



# Transformational Technologies for Global Industries

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May 2025

ASX: SPN

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# Innovating For A Sustainable Future



Sparc Technologies is an ASX listed (SPN) developer of two transformative technologies



## Leading the Next-Generation Green Hydrogen Revolution

- **Disruptive Technology:** Sparc's photocatalysis technology uses only sunlight and water to produce green hydrogen — without electrolyzers.
- **World-Class Partners:** Sparc is partnered with **Fortescue** and the **University of Adelaide** within the Sparc Hydrogen JV.
- **Scalable and Low-Cost:** Solar-driven process requires less energy and infrastructure and offers significant potential cost advantages.
- **Key Catalysts:** First-of-its-kind pilot plant under construction in Roseworthy, South Australia, with commissioning expected in mid-2025.



## Tackling the Global Corrosion Challenge using Graphene

- **Global Market Opportunity:** Additive for the **US\$43 billion** anti-corrosion coatings market, for extending steel asset longevity.
- **Real-world Trials:** With the **SA Govt, BHP Mitsubishi, Santos** and **29Metals** to validate **ecosparc®** enhanced coatings on infrastructure.
- **Key Benefits:** 46x ROI for asset owners via extended time between maintenance events plus CO<sub>2</sub> savings.
- **Key Catalysts:** Positive results from **ecosparc®** field trials reported in April 2025, with further trial outcomes expected in H1 2025, positioning the technology for commercialization in FY26.

# Corporate Snapshot



110m

Shares on issue

\$17m

Market Cap\*

\$0.16

Share price\*

\$2.7m

Cash\*\*

~42%

Top 20 s/holders

6.0%

University of Adelaide

## Board & Management



**Nick O'Loughlin**  
Managing Director



**Simon Kidston**  
Non-Exec Chair



**Daniel Eddington**  
Non-Exec Director



**Dr Denis Wright**  
GM Graphene



**Kristen Kubank**  
CFO



**Paul Saccanello**  
Business Dvmt

## Key Partners



\* As at 7 May 2025

\*\* As at 7 May 2025 following settlement of T1 Placement Shares referred to in ASX announcement on 1 May 2025 [Link](#)

# Share Purchase Plan



- ▶ On 1 May 2025 Sparc announced a Placement and Share Purchase Plan (SPP) to raise up to A\$2.7 million (before costs) from the issue of up to 18m new Sparc shares at **A\$0.15 per new share** (Offer Price).
  - ▶ **Placement:** A\$2.2 million placement to professional and sophisticated investors completed under Sparc’s existing LR 7.1 and 7.1A capacity<sup>1</sup>.
  - ▶ **Share Purchase Plan<sup>1</sup>:** Non-underwritten SPP seeking to raise up to A\$500K. Eligible shareholders are offered the opportunity to subscribe for **up to A\$30,000** worth of Sparc shares at the Offer Price.
- ▶ Sparc reserves the right to accept oversubscriptions under the SPP.

Event	Time (AEST) / Dates
Trading halt and capital raise launch	Tuesday 29 April 2025
SPP Record Date	7.00pm Wednesday 30 April 2025
Announce completion of placement and trading halt lifted	Thursday 01 May 2025
Dispatch of SPP Offer Booklet and SPP opening date	Thursday 08 May 2025
SPP closing date	5:00pm Thursday 29 May 2025
Announcement of SPP results and issue of SPP Shares	Thursday 05 June 2025

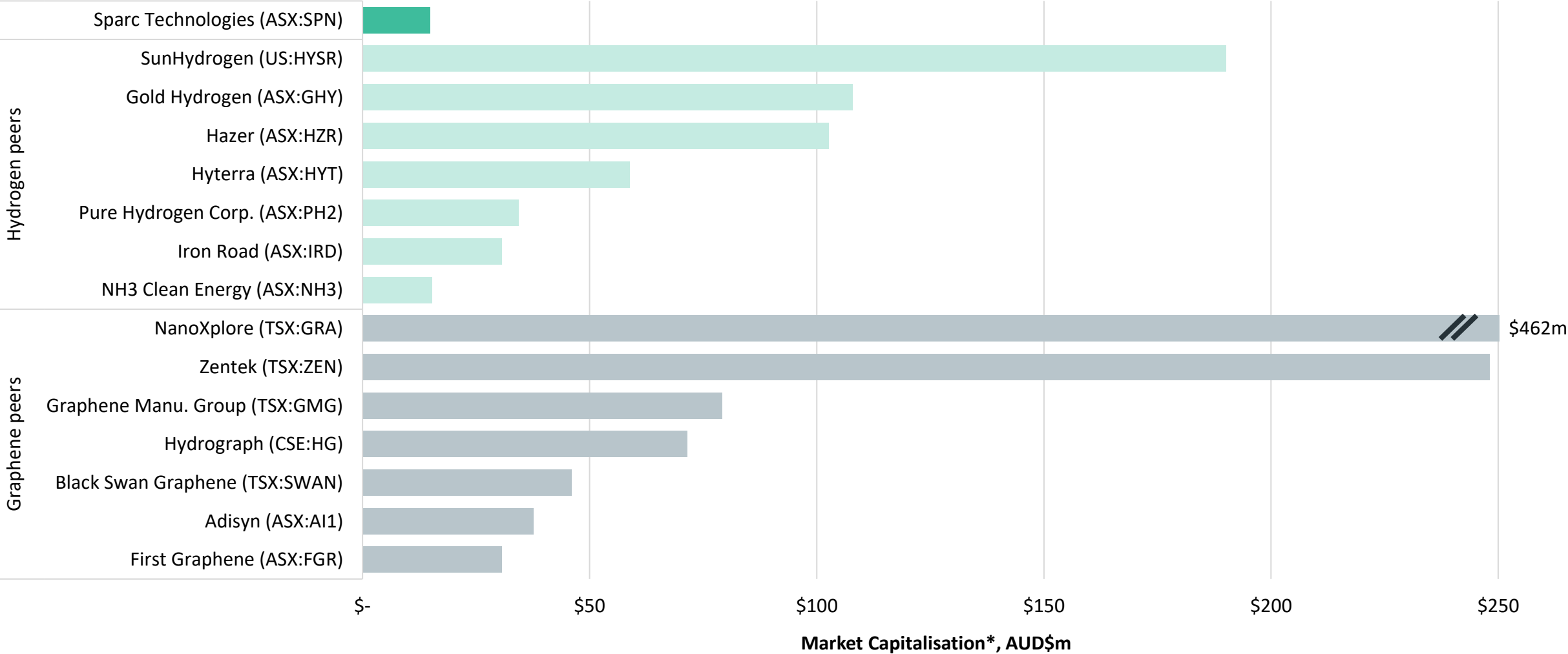
Note: The above timetable is indicative only and subject to change.

