Overlap is not duplication:
Why F-gases need both climate and chemicals regulation

F-gases are fluorinated gases widely used as refrigerants in cooling and heating systems, as well as in other industrial uses. The EU F-gas Regulation mainly targets their climate impact by restricting high-GWP gases. However, most of the newer low-GWP F-gases are a subset of PFAS chemicals and degrade into persistent PFAS such as TFA. Due to their decreased climate impact, they can remain on the market under the F-gas Regulation while significantly contributing to persistent chemical pollution in the environment. A new study by Öko-Recherche shows why the universal PFAS restriction is therefore a necessary complement to the F-gas regulation.

Overlap is not duplication

The F-gas Regulation tackles climate impacts; the universal PFAS restriction tackles persistence and chemical pollution. The overlap between the two rules is not duplication, but necessary complementary regulation to prevent long-term PFAS pollution.

F-Gases need both regulations.

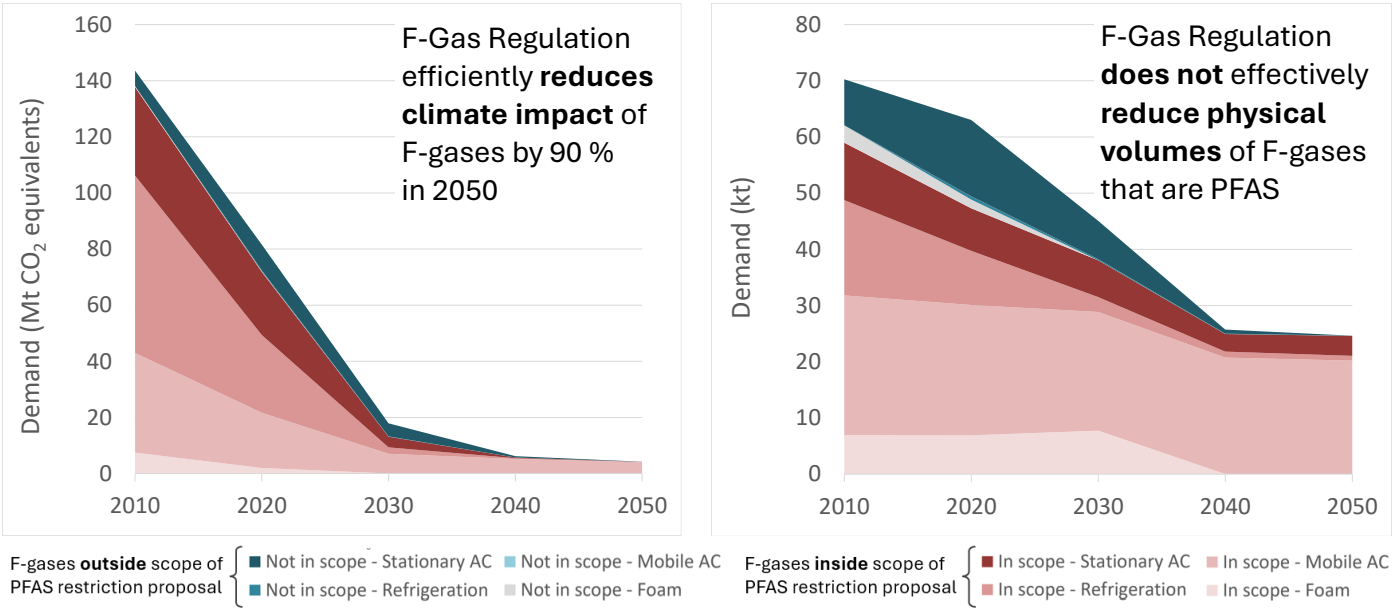
1. The EU F-gas Regulation addresses climate impacts, not PFAS risks

The F-gas Regulation (EU) 2024/573 sharply reduces the climate impact of fluorinated greenhouse gases through a phase-down (expressed in CO_2 equivalents) as well as placing on the market bans. It actively incentivises the substitution of climate damaging F-gases with low-global warming potential (GWP) refrigerants, including PFAS that can degrade into the highly persistent PFAS trifluoroacetic acid (TFA).
Because the EU F-gas Regulation is built around reducing climate impacts, it does not systematically address PFAS-specific concerns such as environmental persistence, mobility, accumulation in water bodies and long-term health risks. Lower climate impact therefore does not automatically mean lower chemical pollution.

2. PFAS F-gases remain in widespread use under the F-gas Regulation

The quantitative analysis underpinning the study demonstrates that, even under full implementation of the current F-gas Regulation and its climate impact-based restrictions, PFAS F-gases remain dominant in future markets without a universal PFAS restriction. In the coming years, around **40,000 tonnes** of PFAS F-gases per year are still projected to be used in the EU despite the F-gas Regulation.

