

Little Creatures Brewery Geelong

Cogeneration System



Project Name:

Little Creatures Brewery Geelong - Cogeneration System

Site Owner: Little Creatures Brewing

Expected Commissioning Date: June 2013

Systems details:

Packaged Containerised Reciprocating Cogeneration Systems

Total Electrical Power: 1,200 kW

Capacities:

- 1 x 800kW unit: 800kWe Electrical - 855kWt Thermal @ 96°C
- 1 x 400kW unit: 400kWe Electrical - 427kWt Thermal @ 96°C

Fuel Source: Natural Gas

Manufacturer: SEVA Energie

Estimated payback period: 4.5 years

Engines: MWM

Building Type: Brewery manufacturing plant built on a heritage building site

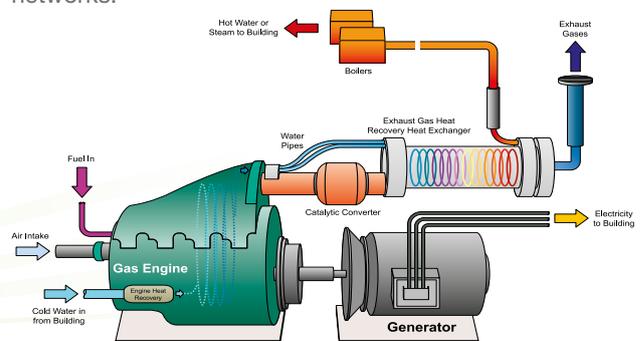
Background

Little Creatures, an Australian brewery owned by Lion Nathan and headquartered in Fremantle, Western Australia, is one of the first breweries that welcomed visitors to walk around their manufacturing plants. Little Creatures first beer was proudly presented to the Australian market in 2001, and with 10 years of constant growth, the company is building a new state-of-the-art manufacturing facility in Geelong, Victoria.

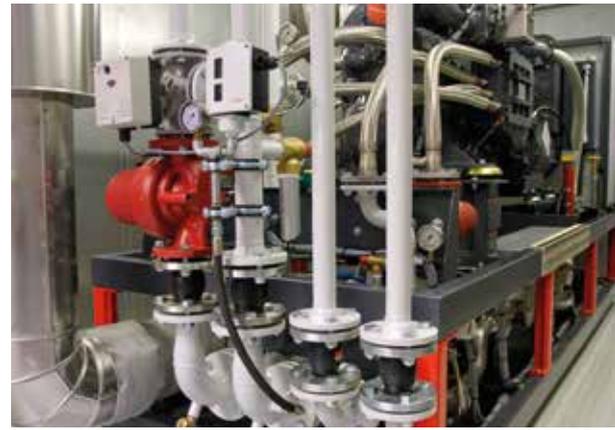
The new Little Creatures Brewery in Geelong was built on a heritage building site, and will include other energy efficient equipment such as energy recovery systems in the brew-house, automation for cleaning regimes and variable speed drives on motors throughout the plant. The brewery is due to have a cellar door bar and restaurant to showcase the brewery's products and other local produce.

With a major project objective of achieving optimal energy efficiency, Simons Green Energy was engaged to design, supply, install and maintain a 1,200 Kilowatt natural gas fired Cogeneration System to provide a large portion of the brewery's electricity and hot water demands. The electricity generated by the Cogeneration System is cheaper and cleaner than coal fired grid supplied electricity thereby providing substantial cost savings and a reduction in carbon emissions.

The engineering team from Simons Green Energy worked closely with the brewery owners and brewery plant suppliers Krones AG to ensure a smooth installation. The team worked with Powercor and Energy Safe Victoria to ensure that the system satisfies the strict design and installation regulations for connecting on-site power generation to the main power grid and natural gas networks.



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What is Cogeneration?

Cogeneration, also known as Combined Heat and Power (CHP), is the simultaneous production of two forms of energy - electricity and heat- from a single fuel source. Cogeneration uses a natural gas-powered engine to generate electricity on site and converts the waste heat from the engine into usable heat for space heating, process heat for manufacturing, domestic hot water, heating for swimming pools and similar applications. On site Cogeneration Systems have a total efficiency of up to 85%, as compared to the 30% efficiency of coal fired grid supplied electricity.

The waste heat from the engine's jacket water and exhaust gasses will be captured to produce hot water at 96°C. As the hot water is produced for "free" from the waste heat of the Cogeneration plant, it will reduce costs by decreasing the amount of steam needed from the site's traditional steam boilers. The hot water produced by the units will be stored in a massive hot water storage tank, and be consumed for the brewery's numerous process heating applications.

System Details

The Cogeneration Systems were supplied as complete factory tested packaged units, with engines, generator sets, controls and heat recovery systems all housed inside purpose built enclosures. They consist of two units (800kWe & 400kWe) with engines supplied by MWM, and will be configured to run parallel to the grid meaning that the only energy to be purchased from the grid will be that over and above what the engines can supply, which is expected to be little.

Delivering Results

The System is capable of producing up to 10 GWh of electricity and close to 11 GWh of thermal energy per year, thereby reducing energy costs dramatically.

Benefits

- Significant energy savings
- Carbon emission reductions
- Expected life span of over 20 years
- Stabilise the risks associated with rapidly rising electricity prices
- High return on investment
- Low operating costs for the life cycle of the system
- 85% conversion efficiency
- Operational safety through control and monitoring systems

About Simons Green Energy

Simons Green Energy, as part of the Simons group of companies, is a leading provider of sustainable energy, heating and cooling solutions in Australia. With over 80 years of operation in the field of thermal engineering, Simons provides solutions tailored to customer's needs with reliable products, technology and service quality. Simons offers a range of sustainable and renewable energy equipment including Cogeneration & Trigeneration Systems, Waste Heat Recovery Systems and High Efficiency Hot Water Boilers. Simons will design, size, deliver, maintain and finance sustainable energy solutions and technologies Australia wide.

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