

## Hydrogen & Renewables Capabilities



[www.valmec.com.au](http://www.valmec.com.au)



THE HYDROGEN FUTURE AWARDS 2022



## ***Specialists in asset lifecycle solutions***

Valmec is an industry leading, multi-discipline construction and maintenance contractor with its roots in the Energy, Resources, and Infrastructure sectors.

Valmec delivers full turn-key project execution solutions including Engineering, Procurement, and Construction (EPC), project development support, feasibility analysis, detailed facility design, major equipment procurement, facility construction, commissioning, operations, and maintenance support.

Valmec has a national footprint, and our team are experts in the delivery of remote area projects for clients including international tier-one mining and gas companies. Our in-house execution teams cover every discipline and include specialist services such as testing and inspections.

### **CAPABILITIES**

---

- ✓ EPC and Turnkey Construction
- ✓ Bulk Earthworks and Concrete work
- ✓ Buried Services
- ✓ Pipelines and Flowlines
- ✓ Structural, Mechanical and Piping
- ✓ Electrical, Instrumentation and Communications
- ✓ Buildings
- ✓ Water Handling and Treatment Facilities
- ✓ Non-Process Infrastructure
- ✓ Commissioning
- ✓ Inspections and Testing
- ✓ Maintenance Services



## ***Hydrogen Capabilities***

Valmec has developed early mover status in this exciting new sector, having already delivered turnkey hydrogen production for clients across Australia. Valmec can support project development through early contractor involvement, execution of detailed design, construction, commissioning, as well as providing personnel and equipment for ongoing operations and maintenance services.

### **HYDROGEN SOLUTIONS**

---

- ✓ Engineering, Procurement and Construction
- ✓ Hydrogen generation – PEM and Alkaline systems
- ✓ Hydrogen compression
- ✓ Hydrogen storage and gas blending
- ✓ Hydrogen dispensing
- ✓ Water treatment systems, storage, pumping and pipelines
- ✓ Hydrogen fuel cell power generation
- ✓ Operations and maintenance services
- ✓ Pressure testing, leak detection, acoustic emission testing



# HYDROGEN PARK SA (HyP SA PROJECT)

Engineering, Procurement, Construction

*Valmec is a market leading developer of hydrogen projects, completing the EPC of the Hydrogen Park South Australia (HyP SA) for AGIG - the largest, first-of-its-kind renewable gas blending project in Australia.*



SIEMENS 1.25MW ELECTROLYSER



AERIAL VIEW OF HYP SA FACILITY AT THE TONSLEY INNOVATION DISTRICT





## HYDROGEN PARK FACILITY (HyP SA)



**Client:** Australian Gas Infrastructure Group (AGIG)



**Location:** Tonsley, South Australia

### BACKGROUND

Hydrogen Park SA (HyP SA) is an innovative energy project that produces renewable hydrogen, for blending with natural gas via the local gas distribution network.

The facility includes a 1.25 MW Siemens electrolyser for hydrogen generation, hydrogen buffer storage, controls, and gas blending equipment. This will enable the injection of hydrogen into the low-pressure gas network, supplying gas to nearby properties with up to 5% blended hydrogen as part of a five-year demonstration. The facility also includes provisions to supply hydrogen to third parties via hydrogen tube trailers.

### SCOPE OF SERVICES

- Engineering, Procurement, and Construction (EPC) contract.
- Works included the complete multi-discipline construction, pre-commissioning, commissioning, performance testing, initial operation, and handover of all associated systems to AGIG.

### ADVANTAGES

- Valmec leveraged its experience in specialised gas processing facilities and electrical hazardous area installations, to deliver a high-quality and compliant installation.
- Providing ongoing project concept reviews with the client to improve constructibility and fit-for-purpose design.
- Understanding of regulations, permits, and approvals to achieve construction and service connections with local councils and governing bodies.

