

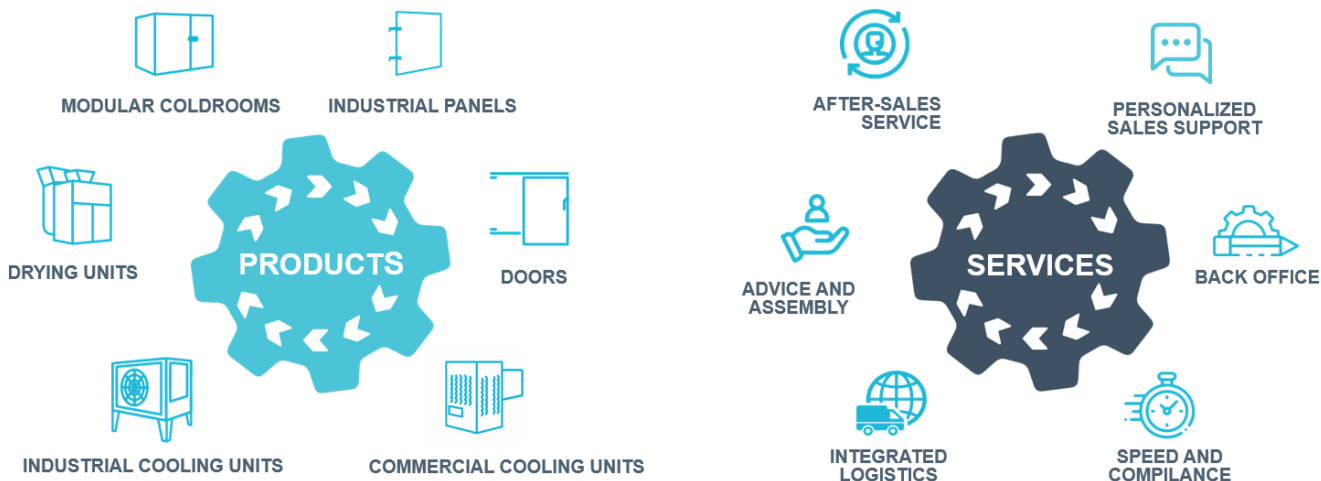
Chillventa Specialist Forums 2024 Chillventa Fachforen 2024

The F-GAS opportunity

**CONNECTING
EXPERTS.**

Pablo Rodriguez – Head of Engineering

360 solution



+ 50 years

of experience in the industry.

The F-GAS opportunity

CHILLVENTA

+ 8000 m²

Manufacturing
plants

100%

Made in Europe

+40 M€

Turnover in
2023

+175

Professionals

More than 50% of the
sales in Export Markets



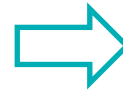
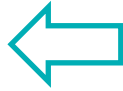
Berriatua - Bizkaia (Spain)



We are a cooperative of the Mondragon Corporation

Objective

Reduce ozone layer pollution



Minimise global warming

The F-GAS opportunity

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GWP < 150

Monoblock units

From 1 January 2025

Split units

From 1 January 2030

According to F-GAS and based on our equipment typology



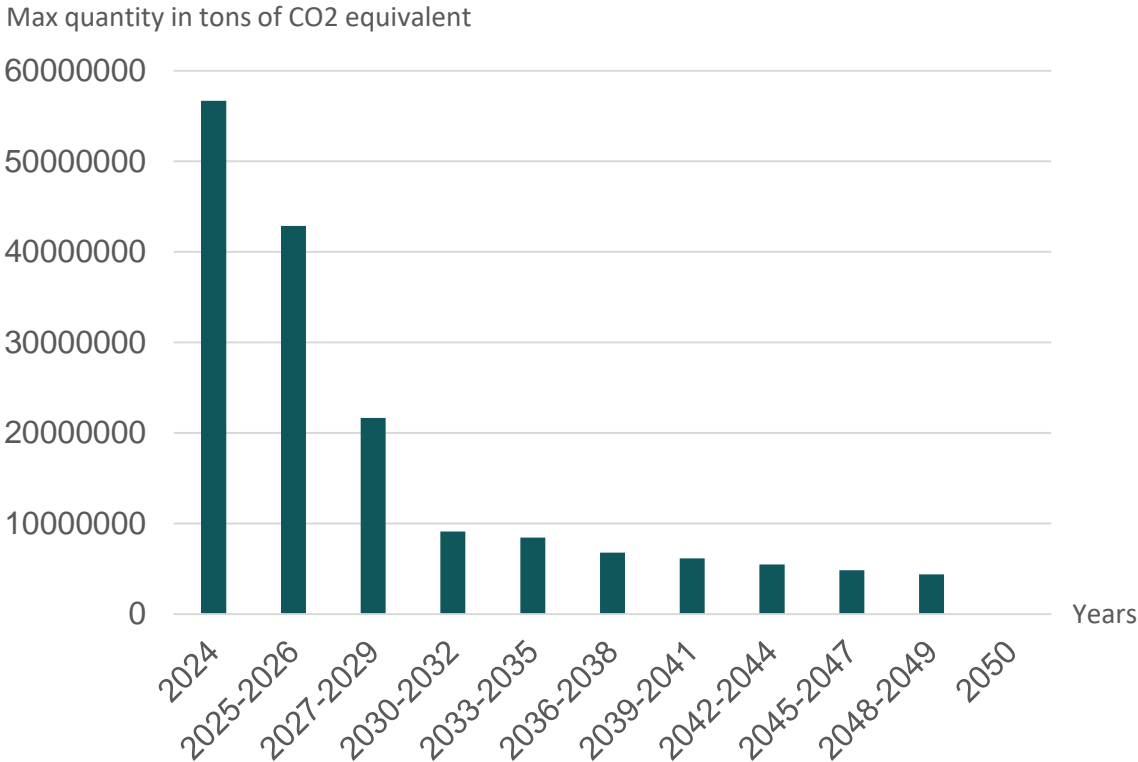
GWP < 750

Glycol chillers

From 1 January 2027

The F-GAS opportunity

Reduction in quotas



The F-GAS opportunity

CHILVENTA

Focusing in our partners



- Range of monoblock and split units available to work with R-455A and R-454C refrigerants.