**Proceeds from the capital raise are intended to be used to:**

- Advance field trials and commercialisation activities for **ecosparc®** following positive initial results;
  - Support Sparc’s investment in Sparc Hydrogen;
  - Continue R&D and patent-related activities; and
  - General working capital.
- Sparc Hydrogen is fully funded** through to mid-2026, following Stage 2 investment proceeds from Sparc and Fortescue received in Q1 2025.

1. Includes the subscription of A\$60,000 worth of new Sparc shares in the Placement by Sparc’s Directors, which will be issued subject to shareholder approval under ASX Listing Rule 10.11.  
2. Further information regarding the SPP is provided in the SPP booklet dispatched to eligible shareholders and released to ASX on 8 May 2025.

# Low Market Capitalisation Versus Comparables



\* As at 6 May 2025



**SPARC**  
HYDROGEN

# Next Generation Green Hydrogen Technology

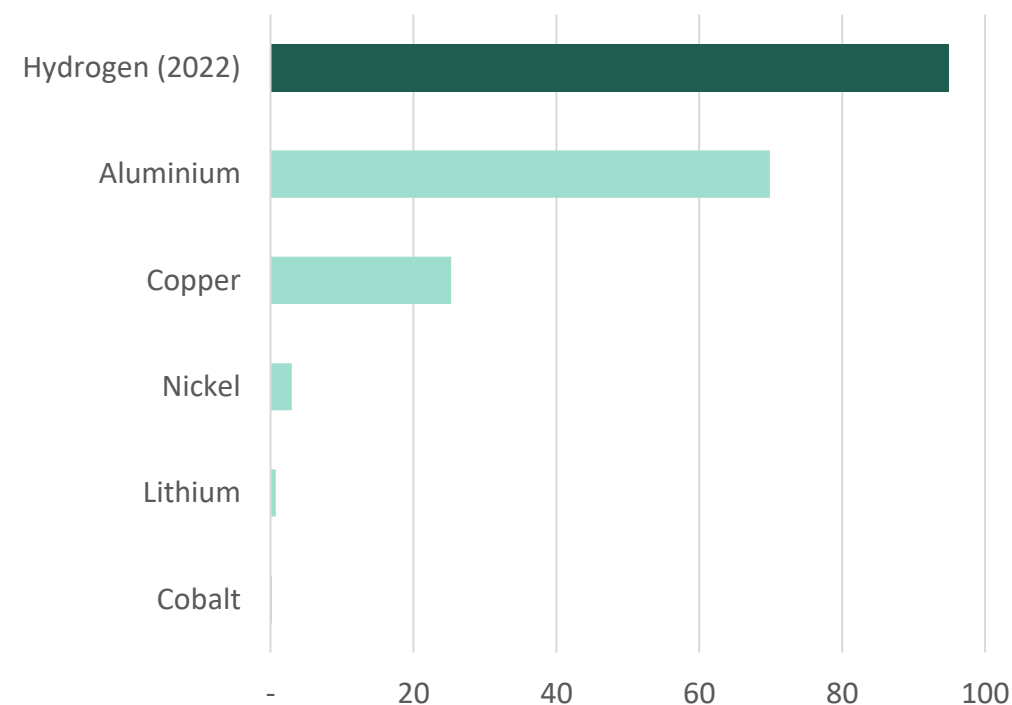


# >US\$200bn Addressable Market



- ▶ **Current Market:** Hydrogen (H<sub>2</sub>) is a **~95Mtpa** existing industry, primarily used in ammonia production for fertilisers, methanol for plastics and to remove sulfur from fuels.
- ▶ **Environmental Impact:** Current hydrogen production generates **over 1Gt of CO<sub>2</sub>** emissions annually, accounting for **2.5% of global emissions**—equivalent to the entire aviation sector. There is an existing need to transition to green hydrogen to decarbonise the current hydrogen industry.
- ▶ **Huge Growth Potential:** Green hydrogen is essential for decarbonising sectors like steelmaking, chemicals, cement, high-temperature heating, aviation, shipping, and heavy road transport, with demand projected to **increase sixfold** by 2050<sup>1</sup>.

## Commodity demand (Mtpa)



Source: Public filings





# Investment in Green Hydrogen Continues...

“Total announced (clean hydrogen) investments through 2030 have increased by approximately 20% – from **USD 570 billion** to **USD 680 billion**.” (May-24)

*“Construction of the **USD-8.4-billion** (EUR 7.85bn) Neom green hydrogen plant in northwestern Saudi Arabia is progressing significantly...” (May-24)*

*“CIP (Copenhagen Infrastructure Partners) subsidiary to build a **\$10bn** hydrogen project in Oaxaca, Mexico by 2028” (Dec-24)*

“Morocco approves six green hydrogen projects with a total investment value of **\$32.8bn...**” (Mar-25)

“Global energy transition investment hit a new record of **\$2.1 trillion** last year, more than doubling since 2020, according to **BloombergNEF**” (Feb-25)

*“**BP** takes final investment decision on a 100MW green hydrogen facility in Lingen, Germany” (Dec-24)*

# ...Despite Challenges For Existing Technology



*Green hydrogen from electrolysis faces major challenges in achieving commercial and technical viability at scale*



