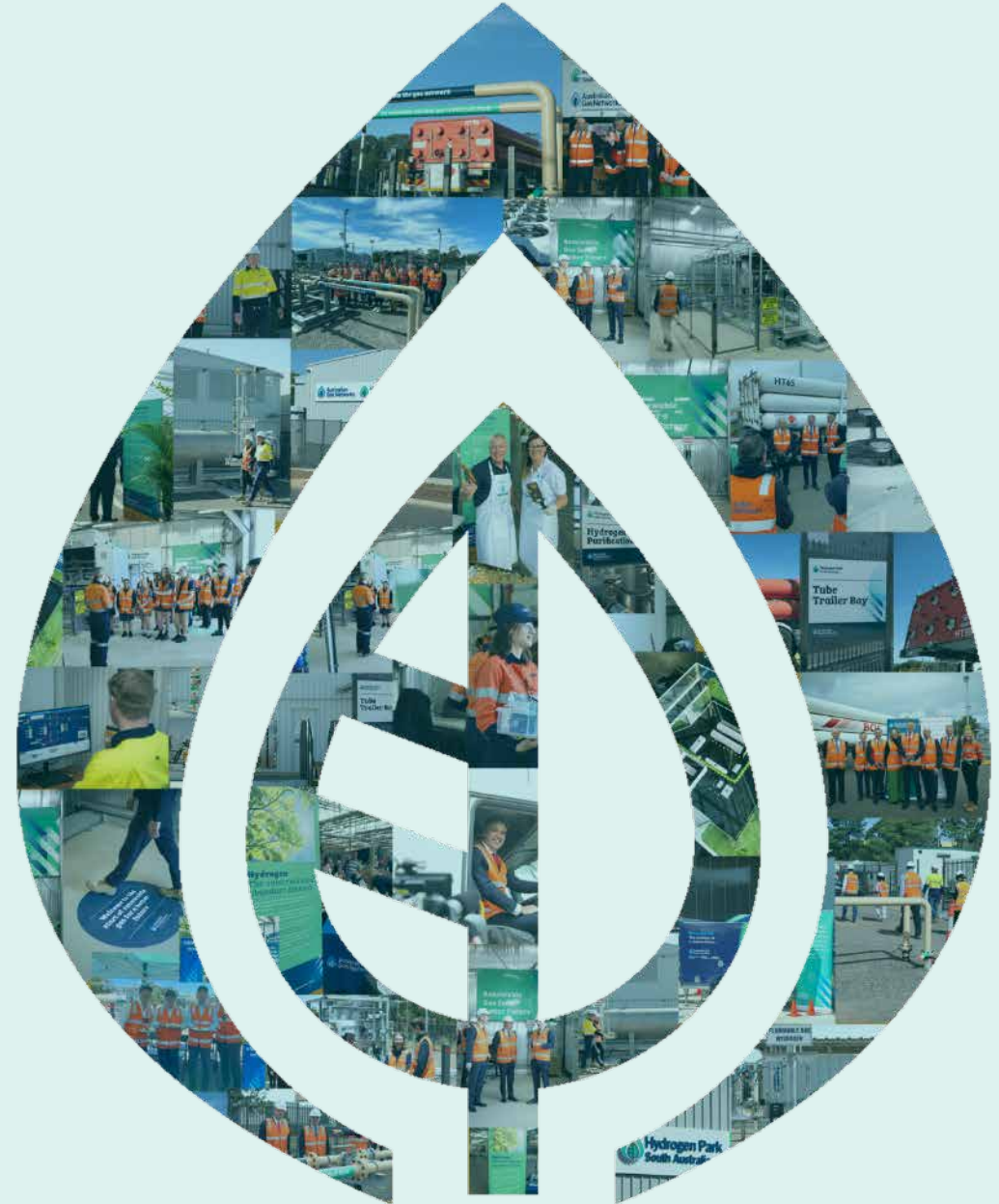


Hydrogen Park South Australia's Performance: 2021 - 2024

2024 APGA Convention
Owen Sharpe, Strategy Manager





Acknowledgement of Country

AGIG acknowledges the Traditional Custodians of the lands upon which we live and operate, and we pay our respects to Elders past, present and emerging.

We recognise Aboriginal and Torres Strait Islander people's historical and ongoing connection to land and waters, and we embrace the spirit of reconciliation.

