Transforming energy. One idea at a time.

For 40 years Atlas Copco Gas and Process has engineered solutions to help our customers reduce their environmental impact.

Starting with our first compressor-based heat pump for district heating in the early 1980s, we have consistently advanced our technology to support a circular hydrogen economy and a pledge towards net zero emissions by the year 2050. Today, we offer environmentally sustainable solutions for hydrogen, carbon capture utilization and storage, as well as industrial heat pumps, energy storage - and more.

Great ideas for now, and for the future

From improving energy efficiency and CO_2 footprint of your existing rotating equipment to machinery serving new and emerging processes - there are numerous ways we can help you decarbonize your current operations.

Atlas Copco Gas and Process provides centrifugal compressors, expanders and fluid pumps that can help you sustainably lower your environmental impact.

Applications we serve

Carbon Capture, Utilization and Storage (CCUS)

- Carbon capture, utilization and storage (CCUS) is a crucial concept to lowering the output of CO_2 into the environment. By removing CO_2 from exhaust sources, we can lower greenhouse gas production and also harness CO_2 for various hydrocarbon processes. Supporting our commitment to net zero emissions, CCUS will play a vital role in reducing emissions for many years to come.

Hydrogen Liquefaction

- Liquefaction plays an essential part in the hydrogen value chain. Our integrally-geared turbocompressors, for example, help support the transport liquid hydrogen on vessels at -253°C. Our turboexpanders are used in local and industrial liquefaction (pre-cooling and primary cooling refrigeration cycles).

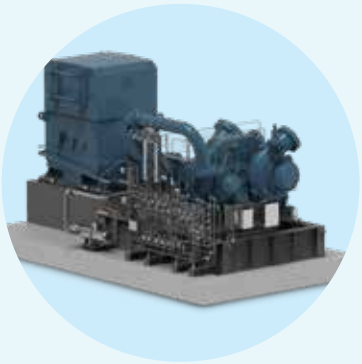
Supercritical CO_2 as a working fluid

- As the preferred working fluid for modern, efficient and compact power cycles and industrial heat pumps, sCO_2 is a game changer. Instead of conventional phase changes to recover energy, sCO_2 undergoes drastic density changes over small temperature and pressure gradients, enabling significant energy recovery within comparatively small equipment. Both for energy recovery and heat pumps, the entire cycle relies on efficiency, also meaning that the design of the CO_2 compressor and expander is crucial.

*Industrial Heat Pumps**

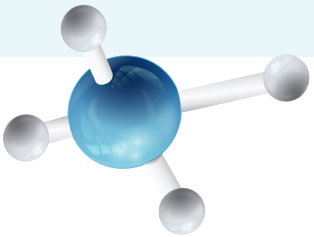
** Includes Mechanical Vapor Recompression (MVR) solutions for the hydrocarbon industry.*

- Atlas Copco Gas and Process has supplied large scale heat pump compressors or companders for district heating efforts for 40 years. These compressors are a large part of decarbonized heating systems that utilize the residual heat from various sources (i.e. river water, steam etc.) help to provide heat or cool municipalities or in the case of MVR, provide process heat in plants.



Waste Heat Recovery

- We can help you recover and harness waste heat from many industrial sources. Chances are if your process is generating waste heat, we can design a system to capture, recycle and/or reuse that energy to support more sustainable processes across the board. Examples include:
  - Cement kiln furnaces
  - Open cycle gas turbine plants
  - Gas turbine pipeline compressors
  - Cold energy recovery in LNG terminals



Energy Storage

- Advanced turbocompressors and turboexpanders are key components in a variety of new non-battery, high capacity energy storage systems. Some examples of these applications are:
  - Liquid Air
  - Liquid CO_2
  - Thermal-based storage

Pressure Letdown (PLD)

- Before natural gas can be delivered to the end user the pressure of the gas must be eased before it enters the consumer pipeline. This can be done with pressure relief valves, which wastes the inherent high pressure format of natural gas. Instead of venting the pressure into the environment, Atlas Copco Gas and Process can supply PLD expander-generators that can utilize the high pressure to generate electricity rather than squandering this energy source.

Geothermal Power Generation

- Organic Rankine Cycle (ORC) and geothermal waste heat recovery are possible through a combination of expansion turbines and heat exchangers to reuse what could be considered as waste heat. The OR Cycle happens at a lower temperature than the water-steam phase change, allowing for a more workable process that is easier on equipment than higher temperature and higher stress applications.

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