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EHPA Position Paper on the revision of the F-gas Regulation (517/2014)

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Introduction

The European Commission is preparing a proposal to revise *REGULATION (EU) No 517/2014 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 April 2014 on fluorinated greenhouse gases and repealing Regulation (EC) No 842/2006* (hereafter, F-gas Regulation). The proposal is expected to be adopted in April 2022 and submitted to the European Parliament and the Council, starting herewith an ordinary legislative procedure.

The European Heat Pump Association (EHPA), representing the heat-pump technologies value chain in Europe (heat pump and component manufacturers, research institutes, universities, testing labs and energy agencies) is a supporter of the F-gas Regulation which has contributed to the decrease of emissions from fluorinated gases in Europe (reduction of two thirds expected by 2030 since 2014).

EHPA is also a strong supporter of the European Green Deal and the "Fit for 55" package published by the EC in 2021. As the heating and cooling sector is responsible for 50% of EU final energy demand (with most of the heat currently generated by burning fossil fuels), fully decarbonising this sector is essential to reach carbon neutrality by 2050. A new level of ambition for 2030 also requires the accelerated uptake of heat pumps, technologies unquestionably to be preferred for the achievement of new climate targets since they are providing at the same time decarbonised, efficient, renewable and smart solutions for residential, commercial and industrial applications.

Consequently, it is also important that the revised F-gas Regulation supports the required accelerated deployment of heat pumps by 2030 (all heat pumps need refrigerants to operate).

This position paper provides EHPA's views on:

- the need to support the accelerated deployment of heat pumps;
- key principles for a heat-pump friendly revision of the F-gas Regulation;
- provisions in the F-gas Regulation to be amended.

1. The need to support the accelerated deployment of heat pumps

Heat-pump market trends & multiple benefits

The European heat pump sales have been growing at an increased rate since 2015. Even in 2020, marked by the effect of the COVID-19 crisis, a slight increase took place.

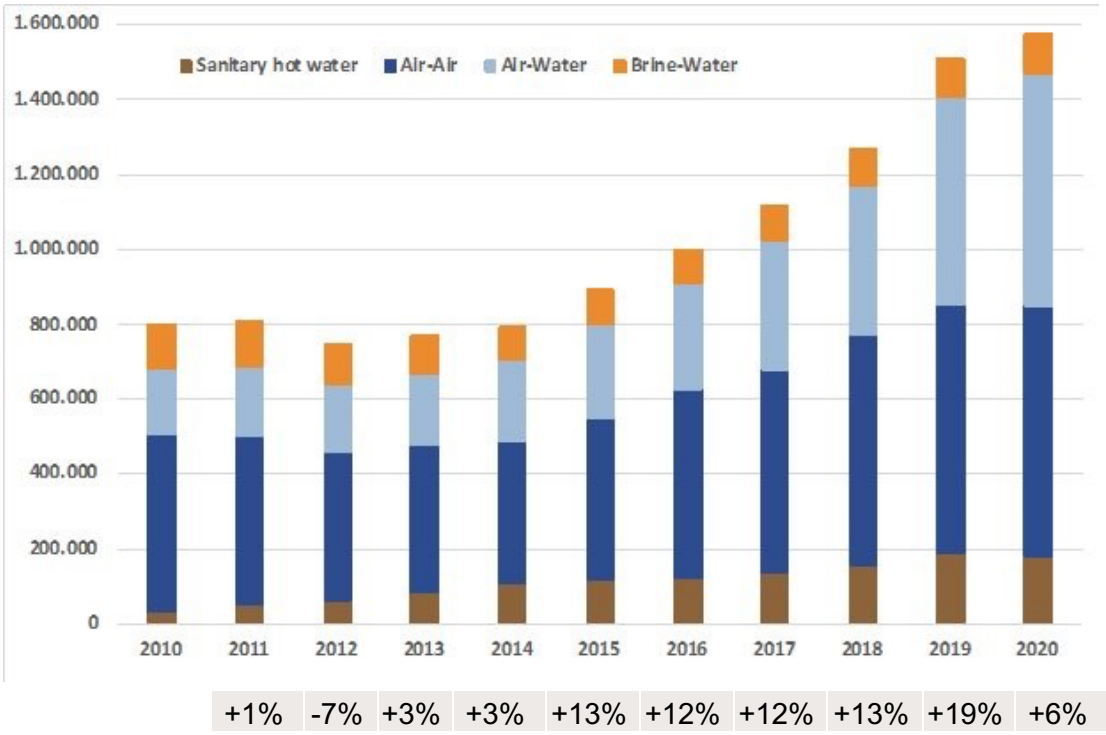
In 2020, 14.8 million heat pumps were installed in the EU (13.2 million for space heating, 1.6 million for domestic hot water production), bringing tremendous benefits to the energy system and Europe's climate and energy targets, including 40.6 Mt of CO_2 savings (that would have otherwise been emitted by traditional fossil fuel systems)[1].

