EUROVENT
EUROPEAN INDUSTRY ASSOCIATION

WHY COOLING MATTERS

MODERN LIFE WOULD NOT BE POSSIBLE WITHOUT COOLING. IT IS CRITICAL TO HUMAN HEALTH AND A KEY ENABLER OF TWIN GREEN AND DIGITAL TRANSITION. MANY APPLICATIONS RELY ON EFFECTIVE TEMPERATURE CONTROL, INCLUDING:

GREEN HYDROGEN

Green hydrogen electrolysers produce heat, which needs to be rejected. A 100MW(e) electrolyser needs around 30 MW of cooling[1].

EV BATTERIES

The production of EV batteries used in modern electric vehicles relies on effective and stable temperature control, during cell assembly, electrolyte filling and testing.

DATA CENTRES

Data centres are the backbone of our interconnected world, enabling online services and global communication. The servers produce heat as they process information. Cooling accounts for up to 40% of data centre power consumption[2].

FOOD COLD CHAIN

The food cold chain keeps perishable produce fresh. The lack of effective refrigeration is a leading contributor to food loss and food waste, which accounts for 8-10% of global greenhouse gas emissions[3].

PHARMACEUTICALS

The cold chain is also essential for temperature sensitive pharmaceuticals, including life-saving vaccines, biologics, insulin, blood products, and antibiotics. Almost 50% of vaccines globally are wasted due to temperature variations[4].

HUMAN COMFORT

Staying cool in summer is not only a matter of comfort, but also affects educational outcomes, productivity, and health. Heat claims over 45.000 lives annually in Europe[5], which studies show can be prevented with space cooling[6,7].

... and many more

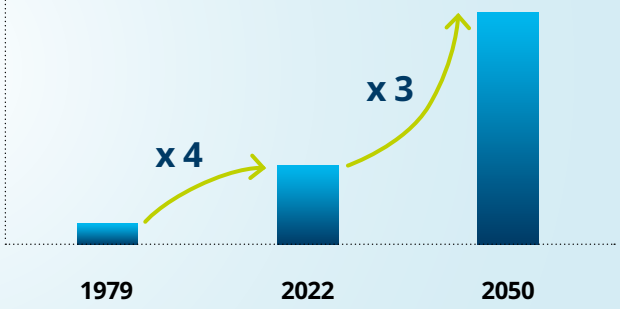
THE INCREASED NEED FOR COOLING

The need for cooling is increasing steadily as temperatures rise.

- **Energy demand for cooling has almost quadrupled in the EU since 1979[8].**
- **The WHO European Region is the fastest-warming, at around twice the global average rate[9].**
- **Globally, demand for cooling is expected to triple again by 2050[10].**

The growing need for cooling is a complex challenge, with implications for climate, electricity grids, food safety, and health. This is a looming challenge that needs to be addressed urgently.

The global need for cooling



HOW TO COOL SUSTAINABLY

Sustainable cooling is a fundamentally different kind of challenge from the decarbonisation of heating. Unlike heating, 75% of which is provided by the combustion of fossil fuels[11], cooling is a fully electrified end-use. It only requires electrical energy for the operation of compressors, fans and pumps, which accounts for most of its associated environmental impacts. There is no direct use of fossil fuels, and its carbon intensity depends on the electricity supply. Only around 28% of grid electricity came from fossil fuels in the EU in 2024[12]. Sustainable cooling includes the following aspects:

ENERGY EFFICIENCY:

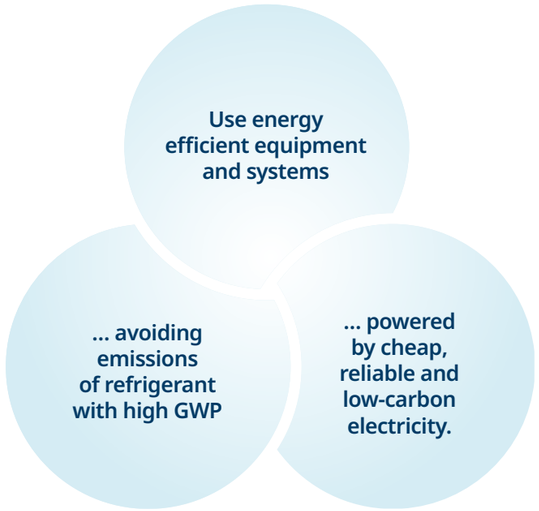
Energy efficiency is one of the keys to sustainable cooling. Highly efficient systems deliver the same amount of cooling with less energy. This helps to mitigate growing cooling demand, easing pressure on power grids and improving affordability. Heat recovery can be a key principle to drive further efficiency gains and turn cooling into a decarbonising resource.