Artwork: Connection to Country
By Karen Briggs , Yorta Yorta artist

Our Assets

One of the largest gas infrastructure businesses in Australia

Western Australia

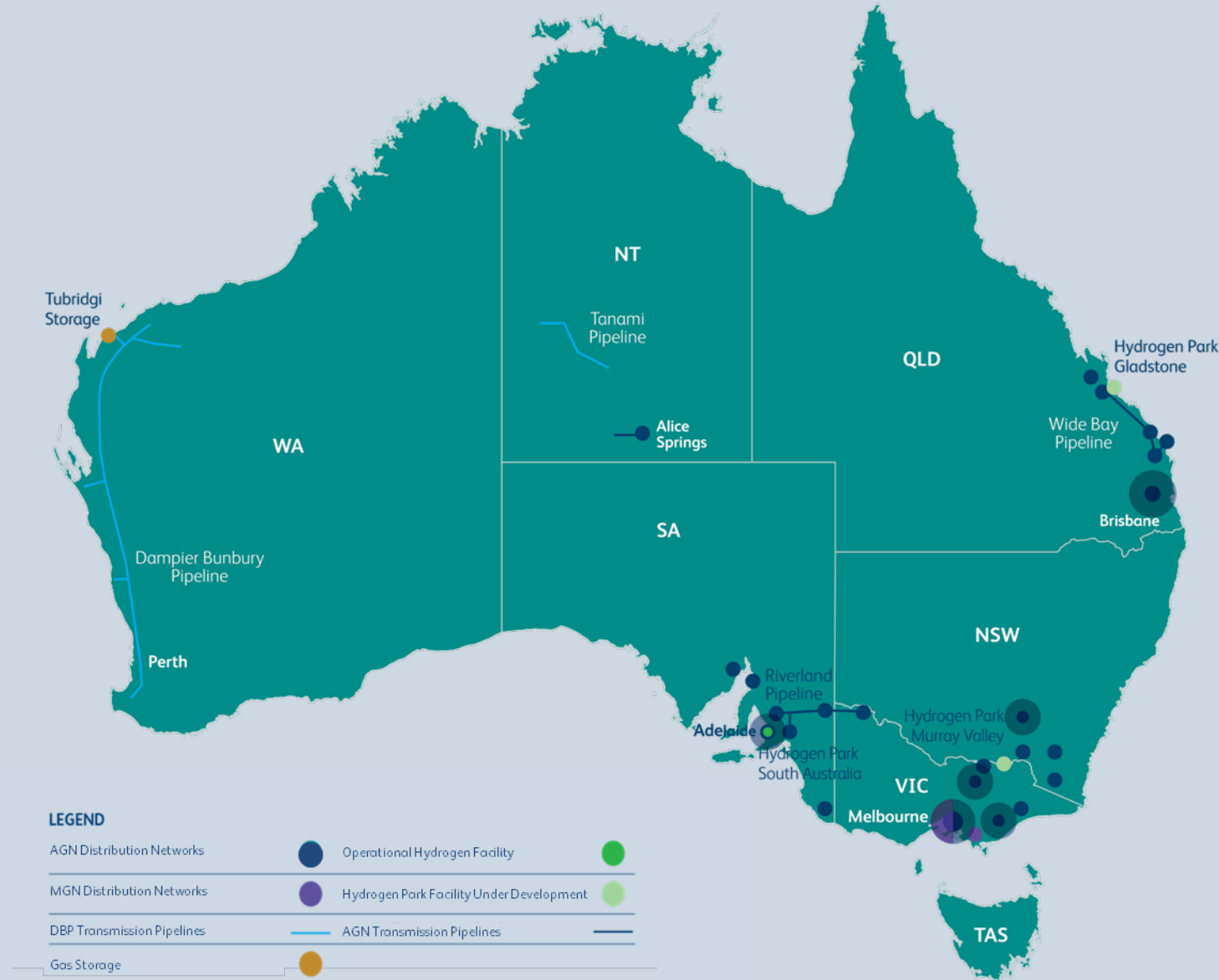
- 59 shippers
- 470,860TJ delivered in 2023
- 2,337km transmission
- 60PJ gas storage

South Australia

- 480,223 customers
- 28,731TJ delivered in 2023
- 8,432km distribution
- 479km transmission
- 1.25MW electrolysis

Victoria

- 1,466,104 customers
- 99,122TJ delivered in 2023
- 21,951km distribution
- 501km transmission



