



SPECIALISTS IN **COGENERATION AND TRIGENERATION SOLUTIONS**





# A FOCUS ON SUSTAINABILITY

The demand for energy is ever growing and becoming increasingly expensive. Businesses are seeking efficient power generation solutions to secure supply and reduce energy costs.

Cogeneration and Trigeneneration Systems generate cost-effective electricity on-site and turns otherwise wasted heat into a useful energy source for heating and cooling purposes. Powered by natural gas, Co and Trigeneneration Systems are highly energy efficient and low in carbon emissions

## Cogeneration & Trigeneneration provides

- Large and consistent electrical loads
- Multiple uses for waste heat from engine
- Chilled Water for Air Conditioning
- Domestic Hot Water
- Pool Heating

## WHO WE ARE

Simons Green Energy is Australia’s most trusted provider of sustainable energy efficient technologies for businesses.

We design, install and commission Cogeneration and Trigeneneration systems that simultaneously generate low-cost power, heating and cooling for commercial and industrial sites.

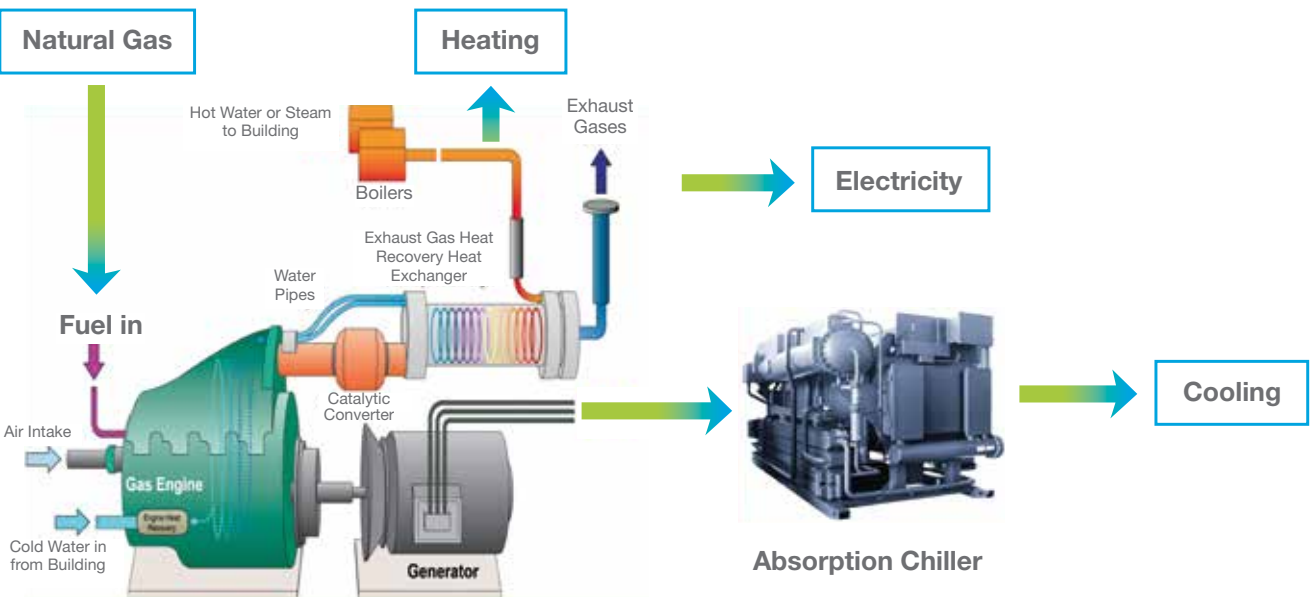
Driven by our vision for a more sustainable Australia, we never stop innovating or serving our customers.

Our complete solutions will help your business achieve a cleaner, reliable energy supply, along with substantial cost savings lasting more than 20 years after your initial investment. This is supported by our proactive, passionate team, delivering a comprehensive suite of tailored support services from systems’ design and lifetime maintenance to energy auditing and monitoring.

We embrace openness, collaboration and trust. That spirit reflects our dynamic internal team culture, and the way we pursue and maintain partnerships with top suppliers from around the globe.

Thanks to our capacity for constant innovation, customers have continued to choose us and rely on us for 80 years and counting.

**As our customer, you’re in capable hands.**



## What is Cogeneration

Combined Heat and Power (CHP) is the simultaneous production of electricity and heat using a single fuel source.

