  - ▶ **Not producing electricity to split water to produce Hydrogen**
  - ▶ **Overcomes key obstacle of green hydrogen production**
  - ▶ **Allows for massive energy efficiencies and ultra cost competitive advantage**
- ▶ **Potential low-cost alternative to current industry practice of steam methane reforming with vastly lower carbon footprint**
- ▶ **Research ongoing to incorporate graphene into the photocatalyst**



# Hydrogen Opportunity

- ▶ Demand for hydrogen expected to grow 5-fold by 2050<sup>1</sup> as the world transitions to low and zero carbon emissions
  - ▶ Clean hydrogen has the potential to aid the decarbonization of c.45% of global anthropogenic emissions
- ▶ The hydrogen opportunity lies in decarbonising Australia by replacing fossil fuels with hydrogen alternatives using existing infrastructure
- ▶ Investment required to reach government production targets and spending projections across the value chain adds up to more than US\$300 billion through 2030<sup>2</sup>
- ▶ Demand for hydrogen from existing ‘hard to de-carbonize’ sectors including industrial, heating, transportation and power generation industries is expected to be at the forefront of reducing these emissions
- ▶ Sparc’s proprietary, low-cost Ultra-Green Hydrogen will be ideally suited to capture this rapid hydrogen demand growth

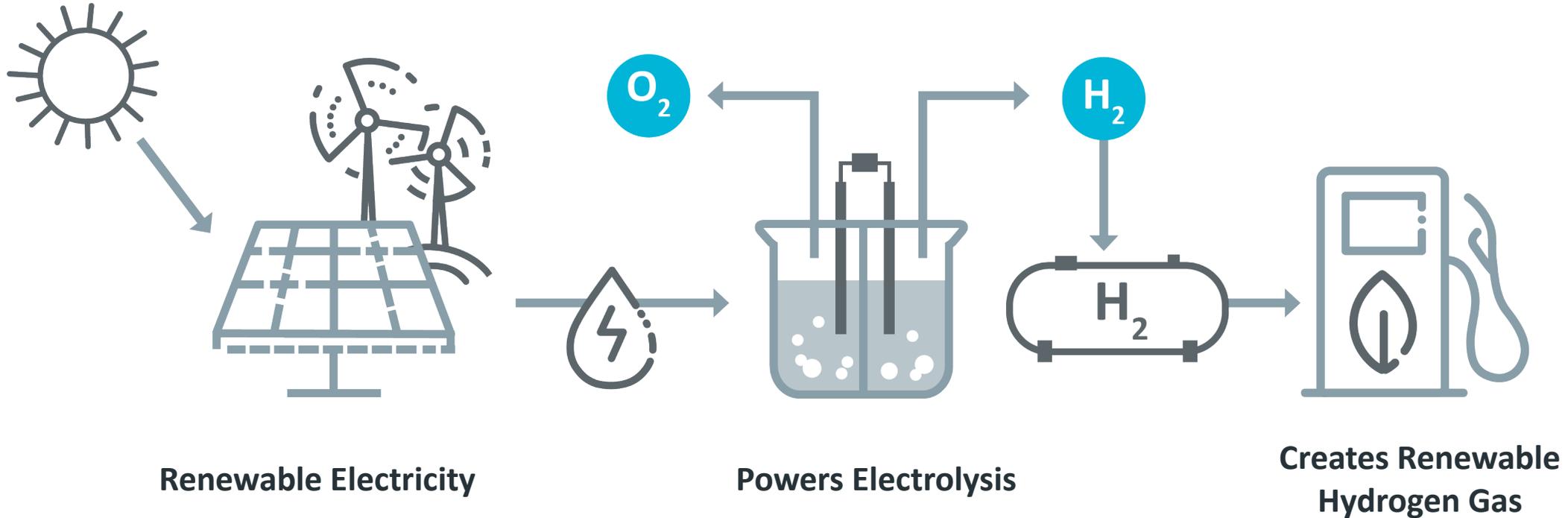
## Global Hydrogen Demand



<sup>1</sup> Hydrogen for Australia’s future Prepared by the Australian Hydrogen Strategy Group, US Department of Energy research