## Infrastructure challenge

- HV electricity transmission
  - Social licence issues
- Lengthy development times

## Scale & flexibility challenge

- Large scale 'on-grid' projects
- Solar PV, Wind, Batteries, Electrolysers
  - High capex

## Cost challenge

- **Expensive...**
- Due to high power costs;
- And high electrolyser capex



# The Future Is Photocatalysis



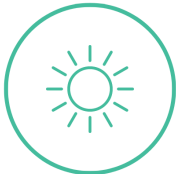
## **Zero-electricity**

Photocatalysis produces  $\text{H}_2$  from  $\text{H}_2\text{O}$  without electricity



## **Low cost**

The simplicity of photocatalysis drives potential for very low costs



## **Solar driven**

Sunlight is the only energy input driving the reaction



## **Scalable**

Utilises a concentrated solar system which is inherently scalable



## **Emission-free**

Water + sunlight = green hydrogen

# Positioned to Deliver: Best-in-Class Partners



Funding for the JV is secured until mid-2026 with potential for additional grants



- ▶ 36% Sparc Hydrogen shareholder<sup>1</sup>
- ▶ JV management and coordination
- ▶ Technology commercialisation expertise



- ▶ 36% Sparc Hydrogen shareholder<sup>1</sup>
- ▶ Global leader in green hydrogen
- ▶ Substantial project development experience

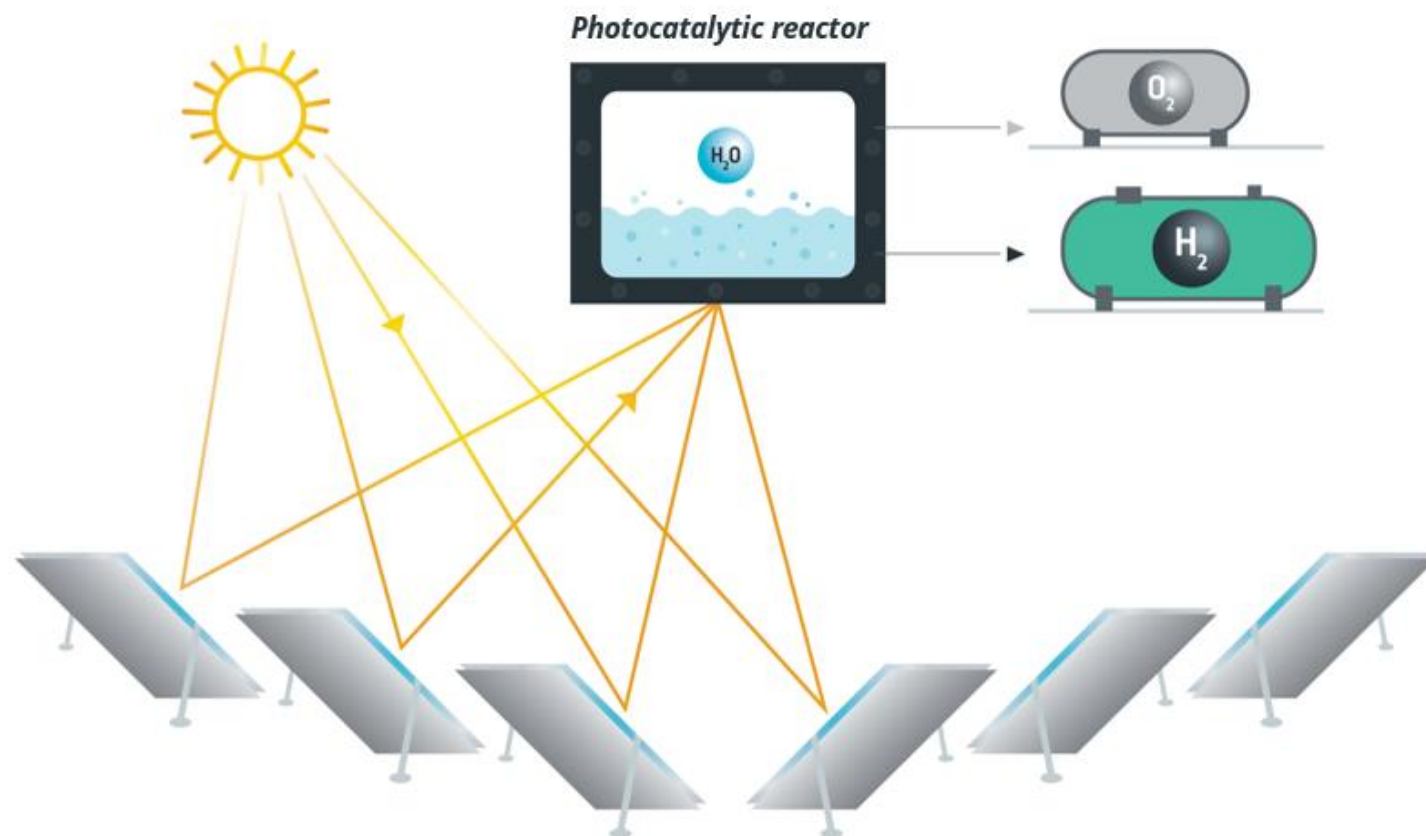


- ▶ 28% Sparc Hydrogen shareholder<sup>1</sup>
- ▶ Developer and contributor of IP<sup>2</sup>
- ▶ Leading R&D work and providing lab facilities

# Unique & Patented Technology



- ▶ Sparc Hydrogen is one of the only companies combining concentrated solar with photocatalytic water splitting (PWS), advantages being:
  - Reduced photocatalyst use.
  - Modular and scalable mirror fields.
  - Increased efficiencies and heat generation.
- ▶ Sparc Hydrogen's reactor is being designed to:
  - Slot into an off-the-shelf linear Fresnel field.
  - Utilise by-product heat for industry use or power generation.
- ▶ First **patent granted** in January 2025 with 17 additional jurisdictions under review.