It is important to note that improvements on each individual dimension of the EU energy policy agenda already constitute a contribution to the objectives of the European Green Deal. Yet, heat pumps are unique in offering the opportunity to meet several goals at once.

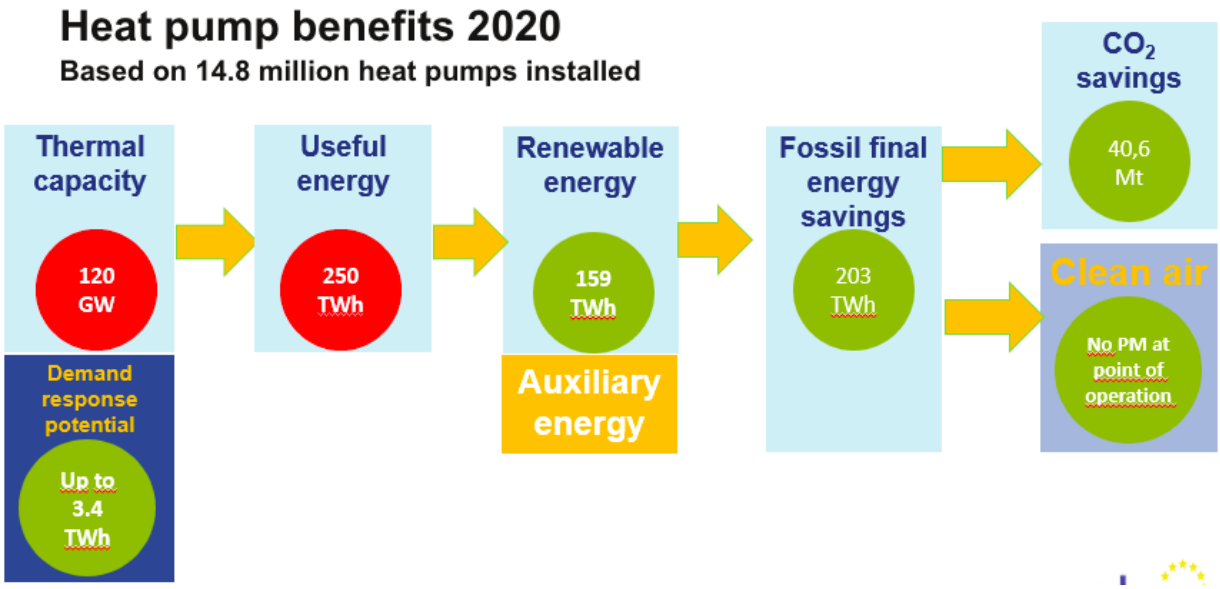
Therefore, the promotion of heat-pump technologies is one of the most cost-efficient and safe policies for public authorities as heat pumps contribute at the same time to CO_2 savings (vs alternative fossil fuel

[1] It is important to note that over its use phase, emissions from a heat pump, even containing refrigerants with a certain GWP, are much lower than emissions from any traditional heating system using fossil fuel (Annex 1).

solutions), to energy savings, to thermal renewable energy capture, to thermal storage, while helping to balance the electricity grid and improving both indoor and outdoor air quality[2].



Source: EHPA Market report, 2021.



