



Providing Energy Solutions since 1932



LEADING THE WAY towards a cleaner and greener future

Simons Green Energy Solutions, a part of the Simons Group of companies established in 1932, continues the tradition of providing reliable energy solutions to Australian industry.

Experts in sustainable small scale power, steam & hot water generation as well as desalination, we are backed by world leading manufacturers of green energy equipment. Our core business activity is in the delivery of sustainable, energy efficient technologies.

The installation of our products will qualify for renewable energy credits and rebates both federal and state, subject to meeting certain criteria. They will also contribute to the achievement of the highest green star ratings.

In contrast to fossil energy sources, renewable and low carbon energies rely on inexhaustible sources. They can be utilised for power, heating and cooling generation.

PROVIDING PRODUCTS AND SOLUTIONS FOR

Cogeneration

Trigeneration

Waste Heat Power Generation

Solar Power Generation

Solar Hot Water

Solar Desalination

High efficiency Hot Water Boilers

Cogeneration

Established in 1982 Seva Energie AG has become a world leading supplier of packaged cogeneration systems. These systems provide electrical power as well as heating, through a single onsite energy source, offering significant operational and efficiency advantages.

They provide the opportunity to both reduce energy operating costs, as well as the negative environmental impact of traditional energy generation.

Seva cogeneration systems are available in sizes ranging from 50kWe (80kWt) to 3,000kWe (2900kWt).

They are also suitable to run on variety of fuel sources

- Natural Gas
- Biogas
- Vegetable Oil
- Landfill gas
- Mining gas



Applications

- Hotels, Leisure Centres & Clubs
- Aquatic Centres
- Hospitals
- Universities, Colleges and Schools
- Military Bases
- Municipal Buildings
- Airports
- Wastewater Treatment & Landfill sites
- General Industry
- Piggeries & Chicken Farms
- Breweries, Distilleries



Cogeneration



Giese Energie, established in Germany in 1971 was a pioneering company in the evolution of Combined Heat & Power systems. Their cogeneration engines inspired many other companies to realise the enormous potential of these products in a rapidly changing world.

Giese Energie has maintained their focus on small scale CHP units, available in sizes ranging from 5kW up to 49kW. These small size engines provide the perfect solution to electricity and heat generation, for residential or small commercial systems.

Powered by purpose built Yanmar gas engines & specialised control systems, they possess the unique ability to modulate their output down to levels, far below the competition.

They are highly efficient (up to 90%) and extremely quiet, allowing them to be installed in a variety of otherwise unsuitable locations. With the ability to operate on a wide range of fuel sources including natural gas, biogas, vegetable oil & landfill gas, the possibilities are endless.

Applications

- Residential developments
- Aquatic Centres
- Universities, Colleges & Schools
- Hospitals
- Hotels, Leisure Centres & Clubs
- Military bases
- General Industry





Wood Gasification

XYLOWATT transforms wood into gas that is a fuel easily manageable. This gas is converted into electricity, heat & chilled water for small to medium sized consumers.

The technology is particularly well suited to biomass resources which are often spread over large areas and which are costly to transport.

In addition to this decentralised advantage, XYLOWATT technology brings solutions for green electricity production and the granting of Renewable Energy Certificates.

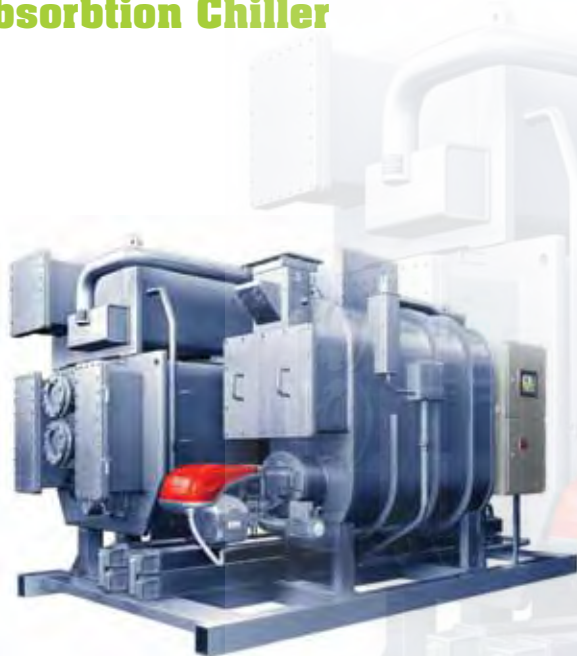
The gasification technology developed by XYLOWATT for CHP installations can use a wide range of biomass sources as primary energy:

- Saw mill by-products (shavings, off-cuts, bark)
- Forestry residues
- Recycled wood from industry or waste disposal sites
- Agricultural by-products such as straw.



