

## **COUNT ON COOLING! THE HVACR SECTOR AT A CROSSROADS**

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*The demand for the benefits of cooling is set to grow in the coming decades. Political leaders can either chose to unlock the potential of cooling as an “enabler” for the energy transition towards a carbon neutral Europe or let go of this great opportunity and take the risk of increasing energy demand and emissions, jeopardizing quality of life for all Europeans.*

Cooling is an intrinsic part of our daily lives: it makes our cities liveable, keeps our food safe and fresh, contributes to best-in-class health care and helps us to keep pace with digitalisation. In short, it's an essential element to ensure quality of life for all Europeans and a necessity with an impact on the sustainability and success of many other sectors. The demand for cooling is set to grow significantly in the coming decades as the climate is warming – and even more so in the light of several trends which will directly impact the need for cooling, such as: An ageing population which is particularly vulnerable to heat; growing urbanisation which increases the need for cooling but also the risk of heat islands in cities; an increasing emphasis on well-being supported by a healthy indoor environment; the acceleration of digitalisation which requires adequate infrastructures.

Such growing demand for cooling, however, could impact energy consumption and emissions if not properly addressed. This is a critical factor at a time, when the European Union's energy and climate goals build on a total transformation of its energy system, while political leaders are torn between the necessity to deliver on these goals and the pressure arising from an increasing gap between rich and poor as well as growing nationalism. One example for this are the yellow vests in France.

In other words, at a time when a fair, fast and attractive energy transition for ALL Europeans is needed more than ever.

Cooling is at the intersect of energy efficiency and the transition to renewable energies. Both of these concepts are closely related to each other as a full transition towards renewables will only be possible if energy demand is reduced right from the start. Minimising the cooling load plays an essential role in that context, for example via adequate insulation, glazing, shading, and the building design. Building on such improvements, cooling – due to its very nature – has a massive potential to deliver on both, energy efficiency and renewables by fostering a systemic approach, for example based on:

- Low hanging fruit such as regular inspections, maintenance and systematic control of cooling equipment allowing significant energy and cost savings;
- Synergies between cooling and heating where the heat rejected by cooling systems is recovered instead of being wasted, contributing to satisfy the heating demand;
- Possibilities to store thermal energy and to provide flexibility to the grid, thereby helping to manage the fluctuating influx of renewable energies;

- Innovative technologies and systems such as heat pumps or their combination with solar PV, high part load efficiency as cooling equipment hardly ever runs at 100% of its capacity, refrigerants with a very low GWP potential, building automation and controls systems, etc.

These and many other solutions are readily available and waiting to be rolled out to ensure that cooling continues to boost health, well-being and productivity for all Europeans – by contributing in a tangible and pragmatic way to the achievement of the EU's climate and energy goals, rather than jeopardizing them. To make this happen and reap this significant potential, EPEE, representing the heating and cooling industry in Europe, has a number of practical recommendations:

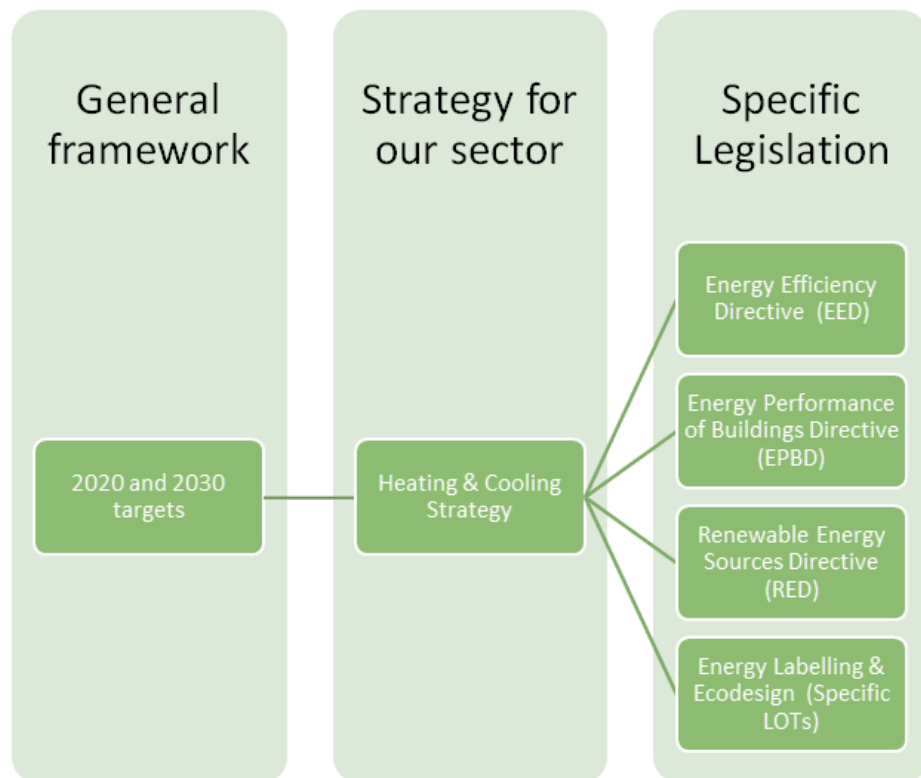
## **1. Tap into the full potential of technical building systems**

With the amended Energy Performance of Buildings Directive (EPBD), the EU has given itself a legal framework to continue pushing efforts at national level to tap into the huge potential for efficiency gains in the building sector. Heating, cooling, ventilation and refrigeration (HVACR) systems play a key role in helping the EU reduce its energy consumption but also optimise energy production. Opportunities to translate this into reality include for example:

- Regular inspection programmes and renovation strategies at EU Member State level in order to identify inefficiencies and faults in HVACR systems, making these systems more efficient and reducing their energy consumption. EU Member States strategies should both incentivise and compel the building owner to realise the recommendations from such inspections, thereby repairing and refurbishing the systems, as appropriate.
- Building automation and control systems to optimize the energy performance of technical building systems in both residential and non-residential buildings. This does not require invasive renovation measures, pays back quickly and has no lock-in effects. Studies show that energy savings can range from 23% to 49% depending on the type of building and packages of sensors and energy-saving controls deployed.
- European standards to ensure full implementation and enforcement of the EPBD. A national approach on standardization, as is currently applied does not reflect the economic context in Europe and could, in the worst case, completely undermine the objectives of the Directive.
- High-efficiency alternative systems in renovation projects and taking into consideration the efficiency at part-load conditions which represent over 90% of the typical operating time of HVAC systems.

## 2. Harness the potential of smart equipment to provide flexibility to the electricity market

Smart equipment, ready for demand response, is a great opportunity to increase energy efficiency of buildings, support the increasing uptake of renewable energy sources and overall provide addressable and cost attractive flexibility to the grid. However, while the technology is readily available, actions are needed to make such equipment affordable for the consumer and to economically reward the investment into such technologies. Therefore, EPEE encourages Member States to implement incentive mechanisms to stimulate the use of smart appliances, such as supporting research & development in that area, or adapt contractual arrangements between users and utility providers to include dynamic pricing or rebate schemes when users provide flexibility to the electricity market. With increased variability in electricity prices, the market uptake of smart appliances with an indirect flexibility interface would be quicker.



## 3. Use the synergies between heating and cooling

Recovering thermal energy from cold sources helps to optimise energy use and, consequently, to reduce CO<sub>2</sub> emissions. It is particularly relevant for those cases where synergies between heating and cooling arise, i.e. where the thermal energy removed from the cold source is recovered and re-used for other purposes, such as heating. To incentivize such recovery of thermal energy, it will be necessary to valorise the heating energy generated by an active cooling system in the sense that it can be re-used rather than wasted into the atmosphere. EPEE therefore encourages Member States to take into account the tremendous potential of recovery of thermal energy from cold sources – especially when looking at the energy demand for heating purposes. Considering the synergies between heating and cooling can make a significant contribution in that sense.