New South Wales

- 63,109 customers
- 5,079TJ delivered in 2023
- 2,055km distribution
- 84km transmission

Queensland

- 111,375 customers
- 5,983TJ delivered in 2023
- 3,307km distribution
- 314km transmission

Northern Territory

- 1,170 customers
- 1,169TJ delivered in 2023
- 39km distribution
- 601km transmission

Australia

- 2,121,981 customers
- 59 shippers
- 610,944TJ delivered in 2023
- 35,785km distribution
- 4,316km transmission
- 1.25MW electrolysis

As at 31 December 2023

Our Distribution Networks



>2.1 Million Connections



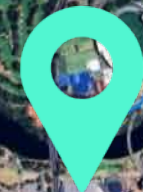
Reliable and Responsive



Secure in All Seasons



Ready for Net-Zero



Our Low Carbon Vision

Our ambition to be net-zero by 2050, with interim Scope 1 and 2 emissions targets

Signatories to the:



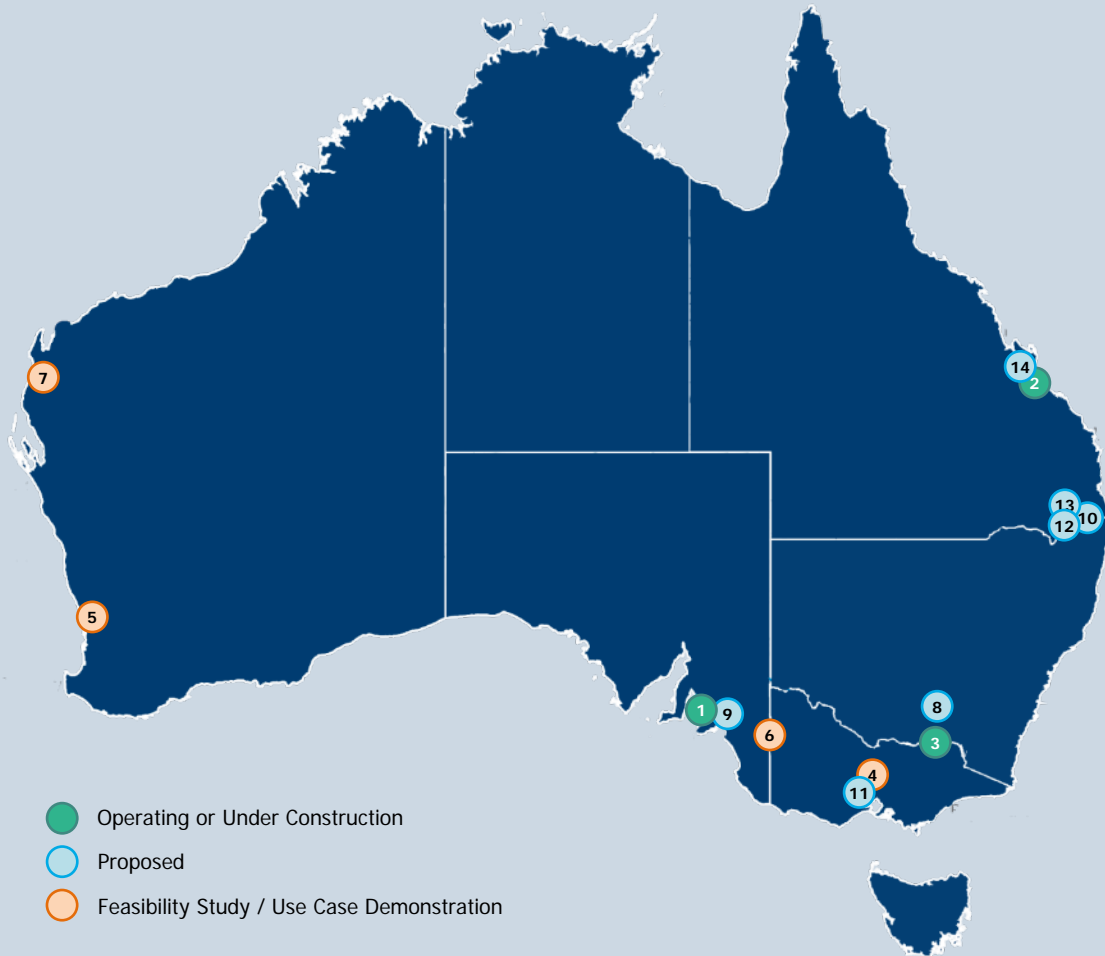
Reporting performance through our [ESG Report](#):



