Position Paper

May 2019

EPEE RECOMMENDATIONS TO EU MEMBER STATES ON THEIR NECPS

Executive Summary

EPEE, representing the heating and cooling industry in Europe, calls on the European Commission to consider the critical role of HVAC-R (heating, ventilation, air-conditioning and refrigeration) in their NECP recommendations to EU Member States. EPEE recommends in particular to:

1. **Tap into the full potential of technical building systems**
2. **Ensure stronger and more effective market surveillance**
3. **Enforce the EU F-Gas Regulation effectively**
4. **Harness the development of smart appliances for electricity market flexibility**
5. **Promote the concept of thermal energy recovery**

1. Introduction

In March 2019, under the provisions of the Governance of the Energy Union Regulation, the 28 European Member States submitted their National Energy & Climate Plans (NECPs) to the European Commission, detailing what objectives, policies and measures they are aiming to put in place from 2021 to 2030 in order to reach the Energy Union's goals and notably reach the climate goals of the Paris Agreement.

EPEE, representing the heating and cooling industry in Europe, welcomes the introduction of NECPs, as they will help Member States draw up concrete roadmaps to reach the 2030 climate and energy targets and beyond, and provide more regulatory certainty to industry. EPEE believes that a robust policy framework has been put in place at the EU level – but that there is still a major gap between these policies and their actual implementation on the ground. The NECPs can provide an excellent tool in helping to close this gap.

However, following an initial own analysis, and building on detailed findings by CAN Europe and the Coalition for Energy Savings, EPEE believes that most NECPs not only lack detail and ambition, but also fail to address the potential of HVAC-R in helping Member States and the EU deliver on their climate and energy goals. Indeed, Member States refer to "heating and cooling" in their NECPs but de facto only address "heating" and even then, heating is only addressed by focusing on the share of renewables for the sector. With the European Commission currently examining the national strategies and expected to deliver its recommendations to Member States by June 2019, EPEE wishes to highlight the important role HVAC-R can play to support the EU and its Member States in meeting their environmental objectives while continuing to ensure the benefits of HVAC-R are taken into account despite an expected growth in demand over the coming years and decades.

2. The critical role of HVAC-R

- **HVAC-R is an intrinsic part of our daily lives**: it makes our buildings 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 is 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 the insulation of buildings is expected to improve through renovations but with consequent higher internal heat gains. Cooling demand will grow even more in the light of trends such as an ageing population which is particularly vulnerable to heat, growing urbanisation, an increasing emphasis on well-being, and digitalisation requiring adequate infrastructures.

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 the gap between rich and poor continues to increase. In other words, at a time when a fair, fast and attractive energy transition is needed more than ever for **all** Europeans.

HVAC-R is at the intersection of increasing energy efficiency and the transition to renewable energies while moving towards refrigerants with a low global warming potential (GWP), and therefore ideally positioned to address this challenge.
These elements 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. By fostering a systemic approach due to its very nature, HVAC-R has a massive potential to deliver on both increasing energy efficiency and to the deployment of renewable energies, for example based on:

- Low-hanging fruit such as regular inspections, maintenance and systematic control of HVAC-R equipment allowing significant energy and cost savings as well as preventing unexpectedly longer downtimes;
- Innovative technologies and systems such as heat pumps or their combination with solar PV, high part load efficiency as HVAC-R equipment hardly ever runs at 100% of its capacity, refrigerants with a very low Global Warming Potential (GWP), building automation and controls systems, etc.;
- Possibilities to store thermal energy and to provide flexibility to the grid, thereby helping to manage the fluctuating influx of renewable energies;
- Synergies between cooling and heating where the heat rejected by cooling systems is recovered instead of being wasted, contributing to satisfy the heating demand;

These and many other solutions are readily available and waiting to be rolled out to ensure that HVAC-R 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, policy makers need to explicitly consider cooling as such – and not only as an appendix to heating – in their plans, creating adequate incentives for citizens and businesses to invest into sustainable cooling solutions.