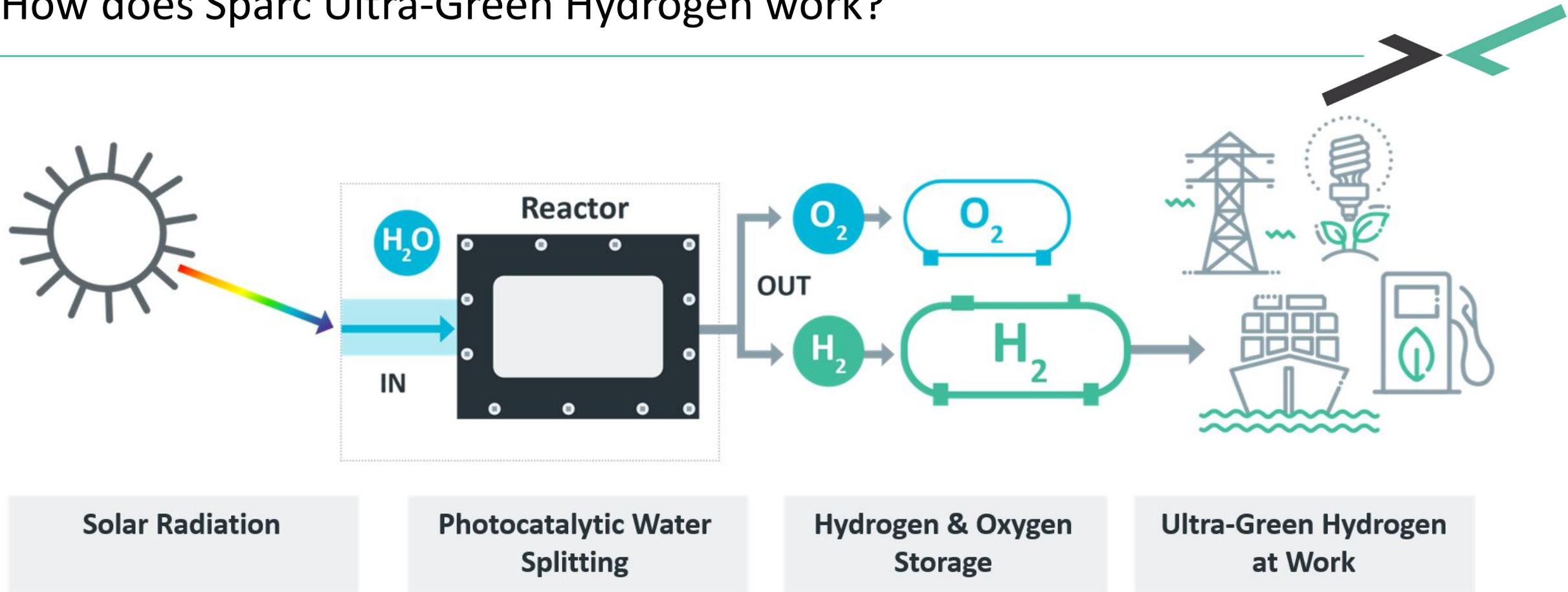
<sup>2</sup> Hydrogen Council – Hydrogen Insights 2021 Report (<https://hydrogencouncil.com/wp-content/uploads/2021/02/Hydrogen-Insights-2021-Report.pdf>)

# What is Conventional Green Hydrogen Energy?



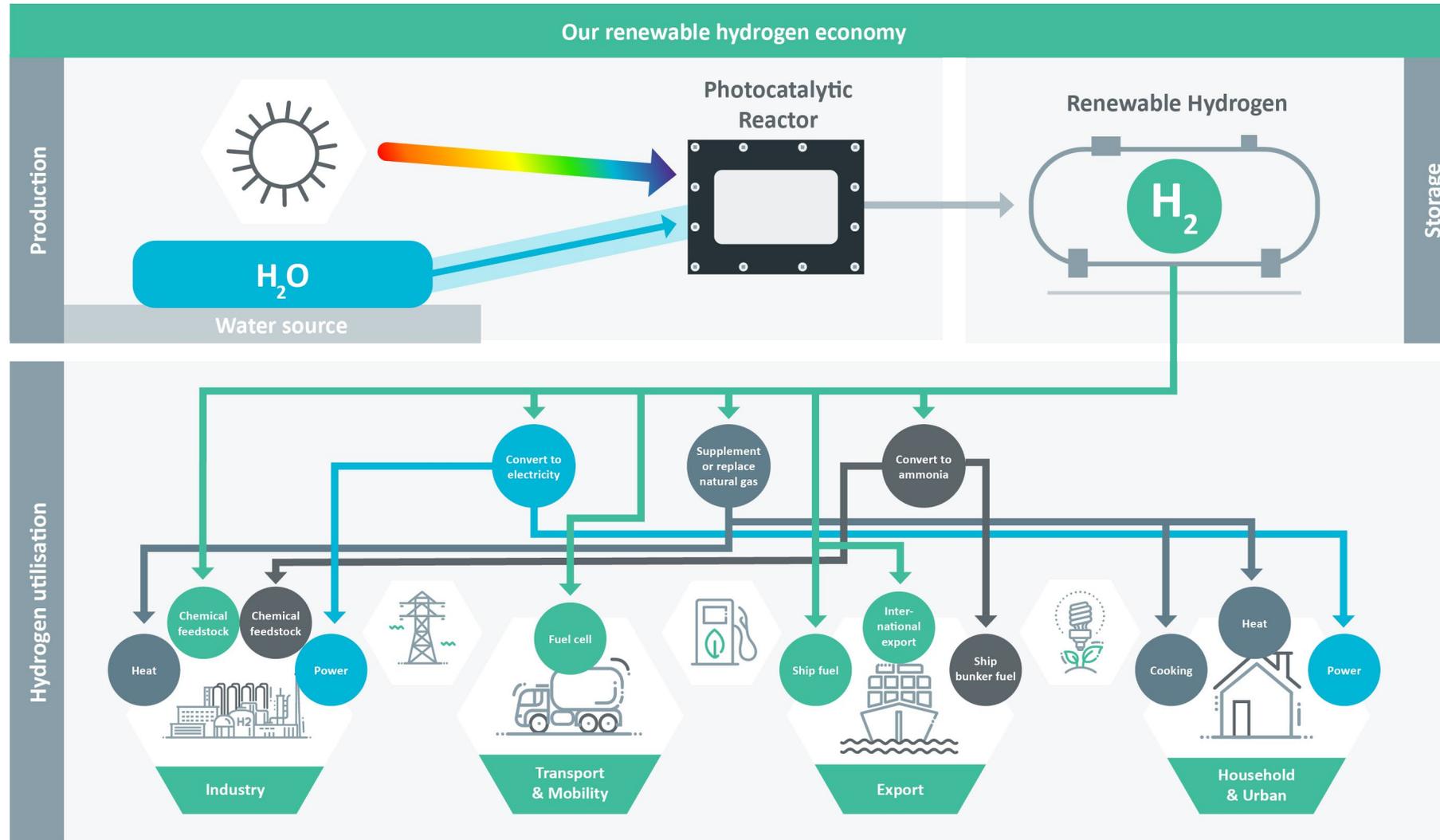
Conventional green hydrogen technologies use electricity derived from solar and/or wind farms to produce hydrogen using an electrolyser