	TODAY	TRANSITION	NET ZERO
Supply	Natural gas is a key part of our energy system	Natural gas continues to play a critical role, renewable gas and CCS begins to scale	Natural gas, renewable gas and CCS operate at scale
Networks	Supplies energy to over 5 million connections	Continues to serve customers through a blend of natural and renewable gases	Net-zero gas networks form part of an integrated clean energy system
Indicators	Demonstrating renewable gas	10% renewable and carbon neutral gas blends on distribution networks by 2030	100% renewable and carbon neutral gases by 2050

Our Renewable Gas Projects

We are advancing projects across Australia



Operating and Under Construction



Studies and Demonstrations




Proposed



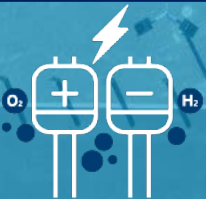
- Hydrogen Park South Australia**
1.25 MW online May 2021
- Hydrogen Park Gladstone**
0.175 MW under commissioning, online late 2024
- Hydrogen Park Murray Valley**
10 MW under construction, online late 2025
- HyHome**
100% hydrogen appliances, online July 2023
- WA Feasibility Study**
Pipeline blending studies completed 2021
- Australian Hydrogen Centre**
Distribution network conversion studies completed 2022
- Tubridgi Carbon Capture and Storage**
Potential for CCS at about 60 PJ facility
- Hydrogen Park Wagga Wagga**
- Hydrogen Park Adelaide**
- Hydrogen Park Brisbane**
- Melbourne Bioenergy Hub**
- Brisbane Bioenergy Hub**
- Ipswich Bioenergy Hub**
- Regional Queensland Bioenergy Hub**