### AWARDS

- 2020 Engineers Australia, Australian Engineering Excellence Awards Winner
- 2020 South Australian Premiers Awards for Energy and Mining, 'Innovation and Collaboration' Category Commendation
- 2020 SA Climate Leaders Awards, 'Business and Industry' Category Winner
- 2020 Australian Pipelines and Gas Association Environment Award Winner
- 2022 Hydrogen Future Awards, 'Hydrogen Project of the Year' Category Winner



## HAZER COMMERCIAL DEMONSTRATION PLANT

## Operations &amp; Maintenance

## HAZER COMMERCIAL DEMONSTRATION PLANT (CDP)

**Client:** Hazer Group Limited**Location:** Henderson, Western Australia

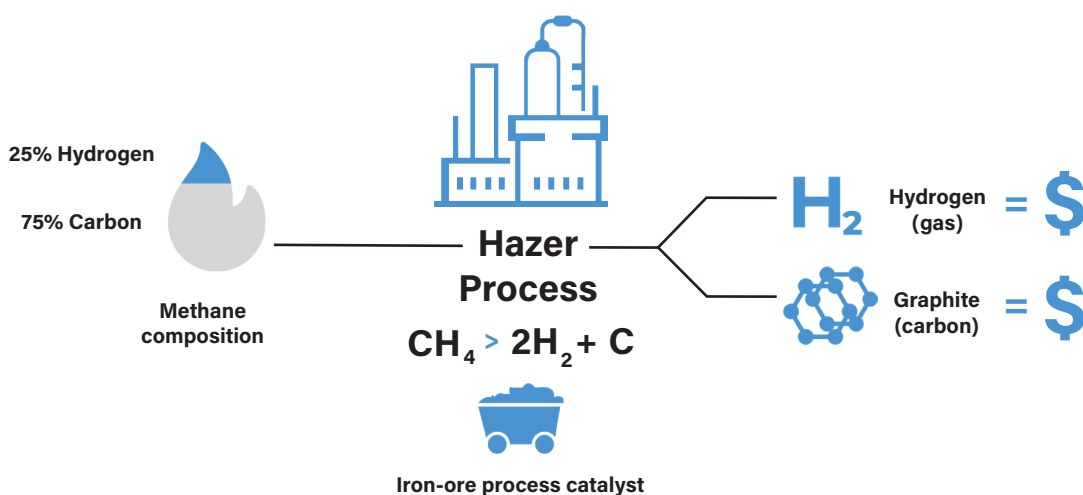
## BACKGROUND

Valmec has been contracted to operate and maintain the Hazer Commercial Demonstration Plant (CDP), located at the Woodman Point Waste Water Recovery Facility (WWRF) in Henderson, Western Australia.

The Hazer CDP is the first large-scale demonstration of the HAZER® Process, a low-emission hydrogen and graphite production process, developed by Hazer Group Limited.

This project is a commercial demonstration of the Hazer production technology which converts methane feedstocks, through the use of an iron-ore process catalyst, into hydrogen and synthetic graphite.

The aim of the HAZER® Process will be to achieve savings for the hydrogen producer, as well as providing 'clean' hydrogen with significant lower carbon dioxide emissions, enabling such hydrogen to be used in a range of developing 'clean energy' applications, as well as in large existing chemical processing industries.



## SCOPE OF SERVICES

- Skilled labour to operate and maintain the CDP on a 24/7 basis.
- Maintenance planning, scheduling and parts procurement services.
- Supervision and management to ensure safe and continuous CDP operations.
- Project engineering services for the planning and execution of improvement projects.

## ADVANTAGES

- Flexibility to adapt to change.
- Leveraging a broad range of capabilities within Valmec Group from commissioning, operations, maintenance, and project management, to mechanical, electrical, instrumentation, and inspection services.
- The CDP operations will be supported from our local Henderson workshop facility.



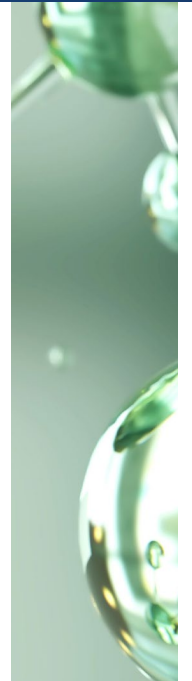
ORIGINAL PILOT PLANT (SYDNEY, NSW)



RELOCATED PILOT PLANT (KWINANA, WA)



CDP (HENDERSON, WA)



*Through Valmec's early involvement in the hydrogen industry, our Team at APTS have continued to develop the Group's expertise in H2 operations and asset management for similar plants around Australia.*





## HyP GLADSTONE PROJECT

**Client:** Australian Gas Infrastructure Group (AGIG)**Location:** Gladstone, Queensland

## BACKGROUND

AGIG's Hydrogen Park Gladstone (HyP Gladstone) will deliver Australia's first whole of gas network decarbonisation project with volumes of up to 10% renewable gas blend to around 770 homes and businesses, by utilising the existing gas distribution network in Gladstone, Queensland.

