

Cryogenic Cold Energy Recovery System

We deliver:

- Energy savings of up to 21 kWh
- CO₂ footprint reduction up to 74 tonnes per annum
- Icing and fogging risk reduction
- Remote access feature
- Significant contribution to ISO certifications



The Right Solution for Your Cooling System

ECO-CHILLER is a cryogenic cold energy recovery system, developed by Air Liquide to improve the efficiency of your cooling process. The system works by recycling the cold energy released during the vaporization of liquid industrial gas and feeding it to your cooling water network. The pre-cooled water thus relieves your cooling unit and reduces the energy costs of process cooling.

ECO-CHILLER is best suited for liquid industrial gas consumption starting from 100 Nm³/hr.

The Nexelia Solution

Air Liquide offers a range of solutions under its unique umbrella brand, Nexelia. ECO-CHILLER is a part of the Nexelia for Cooling Systems solution, which combines the best of Air Liquide's gases, application technologies, and expert support to meet your specific needs for your cooling system. As with all solutions under the Nexelia label, we work closely with you to pre-define a concrete set of results, and we commit to delivering them.

Applicable Industries

Any Industry that require cooling down of process water and use vaporized liquid industrial gas such as nitrogen, oxygen or argon.

Standard Models

ECO-CHILLER	100	300	600
Length (m)	2.0	2.0	3.3
Depth (m)	1.7	2.2	1.9
Height (m)	2.0	2.5	2.5
Weight (kg)	300	600	800

*Customization is available based on actual gas consumption.

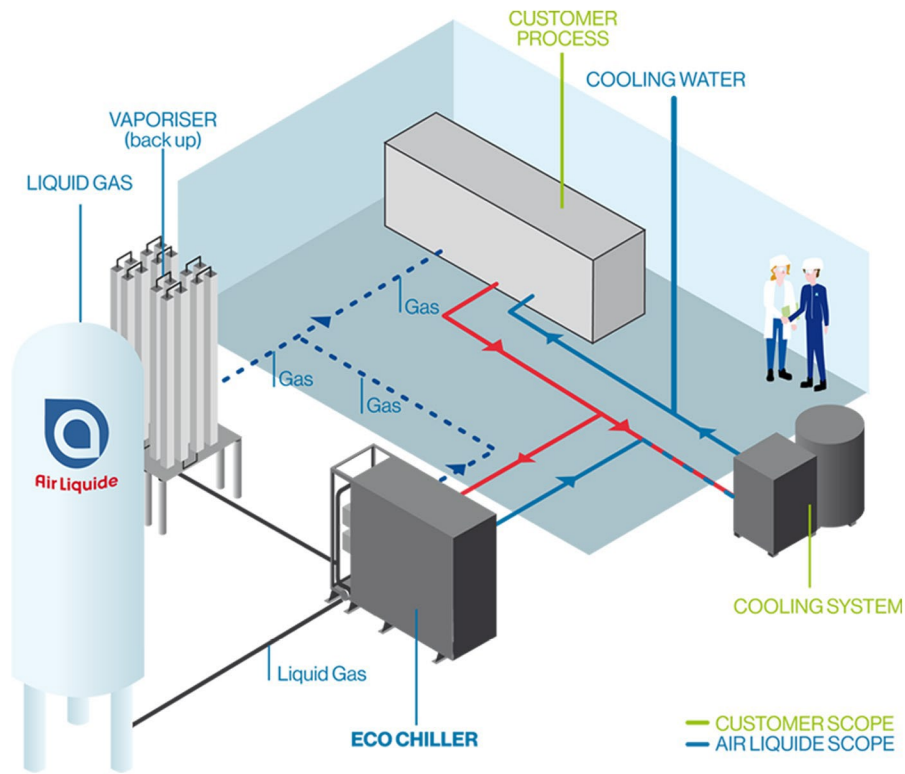
Operating Principles of the Equipment

Liquid industrial gas from the liquid storage tank goes through insulated cryogenic piping into the ECO-CHILLER. The warm water from your process is then cooled down by the liquid industrial gas via heat exchange that takes place within the ECO-CHILLER.

For optimal operational safety, there is an automated switch function in case of:

- Insufficient water flow rate
- Insufficient water temperature
- Insufficient gas temperature

In these situations, the ECO-CHILLER is bypassed and the liquid industrial gas is directed straight to the ambient vaporizer to be converted into gas phase for process use.



Your Advantages

■ Notable Energy Cost Savings

The **ECO-CHILLER** is recommended to be installed as close as possible to the liquid storage tank in order for the cold energy released during vaporization to be utilized efficiently to reduce the electricity load of your conventional cooling system. Maximum electrical energy savings could go up to 21 kWh.

■ Optimal Operating Condition

With a temperature controlled operation, you will be able to rely on a more constant gas supply temperature. Icing and fog formation related to N₂ vaporization would also reduce, hence improving your operational reliability.

■ CO₂ Footprint Reduction and Contribution to ISO Certifications

The decrease in electrical energy consumption in your cooling system could contribute to reduced Scope 2 emissions for up to 74 tonnes of CO₂ per year and help you achieve ISO 50001 and ISO 14001 certifications.

■ Remote Access

Remote access feature is also available, enabling you to monitor operating parameters from your mobile device or laptop at ease.

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