SHUANGLIANG

Absorbtion Chiller



Shuangliang Air Conditioning company is one of the world's largest manufacturers of Absorption Chillers.

Their Lithium Bromide Absorption Chillers can be supplied with heat from various sources including:

- Cogeneration engines
- Direct firing
- Hot water
- Steam
- Flue gas
- Any other waste heat source.

The main advantage is in their lower energy consumption. Some 20-30% less heat and 30% less electrical energy consumption when compared to competitors.

The units are most commonly included into a Cogeneration (CHP) package to provide chilled water.

The inclusion of the chiller, creates Trigeration. As the name implies, Trigeration refers to the production of three functions: Electricity, heat and chilled water.

Steam operated **single** effect chillers: 350kW to 6,980kW
Steam operated **double** effect chillers: 350kW to 4,650kW

Adsorption Chiller

Sortech applies one of the oldest technologies for chilling generation - **ADSORPTION**.

Like in traditional air conditioning systems, cold is generated through evaporation of a refrigerant - in this case pure water. However, the machine consumes heat instead of electricity for driving the process.

These machines provide for a saving of up to 80% power consumption and CO2 emission. Water as the natural refrigerant additionally reduces the impact of global warming which is caused by the leaking of conventional chillers.

Sortech adsorption chillers are available in two sizes 8 and 15kW nominal cooling capacity.

They can be used for a broad range of air conditioning and cooling applications in small and medium sized buildings and systems including:

- Solar cooling
- Tri-generation
- District cooling
- Cooling with process



Waste Heat Power Generation



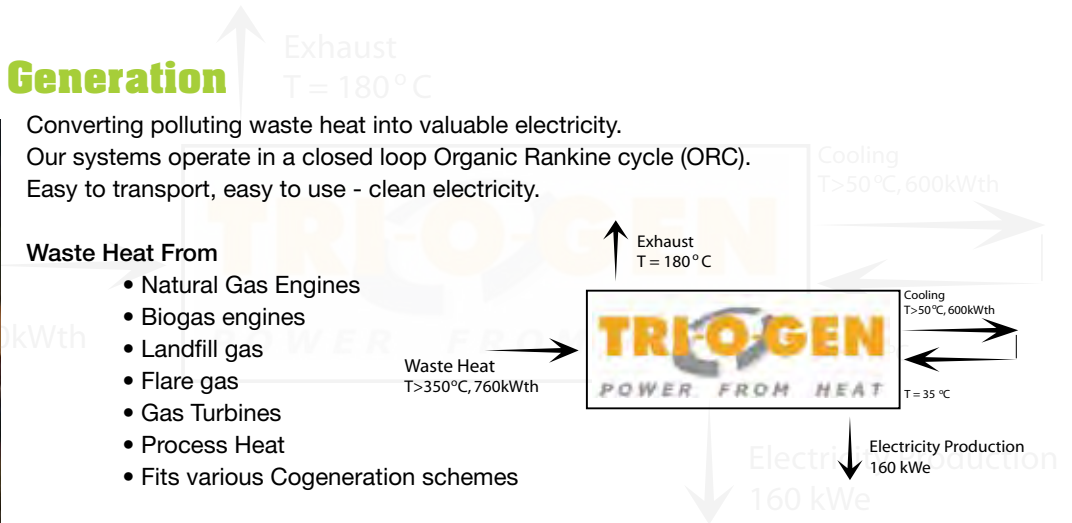
Converting polluting waste heat into valuable electricity.

Our systems operate in a closed loop Organic Rankine cycle (ORC).

Easy to transport, easy to use - clean electricity.

Waste Heat From

- Natural Gas Engines
- Biogas engines
- Landfill gas
- Flare gas
- Gas Turbines
- Process Heat
- Fits various Cogeneration schemes



| | |
|-----------------------|--------------|
| Net Electrical power | 60 - 160 kWe |
| Min. Temp. Heat input | 350 °C |
| Exhaust Temperature | 180 °C |



Waste Heat Power Generation



ElectraTherm's GREEN MACHINE heat to power systems operate in a closed loop organic Rankine cycle (ORC). Similar to a conventional steam engine that boils water into steam to produce mechanical work, an ORC uses low grade heat to boil a chemical working fluid, into gas.

The award winning Green Machines generate electricity from water no hotter than a cup of tea, but on an industrial scale and with the best Return on investment in the industry.

