

# MECS Application Areas Overview



## C2 Technology's

Modular Energy Conversion System (MECS) is for businesses operating with pressurised gasses who would like to reduce their energy bills or even sell electricity to the grid, minimise their carbon footprint and improve their operational efficiency.

### What is a Modular Energy Conversion System?

The C2 Technology **MECS** is a modular, multi configurable, energy conversion system consisting of a turbocompressor or turbogenerator, control & power subsystems, valves and ancillary equipment. The package has a compact plug and play design and is used to convert energy through the compression or expansion of gaseous media.

### Who could use a Modular Energy Conversion System?

**MECS** has configurations for several application areas across many of the industrial sectors with the heaviest energy consumption including clean power generation, compression and waste heat recovery.

#### Clean power generation applications

For clean pressure to power generation **MECS** can be configured either as a **Steam Let Down Expander (SLDE)** or a **Gas Let Down Expander (GLDE)**.

The **SLDE MECS** can be used within a plant with a high-pressure steam network. While the **GLDE MECS** can be used by a plant consuming natural gas directly from the high-pressure distribution network. Installed in parallel with a pressure reduction station (PRS) the **SLDE** and **GLDE** will improve operating efficiency of a business by generating grid compliant electricity from the energy wasted during pressure reduction.

Having a payback time of around 2 years, and a service life in excess of 25 the **SLDE** and **GLDE** are a must for any business utilising steam or high-pressure natural gas.



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## Compressor applications

For compression **MECS** can be configured as a **Natural Gas Wellhead Compressor (NATCO)**, **Hydrogen Fuel Cell Air Compressor (HACO)** or as a **Steam Heat Pump (STECO)**.



The **STECO MECS** is developed for any business with an excess of low-pressure steam that could be converted into useable high-pressure steam. It will reduce the plant's energy bills and carbon footprint. It also improves business operating efficiency as the ROI is in excess of 40-50%. Using **STECO** alongside **SLDE** is even more efficient.

The **NATCO MECS** is developed to boost production of gas wells that have reached the end of their lives for being unable to feed gas into their manifolds.

Payback time for businesses that would access more of their asset is less than a year while the well continues operate for another 18+ months.

## Waste heat recovery applications

**MECS** can also be configured as an **Expander-generator & Compressor (EXCO)** in waste heat recovery (WHR) applications using Rankine or super critical carbon dioxide (sCO<sub>2</sub>) power cycles and in small scale bioLNG production.

The **EXCO MECS** has applications such as onboard LNG-reliquefaction, energy generation from excess gases in fertilizer production, as well as simultaneously chilling and compressing gases in liquefied natural gas (LNG) and hot-gas processes. Fuel burning plants with high temperature exhaust gases can by implementing WHR with EXCO MECS convert 12-16% of heat waste into grid compliant electricity.



## How Can I Get a C2 Technology Modular Energy Conversion System?

C2 Technology supports each installation by a full set of expert services starting with a thorough analysis of the site and calculations of the projected savings from a **MECS** installation.

**To arrange a free consultation please call or email us.**

Please visit our website  
or email us for more  
information

**C2 Technology Is Your Partner  
for Smart & Eco-friendly Solutions  
Bringing Tomorrow's Technology into Today**