HyP SA Performance | Key Milestones







Metropolitan Adelaide








1.25 Megawatts



\$14.5m

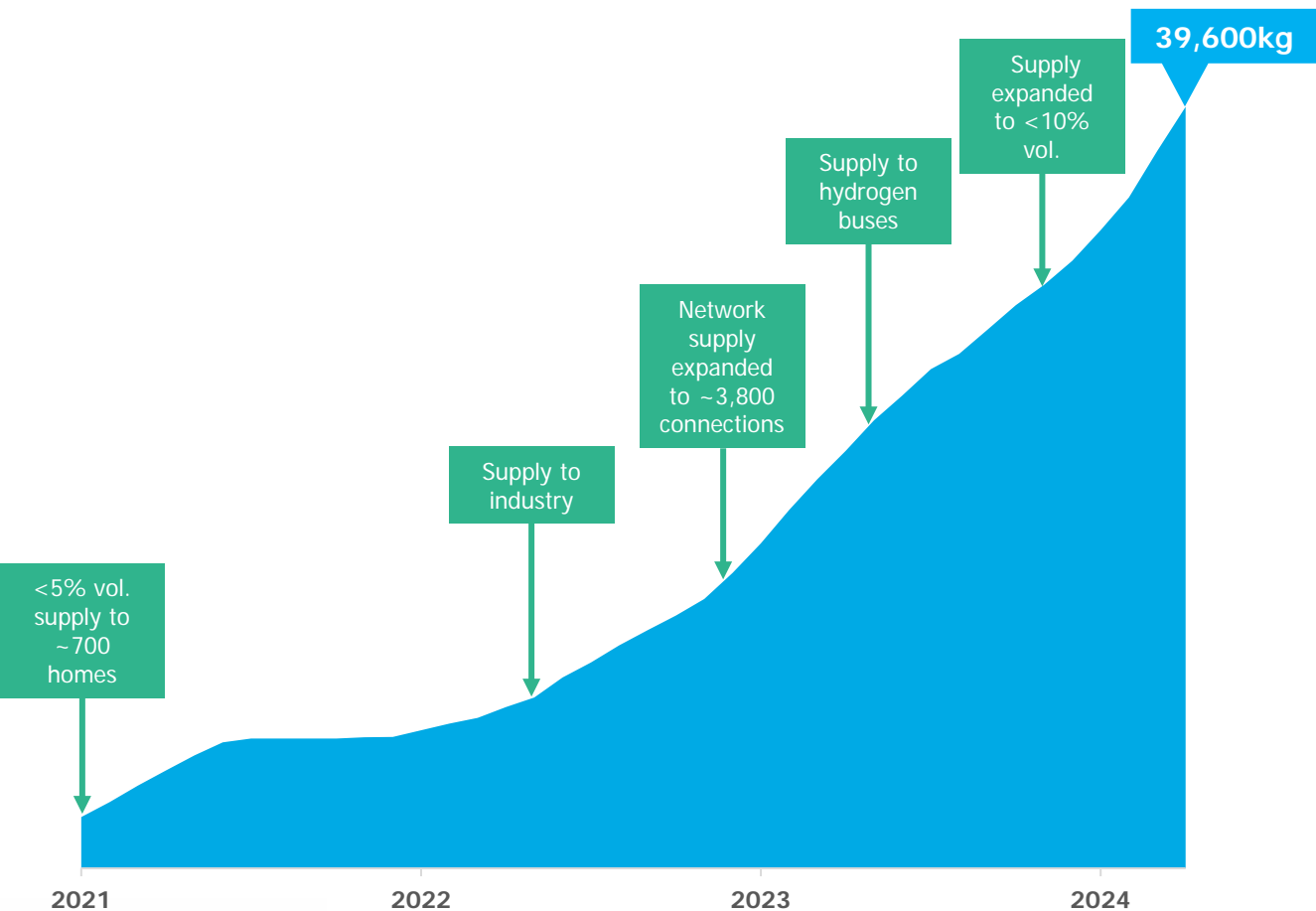


Grid-connected

2018		Project funded with SA Government support
2019		Construction commences
2021		Australian-first supply to ~700 connections at <5% by volume
2022		Australian-first supply of 100% renewable hydrogen to industry
2023		Supply expanded to ~3,800 connections, public transport buses
2024		Supply expanded to <10% by volume

HyP SA Performance | Hydrogen Production Growth

Cumulative Hydrogen Production



KEY INSIGHTS



Production steadily increasing with additional markets, July '24 the highest producing month since commissioning



Supplied enough renewable gas to the network to cook **>620,000 pots of pasta, or 100,000 hot showers¹**



Reducing industry and transport sector emissions, **displacing >516 tonnes in direct and supply-chain emissions²**



Industrial supply via tube trailer



Adelaide public transport buses

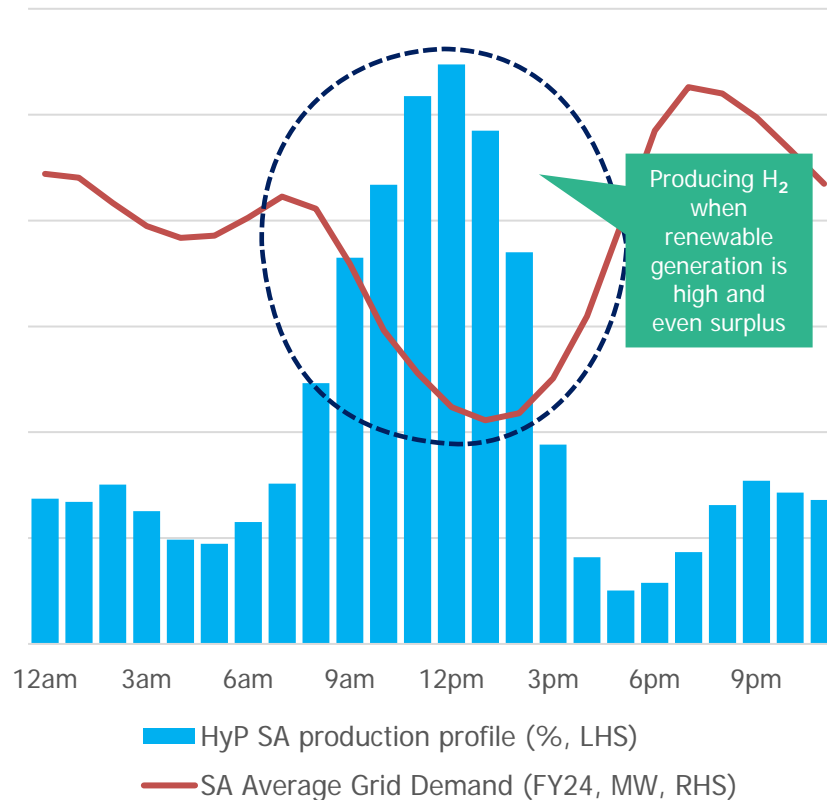
1. AGIG worked with the Aurecon Group to provide analysis on the data captured at HyP SA from May 2021 to August 2024
2. Estimate to date based on a scenario where 'grey' hydrogen for industry would otherwise have been used. Includes additional transport emissions avoided by using local supply.