REFRIGERANTS:

Another potential environmental impact from cooling is refrigerant emissions. Commonly used HFC refrigerants can act as powerful greenhouse gasses if they escape into the atmosphere. It is therefore essential to prevent refrigerant emissions and phase-out high-GWP refrigerants in accordance with the F-Gas Regulation.

RENEWABLE ELECTRICITY:

Plentiful, cheap and low-carbon electricity generation is of fundamental importance for coping with growing cooling demand, improving affordability, and reducing the negative environmental impacts related to cooling.



HOW EU POLICY CAN HELP

1. **A new and updated EU Heating and Cooling Strategy, which acknowledges the unique challenges and contributions of the cooling sector**

   The updated EU Heating and Cooling Strategy needs to outline a clear roadmap for the sector, which addresses the challenges and barriers to decarbonisation. This updated strategy should acknowledge the unique challenges and contributions of cooling, as distinct from heating.

2. **Continue to promote best-in-class cooling equipment under the Ecodesign and Energy Labelling framework**

   The Ecodesign and Energy Labelling framework has driven efficiency gains in cooling equipment. It is crucial to keep it up to date to reflect the best available technologies and complement it with stronger market surveillance to prevent non-compliant products from undermining energy savings.

3. **Provide targeted financial incentives for sustainable cooling solutions**

   Financial incentives can accelerate the adoption of sustainable cooling by making high-efficiency technologies more accessible, especially as compared to less efficient products. Incentives should prioritise solutions that enhance efficiency, especially among vulnerable households, those living in energy poverty and people facing extreme heat events.

4. **Cooling considerations in the implementation of the Renovation Wave, including in National Long-Term Renovation Plans**

   The Renovation Wave must ensure buildings are prepared for rising temperatures. National Long-Term Renovation Plans should take into account the rising need for cooling and ensure that renovations heat-proof buildings, through measures that reduce heat gains (like smart solar shading) and provide highly efficient space cooling.

5. **Acknowledge the growing demand for cooling in the Electrification Action Plan**

   In some parts of the world, on hot days, space cooling can account for as much as half of peak electricity demand or more. The Electrification Action Plan should plan for the growth in cooling demand to ensure grid stability. Smart controls and thermal storage can turn cooling into a solution for peak shifting and demand response.

6. **Ensure that the Comprehensive Heating and Cooling Assessments also account for the specific challenges of cooling**

   Comprehensive Heating and Cooling Assessments under the Energy Efficiency Directive (EED) should fully account for the unique challenges of cooling. This includes addressing rising demand, the role of energy-efficient technologies, the potential of thermal storage to reduce peak loads, and heat recovery to turn cooling into a decarbonising resource.

7. **Implement and enforce the F-Gas Regulation**

   The impacts associated with refrigerants are already regulated in the EU through the F Gas Regulation, which creates strict rules for the handling of refrigerants and aim s for the total phase out of HFCs by 2050.
   The legal framework is already there; it is only a matter of implementing and enforcing it.

8. **Recognise the role of the European HVACR industry in the EU industrial strategy**

   With over 350 manufacturing sites and 150.000 employees in Europe, the European HVACR industry's role in delivering sustainable cooling and refrigeration solutions made in Europe needs to be recognised in the EU's industrial strategy to support growth and innovation.

1 Green Hydrogen: Md Rizwan et al., (2021), *Design considerations for industrial water electrolyzer plants*, International Journal of Hydrogen Energy, Volume 46 Issue 75, Pages 37120-37136

2 Data Centres: X. Zhang et al., (2017), *Cooling Energy Consumption Investigation of Data Center IT Room with Vertical Placed Server*, Energy Procedia 105 (2017) 2047-2052

3 UNEP Food Waste Index Report 2021, https://www.unep.org/resources/report/unep-food-waste-index-report-2021

4 WHO (2005), *Monitoring vaccine wastage at country level.* https://iris.who.int/bitstream/handle/10665/68463/WHO_VB_03.18.Rev.1_eng.pdf

5 García-León et al., (2024), *Temperature-related mortality burden and projected change in 1368 European regions: a modelling study*, The Lancet Public Health, Volume 9, Issue 9, e644 - e653

6 Romanello et al. (2021), *The 2021 report of the Lancet Countdown on health and climate change: code red for a healthy future*, The Lancet, Volume 398, Issue 10311, 1619 – 1662

7 IEA, (2023), *Sustainable, Affordable Cooling Can Save Tens of Thousands of Lives Each Year,* Paris https://www.iea.org/reports/sustainable-affordable-cooling-can-save-tens-of-thousands-of-lives-each-year