Figure 1: Projected F-gas demand in the EU-27 under the EU F-gas Regulation, without a universal PFAS restriction. *Left: climate impact in mega tonnes CO_2-eq. Right: demand in kilo tonnes. "In scope" refers to fluorinated gases covered by the PFAS restriction proposal; "not in scope" to F-gases outside that proposal. Source: based on Öko-Recherche (2026).*



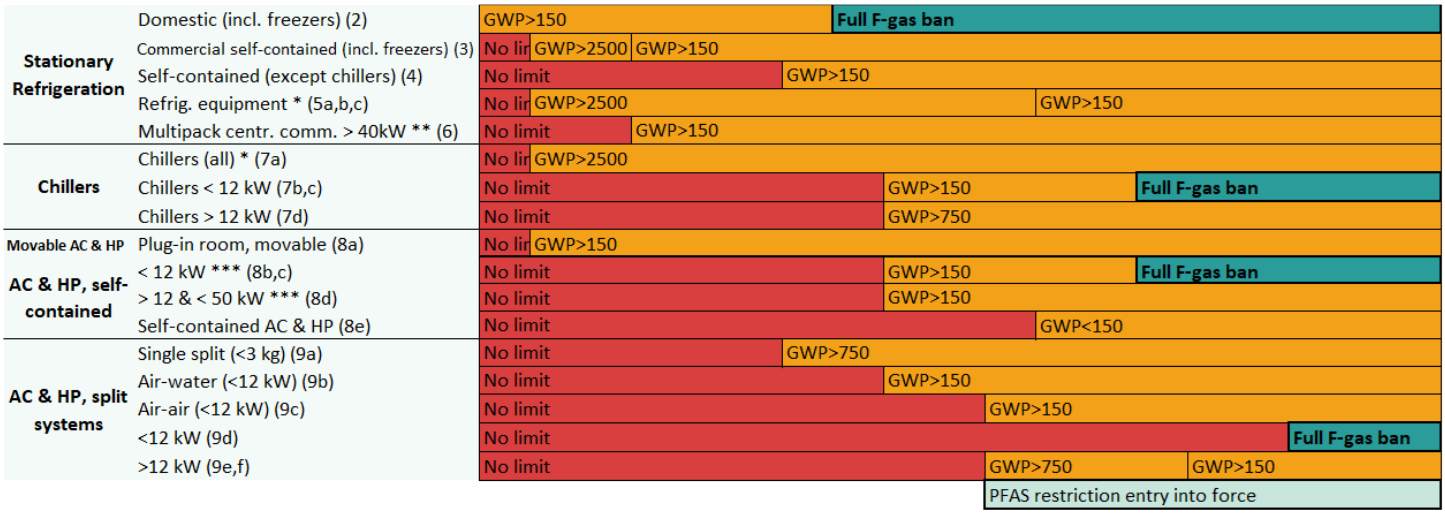
Without a universal PFAS restriction, almost 100 % of F-gases still in use by 2050 would fall under the PFAS definition.

This means that the F-gas Regulation does not eliminate fluorinated substances as such; it merely shifts the market towards PFAS with lower GWP but high environmental persistence and various health concerns.

3. F-gas bans affect only a small fraction of PFAS use

The EU F-gas Regulation bans all F-gases covered by the Regulation only in four specific types of cooling equipment (blue bars): Domestic refrigerators, chillers, self-contained air conditioners and heat pumps, split air conditioners and heat pump systems. By far the most placing on the market prohibitions are solely based on GWP-limits and therefore only restrict a subset of F-gases and not low-GWP PFAS substitutes:

Figure 2: F-gas Regulation only bans all F-gases covered by the Regulation in four cooling applications. *Threshold figures listed for certain years indicate the entry into force of placing on the market prohibitions for stated F-gas applications under the EU F-Gas Regulation (EU) 2024/573 (Annex IV). Prohibitions are without limit [red], based on GWP of F-gases (>2500, >750, >150) [orange], and full F-gas bans [blue]. PFAS restriction entry into force in 2028 is an assumption. Source: based on Öko-Recherche (2026).*



Moreover, the study finds that:

- many of these bans reflect market transitions that have already taken place;
- they therefore deliver only limited additional reductions in PFAS use; and
- major future sources of PFAS emissions, especially mobile air conditioning, remain unaffected.

The EU F-gas Regulation alone is therefore not sufficient to drive a meaningful phase-out of PFAS F-gases.

Conclusion: Climate regulation is not chemicals regulation – and F-gases need both

The study shows that the EU F-gas Regulation is effective in reducing the climate impact of fluorinated gases, but it is not designed to address the persistence, mobility and wider environmental and human health risks of PFAS. In many sectors, non-PFAS alternatives already exist or are technically feasible, yet the F-gas Regulation does not systematically drive their uptake. By focusing on GWP, it can instead shift the market towards low-GWP PFAS and leave a major regulatory gap. The universal PFAS restriction under REACH is therefore essential to complement the F-gas Regulation. It can address PFAS-specific risks, prevent regrettable substitution within the PFAS group and phase out PFAS uses where alternatives are available, while allowing targeted, time-limited derogations where they are still needed.

Reference:

Öko-Recherche (2026): Fluorinated Gases under EU Regulation: Assessing the Role of the F-gas Regulation and the Proposed Universal PFAS Restriction. Final report, Frankfurt/Main, 22 October 2026.

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