HyP SA Performance | Electricity and Gas Sector Coupling

Gas networks are like an enormous battery, capable of storing surplus energy for later cooking, heating and hot water



SA NEM average grid demand (MW) versus HyP SA production (% by time of day)



KEY INSIGHTS



HyP SA is connected to the National Electricity Market (NEM), with an **operating protocol** driven by a 'set-price' algorithm



Electrolysis flexibly responds to NEM conditions: from 'cold start' to 100% capacity in less than 5 minutes



~85% grid-scale renewable electricity during production times since 2021 (not including rooftop-solar)¹

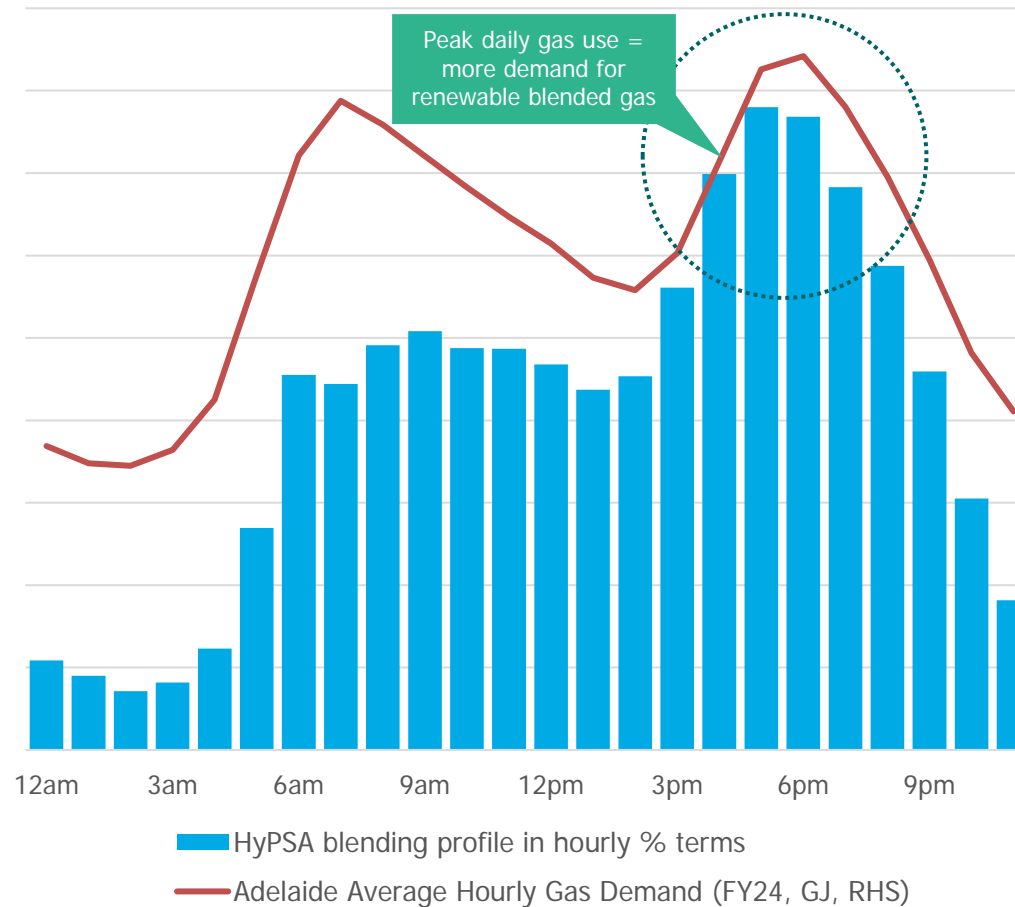


Renewable electricity used was **~\$29/MWh** despite the NEM pool price averaging **\$117/MWh** (Sep 23 – Aug 24)


1. HyP SA purchases GreenPower Large-scale Generation Certificates (LGCs) for 100% of the electricity used at site. Statistic provided to demonstrate capability of technology to respond to high penetrations of renewable electricity in the grid and potential for application at scale.