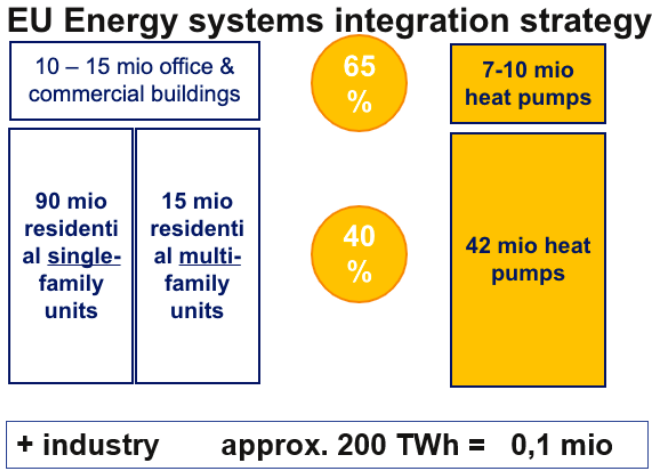
Source: EHPA Assessment of the EU Energy System Integration Strategy, 2020.

Required accelerated growth rates in 2030 and 2050

The EU Strategy for Energy System Integration calls for 40% electrification of heating in residential buildings and 65% electrification of heating in the service sector by 2030. Assuming that the "energy efficiency first" principle is applied, as recalled in the EC "Renovation Wave" Communication, **this means that, according to EHPA**

[2] Detailed quantifications of the benefits of heat pumps can be consulted upon request at stats.ehpa.org.

calculations, the installed stock of heat pumps must reach 49-52 million by 2030 (= increase by a factor of x4 of the heat pumps used for space heating).



Source: EHPA Assessment of the EU Energy System Integration Strategy, 2020.

By 2050, according to EHPA calculations, a fully decarbonised heating and cooling system will require a stock of +- 90 million installed heat-pumps (= increase by a factor of more than x6 of the heat pumps used for space heating).

By extrapolating from the benefits of the current installed stock, such a massive deployment of heat pumps would offer an additional 181,8 Mt of CO_2 savings in 2030 and 203 Mt of CO_2 savings in 2050 compared to 2020.

The European heat pump industry is committed to making the required acceleration happen and calls for a supportive policy-framework, including on the use of refrigerants.

2. Key principles for a heat-pump friendly revision of the F-gas Regulation

As mentioned above, to meet the European Green Deal objectives and the new level of ambition brought by the "Fit for 55" package it is crucial that the revised F-gas Regulation supports the required accelerated deployment of heat pumps by 2030.

EHPA suggest to keep in mind the following principles for a heat-pump friendly revision of the F-gas Regulation:

- **The HFC phase-down mechanism is sufficiently flexible ensuring the uptake of energy and resource efficient, safe and affordable heat pumps. Specific market prohibitions on heat pumps will not contribute to the targets of the Regulation**. All heat-pump techolologies will be needed for the required massive deployment action.
- **"Energy efficiency first" principle should apply**. The policy option to be considered in the review of the Regulation should contribute to the cost-effectiveness of the energy savings potential offered by heat pumps.
- **The Regulation should support a diversified use of refrigerants**. No heat-pump technology may be hampered, based on its refrigerants contents, to bring its necessary environmental contribution in a safest possible way today.
- **HFCs contained in pre-charged equipment exported out of the European Union should be exempted from the quota system** ensuring global competitiveness from EU equipment manufacturers.
- **Heat-pump manufacturers need reasonable time to implement new technologies.** A high level of safety based on requirements and standards, as well as specific training and certification are to be taken into account for the timing.
- **Recovered, recycled and reclaimed refrigerants (RRR) should be given more visibility and be better valorised in the F-gas Regulation**, in line with the promotion of a more circular economy. A better market for RRR would not only limit the needs for virgin refrigerants, but also be a strong tool against illegal imports.

3. Provisions in the F-gas Regulation to be amended

"Whereas"

- **European System Integration Strategy and Renovation Wave:** EHPA recommends adding a reference to the EC communications on "EU Strategy on energy system integration" (8 July 2020) and "Renovation Wave" (11 March 2020), as well as to the need to support the accelerated deployment of heat pumps by 2030 that those policies entail.