# Pilot Plant Commissioning Expected Mid-2025



- ▶ Construction of a first-of-its-kind pilot plant utilizing Sparc Hydrogen's concentrated solar based PWS system is underway.
- ▶ The pilot plant will be located at the University of Adelaide's Roseworthy Campus, ~50km north of Adelaide in South Australia.
- ▶ The plant will utilize Sparc Hydrogen's scalable reactor design and will represent a key milestone in derisking the technology.
- ▶ Construction commenced in March 2025 and plant is expected to be commissioned in mid-2025.



Construction activities at the Roseworthy pilot plant during early April 2025

# Modularity Drives Ability To Scale Quickly



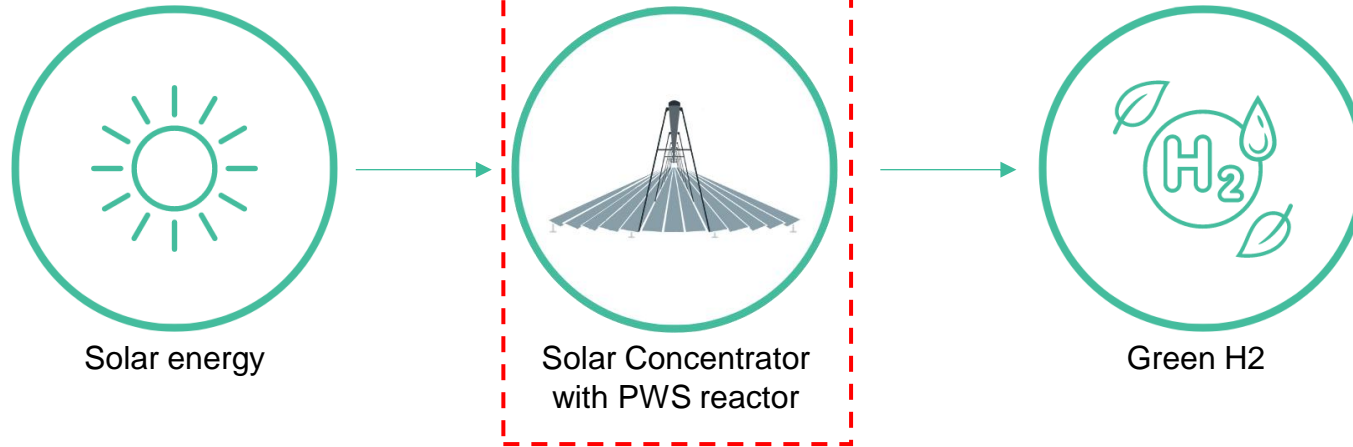
***Commercial scale linear Fresnel field in Spain (28 x ~1km mirror rows) generating ~30MW electricity***