HyP SA Performance | Blending Performance

Hourly blending volumes versus distributed gas demand in Adelaide (FY24)




KEY INSIGHTS

 Hydrogen production and blending can **respond to swings in gas demand** driven by the weather and time of day in real time

 Engaging with the Office of the Technical Regulator on potential to **continue stepped approach** (5% → 10% → 15% → 20%)

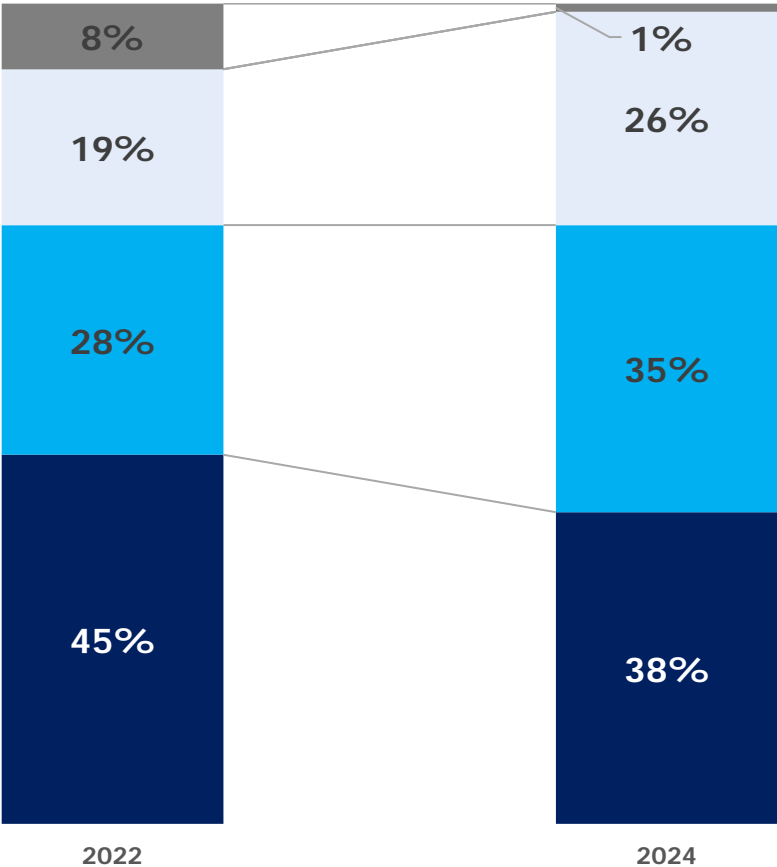
 Surveys and sampling has **not raised any operational issues** with the network or appliances

 **Digital meter trial with 100% voluntary participation**, demonstrating a pathway to customer empowerment on their energy use

HyP SA Performance | Customer and Stakeholder Engagement



Overall Satisfaction with Receiving Renewable Blended Gas



■ Extremely satisfied ■ Somewhat satisfied ■ Neutral
■ Somewhat dissatisfied ■ Not satisfied at all ■ Don't know

KEY INSIGHTS

Multiple awards for engagement program, **co-designed with stakeholders and the community**

Interest in visiting the site has remained high with **over 300 tours delivered (~1.7 per week) and >5,500 guests**

100% of survey respondents were **satisfied (73%) or neutral/don't know (27%)** with receiving renewable blended gas, with none dissatisfied¹

100% perceived the safe delivery of renewable blended gas as **the same or better than before**²

^{1,2} Outcomes from June/July 2024 survey of 111 customers in HyP SA's blended gas zone, including Mitchell Park, Clovelly Park, and parts of Marion.

HyP SA Performance | Impact and Next Steps

IMPACT



A **technically successful demonstration** of flexible hydrogen production and blending to existing networks



Helped **pave the way for future renewable gas projects** by removing market barriers



Upskilled tradespeople, engineers, professionals, and first responders and creating new full-time roles



Foundation for **targeted programs and partnerships** (TAFE SA, FFCRC, Digital Meters, Guarantee of Origin Scheme Pilot Plant)



NEXT STEPS



Further supporting SA's electricity grid – a record 150.7% of electricity demand on 29/9, and rooftop solar output on 8/10¹



Expanded supply **enabled by supportive market-based incentives**; Guarantee of Origin scheme, Hydrogen Production Tax Inputs incoming, more called for



Further innovation potential: 100% hydrogen networks, fuel cells, refuelling etc.