**Electrolyser:** 175kW PEM**Production:** Up to 2.75kg per hour

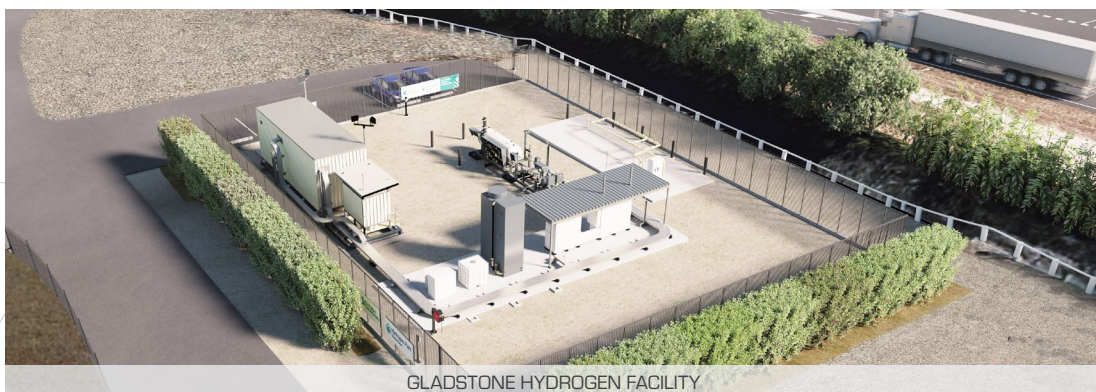
**Carbon Reduction:** Approximately 57 tonnes of carbon dioxide emissions saved per annum. This is the equivalent of removing around 19 petrol passenger vehicles from the road.

## SCOPE OF SERVICES

- Valmec is executing two packages (SMPEI Fabrication and Assembly, and Construction) for AGIG's hydrogen facility at Gladstone, Queensland.

## ADVANTAGES

- Local content with the works delivered entirely by our Queensland-based construction team.
- Valmec's Darra workshop facility has provided flexibility for storage of free issued materials, prefabrication, skid assembly and factory acceptance testing.



GLADSTONE HYDROGEN FACILITY



## BROKEN HILL BATTERY ENERGY STORAGE SYSTEM (BESS)

**Client:** AGL Australia**Location:** Broken Hill, New South Wales

## BACKGROUND

Valmec (working with Fluence Energy) has been engaged for the full turnkey construction of the Broken Hill Battery Energy Storage System (BESS), including project management, construction supervision, all site civil works, mechanical, and electrical installation and connections to the BESS. Following construction, Valmec will provide commissioning support to Fluence to test and start up the system.

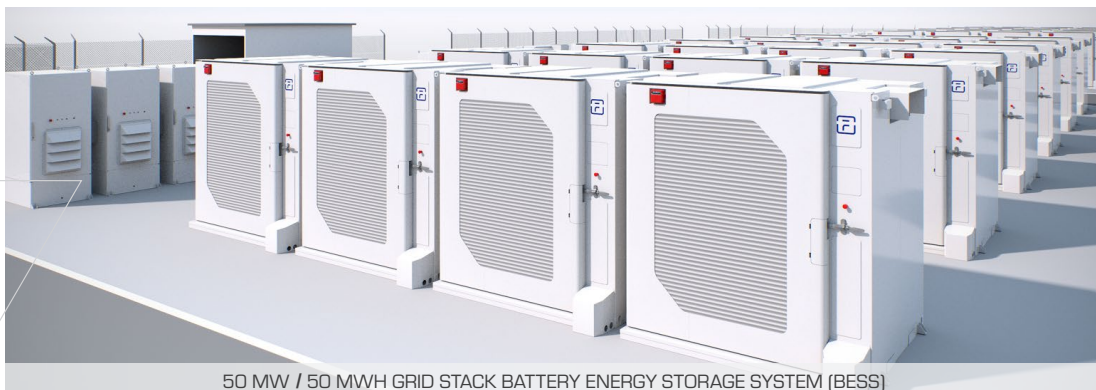
With the increasing penetration of renewables such as solar and wind, combined with the shift away from coal fired power generation, there is an increasing need for energy storage via battery systems for grid forming. This \$41M project will demonstrate the ability of large-scale battery systems with advanced grid forming inverters to improve system strength.