#### **4. Fully implement and enforce the F-Gas Regulation**

The HFC phase-down under the EU F-Gas Regulation stipulates the reduction of HFC consumption, expressed in CO<sub>2</sub>-equivalents, by 79% by 2030 in order to ensure the transition to refrigerants with a lower global warming potential. Current market trends show that the F-Gas Regulation has started to deliver on this objective, such as for example:

- There is virtually no more new equipment with high global warming potential refrigerants such as R-404A or R-507A installed in supermarkets and retrofits of existing equipment are well underway;
- Small plug-in equipment in commercial refrigeration applications predominantly uses hydrocarbons;
- The market of small air-conditioners (charge size up to 3kg) has adopted R-32 as a mainstream solution and larger products (between 3kg and 12kg) also seem to start moving into this direction;
- In chillers, there is a clear trend towards the use of HFOs and HFO blends;

While it is encouraging to see these trends gaining traction, showing that the F-Gas Regulation works, there is, however, also an increasing illegal trade of refrigerants being reported which needs to be addressed to ensure the ongoing success of the Regulation. Proper enforcement is therefore more important than ever including the introduction of dissuasive fines and penalties in case of non-compliance and stricter controls at EU borders.

Indeed, illegal imports and the consequent placing on the market of such refrigerants do not only pose a major reliability and safety hazard for installers and users but also put at risk the achievement of the ambitious CO<sub>2</sub>-equivalent reduction goals set by the F-Gas Regulation.

#### **Conclusion**

As said, cooling can make a massive contribution to increase energy efficiency, and to support the transition towards renewable energies on the way to a carbon neutral Europe. Given the expected growth in demand for the benefits of cooling, the sector is today at a cross roads: Political leaders can either decide to truly unlock the potential of cooling – in its own right and not just as an appendix of heating – or let go of this great opportunity and take the risk of increasing energy demand and emissions, jeopardizing quality of life for all Europeans.

Technologies are readily available and waiting to be rolled out and a robust policy framework has been put in place at EU level. It's now time to make it happen and to count on cooling as an important part of the puzzle!

#### **The European HVACR Week and EUREKA 2019**

AREA, the Associazione Tecnici del Freddo, EPEE and EVIA are joining efforts to emphasise the importance of the Heating, Ventilation, Air-Conditioning and Refrigeration sector during the first ever "HVACR Week", which will take place from 6 to 12 June 2019. The associations will be hosting two showpiece events, namely the 18th European Conference in Milan on 6-7 June, and EUREKA 2019 in Bruges on 11-12 June.

“We want the HVACR Week to be a highlight of our sector’s calendar for years to come,” said Marco Buoni, President of AREA. “Six months after the entry into force of the Kigali Amendment, two weeks following the European elections, and at a time when climate change is a major concern for worldwide citizens, this will be the perfect time for our sector to gather, stop and think about how it can help make the world a better place.”

“Cooling and ventilation are not a luxury but a necessity”, said EPEE’s Director General Andrea Voigt. “Our sector contributes significantly to a number of Sustainable Development Goals (SDGs) but is far from getting the attention it deserves. Technologies and solutions are readily available but still not sufficiently deployed. This is even more worrying as current trends such as urbanisation, an ageing population and a warming climate will fuel market growth as well as energy demand.”

That’s why this year’s EUREKA will focus on the role of cooling and ventilation in view of the SDGs. The event will explore opportunities for sustainable cooling and ventilation technologies and their role as part of the transition towards smart and sustainable cities and regions, as well as the wider challenges the sector is facing such as skills, employment and gender participation

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#### About EPEE:

The European Partnership for Energy and the Environment (EPEE) represents the refrigeration, air-conditioning and heat pump industry in Europe. Founded in the year 2000 and headquartered in Brussels, EPEE’s membership is currently composed of 48 member companies, national and international associations from Europe, Asia and North America. EPEE member companies realize a turnover of over 30 billion Euros, employ more than 200,000 people in Europe and also create indirect employment through a vast network of small and medium-sized enterprises such as contractors who install, service and maintain equipment. For further information, visit [www.epeeglobal.org](http://www.epeeglobal.org)