8 Eurostat, *Cooling and heating degree days by country annual data,* https://doi.org/10.2908/NRG_CHDD_A

9 WHO, (2025), *Heatwaves,* https://www.who. europe/health topics/heatwaves

10 IEA, (2018), *Air conditioning use emerges as one of the key drivers of global electricity demand growth*

11 Eurostat, *Share of energy from renewable sources,* https://doi.org/10.2908/NRG_IND_REN

12 Eurelectric, *Power Baromete r 2024*, https://powerbarometer.eurelectric.org/

EUROVENT
EUROPEAN INDUSTRY ASSOCIATION

EUROVENT IS THE EUROPEAN INDUSTRY ASSOCIATION FOR HEATING, VENTILATION, COOLING, AND REFRIGERATION

ABOUT

Eurovent is the voice of the European HVACR industry, representing over 100 companies directly and more than 1.000 indirectly through our 16 national associations. The majority are small and medium-sized companies that manufacture indoor climate, process cooling, and cold chain technologies across more than 350 manufacturing sites in Europe. They generate a combined annual turnover of more than 30 billion EUR and employ over 150.000 Europeans in good quality tech jobs.

MISSION

Eurovent's mission is to bring together HVACR technology providers to collaborate with policymakers and other stakeholders towards conditions that foster fair competition, innovation, and sustainable growth for the European HVACR industry.

VISION

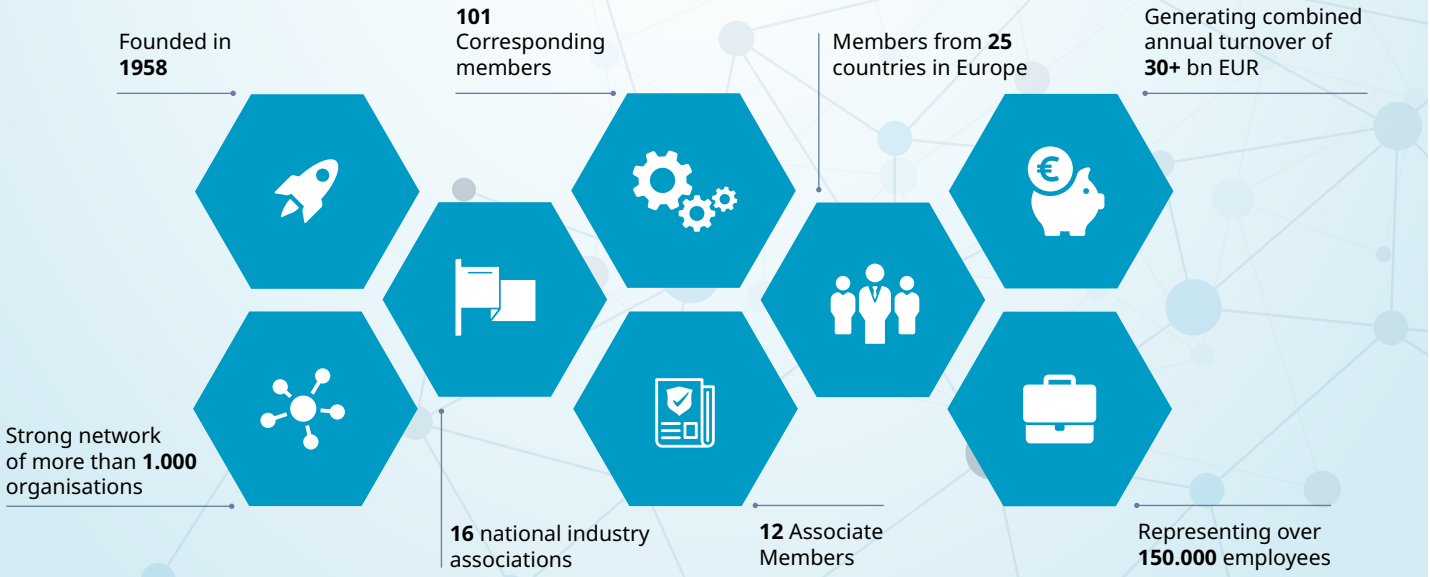
Eurovent's vision is an innovative and competitive European HVACR industry that enables sustainable development in Europe and globally, which works for people, business, and the environment.

TECHNOLOGY AREAS

Our members are active within one or more of the following four key technology areas. By incorporating them, we think beyond 'HVACR', acknowledging the term's various components by approaching them from a wider application perspective.

- **INDOOR CLIMATE**
- **PROCESS COOLING**
- **FOOD COLD CHAIN**
- **INDUSTRIAL VENTILATION**

EUROVENT IN A NUTSHELL



ADDRESS
80 Bd A. Reyers Ln
1030 Brussels, Belgium

PHONE
+32 466 90 04 01

EMAIL
secretariat@eurovent.eu

FOLLOW US ON LINKEDIN
Receive most up-to-date information on Eurovent and our industry.
linkedin.eurovent.eu

www.eurovent.eu

EUROVENT
EUROPEAN INDUSTRY ASSOCIATION