## SCOPE OF SERVICES

- Detailed Civil and SMP works for the installation of the BESS battery bank modules and inverters.
- The Electrical scope consisting of the design and implementation of multiple in-ground HV cable runs, as well as commissioning of the HV system.
- Additionally, Valmec will be assisting our consortium partner – Fluence, in the commissioning of the plant.

## ADVANTAGES

- Valmec is an accredited contractor under the Office of the Federal Safety Commissioner (FSC) accreditation scheme. Valmec will be providing site management, safety systems, and personnel to safely manage the project throughout construction.



50 MW / 50 MWh GRID STACK BATTERY ENERGY STORAGE SYSTEM (BESS)

## GRUYERE POWER STATION EXTENSION GAS GENERATOR &amp; BESS

**Client:** APA Group**Location:** Laverton, Western Australia

## BACKGROUND

APA Group owns and operates the Gruyere Power Station at the Gruyere Gold Mine located in the Yamarna Greenstone Belt, approximately 200km east of Laverton in Western Australia.

Gruyere Power Station is a gas fuelled reciprocating engine plant operating in islanded operation mode. The plant consist of 11 gas engine generating sets (Jenbacher J624 each rated 4.4MW at 36°C), and 2 diesel engines (Kohler sets each rated 1.7MW).

APA Group required an expansion of the existing facility, with one additional gas engine generator and a Battery Energy Storage System (BESS) to provide flexibility in power generation management.

## SCOPE OF SERVICES

- Installation of gas fired Jenbacher 624 Engine/generator skid.
- Ancillary equipment to support one engine and tie into the existing piping and electrical systems.
- Ancillary equipment for a future gas generator, within the engine hall expansion.
- HV cable terminations & VLF testing.
- Battery Energy Storage System x2 (2MW / 2.5MWh Capacity).
- Fibre Optic network integration.

## ADVANTAGES

- Valmec brought an experienced WA-based delivery team to the project, familiar with construction in remote gas and mining environments.
- Valmec provided rostering flexibility to meet the site's operational requirements.



GRUYERE POWER STATION



GRUYERE BESS SAFE LIFTING



**Alpha** is a provider of specialist engineering services to the onshore and offshore wind industry. Alpha can provide operations, maintenance, installation, and commissioning services for wind turbines.

### BLADE UPGRADE CAMPAIGN



**Client:** Vestas Australia



**Location:** Collgar Wind Farm,  
Western Australia

### BACKGROUND

Alpha was contracted by Vestas on a range of ad-hoc services to support their service operations. A programme of blade upgrades using innovative serration, gurney flap and vortex generator technologies required additional labour at a remote wind farm containing 111 wind turbines 260km east of Perth, Western Australia.

### SCOPE OF SERVICES

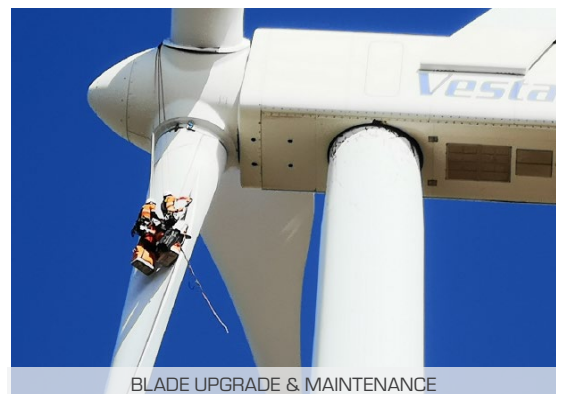
- Provided global technical support (blended team of local and overseas technicians).
- Our global team based in Struer Denmark, provided overall management and technical support with assignment of a highly experienced technician familiar with the specific upgrades.
- Our local team managed daily administration and operations support, adding additional resources.
- Blade upgrade and maintenance.
- Vortex generator upgrades.
- Rope access.

### ADVANTAGES

- Reduced cost and travel risk through supply of local labour.
- Improved productivity through site-based training using a specialised blade supervisor.
- Improved client responsiveness using local management.



ALPHA ROPE ACCESS TECHNICIANS



BLADE UPGRADE & MAINTENANCE



**1300 VALMEC**

AUSTRALIA-WIDE ENQUIRIES & SERVICE

PERTH | DARWIN | ADELAIDE | BRISBANE | ROMA | SYDNEY

[info@valmec.com.au](mailto:info@valmec.com.au)

[www.valmec.com.au](http://www.valmec.com.au)