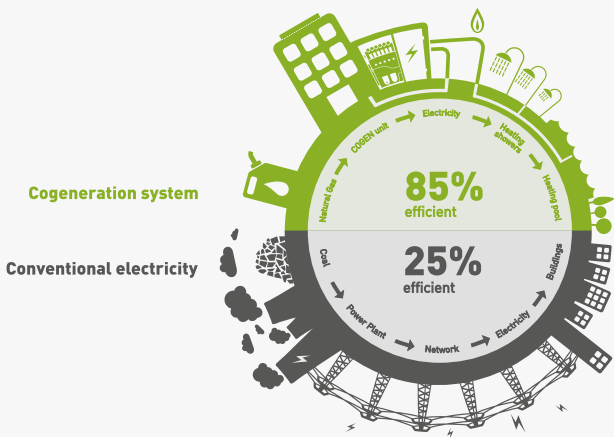
## What is Trigeneneration

Trigeneneration is the addition of an Absorption Chiller to a Cogeneration system to produce Electricity, Heating and Cooling at the point of use.

# Cogeneration

Cogeneration or Combined Heat and Power (CHP) is an extremely efficient technology that converts natural gas or biogas into electricity and heat in a single process at the point of use.

- Produces cleaner and cheaper electricity with “free” heating.
- Recovers wasted energy.
- Reduces energy costs and carbon emissions.
- Operates on Natural Gas and Biogas fuels.
- Space heating, domestic hot water, pool heating, process heat and more.
- Systems custom designed to clients electrical and thermal requirements.
- Total efficiency of up to 85% compared to 25% efficiency for conventional electricity.

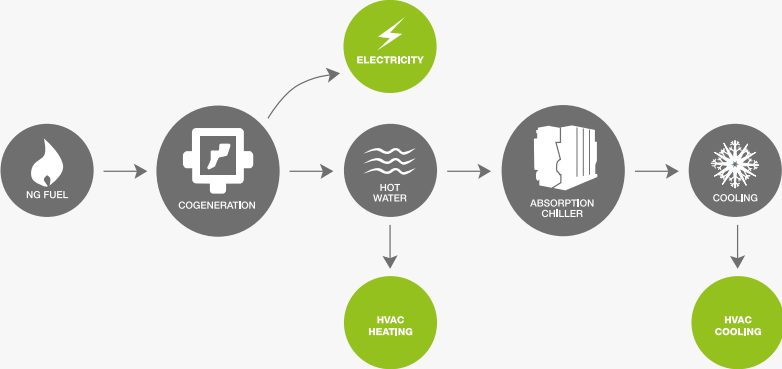


## Cogeneration projects are all different. One size does NOT fit all.

Simons Green Energy will partner with you to find the CORRECT Cogeneration Solution for your business. Our exclusive partnerships with international suppliers allow us to provide a wide range of engine sizes to suit your specific needs.

# Trigeneration

Trigeneration is the addition of an Absorption Chiller to a Cogeneration system to produce Electricity, Heating and Cooling at the point of use. Cogeneration captures waste heat generated by a Cogeneration engine. This waste heat is then directed to an Absorption Chiller as hot water at 90 degrees C° to produce useful cooling that can assist water based cooling systems.



## HOW DOES AN ABSORPTION CHILLER WORK?

Absorption Chillers use two working fluids; Lithium Bromide Salt (LiBr) and a Refrigerant, in this case, water. The operating principle of an Absorption Chiller is similar to a standard HVAC Chiller, except that the electrical energy required to operate a standard Chiller through the use of a large pump, is replaced by a generator and an absorber.

Both chambers in the chiller are under vacuum (the top chamber at 1/10 standard atmospheres and the bottom at 1/100 atmospheres), which reduces the boiling point of the water. The absorption chiller also relies on the large amount of heat liberated from the combination (chemical reaction between) of LiBr, which is highly hydrophilic, and Water.

## OUR SUPPLIER



There are over 20,000 Shuangliang chillers operating worldwide giving them a 15% world market share. Shuangliang can supply multi energy chillers such as – exhaust gas fired, hot water fired, steam fired, natural gas fired or a combination of above different energy streams. Shuangliang chillers provide one of the highest coefficients of performance in the world. Continues operation is assured due to sophisticated auto purging and auto de-crystallization systems. Chiller capacities are available from 100kW to 6000kW. Simons Green Energy can supply, commission and provide service for these absorption chillers Australia wide.



### QNERGY MICRO COGENERATION (CHP) 7.5kWe

The Qnergy micro Cogeneration (Micro CHP) unit is designed to provide both heat and power for light commercial or large residential applications.



### YANMAR MICRO COGENERATION (CHP) 5, 10, 25 kWe

YANMAR Micro Cogeneration units use Natural Gas or Biogas to produce electricity on site and transform waste heat into space heating, domestic hot water or process heat depending on each site’s power and heating requirements.



### ENER-G CHP SERIES 35kWe – 2,140kWe

Europe’s largest packaged Cogeneration supplier with 2,500 units operating in 11 countries across the globe. ENER-G’s experience in the Cogeneration market dates back to 1984 when they began designing, manufacturing, installing and maintaining Cogeneration systems in the UK. They are now firmly positioned as Europe’s leading supplier of Cogeneration systems.



