



F Gas Regulation Review Briefing Document

1. What are F Gases?

F Gases are a family of molecules containing fluorine which are used as refrigerants in air conditioning, heat pumps and a variety of other refrigeration applications. They are also used as aerosol propellants, most commonly in metered dose inhalers (MDIs) for the treatment of asthma. Most F Gases are typically Hydro Fluoro Carbons (HFCs), although some products are, or contain, Hydro Fluoro Olefins (HFOs).

HFCs and HFOs play a vital part in many aspects of our lives and, whilst there are other alternative products that can be used in many applications, this is not true of all.

2. Background

HFC's were introduced in the 1990s to replace CFCs, which were powerful ozone depleting substances. This was done under the Montreal Protocol which was agreed in 1987. It was later realised that HFCs are relatively powerful greenhouse gases with high Global Warming Potential (GWP), and hence in Europe the first F Gas regulation was introduced in 2007. This was designed to limit emissions of F Gases and had only one ban on the use of R134a in automotive air conditioning. The revision of this regulation in 2015 brought in a phase down of the use of F Gases, and some specific product bans – mainly aimed at high GWP gases. This regulation prompted the development of HFOs, as very low GWP alternatives to HFCs.

The next review of the F Gas regulation aims to further limit the use of high impact F Gases.

3. DEFRA's F Gas Regulation Review

EU F Gas regulation was absorbed into UK law after Brexit, with the proviso that a review of the regulations would be carried out in the coming years. This review is now underway with a target implementation date for the new F Gas regulation of January 2025. DEFRA are leading the review and have indicated their desire to closely follow what is happening in the EU on F Gas.

4. What is industry calling for and why?

- **To work with DEFRA to develop viable timescales for the F Gas Regulation Review.** The current EU F Gas review proposal seeks to reduce significantly the usage of high impact F Gases. Industry fully supports the need to move away from high Global Warming Potential (GWP) gases where feasible, but the timescale being proposed is unrealistic. Switching to alternative gases will require a great deal of R&D which takes time and we are calling for this to be recognised in DEFRA's review.
- **For sufficient time to be allowed for safety checks on alternatives to F Gases:** Many of the current alternatives to F Gases are highly flammable and therefore subject to a number of safety standards which may limit their use, and may impact on system energy efficiency. Furthermore, if there is a technically feasible alternative to an F Gas in a system, it will take time to ensure this alternative is safe to use plus time to retrain the Refrigeration, Air Conditioning and Heat Pump (RACHP) workforce which is currently underprepared for the use of highly flammable refrigerants. Latest research from AREA (the European association of refrigeration, air conditioning and heat pump contractors) suggests only 10% of the European workforce is trained on these alternative gases.



- **An understanding that viable alternatives for F Gases do not currently exist in all applications:** Whilst there are many viable alternatives for F Gases in a wide variety of applications, there are not currently solutions for all, such as metered dosed inhalers (MDIs) which treat respiratory and other diseases. MDI's are currently propelled by F Gases and there are some non F Gas alternatives being worked on. However, this sector is developing much lower GWP alternatives, but due to the regulatory processes for medicines this will take some years to bring to market.

We believe it is worth allowing time to get the switch to alternative gases right, particularly due to:

- **The success of current regulations:** Gases in the RACHP sector only impact on the environment if they leak out of systems; either during the life of the system or when it is ultimately disposed of. The current F Gas regulation has been hugely successful in reducing leakage, emissions and in moving away from high GWP refrigerants.
- **UK's role in reprocessing F Gases:** The UK has a very robust system of companies that can reprocess F Gases at the end of their life in one system for use in another.

5. What are opponents of F Gas saying?

- **F Gases contribute to climate change with a higher global warming potential than carbon dioxide.** The amount of F Gases emitted in recent years has dropped significantly. The current F Gas regulation has had a dramatic impact on the use of high impact F Gases. The gas which has the single most impact on climate change is carbon dioxide which is emitted into the atmosphere principally via the burning of fossil fuels.
- **It is easy to make the switch from F Gases to “natural” and readily available alternatives such as ammonia, hydrocarbons, and carbon dioxide.** Switching to alternative gases will require a great deal of R&D which takes time and industry is calling for this to be recognised in DEFRA's review – furthermore F Gases play a crucial role in MDI inhalers for respiratory diseases and alternatives are not available for all medications. New propellants are being developed for MDIs but this process takes a very long time.

6. What is happening in the EU?

The final proposal on F Gases agreed by the EU Commission and Parliament is much more ambitious than the current regulation and aims for a phase out of F Gases. EU industry and trade bodies have grave concerns about the impact of this on industry; in particular the roll out of heat pumps to meet net zero commitments and the impact on the ability to service existing equipment, potentially leading to the scrapping of perfectly good equipment which cannot be serviced.

The EU is also proposing further bans which would mean a lot of equipment, particularly small a/c, heat pump and split systems, would be forced to move to non-F Gas refrigerants – principally propane. Whilst industry understands the need for this and has already started the transition to propane in some equipment, this does raise several issues. Propane is classed as an A3 highly flammable refrigerant and under current product safety standards there are limits on the charge size for all refrigerants, and particularly highly flammable refrigerants – so the use of propane will be limited.

The EU Proposed revision of the F Gas regulation has been agreed and is now going through further parliamentary review, with a view to April 2024 implementation.

The UK RACHP industry is committed to moving away from F Gases where it is safe and where there will be no negative impact on energy efficiency. However, switching to alternative gases will require a great deal of R&D which takes time and we would like to work with DEFRA to develop viable timescales for the F Gas Regulation Review.