- **Energy Efficiciency First**: EHPA recommends adding a reference to the EC recommendation and guidelines on the energy efficiency first principle adopted on 28 September 2021 to invite Member States to apply this principle when implementing the F-gas Regulation.

- **Circular economy:** EHPA recommends adding a reference to EC communication on "A new Circular Economy Action Plan" (11 March 2020) to acknowledge that the recovering, recycling and reclaiming of refrigerants is an implementation of circular economy principles.

- **Industrial Strategy**: EHPA recommends adding a reference to EC communications on "A new Industrial Strategy for Europe" (10 March 2020) and "Updating the 2020 New Industrial Strategy: Building a stronger Single Market for Europe's recovery" (5 May 2021) to help the F-gas Regulation contribute to the main indicators fof the competitiveness of the EU economy (such as "Single market integration" and "International competitiveness").

General provisions (chapter I) & Containment (chapter II)

- EHPA recommends that the provisions on "leak checks" (article 4), "recovery" (article 8), "training and certification" (article 10) also apply to HFOs, increasing fair treatment and consistency regarding the handling of fluorinated refrigerants in heat pumps.

Placing on the market and control of use (chapter III)

- **Restrictions on the placing on the market (article 11):** EHPA advises against any changes to be brought to this article that would risk to slow down the required massive deployment of heat pumps by 2030. All heat-pump techolologies will be needed to contribute to the targets of the F-gas Regulation, the European Green Deal and the "Fit for 55" package.

- **Pre-charging of equipment with hydrofluorocarbons (article 14):** EHPA recommends adapting the provision to ensure that fluorinated gases contained in pre-charged equipment exported out of the European Union would be exempted from the quota system. This would support the global competitiveness from EU equipment manufacturers in the spirit of the EC European industrial strategy.

Reduction of the quantity hydrofluorocarbons placed on the market (chapter IV)

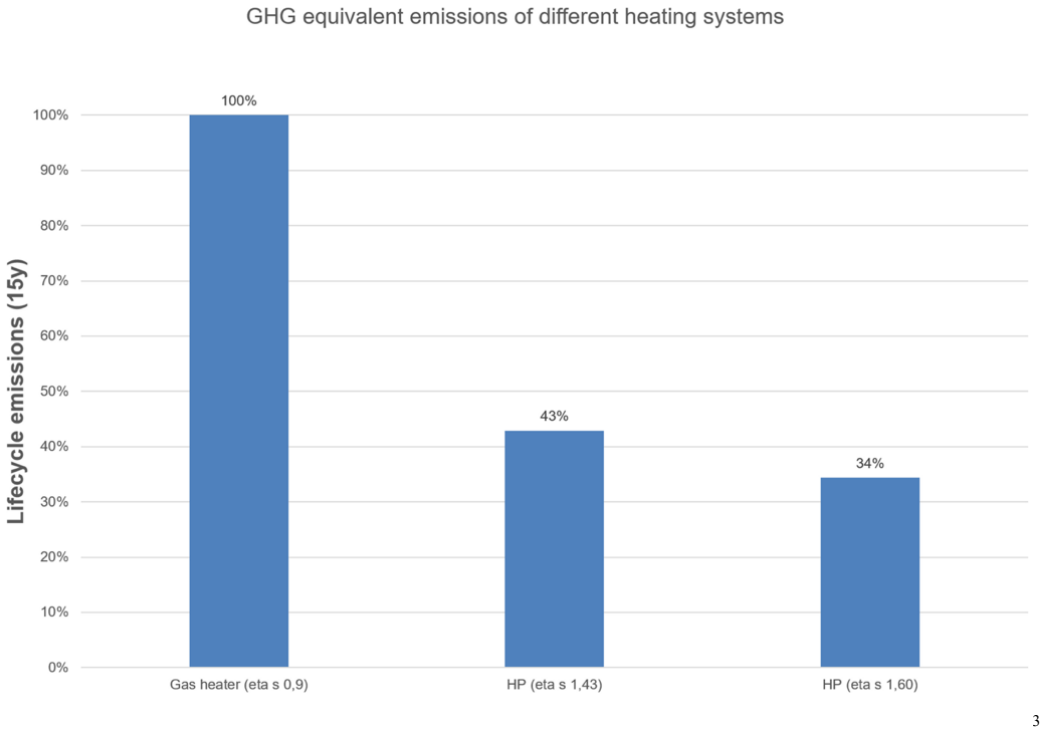
- **Reduction of the quantity of hydrofluorocarbons placed on the market (article 15):** EHPA advises against any changes to be brought to this article to secure the time needed to implement new technologies. Unjustified disruptions should be avoided as they would hinder the required accelerated deployment of heat pumps by 2030 and beyond.