3. EPEE's recommendations to EU Member States

3.1 Tap into the full potential of technical building systems for new builds and in view of long-term renovation strategies

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, ventilation, cooling and refrigeration (HVACR) systems play a key role in helping the EU reduce its energy consumption and carbon emissions.

In order to achieve this, Member States need to fully implement the revised measures by[1]:

- **Putting in place regular inspection programmes and renovation strategies**: to identify inefficiencies and faults in HVACR systems (such as badly sized installations[2]), making these systems more reliable, efficient and reducing in the end their energy consumption. These strategies should both incentivize and compel the building owner to realise the recommendations from such inspections, thereby repairing and refurbishing the systems, as appropriate.
- **Using building automation and control**: 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. According to a study[3], energy savings can range from 23% to 49% depending on the type of building and packages of sensors and energy-saving controls deployed.
- **Implementing European standards**: to ensure full implementation and enforcement of the EPBD. A national approach on standardization, as it is currently applied, does not reflect the economic context in Europe and could, in the worst case, completely undermine the objectives of the Directive.
- **Encourage the use of high-efficiency alternative systems** in renovation projects and consider part-load conditions when inspecting HVAC systems.

3.2 Ensure stronger and more effective market surveillance

EPEE supports **Ecodesign and Energy Labelling Regulations** as they have proven very successful for several product groups and contributed to the EU's energy and climate goals by pushing and pulling the market towards more energy efficient products.

Market surveillance is, however, essential in ensuring that products on the EU market are compliant with the existing legislation and that EU policy delivers on energy efficiency objectives in reality. With a new set of EU rules[4] on compliance and enforcement soon to be implemented, the EU is asking Member States to improve checks on products entering the EU market and foster more cooperation among national market surveillance authorities to the benefit of consumer safety and compliant businesses. EPEE welcomes this new Regulation and calls on Member States to fully implement its provisions,

[1] EPEE's EPBD implementation Guidelines

[2] For example in Germany, the Verbraucherzentrale has developed data showing over 17.000 heating installations were badly sized, with on average oversizing up to 200%.

[3] Impacts of Commercial Building Controls on Energy Savings and Peak Load Reduction (see Fig. S.2 on page 10 of the pdf, "viii" at the page bottom)

[4] Regulation on Compliance and Enforcement 2017/0353(COD)

making use of all the opportunities it provides to improve market surveillance and cooperation with manufacturers.

According to EPEE's analysis, **only three countries** mention in their NECP, the Ecodesign & Energy Labelling Regulations and the importance of Market Surveillance. EPEE therefore calls on the EU and Member States to strengthen pan-EU cooperation in Market Surveillance, intensify cooperation among national Market Surveillance Authorities, and ensure they make use of the industry's expertise as an advisory party.

3.3 Implement properly the EU F-Gas Regulation

The revised F-Gas Regulation No 517/2014 is a European legislative instrument which aims at reducing emissions stemming from F-gases, so-called fluorinated greenhouse gases (such as HFCs), through a phase-down approach, where the quantities of HFCs (expressed in CO2 equivalent) that are placed on the market are gradually reduced by the allocation of quotas by the European Commission to producers and importers of bulk HFCs. As a result of the phase-down, HFC consumption will be reduced by 79% by 2030 in order to ensure a transition to refrigerants with a low or very low Global Warming Potential (GWP).

Despite these measures being able to help them reduce their emissions, only half of Member States mention the F-Gas Regulation in their NECPs. EPEE recommends that Member States refer to its FAQ documents[5] developed over the years for market players and decision makers to understand the key measures to be implemented.

- As illegal trade of refrigerants is increasingly being reported, **proper & systematic enforcement of the F-Gas Regulation** should be prioritized at national level in order to ensure the safe and efficient operation of HVACR equipment. This can be done through **the introduction of more dissuasive fines and penalties across the HFC supply chain in case of non-compliance, stricter controls at EU borders** and **increased reporting of illegal trade including online trade**. 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 are already putting at risk the achievement of the ambitious CO2-equivalent reduction goals set by the F-Gas Regulation.