# How does Sparc Ultra-Green Hydrogen work?



Sparc Ultra-Green Hydrogen does not use solar and/or wind farms, nor electrolysis as with conventional green hydrogen – only photocatalyst and solar radiation.

# Renewable Hydrogen Economy



# Sparc Ultra-Green Hydrogen Benefits



Lower CAPEX-  
wind and/or  
solar farms not  
required



Lower OPEX –  
no electricity  
required to  
produce  
Hydrogen



Can be adopted  
on a smaller scale  
without wind  
and/or solar  
farms – smaller  
land footprint



Can be utilised  
directly on location  
e.g. mine sites,  
industrial locations  
and domestically

# Sparc Hydrogen Project – Key Terms

- ▶ UoA grants Sparc Hydrogen JV an exclusive commercial licence to the relevant UoA IP and Improvements

The material terms of the proposed Joint Venture are summarised below:

- ▶ The equity structure of the Joint Venture will see University of Adelaide retain 28% of the Joint Venture, with Sparc holding 72%.
- ▶ Sparc to issue the University of Adelaide 3,000,000 SPN New Shares, plus expenditure of \$4,750,000 over 4.5 years towards the Joint Venture.
- ▶ Total cash contributions of \$4,750,000 to be made throughout the period of the project (4.5 years), comprising:
  - ▶ Stage 1 commitment over the first 2.5 years of \$2,000,000 (“Stage 1”); and
  - ▶ Stage 2 over 2.0 years of \$2,500,000 (“Stage 2”).
  - ▶ Additionally, \$250,000 to be paid to University of Adelaide for operations set-up and a scholarship.





## DR STEPHEN RODDA

Executive Director, , Innovation & Commercial  
University of Adelaide



THE UNIVERSITY  
*of* ADELAIDE

“This joint venture is a perfect example of the University of Adelaide’s internationally regarded research being brought to a commercial outcome, which we hope will have benefits for industry and the community. We are proud to be the leading university involved in this venture, applying our research and innovation in responding to one of the great challenges of our times: the development of green energy solutions for our planet.”

# Sparc Technologies - Snapshot



Corporate overview	
ASX Code	SPN
Market cap (at \$1.32 per share)	\$103.5m
Shares on issue	78.4m
Cash (as at 30 Sept 21)	\$2.19m
Debt (as at 30 Sept 21)	\$0.0m
EV	\$101.3m

Major shareholders (pre placement)	% held
Adelaide University	6.6%
Hoperidge Enterprises	5.4%
Director's and Management	17.0%
Top 20 Shareholders	42.8%

## SPARC TECHNOLOGIES BOARD



**Stephen Hunt**  
Executive Chairman



**Mike Bartels**  
Managing Director



**Tom Spurling**  
Non-Exec Director



**Daniel Eddington**  
Non-Exec Director

## EXECUTIVE MANAGEMENT TEAM



**Peter Wilson**  
General Manager,  
Engineering



**Andrew Smith**  
Technical Manager –  
Industrial Materials



**Ben Yerbury**  
Technical Lead –  
Bio-Medical & Health



**Jake Parker**  
Chief Technology  
Officer

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