Reporting (chapter V)

- **Collection of emissions data (article 20):** EHPA recommends adding the dimension of a more harmonised data collection procedures across Member States (eg. by referring to a future EC recommendation/delegated act or concerted action), as well as a compulsory use of the electronic logbooks. A more comparable and granular approach on emissions data would facilitate potential future regulatory updates. (For heat pumps, this would offer a better assessment of the specific needs and contraints regarding refrigerants across all the numerous applications within the sector.)

Annex 1

GHG equivalent lifecycle emissions of different heating systems



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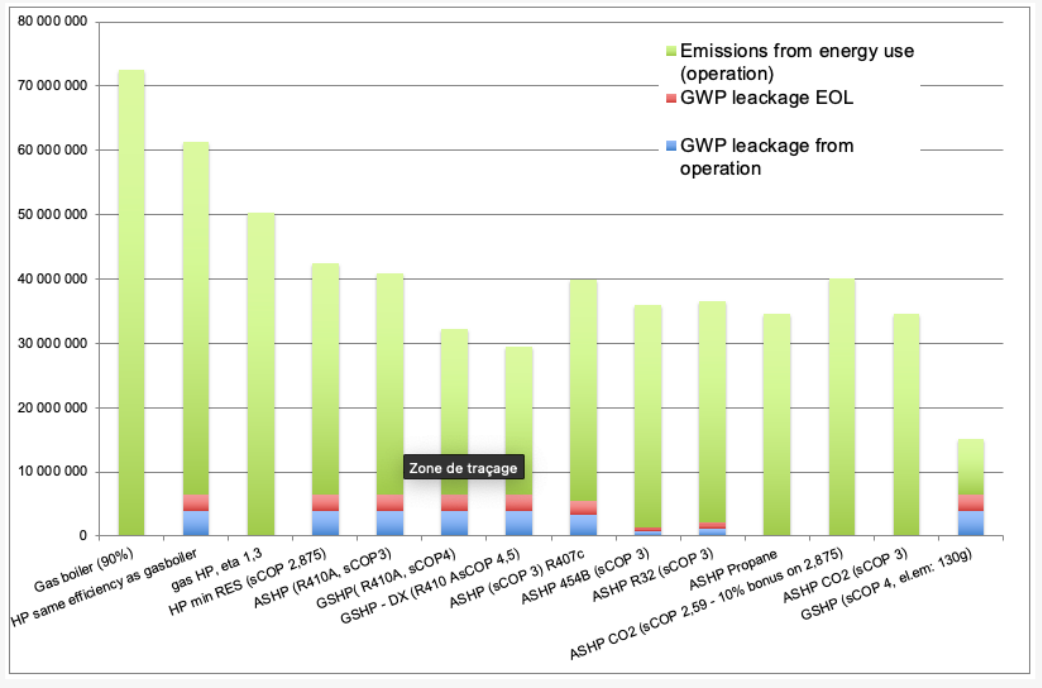
Source: EHPA TEWI calculation, 2020.



Source: EHPA TEWI calculation, 2020.

These graphs show the comparison of greenhouse gas (GHG) equivalent emissions in use phase over a 15-year lifecycle for a fossil gas heater, a heat pump with an efficiency (eta s) of 1.43 and a heat pump with an efficiency (eta s) of 1.6. It is obvious that heat pump technology (even containing refrigerants with a certain GWP ranging from potentially 3 to a maximum of 2088) reduces GHG equivalent emissions by significantly more than half compared to a gas heater. The savings will improve with improving efficiency and an increasing share of renewable energy in electricity generation.