ElectraTherm's Green Machines make electrical power up to 50 kW from the following heat sources -

- Stationary Engines (jacket water - engine exhaust)
- Solar Thermal
- Geo Thermal
- Biomass
- Process Heat
- Boilers

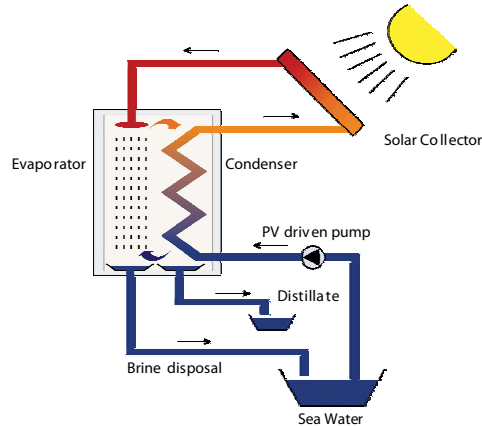


Evaporative Desalination System

The Mage, evaporative desalination systems, use solar or waste heat (boiler or existing heat source) for the production of pure drinking water, using the process of multi effect humidification.

Our systems are able to produce up to 50,000 litres per day of desalinated water. The process is based on the evaporation of water & the subsequent condensation of the generated vapour.

The produced water is virtually clear with no dissolved substances, & following condensation one can collect clear, salt free, drinkable fresh water.



Concentrated Power Solar System (Solar Parabolic Trough) Collector

By harnessing solar energy from the sun, SOPOGY MicroCSP solar collectors focus this energy onto a system of tubes filled with thermal oil. The oil is thereby heated to extremely high temperatures, allowing it's thermal energy to be converted into a multitude of applications.

Whether it is air conditioning, process heat, refrigeration or hybrid applications, Sopogy has a solution for you. Our mission is to offer the worlds most innovative and affordable concentrating solar power collectors.

The benefits of solar power are compelling - The fuel is free, abundant and inexhaustable.

Advantages

- Reduce your energy costs
- Lower emissions
- Qualify for renewable energy credits



Solar photovoltaic/thermal cells



High Energy (H-NRG) is a PVT (Photovoltaic and Thermal) system intended to cool the photovoltaic cells using a closed circuit cooling fluid.

An aluminium heat exchanger is applied on the back face of the collector module, transferring the heat released by the photovoltaic section to a water/glycol closed circuit.

A lower operating temperature of the PV cells, increases the efficiency and at the same time allows the generation of hot water.

This allows for an increase in the yearly kWh production.

Advantages

- Significant increase in cell output over standard PV cells.
- Hot water generation
- Reduced ageing of PV modules
- Hydronic heating for civil and industrial buildings





EDWARDS
commercial hot water

Commercial Solar Hot Water

Edwards Hot Water manufacture a wide range of commercial solar and gas fired hot water heating equipment to offer you the flexibility and performance you need.

We have a range of Solar Collectors to suit every application. The popular Australis Series contains copper tubes with a pressed Aluminium absorber plate coated with a polyester matt black paint for maximum performance. The casing is colorbond with 38mm insulation.

The Titan series is designed for high performance in cooler climates and incorporates titanium coated copper absorber plates for greater efficiency.



The Edwards Solar system has the ability to be installed with a glycol additive to prevent freezing and is guaranteed to minus 15°C.

All Edwards Solar Collectors are made in Australia and comply with all relevant Australian Standards.

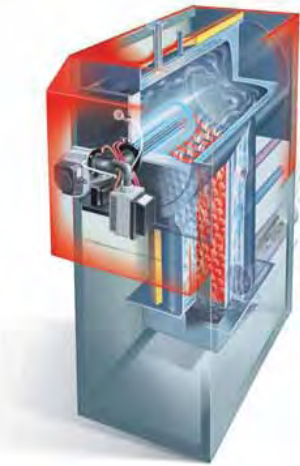
Edwards also manufacture a range of unique indirect heat exchange hot water storage cylinders.

These cylinders have the advantage of having two separate heating circuits.

A low pressure treated water circuit which can be used for connection to solar collectors or to mechanical devices for room heating, and a mains pressure circuit which does not compromise on the supply pressure to the hot water fixtures.



Condensing Hot Water Boiler



The Stelt & Monolite range of Condensing Boilers operate at very high efficiencies (max. MAX 106%) placing them at the peak of European classification standards (output directive 92/42/EEC).

The reasons for these high efficiencies are:

- Recovery of the latent heat by condensation of the water vapour present in the flue gases;
- Extremely low flue temperature, equal to that of the return water temperature plus about 10°C;
- Reduction to a minimum of heat loss through the heater casing.
- The AISI 316 Ti furnace and vertical flues are capable of resisting attacks from acidic condensation.
- Models from 75 kW to 863 kW (output calculated using a water temperature of 40°C/30°C).

For further information & assistance in finding the right solution for you please contact us:

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