# Simplicity Drives Low-Cost Potential

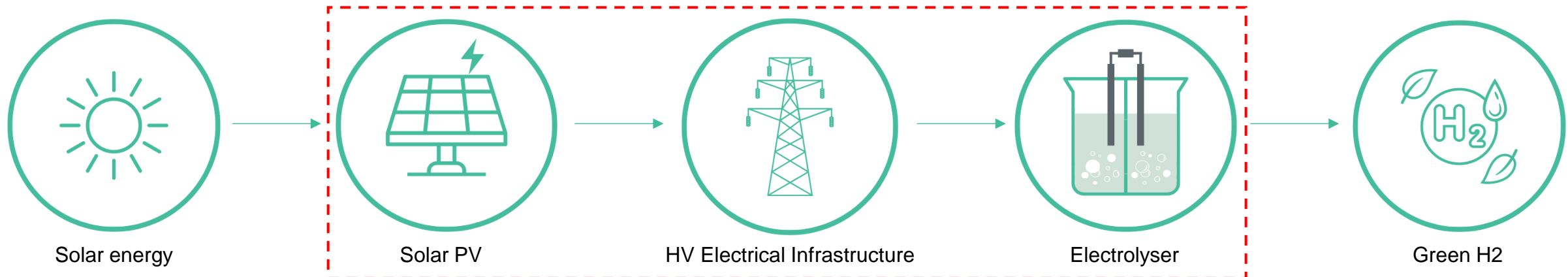


## Photocatalysis



**Low infrastructure  
requirements / capex**

## Electrolysis



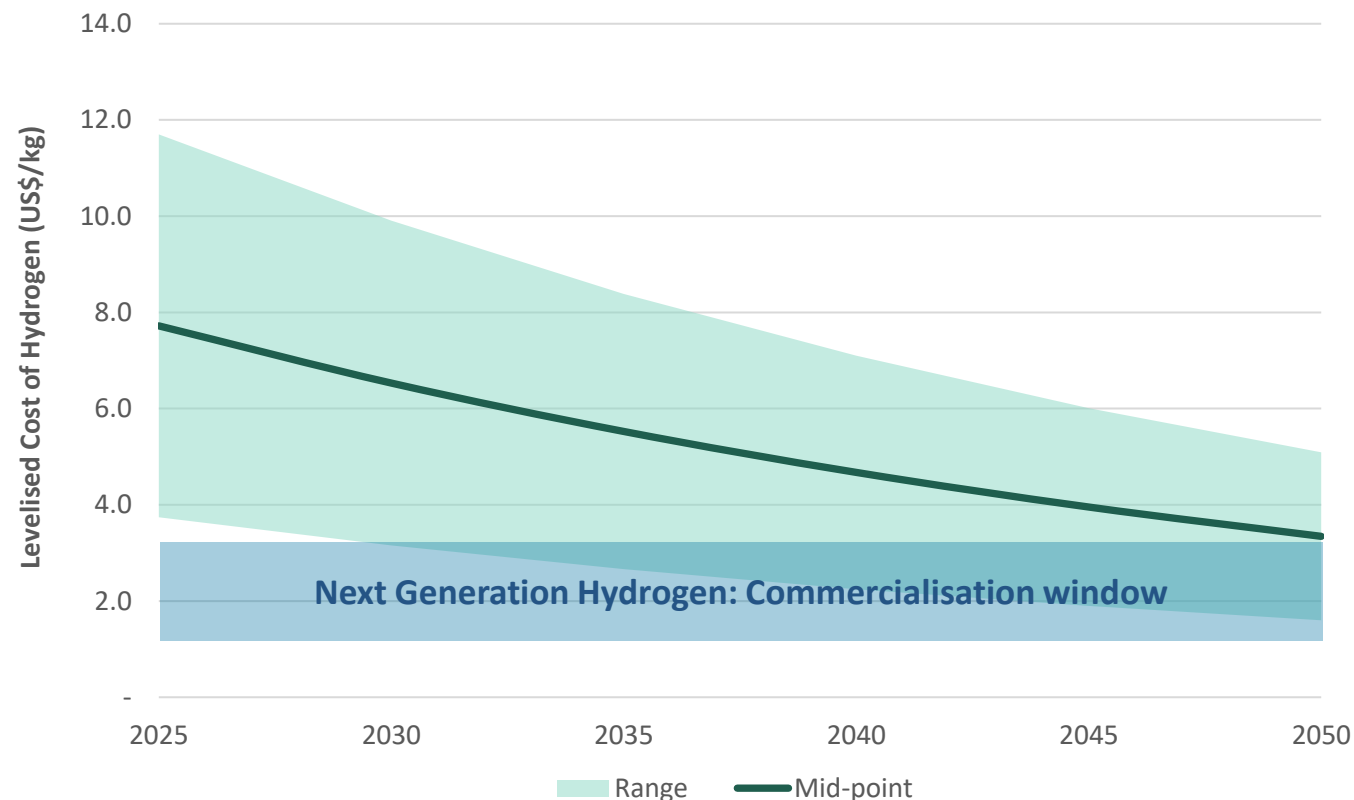


# The Green Hydrogen Race Is On...



- ▶ Conventional green hydrogen (electrolysis) projects will not reach industry and Government cost targets until well into the 2030s, at best.
- ▶ As the costs and limitations of electrolysis projects have become clear, there is an increasing push **towards developing new technologies** which can unlock the substantial opportunity for green hydrogen to decarbonize existing hydrogen use cases and other hard to abate industries.
- ▶ Sparc Hydrogen is in the **right place at the right time** with a substantial commercialisation window providing an opportunity for a next generation **low cost photocatalysis production** technology.

## Green hydrogen production costs using electrolysis<sup>1</sup>



1. Bloomberg New Energy Finance, Green Hydrogen Goes From Hyped to Humbled on Eye-Popping Costs (Dec-24)

# GRAPHENE

Unique Approach to  
a Next Generation  
Super-material

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# The Problem – Corrosion Of Steel



## The Cost and Carbon Problem

- ▶ **~\$6 trillion** direct and indirect costs associated with the impact of corrosion globally per annum<sup>1</sup>
- ▶ Corroded steel replacement accounts for up to **3.4% of global greenhouse gas (GHG) emissions**<sup>1</sup>

## The Business Interruption Problem

Asset shutdowns

Productivity loss

Safety risks

# Protective Coatings Market Opportunity



1. Estimate of the global anti-corrosion coating market by 2029. Sourced from Exactitude Consultancy <https://exactitudeconsultancy.com/reports/3960/anti-corrosion-coatings-market/>  
2. Addressable market is calculated based on Sparc's estimate of the proportion of products in the global anti-corrosion coatings market suited to the ecosparc® product along with Sparc's proposed selling price relative to coating value

# About **ecosparc**®



**What is it?:** **ecosparc**® is a graphene-based additive for protective coatings - Sparc is not a paint company.

**Performance Boost:** Added at ~2% by weight, **ecosparc**® significantly enhances existing protective coatings used on steel assets to combat corrosion.

**Key Benefits:** By extending the time between maintenance cycles, **ecosparc**® delivers substantial cost, emissions, productivity and safety benefits.



**lower maintenance costs<sup>1</sup>**



**reduction in carbon emissions<sup>1</sup>**

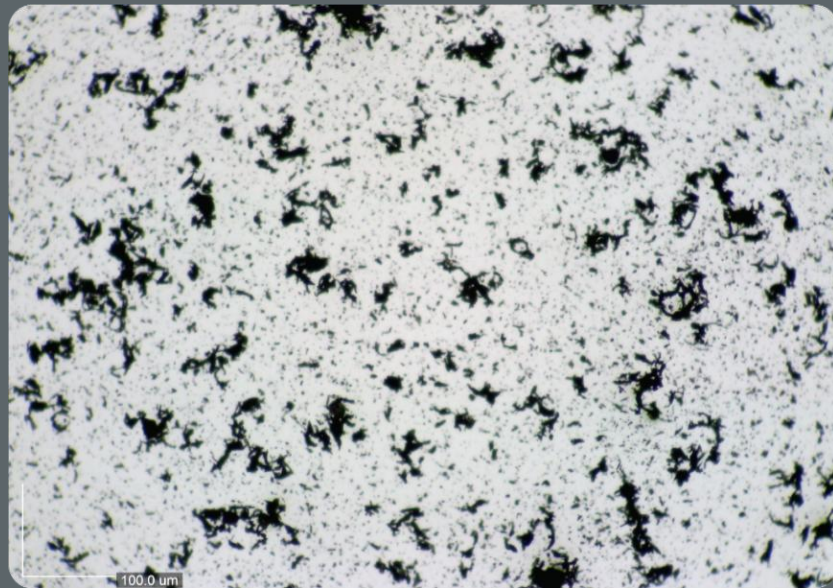


# Overcoming The Graphene Challenge



*Sparc Technologies are world leaders in the **long-term stable dispersion** of graphene to facilitate its effective integration into polymer-based materials.*