EPEE also recommends that Member States consider the implementation of the F-gas regulation as a key pillar in their national long-term renovation strategies.

3.4 Harness the development of HVAC-R appliances to enhance the flexibility of the energy system

The flexibility capacity of smart HVAC-R appliances, can provide Member States 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, the development and market uptake of smart appliances will require actions on both the supply and the demand side. The market success of smart appliances will very much depend on their

[5] Q&A on HFOs and HCFOs https://www.epeeglobal.org/wp-content/uploads/2018-11-06-QA-Screen.pdf and Lesson Learned from the EU F-Gas Regulation https://www.epeeglobal.org/wp-content/uploads/EPEE_Lessons-Learned-document.pdf

affordability for end-users, which should benefit from significant operational savings and should be sufficiently economically rewarded for investing in these technologies.

That is why EPEE encourages Member States to **implement incentive mechanisms** (including European funding schemes) to stimulate the use of smart appliances, such as supporting research & development in that area, or adapt contractual arrangement 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.

3.5 Promote the recovery of thermal energy

Recovering thermal energy from cold sources helps to optimise energy use and, consequently, to reduce CO2 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. There are also cases where thermal energy can be recovered to generate steam through industrial heat pumps or turned into electricity with an Organic Ranking Cycle unit that use a heat transfer medium, known as a refrigerant, to move heat from a heat source to a heat sink.

To **incentivize 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. So far, there has been very limited incentive or dedicated policy framework to promote the recovery of thermal energy. EPEE therefore **encourages Member States to take into account the tremendous potential of recovery of thermal energy** – especially when looking at the energy demand for heating purposes. The synergies between heating and cooling can make significant contributions to national climate & energy targets by optimising energy use and decreasing energy demand.

In this context, EPEE would also encourage Member States to fully tap into the potential of heat pumps by properly calculating the share of renewables resulting from their use. Today, the share of renewable energy generated by heat pumps is not fully reflected in Eurostat RES tools despite being able to help Member States reduce their CO2 emissions and meet their renewable energy targets. For example, the temperature of the heat rejected by cooling processes is often too low to make it a useful source of heat, but it is possible to upgrade it to a more useful higher temperature level by using a heat pump. However, today, the heat generated by heat pumps is not accounted for as renewable if the heat pump uses the outlet of a cooling process as an energy source.

More generally speaking, heat pumps can contribute to over 29 Mt of CO2 emissions savings, generate 116 TWh of renewable energy, create over 60 thousand jobs and deliver 369 GW of storage capacity[6] and should therefore be prioritized in NECPs.

[6] https://www.ehpa.org/about/news/article/heat-pumps-in-the-spotlight-thomas-nowak-interviewed-by-energy-world/

4. Conclusion

With a fast-growing demand for HVAC-R, it is essential to recognise its importance in ensuring high quality of life for all Europeans as well as being one of the key actors in ensuring a fair, fast and attractive energy transition for the EU. The HVAC-R industry is therefore committed to contribute to the implementation of effective European policy instruments in order to achieve the energy transition as well as the EU's long-term sustainability agenda. These policy instruments include not only the crucial adaptation of existing national regulatory frameworks but also the development of incentives schemes to influence the uptake of new innovative and low carbon technologies in the market notably through funding.

EPEE would encourage Member States to consult with all relevant stakeholders once the European Commission's analysis and recommendations are submitted to them. In this context, EPEE remains at the disposal of the European Commission and Member States to further detail the views of the HVAC-R industry on how to ensure that NECPs fully grasp the opportunities provided by the industry to reduce their GHG emissions, improve their energy efficiency, and overall fulfil their climate ambitions.

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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, EPEE's membership is composed of 48 member companies, national and international associations. 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.

EPEE member companies have manufacturing sites and research and development facilities across the EU, which innovate for the global market. As an expert association, EPEE is supporting safe, environmentally and economically viable technologies with the objective of promoting a better understanding of the sector in the EU and contributing to the development of effective European policies.

Please see our website (www.epeeglobal.org) for further information.

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