

New F-Gas Regulation Now Approved

The proposal for a new F-gas regulation, which we have previously discussed in this column, has now been definitively approved by the **European Parliament** with an overwhelming majority (1). No additional changes appear to have been made to the text compared with the proposal presented in October after lengthy negotiations, except for certain clarifications. A formal decision must still be taken by the **Council of Ministers**, expected on **29 January**. The text will then be published in the **Official Journal of the European Union** and will enter into force (anticipated in March).

Although the text is now approved and publicly available, questions remain about how it should be interpreted in several specific cases. The **European Heat Pump Association (EHPA)** recently organized a webinar in which representatives from the European Commission (**DG Clima**) presented the new regulation and also answered questions from participants.

From the meeting, we noted that the allocation of **refrigerant quotas** for the coming years is not expected to cause a shortage of refrigerants, as several actors have already announced their transition to **natural refrigerants**. It was also highlighted that additional regulatory measures are needed for the regulation to have its intended effect. One of the first tasks will be to define **certification and training requirements** to quickly ensure availability of technicians authorized to install and service systems using natural refrigerants. (As mentioned in the previous column, the current certification will remain valid for the areas it covers today, but **not** for natural/flammable refrigerants.)

Regarding interpretation of the F-gas regulation, Commission representatives noted that only the **Court of Justice of the European Union** can make final interpretations. With that said, they still attempted to answer the questions posed. Below is a selection (slightly reformulated):

Selected Questions and Answers from DG Clima

• **Question:** How is the maximum capacity of a system defined?

DG Clima: It should be defined based on the **nominal capacity** of the system's primary function—heating or cooling. This is already defined in Ecodesign legislation.

• **Question:** Some systems are connected to both air and water. Should they be regarded as air/air or air/water?

DG Clima: This must likely be assessed **case by case**. Most often, they will be considered **air/air**.

• **Question:** According to the regulation, there are exemptions from installation bans for certain types of equipment when used as replacement parts. How is a replacement part defined? Could an outdoor unit or indoor unit of a split system be considered a replacement part?

DG Clima: We regard these as **parts of a system**, not as replacement parts.

• **Question:** Multi-split systems are very common in, for example, Spain. In such cases, building legislation does not permit the installation of (flammable) A3 refrigerants. What solution do you see? And who decides whether an installation can be considered safe?

DG Clima: The regulation is clear. Now we need to determine how it should be applied. The regulation includes **possibilities for exemptions** in certain cases. The **user/owner** is responsible and must demonstrate that the system meets all requirements.

• **Question:** Does this mean that an individual assessment will be required in every single case to determine what is permitted?

DG Clima: The exemption applies specifically to **the site of installation**. Equipment with high-GWP refrigerants may only be installed if it is **the only viable solution**. It is always difficult when new regulations are introduced. We will need **some flexibility** initially, followed by possible tightening and clearer rules for how the regulation should be interpreted and when exemptions apply.

We will certainly return to how the new regulation should be implemented and interpreted. In general, the new regulation will, within about **ten years**, lead to a transition to **natural refrigerants in all smaller systems** (below 12 kW). For larger systems, **low-GWP F-gases** (below 150) will still be allowed in the future. This means we must learn to handle refrigerants that are more or less flammable (with the exception of CO₂).

That the phase-down of F-gases can indeed have a positive climate impact was recently demonstrated in an article in the well-known scientific journal **PNAS** (2). The study examines emissions only from **small air-to-air (split AC) units**. The number of such units is expected to increase dramatically during this century, partly due to rising living standards in warm regions of the world, and partly due to increasing temperatures.

The left side of Figure 1 shows expected emissions under three scenarios.

- The **Baseline** scenario corresponds to continued use of **R410A**.
- The middle trajectory shows a transition to **R32**.
- The lowest trajectory shows the scenario where air-to-air units transition to **propane**.

The right side of the figure shows the resulting effect on global temperature, where the zero level corresponds to continued use of R410A. As shown, a transition to propane would result in **0.06–0.12°C lower warming** compared with continued use of R410A.

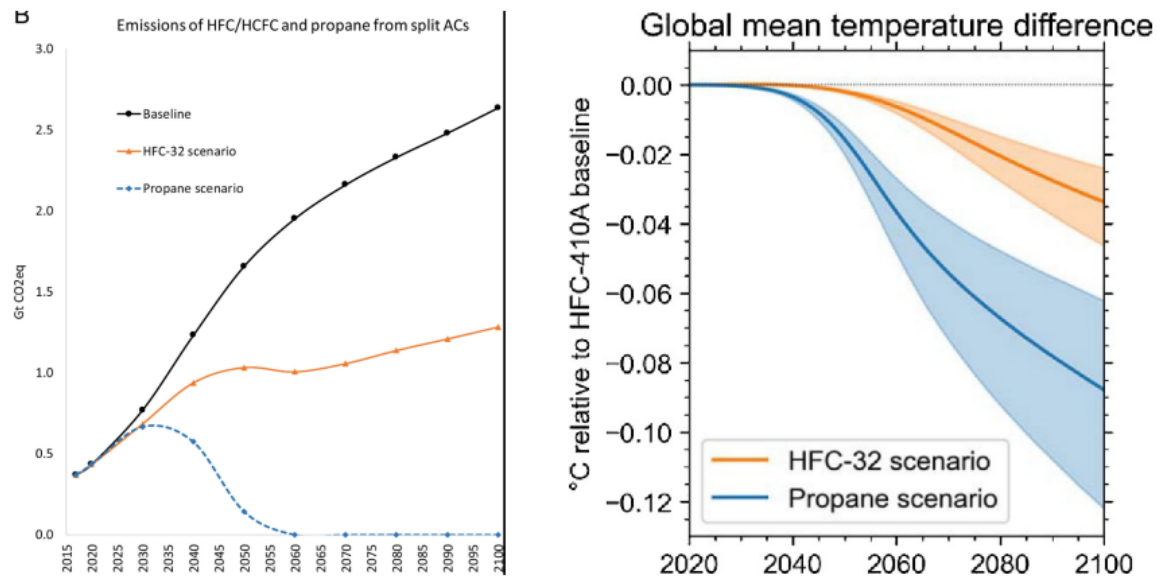


Figure 1. Left: Emissions of refrigerants in three scenarios from air-to-air AC systems, expressed in gigatonnes of CO₂-equivalents.

Right: Change in global mean temperature in scenarios where systems transition to R32 or propane compared with continued use of R410A.

Sources

1. <https://www.europarl.europa.eu/news/en/press-room/20240112IPR16757/reducing-emissions-from-fluorinated-gases-and-ozone-depleting-substances>
2. **The key role of propane in a sustainable cooling sector** | PNAS
<https://www.pnas.org/doi/10.1073/pnas.2206131119>