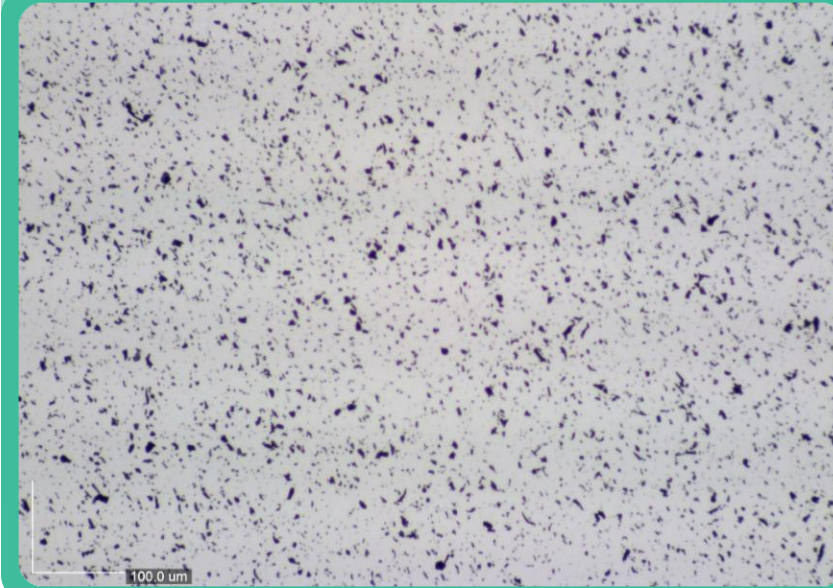
## Re-agglomerated Graphene Post Dispersion



**Dispersion  
Level**

**< 20%**

**ecosparc®**

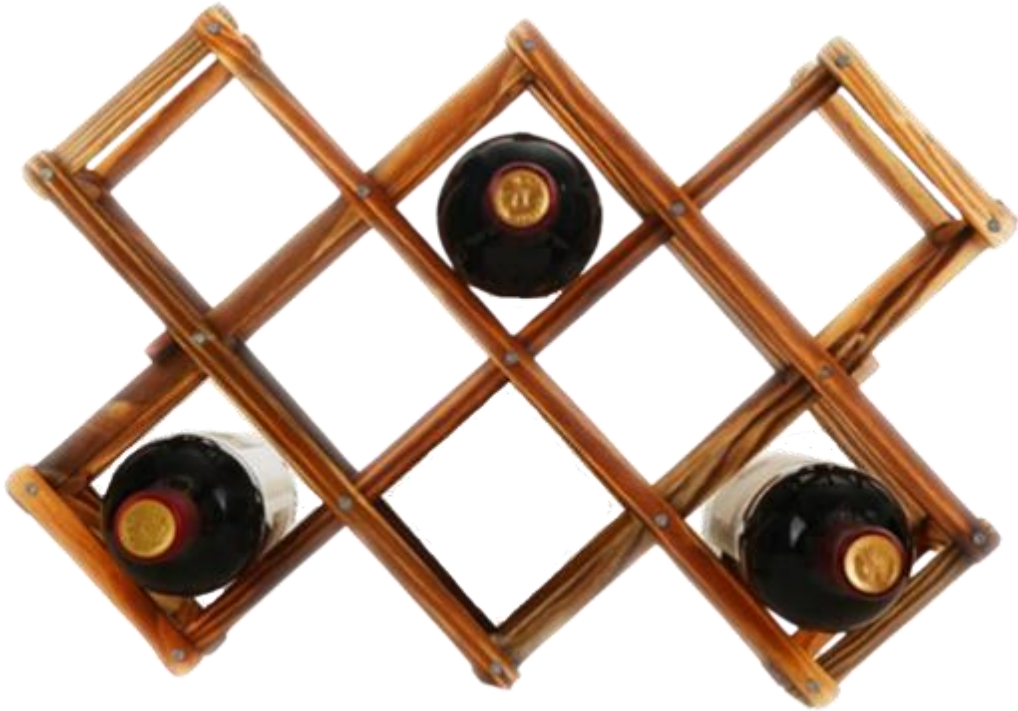


**Dispersion  
Level**

**94%**

Effective dispersion of graphene particles has been a significant problem for the graphene industry

# How Graphene Inhibits Cracking & Corrosion



- ▶ Wine rack analogy – graphene flexes laterally and takes up stress from the polymer matrix, increasing resiliency and acting as a shock absorber.



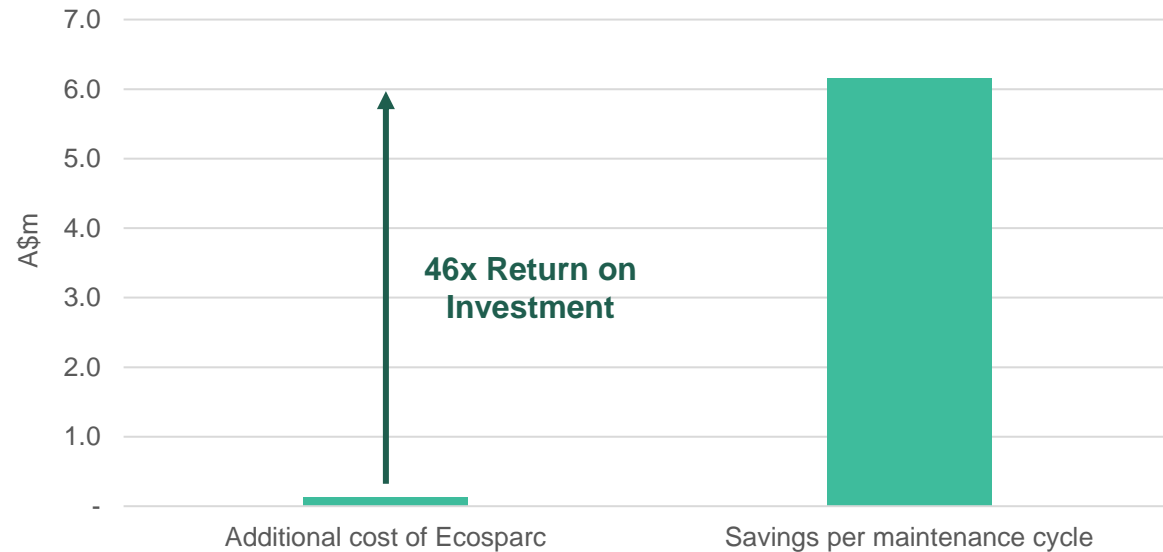
○ Crack termination

- ▶ Fractured surface of graphene modified epoxy at high magnification shows cracks terminating at graphene particles.