Continue to pursue and enable renewable gas projects (hydrogen, biomethane and others)

Hydrogen Park Gladstone

The first Australian city where the entire distribution network will be up to 10% renewable gas

Australian-first Blend to an Entire City Network

Supplying up to 10% by volume to
>700 homes, businesses and industry from late-2024



Queensland Government Support

Supported by funding of \$2.73 million
from the Queensland Government



Supporting Regional Customer Emissions

Will deliver ~57 tonnes of carbon dioxide emissions saved
p.a.



Central Queensland Hydrogen Hub

Early step towards hydrogen superpower
ambitions for the region



Aerial view of the HyP Gladstone facility; hosting Queensland Minister the Hon Grace Grace MP

Hydrogen Park Murray Valley

Globally significant decarbonisation project delivering lower emissions blended gas



Artist impression of HyP Murray Valley; site visit with key delivery partners

Achieving Commercial-Scale Hydrogen

Supplying up to 10% by volume renewable hydrogen to
>40,000 homes, businesses and industry



Australian and Victorian Government Support

Funding support from the Australian (\$36.1 million)
and Victorian (\$12.3 million) Governments



Co-location with Wastewater Treatment

Potential synergies around reclaimed water and oxygen

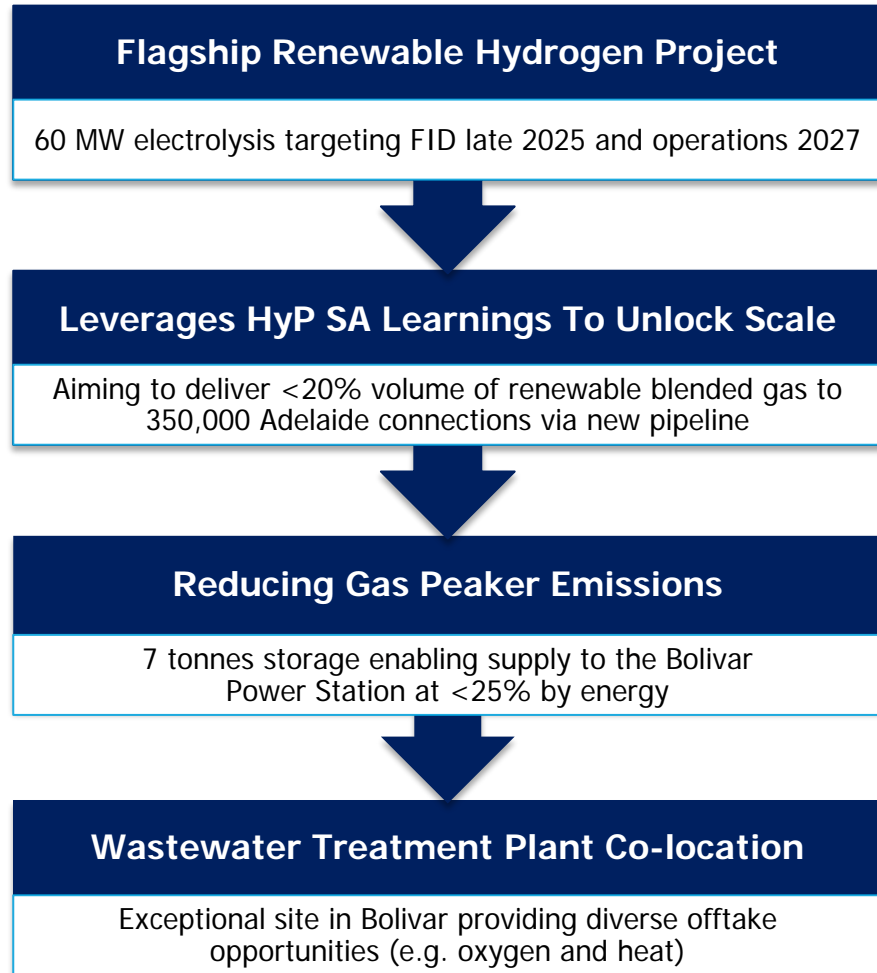


Potential Expansion for Transport

Expansion to supply refuelling in Victoria
and New South Wales

Proposed: Hydrogen Park Adelaide

Decarbonising 350,000 Adelaide connections while growing South Australia's hydrogen ecosystem



Thank You

Owen Sharpe
Strategy Manager

