

The recast of the F-gas Regulation – FAQ

Q: Why do HFCs have such a big impact on the climate?

A: *HFCs have a considerable impact on the climate because they are far more potent greenhouse gases (GHGs) than carbon dioxide (CO₂). The most widely used HFCs in the European Union include HFC-134a, which has a Global Warming Potential (GWP) of 1,430 and the blends R404a (GWP 3,922) and R410a (GWP 2,088). Another common F-Gas, HFC-23, which is a by-product of the manufacture of the ozone-depleting chemical HCFC-22, has a 100-year GWP nearly 15,000 times that of CO₂.*

Q: What's wrong with the current F-Gas Regulation?

A: *Even with full implementation, the combined measures of the F-Gas Regulation and MAC Directive actually legislate for a 20% rise in HFC emissions from 2006 to the present day, and they will remain stable at this higher level from now until 2050.*

Taking only the sectors covered by the F-gas Regulation, the increase in HFC emissions is over 80%. It is widely accepted that the EU cannot transition to a low-carbon economy without more ambitious action to reduce greenhouse gas emissions across the board. In its report, the European Commission notes that a cost-effective pathway to its 2050 objective of cutting GHG emissions by 80-95% by 2050 “would require reductions of non-CO₂ emissions (...) between 72-73% by 2030 and by 70-78% by 2050 compared to 1990 levels”.

It is therefore critical that additional measures be taken under the F-Gas Regulation to reduce emissions of HFCs and other F-Gases.

Q: What's wrong with the current proposal?

A: *The proposal which is currently before the European Parliament and EU Member States contains the basic elements required to tackle HFC emissions but lacks ambition and advances an incomplete regulatory framework. It is considerably less ambitious than an earlier leaked draft, reflecting the enormous pressure some industry players placed on different services within the European Commission in the run-up to its publication.*

Q: Why should the proposal have a single environmental basis and not a dual basis (internal market/environmental)?

A: *Numerous industry stakeholders are of the opinion that the F-gas Regulation should have a dual legal basis. This is because they fear that some Member States could be inspired to take more ambitious action to address HFCs through domestic legislation, as is already the case in Denmark for example. Adjusting the current proposal's current legal basis to accommodate the HFC industry's wishes would hamper Member States' ambition by requiring derogations on a case-by-case basis. It would take the focus away from the primary goal of the F-gas Regulation, which is to address GHG emissions as part of the EU's effort to combat climate change.*

Q: What role should containment and recovery play in controlling F-gas emissions?

A: *Containment and recovery are **key elements** of the F-gas Regulation and every effort should be made to strengthen and enforce the relevant provisions. However, the measures set out in the*

current Regulation have proven difficult and burdensome to enforce in Member States. Indeed, a comprehensive review of the F-Gas Regulation conducted on behalf of the European Commission in 2011 concluded that “only little evidence [for effectiveness of the containment and recovery measures] has been found so far.” It also highlighted a **shocking lack of implementation** at the Member State level, and showed that containment and recovery carry significant costs. It is therefore **completely unrealistic to present containment and recovery as adequate substitutes for placing on the market restrictions (POMs) combined with an ambitious phase-down.**

It’s important to underline that the **costs** of containment and recovery measures are currently **borne by EU Member States, taxpayers and end users**, not the HFC producers themselves, which are largely Japanese and US multinationals.

What is more, the reliance on containment and recovery measures, which leads to the accumulation of HFCs in **huge chemical banks**, places an unfair economic and environmental burden on present and **future generations.**

Q: Why are bans so important?

A: Bans should be the **lynchpin** of any regulatory framework to control F-gases. [Unlike other measures,] they provide chemical producers, manufacturers and end-users with **genuine regulatory certainty.** They send **clear market signals** with concrete timeframes for companies and investors in each subsector, spurring the necessary **planning and capital investments.**

The limited scope of bans in the current draft represents a **dramatic departure** both from the ODS Regulation, which successfully controlled ozone depleting substances (CFCs and HCFCs) and is also a big step backwards from the bans which were contained in the leaked draft of the proposal (the leaked draft contained bans in commercial and industrial refrigeration).

Unlike an economy-wide phase-down, where the efforts made by the **first-movers** provide the **laggards** with the “flexibility” to do precisely nothing, **bans lock in benefits** in those sub-sectors capable of transitioning, and ensures that everyone does their **fair share.**

Q: Why is it important to uphold the servicing ban?