# Significant Value-in-Use For Asset Owners



- ▶ Independent **lifecycle assessment** (LCA)<sup>1</sup> completed in August 2023.
- ▶ Modelled impact of using **ecosparc**<sup>®</sup> enhanced paint on a major Australian port with 57,883m of re-coatable steel.
- ▶ Cost and emissions savings over 50-year asset life were based on a conservative 26% improvement in corrosion resistance<sup>2</sup>.
- ▶ Analysis **does not** include any returns from potential productivity benefits or life extensions.



**~750t**

Lifetime reduction in carbon emissions<sup>3</sup>



**~A\$34m**

Lifetime savings in steel recoating costs<sup>3,4</sup>

1. See ASX Announcement 30 August 2023 [Link](#)  
2. See ASX Announcement 12 September 2023 [Link](#)

3. Bontick, P.A. (2023), Carbon footprint of ecosparc graphene additive for protective coating applications, Lifecycles, Melbourne, Australia  
4. Cost savings accruing from both the reduction in paint use and fewer maintenance events



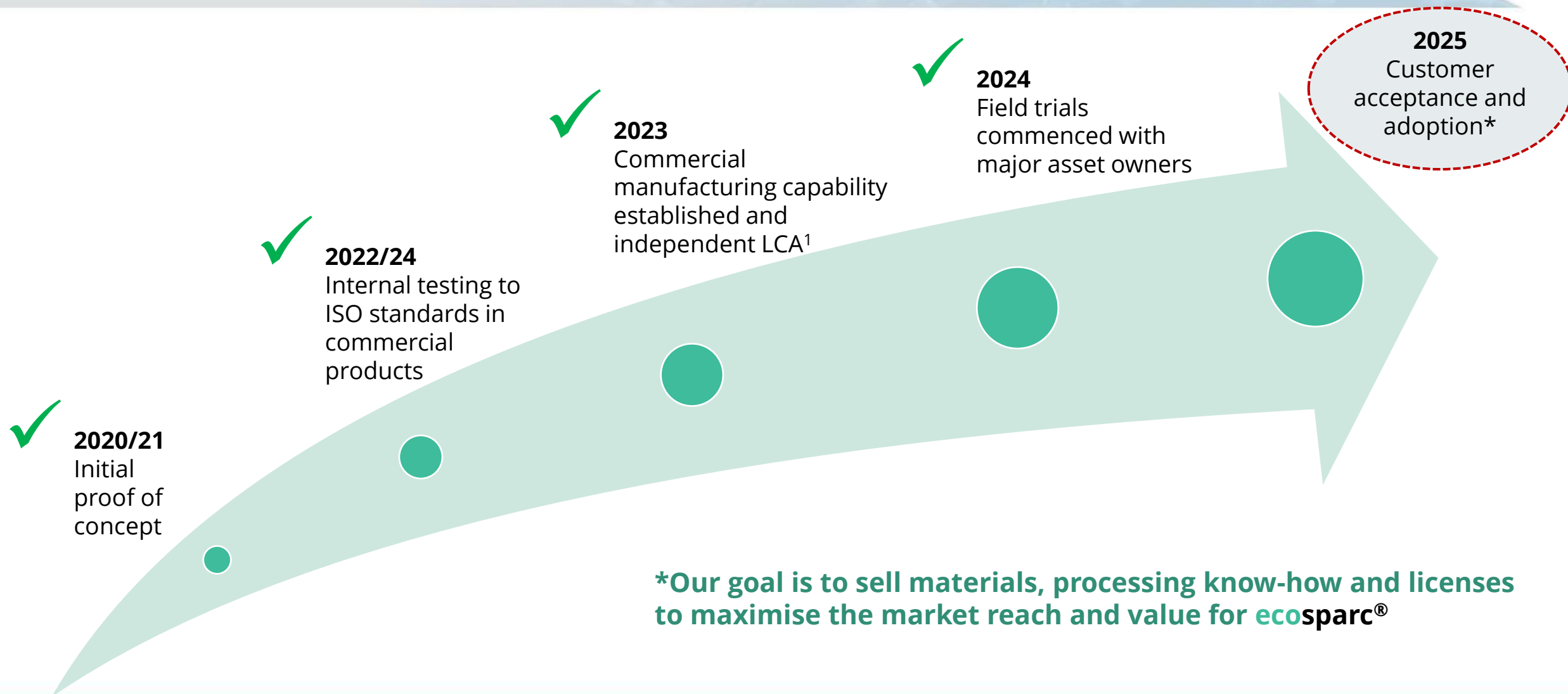
# Field Trials With Major Asset Owners Underway



- ▶ In 2024, Sparc commenced collaborative field trials using **ecosparc**® enhanced coatings on relevant steel infrastructure in a variety of operational environments. The purpose of the field trials is as follows:
  - Derisking **ecosparc**® enhanced coatings for commercial use.
  - Demonstrating market interest for better performing anticorrosive coatings from significant asset owners.
  - Working towards inclusion of **ecosparc**® enhanced coatings on asset owner specifications.
- ▶ Positive results from initial inspections at Streaky Bay were reported in April 2025.



