

PolarFit® Cold Energy Recovery System

Improving the efficiency and sustainability of your cooling process

PolarFit® Cold Energy Recovery is a system that utilises a heat exchanger to recover cold energy from a vaporising cryogen, helping improve the sustainability and economics of plant operations.

Many production processes require the use of industrial gases such as nitrogen, oxygen, carbon dioxide or argon in gaseous form. However, these gases are typically stored in liquid form in cryogenic tanks then vaporised before use in the process. This is usually undertaken by an ambient vaporiser that utilises the ambient air temperature as the energy source for vaporisation and the cold energy from cryogen vaporisation is lost to the atmosphere. The Air Products' PolarFit® Cold Energy Recovery System ensures that this cold energy, which can represent significant value, is captured and utilised.

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Common industrial processes and plant operations have existing refrigeration requirements, so by incorporating the Air Products' PolarFit® Cold Energy Recovery System into the current refrigeration or cooling loop, the cold energy can be transferred directly into the circulation refrigerant.

Cryogenic liquid from the storage tank is released through insulated piping into the PolarFit® Cold Energy Recovery System. In a heat exchanger, the refrigerant fluid heats up the cryogenic liquid, vaporising it into gas, and the fluid itself is then cooled down in the process. The system recovers the cold energy generated from the cryogenic liquid vaporisation back into the cooling system which is then returned to the existing refrigeration process. Recovery of the cooling energy of the liquefied gases reduces energy consumption and supports efficient operations of cooling systems.

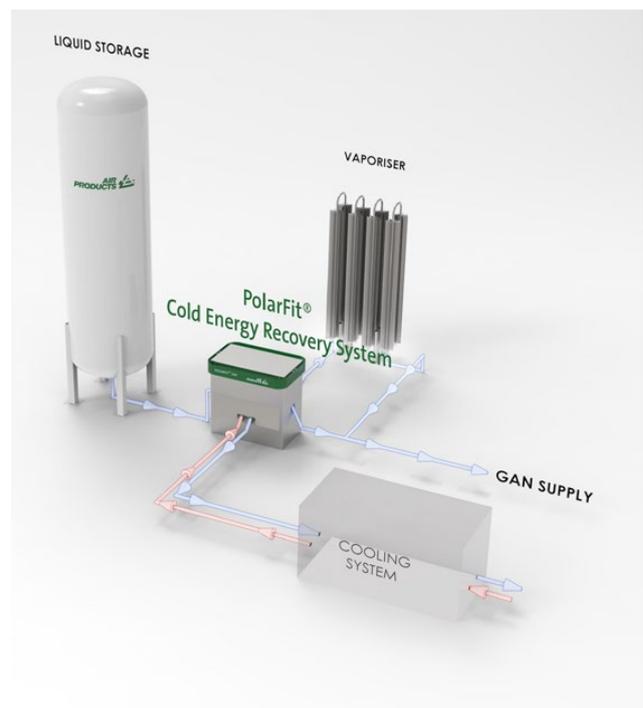
Tailored to your needs

PolarFit® Cold Energy Recovery System is suitable for many industrial processes that use gas and heat simultaneously.

The system can be customised to meet specific plant requirements and is easily integrated into an existing installation or process.

Features

- Easy installation
- Integration into existing or new facilities
- Cold energy recycling credits possible
- Simple automatic operation



Benefits

- **Improves efficiency of cooling processes**
- **Substantial energy cost savings**
 - The system helps you to recycle the cold generated by the vaporisation of a cryogenic liquid. The cold recovered can be used to cool other plant refrigeration processes, including cold storage.
- **Reduce your environmental impact**
 - It helps you to lower your CO₂ emissions. The system also contributes to achieving your ISO 50001 and ISO 14001 certifications.



This system provides sustainable benefits. The improvements made can enhance the efficiency of cooling processes, reduce energy costs, improve process safety and security, and decrease CO₂ emissions.

If you have any questions, please contact us. One of our application specialists will evaluate the right process for your needs.



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