A: Retrofilling existing stationary refrigeration systems with “drop-in” replacements is a relatively **straightforward and inexpensive** measure which would lead to **deep cuts in demand for HFCs.** The current proposal prohibits the use of HFCs or HFC blends with a GWP of 2,500 or more for the servicing and maintenance of refrigeration equipment with a charge size of 5 tonnes of CO₂e or more from 1 January 2020. This will effectively ban the use of HFC-404A, an HFC blend (GWP 3,922) that is responsible for over 40% of the EU’s HFC emissions, and for which there are multiple alternatives.

Q: Why should pre-charged equipment be banned, rather than brought under the phase-down?

A: Importers of pre-charged equipment, the majority of which consists of mass-produced air conditioning units, were not required to submit import data under the original F-gas Regulation so **no concrete figures** exist to enable integration of this market segment under the phase-down. In addition to this, the **high number of importers and ports of entry** in the EU would considerably complicate oversight and enforcement of the phase-down by the European authorities while

incentivising **mislabelling and illegal trade**. What is more, because pre-charged equipment is packaged in standard sizes, and not tailored to the specific end use, most systems are either over or under-filled, resulting in reduced energy efficiency in comparison to equipment charged on site.

If the import of pre-charged equipment was brought under the phase-down, it is highly probable that manufacturers and producers would find loopholes enabling them to circumvent the phase-down by pre-charging equipment abroad or even by moving production outside the EU.

Q: How will the phase-down work?

A: By gradually reducing the quantity of HFCs available on the market, the phase-down mechanism can play an important role in **supporting** the other measures contained in the F-gas Regulation, namely the placing-on-the market restrictions (bans), containment, and reclamation & recycling.

However, as the difficulties experienced by the EU Emissions Trading Scheme (EU ETS) demonstrate, the major risk associated with any phase-down mechanism is the initial **over allocation** of permits to polluters. Unfortunately, the mechanism contained in the current F-gas proposal is no exception to that rule. In its current form, it would lock in a **substantial surplus of permits** based on major design flaws and unwarranted flexibilities afforded to polluters.

One important aspect to bear in mind is that, unlike other GHGs, HFCs present considerable differences in GWP (ranging from 4 to 14,800). Because the proposed phase-down is CO₂-weighted, any **downward pressure can be reduced or eliminated** by using HFCs or HFC blends with slightly lower GWPs. US and Japanese chemical companies – including Daikin, Dupont and Honeywell – offer a range of “mid-GWP” HFC options designed to prolong reliance on HFC-based equipment which could potentially thwart a transition to alternatives (often produced by smaller European companies that invested in the green economy).

To be an effective tool in controlling HFC emissions, the phase-down mechanism must therefore be amended as follows:

- **Adjust baseline** downwards to account for historical non-compliance with the F-gas Regulation embedded in reported data
- **Remove deliberate over allocation** (10% and 5%) contained in pre-2020 phase-down steps
- **Tighten phase down steps** after 2020 to take account of the servicing ban

Q: What is the penetration rate and why is it significant?

A: The penetration rate is defined as “the maximum market potential of a technical choice (i.e. abatement option) to replace new products or equipment relying upon HFCs in a particular sector”. It **incorporates safety concerns and cost constraints** while also factoring in the availability of materials and components, system complexity and know-how. It also ensures, as its basic guiding principle, that abatement options (alternatives) achieve “**at least the same level of efficiency** as the existing refrigerants”. This ensures that indirect greenhouse gas (GHG) emissions from energy consumption are always equal or less in the case of alternatives

Q: Why would a phase-out of HFCs be good news for the European economy?

A: *At international level, there are several initiatives on the table at the Montreal Protocol which are likely to result in a global phase-down of HFCs. With China and India becoming increasingly isolated in these talks, it is only a matter of time before the phase-down is agreed.*

By making a head start before the global HFC phase-down kicks in, Europe will be putting itself in an excellent position to gain first-mover advantage and benefit commercially.

Most HFC production and AC and refrigeration equipment manufacture already takes place outside Europe. By leading a phase-out, Europe can take the lead in pioneering and marketing new and environmentally friendly technologies.

This is an opportunity to revitalise the European refrigeration sector, and for it to gain first mover advantage in what will be a huge global industry.

Q: What are the alternatives to HFCs?

A: *A wide range of safe, energy-efficient and cost-effective alternatives to HFCs are already in use, particularly natural refrigerants such as hydrocarbons, CO₂ and ammonia. In some sectors (e.g. domestic refrigeration) these have become the dominant technology. Numerous studies show that in the presence of regulatory restrictions on HFCs they would be able to meet the demands of other sectors as well.*

As a general principle, when alternatives can fully meet market demand for any given application, new equipment using HFCs should be banned in that sub-sector.