# Projects

OUR INSTALLATIONS SPAN MULTIPLE SECTORS

## CASTLE HILL RSL CLUB

Project 1 – 142 kW Cogeneration  
Project 2 – 378 kW Trigeneration



## RYDGES SYDNEY AIRPORT HOTEL

70 kW Cogeneration



## SWINBURNE UNIVERSITY OF TECHNOLOGY

230 kW Trigeneration



## CROWNE PLAZA RESORT & BREWERY

375K kW Cogeneration



## 1 KING WILLIAM ST. ADELAIDE

310 kW Trigeneration



## MINGARA RECREATIONAL CLUB

2 X 230 kW Cogeneration



## LITTLE CREATURES BREWERY GEELONG

1.2 MW Cogeneration



## WAGGA WAGGA OASIS AQUATIC CENTRE

229 kW Cogeneration System



## DEVONPORT AQUATIC CENTRE

70 kW Cogeneration System



## TWIN TOWN SERVICES CLUB BANORA

230 kW Trigeneration System



## CANTERBURY HURSLTONE PARK RSL

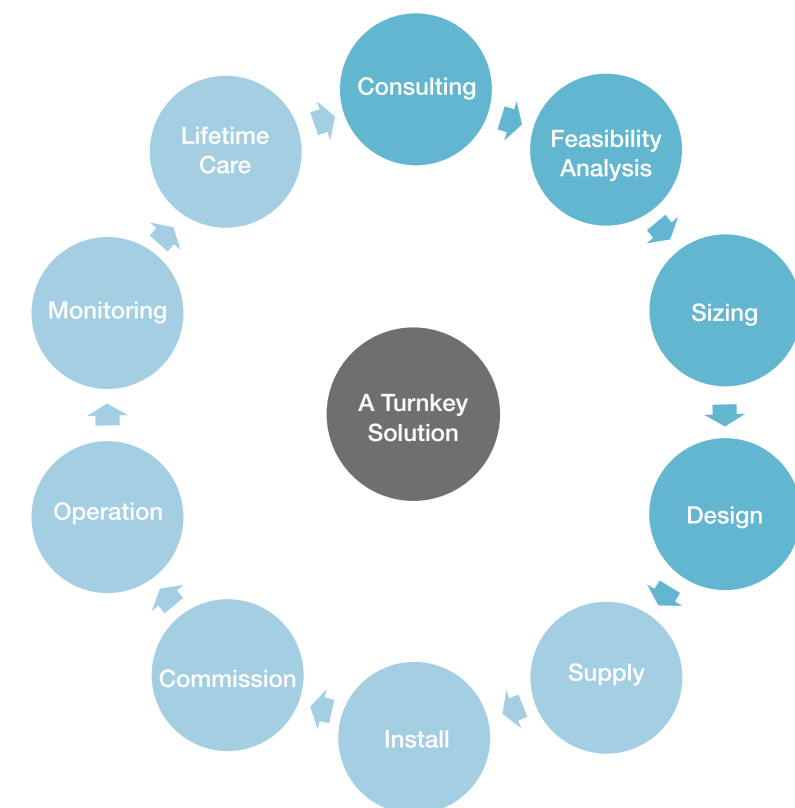
500 kW Trigeneration



# Our Services

From initial consulting and engineering design through to installation and lifetime maintenance. We deliver complete Cogeneration, Trigeneration and other energy management solutions for a range of industries.

- Feasibility Analysis
- Design, Supply and Install
- Commission
- Project Management
- Customer support and lifetime maintenance
- Energy Review, Monitoring and Audit
- Procurement Options.



The key to our success is designing the right solutions to meet our clients' needs from consulting to lifetime care. We offer a turn key solution.



## A COMPLETE SOLUTION

Our engineering team will carry out an in-depth analysis of your project requirements, based on a review of current and projected energy usage and other relevant implementation factors.

Assuming a technical solution makes sense, the detailed engineering analysis will determine the optimum system size and configuration and result in a technical and financial feasibility report that will illustrate the benefits and costs of the proposed solution.

Working closely with your team, our engineers will prepare detailed design drawings to ensure a smooth integration with the other building services.

We can assist with design and specification, we can offer a “supply only” solution or a complete turnkey solution. Our team can complete all the procurement activities, including order processing, insurance, freight and logistics.

The installation and commissioning process will be carried out by our mechanical and services engineers. Later, our maintenance and service technicians will remotely monitor the units maximising the efficiency and lifetime operation.



Simons Green Energy

SYDNEY | MELBOURNE | PERTH

Email – [info@simonsgreenenergy.com.au](mailto:info@simonsgreenenergy.com.au)

Web – [www.simonsgreenenergy.com.au](http://www.simonsgreenenergy.com.au)

Head Office – 02 8338 8660