- Range of monoblock units with R290, air and water condensed (up to 500 grams).



The F-GAS opportunity

To carry out this development we have had to take into account the **following considerations:**



Analyse the availability
of components on the
market to manufacture
the units:
Compressors, valves,
coils...



COPELAND



SANHUA



Performing
theoretical
calculations and
purchasing
components.

To carry out this development we have had to take into account the **following considerations:**



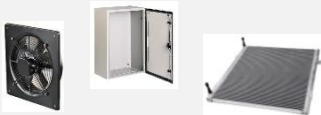
Laboratory approval tests.

MODEL	COMPRESSOR	Gas	LOAD	EXT T°	Condenser air output T°	INT T°	Evaporator air output T°	Discharge T°	High pressure	Low pressure	Rec. Tool	Rec. Total	DT cond.	Consumption	Watts heat	Chamber volume
EMB1006M1G	AJ4510P-FZ	R-455A	0.9Kg	8°C	24.8°C	1.3°C	-3.4°C	73.4°C	27.2°C/13.6B	-9.1/2.51B	8.8 K	9 K		3.2 A	1200 W	6 m³
				22.7°C	29.3°C	0.6°C	-3.9°C	81.1°C	35.8°C/16.9B	-10.8°C/2.3B	8.9 K	9.8 K	13.1 K	3.3 A	1100 W	
				32°C	38.8°C	1°C	-3.3°C	90.6°C	44.5°C/20.7B	-8.5°C/2.6B	7.5 K	9 K	12.5 K	3.6 A	700 W	
				42.2°C	48.5°C	1.1°C	-2.4°C	103.4°C	54.1°C/25.6B	-7.8°C/2.7B	7.1 K	9.1 K	11.9 K	3.9 A	600 W	

To carry out this development we have had to take into account the **following considerations:**



Considerations for the design of equipment with A2L and R290 refrigerants.



Final design of all components.



Obtaining CE certificates and adapting the production line.



Marketing

The F-GAS opportunity

CHILVENTA

Range of units ready to work GWP < 150

- Monoblock and split units available to work with R-455A and R-454C refrigerants, air and water condensed. Drying units are also available for hams, sausages and cheeses.

- High temperature (+12/15°C): 1.2kW up to 90kW
- Chiller (-5/+10°C): 1.1kW up to 81kW
- Freezer (-15/-25°C): 0.85kW up to 71kW



- Monoblock units with R290, wall and ceiling, air and water condensed. Glycol chillers are also available.

- Chiller (-5/+10°C): 0.65kW up to 2.8kW
- Freezer (-15/-25°C): 0.45kW up to 2.1kW



The F-GAS opportunity

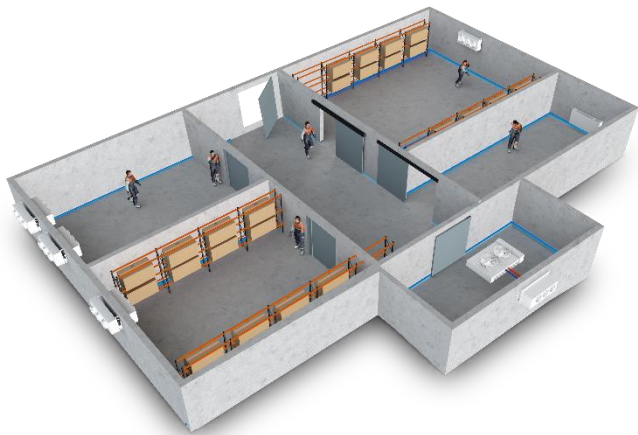
CHILVENTA

Sustainable solutions

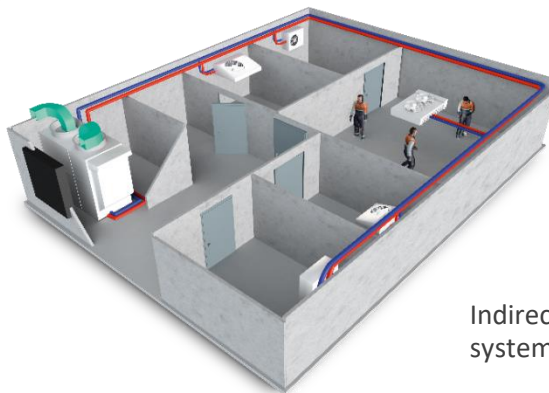
Waterloop refrigeration system



Direct expansion refrigeration system



Indirect expansion refrigeration system



The F-GAS opportunity

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Case stories Worldwide

- Industrial Freezing units with A2L – Leading poultry industry in Lugo (Spain)
- Glycol chiller and waterloop system with R290 – Airline catering company in Copenhagen
- Glycol chiller with R290 – Main Hospital in Madrid (Spain)
- A2L Refrigeration system – Central kitchen for Norwegian airlines in Oslo (Norway)



newrest



norwegian



The F-GAS opportunity

CHILLVENTA

CHILLVENTA 2024 8-10 OCT
The world's leading exhibition for
refrigeration technology

 Nuremberg

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**CONNECTING
EXPERTS.**

**Thank you very
much!**

Pablo Rodriguez – Head of Engineering