Renewable Hydrogen
Hydrogen Park SA

World Plumbing Conference
11 September 2019
All sectors need to decarbonise

In Victoria, gas consumption is significant and concentrated in winter months

Setting the Scene | The decarbonisation challenge

Energy Consumption for VIC

Total energy 100%

Transport 41%

Gas consumption 30%

Electricity consumption 25%

Renewable electricity Generation 4%
Gas Vision 2050 | A vision to decarbonise gas

- An industry-wide vision to decarbonise the gas sector, released in March 2017
- Highlights the importance of gas to Australia today and into the future
- Established a credible pathway to decarbonise

Hydrogen produced from wind and solar generation and electrolysis is 100% renewable
Setting the Scene | Hydrogen Activity is Building

**Australia**
- National H₂ Strategy
- CSIRO H₂ Roadmap
- Future Fuels CRC
- SA Government Funding and Roadmap
- ARENA H₂ Funding Round
- Victorian H₂ Investment Program
- Queensland Hydrogen Industry Development Fund
- WA Hydrogen Development Fund
- Numerous H₂ production and use projects

**Internationally**
- Various roadmaps – targeting import of H₂
- Leeds H21 feasibility of 100% H₂ conversion
- Various H₂ production and use projects including:
  - HyDeploy blending up to 20% H₂ into gas networks in the UK
  - GRHYD project: refuelling station and injection of up to 20% H₂ into the local gas network, supplying 200 homes
  - Trial in Germany blending up to 10% H₂
“Progressively adding small amounts of hydrogen to domestic gas networks to meet existing demand and begin driving down production costs as manufacturing scales up”

Source: Hydrogen for Australia’s Future, A report prepared for the COAG Energy Council
Hydrogen Park SA (HyP SA) | AGIG flagship project

**A leading project**
An Australian-first project of its type and scale

**5% renewable gas**
Renewable hydrogen is expected to make up a maximum of 5% of the volume of gas in the network

**More than 700 homes**
More than 700 homes and businesses in the project area

**Jobs**
Building a new industry and jobs for Australians

Enabled by a $4.9m grant from the SA Government Renewable Technology Fund
Hydrogen Park South Australia
How it works

*AGN will purchase (and voluntarily surrender) Large-Scale Generation Certificates (LGC’s)
to offset the amount of electricity and ensure the 5% hydrogen supplied to customers is renewable.
HyP SA | Project location

Locate near the old Mitsubishi Assembly Building (MAB) precinct (redeveloped as the Tonsley Innovation District)

712 Households receiving 5% blended gas in Mitchell Park
Neutral to positive response – consistent with Focus Group testing

HyP SA | Informing and Engaging the Community

Stakeholder briefings
July 12 - letterbox drop with letter, brochure and Free Gas Appliance Efficiency Audit flyer and reply paid envelope

Website
Dedicated 1300 number and call centre
Project email address
Fact sheets
FAQs
Media program
Social media advertising and content
Ongoing support and discussions with gas customers
## HyP SA | Commercial Operation Date of Mid 2020

<table>
<thead>
<tr>
<th><strong>FEED</strong></th>
<th><strong>Electrolyser</strong></th>
<th><strong>Land</strong></th>
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<tbody>
<tr>
<td>Completed August 2018</td>
<td>Purchased November 2018</td>
<td>Site finalised with Renewal SA and cleared in December 2018</td>
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<thead>
<tr>
<th><strong>Design &amp; Construct</strong></th>
<th><strong>Development Application</strong></th>
<th><strong>Engagement</strong></th>
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<tbody>
<tr>
<td>Preferred party selected February 2019</td>
<td>Crown Sponsorship received, submitted for assessment</td>
<td>Comprehensive community &amp; stakeholder program</td>
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<tr>
<th><strong>Safety Report</strong></th>
<th><strong>Electricity</strong></th>
<th><strong>Appliance Testing</strong></th>
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<tbody>
<tr>
<td>Submitted, part of our annual safety case reporting</td>
<td>Finalised network and wholesale contracts</td>
<td>Future Fuels CRC and AGA</td>
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<tr>
<th><strong>AHC</strong></th>
<th><strong>H₂ Blend Injection</strong></th>
<th><strong>Project Term</strong></th>
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<tbody>
<tr>
<td>Tube and Trailer Submission with ARENA BOC as partner</td>
<td>~710 properties</td>
<td>Initial term of 5 years</td>
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2019 | 11
**Australian Hydrogen Centre (AHC)** | Developing a pathway to decarbonise gas networks

- Detailed feasibility studies to decarbonise the Victorian and SA gas distribution networks
- Establishing the AHC, in partnership with Industry and Government support

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**Key projects**

1. **HyP SA**
   - Externalise learnings – 5% hydrogen blending
   - 720 customers

2. **Regional Towns**
   - 10% hydrogen blending – detailed feasibility studies

3. **States**
   - Feasibility study for 10% blending & 100% H₂ conversion

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**ARENA process**

- **March 2018** Initial ARENA presentation
- **June 2018** EOI application to ARENA
- **May 2019** Full application to ARENA
- **June 2019** ARENA presentation
Many regional towns are in proximity of operational wind farms (and solar farms).

Regional towns of 10,000 plus households, represents a good platform to scale up and deploy learnings from HyP SA.
Summary

HyP SA, an Australian-first project, on track for first production in mid-2020

Around 700 customers will receive a cleaner gas at no extra cost

Blended gas is as safe to use as 100% natural gas

We are engaging with the community

AHC delivers blueprint to decarbonise gas networks

A technology neutral approach to decarbonisation is key to balancing emissions, security and price considerations

Commercial H₂ production is achievable with scale, networks can offer this

Industry and government are leading the way

Potential for jobs and economic growth from H₂ production and export