# Development Pathway



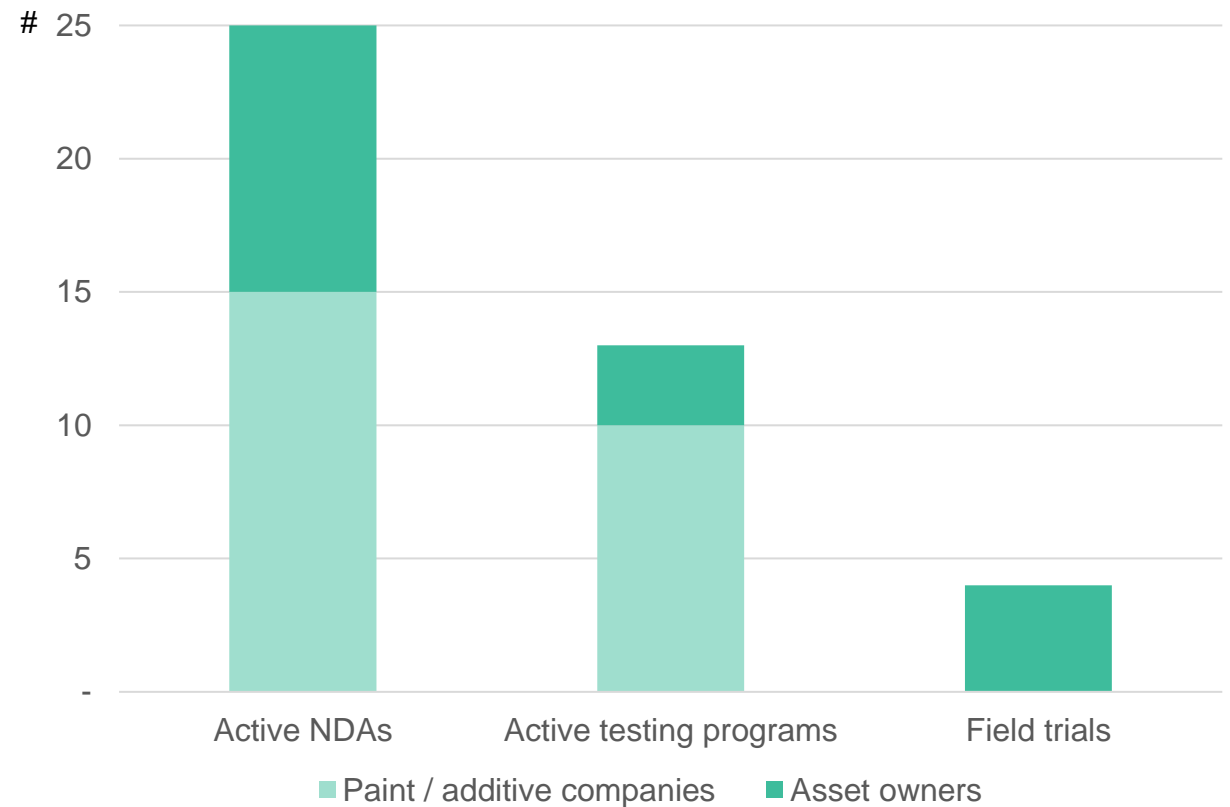
# Pathway To Market

Dual track approach to commercialising **ecosparc**® within the US\$43 billion<sup>1</sup> global anti-corrosive coatings market:

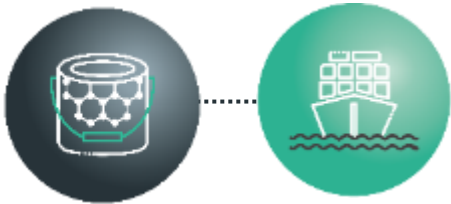
1. Sparc is actively working with global coatings companies, regional coatings companies and additive suppliers on testing and trials.
2. Partnering with large **asset owners** to test **ecosparc**® on relevant steel infrastructure under real-world conditions via field trials.

With field trial results and lab testing in commercially applicable products and specification programs culminating in 2025, Sparc expects commercial acceptance and adoption of **ecosparc**® enhanced products in FY26.

## Customer Engagement Status<sup>2</sup>



# Other Target Applications



## Anti-fouling Coatings

- ▶ Fouling is the result of accumulation of marine growth, resulting in reduced vessel speed, increased bunker consumption and high cleaning costs.
- ▶ Sparc is developing antifouling technology (**biosparc™**) which substantially reduces fouling on marine infrastructure.
- ▶ Sparc, together with Flinders University, was recently awarded a **~\$350k grant** from the Australian Government to further develop the technology.



## Composites & Plastics

- ▶ Composites are two or more distinct materials that, when combined, create a new material with enhanced properties.
- ▶ Sparc's graphene additives are being tested in multiple applications in composites and plastics (including bioplastics and recycled plastics) targeting improved flexibility, strength, conductivity and elasticity.

# INVESTMENT OPPORTUNITY

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# Momentum Building With Delivery



## 2025 is a transformative year for Sparc Technologies – Green hydrogen derisking and **ecosparc®** commercialisation

✓		▶ Appointment of Genex Founding Director Simon Kidston to the Board (Dec-24) <sup>1</sup>
✓		▶ Sparc Hydrogen Proceeds to Stage 2 Pilot Plant (Jan-25) <sup>2</sup>
✓		▶ Sparc Hydrogen Secures First Patent (Jan-25) <sup>3</sup>
✓		▶ ecosparc® field trial with BHP Mitsubishi Alliance (Feb-25) <sup>4</sup>
✓		▶ Construction of first-of-its kind pilot plant commences (Mar-25) <sup>5</sup>
✓		▶ Positive ecosparc® field trial results at Streaky Bay (Apr-25) <sup>6</sup>
Q2 25		▶ Pilot plant construction updates
Q2 25		▶ Grant funding results
Mid 25		▶ Pilot plant commissioning and operations
FY26		▶ ecosparc® commercial acceptance and adoption

1. ASX Announcement 6 December 2024 [Link](#)

2. ASX Announcement 7 January 2025 [Link](#)

3. ASX Announcement 16 January 2025 [Link](#)

4. ASX Announcement 7 February 2025 [Link](#)

5. ASX Announcement 12 March 2025 [Link](#)

6. ASX Announcement 28 April 2025 [Link](#)

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